

L. A. OFFE.

ENDERBY

0031

LAND - I

(ANTARCTICA)

BMR

75/76

Contents

Mawson

Law Island

Rippon Depot ✓

Mt Breckinridge ✓

Mt Christensen

Pt Widdows

Fyfe hills ✓

Nth of Observ = Island

Sheelagh Island ✓

Latham Peaks ✓

Pinn Island ✓

Krasin Ntk ✓

~~Makood Ntk~~

~~Sanderson~~

Gravity - radial lhs of mark on 3 2

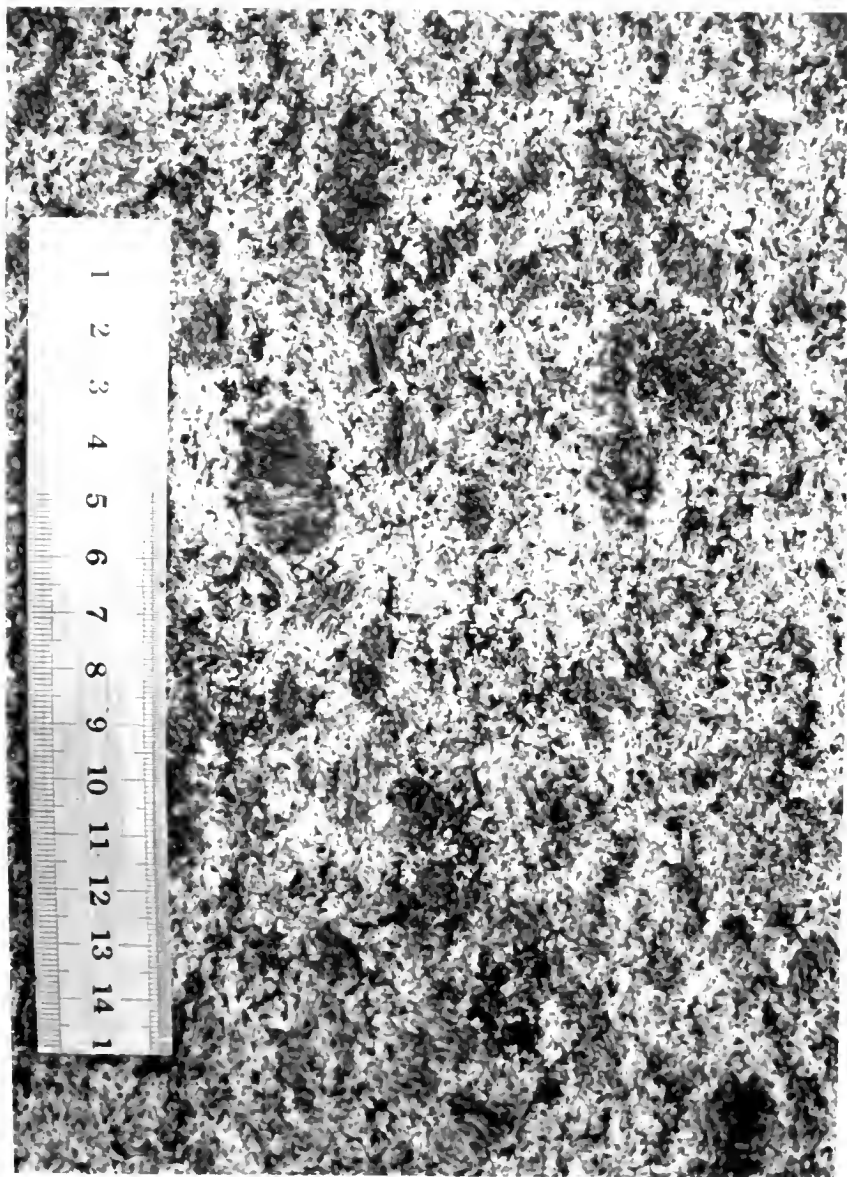
Mawson

27, 12/75

Host rock - Hagen gneiss.
- feldspars (grey translucent colour) to 7cm length in fine grained f-g - biot matrix. Major part of matrix also appears to be pyroxene?
Includes xenoliths of folded gneiss. Some intrusive contacts into xenoliths seen. (photograph). Xenoliths ~ 3 metres long (slope away from coast behind helipad) of phlogopite - feldspar - scapolite rock and feldspar rock. Crosscutting veins of f - biotite - commonly garnet concentrated near these veins. Cut by mylonitic veins (mylonitoid gneiss).

* SOE 1 - xendith - p. beams
 * . . . 2 - chrom. angungun
 * 76283103 - esvtdite 2
 sayy. . . phlog
 xendith.

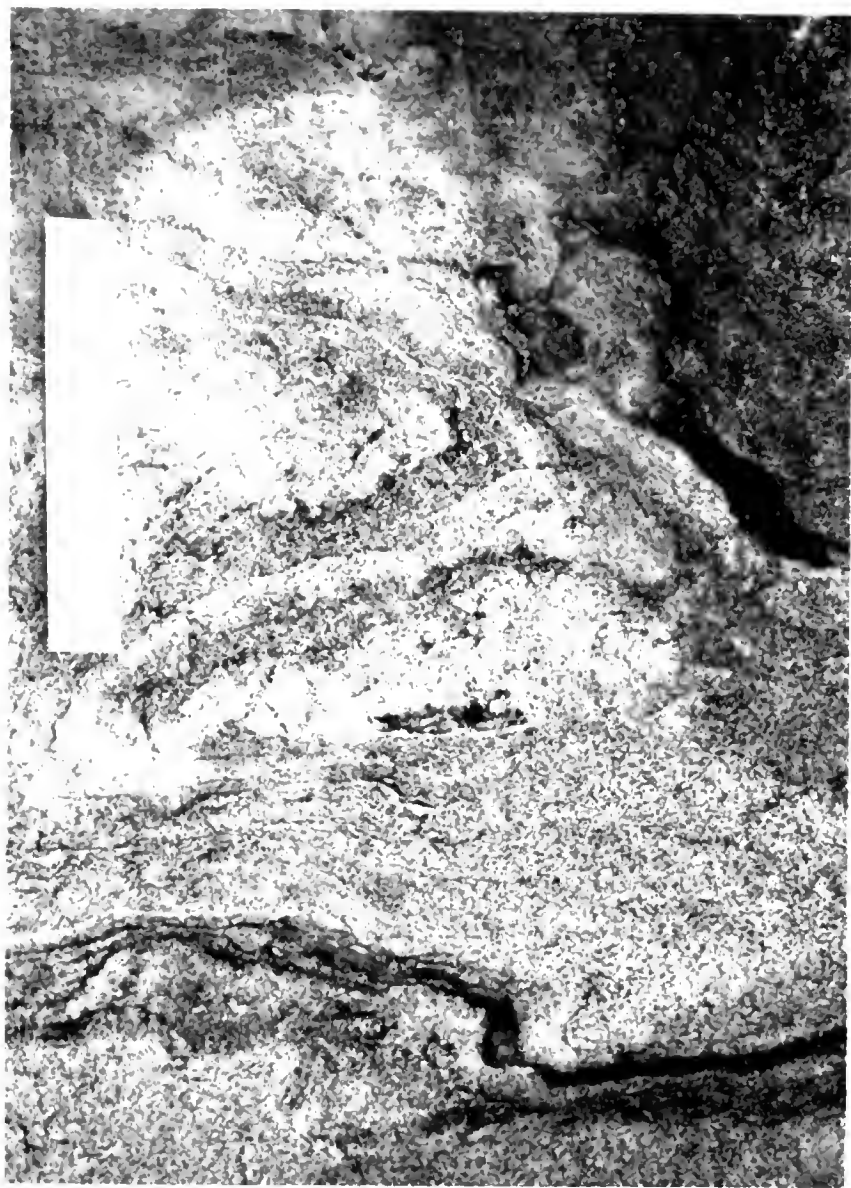
EB/1045



G13 / 10.54



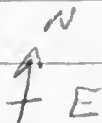
CB/1047



29/12/75

Law Island

Law Is } 0



(Fold Is

Malachite staining joint and fracture faces of gnt. biot gneiss - layered. Very quick look at outcrop (5 minutes)

* SPEC 4.

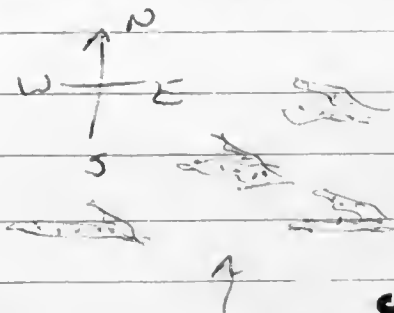
Along coast - indications that wind to west. Snow dunes indicate two directions.

sea ice



snow drift

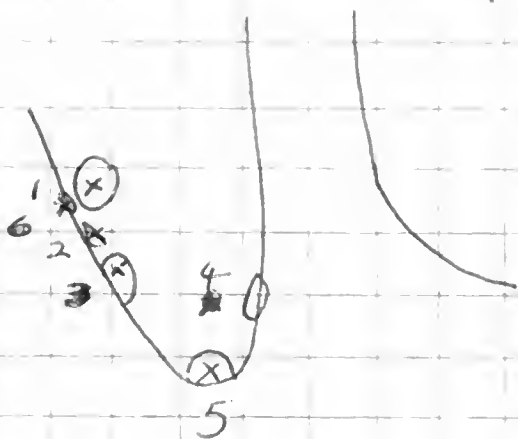
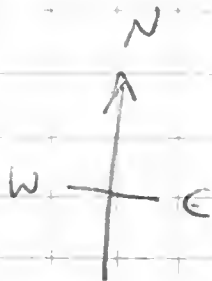
iceberg



coast

CAPE DAVIES # RAYNER PK / 28/034 B&W
Rippon Depot - 11/12/75 - 1959

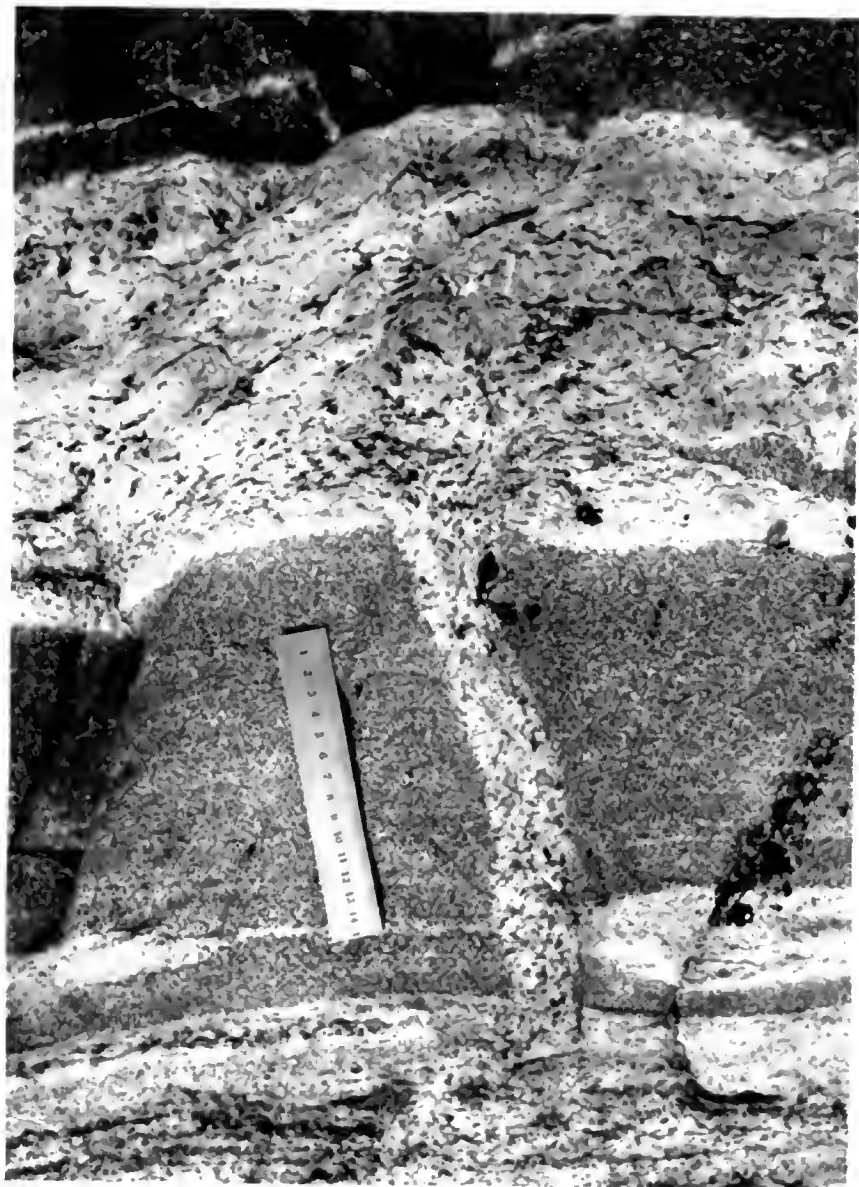
Readings true - (compass
~~set 56°~~ readings reduced
by 56°).



1. Fine - med grnd px - g f gneiss
- small black grains probably
px. Intrusive contacts
with xenoliths of basic
rock - px - plagi (red biot)
Two dolerite dykes cut the
above. One up to 50 cm wide
Sharp contact.

by (q. f) veins parallel and
cut the xenoliths and country
rock. Cut by dol dykes through

GB/1021



Intrusive relationship of country
rock with the major xenoliths

GB 11020



GB/1027



Folded arenalith. Country
rock probably also folded.

GB/1022



Pods rich in ps (hypococca grains)
in the lower scapolites

GB / 1024



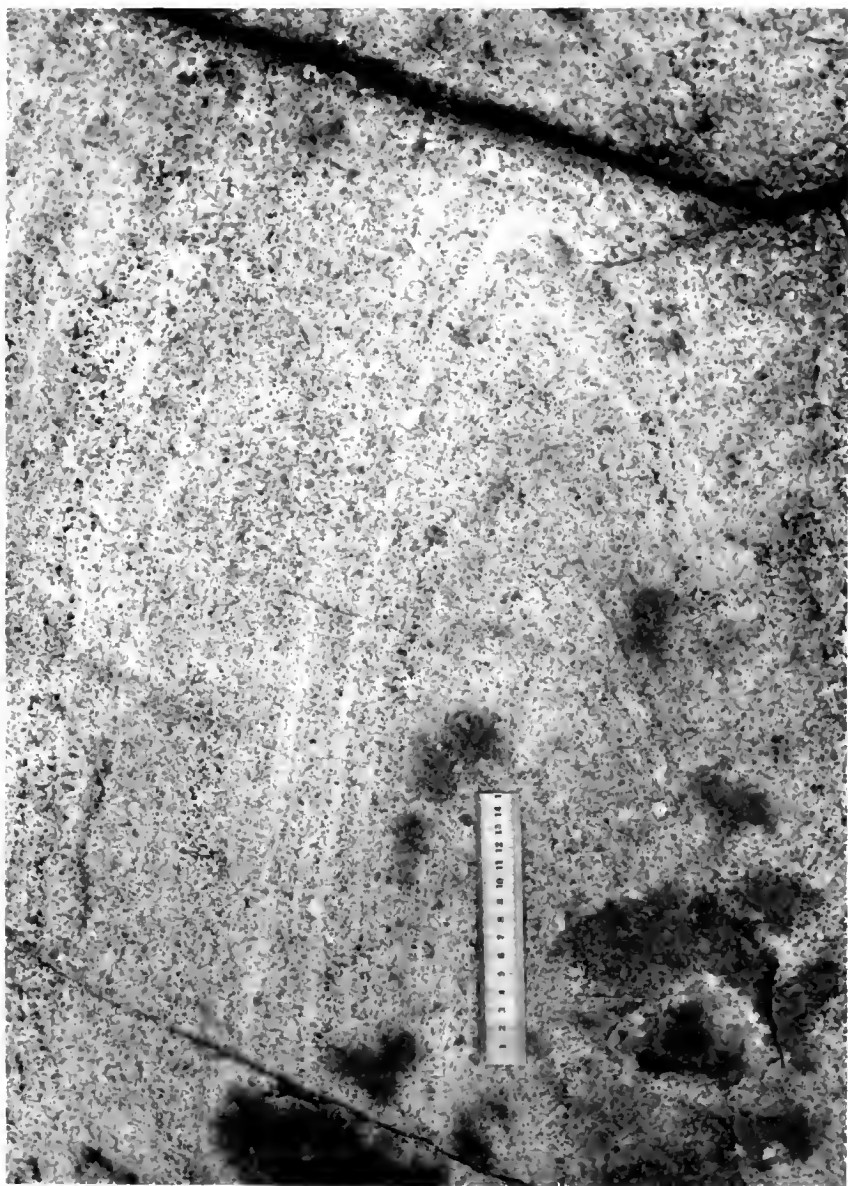
History: Charnokite intrusive
into basic rock. Some
mixing of the two? Late
veining of peg veins. Folded?
Intruded by dykes
Foliation appears to be defined
by grainosity - g-f (charnokite
grind) layering & f (fine
grind) layering & also
elongated xenoliths

30/4/76

How about sequence of
basic & tuffaceous rocks
- lightly folded - high grade
not with parallel foliation
of g & f - pink (green)
folding at this time.

From this fold it appears
that the g-f "militariae"
same age or later than
folding.

GB/1023



- T5: pale green cpx, hypers
(total px 57%), plag
* SPEC 5 - dol (40%), op. (3%) minor
hornblende & quartz
* SPEC 6 - major xenolith
rs

General Folio

S 294
D. over +

Tourmaline S 220
D 77W

Also xenoliths of b-g-f.
Xenoliths // to foliation
and vary from several
cm lengths to 10's metre
layers.

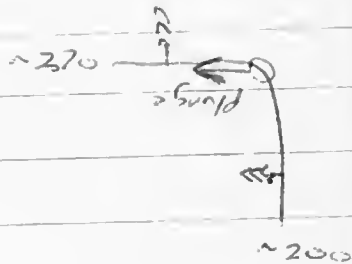
This section of 76283105 - metamorphosed
basalt dyke - pale green cpx + hyp
(57% total), plag (40%), opaque min
(3%), hornblende (minor) & ? quartz

This section 76283106 - hypersilane,
colorless qtz (total px 55%), pale
green omph (25%), plag (20%)
minor phlogopite and opaque grains
Foliated grains, firmed grains.

2. Phge 78 → 304

Meso scale fold.

Granular g-f
gneiss with
thin fairly continuous
mafic layers.



2nd phase?

GB/1028



3. Charnakite - g-pr - f gneiss
 granite. On southern side
 of outcrop abundant mafic
 layers. Interlayered with
 charnockite rock type
 Some coarse knobs
 (4 cm across) of hypersthene
 and lenses of black pyroxene.
 The charnockite host rock
 appears to be magnesian
 phase of a intermed
 basic rock (total comp)
 More mafic phase has
 melted & re-cryst - partly
 intruding the more basic
 layers.

* SPEC 7 - Charn

TS = perthitic orth (68%), quartz (30%), hyp altg to opaque rctd
 (2%), minor zircon & apatite

* SPEC 8 - mafic r

TS = hyp (40%), green-brown hornblende = black pr
 (40%), plag (15%) minor phlog & opag - secondary? growth
 of hyp at boundary
 of horn/horn & horn/plag

* SPEC 9 - large hyp

TS = hyp (ined-grind) along fractures hornbl. & biot - also scatt
 biot =

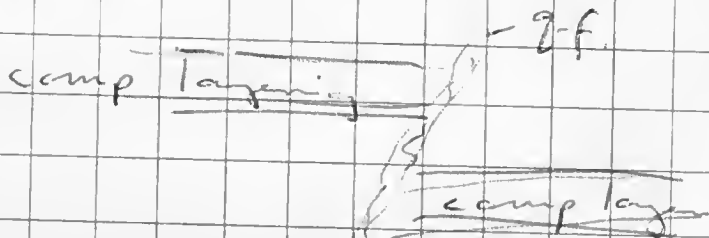
* SPEC 10 - layered =

TS = hyp (50%) partly altered (opag. & ?), plag (20%), horn (20%), q (10%), biot (10%)

Fold S: 294

D: west

Some layers
displaced and fracture
filled with coarse
grit q-f



this is
larger than
main channel
melt but
probably
last phase.

~~7~~ folds Page 82 → 280

GB/1025

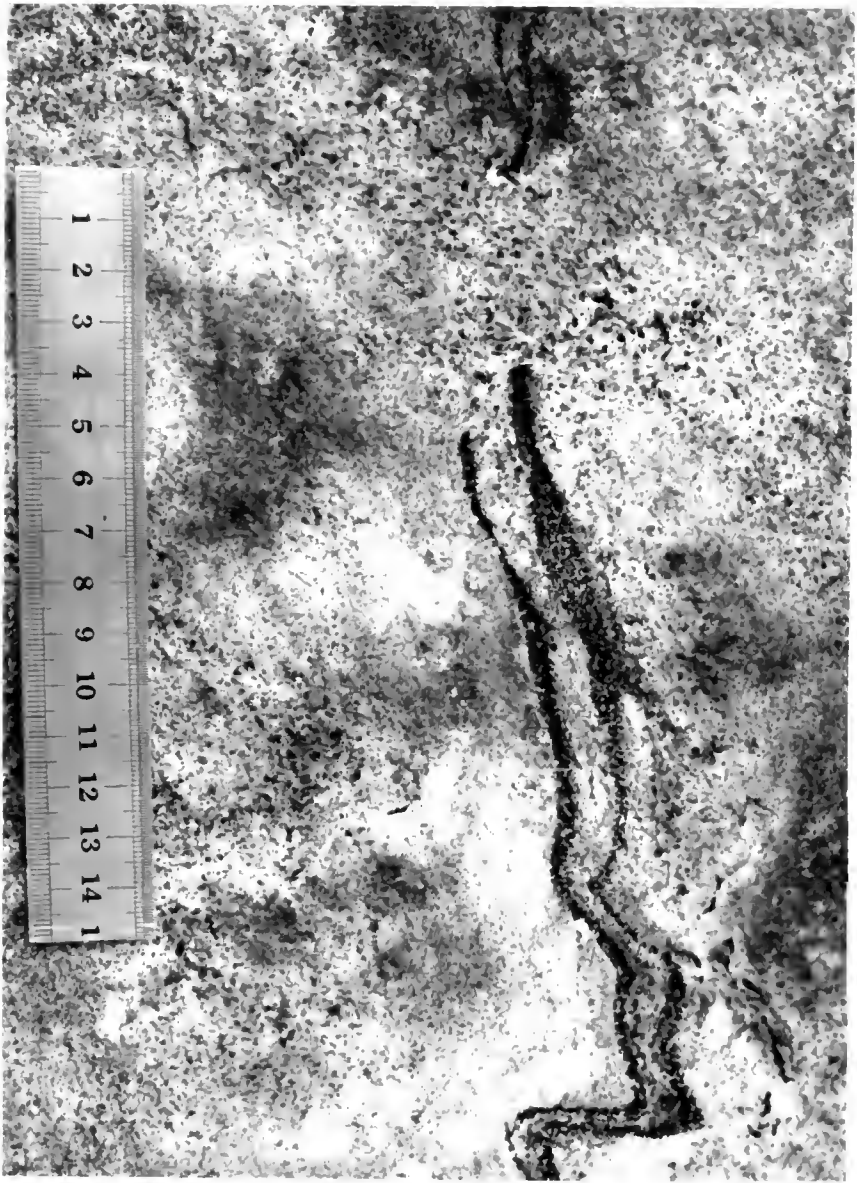


GB/1030



N
↗

GB / 1029



GB/1026



4. Charnakite

5. Partly honeycomb
weathering of f. gnd
charnakite fol. S. 290
(p. q. fld) D: 82N

Veins of q f peg.
Layer of mafic rocks // to fol.

At pt 1 again * SPEC 11

- basic layer (biot-plag. q. f.)

Some pinch and swell structure
of the peg layers

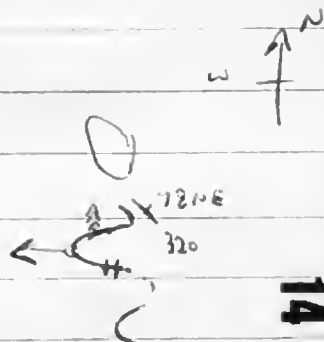
TS - hyp (53%) plag (45%), biot (18), opaque (18)
minor hornblende.

6. Mesoscale

Plg 78 → 280

fold

Layers consist
of p₂-fold-gnt,
p₂ biot-f-gnd,
q f-p₂
* SPEC 12.



TS - layers biot, orthoc, plag; hyp, perth, antip; quartz.

Location Phycolite 06 → 35g
defined by
long axis of boat & stubby part
(axial plane do folds)



4. f.
stubby

field

GB/1046



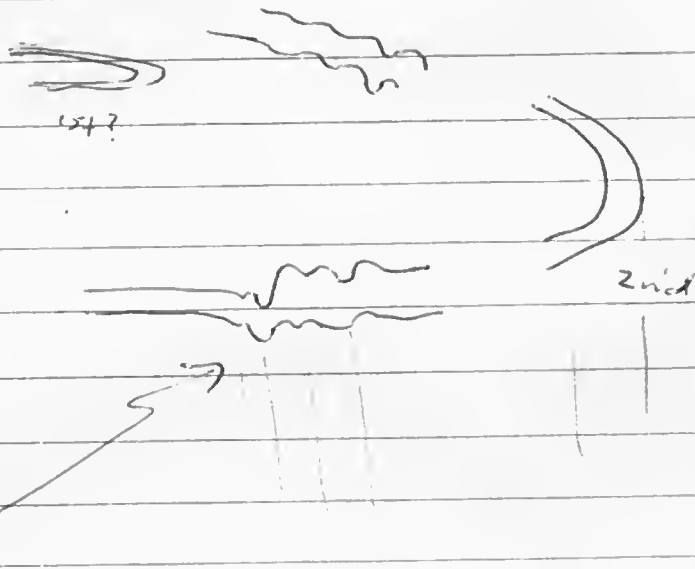
GB/1043



grit
stone
10
11
12
13
14
15
16
17
18
19
20

Two phases of folding?

- tight phase (see photo's)
folded by open phase



parasitic to second phase?

2-f or f peg vein // foliation
& in places cut fold. Folded
by first fold phase but also cut
1st fold phase. Bloody Hell

* SPEC 13 at loc 3

- part of mafic band

TS - clings (90°) entering partly to brown hornblende,
interstit. h₂O, plag, crtz & ortho grains

MT Cod 1181069 B&W 2/1/76

MT Beckenridge (1976) - 54 - 7

Feb. 5. ²¹⁴~~202~~

1. Charnokite

D. 31W

* SPEC 14

Feb

2. Charnokite

S 189

* SPEC 15A

D 30W

* 15B - black cyclohercitic
fracture full (pseudotach?²)

Tange Prom 12/1888

8/1/76

Mt Christensen

111

S ~~288~~-51=060

1. Bx. biot. q-f gneiss

D 35SE

- medium grained

Lenses up to 1 cm^{width} of q-f separated by mafic minerals



Close jointing

S. 284

S. 284-51=233

D. vert

Granite dyke cuts

gneiss (q-f-biot-tourmaline)

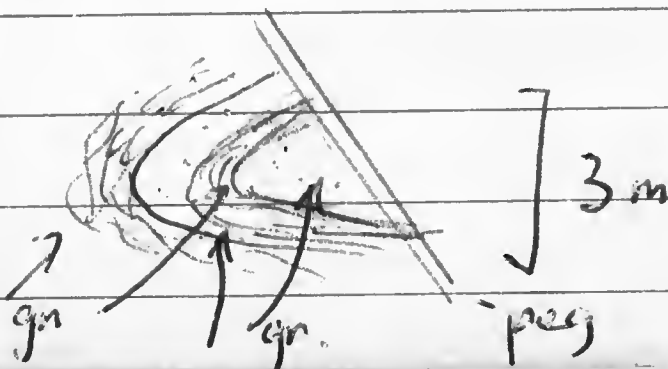
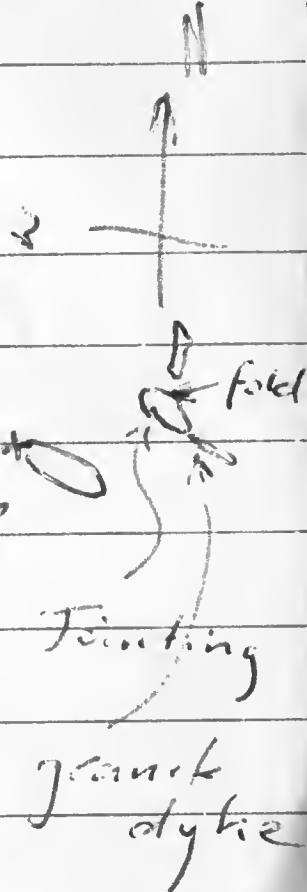
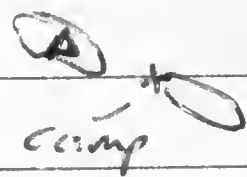
- centre of dyke

pegmatitic

Meso scale fold

Phy fold

38 → 130-51 = 079



Two ages of gr. intrusion
- f-m grained biot (horn) gr
which is folded with the
gneiss (remnant contact
& the graininess of host rx)
& peg veins which cut
the folds & contain tourmaline
& minor euhedral magnetite
(octahedra)

Near large fold *SPEC 16

Between Nat Map site and camp
- peg vein *SPEC 17
- mag grain
& tourmaline

The host gneiss is fairly homogeneous
but includes zones with
mafic minerals. The gneiss
is intruded by the horn
bearing biot-gr (mainly
f-med grained) remnant
& both gneiss & gr are folded.
Cut by later granite veins.

M/2036





M/2036



M/2036

M/2036



S surface caused by folding
is not obvious

At Widdows

10/1/76

Crassic granite - fairly
even grained - b & f.
- foliated. Includes
xenoliths of f. quartz
biot gneiss

Large amount of scree (foreign
but some bits resemble
the xenoliths).

- includes calc silicate
(diop - calcite - epidote
quartz - f with pyrox.)

* SPEC 19

and biot - quartz - f gneiss
- some tightly folded scree
- biotite gneiss with
conformable q. ven.
- includes pyrox gneiss
- also possibly some
Cu carbonate staining on
fracture. * SPEC 18

M/2036





M1/2036

Feb - 5 -

gn granite

340-49-291

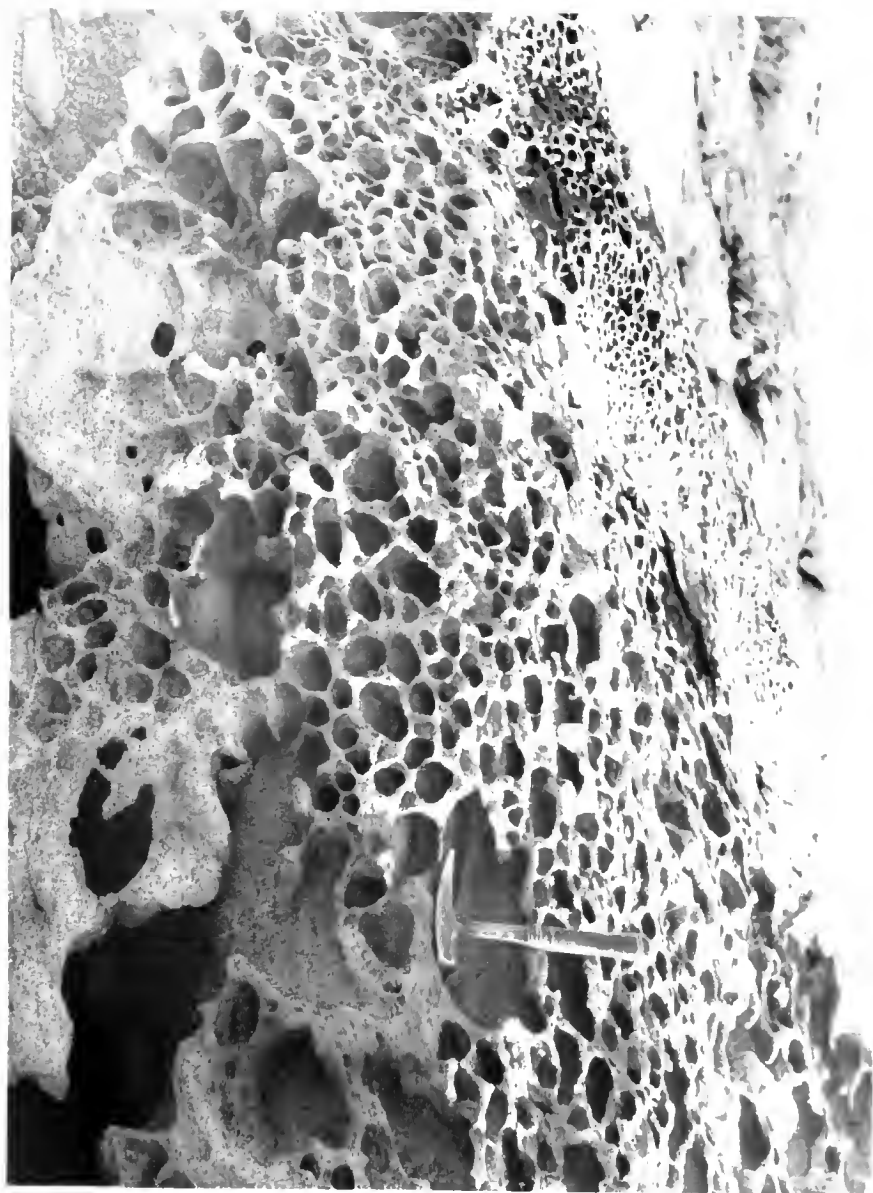
* SPEC 20

D. Vardas

Score of peg \bar{c} lens? * SPEC 21.

Granite is cut by peg veins
- mainly quartz

Honeycomb weathering



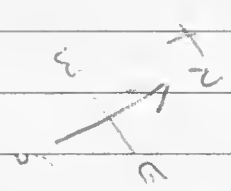
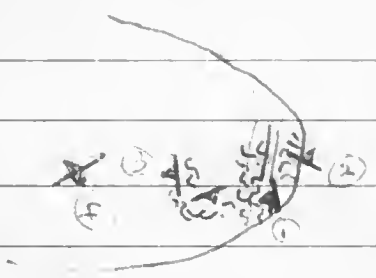
M/2036

SIMPSON PK. / 7 / 272 (Colony 1976)
Fyfe Hills 12/1/76

1. Siltstone, rock S. 339-51 = 288
-generally D 685
black (black)

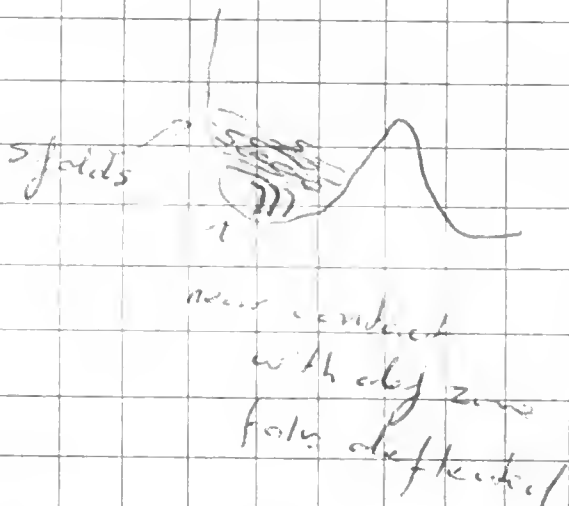
ophanitic texture contains
laminated foliages commonly
4 cm length. Deformed
laminae of grey - pink & white
feld. q. & biot & musc.
One near south side of fold
seen. Grey pink interbedded
during formation of this
deformed zone. Zone
may be about 80m wide
& includes blocks of
retorted country rock.

2. F. red gneiss S 200 51 = 229
q. f. gneiss D 87vi
Fabrication due
to q. elongation & gneiss stringing



* SPEC 22 - myl peg

* SPEC 23 - gnt veins



Some of the peg - g veins have
backs of muscovite & amethyst

* SPEC 24 - small's fold
of g-f lens in black
ephratic matrix.
Strong lineation // to axial
plane of fold.
- small axes of garnet.

(3)



styl

S 330-51=279

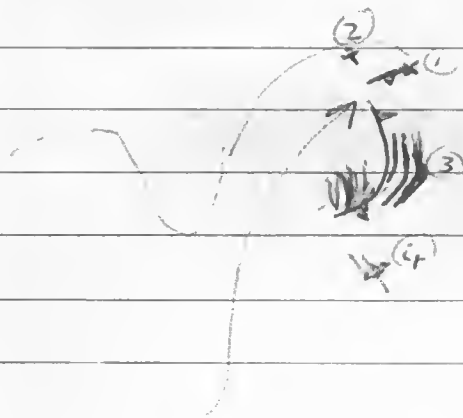
D. 70S

Myl

S. 232-51=181

D 60E

L. 50-203-51
stkg = 152



rubble - can't follow strike.
May be large S fold of
mylonite (macro scale).

(4)

Fine grained quartz-gneiss S. 276-51=225

- in places quartz
clusters to 1 cm D. very

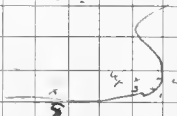
Includes layer 1/2 m wide
of quartz biotite gneiss

- * SPEC 25 quartz gneiss
- * 26 biotite gneiss

Don't know what angle def zone
doing

51100

X 520



④ Strongly foliated S 336-51-285
 gnt gneiss D. 705

* SPEC 27 Pkg L₂ 20 → 328-51
 silty = 277

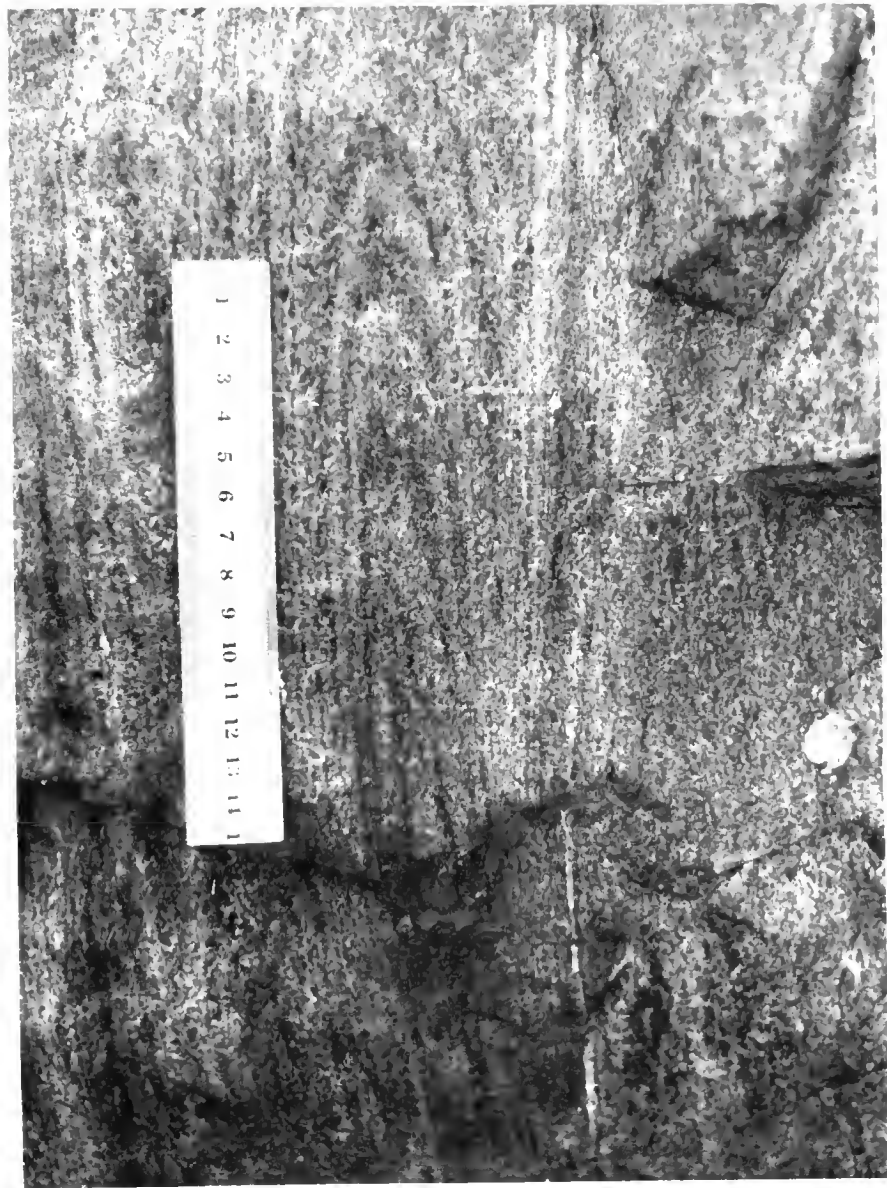
Between pt 4 & 5 zones
 of myl. rocks.

At pt 5 - Interbeds (1-2 m)
 of fol gnt gneiss and black
 carbonaceous granular myl.
 rock. Lenses of def
 hornblende? gneiss

* SPEC 28

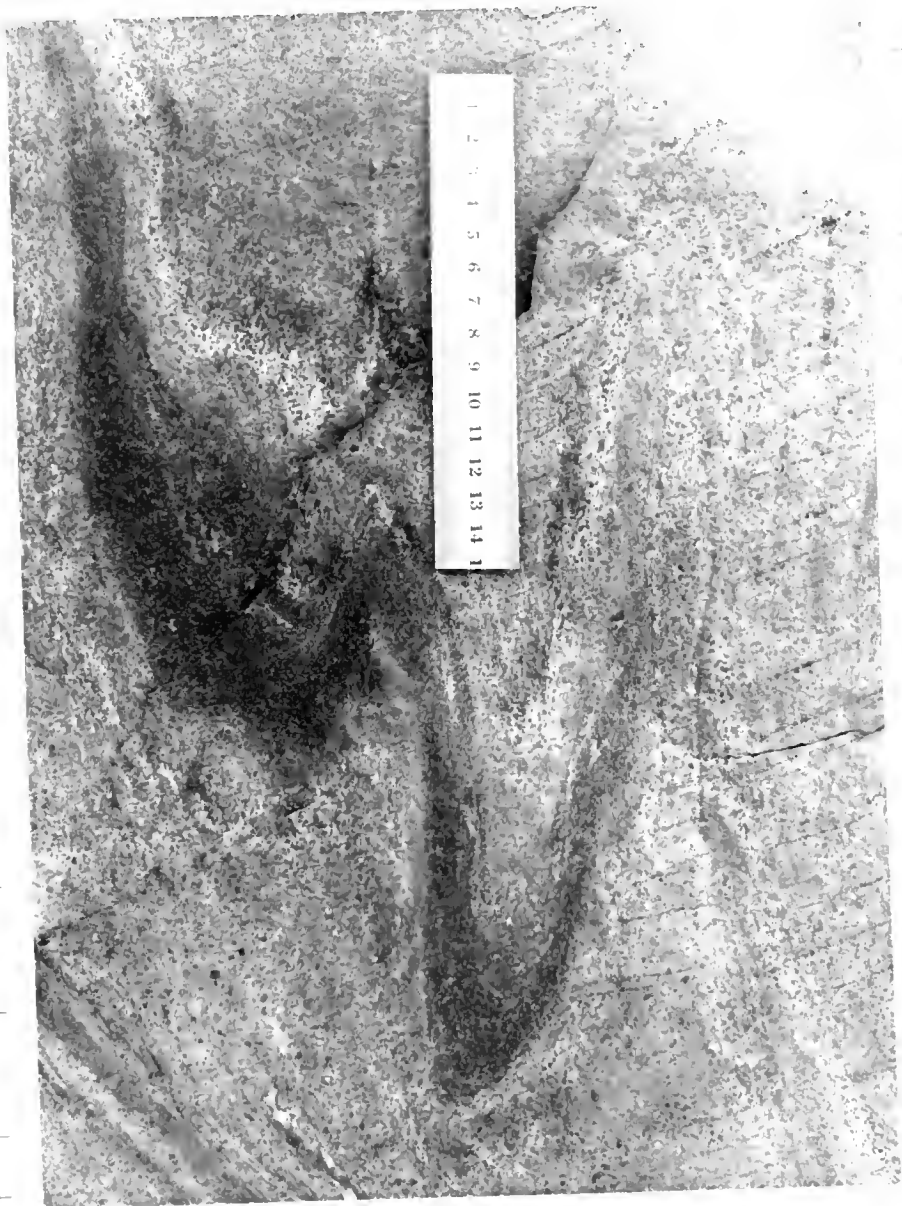
Isoclinal - open folds
 - handspec 51200

11/2036





M/2036



M/2036

Malachite staining on fracture
surface of ^{mylonite} gneiss.

Phy: 64 → 180-51
Tectonic fold = 127.
hard spec fold.

mylonite



ph⁺ gneiss

M/2036

⑥ Base of hill to survey pt

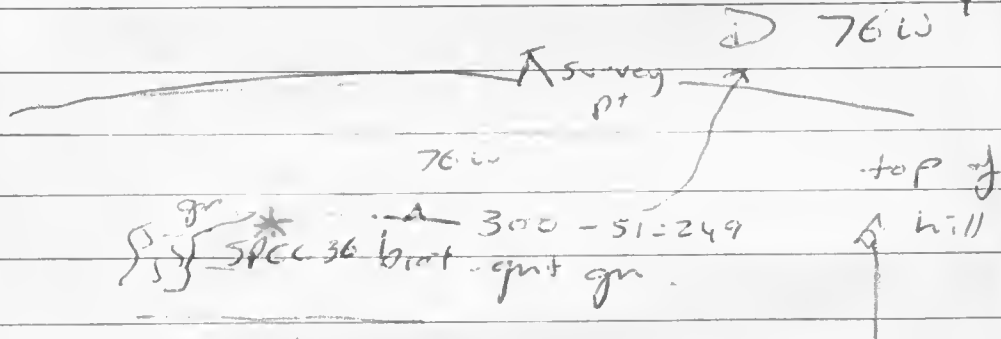
Base of hill - screen

* SPEC 29 - f. qtz - mag - qtz

* SPEC 30 - mag biot qtz grains

- also screen of ~~for~~

* from SPEC 3, local g. 300-51 = 249



1m { black

* SPEC 35 - biot - gn - qtz

~1m { white

* SPEC 34 - gn - qtz

yellow (b) q - f. qtz flaggy * SPEC 33

rubble ?? * SPEC 32 h. & f. gn.

~~SPEC 31~~ SPEC 31 - qtz - amphib?

SPEC 31 - intrusive? pool into
gneiss. First thought mafic
min. clinic - however bladed
appearance - an amphibole (px?)
(looks v. much like clinzoisite)



fold
→
T

M/2036

(7)

* SPEC 37 Pyroxenite

- pod near NW station

- 2-3 m x 2 m

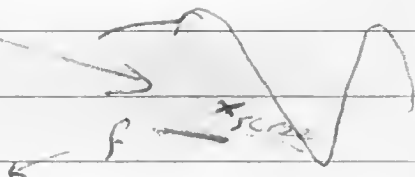
(8) Miscellaneous Phys. Fold 50 → 085-51

folds

m.b. gn.

21

= 034



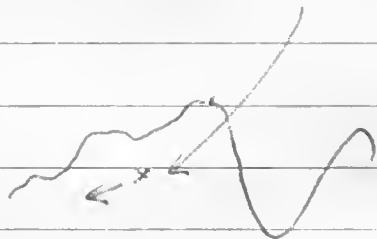
peg with mylonite
at margins of the dyke

Δ 51

227

Fold S. 278-51

D 85SE



Spackled cream-grey gneiss
- of grad b-gr' & f-gr'
Includes thin (1-2 cm)
layers of the mafic rock
(see spec 31 & 37.)

Several metres to NW
cream colored (b-) gneiss
containing layers of the
mafic material - also
minor number of angles
of mafic mineral
* SPEC 38



17/2036



M/
2036



⑨ Cream coloured

gnt quartz
Contains layer 2 cm wide
of yellow brown f. gnt
material containing garnet
spots. Each side of this
layer a layer 1-2 cm
wide rich in garnet

* SPEC 39

About 4 m further
layer - 15 cm wide
of gnt-mag-quartz rock

* SPEC 40

Near cliff edge * SPEC 41
- foliated dull black
rock containing biot
- deformed maf. - band?

In this corner - murex's pod



M/2-36

... .. thin, poor layers

metachite
↓ fracture



M/2036

Same area as SPEC 41 &
last two photos taken.

On job surface of gneiss
- scabby yellow & light
green material -
probably limonite *SPEC

However in this area
(see photo) on a fracture
malachite staining was
present

*
SPEC 43 b-gr gneiss

*
SPEC 44 Red of μ m - alt. products

(10)
*
SPEC 45 Fairly massive gneiss

(11)
*
46 - malachite in face common

*SPEC 46A massive mafic rock

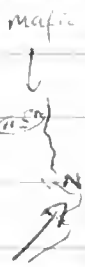
*
B - siliceous mafic rock

*SPEC 47 Gabbroic rock. - mal quartz

... ..
... ..
... ..
... ..
... ..
... ..
... ..

* DEC 48
Marshall

- collected by H. ...
M/2036
test (A)



47
*46

45

44

43*

Nth of Obson Is. 14/1/78

- find stop on a table note 271

- mafic of f grain S N-S

E mafic D. dip w

see also

General trend Jc

1st Riiser Larsen / 12/345
Sheelagh Island 15/1/75-

Dark grey uniform (bat)
- g. f. grains. Quartz?
bluish in colour. Mat
granul.

Includes layers

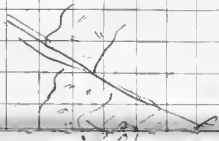
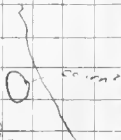
- semi-congl. de
fals - up to
3m wide

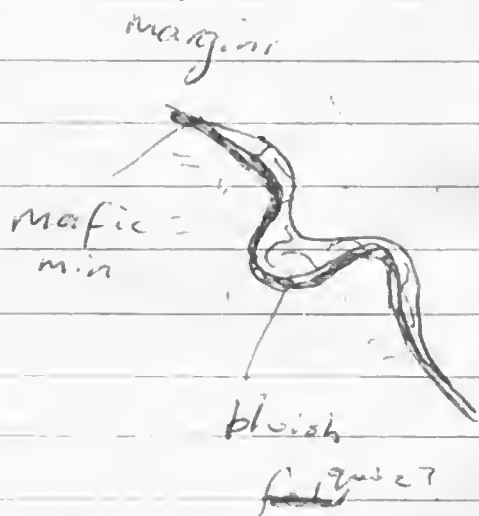
of mafic
material

Cut by
~ NW-SE
trenching

Shear zones

- few cm of
dark black
f. g. fluid type rock
- mafic





2 Joints Sets

S: $307 - 51 = 256$

D: 83 N

S: $248 - 51 = 197$

D: vert

General fold

S: $311 - 51 = 260$

D: 31 SW

Z fold in peggy layer
(grey f - blue qtz)

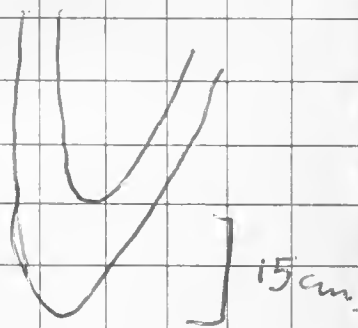
Phy Lin: $30 \rightarrow 228 - 51 = 177$
(compositional stky)

Near survey mark appears
to be fold in a thin layer
of slightly finer grained
lighter grey gneiss.

Other layers of
this gneiss

- ~ 15 cm wide

- conformable with
general foliation.



* SPEC 49 - host gneiss

* SPEC 50 - layer of finer grained
gneiss

* SPEC 51 - mafic rock

* SPEC 52 - part of blue
quartz? vein which
is commonly associated
with margin of mafic
layers

Island ~ 20 m high

Mosses in outcrop.

Another job
measurement

S 291 - 51 = 240

D 355



M/2037



M/2037

11st Cod/Proc Is / 7/2830 (B&W 1976)
Latham Peak 18/1/76

- 2) Rubble of g f gneiss and
some amphibolite (2 pa)
Toward pt (2), - boundary
outcrop of g f gneiss
then zone ~ 7 m wide of
basalt rubble outcrop
Position of dykes

* SPEC 53.

At margin the g f gneiss
is covered by mafic material
and the field is heavily
altered to clay. Some epidote

* SPEC 54.

Trend of dykes $200 - 52 = 148$

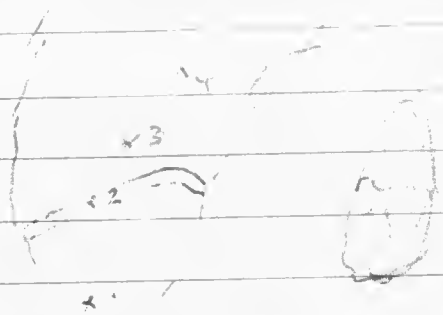
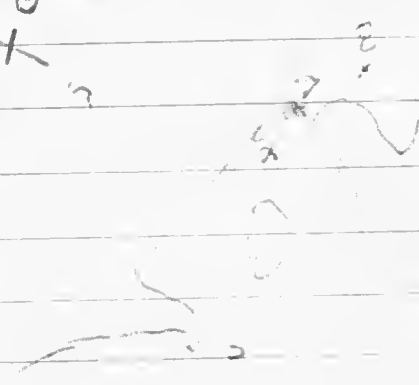
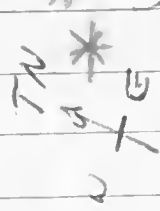
- 3) Boundary outcrop of gabbro, dyke

* SPEC 55

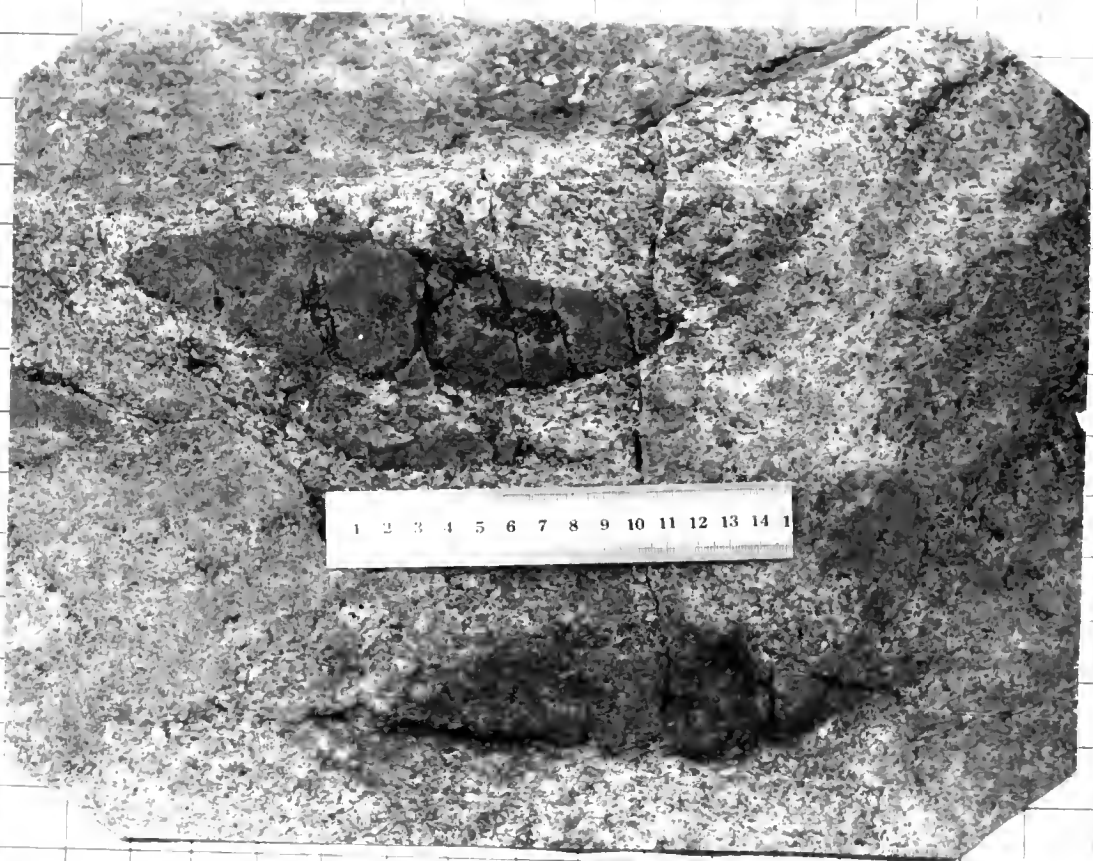
in ... of many rocks
 but ... of green Also rubble
 of galena (metals?). Many injected
 into country rock around
 galena plug?

* SPEC 56 Moly. rock

57 Galena



5. *Strophomena* (?) - of green
leaving traces of hypostome
(see large part of 5A on p. 15)
(middle green part of part?)



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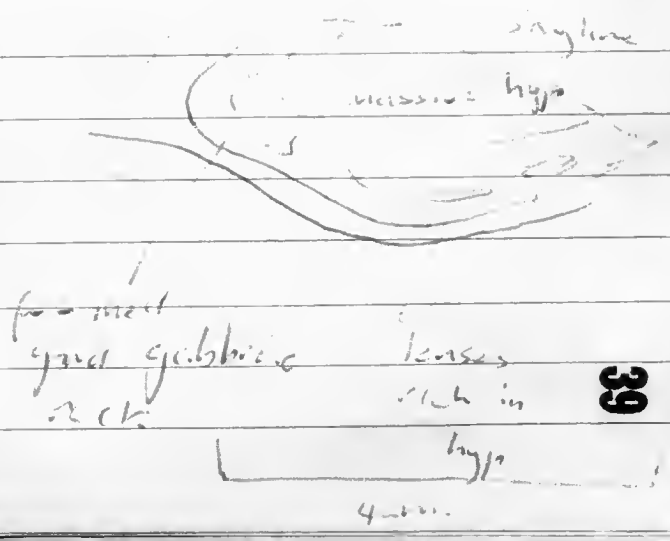
* 59 - pale green m.s.

These mafic pods have no
apparent feeder

20 m further up hill - blocks
of size 58 rock type - job
of trending $\approx 248 - 52 = 196$
dip steep. These blocks
probe in place.

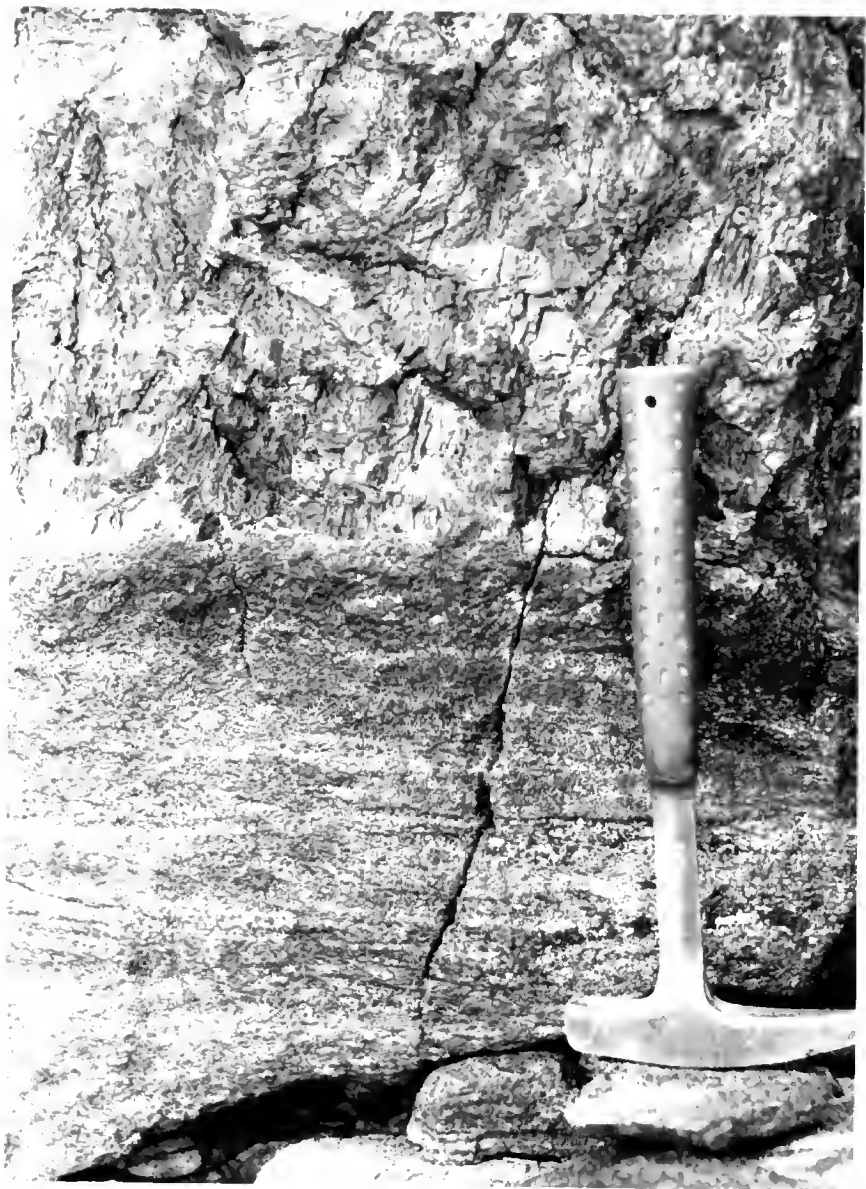
6. S. edge of mafic - grey-yellow
mottled w. f. green
rock 4 m long (photo)

* Spec 60





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40

Near pit *SPEC 61 - light
green ^{b. light} mineral in the matrix
part - number to SPEC 48
- this part (61) also contains some

30 is along matrix. Difficult
to see what job is along

'cleared' *SPEC 62 rock

- contains more of light
green bladed "crystals?"
Probably also a part. Part
apparently to be continuous
in the series.

7. Greenish green Quartz like

*SPEC 63

2 1 1/2 m wide basalt dyke

More resistant to erosion
& with foliated green (cleared
// to dykes) form tongue
extending out from ridge

Trend of dyke. 265 - 52 = 213

- also with *SPEC 64

... ..
... ..
... ..

* SPEC 65 - black - Inyr.

* 66 claps - bright
light green

Clas Fly

$$\begin{array}{r} 255-52 \\ \times 203 \\ \hline D \quad 71E \end{array}$$

$$\text{Fly } L = 18 \rightarrow 241-52$$

$$\text{comp. } \approx 189$$

(a mineral change)

may be foliated
J-ndy

white spots

becoming of
green.

Folds?

$$3 \cdot 110 - 52 = 138$$

D. 200

Have a folding whole embos.
is folded to bedding - the
folds (if not immaginary) is
covered by compound layering

20 m up ridge

* SPEC 67 - Red - coarse grained
grey (quartz) - of green



plateau
- peak at
SE end.

Trench
184-52
vert = 132

Feb. 1? - Linsting
S 26 2-52
D 83 NE

9. Basalt dyke

7m across,
Margin greenish - fractured
& spidate.

* SPEC 68.

19/1/76

10

Other end of ridge - grey
(quartz) - of green. Vitz
grains to 2mm. Close
packing. foliation caused
by slight cleavage of green

Fals

S. 264 - 52 = 212

D. vert

1 hrs dip & strike taken on E side of ridge. Near top of ridge dip ~ vert. Dip to E may be due to slumping.

11) Trench 262 - 52 = 210 of base of dyke - thin < 1 m? into white ground of f. green

12) Cont. of f. green. Cont. extending up to 15m * SPEC 69.

Fals

13) Gravity recording taken here

S. 252 - 52

↑ 200

D. vert

- recording reference mark (in mapping)

Altogether best seen exposure

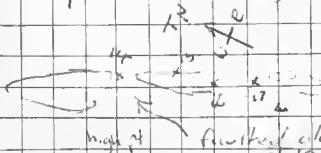
showing fold

Fold defined by gut - 'bird'

layers / top of f. layers

The general high of the peak
 - backbone of ridge is mainly
 composed of gneiss -
 commonly the white gneiss.

Because of the lack of murens
 in the country rock fold is
 difficult to see and the same
 occurs ~~as~~ after some
 orientation from locality to
 locality - could be a
 lot of folding going on but
 can't see it except
 in places between lane
 lanes and country rock
 (see p 39 sketch)



14

highly faulted along descent
 of the mountain??
 To north grey gneiss of gneiss
 (partitions of white gneiss)
 - various rocks

of same rock. At pt 14

* spec 70 block of hornblende

showed rock containing
plagioclase. Same as also in the area.
Some of gnt-biot - g.f. greases
Trend of hornblende rock

226 52 = 224

Zone was a hornblende -
part of series in the locally
deformed rock. On south
side - white gnt grease

15. (Gnt-pa?) - g.f. greases Grey

* SPEC 71

16. (white gnt greases)

* SPEC 72 - Shows

the grey streaks in the greases
- dit. mineral. ground

17. Major part revealed in diameter.
(not entirely exposed).

Outer zone appears to be made

43

up of f. gnt. cp - plagioclase (dark & some
bright light green, pa)

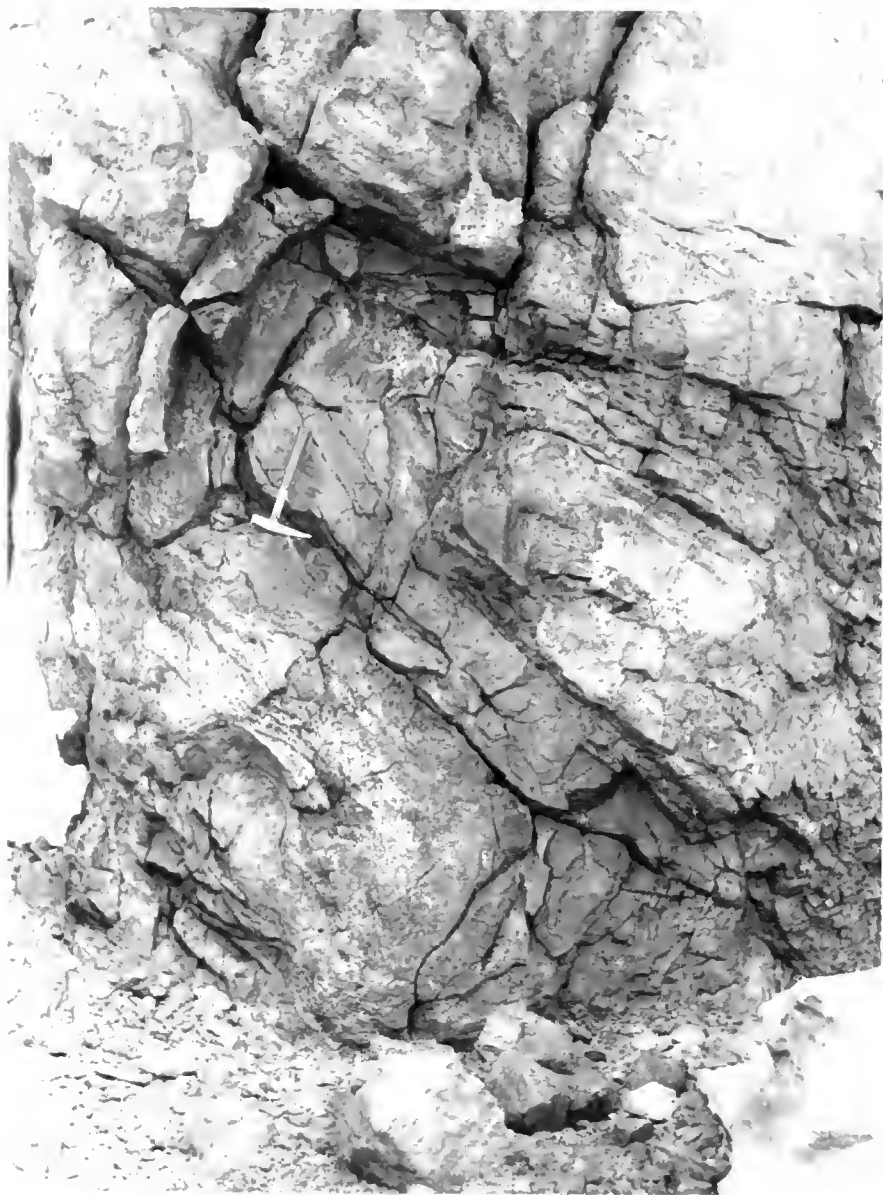
- then "supper - phlogite?" over
inverted cores of coarse sand
hyposthen - play rock.
Pocket with black granite (up to
1 cm across) - play



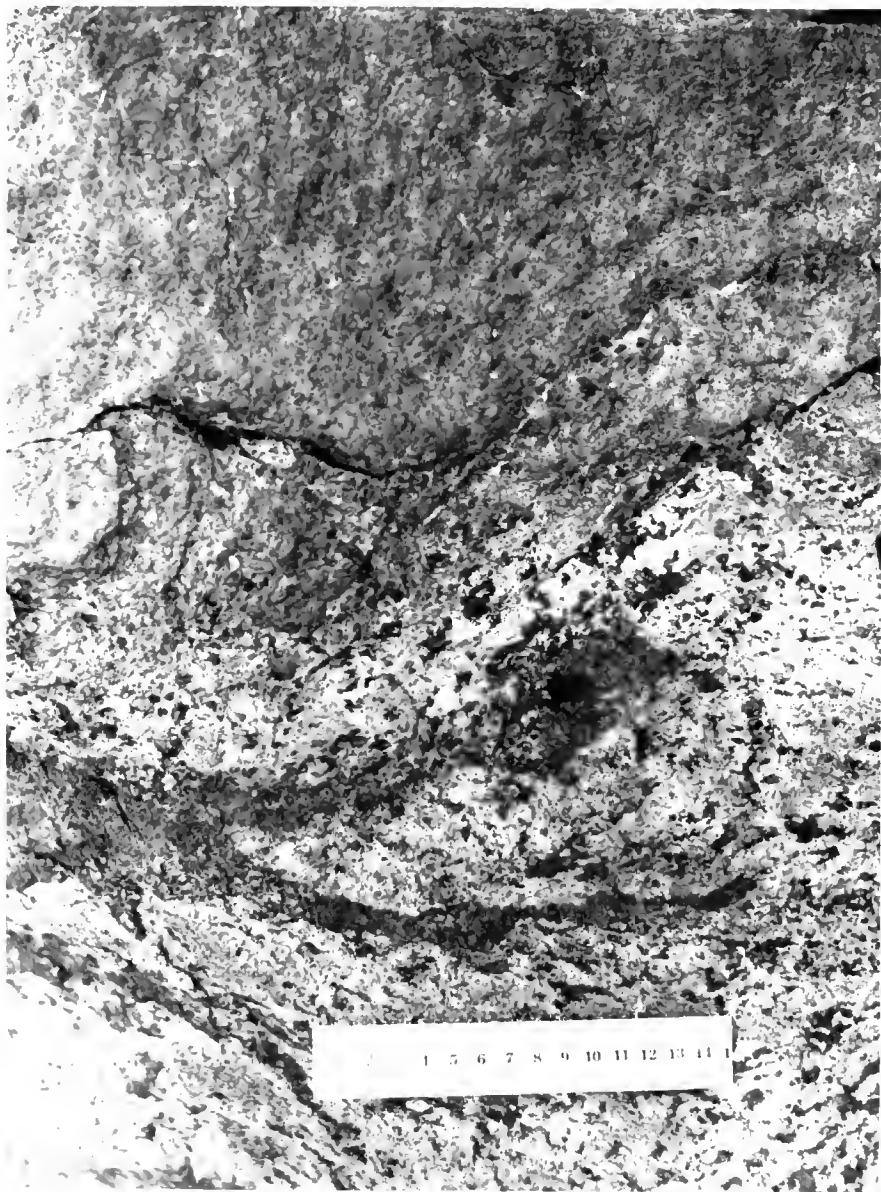
Bridges length ~ 258 - 52 = 706

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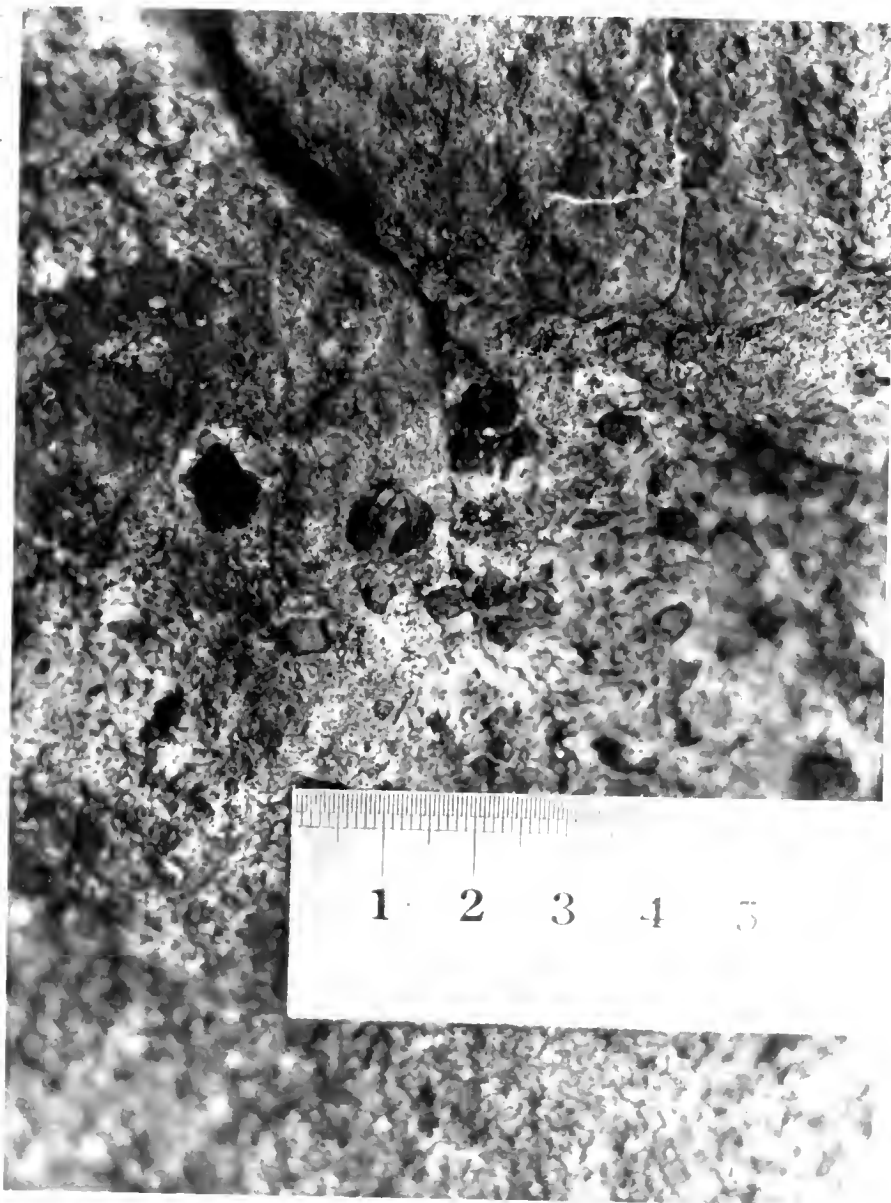
also GB/1041



also GB/1049



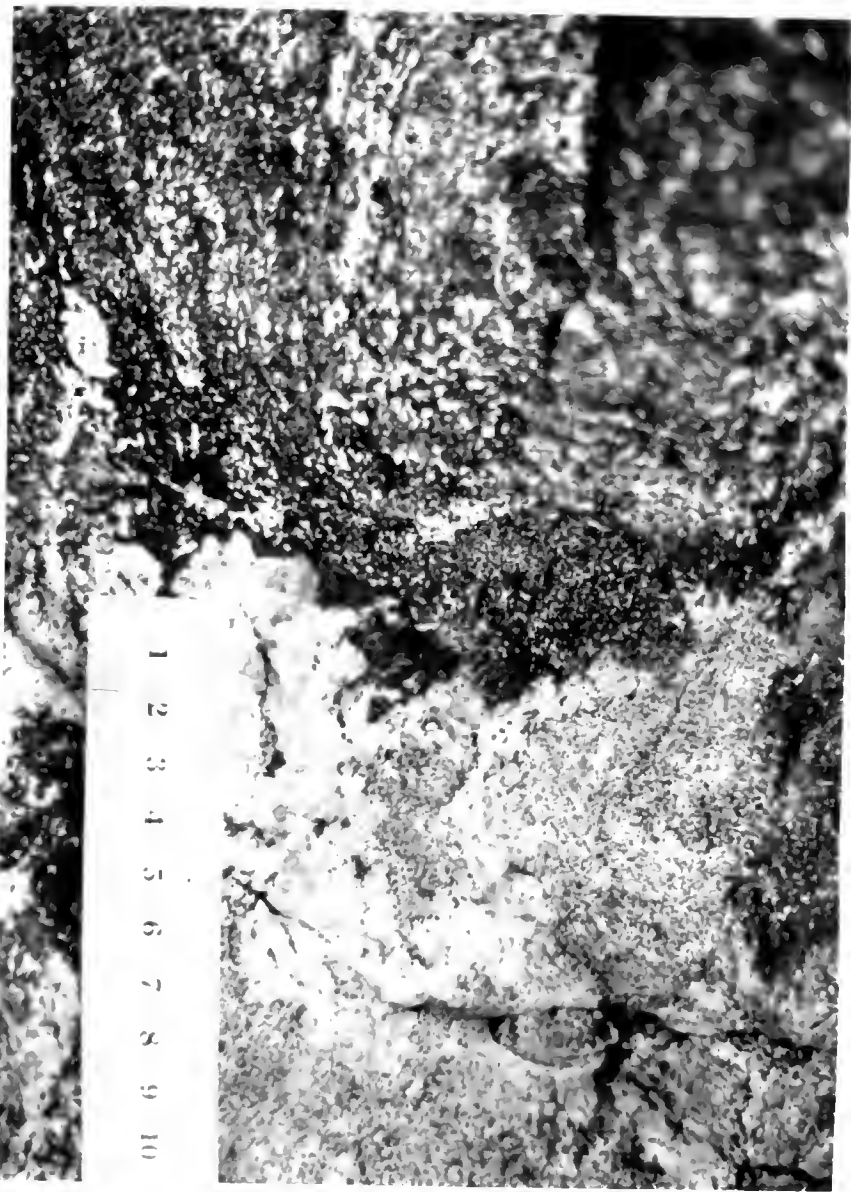
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M/2037

11/15/50
11/15/50

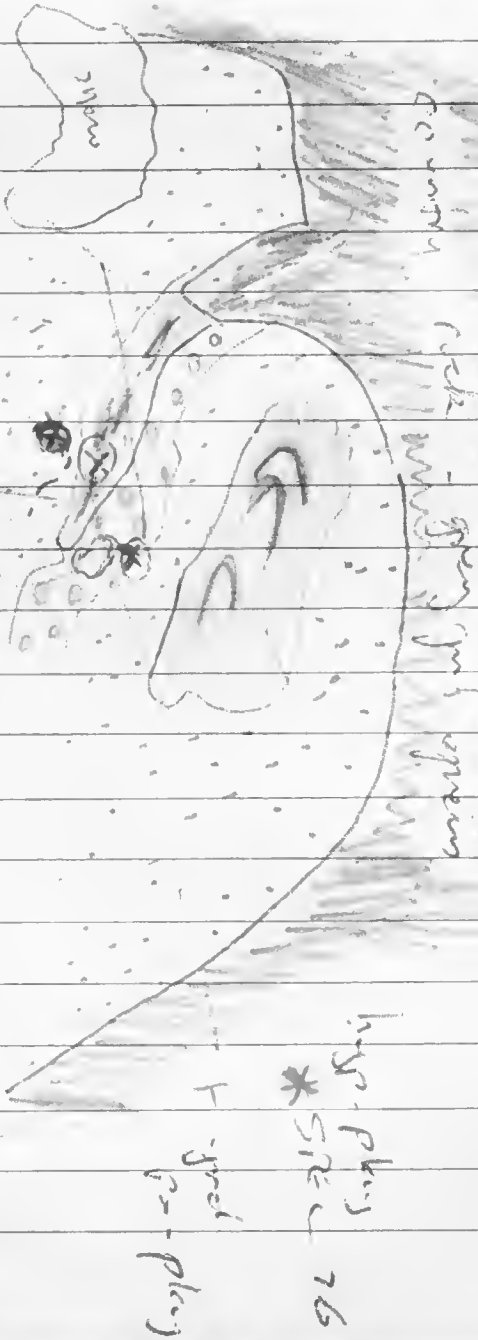
GE 11040



1
2
3
4
5
6
7
8
9
10

Skin cells
(using sketching)

South face

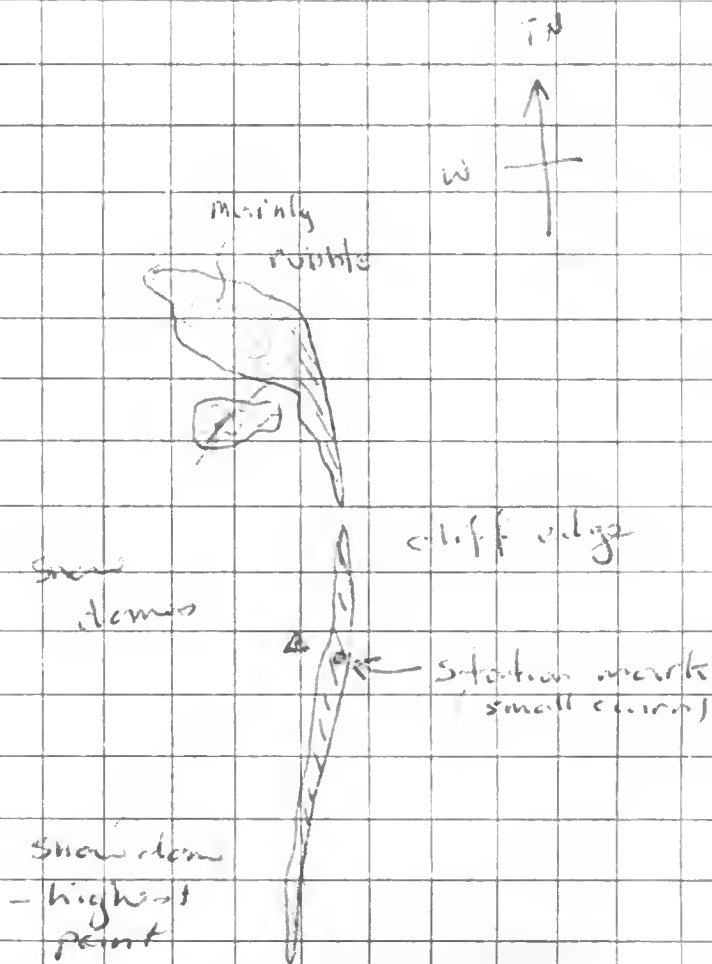


Synphonous
- phloem
* SPEC 75
F - grad
p - play
* SPEC 73

part of play
with black crystals
* SPEC 74
layers of hyp (reddish
in play
in surface)

hyps. play
* SPEC 76
F - grad
p - play

LATHAM PEAK



Throck PRCM/2/1871 (B&W 1976)

Pinn Island ~13/1/76

- collected from screen by
Carl MacMaster (Pur Plaf)
& Peter Hill (Geophy)

Screen is derived from outcrop.

* SPEC 77 - (b) - y-f-green

* 78 - fld. px (black) rock

* 79 - fld px (bright green
& black px) rock

* 80 - basalt

The basic rocks (78 & 79)
are probably derived from
the basic pods with
country rock SPEC 77.
SPEC 80 may be derived
from dyke.

7628 3179 → XRD on bright green px

(D. Barnes, BMR 1976 pers com)

- probably augite

NYE MTS / 11 / 165 BEW (1976)

Truman Ntk (1069) 25/1/76

1. End of ntk biot-grnt px play
gneiss Some mica layers
very Green & black px present

* SPEC 81

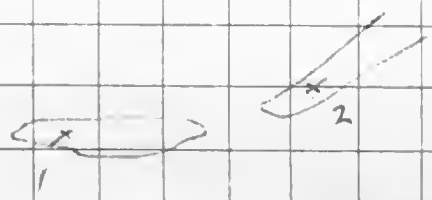
Med-grnt mafic gneiss [Play, 558, Hyp-Cpx, 258, g.c. + Hbl]
(158, biot 58, opq, grnt
- secondary growth of ~~px~~ f. pyroxen.
Thin cont veins of px - grt f. pyroxen.

* SPEC 82

2. F-med grnt px granite cutting
grnt-biot-px gneiss

* SPEC 83 of granite

Field S 330-52
of granite D 875 = 278



(low jointing)
S. 235-52 = 183
D cut

The pt - the granite is a
aggregates.

Further up hill 3.0 m wide
layer of g f granite.

Fals // to basic gneiss.

However margin consists
of alt layers of basic
& granitic rocks & lenses
of basic rock in the
granitic rock. In main
layer no pt in the gr.

Then back into basic gneiss
20 m further up hill another
granite layer almost //
to fol - (seen in basic
gneiss)

- 15 m wide - includes
lenses of basic gneiss
Some coarse granite
lenses within the fine
grained granite

* see 84

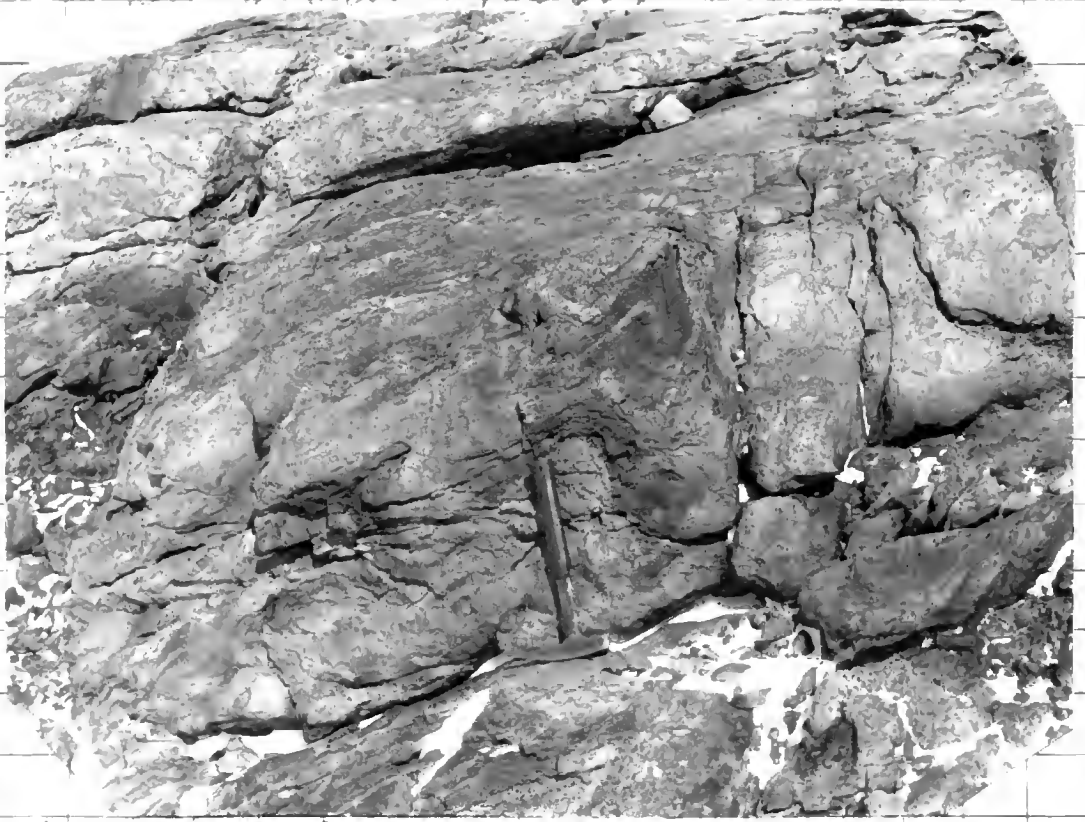


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... in bed large layers of
 ... shows ...



M/2037

2/

1/

300 124

...	3	2	5	15
	a	b	a	b

The granite layers form a subhorizontal
blocky ridges. The gneiss is
subdued in relief.

At the margins of contact
granite commonly contains
biotite

Fol = S 306-52
= 254

D: 90

Measured on beam gneiss

S. 307-52
= 255

D. 855

L: 43 →

144-52 = 92

(min elong.)

3. Two photos showing leering
out and truncation of
granite foliation in the beam
gneiss. In this case there
is layering of green & granite
on the scale of a few cm. **50**



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Near to top of ridge - in basic
rock - fracture filled with
malachite. Only one small
bit seen.

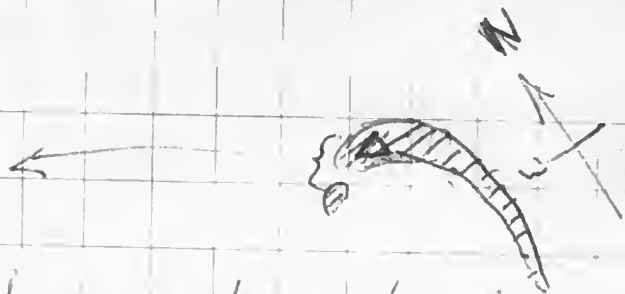
Laminated grains & granite?

* SPEC 85

This spec appears to contain
p & q - certain amount of
mineral segregation.

Part of late peg phase - b-g -
f prob. related to granite.
Essentially in whole of
this outcrop (the whole nth)
consists of basic grains
interbedded generally conformably,
by g-f grains (mineral
biot). The granite may
be foliated - there are
peg veins in the gr which
parallel fol. & prob grains in
the granite are elongate // to
an 11 mineral boundary etc.

P



Layers of granite including
mafic grains

* SPEC 86 - granite

* 87 - yellow staining
& ppt on granite surface
(local occurrence)

* 88 - barite core

* 89 - q-f. vein in the
barite core

late crosscutting peg phase
(crosscuts barite & acid rxn)

q-f-b also contains magnetite.



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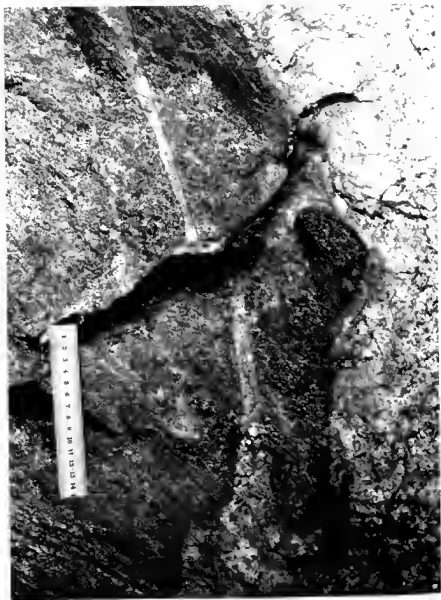
53



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M/2037



M/2037

JMR-1 Doppler Survey Set.

The JMR-1 Doppler Survey Set is a portable receiving and data recording system which receives Navy Navigation Satellite System (NNSS) transmissions and records orbit and doppler information for later processing in a digital computer. The set will automatically record adequate data for a precision survey in one or two days of unattended operation.

Major features of the JMR.

- 1) Data recorded by the JMR-1, can be processed to establish the geodetic long, lat and elevation of the position without requiring a reference to any other point on the Earth's surface.

2) Posi accuracy is essentially unaffected by geographic location, weather or time of day or night.

3) Ownership & operating costs are \ll any other first-order survey ~~techniques~~ techniques; \ll all other techniques for distances of 100 km or more from a control point.

4) For more precise measurements relative to a known marker, a TMR set can be located up to 1,000 km from a record set at the nearest survey control with no radio or visual contact required. This technique is known as "Translocation".

Cost of instrument \$35,000
Also have to pay for computer
programme - somewhere
around 4-\$8,000

JMR uses U.S. Navy Navigation
Satellites as its only reference
in determining the precise
3 D position of a point on
the Earth's surface. Used
for over 10 years. Five
operational satellites are now
in polar 600 n mile circular
orbits. Some now in operation
for over 6 years. The track
of the satellite in its orbit
must be precisely known as
its the surveyors position
reference. The data which
describes the satellite position
as of each two minutes into
the future is predicted by
the U.S. Navy and stored
in the satellite's memory. The

satellite is programmed to transmit the data as modulations on its carrier frequencies in the appropriate time slots for reception by user's equipment. The actual data is correlated with satellite-transmitted time marks.

The JMR receives two coherently-related satellite-transmitted signals, at frequencies of ~ 150 MHz & 400 MHz and extracts and records timing information, predicted satellite ephemeris, and doppler shift data.

One cassette has the capacity for ~ 50 pages Nat Mapping & about 20 pages for accuracy of couple of metres

Using satellites that get
above 15° from horizon
Can use satellites that
are $< 15^\circ$ but far less
accurate.

10th all.

finished (52 b w)

penis

white out Latham Peak

250 = 200

235 = 185

Film ?

-
-
-

Mt King camp
photo Pythay pk
" " "

Auster Gl. (Ton Is) - pol
" " unpol

Mt Ann
Mt Chris
Thyer Glac
Thy Glac
Rayner

9th roll
Russon

W side Mt Pardoe - ice
melting

Russ. Low.
Shela Is.
Roote


Film

To Mt Breckenridge


- photo of Erkins

- rock next to Mt Moinis

photo of

 Mt Bennett





 Mt Brek

- photo (pol 28mm) of Moinis &

Erkins

 Erkins

 1 
Moinis

Edh

29th

Taylor Rookery

Rippon

Taylor Rookery

Rookery Is

Mawson

30th

7th. Gallant Glacier 6,000'
(polar)

(shot yesterday of lake
just to east of Rookery)

2 shots of Ed 7th (E pol)

View into) ~~Ed Rippon~~

Ed 7th

Plot F

(shot yesterday

wooden cabinet - R.T.

2

