THE GEOLOGY OF THE UPPER HUON–ARVE RIVER AREA

By

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(WITH TWO MAPS)

ABSTRACT

Permian and Triassic rocks have been intruded in a complex manner by dolerite of lower Jurassic(?) age. The Permian rocks consist of mudstones, limestone and some sandstone with a total thickness of at least 870 feet. At least 800 feet of Triassic rocks are present, consisting of uniform fine grained quartzose-sandstone and micaceous shales. The structure of the area appears to be controlled by the dolerite intrusions.

INTRODUCTION

During January, February, 1955, the map squares 4769 and 4770 were mapped as part of a geological investigation of the Upper Huon and Arve River areas. The general structure and stratigraphy of the area were determined. The work was carried out using maps obtained from the Forestry Commission as base maps. Geological boundaries were mapped on air photos and transposed onto the base maps. The access to the Upper Huon square was good but accessibility was not so good in the Arve River square due to lack of roads and the presence of thick rain forests. The geology of the latter square in the inaccessible parts consisted of making series of traverses across the Arve valley and noting the disposition of the rocks where these were exposed in the bed of the river.

TOPOGRAPHY AND PHYSIOGRAPHY

The topography of the area is typically that of a young to mature river system. The dolerite hills have steep slopes and a positive relief although the highest point does not exceed 2000 feet. The areas of Triassic and Permian rocks not covered by dolerite have been eroded more readily, hence the valley of the Arve River is almost a plains tract in these sediments while the Huon somewhat further downstream from its confluence with the Arve flows through a gorge cut in dolerite. Rapids have developed in the Huon and Arve Rivers where they intersect relatively harder bands of Permian rocks. The Arve shows three distinct stages in its course due to the influence of underlying rock types. It has developed a prominent meander belt in softer Triassic rocks due to barring by the Permian rocks near its mouth, because headward erosion from the Huon River has not yet reached the stage where the

barring rocks have been breached. The Arve is wider where it crosses the Permian rocks because it has tended to carry out lateral erosion of its banks in the relatively harder sediments. The third case occurs further upstream from the meander belt where the river has a comparatively straight course through dolerite on which it appears superimposed. The floor of the Arve valley is covered by a great amount of white sandy alluvium derived by weathering from the Triassic sandstones. The Russell River at Lonnavale similarly appears to have been superimposed on dolerite underlying Permian rocks. The Huon River has had its course altered because of barring by a dolerite dyke on the western edge of the area and a dyke-like dolerite intrusion on the eastern boundary. The Little Denison River, where it crosses the Denison Hill Road has also developed a small meander because of barring by dolerite contacts. The Huon itself flows along such a contact above the Huon Falls. On the flatter plain areas the Huon has built up levee banks which are up to 10 feet higher than the surrounding country. The streams flowing in the dolerite, particularly on the eastern bank of the Huon have cut steep narrow V-shaped valleys. The control of the location of these streams is intrusive contacts and joints in the dolerite.

Vegetation and rock types:

It was noted that on Permian rocks and weathered dolerite the vegetation was in the nature of very thick rain forest. Dolerite covered by little soil occurs as dark patches on the air photographs and is covered with occasional stunted eucalypts, coarse grass and stunted cutting grass tussocks. Dolerite capped hills occur generally as hills with steep slopes forming buttes in many cases. The Triassic sandstones develop a mesa-like physiographic form and are characteristically covered by thick bracken growth with a few stunted trees or by a very thick stunted growth of small stems. The Permian rocks have no characteristic vegetation but photograph white on the air photographs when not covered with thick vegetation cover. The Permian rocks occur in the lower plains and as low rounded hills.

STRATIGRAPHY

The sedimentary rocks of the area belong to the Permian and Triassic periods together with Recent alluvium and river gravels. The Permian and Triassic rocks have been extensively intruded by dolerite of early Jurassic age. A summary of the stratigraphy follows:

Quaternary System	Alluvium and river conglomerate
Jurassic System	Dolerite
Triassic System	Knocklofty Sandstone and Shale
Permian System	Ferntree Formation
	Woodbridge Glacial Formation
	Berriedale Limestone
	Bundella Mudstone
	Rathbones Siltstone

PERMIAN SYSTEM:

The oldest rocks occurring in situ in the area belong to the Permian System. The most complete exposed section of the Permian in the area is shown on the western flank of the divide between the Russell River and Little Denison River, west of Lonnavale.

A detailed analysis of this section gives the following sequence:

Ferntree Formation	200′	†	grey mudstones	370′
	30′		coarse sandstone	
	120′		dense grey mudstone	
	20′		Risdon sandstone	
Woodbridge Glacial Formation	85′		grey-white mudstone	290′
	10′		coarse mudstone with erratics and brachiopods	
	55′		grey-white mudstone	
	110′		fairly finely bedded mudstone very rich in Bryozoa	
	6′		tillitic (?) mudstone	
	24′		coarse-grained mudstone with Bryozoa and large *Spirifers*	
Berriedale Limestone	90′		Limestone and calcareous shales	90′
Bundella Mudstone	120′	†	Irregularly laminated shale bands with few fossils at top	120′

Total exposed thickness = 870 feet Permian sediments

Bundella Mudstone:

This name has been given to rocks occurring in the valley of the Little Denison River, which are similar, both stratigraphically and lithologically, to the Bundella Mudstone in the Granton area. These are the oldest exposed rocks and consist of dark shaly mudstones containing many fossils, particularly *Spirifer*, *Neospirifer* and *Fenestella*. Thin bands of tillite are also present. The lowermost exposed beds of the Bundella Mudstone are not as fossiliferous as the overlying members. These lower rocks are dense, dark, massively bedded and very fine grained with few fossils, some small quartzite erratics, and an appearance of irregular bedding due to weathering.

Within this formation at least one band of a rock similar to the Rathbones Siltstone has been identified. This rock type occurs as a thin band of well laminated, very fine grained, grey sandstone or mudstone containing quartz grains and some feldspathic material. It shows a differentiation into layers due to bands of dark material about 0·5 millimetres in thickness. The dark bands are characteristically covered with a dense layer of white mica (muscovite) similar to the Knocklofty Shales. The thickness of this rock type was not determined accurately. The thickness of the Bundella Mudstone including the Rathbones Siltstone is somewhat greater than 120 feet as the base was not exposed.

Berriedale Limestone:

The Berriedale limestone overlies the Bundella Mudstone. The transition point is marked by dark greenish-brown, unfossiliferous, irregularly laminated shales with occasional erratics. It consists of a dense gray massively bedded limestone rich in brachiopod remains. *Spirifer, Martiniopsis, Fenestella,* pectenids and *Conularia derwentensis* ?

occur abundantly in the rock, together with occasional corals. Erratics of quartzite, schist, and granite are present. There is evidence of deposition of calcite on exposed surfaces. The limestone is impure and smells of hydrogen sulphide when broken. The uppermost beds of this formation consist of a dark greenish, irregularly-bedded calcareous mudstone with *Fenestella, Martiniopsis* and *Spirifer* and some erratics. The total thickness of the Berriedale Limestone in this area is 90 feet.

Woodbridge Glacial Formation:

The Woodbridge Glacial Formation consists of massively bedded, grey to creamy coloured mudstone containing numerous erratics of slate, schist, quartzite and granite. The uppermost beds of this formation are grey in colour with few fossils. Bands of conglomerate are common, together with grey shales containing a few iron-stained fossils. The lower beds contain dark shale bands very rich in *Fenestella* and other Bryozoa. Coarser bands contain many Brachiopods and some *Stenopora*. There also appear to be fossils concentrated in a band immediately beneath the base of the Ferntree Formation. A mottled zone appears in the Woodbridge Glacial Formation about 100 feet below the Ferntree Formation near Judbury. The total thickness of the Woodbridge Glacial Formation is 290 feet.

Ferntree Formation:

The Ferntree Formation is overlain by the Knocklofty Sandstone the base being shown by the presence of the Risdon Sandstone member. This sandstone occurs as a band of massive, current-bedded, quartzose sandstone of very irregular grainsize containing erratics which may attain 6 inches in diameter. The erratics are mainly quartzite. Its thickness is about 20 feet. The mudstones are generally uniformly massively bedded with small erratics and alternations of shaly bands. The rock is fine grained containing many small irregularly shaped erratics and many dark carbonaceous-looking streaks which tend to give the rock its greyish colour. Occasionally large erratics of quartzite, slate, schist and granite are present. Fossils are very rare or absent. At 120 feet above the base of the Ferntree Formation another band of sandstone resembling the Risdon Sandstone outcrops. The second band of sandstone is about 30 feet in thickness. The total thickness of the Ferntree Formation in the area is at least 450 feet and may be 600 feet.

The Ferntree Formation is overlain by the Knocklofty Sandstone and Shale. It does not appear that any rocks representing the Cygnet Coal Measures occur in this area although a fine grained, dark, micaceous shale in the Arve River near the base of the Triassic may represent this formation.

TRIASSIC SYSTEM:

The Triassic rocks overlie the Ferntree Formation with a slight disconformity. This was not seen in detail in the area.

Knocklofty Sandstone and Shale:

The Triassic rocks in this area have been provisionally placed in this Formation. The lowermost beds consist of the typical buff to red coloured, fine grained shales containing numerous muscovite mica flakes and occasionally graphite particles on the bedding planes. Interbedded with these are the typical cliff forming sandstone horizons. At least four cliff forming sandstone horizons are present in the section on the western face of Green Hill. The sandstones are massive, strongly cross-bedded, glistening, uniform grained, quartzose sandstones, which may be iron-stained, containing concretionary structures and occasionally mud pellets. The leached sandstones are very white and weather to give a very sandy soil which supports a heavy growth of bracken fern. The maximum thickness of this formation in the area is at least 800 feet with the top beds being omitted.

JURASSIC ? SYSTEM:

Dolerite

The extensive intrusions of dolerite took place after the deposition of the Triassic rocks, probably in the lower Jurassic. The intrusions are sill-like and dyke-like in form. The dolerite appears to be sill-like mainly when intruded into the Triassic and dyke-like in the Permian rocks. The dolerite intrusions are the main structural controls in the area.

QUATERNARY SYSTEM:

Alluvium and river conglomerate

The youngest sediments in the area appear as alluvium derived from the weathering of the rocks and an extensive development of river gravels and conglomerate occurring on the banks of the Huon. This occurs in the form of three river terraces, the highest of which is approximately 150 feet above the Huon River in the area about half a mile downstream from the Arve River. The conglomerate consists mainly of well rounded pebbles and boulders of quartzite and siliceous conglomerate, the largest diameter being about 12 inches. Pebbles in the bed of the Huon show imbrication when exposed. Near the Huon Falls where the river has cut through the dolerite the conglomerate consists of pebbles of dolerite which have become cemented to form a hard conglomerate.

GEOLOGICAL STRUCTURE

The structure of the area is controlled mainly by the intrusion of the Jurassic dolerite, associated with contemporaneous faulting. Other post-dolerite faults, the age of which cannot be determined decisively, are also present. These have been established in the Upper Huon square because access is easier. In the Arve River square evidence exists for the presence of at least two post-dolerite faults. Other faults are present but lack of suitable evidence does not allow for their correct placement.

Dolerite Occurrences:

The dolerite has intruded the sediments of the area in a very complex manner. Three types of dolerite contact, with the country rock, can be recognised. These are:

1. Sill-like contact.
2. Dyke-like contact.
3. Post intrusive fault contact.

The first two types are the most common in the area. The post intrusive fault has been doubtfully identified in the area. Because of the complexity of the intrusions, in any particularly intrusive body, it frequently happens that the contacts with the country rock are both dyke-like and sill-like.

The dolerite on the northern boundary of the Upper Huon sheet occurs, as a concordant intrusion in the Woodbridge Glacial Formation, in the bed of the Russell River. East of this the boundary crosses the hillside, sharply transgressing the Woodbridge and Ferntree Formations, as a dyke-like intrusive contact. At the north-east corner of the area the dolerite occurs as a concordant intrusion into the Ferntree Formation. Along grid line 709000 N the dolerite becomes dyke-like near the junction of the Lonnavale-Denison Hill roads. The western contact is dyke-like, crossing the Denison Hill Road at the first sharp bend south of the Lonnavale turn-off, and extending to the top of the hill where an outcrop of Risdon Sandstone appears to be covered by a sill-like contact. This contact extends as a steeply dipping discordant contact which is exposed on the hillside on the north-east bank of the Little Denison River. The contact crosses the road near the bridge over the Little Denison River and bears almost due south from here along a spur almost to the last substantial hut on the Weld River track. A quarry has been opened in the baked Permian rocks of the Woodbridge Glacial Formation on this contact at the beginning of the Forestry road to the Standard Case Co. Mill. The Permian here shows a drag dip to the west. From grid line 714000 N this contact becomes sill-like in nature overlying the Ferntree Formation and bearing north-west to edge of the area. Further south this same intrusive mass has a dyke-like contact with the Knocklofty Sandstones and Shales at the top of the hill. At the base of this hill the mass has a discordant contact with the Ferntree Formation. The contact is exposed in the bed of the Huon River near grid line 701000 N. The Ferntree Formation here has been baked and silicified by the intrusion; the contact of which shows columnar jointing and dips very steeply in a northerly direction. On the eastern bank of the Huon the contact bears east to the northern slopes of Green Hill. On the eastern side of Green Hill the contact, which is now in the Knocklofty Sandstones and Shales, swings approximately south, still showing fine-grained dolerite. The eastern side of this intrusive dolerite mass beginning at the junction of the Lonnavale and Denison Hill roads appears to be dyke-like in nature intruded into the Woodbridge Glacial Formation. Near the Huon River the contact appears to be sill-like but this could not be determined decisively due to the presence of the overlying river conglomerate. The Huon River between grid lines 706000 N and 707000 flows along the contact of the dolerite and Woodbridge Glacial Formation.

The Little Denison River flows in Woodbridge Glacial Formation rocks for approximately one and a half miles before its confluence with the Huon River. In this area the dolerite is sill-like over the Woodbridge Glacial Formation north of the Little Denison River. The dolerite then becomes part of the dyke which bars the upper reaches of the Little Denison River. On the southern bank of the river the dolerite swings away in an easterly direction and eventually is cut by the Huon River near grid line 705000 N. The nature of the contact on the southern bank of the Little Denison could not be determined accurately although the outcrop to contour relationship suggests that it may be sill-like in nature. On the eastern bank of the Huon at this point the dolerite is strongly discordant and follows the course of a stream towards the tops of the hills on the eastern edge of the area. The dolerite occurs as a slightly transgressive sill overlying rocks of the Ferntree Formation on the tops of these hills. To the north-east, slightly outside the area mapped this sill becomes strongly discordant, crosses the Huon River, and ultimately connects with the dolerite sill in the north-eastern corner of the area. The course of the river has been modified slightly where it cuts through the dolerite. In the south-eastern part of the Upper Huon sheet the dolerite shows an intrusive dyke-like contact in Permian rocks. This contact becomes sill-like near the junction of the new Forestry Road south-west of Glen Huon. The dolerite shown in the south-western corner of the Upper Huon sheet is part of a dolerite dyke which extends at least two miles connecting the dolerite intrusion south of the Huon with the dolerite mass which runs north-west on the northern edge of the Knocklofty Sandstones and Shales Formation. This dyke appears to be about 300 yards wide and occurs as a topographic linear of positive relief. On the southern boundary of the Upper Huon sheet the dolerite occurs as a sill-like intrusion overlying the Ferntree and part of the Knocklofty Sandstones and Shales. It has not been determined that this mass is part of the larger mass occurring a few hundred yards further north. It can be seen, however, that most of the dolerite occurs as one large intrusive mass with the various types of contacts described above. The dolerite appears to be massive and well jointed. The tributaries on the eastern bank of the Huon appear to be controlled by jointing in the dolerite and have cut deep V-shaped valleys. There does not appear to be any faulting associated with the streams because apparently massive dolerite occurs in their beds. The eastern bank of the Huon where it cuts through the dolerite in the gorge does not have any debris from the river, however, the western bank is covered by coarse river conglomerate containing rounded boulders of quartzite and silicified conglomerate up to 150 feet above the river. The dolerite on the western bank is covered by thick rain forest which may mean that this dolerite has undergone a greater amount of weathering than the dolerite of the eastern bank, or may be due solely to the covering of river wash. Scattered in patches over the dolerite are small areas of silicified Permian rock which occur apparently as small erosion residuals. They may represent the remnants of the tops of the intrusions or they may represent stoped blocks of sediment which have fallen into the magma. One particularly interesting occurrence at 704000 N and 479000 E consists of a small pipe of dolerite intruded through one of these blocks.

The dolerite intrusion in the Arve River sheet does not appear to be as complex as the previous type. Here again the dolerite appears as a single intrusive mass. In the north-eastern part of this area the dolerite has intruded the Knocklofty Sandstones and Shales as a sill which branches from the dyke-like intrusion in the south-east corner of the Upper Huon sheet. The sandstone has been baked to form a white crystalline quartzite. On Green Hill in the central northern area of the Arve River sheet the dolerite occurs as the sill intruded into the Knocklofty Formation from the Upper Huon sheet. On the southern part of Green Hill the Triassic rocks lie in contact with the dolerite hence it appears that the Triassic was faulted by the intrusion of the sill in this area and the upthrown block of Triassic has since been eroded away. On the western boundary of the Arve River sheet the dolerite is intruded into the Ferntree Formation as a dyke-like intrusion and appears to cap the divide between the Arve and Picton Rivers. It appears to be in the form of a transgressive sill. The general structure of the Arve River Valley is that of a series of beds dipping at a low angle in a westerly direction. The dolerite has been intruded into these beds as a sill overlying the Knocklofty Sandstones and Shales and dips at a low angle upstream; thus the bed of the Arve River near the southern boundary is cutting dolerite but as one follows the river north, the dolerite outcrops higher on the banks of the river while the river bed itself is cut in Triassic and Permian sediments. The sill was not mapped in accurately because of thick undergrowth but there appears to be two sill-like intrusions into the Triassic rocks in the south-western part of the area. These structures can be seen along the track to Mt. Picton on the eastern side of the Arve River. The western bank of the Arve valley is made up of dolerite which has both a sill-like and dyke-like contact. This can be seen where the Arve road begins to climb up the eastern face of the divide between the Arve and Picton rivers. The highest part of this divide lies to the west of the area and consists of the Knocklofty Sandstones. The dolerite appears to make up the eastern part of the divide running northwards as a transgressive sill overlying the Permian and Triassic rocks of the Arve valley.

The south-eastern quarter of the Arve River sheet shows the general structure of a big transgressive dolerite sill which is intruded on the contact of the Permian and Triassic formations. This intrusion becomes dyke-like in form on the top of the hill on Fletcher's Hut track. Elsewhere the intrusion underlies the Knocklofty Sandstones and Shales except in the south-eastern corner where it transgresses the Ferntree Formation with an apparently strongly discordant contact. The edge of this intrusion on the eastern part of the area is discordant and cuts a small outcrop of Triassic rocks overlying the Ferntree Formation. North of Fletcher's Hut track the dolerite lenses out as a thin sill intrusive into the Knocklofty Sandstones and Shales. The sill outcrops on the top of a prominent band of cliffs in this formation and is overlain by more sandstones. This structure is similar to that on the northern slope of Green Hill. The dolerite in this form connects with the sill in the north-eastern corner of the sheet where the sandstone has been baked to a quartzite by the overlying dolerite.

The complexity of the dolerite intrusions is shown by the upper reaches of the Little Denison River where in one section a dolerite outcrop approximately one foot in diameter and showing a baked contact was seen in the Bundella Mudstone. No dolerite outcrops elsewhere until the main dolerite intrusive body about a quarter of a mile away. This evidence suggests that even in the apparently homogeneous sedimentary blocks there could well be hidden dolerite intrusions. In a similar manner a small irregularly shaped intrusion occurs in the Huon River downstream from the Arve.

Faulting

Numerous small faults exist in the Permian rocks near the mouth of the Arve River, as shown by the presence of many reversals of dip. The relation of these to the dolerite is indeterminable. The Triassic rocks along the Arve Road also have many small faults, shown in cuttings by reversal of dip. These strike generally north-east south-west. There is much dolerite in this area and its intrusion most probably was responsible for these disruptions. Where exposed the fresh dolerite is dense and fine grained.

Little evidence was seen showing the presence of post-intrusive faulting where the dolerite had been displaced. On the southern part of the Arve River sheet the upper dolerite sill capping the eastern flank of the Arve River valley from the air photographs was seen to be displaced by a linear running approximately north-east south-west. This could not be checked accurately on the ground but it appears to be a post-intrusive fault. To the north of this fault another fault running approximately north-west south-east exists. The actual position of this fault is not exactly known but evidence is that on going up the Arve River valley from the Huon the sequence is Ferntree Formation, Knocklofty Sandstones, Ferntree Formation, Knocklofty Sandstone and dolerite. All these rocks have a component of dip upstream. The fault has been responsible for repeating the Permian in the sequence and this repetition appears to exist across a line which extends off a strong linear developed in the sandstones on the button grass plain on Picton Run Nine 21287. The drainage of Billy Creek and a small creek to the south-west of it are also strongly delineated in a north-west south-east direction.

In the Upper Huon area faults have been found cutting the Permian sediments. The largest fault follows the course of the Little Denison River valley in a north-west south-east direction. As a result the Bundella Mudstone on the north-east side of the valley is upthrown against rocks of the Woodbridge Glacial Formation to the south-west. The throw of this fault is about 400 feet but the age is puzzling because it does not appear to cut the dolerite to the south-east on the Denison Hill road. The course of the Little Denison river has been controlled by the presence of this fault. In the same area another fault running in approximately the same direction occurs south of the Forestry road. In this the Ferntree Formation rocks are thrown down against Woodbridge Glacial Formation rocks. The throw of this fault which is shown on the air photos by a strong linear is about 100 feet. The age of this fault is also indeterminate. There may be a doubtful third fault in this group bearing approximately north-east south-west with Woodbridge Glacial Formation rocks in contact with the Ferntree Formation. In the bottom

of the valley the Risdon Sandstone outcrops on the downthrown side of the fault. On the upthrown side the Risdon Sandstone outcrops high on the hill to the east of the road which leads out to the south-west corner of the square. However, the distribution of Risdon Sandstone may be due to the dip of the rock across the valley. The southern end of this fault may cut the dolerite boundary. This is hard to prove and if this is the case then the fault is certainly post-intrusive. Another doubtful small fault may exist along the line of a small creek flowing down 472000 E in the south of the Upper Huon square with the western block as the downthrown side. The rocks on the eastern block appear to have a greater dip than those on the western block and the occurrence of a sandstone which may be the Risdon Sandstone does not leave enough room for the remainder of the Ferntree Formation which underlies the Triassic rock to the west. The Knocklofty Sandstone and Shale on the Arve road in the southern part of the area is cut by numerous small faults which have probably been caused by the intrusion of the Jurassic dolerite. It is impossible to determine the relation between these and the dolerite contacts.

General Structure:

The dolerite has caused the splitting up of the sediments into discrete blocks. These can be recognised in the north-east and north-west of the Upper Huon square and in the south-east and south-west of the above. The south-west block is terminated by a north-west south-east trending dyke.

The Arve valley consists of one block surrounded by continuous dolerite with a discrete block of Triassic rocks in the south-west. The eastern edge of the area consists mainly of massive siliceous Triassic sandstone which overlies the dolerite concordantly. This sandstone rises on going from south to north and reaches its highest point on Scott's Divide. The sandstone has either been strike faulted to different heights or has been raised to different heights by the intrusion of the dolerite as different blocks. No sign of post-intrusive faulting has been definitely found in this area and all contacts which have been pin-pointed have proved to be intrusive contacts with baked sandstone hence it would appear that the Triassic sandstones on Scott's Divide have been pushed to different levels by the intrusion of the Jurassic dolerite. The power of the dolerite to wedge blocks out of the Triassic sandstone is shown quite clearly by the sill on the northern slopes of Green Hill.

ACKNOWLEDGMENTS

My thanks are due to the Hydro-Electric Commission for whom the field work was carried out and who made equipment available for work in the area.

LOCALITY INDEX

	Internat. Grid Reference K/55 Quadrangle		S. Lat.	E. Long.
Arve River	Picton	87	43° 4′	146° 51′
Billy Creek	Picton	87	43° 7′	146° 51′
Green Hill	Picton	87	43° 4′	146° 51′
Little Denison River	Picton	87	43° 0′	146° 50′
Russell River	Styx	81	42° 59′	146° 51′
Scott's Divide			43° 7′	146° 54′

GEOLOGY OF ARVE RIVER AREA

1. BIBLIOGRAPHY:

BLAKE, F., 1935 — Report on country along route of Craycroft Track. **Unpublished report of Mines Dept.**

FORD, R. J., 1956 — Geology of the Upper Huon-Arve River Area. **Pap. Proc. Roy. Soc. Tas.,** Vol. 90, pp. 147-156.

2. STRATIGRAPHIC TABLE:

SYSTEM	FORMATION	ROCK TYPE	THICKNESS (in feet)
Tertiary and Quaternary		**Erosion interval**	
Early Tertiary?		**Strong epeirogeny and faulting**	
Jurassic?		Dolerite sills and sheets	
Triassic	Knocklofty	Sandstone and shale	800
Permian	Ferntree	Mudstone	370
	Woodbridge	Glacial formation	290

3. LOCALITIES OF SPECIAL INTEREST:

Thin sill of dolerite	476500E. 698000N.
Dolerite sill	477000E. 693800N.
Ferntree Mudstone showing presence of strike fault	472500E. 693700N.
Faulted Triassic rocks	470300E. 691000N.

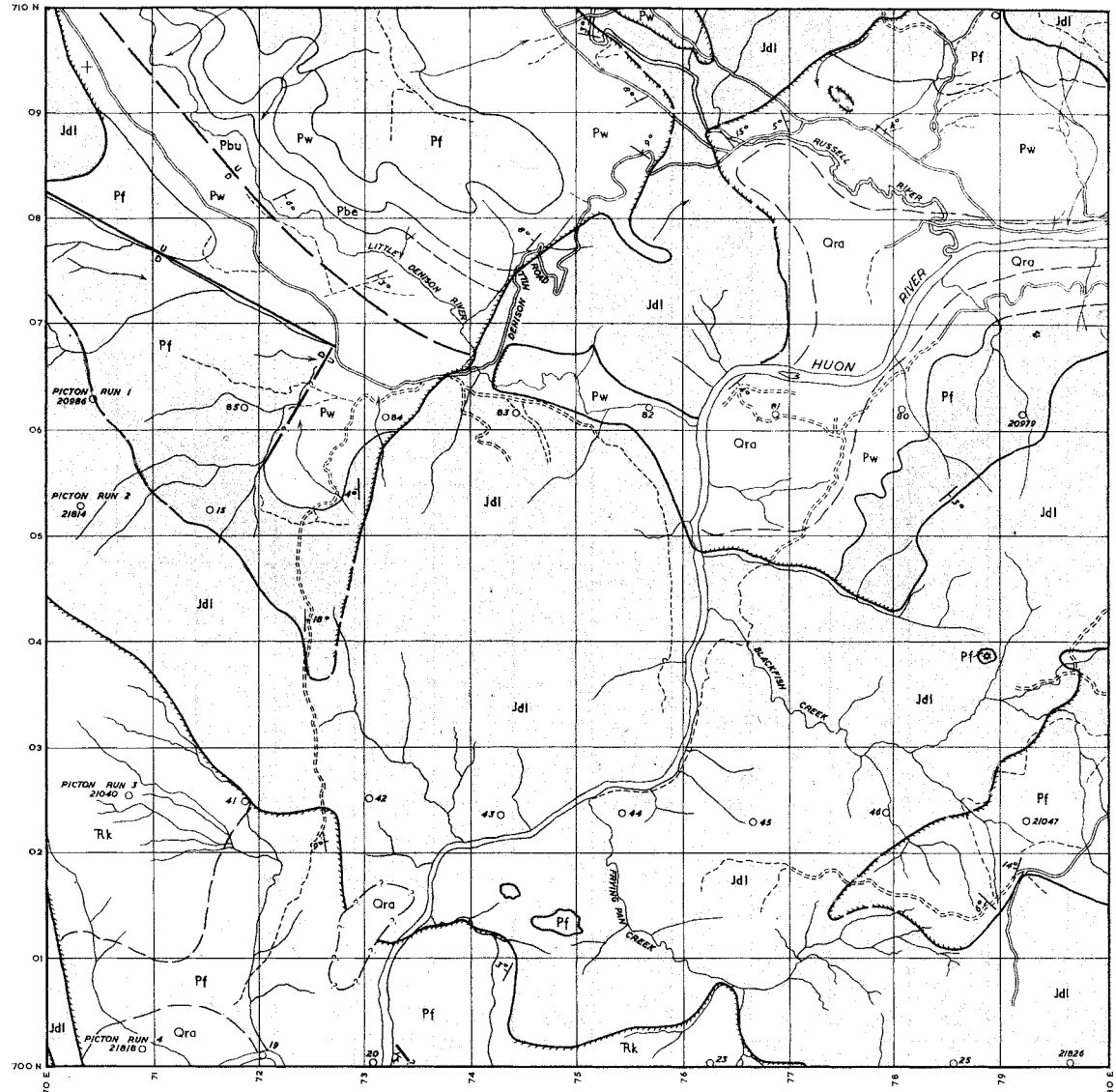
4. PHYSIOGRAPHY:

Note control of Arve River by rock types.	
Waterfalls in Ferntree Mudstone	473600E. 697500N.
Weathered dolerite	471000E. 696000N.

GEOLOGY OF TASMANIA
ONE INCH SERIES – UNIVERSITY OF TASMANIA, GEOLOGY DEPT.

UPPER HUON

4770



LEGEND

- FAULT WITH DOWNTHROWN SIDE INDICATED
- FAULT – POSITION APPROXIMATE
- FAULT INFERRED
- FORMATION BOUNDARY

Dolerite Boundaries

- CONCORDANT SILL
- DISCORDANT INTRUSIVE BOUNDARY
- STRIKE AND DIP
- ROADS
- VEHICULAR TRACK
- TRACK
- HORIZONTAL DIP
- PHOTO CENTRE

Quaternary System
RECENT SERIES

- Qra ALLUVIUM

Triassic System

- Trk KNOCKLOFTY SANDSTONE AND SHALE

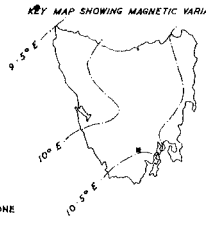
Permian System

- Pf FERNTREE MUDSTONE
- Pw WOODBRIDGE GLACIAL FORMATION
- Pbe BERRIEDALE LIMESTONE
- Pbu BUNDELLA MUDSTONE AND RATHBONE'S SILTSTONE

IGNEOUS ROCKS
Jurassic ? System

- Jdl DOLERITE

KEY MAP SHOWING MAGNETIC VARIATION



Base map by courtesy of FORESTRY COMMISSION Hobart

SCALE
0 1 2 3 4 5000 10,000 FEET
0 2 MILES

MAPPED BY R. J. FORD JAN. 1955

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	Woodbridge	Glacial Formation	290
	Berriedale	Limestone	90
	Bundella	Mudstone	120+

3. LOCALITIES OF SPECIAL INTEREST:

Berriedale limestone with fossils	473500E. 708000N.
Intrusive contacts of dolerite	473250E. 701250N. 473250E. 706500N.
Dolerite dyke	475000E. 707800N.
Isolated sedimentary blocks on dolerite	474300E. 701700N. 478800E. 703800N. 475000E. 701400N.
Weathering of dolerite	473500E. 701500N. 79500E. 700000N.