Bergvesenet

Postboks 3021, 7002 Trondheim

Rapportarkivet

Bergvesenet rapport nr	Intern Journal nr	Internt arkiv nr	Rapport lokalisering	Gradering
BV 1721			Trondheim	
Kommer fra ..arkiv	**Ekstern rapport nr**	**Oversendt fra**	**Fortrolig pga**	**Fortrolig fra dato:**

Tittel

Blåhammeren - Havdalen -region
Geological report

Forfatter	Dato	Bedrift
Mayfield, Ian	1973	

Kommune	Fylke	Bergdistrikt	1: 50 000 kartblad	1: 250 000 kartblad
Namsskogan	Nord-Trøndelag	Trondheimske		

Fagområde	Dokument type	Forekomster
Geologi		Blåhammeren - Havdalen
Råstofftype	**Emneord**	

Sammendrag

BLÅHAMMEREN - HAVDALEN REGION

GEOLOGICAL REPORT

(1973)

Ian Mayfield, B.Sc.

Summer Field Mapping 1973

Skorovas, Norway

Ian Mayfield

Contents

Introduction

The area mapped is believed to be part of a Cambro-Silurian volcanic/sedimentary pile.

The rocks are part of the Gjersvik nappe and are p part of a calc-alkaline suite of rocks consisting of basaltic/andesitic greenstones intruded by large trondhjemitic and gabbroic igneous bodies.

The greenstones generally dip to the South-East. There are indications of isoclinal folding and thrusting is certainly a major structure present in the area.

The area may be roughly divided into four zones

i) greenstones

ii) polymict conglomerates

iii) basic intrusives (gabbros)

iv) acid intrusives (trondhjemites)

The pyrite deposits of Skorovatn are contained within the greenstones of the Gjersvik nappe.

DESCRIPTION OF LITHOLOGIES

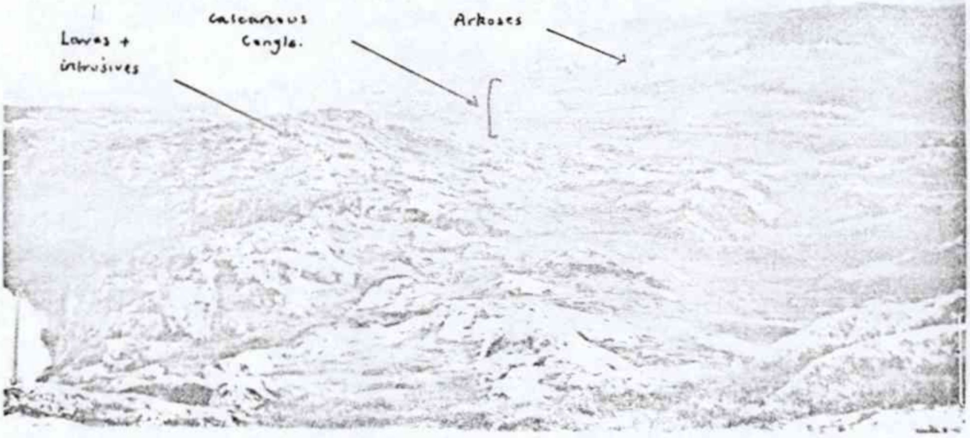
Conglomerate Series

Schists in Conglomerates

i) Within the coarse conglomerates e.g. M.R. 363069790 The main constituents are albite, quartz, variable amounts of chlorite and carbonate which weathers to a brown colour possibly indicating the presence of iron or magnesium.
Chlorite grit - more chloritic than the above and also slightly coarser grained. This is possibly a different schist band from that above or it may be just a lateral variation in lithology.

ii) Phyllitic schist e.g. M.R. 427069550 This is not really a true phyllite as the grain size is a little small and the rock is not really fissile. However, the rock shows phyllitic partings along which pyrite is common. Occasionally limestone clasts are included. The rock is more psammitic than the above.

These schists seem to show a variation with time ie. the earliest schists, those between the Trondhjemite conglomerate and the calcareous conglomerate are pelitic in nature becoming more psammitic to the South-East e.g. schists at M.R. 363069790 compared with schists at M.R. 427069430 This phenomenon is borne out by the fact that calcereous conglomerates change in nature the same way with regard to both the included clasts and the matrix.



Calcareous Conglomerates

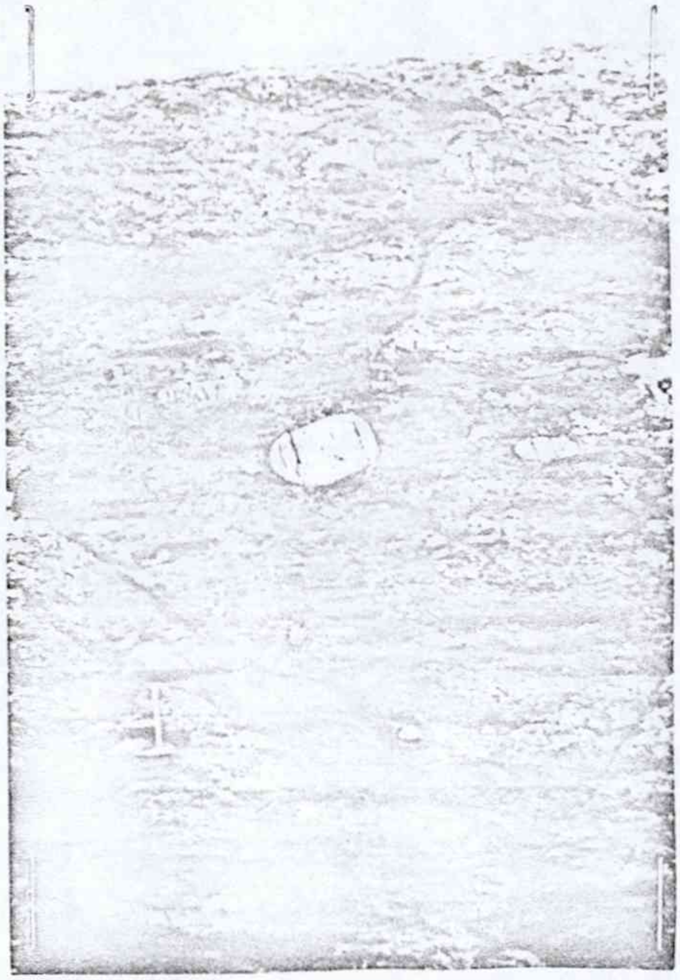
i) Large clast calcareous conglomerate e.g. M.R. 292069230

This is a clastic filled chlorite schist with clasts of predominantly saccharoidal limestone (with perhaps a small magnesium content giving a brown weathering stain), trondhjemite and jaspilite. Clasts show elongation parallel to the schistosity suggesting quite intense folding. Calcareous material often displays a conjugate fracture. The limestone clasts show variable elongation with maximum elongation being about 80 cms.

ii) Transition conglomerate in face of thrust M.R. 335069230

This is a mixture of both Trondhjemite conglomerate and calcareous conglomerate showing a passage of Trondhjemite clasts into calcareous clasts toward the South-East.

Trondhjemite clasts 45-60 cms - Calc clasts much longer. This is due to a difference in competance rather than a difference in tectonism.



Transition congl. in face of thrust.

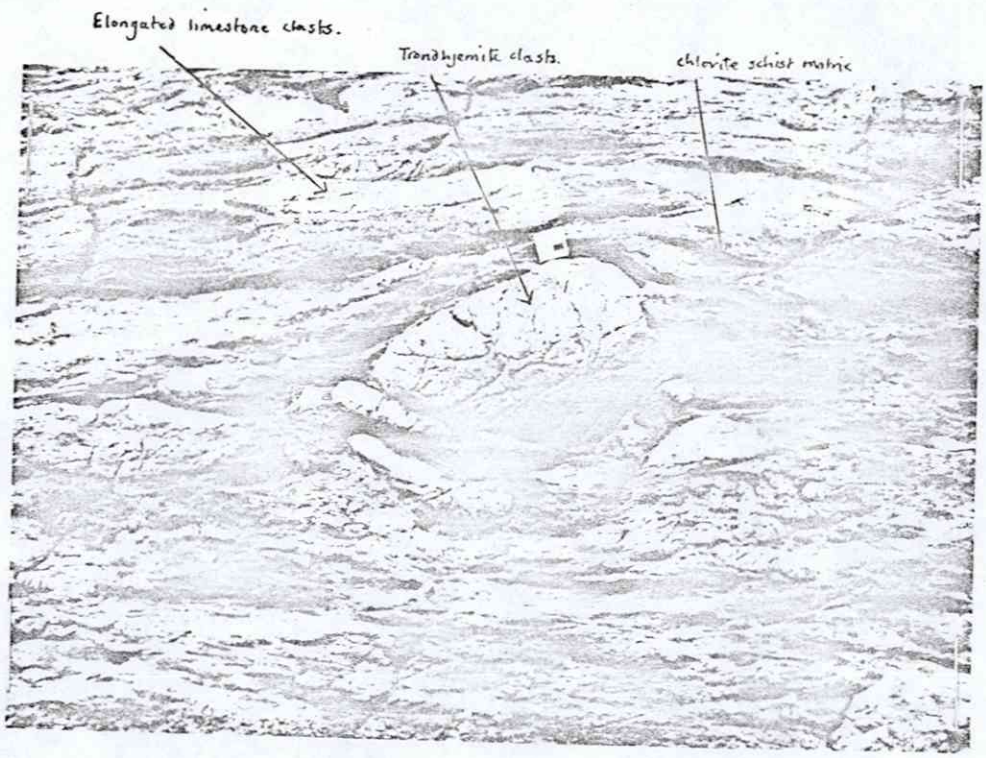
iii) Calcareous conglomerate - fine clasts with chloritic matrix e.g. M.R. 380069450

Clasts of brown weathered limestone in a matrix of felspar, quartz, carbonate and chlorite, the latter predominating. Clast size is between 1-3 cms. Some recrystallised limestone with occasional greenstone fragments help make up the clastic part of the rock. The rock occasionally shows quite a strong foliation.

iv.) Calcareous conglomerate - fine clasts with non-chloritic matrix e.g. M.R. 370068850

This rock type shows a striking change from the above in that the colour of the matrix becomes much more buff càloured ie. change of matrix from pelitic to psammitic. The matrix has a high carbonate content with only subordinate felspar and chlorite. This reflects the change in the schists earlier described.

Ratio of matrix:clasts is - 80:20. The clasts tend to become smaller their composition being mainly carbonate with occasional greenstone fragments. It is thought that these rocks represent a more distal deposit compared with those to the North-West.



Trondhjemite Conglomerate

This lithology has the same chlorite, quartz, felspar carbonate matrix as the large clast calcareous conglomerate. However, trondhjemite is the major clastic component accompanied by jaspilite, greenstone fragments, altered gabbro and minor amounts of limestone. Epidote becomes a noticable constituent. This is probably a result of metamorphism where the calcic felspar of the greenstones and gabbro have been broken down to form epidote and albite.

Clast sizes range from 30-50 cms along the long axes which are parallel to the initial penetrative schistosity.

In only one exposure was graded bedding seen. M.R. 0200' 67385
This showed the conglomerate to be the correct way up.

Marble Band

This is an inconsistant lithology but to the North-East of the area mapped it becomes more coherent. The band seems to grade into fine calcareous conglomerate which may be its lateral equivalent. Seen in these exposures was a bright green micaceous mineral which may possibly be the chromium mica fucsite.

The marble is a dirty pale brown with a rough texture due to etching. The brown staining is possibly to an iron impurity.

A similar type of lithology is seen at M.R. 010067460

Acid Igneous Rocks

Massive Trondhjemite

This is a coarse grained potash free granodiorite, poor in the ferro-magnesian minerals. The major constituents are quartz (the rock contains approximately 70% normative quartz), plagiocase with minor amounts of ferro-magnesian minerals. The mafic content is now nearly all chlorite due to metamorphism and tectonism. At some margins the trondhjemite remains coarse grained, at others it has been sheared to almost a mylonite. Many margins were fine grained and were identified as being keratophyre implying that keratophyre is the fine grained equivalent of trondhjemite.

Some granite veining within the lavas is found at the boundaries of the Trondhjemite.

Trondhjemite Schist

This is a chlorite, quartz, felspar, sericite schist. The amount of schistosity imposed is variable.

The quartz grains tend to be equant implying that they have survived metamorphism. This is, therefore, the schistose equivalent of coarse grained trondhjemite. At the exposure M.R. 010067900 agglomeratic and coarse grained horizons exist implying that much of the finely foliated schist is extrusive.

Towards the top of the bed there is decreasing quartz grain content and the rock becomes more finely foliated.

Keratophyre

This rock may be described as a leucocratic sodic aphyric volcanic rock. In the field this definition varied greatly with regard to grain size and field relations.

The keratophyre was often granular with variable amounts of chlorite present. Grain nature varied from granular to completely aphyric.

n Generally this is a pale flinty rock with colour varying from pale green to grey or white depending on the amount of chlorite present. Pyrite was generally present though in varying amounts.

Often free quartz grains were present such that rock should strictly have been called a quartz keratophyre. Occasionally quartz felspar porphyry types were found. Foliated keratophyre was occasionally found which has in some cases been folded by F_2.

One particular type of keratophyre was rich in sericite and pyrite and with a strong foliation is known as Rüstschieffer.

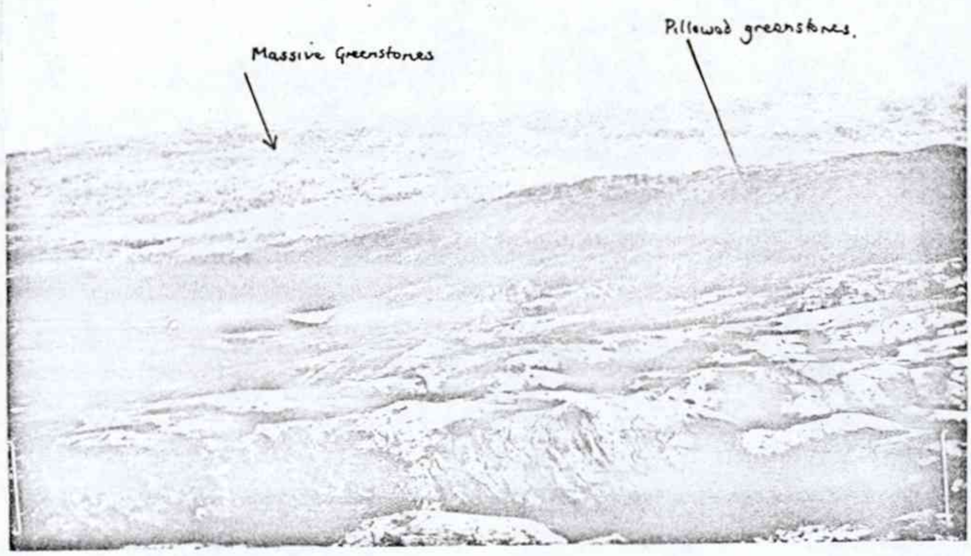
The felsic tuffs were distinguished by their distinct granular texture and contained visible clastic grains of quartz.

Field relations showed the keratophyre to be truly intrusive in places; elsewhere it showed a tuff-like nature with clastic grains present.

Greenstones

There are two generations i) massive lavas

ii) pillowed lavas



i) Massive hornblende/actinolite bearing lavas. These appear dark green in colour being fine grained. Calcite filled vugs and amygdaloidal calcite are common. Pyrite is dispersed well throughout. These lavas are harder than the pillow lavas and show no pillow structures. These lavas were occasionally found containing a dull, brown mica, stilpnomelane. Occasionally epidote was found. Chlorite schist bands are common although distinct structural breaks were not easily seen in this uniform lithology.

These types of lava found North of Olatjene Lake tend to be tougher which is probably due to the proximity to the main Trondhjemite body. The lavas are also richer in epidote which appears as veins and epidote knots.

ii) Pillowed lavas.

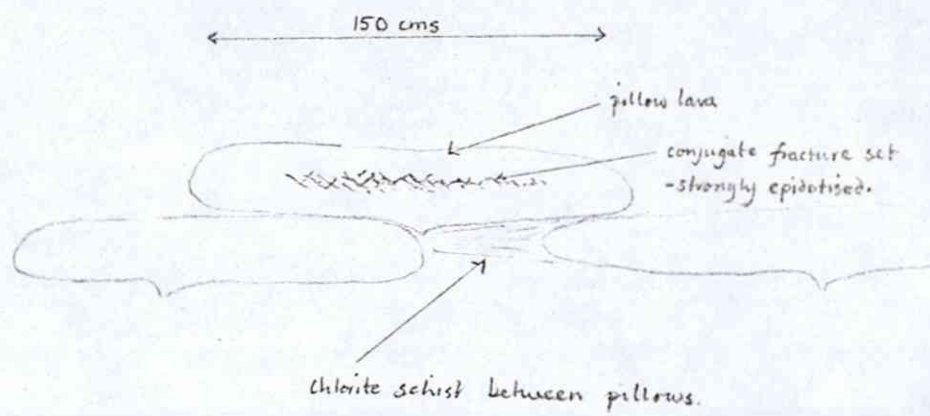
These lavas were found in many different forms. They are certainly a different generation of lavas to the above. They are thought to be basaltic/andesitic in composition.

The truly pillowed lavas were often vesicular with much epidote present both in the cores of the pillows and also along pillow margins where growths of albite were also common. The albite probably formed with the epidote as a result of metamorphism when calcicplagioclase of the original pillow lavas was broken down. Often the epidote within pillow cores showed a conjugate fracture.

set. Amygdaloidal calcite and quartz were common.

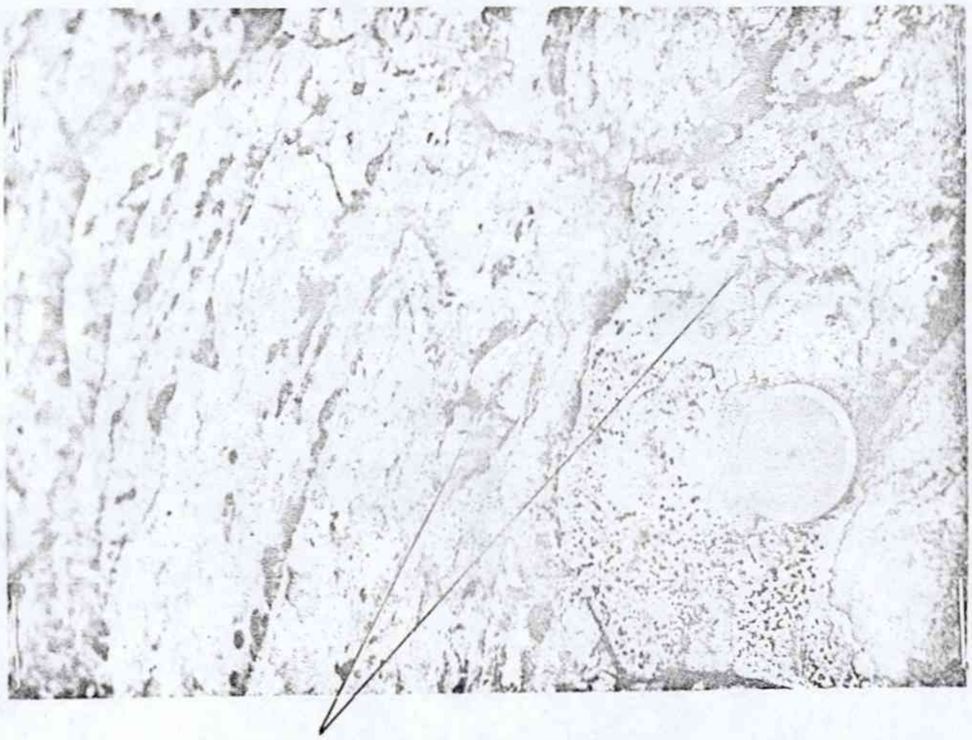
Pillow structures were not always visible. The lavas were generally a pale green, however, this depended on the amount of epidote present. Pyrite is common throughout.

Structures within pillows.



Undeformed pillows gave the following length: breadth measurements 2oo cms: 55cms giving a l/b ratio of 3 or 4: 1.

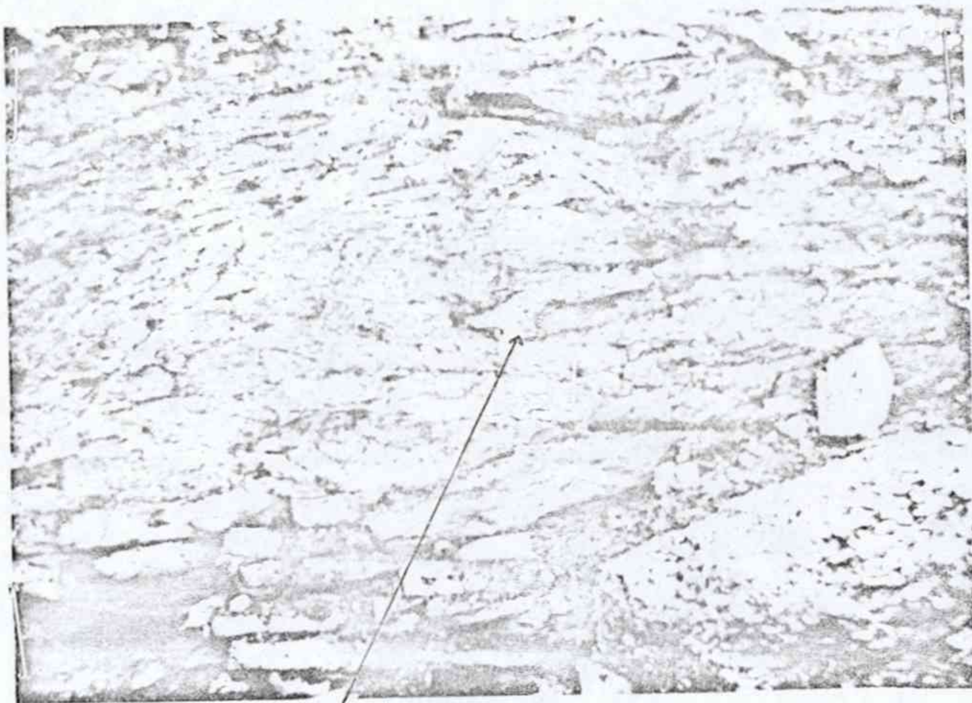
To the South-West the lavas change in form. Pillow structures become far less apparent and the lavas take on a knotty appearance. These knots are made of epidote.



Epidote knots within pillow lavas.

These lava types are especially associated with the dyke swarm to the North-West of the greenstone agglomerate. It is possible that the epidote is related to the amount of dyke emplacement.

An outcrop M.R. 019068035 was interesting as a cherty material was found between pillows which was unfolded. This was probably a silicious ooze present just after extrusion of the lavas. Jaspilite was also found in such positions.



M.R. 019068035.

Felsic infilling within pillow lavas.
The felsic infilling is undeformed.

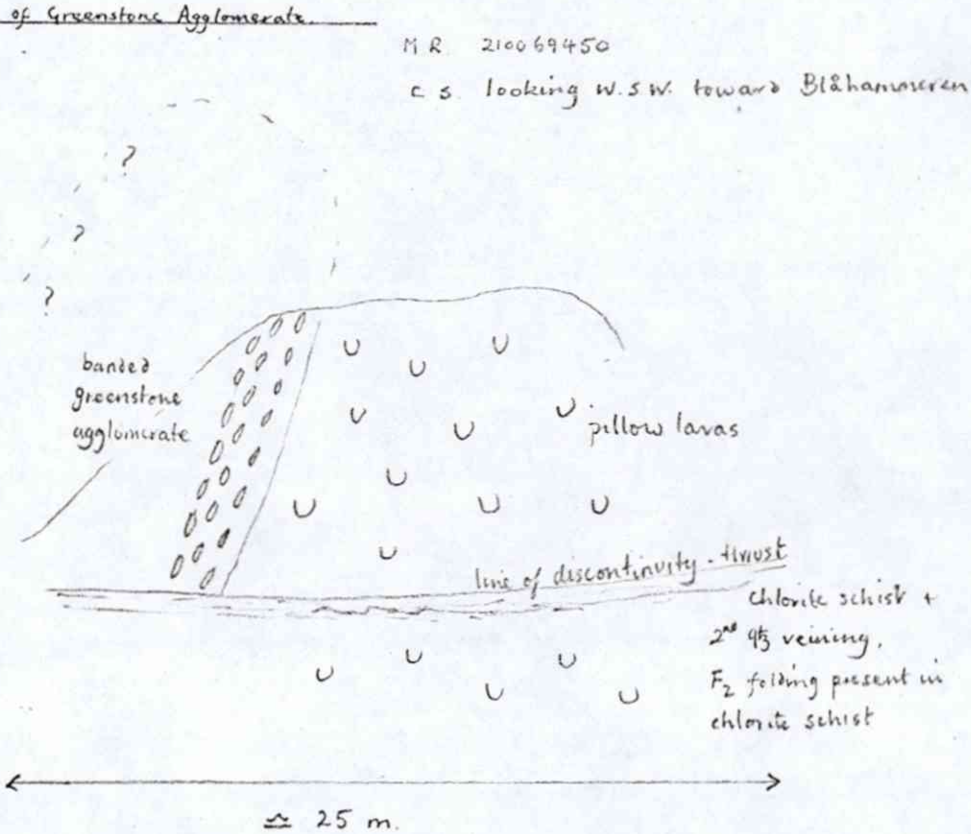
A further type of pillow lava was formed to the South of the Trondhjemite schist. This displayed excellent pillow structnres with much epidote. However, these lavas contained euhedral pyrite crystals, a feature not seen elsewhere. It may be possible that this is a further generation of lavas.

Greenstone Agglomerate

This rock appears dark green there being basic clasts within a mainly chloritic matrix. In places the agglomerate becomes well banded, the fine bands containing few clasts. At least part of this lithology had been thrust into its present position. This was seen on Blahammeren M.R. 223069430. P.T.O. for diagram.

The greenstone agglomerate is pictured above. This lithology provided a very useful marker horizon within the uniform lavas.

Thrusting of Greenstone Agglomerate.



Basic Igneous Intrusions

Identified as fine grained gabbros. Metamorphism has altered the original ferro-magnesians to hornblende/actinolite and chlorite. The plagioclase has become more sodic releasing calcium for the formation of epidote.

The gabbros occur as small intrusive bodies. A feeder dyke was found close to the main gabbro body M.R. 250071350.

Economic Horizons

Jaspilite

This is silica with hematite dispersed throughout to give a deep red colour. This is formed by precipitation of silica during an interuption of lava extrusion and indicates the top of a particular flow.

The rock is very variable in thickness. Massive magnetite and quartz veining are found in association.

Vasskis

This is an ore bearing chlorite schist often though not necessarily associated with jaspilite. Usually pyrite and magnetite are found together, the magnetite as distinct octohedra. Massive pyrite and magnetite and pyrite occur banded together. These bands show original bedding as they were horizontal when deposited.

Structural Setting and Environments of Formation of Lithologies

As mentioned in the introduction the rocks of the area are part of a nappe emplaced upon pre-Cambrian basement. The features associated with the emplacement are mainly the folding and thrusting throughout the area. It is thought that the folding is isoclinal with low-angle thrusts occuring on the limbs.

Due to the competance of the conglomerates and the extent and uniformity of the lavas the nature of the folding is extremely difficult to recognise. However, some idea of the structures present are given by the minor structures found within the jaspilite, keratophyric bodies and to some extent the marble band. These lithologies all formed post-lava extrusion and suffered deformation as nappe emplacement occured.

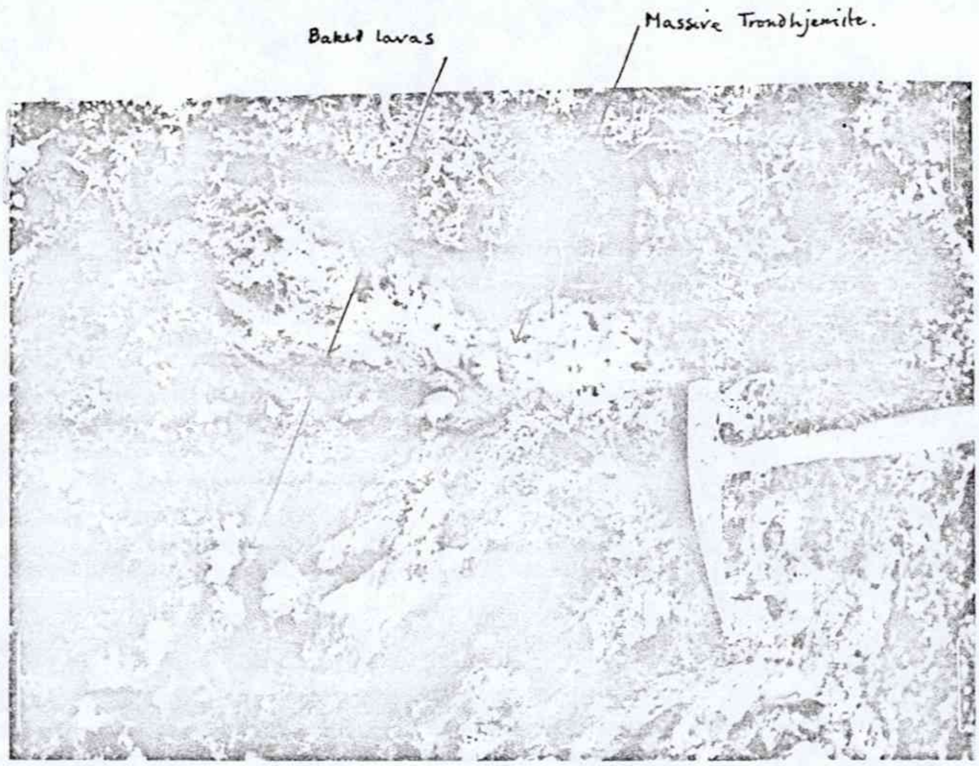
The formation of all rock types must have been completed by the time nappe emplacement occured as they all display an initial penetrative schistosity which dips to the South-East.

Contemperaneous formation of lavas and associated rocks and the conglomerates is almost certain. The jaspilite formed in deep water close to the volcanic source where excess silica is likely to be present, whereas the marble band formed in much shallower water. This would occur in a quiescent stage between lava eruption. The fact that greenstone, jaspilite and the marble band are all incorporated within the conglomerates seems to suggest a slightly earlier origin for the former.

The intrusive rocks are thought to be later than the lavas as they show transgressive margins with the rocks into which they are intruded e.g. the keratophyre dykes which cut the greenstone agglomerate.

Intrusion of Trondhjemite has taken place at three points at seemingly different levels and with varying activity.

The major Trondhjemite body is intrusive.



The rock has a coarse grained texture with chilled margins which are, to all intents and purposes, keratophyre. Attitude of the jointing found at the margins was measured to try and find the shape of the body. Dips of approximately 30° were obtained. However, the Trondhjemite schist bodies show a completely different nature. There appear to be two points of intrusion.

The first at M.R. 23006900 is truly Trondhjemite schist as already described. The second at M.R. 0100'67900 has a base of massive trondhjemite with a faint foliation. Higher in the bed, ie. to the South-East, the foliation becomes stronger with decreasing quartz crystal content until a very finely foliated schist is found. The indicative feature of this exposure is that agglomeratic horizons are present indicating an extrusive origin of the fine schists which surround the agglomeratic horizons.

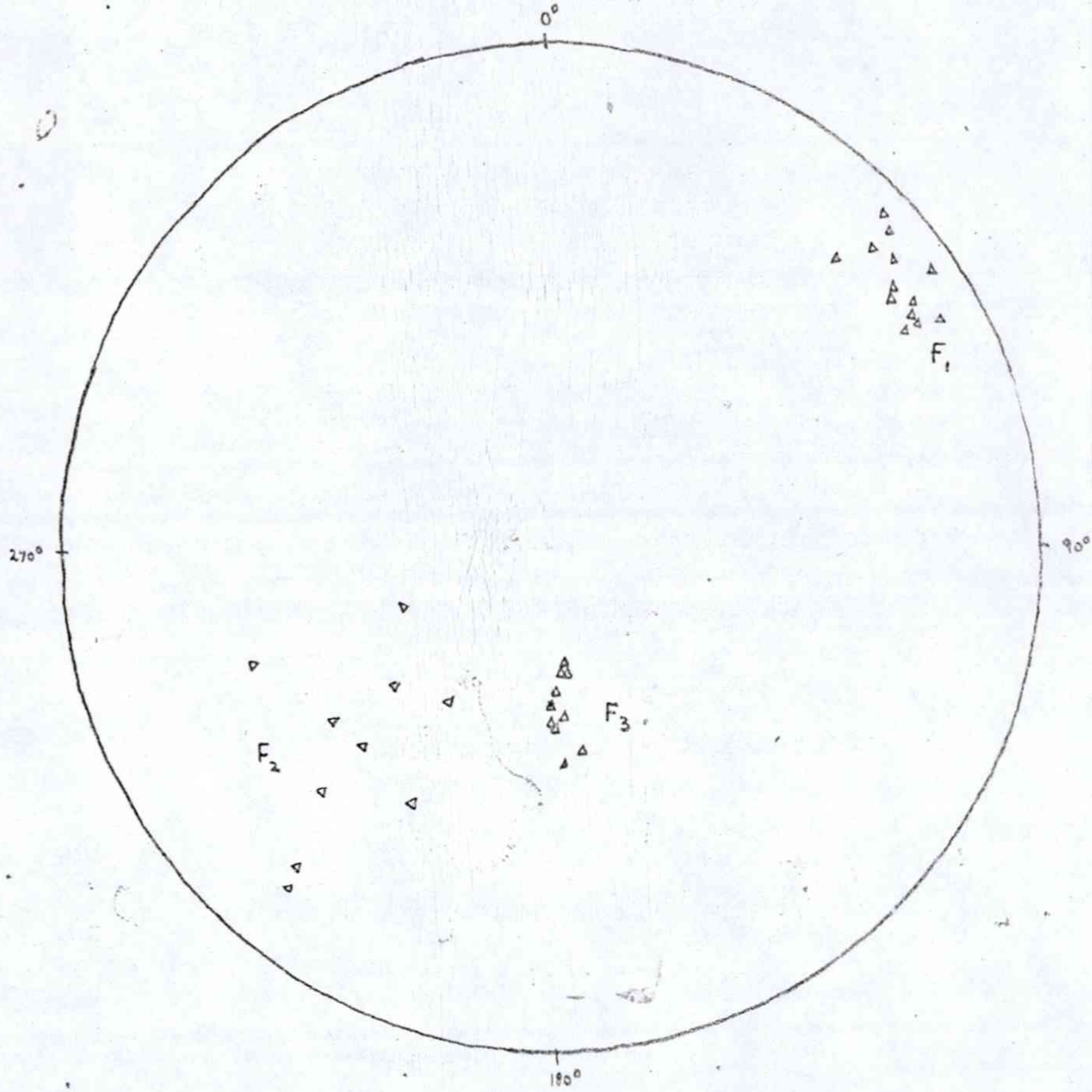
Intrusion of the keratophyres, which also show both intrusive and extrusive natures, is likely to have occured at the same time as the Trondhjemites. Dykes were found leading from the main Trondhjemite body. Emplacement has occured over most of the area. There is one particular dyke swarm running the length of the area and this might be associated with the many structural breaks in the dyke swarm zone. This dyke swarm contains particularly pyrite rich keratophyre and gives rise to the Rüstschieffer formation, a fine pyrite bearing schist found in the Western part of the area.

It is likely that the gabbroic bodies were intruded at a similar time to the acid suite of rocks.

MAP REFERENCE	AXIAL PLANE DIP/STRIKE	TREND / PLUNGE	VERGENCE	FOLD STYLE
3900 69500	356 / 30 S.W.	198/ 48		F_2 or 3
	360/ 48 W			F_2 or 3
3830 69570	080/ 46 S.E			F_2
3620 69780		084 /12		F_2
4550 68960		185/ 45	80 N.W.	F_2
4270 69450		046/ 11	42. N.W	F_1
3940 69450		170/ 42	20. S.W.	
3420 68425		093/ Indeterminate	49 N.W.	
4270 69430		046/11	42 N.W.	
		054/08	52 N.W.	
		060/10	42 N.W.	
		060/06	35 N.W.	
		048/04	38. S.E.	
		046/ 03	32. S.E	
		048/ 07	40. N.W.	F_1
		051/ 06	39 N.W	
		055/ 03	45 N.W.	
		061/ 05	42 N.W	
		057/ 07	47 N.W	
		049/ 08	50 N.W	
		055/ 09	35 N.W	
4270 69430		177/ 44	05 S.W	
		173/ 62	08. S.W	
		180/ 65	05 S.W	
		172/46	10 S.W.	
		176/62	03 S.W.	
		176/53	05 S.W.	F_3
		178/ 58	09 S.W.	
		179/59	06 S.W.	
		181/61	04 S.W.	
		180/55	05 S.W.	
		175/64	06 S.W.	
3750 69350		160/48	10 S.W.	F_2
		166/ 24	24 S.W.	
3650 70060		150/ 20 - 25		F_2
2070 70685		236/71	08 S.W.	F_1 or 2
3670 70250		236/ 14		F_2
3100 70270		225/23		F_2
2800 69950		048/54		F_2
0495' 68760	142 /60 S.W.	162/39	28 N.E	F_2
0345' 68860	118 / 50 S.W.	155/ 37		F_2
	118/ 88 N.E.	123/59		F_2
0120' 68500	156/52 S.W.	163/ 37		F_2
0080' 68055		250/06		F_1 (folded jaspilite)
0700 67810	240/60 S.E.	240/ 05		F_1 or 2
	240/05			F_3 (plunge of pebbles, Tr. Congl.).
0750 67680	175/ 50 W.S.W.	208/45		
	155/ 40 S.W.	212/ 30		
	155/ 40 S.W.	215/ 33		F_2
	145/ 45 S.W.	250/ 50		
	145/ 45 S.W.	225/ 45		
	162/ 55 S.W.	225/ 43		

MAP REFERENCE	AXIAL PLANE DIP/STRIKE	TREND / PLUNGE	VERGENCE	FOLD STYLE.
0750 67680	168/48 S.W.	205/38		Plunge of crenulation.
0810' 67730	180/47 W.	189/31		
	187/72 N.W.	204/39		F_2
	165/57 S.W.	184/32		
0750' 67670	142/42 S.W.	237/31		
	140/33 S.W.	213/30		
	140/41 S.W.	233/34		F_2
	132/40 S.W.	222/40		
	130/50 S.W.	232/39		
0640 67825	157/43 S.W.	214/33		
	137/45 S.W.	218/44		
	169/43 S.W.	206/29		
	181/47 W.	214/31		F_2 (lavas)
	152/38 S.W.	220/38		
	157/29 S.W.	216/26		
	167/47 S.W.	209/32		
	194/38. W.N.W.	224/30		
0640 67825	165/74 S.W.	174/13		
	178/60 W.S.W.	182/32		
	185/56 W.N.W.	191/39		
	164/58 S.W.	176/46		F_2 (Tr. Schist)
	147/49 S.W.	199/39		
	162/55 S.W.	200/37		
	148/43 S.W.	204/32		
	165/54 S.W.	206/27		
0685 67950		252/08		
		246/12		
		248/07		F_3 Conglomerate Pebbles.
		246/09		
		247/11		
0560 68560	213/36 N.W	219/09		
	160/30 S.W.	220/12		
	215/30 N.W.	250/25		F_2
	210/33 N.W.	225/23		
	200/34 N.W.	233/32		
		225/33		
0560 68560	255/65 S.E.	250/55		
	245/75 S.E.	230/45		F_2 - crenulation.
	197/60 N.W.	210/30		
0400' 68700	072/45 S.E.	247/04		F_1 in jaspilite.
0400' 68700	150/55 S.W.	215/50		
	145/50 S.W.	215/50		F_2 in lavas.
		210/25		
	140/45 S.W.	205/30		
0220' 68860	070/60 S.E.	080/12	28 N.W.	F_1 in cherty material in lavas
0560 68530		208/15	09 W.	F_2
1170' 68640		184/11	72 W.	F_2
1400 68510		159/30	07 W.	
0120' 68500	156/52 S.W.	163/37		F_2 aphyric felsic dyke.
0750 67680	175/50 W.S.W.	208/45		
	155/40 S.W.	212/30		
	155/40 S.W.	215/33		F_2 folds in schistose lavas
	145/45 S.W.	250/50		
	145/45 S.W.	225/45		
	162/55 S.W.	225/43		

1. Trend / plunge measurements to determine phases of folding.



F_1 – shows isoclinal type folding with axial trace parallel to S_1 schistosity ∴ S_1 imposed at same time as isoclinal F_1 folding.

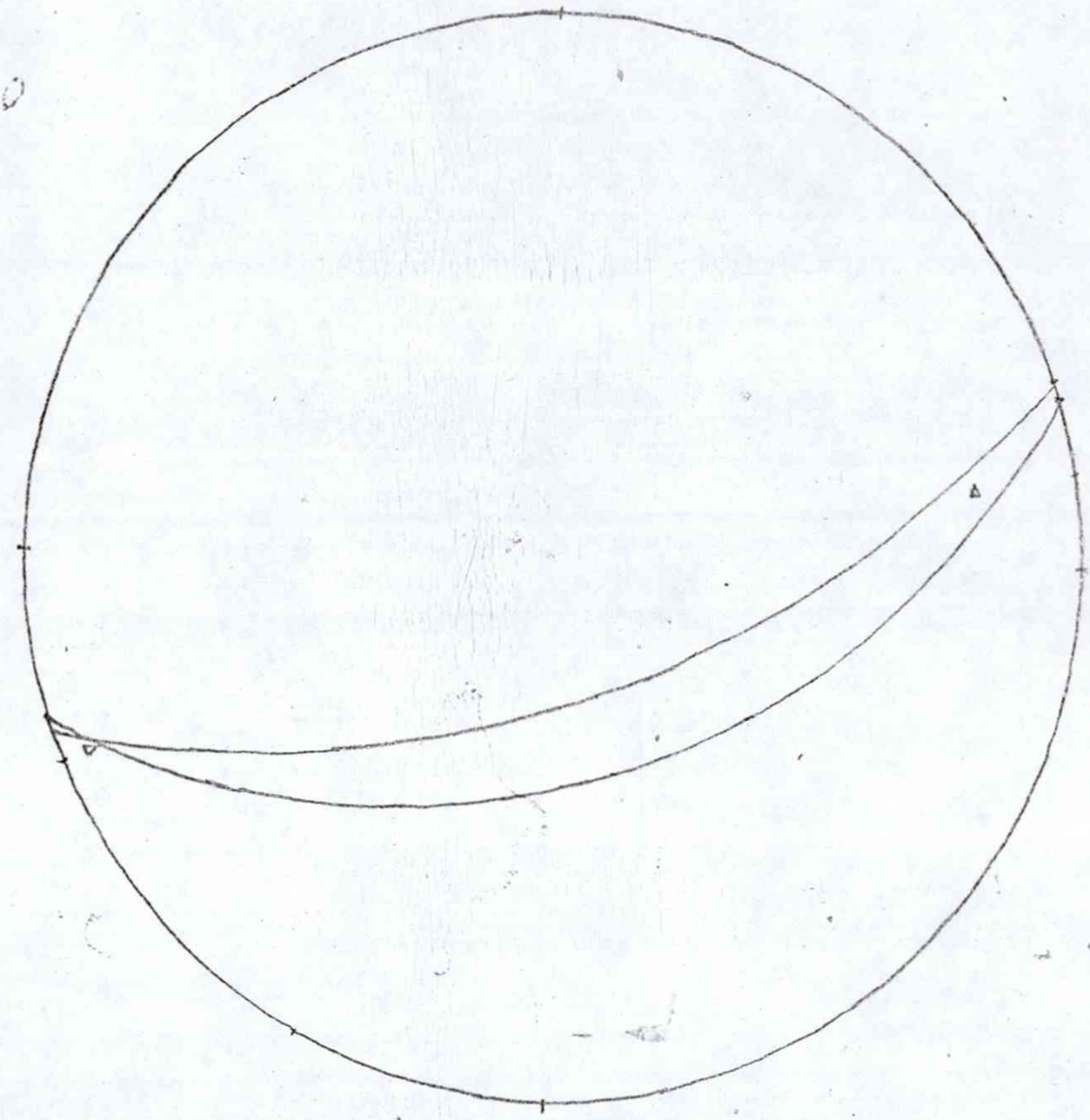
F_2 – associated with thrusts in area. Rotation common hence wide spread of p...

F_3 – minor folds in schists. Small wavelength version of F_3. The open folds with the same trends are present.

F_1 F_1

Gt circle is axial plane dip/strike

Δ - trend/plunge.

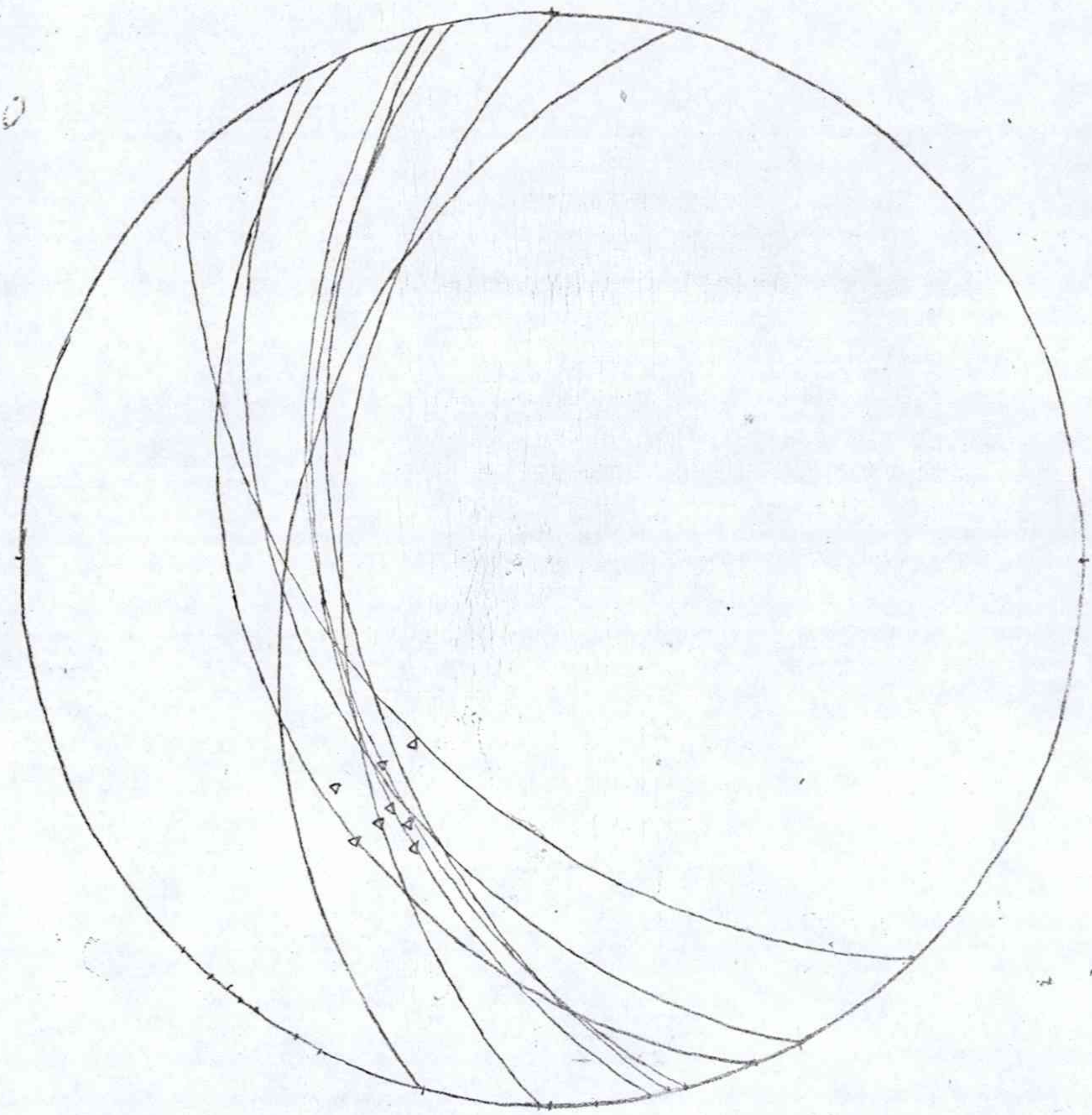


F_1

Folds shown to be plunging in both directions along the axial trace

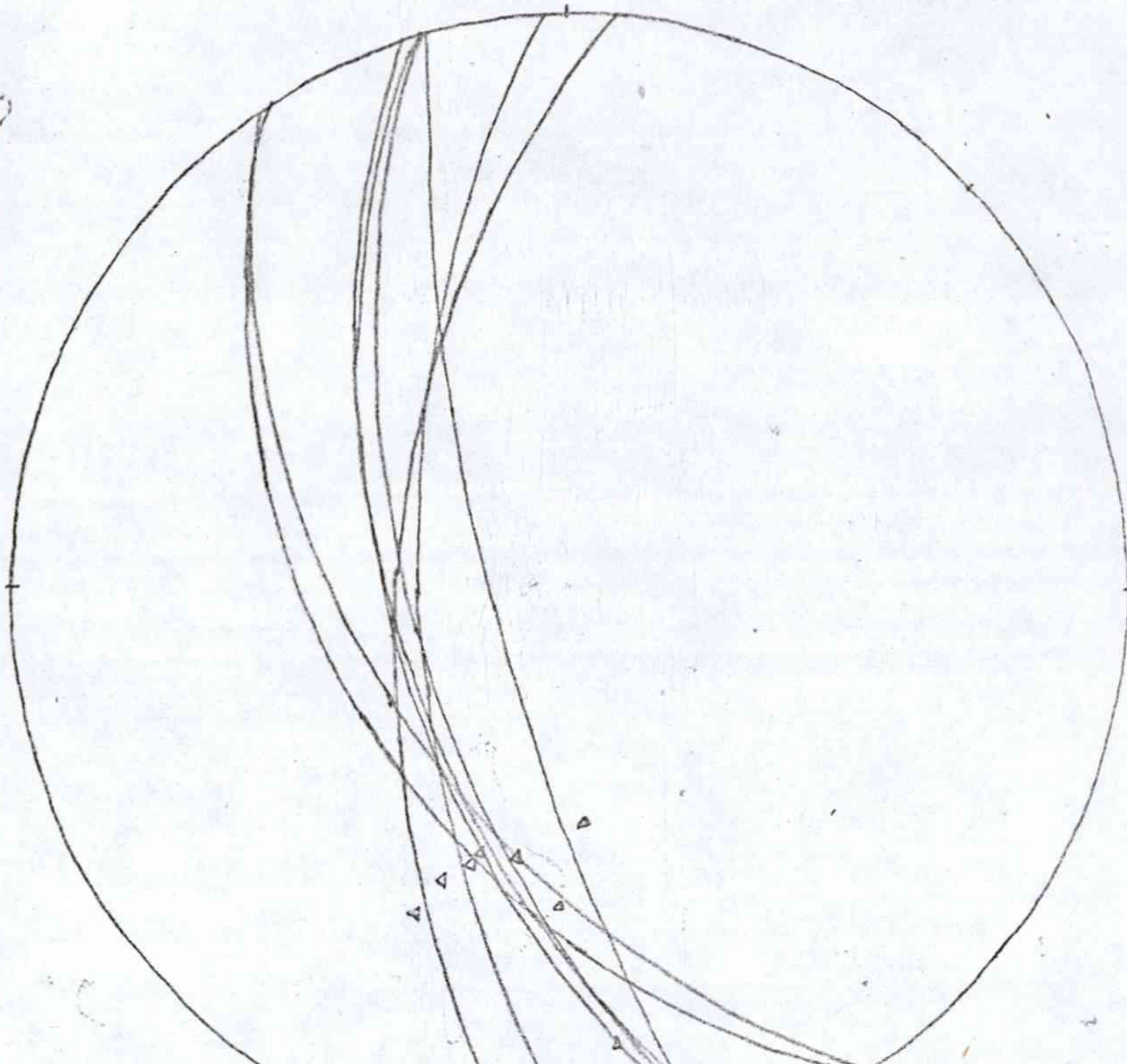
F_2

Gt circle is axial plane dip/strike
Δ - trend/plunge.



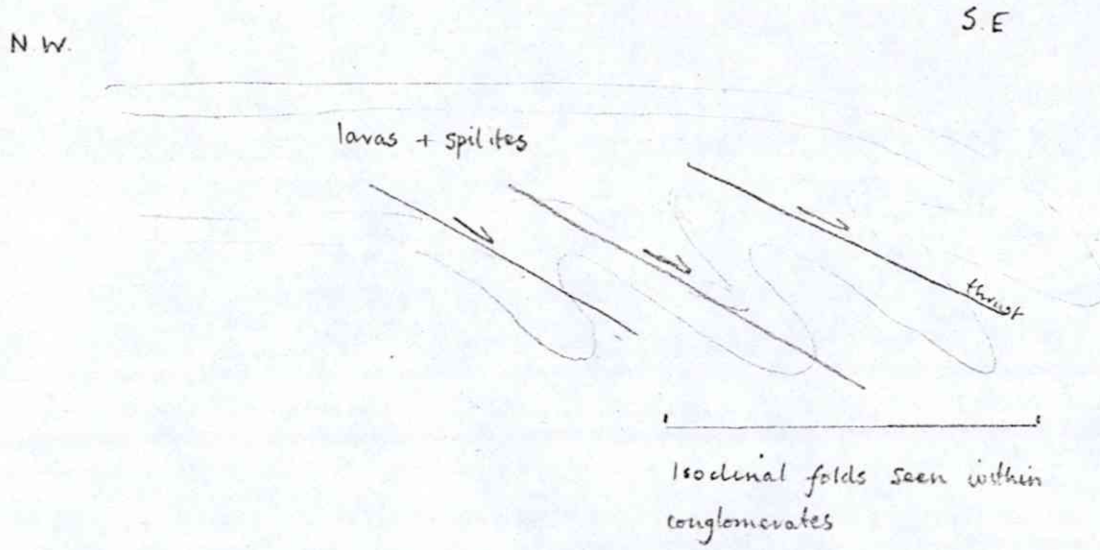
F_2 folds generally along thrust planes.
Rotation of some of thrust slices is cause of wide range of direction of strike of axial plane.

F_2 contd.



Structure and Metamorphism

As already stated the area is characterised by probable isoclinal folding with low angle thrusting post dated by a few sinistral tear faults.



Within each isoclinal fold are probably many smaller incident folds. These are a product of F_1 folding

Repetition of beds are caused by local folding along the major limbs and are only seen at certain topographic levels.

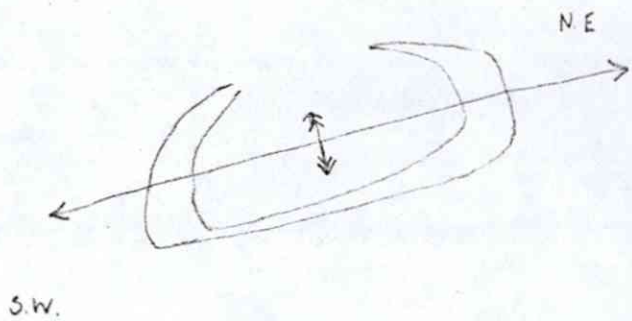
It would appear that the thrusting is a continuation of the process of isoclinal fold formation where further stress causes shearing along the limbs of the folds.

These thrusts appear as well marked structural breaks and appear as cliffs. The line of these thrusts has often been picked out by streams. Chlorite formation is closely associated with the thrusts and nearby rocks have chlorite formed along shear planes within them.

From the stereograms it can be seen that there are three phases of folding present in the area.

The first was produced during nappe emplacement hence the axial trace of folds is parallel to the penetrative schistosity. These folds can be shown to be plunging by examining the outcrop pattern of some of the keratophyres.

e.g. M.R. 2700 70200

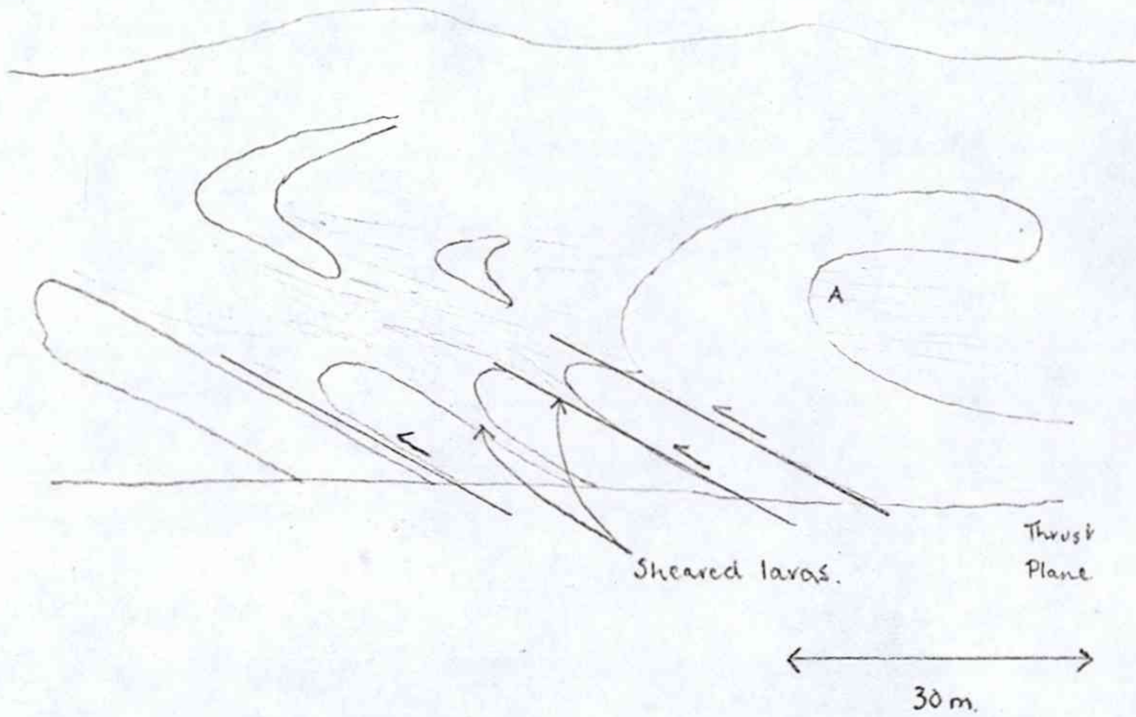


This dyke has been folded by F_1. The thin outcrop pattern of the N.W. and S.E sides indicate that the dyke is dipping steeply. The wide outcrop at the N.E & S.W. indicates that there is appreciable plunge present at both ends of the structure.

These type of F_1 structures are easily seen in many of the dykes. On excellent example was found at M.R. 110069380 where dykes were seen to be folded by F_1 in a cliff face which had been formed by erosion along a thrust plane.

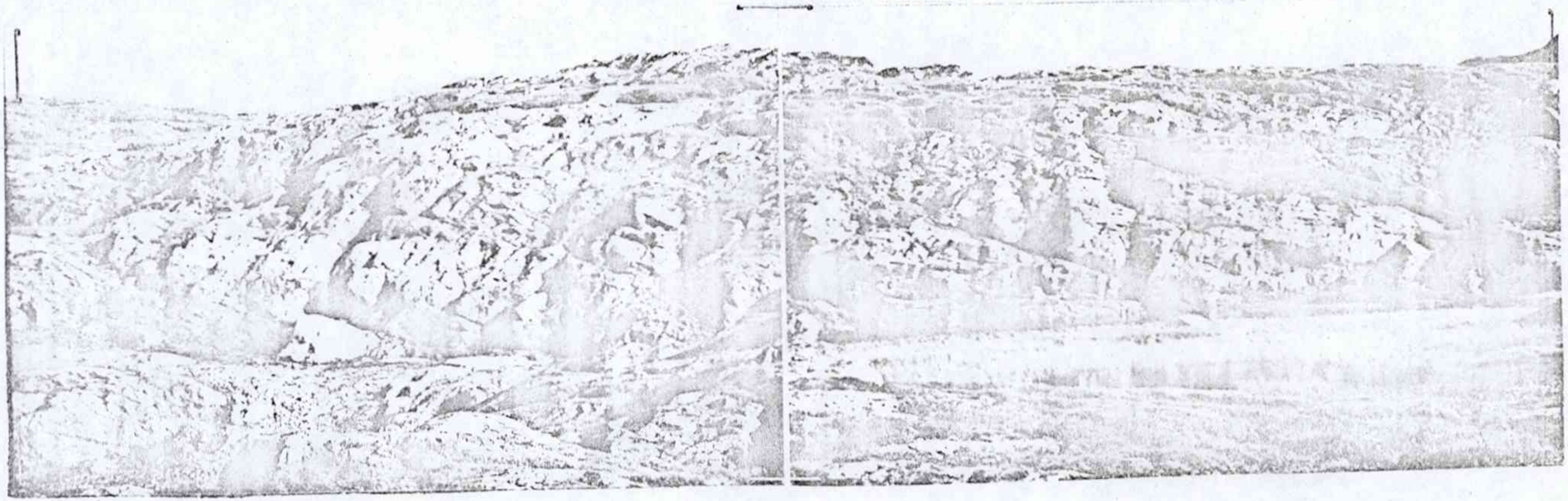
Folding in Dybes

Face of thrust fault

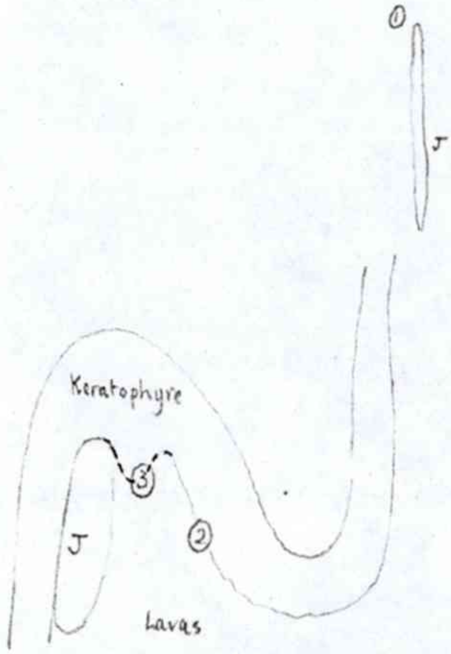


Associated with the folded keratophyre is some minor thrusting along which sheared lavas, now chlorite schists, have acted as a lubricant. The schistosity of the lavas (marked A) remain unfolded indicating these are F_1 structures.

M.R. 1100 69380 Folding in Dykes of keratophyre in cliff face.



Folding in the jaspilite similar to that in the keratophyres is also visible. e.g. M.R. 367070250



The folding in the keratophyre seen in the outcrop pattern would suggest that both the jaspilite and lavas have been folded in a similar manner.

The jaspilite enclosed by the keratophyre can be shown to be the generation as that marked ①.

Field relations show the sequence to be:

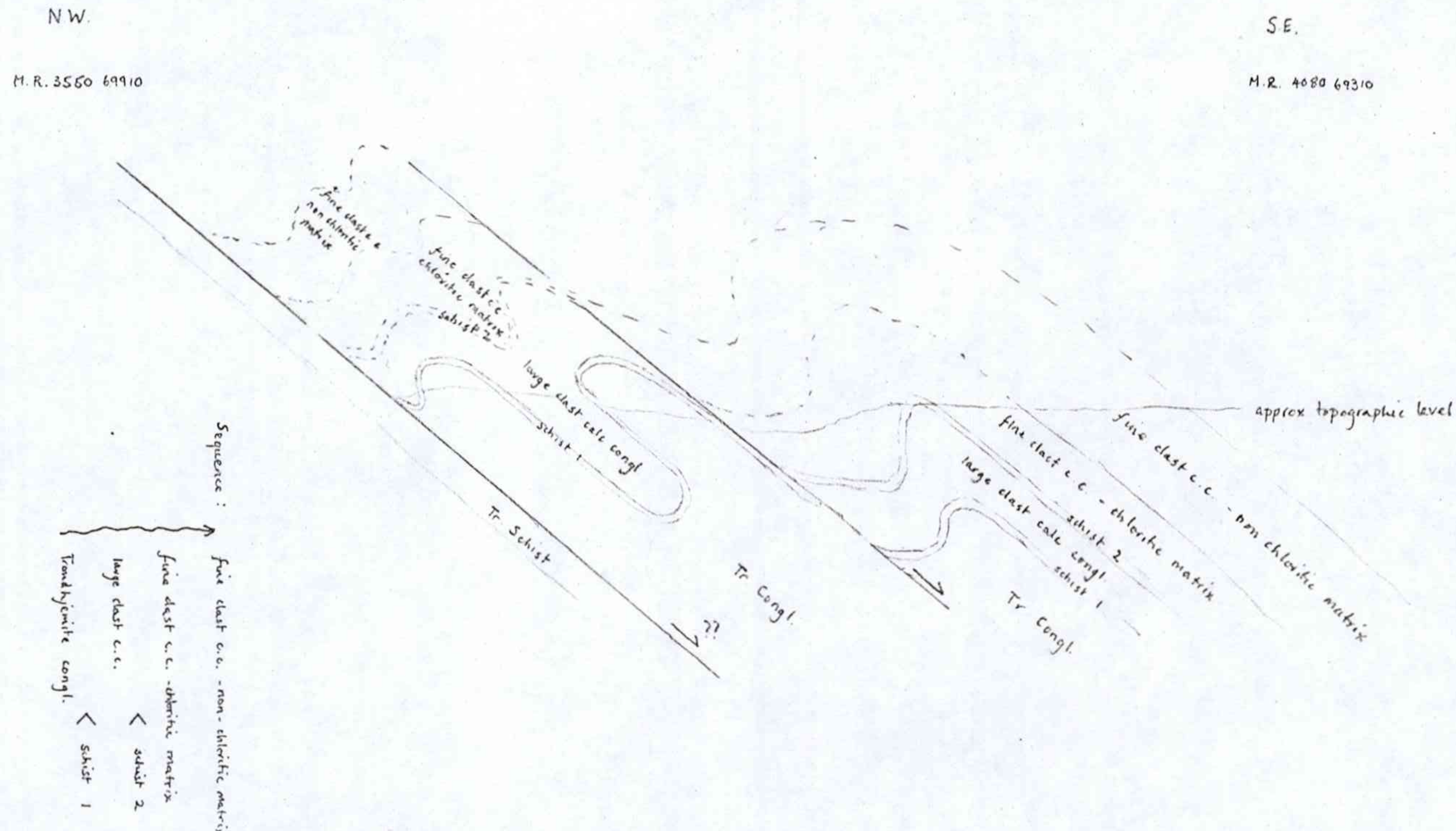
Keratophyre
Jaspilite
Lava

J - jaspilite

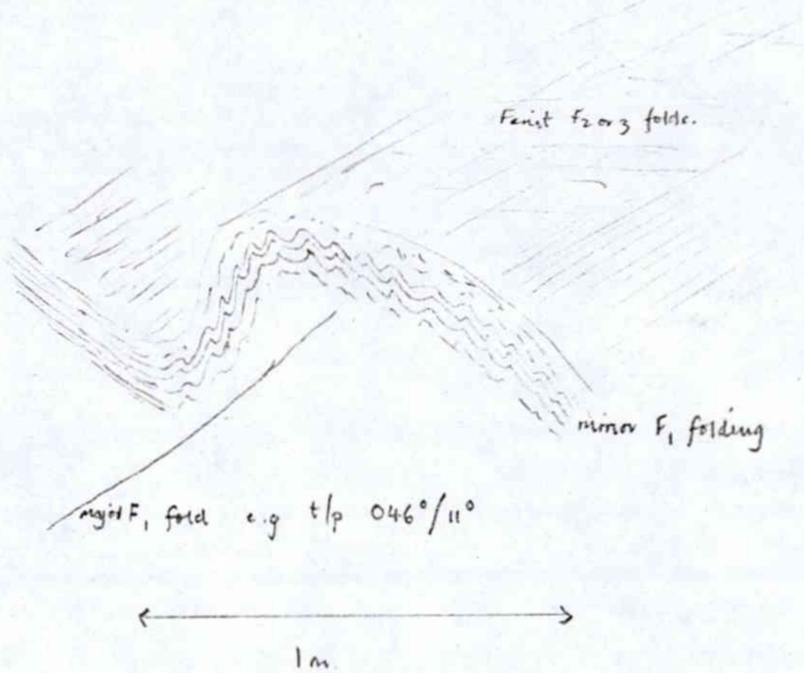
However, because of the junction at ② it is necessary to make the outcrop pattern shown at Loc ③ even though there is no exposure. This means the jaspilites are the same generation and also the stratigraphy remains correct.

The folding in the keratophyre suggests that the jaspilite has been folded in a similar manner. Using the folding in the keratophyre it was shown that the two jaspilites shown were the same horizon. (Jaspilite is thrust rather than folded as it is particularly competant).

The type of F_1 structure shown in the conglomerates is seen in the schist bands which occasionally show F_1 fold closures.


N.W.
M.R. 3560 69910
S.E.
M.R. 4080 69310
approx topographic level
fine clast c.c. - non chloritic matrix
fine clast c.c. - chloritic matrix
schist 2
large clast calc congl.
schist 1
Tr. Congl.
Tr. Congl.
??
fine clast c.c. chloritic matrix
schist 2
fine clast c.c. non chloritic matrix
large clast calc congl
schist 1
Tr. Schist
Sequence :
fine clast c.c. - non-chloritic matrix
fine clast c.c. - chloritic matrix
< schist 2
large clast c.c.
< schist 1
Trondhjemite congl.

Actual F_1 folds are seen at M.R. 427069430 within the schists. These show minor F_1 kinks within the larger wavelength F_1 folds.



It is very likely that metamorphism to greenschist facies accompanied nappe emplacement as the metamorphic mineral lineation is parallel to the initial penetrative schistosity e.g. the chlorite in the matrix of the conglomerates.

The second phase of folding is of a completely different nature to F_1 in that it is far more restricted and involves certain amounts of rotation of thrust slices. e.g. MR. 056068530 Blahammertjern. The thrust plane is easily seen at the base of the thrust slice. At the base are sheared pillow lavas, now chlorite schists, and massive quartz veining; a secondary feature. Rotation is deduced as minor F_2 folds are found in these chlorite schists. These F_2 folds are along nearly all the thrust planes in the area.

There has been development of axial plane cleavage in some of these minor folds.

Pictured above ; base of thrust slice showing F_2 folding and secondary massive quartz veining. M.R. 0560 65530

Above; Development of axial planar cleavage of F_2 age. M.R. 0560 68530

Below; F_2 folding in base of major thrust M.R. 1100 69380 (approximate)

Above; F_2 movement shown to be very localised - i.e. good pillow structures found close to thrust plane.

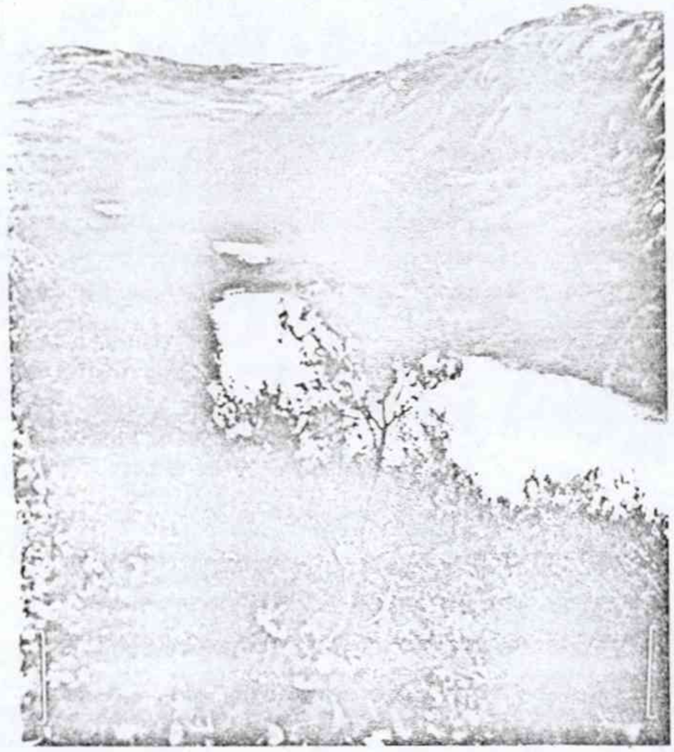
Below; F_2 folds N.R. 3170 70450

Good pillow structures are found very short distances away from the thrusts showing movement to be very localised.

The F_3 folding phase was discovered in two ways. Minor folds trending - 180° were found at M.R. 42706943 in the schists within the conglomerates.

There are also open folds in the area, also F_3, which were discovered by measuring the change in dip of the pebbles in the conglomerates parallel to the schistosity. This varied from dipping along trends of - 060° and - 240°, the dips being anything between 2° and 12°. By measuring the plunge of these pebbles the dip of the limb of a fold is obviously shown.

Faulting in the area is very limited and from the faults found at M.R. 102569060 and M.R. 018067720 where schistosity and jaspilite respectively are bent by fault movement suggests sinistral tear faults. From this it is assumed that the main fault displacing the main Trondhjemite body is of the same type. The faulting is thought to be the last tectonic movement to occur.



Line of tear fault. Massive Trondhjemite rises sharply to the right with massive greenstones to the left. View is to S.S.W.

One final point of tectonic significance is that tectonism is particularly non-uniform threughout. This was easily discovered by simply measuring the length to breadth ratios of pillow lavas. It is thought that pillows are extruded with a l/b ratio of about 3 or 4: 1. However pillows with l/b ratios of 12:1 were found. The extreme case of tectonism is obviously found along thrust planes where pillows have been so tectonised that they have become chlorite schists.

Above: Pillow with l/b ratio ≃ 3.5 : 1

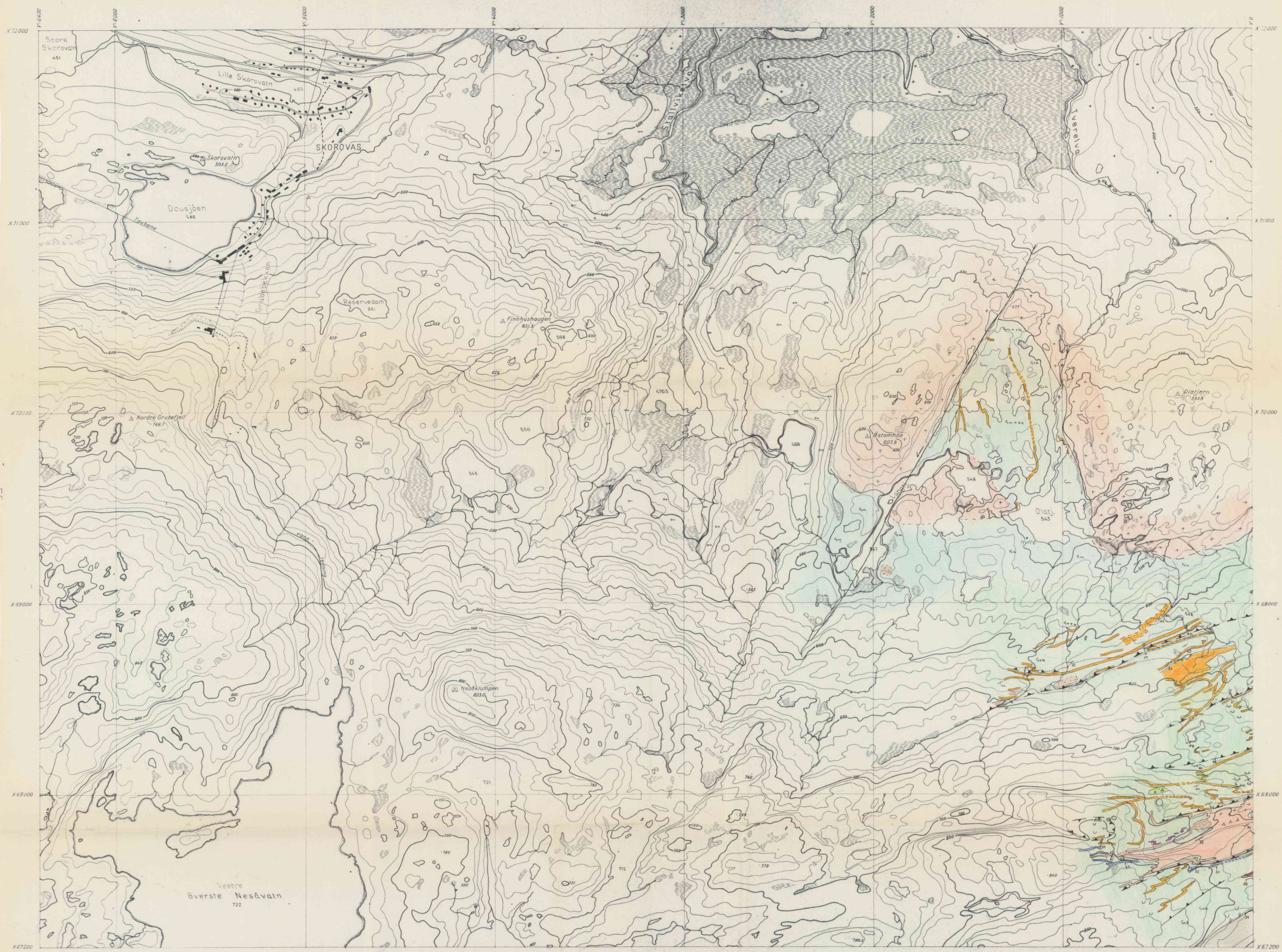
Below: Pillow with l/b ratio ≃ 12 : 1

Outline of pillow shown by dotted line.

Stratigraphic Column

Only an approximate stratigraphic column may be devised due to the complexity of the sequence and also contemperaneous formation occured causing a certain amount of overlapping.

	Calc. Congl.- fine clasts, non-chloritic matrix
	Calc. Congl.- fine clasts, chloritic matrix
	Calc. Congl.- large clasts
	Trondhjemite conglomerate
Igneous intrusions?	Jaspilite, marble band + vasskis
Greenstone aggl. ?	Pillow lavas
	Massive hornblende bearing lavas



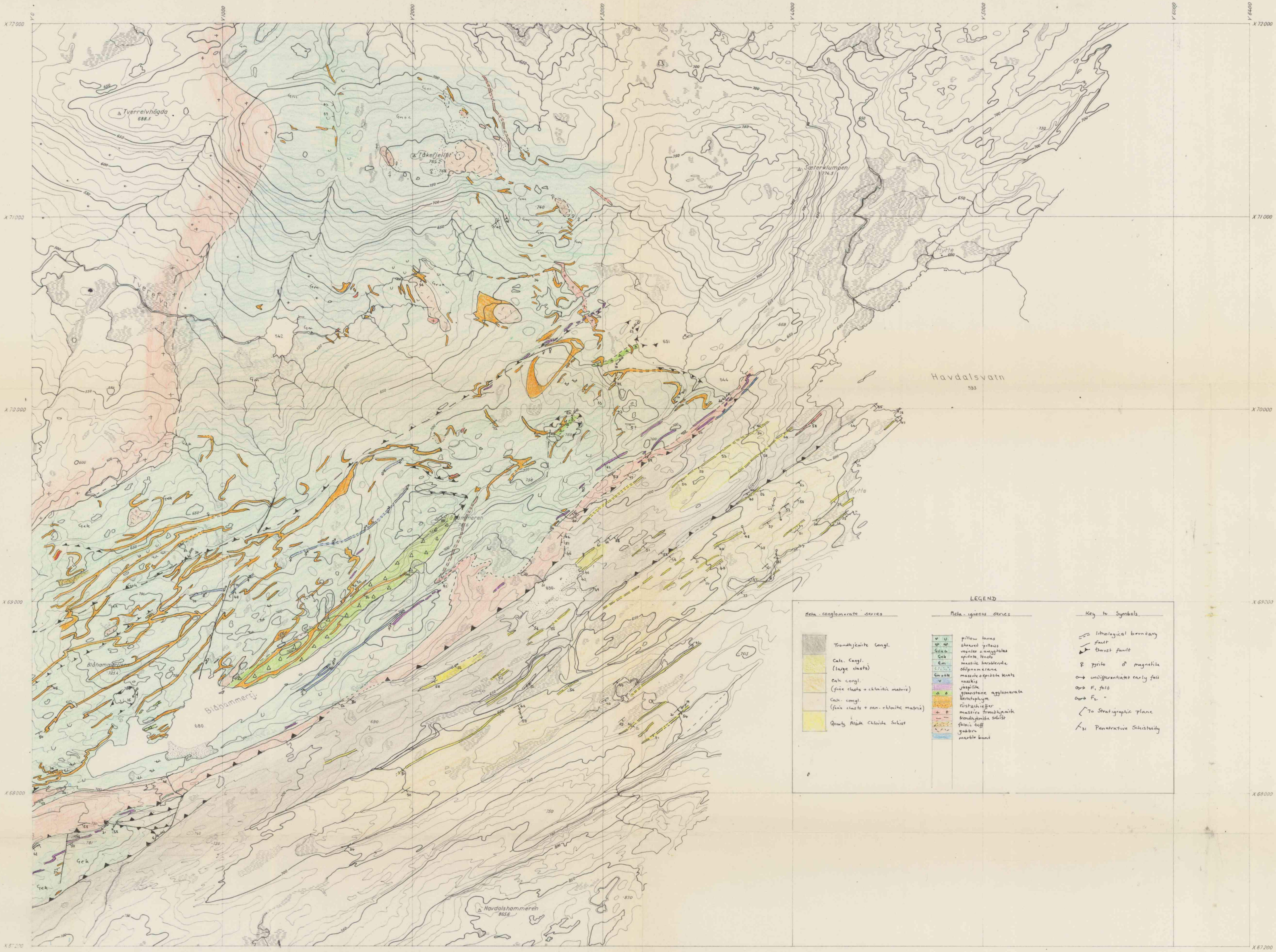
Konstruert av Widerøes Flyveselskap og Polarfly A/S
på grunnlag av fotogrammer opptatt sept. 1956 - aug. 1957.

Ekv. 10 m.

SKOROVAS 1:10000

F5

G4



Konstruert av Widerøes Flyveselskap og Polarfly A/s på grunnlag av fotogrammer opptatt sept. 1956 - aug. 1957.

SKOROVAS 1:10000

G5

100 50 0 500 1000

Ekv. 10 m.

G6