

W.A. No.

NAME INDEX

SUBJECT REPORTS

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PROPERTY FILE

003914

82K W 038-07

PROPERTY FILE

INDEX

July 8 '57 - Moved to end of Index Basin rd by Rorer vy & finished making camp by then, make an abortive start at planing. Switch out as interm. drizzle. P. 127

- MAI-01 plotted ck jc - estab. Δ 1 therefrom.
- July 9 '57 Drizzle turned to fairly steady rain or overcast, along mid-AM. Day turn-around for Rorer, then resume p/te.
- MAI-02 Baker tent 03 - weds. tent.
- 04 cat rd crosses Index ck E. Pack trail also crosses Δ 1 here. then 45' along F².
- 05 N tip of % of grn phyl. ext. 30' at 120° F¹ abt 320° 85 SW. Max 15' wide.
- 06 % of grn phyl. made by cat, ext. 10' at 295°, 15' at 130° & 10' wide. F¹ 315° 75 SW. Actually natural % of grn phyl. exts a further 20' at 265°, then 25' up to N tip of small bluff at 07; this runs 35' SE along str. Most of Δ is floored by grn phyl. % or nr. %.
- 08 A band of grn phyl. % 10' wide is essentially ctuous fr 06 to 08. % is offset 20' NE at 08; clean x-fracts in rock make it poss for it to be offset 70g, but no further evidence. % dies out to SE betw. this band & that of 07.
- 09 ~~1. edge of Index ck E, 25' N of 01, 20' N of 02.~~
cat rd crosses Index ck W. 30' fr spot % of micac. grey phyl, lowest on this ck. 25' farther up to start of ctuous %, here rust-spotted blk phyl, but chgg to grn phyl. in 5', then growing compact & g²sc, sp. 50, in 20' (ie 75 fr 09).
- 10 NW end of cat rd cut % of grn phyl, F¹ 310° 70 SW, here df on vert. axes for SW side NW. Δ shown by finely-banded ^{brown} beds or lenses, themselves $\frac{3}{4}$ " th. Exts. 50' twd 09, gray phyl. coming in at 30' & being 5' of exp. wid that end. % increased to 15' at 90' pt by natural exp. above.
- 11 cat rd crosses a 3rd, small, ck.
- 12 Mid. of 10' % of a band of grn phyl, 320° 80 SW; rust-spotted & finely banded in grass-grn & greenish-cream, like % ad-1. Float all along here is siliceous blk phyl. & blk q²e - evidently fr Triane & Ajar.
- 13 Switchback in cat rd. 20' back & 30' left is NW end of small bluff, 25' long of rust-spotted, cream & greenish-cream phyl. - looks like it might be calc. F¹ 318° 70 SW.
- 14 cat rd switchbacks to rt going up, 30' to rt. of small ck of 11.
- 15 " " " " left " "
- July 10 '57 Drizzly AM, slowly along PM. Ctu p/te, sectioning up Index ck W.
- MAI-016 20' at 067° along mud track thru alders fr spot % of deep grn phyl. Further exps 15' SW & then 15' SE define a Δ % area. Phyl. grows paler to SW with crossed cleavages.
- 017 band of Index ck E. Fr here to Δ is a small basin.
- 018 % in " " "
- 019 Edge of % fall" to by norm - deep grn phyl, F¹ 323° 85 SW

TA1 - 020

etc of deep grn phyl with pale grn, rust spotted phyl. on str. Abt 10' above ct bed
 & 4' over. A little interfoliated grn just df etc with grey phyl. 20' farther SW.
 Back to dom palegrn phyl in 10' more across str SW; fⁿ of etc 310° 65 SW.
 However grey phyl. ctus interfoliated with the pale grn, commonly rust spotted, up to
 thoroughly rusty & somewhat qzse phyl. at 021. This is 5' wide, going to 10' of
 pale grn, then grey. In 10' more grey goes back to palegrn with some brn
 qzse in it, sp. 51 (2). Back to grey in another 5'. % inaccessible ^{for here} up to 023, which is
 is over to NW, abt 30 or 35' fr ck wall, since this is on ^{a thin band of grn in} etc of grey with grn phyl. to
 grey we prob. haven't missed much. 15' SW to qz vein in rust spotted cream phyl.

023

Abt 8' grn to brn. qz band, sp. 52, in the grey phyl. Exp. incompletely accessible fr last
 obs to here, but seems very largely grey phyl. This is 25'-30' fr lower falls. 15' SW
 of 0 is etc of grey, here silty to gritty, with pale grn phyl. But it is mostly grey
 in part with greenish tinge, to etc with dirty grn phyl. at 024. Fⁿ here 310° 85 SW.
 This grn phyl. is no more than 20' wide, succ. by grey to blk. 100% accessible exp. fr here
 to ls. etc - some bands of grn phyl. up to 3' th, but overwhelmingly grey.

025

10' past ls. etc. Accessible gr. rust ck not vis at A; etc crosses ck abt 60' at
 130° fr 0. Good df for % SW.

026

On small ridge & top of ls. %. 10' short of SW edge of ls. %. Small gully to SW is
 prob. cut along etc. here, tho. wanders off SW farther SE. This gully joins
 3rd ck a little farther NW.

A2

On rj where catrd crosses

027

1' in front of transit sta. 38 25' at 150° to portal Index adit. 0 is prob. on ls.
 etc, tho. NE edge of % is 10' SW. Ls etc. is poorly exp. fr. here down rj. twd. etc,
 but is clearly displ. SW by dip.

July 11

TA A2 - 028

Small bluff of ^{light (not pale)} ~~deep~~ grn phyl, fⁿ 3130 83 SW. % jogs 10' SW here going SE. % ends
 abt 40' NW on str, abt 5' wide. Some grey phyl. 1/6. Actually base jogs 25'
 right, then follows str for abt 70' SE, coming to fadeout end, 25' wide, at trickle.
 Actually sporadic %s of grey phyl. ctus for abt 50' more, zig sly left across str. Then

029

climb st. uphill to small bluff of 029, ext. abt 20' NW, 10' SE & 10' wide - grey to
 greenish-grey phyl, fⁿ 315° 83 SW. This appears to be base of timber. Actually % is
 15' wide; base jogs 25' left for 30' more of %, 5' wide, to SE. All grey or greenish-grey phyl.

030

On face of big bluff, nr. NW end. Have to skip small % below, on ^{NE} edge of slide valley,
 because not vis. to A2. Fⁿ is 315° 80 SW in med grn to greenish-grey phyl. at 0.
 0 is 20' fr NW end, 20' fr top, 910' fr base of %. Med. grn phyl. mostly, locally pale & rust-
 spotted, or alternatively grey. Grows paler in 10' rundown in trickle 70' to SE.

031

Base of same %, still grn phyl, just df. jogs 15' SW over pale grn phyl. Back to
 med grn, greenish-grey, & finally grey in 20' more down ck 941ly. Som 1/6 pale grn phyl.
 but dom. grey down to base of %. 25' fr 0. Abt 15' NE to ls etc.

MA2
③2

prom. vert. ~~to~~ ^{fr} ~~fact~~ 30' SE of ③1, accompanied by spring in fr. to 305° vert. % ctus in subdued form to a ck gully with excellent exp. ③2 is on N edge of this gully abt 25-30' below genl. base of exp. to NW. ③ is on narrow band of bryt. in pale grn phyl. ± NE of etc with grey; fr. here 310° 80 SW. However ~~from~~ light to pale grn for 15' SW of ③, where good little dcf for % SW. Ctus essentially lgt grn to base of exp, with some bryt grn bands & in creasing greyish-grn & green to base.

③3

10-12' beyond, to NE, base of exp. in above ck. lgt to pale grn phyl. more or less rust-spotted, ctus up fr ③2 to etc with grey

③4

at ③4, up & N of ck gully. Grey is 15' wide, then back to pale grn for 15' more to top of %. Mostly cream (a rust-spotted) at abt 60' across str. fr. ③4. Back to grey at ③5, then run out of % abt 15' NE, in actively greenish-grey phyl. 20' more

③5

across str., but on echelon to E, hit small % of pale grn phyl. ~~etc~~ some mag. ~~etc~~ bryt grn. Another 20' of pale grn, in minor part bryt, ends at ③6. % resumes in 10' with

③6

grey phyl. fr. 315° 85 SW. This grey turns almost chalk-white, non-rust-spotted, in 10', then greenish-grey by top of % in another 20'. Come out on a bench sloping WNW just above, mostly cov'd with scrub balsam. Bench is floored by ls. rubble & enses up into talus slope of Silver Chief trail.

③7

Rim of bench, on brown-weather'g phyl. which is pale greenish-white at edge of % 15' NE

③8

" " " & NW tip of % of pale grn phyl. fr. 315° 80 SW.

③9

W cr of % of ls, abt 25' across NW end, which forms rising hogback betw bench rim & a broad gully agnst talus slope.

All phyl. as go down another ck gully; grey phyl. in hump on left lower bank is as far SW as % gets around here.

A3

Down on edge of bulldozing on E side of ridge.

A4

W edge of ridge, just above Index etc.

July 12 '57

Clear & warm AM with warm front moving in fr S. P/E on & W of Index rj.

~~Most NEly exp. of ls. passes 10' NE of A2, etc. of ls with pale grn phyl. is 1/2 way betw. A2 & A3. Minz'd over abt 10' next to etc. here.~~ with gal & rusty

Anoth. minz'd band or lens, 5' wide, passes 10' SW of A2. SW etc. is cov'd here, but judging fr ox'd ~~etc~~ colluvial SW minz'd band is abt 10' wide & passes 10' NE of A4.

A4 itself is 3' NE of ck-side exp. of qz-ridden pale grn phyl. mod rust-spotted.

^{pale} Grn phyl. ~~is~~ finely interbanded with ls over 3' immed NE of SW minz'd band in exp area 20-40' SE of A2-A4 line.

MA4 ④0

Prob. spot % of pale grn phyl. rust-spotted, qz-ridden, & decayed, rt on SW ls etc. This makes SW minz'd band exactly 10' wide.

④1

NE edge of ck-side % of salmon-coloured phyl. er; dently rusted fr greenish-cream. NWst ls. exp. is 25' NE. An 8' minz'd band just to NE is prob. middle one noted above.

④2

NE edge of ck-wall % of dirty, orange-grey phyl. Abt 15' NE to ls etc. 20' hr-vert. drop to ck at ④.

- Map across 100% exp'n ck str of @42. Some hard bands in phyl, prob due to sil'.
- Fⁿ is wavy & in part pali & vert. grooved. Some bands of bryt grn & grey phyl.
- TRAA - @43 but essentially pale grn over & down to @43. Abt 40' at 016° fr @ to collar of incline str. in SW etc of ls. 20' of cream to pale grey phyl SW fr @ to edge of %. This is also NW end of % SW of ck rim. This SW edge runs into rim abt opp. @42. Tran. uphill
- @44 on orb. to @44 where cut rd proper ends at small ck. Above this it was appar. built largely on snow. Bryt grn phyl here but grows pale down rd & chjs to grey at 25'. Back to bryt grn at 50', fⁿ 310° & 55W. Grows cream in 15' more downwards.
- @45 Last cut rd cut o/c - rusty pale grn phyl 20' short of 3rd ck. 40' fr bend in rd Bryt grn phyl. ctus for 15' up rd fr @44, then 40' orb. to pale grn phyl which turns bryt grn in 15' then gradually pales to grey.
- @46 On pale greyish-grn phyl. which has some bryt grn partings crossing cl. & so suj. % NE Pale grn for 15' bf this. Some bryt grn bands but mostly pale grn & pale greenish grey
- @47 to edge of % on SW side of ck.
- @48 7' str of ^{sw} etc of ~~grn phyl. band~~ ~~with the main ls.~~ Grn phyl. band, likewise the SW minz'd band, appear to pinch to SE. A little minz'n rem'y here.
- @49 NE edge of ctuous phyl. %, 17' SW of rusty muscovitic qz vein; 20' fr SW edge of ls. %. Abt 5' of clean ls. bf grows rusty & minz'd. Ls. % ctus along str. of 310° for 20' then cuts over 15' to NE brow of rj. Fr this jog pt. 35' at 109° to inner end of cut where ls. on NW side vary pale grn phyl. on SE; clearly a fault here, 075° 80S with drag for S side & Ls. is clean for 5' to a 2' qz vein, except for abt 1' of minz'n adjct to fault. Abt a ft of pale grn phyl. on NE of qz vein, then rusty minz'd ls. for rem'y 10' of exp. ~~Anomalous~~ Ls. & qz vein also show drag to E, in same dir'n as phyl. @ was on l't greenish-grey phyl., weath. ochreyel. A few scattered small phyl. %s past fault line then 40' gap in exps, all across rj., up to a sort of low wall Rj. as such ends here. Tran. wall & find grey phyl., 310° & 55W, almost on str. with cut. Grading in abt 20' SW to predom. pale grn & pale greenish-grey.
- @50 On this wall where SW ~~brn~~ brow of rj. merges into uphill slope. 15' SW of @ get a little brn qz in lenses then bryt grn phyl. as bluff grows higher then ends in 2 sp. rods of perf exp., replete with fine & hyperfine struct - can't make much of it as most little folds appear to be brkn &/or mashed. Can here obs bryt green grading on str NW to grey. Plunge is SE at > 20°. Turns cream & rust-spotted for last 10' of ls etc.
- @51 NE etc of this ls at base of exp. at head of ck basin. -s is rolling around like mod & is def overlain by pale grn phyl on SW. Drag % 40' W of @ plunges 24° SE. Suj. of reverse df on NE etc.
- @52 Top of ls, %, here 8' wide. cov'd on str. up draw & prob. on rj. above. Ls could still go thru.
- @53 Rim of ck gully where enters basin & 10' SE of base of % in it - looks like bryt grn phyl. over to ls.

MA4-054 NE edge of ls % on NW side of ck. ^{ls} At 20' SE to end of % in ck bed. 2' to a fault
Numerous thin phyl. bands in ls % here, some of them probably synclinal.

055 Abt on fault trace @ 10' NE of SW cr. of ls.

056 SW etc of same ls, prob. offset left 15-20' on another fault striking abt 055; butts
against same kind of bryt grn phyl. seen in perf exp.

057 NE etc of this ls, against mostly bryt grn but rust spotted phyl. Unfortunately ls is
poorly exp. betw draws, so can't prove 2d displ. Mostly bryt grn phyl. down draw
of 056-057 to 10' short of 047, where largely pale grn.

MA3-058 66' at 091° fr 027.

Note: from 059 to 066 notes are 1 number behind p/E sheet;
from 070 to 092 " " 1 " ahead of " "

Sat, July 13

Fr 014 go 55' at 057° to N cr of % of Index ls. 1st exp. of phyl. here gray,
is 30' down ck. Ls is min'd directly across ck fr SW back. 100' at 06° tower
of ls. 30' S to 1st % of buff phyl.

MA4-45 Abt 350' below 045 on cut rd.

015 Roughly, within abt 5' of orig. 015, to further check upper & lower surveys.
Intersect on wedge tent, 03, fr A3 & A5 & prove discrep.
NE etc of Index ls is 65' fr inner end of cut, just NW of fault.

MA4-059 NE etc of ls. poorly exp. to SW.

060 10' x 10' % of grn phyl.

061 on rusty, poorly-exp. ls. band, abt 10' wide & ext at least 20' each way.

This ls exts abt 100' NW to 3rd ck, where as everywhere else, all %s stop. Ls itself
is abt 5' wide, grading off to cruddy ocherous phyl. for 20' or so on each etc.
Further away on each side the phyl. is normal.

062 Spot % of calc. ocherous phyl., prob. to be ne in this band.

063 NE edge of ocherous band; gets offset at least 50' betw here & ck bank, 30' away

064 on bldr to % of grn phyl, ext. 20' upstrm & 20' down, 10' wide, rusty-weathering on NE etc.
Anoth. exp. of SE shows rusty-weathering band is 20' wide.

065 on SW edge of 10' x 10' % of NE ocherous band; almost ls under 0, phyl. to NE.

066 cr of an upper bench.

Thurs, July 18

Rtn to Index basin camp af rains & try find p/E mistake.

Run tape & Brunton with tripod fr A4 to 053, thence to 054, 052, then reshoot with p/E -
error in 054, others close. Reshoot 056, 057. Find farther sugg at 052, 54, &
esp. 057 for % SW. Also reshoot 059 (Blair's 60) at NW tip of % of this ls, str. size.

MA4-068 NE etc of this ls, where rj drops off twd cut rd. Ls is prob cut off by a fault a few
ft to N; most likely str of fault is 11 steep rj end, or abt 11 A4-068 line. Phyl. to NE is
more or less on str to NW is mostly grey. This ls would prob reappear abt on str with
ochre band if there were any % NW of 3rd ck.

Notes 1 pt. ahead of pl^{te} heat

- side % of 043 ends 35' NE of 046, which starts a new & higher one 37' NE of 046
 NE etc of ochre phyl, mostly with grey phyl, as proj. 20' along str. fr dk bank,
 " " " " " , where an 8" qz vein follows diag. fract. running 265° vert. 8' SW to
 ls. Interc. grn. phyl. 13'-20' across str., then more massive carbonate rock, sp. 53, to end of
 % at 33'. % is 8-10' wide & runs 190°. ochre band seems cut off SE of here,
 mostly of a rather harsh grey phyl. as climb to 066 (Blair's 067). This grey ctus are
 small exp. (might be float, but seemed bedrock) of calc blk sl. This grey ctus across str
 to SW edge of draw up fr 052 at 072, where a little brn qz in pale grn, rust-
 spotted phyl. Mostly brnt grn, then pale grn phyl. NE across this sloping bench.
- July 19'57
 Cumu. 4, warm. Pl^{te} SW & S of Index strippings.
- 070 Base of % of grey to blk chly sl, obviously Triune, fr 315° 83SW 7' NE to ^{spot} small exp. of
 silky, harsh-grey, rust-spotted phyl., then 4' more to 8' of ochre phyl., sp. 54, followed by 2' of
 dioritic rock, sp. 55, which seems to grade to the ochre rock, & finally 8' of coal-blk
 chsl on SE edge of snowbank. SW (main) chsl. is silty to gritty & has some rusty partings
- 074 Ctc of blk chsl. & pseudo-d, abt 10' fr gen'l base of %
- 075 Base of % of blk chsl, here grading grey. Ctes are 2ing sly up hillside. 60' SE &
 just abt on str with last exp of ochre rock, 8' wide. If there is a fault here it
 will be 30'-60' NW of 0.
- 076 Up on Triune grey chsl. Corngs on f" surfs. plunge 14° SE. Prob close folding in these
 sls, as suj. by ^{3-4 ft} qz veins & by relns. of 2 partings suj. of cl & p. ctuous % of blk chsl to 077
- 078 Base of % at 5' of ochre rock. 38' due N to 10' x 10' % of blk chsl. 25' E to Index
 Ek W. Base of % swings up over ochre rock 15' NW. Rock on SW is blk to dk grey chsl,
 consid. cut by qz
- 079 NE etc of ochre rock, agnst a foot of harsh blk phyl., with 5' of blk chsl exp. to NE here
 & 15' in ck bed. 18' of ochre rock exp, but SW etc. can be only a 'or 2 away.
 Fr float & fr distant obsv'n there seems to be a sim. ochre band at Triuno-Aja etc.
- 080 E of exp of ochre rock, 5' across str, 20' N, on NE edge of % of dk grey chsl. Snow
 patch betw 079 & 080. Either the ochre band noses out bet next % lobe, 50' SE, or
 it is offset on a fault; only place to put the fault is up a small ck gully, abt N-S.
 This 2d lobe of % exts abt 30' past proj'd ctuation of ochre band, all blk chsl.
 30' farther SE the blk chsl lobes another 10' NE.
- 081 on top of this 2d lobe, on E of ochre band, now 6' wide with blk chsl on both exp, ctes. could
 fr here for abt 30' to NW face of lobe, where all blk chsl on str. Appan. there was another
 place to put a fault. Abt 30' of chsl to NE. Prob. plunge - under of ochre band abt 30'
 SE of 0.
- 082 N cr of % of Ajax. % of Triune. 90 to 150° SW, mostly plunging into bluff to SE.
- 083 NW face of bluff of blocky grey chsl, 10' NE etc with pale d, sp. 56. On str with
 Ajax across draw, so a fault in it. Rock face str. 030°, with marked grooves & striae
 plunging 10° NE. % axis in blk chsl. 25° NE of 0.

TAA-084

July 20 '57

TAA-085

N cr of this % of blk chsl, at 10' runback ^{at} 20' SW. Growing a bit gritty here. Camu. 7, marm. Ctn p/te S of Index. Show Biff Reed around then etc.

SW etc of new ochre band, at base of %, which is over here fr 50' SE of 081, over dk grey chsl. Uphill a 4' band along this etc grades in 20' to fresher role, sp. 57. Actually SW etc is 10' SW of 0 & 8' SW of grn band. Another grn band 25' NE, sp. 58, coming over to let in etc to SE. Struct. obscure in ochre rock to NE, tho it has relics of grn in it, but def an etc ings. 10' NE of etc at 086. Sp. 59 of gs at etc. Abt 25' across gs. to more ochre rock, ~~at least 20'~~ ~~wide with NE etc not exp. 15' wide to etc with pale grn phyl.~~

087

Base of small bluff, 5 fr edge of exp of rusty gs (situation of ochre band) 9 10' fr ctuous exps of ^{grey} chsl on SW. etc with pale grn phyl abt 60' NE, after which rocks are thrown into such close small folds that etc. runs effectively horiz along bluff at this level, grn phyl strat. below.

088

Last s/c tail of rusty gs going NE at this level. Cross abt 60' of pale grn phyl. to a pass. route up bluff (if ever needed). 25' NE of 0 is a 3' gs veins at a ^{to here} s/c NE dips. Follow SW etc of rusty gs up bluff abt 40' horiz fr 087, then lose it in brush then bound talus slope above.

089

W cr of % of rusty gs; good little s/c almost on str 20' SE. No exps for ser 100' SW.

090

NE edge of % of rusty gs, 25' fr N cr. No % for at least 100' NE. Vis. closely folded across to here. Fault could pass under little slide basin to NW, except rusty gs does not appear to be offset.

091

On rusty roles, 8' fr NE edge of % Manage to scale bluffs to

092

approx. SW etc of rusty roles. 20' each way resp. to % of Triune & of roles.

Needed

Sech fr. SW is to ochre band, up bs. Index ch W, both lith. & struct. ✓

More data on limits of " ", at 060 & 070, also 091, 062. Any % SW of 01 & 02? ✓

Sec'n fr Index to Index ch E abt below A3 } fr A3

Pick up " " SE of fault.

" " spot % of ochre band away up slide gully above 052 & 072

Any % betw 066 & 086?

Can we wiggle fault thru Triune % SW of 085?

Look at base of Triune % where 3rd ch comes down. Also SE to 073, for S Index, ✓ fault.

More data on cleft & Reed's faults & on pale d.

Sideritized ⁹⁵ may be intrus. because (a) sand beneath Triune is disctuous

(b) Band nr Index appears to be anti-clinal, but does not reappear to NE.

Last exp. up this way is of same rock as sp. 66 at 35' NW of 066. Bound or free talus above 066 to Triune bluffs, round fr at least SW to SE. Except, 28' at 120° to SW end of $\frac{1}{2}$ narrow % of ochre rock in small gully, ext. 12' to etc with bryt grn phyl & 18' to end % at 050°.

July 23 '57

Rain last ev & overnight. Cumu .8 morn. Clearing SE fr $\Delta 4$.

$\pi \Delta 4-098$ On bound talus, 5' SW of % of bryt grn phyl which turns banded in 10', showing good df for % SW; in 20' more grows dk greyish-grn, resembling Spider fm. A little grey here & there, one narr. band in trot of %, 25' fr NE edge of %; also a little pale grn; but essentially all bryt grn phyl. % exts 115' NE (space), ~~at 30' wide~~ & is more or less ctuous over $\Delta 4$ area to tip of 099, largely bryt grn phyl, but with grey growing sly more abundant uphill.

099 A narr. patch of bryt grn phyl exts 15' SW.

0100 In gully %, 10' wide, on 2' band of ochre rock, flanked on NE by 6' of pale grn phyl & siliceous phyl, then 4' of bryt grn phyl. To SW have 25' of grey & brn gze mixed with grey phyl to end of %, then spot % of same 10' farther up gully.

0101 NE etc of a dk grey, t/b ls, with a bryt to greyish-grn phyl which it seems to overlie, at top of % 45' past base. At base 15' of this grn phyl, then 15' of mixed grey phyl. & grey & brn gze to tip of %.

0102 Swedge of above %, on a dirty grey-grn phyl, sp. 67, 15' fr SW etc of ls. seems to be ρ -fol for % SW here. \therefore it may be that ls occupies a % ^{at etc}. Fⁿ here is 305° 80' NE, but whips over 5' NE of 0. 20' S is a small spot % of the same dirty grey-grn rock.

Tran. base of bluff NE of 088:~

0103 Mostly cream phyl. For 50', where df for % NE, then 10' of dirty grey-grn, then pale grn. Prob. % axis, on phyl. ls, ext 4' NE & 7' SW along face of bluff. Good indons of % NE for just 60'. All pale grn or cream phyl to ls, but turquoise-grey on NE - % might be faulted, but there is no sign of a break in prof exp. 12' NE to prob. % axis, 23' to re-emergence of phyl. at end of bluff. Face of this bluff is a little too NW to be on str. of gully fault. Going SE the % band of ls is upraised in 60' h. & r to the same width; presumably responsible is a prom. x-fract. Poss. further upraised to SE. Sp. 68 of ls in SW etc, 69 nr core of % up edge of bench.

0104 NE etc of 2d band of phyl. ls, which may also be anticlinal, with grey phyl. just across 2d big x-fract.

0105 SW etc of 2d band, 10' fr 1st band.

0106 ^{5' SW of} % of grn phyl. pitches abt 50' NW of 0103. NE etc of combined bands, more or less heading for 0101.

July 24 '57

$\pi \Delta 3-0101$ Abt on SW etc of a sort of ls, more or less exp. in ck gully 5' back, with pale grn phyl on SW, showing df for % NE. 20' NE of 0 to end of gully %, still cradly ls 15' SW of 20' x 20' % of bryt grn phyl.

$\Delta 6$

July 22 '57

K. photos 34, 36

35

Checking

Camp fr where 3rd ck crosses catrd. 34 spoilt by being set at 10'. * P. 134

Spine Mtn & MM showing fr just up cat rd.

Abt 8' of palegrn phyl SW of SW is. on SE side of fault, then brt grn, with some pale bands & lenses, esp. opp. 54, with poss 1 fault 5' farther. Minor % in this 8', plunging SE. Many df for % SW to here, but they plunge NW, so may be rel. to the fault. Phyl ctas brt grn across 1 fault & for at least 20' beyond; little struct. to be seen here. Higher up to SE there is a small % NE of 1 fault, almost on str with %.

Again stracts appear to be lacking SW of 1 fault. A minor lens of brn gze, 10' fr it, shows df for % SW. Poss % abt 20' SW of " ". Palegrn lenses in brt grn phyl here. Chjs to pale grn 5' past opp SW etc of ls. This lasts 10', succ. by 15' of sil., rusty, brt grn phyl, then blk phyl, much inj by gze & turning cherty in 10', sp. 60. Then 10' more of blk phyl, chty blk phyl & brn gze to etc with dioritic rock, ^{sp. 61} abt 10' NE of ochre band.

tx photos: 13

Silver chief pk & trail slide

14

Ophir Lade Mtn & Badshot Mtn.

15

Lower MM rj & N slope of BH basin

} Fr up on ochre band is Index ck w.

061 is 45' fr SW edge of exp of ochre band, ^{here dioritic like sp. 61} No % to SW of it NW of Index ck w, until base of Triune bluffs.

Prom. fract., 050° 70NW, cuts Triune at base of bluffs & in line with NW end of % of ochre rock - at 35' at 290° fr 073. Some slyt drag in sls for rt-hand mov't.

M 44 - 092(b)

Marked drag for l-h mov't at base Triune %.

093

Intersec'n of SW etc of rusty gs with a fault, 055° 80SE. Abt 3' of Triune exp. in line with gs across fault. Good drag for l-h mov't. 8' of rusty volcs exp. ^{tr/tr} Rusty gs. exp is 10' long, ending at another x-fract, dragless. NW of this str. ^{gs} swings tort, sug. r-h mov't wtd.

094

Base of % of gray chsl, 320° 70SW, 10' bf runs up on SE side of broad brushy drag zone of x-fracts betw 093 & here, but no def. fault. At least 50' of chsl to SW.

095

SW edge % of NE ochre band, where meas'd to fr 061. 66' at 215°/level, to SE end of 5'x 15' % of greyish-grn phyl, sp. 62. Thence along 175° line. 7-17' - 5' wide % of salmon-coloured phyl, sp. 63. Fr. 312° 75SW. This is in ^{gully} connect'g 3d ck with snow slide below 073. 3d ck starts as spring 40' N.

096

On sly alt. gs, ^{sp. 64} 6' fr SW edge of % & 2' fr etc with ochre rock. Also 10' fr 5' tip of %. SW edge cuts over to ochre rock to NW edge of %, 50' away, just across ck. The rusty-went'g phyl. of 061 is clearly the siliceous phyl. SW of 095.

097

10' SE of 8' wide %, on projec'n of NE etc. of rusty sil. phyl.; here only 8' wide with 3' of pale grn phyl. on SW to end of %. Tip of % 35' NNW of 0. ~~0~~ A Brt greyish-grn phyl to NE looks volc; lighter-coloured lenses could be sheared-out frags. Slyt gap betw ck exps 7 10' wide small cliff. Sp. 65 is extreme, lenses are calc.; tx-16 photo 50' NE of 0 start getting into what looks like sly alt gs, sp. 66, but change is gradual & oscillating. 15' more to end of exp. Abt 30' farther NE hit a small % of siliceous lvt greyish-grn phyl.

A gully % of grey phyl. starts 50' at 020° fr Δ G.

MA3 - 0108

This gully % comes out on top of a small bluff, still grey phyl.

0109

10' up face of this small bluff, outcrop of grey with lgt grn on NE; Fⁿ here 305° 78SW. ^{Grains qzse to here.}

0110

N. cr. of this small bluff, on ^{also 10' up face} greyish-grey phyl. Show internal fr 0109 as grey crossed with both lgt & dk grn. Actually % ctus 15' to E, heavily qz-ridden for 10', then back to greyish.

Some 40' ESE of 0 a small ck gully is cut in grey phyl., gritty & somewhat greenish in places, in part due to water flowing over, sp. 70. 30' gap, resuming 60' fr Index ck E with a little bryt grn phyl, then grey ctus. Phyl. finally turns bryt grn at Index ck E, in ctuous etc up SW side of Little Midway. (This jc & foot of Little Midway to be mapped in fr AD) Fairly good exps. of grey phyl. SE of this ck gully. (Note there is another ck comos in opp. top of Little

Midway).

0111

Small % of mostly bryt grn phyl., rather qzse, ext 8' to S tip & 15' to NW end, where 35' across 25' to E of Index ck E, 20' to grey phyl. bluffs on its SW side.

0112

Just across prom. dry gully, on % of grn phyl., ext. 5' NE, 10' SW, & 40' in each of other 2 dirns. Fⁿ 310° 75 SW.

0113

20' at 190° fr SE end of 7x10' % of grey phyl. Almost ctuous phyl. % to NE up a small ck & on both sides, almost to ls. %.

0114

Up on small hump of bryt grn phyl. ext. 15' NE, 5' SW, 15' SE, 30' NW.

A7

On top of Midway Hill. Slide on 3 sides. Midway Hill itself seems to be part

0115

of a breached moraine. 0115 is top of % on NW slope, on siliceous lgt grn phyl.

The prom block of ochre rock to NE is a slide block.

0116

On % of 0115. Fⁿ on SW edge 300° 70 SW. - 95' across str. Mostly lgt greyish-grn phyl. Sug. of df & P-fel at 0 for % NE. 20' NE edge % but top of another starts a

0117

further 20' NE. Essentially bryt grn phyl. to 0117, then grey.

July 25 '57

clear & hot. P/E on NE side of Index Basin.

MA3 - 0118

Highest sw-back on Petersen's, which ends shortly. Also resumption of pack trail.

0119

Base % of clean ls, ext. 20' SE 30' NW. Base runs 25' uphill then 40' SE to timber.

All clean ls, internally much folded.

0120

NE etc of ls, with bryt grn phyl. Abt 90' to SE edge of % lase. Only grn phyl. is ctuous thru cedar tangle, but small exps of ls are scattered thru.

0121

5' SW of SW etc of ls, with cream phyl.; start of new % area, 5' fr base. This phyl. may be anticlin'al, for 60' SE part of it ends abruptly agnst ls, with no place for a X/fault above. 20' more SE ls. bands start coming in on SW of phyl.

0122

on ls 3' fr base of % in 10 to 20' wide rundown of 20'. 10' NE to 10' band of phyl. Phyl. varies fr cream to lgt grn or gray.

0123

NE etc of ls. abt 30' NW of Silver Chief draw. Oddly, phyl. bluff 15' NE shows good df for % NE. Abt a 30' offset to left abt 50' SE.

0124

NE etc of ls in draw % . Str. has swung to left here, 310° 75 SW. 1st strct in ls is m a/c. etc ls uphill 50' to cedar tangle.

- MA3-0125 On ls at base of % which exts 70' SE & 60' NW, 25' past pack trail, & 35' past w 1/3 of 10' x 30' % of ls. P. 137.
- 0126 In timber, 15' left of sw-back in S-chief pack trail.
- 0127 30' short of base of ls %, ext 15' NW to cedar tangle. 25' beyond 10' left of sw-back in pack trail.
- 0128 Sw-back in pack trail.
- 0129 " " " " SE edge of timber, nearby, is start of talus slope, so no more % of the lowest ls.
- 0130 Base of small bluff of pale grn. phyl, base 2' ing sly. left of str.
- 0131 40' rt. of sw-back in pack trail. 70' NE to lowest of closely-scattered %s of bryt grn phyl; this dips NE, so slumped, but prob not far. Turns grey 15' bt ls. etc. of this phyl with middle ls., quite th/b at etc. % ^{etc} abt 50' NW here then st. uphill.
- 0132 10' short of etc of clean with dirty ls. on NE.
- 0134 8' " & 10' left of sw-back in pack trail, 20' past tip of phyl. % of 0130, & abt 50' short of base of % of clean, lgt grey ls.
- 0135 End of more or less decent pack trail in slide; scramble above. Abt 10' past etc of clean & dirty ls in end of % 25' SE.
- 0136 Sw-back in pack trail on NW edge of talus slide.
- 0137 Pack trail lvs. slide & Lsup above bluff which is above 0133. Str. swings to 270° 50' up pack trail. This explains next 0
- 0138 On pack trail 5' fr etc of 0133.
- 0139 5' short of sw-back in pack trail, amid scattered exps. of dirty ls.
- 0140 on gradational etc of dirty ls with clean ls on NE.
- A 8 NE edge of bluff % of middle ls & 15' short of pack trail.

July 26 '57

Ferguson: Kodak film, also roll of xx

Crawford: 40' of haywire, nuts & bolts for rod

Take camera & rod down.

Patch grn pants.

- MA3-0141 Abt 5' short of NE etc of lower ls & 10' short of % of pale grn phyl. 15' past base of % & 15' ^{from} past SE tip of ls. exp.
- 0142 Hump of greyish-grn phyl. on SE edge of silver chief draw. Ctuous exp. of phyl. up draw.
- 0143 Abt 35' short of SW etc. of middle ^{left} ls on SE edge of draw. 01 is 20' fr draw. On bryt grn phyl. here. Abt 20' offset in ls. etc on NW edge of draw.
- 0144 ~~20' short of~~ base of bluffy % of dirty ls; thence 110' along str. to W cr. of % ^{cont'd} etc. with clean ls in draw, but unable to get over for enough to see table. A little clean ls in very base of % to sug: 01 is abt on etc.

July 29/57

Cumulu. 4, warm.

Try to climb st. up fr. Index ck E to A3. No % until hit lower edge of scrub timber as slope gentles. Mostly grey phyl, somewhat silty, some bands shy greenish; with some thin pale grn bands. Upper 2/3 of this secn bf ls. is gristly grey to brist grn, gritty in part. Come out 200' NW of A3.

311° fr A3 to DDH HT 1-2, also 58' at -25°.

MA6-0145

8' at 027° fr 0107.

0146

5' short of ~~base~~ ls % in next ck gully, 5' wide; base is 10' NE, start of grn phyl. % 30' farther NE.

0147

str etc of ls in same ck gully, with cream phyl which exts another 20' up ch

0148

SE tip of 5' X 30' % of phyl, grey on SW, cream on NE. Bound talus fr N thru SE to SW fr here.

0149

SW cr of 6' X 10' cut in well min'd ls. etc with cream phyl. is on edge of % 20' SW

0150

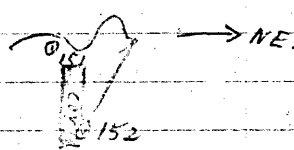
15'-23' at 265° to a 2d cut in min'd ls, here forming SW edge % area. 25-35' at 110° across small shaft in min'd ls, constituting SE tip of % area. Tip of 15' wide % of grey phyl. is 50' at 085° fr SE end of shaft. This passes 50' NE of 0150 & 45' fr 0149. Pass a little brist grn phyl. exp. betw grey phyl. & ls, tho maybe float. No ls. exp. NE of cuts & shaft.

0151

NE etc of ls overlying brist grn phyl. 8' to SW etc, with grey phyl. 20' h & -10' NW to base %. 30' SW of 0 to W cr of %, still grey phyl. % does not reach NW base %, in dec'n % . NE limb is 12'-25' NE of 0 at base %, & wrapover of grn. phyl. is 25' ESE. N tip of % is 40' NE of 0, with 20' rundown 60-80'. All grey & greenish-grey phyl.

0152

NE edge of %, on ls, essentially on its NE etc. Prob. < 20' wide here. 25' band of cov'd grn SW fr 0 to grn phyl. %



0153

On 10' band of brist greyish-grn phyl. connect'g above % with bluff %.

0154

Base of bluff %, on NE etc of ls, here 15' wide.

0155

1' from plunge-under pt. of ls up in bluff face. Wrapover phyl is brist grn, but grows grey 10' NE.

Fr 0154 base of bluff runs 35' NE then falls back in 2 steps to 0156.

0156

SW etc of ls in base of bluff %; 10' back brist greyish-grn phyl starts to wrap over. 30' SE start a line of plunge-under of the closely-folded ls, ending with its

0157

disappearance at 0157. This then is a 2d, complexly folded, apt'clinal band of the ls. 0 is also base of bluff % at 25' ^{cut} back along str. Overlapping phyl. is pale grn & rust-spotted here. Base of % runs 25' NE to etc of a 3rd ls band.

0158

SW etc of this 3rd band of ls at local top of %. Boulder td above, but some % in gully up W side main talus terrace area. Top of % runs down 5' NE of 0.

Base of % < 20' SE in 30' NE to NE etc of ls, which runs 30' SE to top of %. Fair of at both etc for % NE, so this is a strat. band. Abt 3' of pale grn phyl on NE, then grey

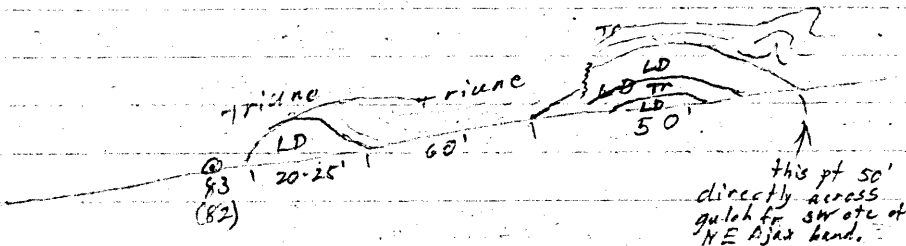
July 30 '57

clear at first, gradually clouding over; warm after cold night.

Shower 5PM

P 139

Up Ajax cutoff gulch: sketch of SE wall:-



etc of LD may x/c sly, but this could also be due to tiny faults

TR 27-0159

SW etc of Ajax, overlain by siliceous lgt grey phyl, un-Triune-like, dipping 19° NE, that's gentler than hillslope. 20' to end 1/2 of gulch, then 30' to SE wall. Rock grows very Triune-like to SW on NW side of gulch. etc could be a fault; it seems open, & there is no transition to Ajax.

© 160

NW wall of gulch, on ^{slightly} fault dipping 50° SW, 2' short of Ajax gce, & 2' NW of gce vein which seems to occupy gulch fault. - On SE side Ajax comes in ^{opp 1/2 way bet 100 & 200} ~~opp 1/2 way bet 100 & 200~~ & abt 100' back fr gulch walls, then floors hillside up to SW, ~~keeping the road level~~. Actually this Ajax appears to be a wall skin, a lens within fault, which exts. 40' up gulch & is sep'd fr a sim 20' lens by 5' exp. of siliceous phyl, which can also be seen over top of both lenses. Abt 70' fr © to rock wall at head of gulch, all phyl, cut by 2 narr. fract., abt 15' apart & diverging. Good slickensides up NW wall, dipping gently NE & indcg NW side down.

X photos

pink flowers on talus.

Big cave may be on an 1/2, but fⁿ dips steeply NE thru it; lgt siliceous phyl. here & for 40' SW, with no prospect of Ajax beyond. Nor is there any Ajax over to Biff's fault all siliceous sl & phyl. sizeable thin 1/2 at cars, with more folds over nr Biff's " ". Pass flat fault at cave floor, but uncertain. Cave is at NE end of line of ragged snow cing up. Nor is there any Ajax NE of Biff's fault at lower elevs.

TR 27-0161

Re-std of © 90 (89)

© 162

Top of 1/2 in gully, on lgt greenish-grey phyl. Chjs to ^{top of edge of talus} lgt grey 20' NE.

© 163

E cr of 1/2 of bryt grn phyl. in talus slide, ext 30' NW, & 40' SW, where 15' wide. Fr it cr. there are scattered exps of phyl. down edge of talus.

July 31 '57

cunn. 35, warm with cooling breeze. 1/2 E along SW side upper Index basin.

TR 27-0164

Base of 1/2 in gully, on ochre rock. Base is brokenly ctnans at this level & horizon SE into snow slide, but 10' NW of © it runs st uphill, for 20'

© 165

8' short of © 91 (90), at cr of 1/2 of rusty qs. Pr here base runs to above 20' at

© 166

Base of 1/2 of rusty qs & ochre rock in snow slide 30' run up just to NW. This seems to be just abt NE etc, looking at bluff face to SE

© 167

On sheared, partly siltst gabbro, sp. 71, 5' past etc with rusty qs 35' SW to etc with sheared fresh gabbro, sp. 72 (5 pl.), which weathers blocky & lgt grey to lgt gm. The 2 gabbros

may be in fault etc. The etc. of sids'd g. converge to NW.

- TA7-0168 NW edge of small lobe of % in snow slide; on sheared fresh gs, sp. 73, 7' short of ocherized gs.
- 0169 SW etc. of 10' band of blk phyl., sp. 74; 10' E of snow slide. 20' SE this band is displ. 10' rt on fract. running 200° vert. Appears to be more fresh gs on NE, sp. 75.
- 0170 etc. of another blk phyl., much inj. by qz, displ. at least 3' here by fault 095° vert. All gs. betn. blk phyl. bands, sly rusty. Fr too is only 10' wide & has 10' of lylt. greyish-grey phyl. on NE, which plunges under it 20' SE.
- 0171 NE etc. of this blk phyl. band, here 10' wide, & 30' fr its plunge under gs. Another, 3', band of blk phyl. in gs. 25' NE of 0. A base of % maybe said to have std. 30' SE of 0169, with 170 & 171 just above it.
- 0172 SW etc. of 4' of blk phyl., passing to NE to hard serp. sch, sp. 76. Dips are gently NE here, but steeply SW only 6' SW. Apex is cov'd for some dist. up hillside, but gs on SW shows df for % NE. Abt 15' of this serp. sch (prob. alt. fr the blk phyl.), then 10' more blk phyl., showing good df for % SW, then gs. Prob. % in gs abt 50' NE of 0.
- 0173 Local base of %, on % in siliceous blk phyl. that approaches geo. Phyl. exts 6' NE to 10' talus slide & 4' SW to gs. Sp. 177 shows what happens to phyl. in core of lylt. drag etc. Local base of % runs 10' SW of 0, thence 40° at 330° . The talus draw on NE is prob. the site of a small zone of str. faulting, dipping 45° SW, or gentler than ρ . Phyl. on NE is mostly grey-white & augenized, with lenses of bryt grn. Judging by band in str. of phyl. this fault may curveright coming down fr opp 0 to gen'l base of % resuming 10' E of 330° . Rock at gen'l base of % for 25' NE of draw looks rather like gs, then chgs to an intensely grn phyl., sp. 78, which may also be volc. in origin.
- 0174 Base of same %, 10' past band to st down across str.; on etc. of above bryt grn phyl. with pale grn, rust-spotted phyl. Fr? here 325° to 65° SW, pale grn phyl. is 25' across, with 5' band of bryt grn in centre; bryt also follows, weathy almost greyish. Lenses of harsh grey phyl. in pale grn. 3' band of harsh grey 15' NE of pale grn.
- 0175 L of %, still on grn phyl. Fr here base of % runs 75° at 060° - over bryt grn phyl. except for 5' of grey at 40.

~~July~~ Aug. 157

Var. cloudy with freq. showers. Ctu pit on SW side upper Index basin.

- TA7-0176 Fr pit 75' fr 0175 base of % follows f' in bryt grn phyl. to 0176 at head of talus cone. 15-35' NE of 0 phyl. is pale grn to cream with brn qz. lenses up to 1" th.
- 0177 Bryt. grn phyl. on NE side chgs to grey, qz. in part, $\frac{1}{2}$ way down to new cr of % at 0177.
- 0178 Fr here base of % follows str. SE to 30' WSW of new cr at 0178, follg an err. pale grn band, with intensely grn phyl. on NE. Rock at 0178 & up rj dips gently SW - prob. slumped a little. Fr 0178 base of % runs 40° at 080° then Ls up W side of Devil's slide.
- 0179 to 10' NW of 0179, then falls back 35' to rj; bryt grn phyl. at 0.
- 0180 On rubble-stream rj, abt on etc. of blk phyl. on NE with rusty scales on SW.

Looks like there is precious little Triana betw rusty qs & Ajax at top of bench slide & SEward; the little bit there is on rj up fr @180 looks like it might be pretty well covered up. Rusty qs must be at least 500' wide at this slide.

MAY - @181

On 6.5' of calcitized ls, phyllitic in centre; P. 297° 50 SW. Mixed pale grn & grey phyl for 20' SW, then bryt grn for remig 60' to cr of %. This is 1st base of % at head of basin. 15' of grey & minor pale grn phyl on NE, then bryt grn. Sp. 79 of ls.

Whole ls band appears to be of for % NE; the more conspic along SW etc. ^{Bryt} Grn phyl on NE is only abt 30' th, foll'd by grey for abt 60', then grn for 70' & what looks like a 5' of grey phyl, 20' wide at base %, then bryt grn over & down to @182.

@182

Base % chjs fr running almost st. down str to almost NE across it.

K photo 2

Small blue flowers agnst red hat.

Cross over this nose of % to avoid wading thru snow. Phyl. chjs to grey at 100' then dock to grn at @183, which is 170' past base of %. 25' NE there is 8' of grey grit, sp. 80, then blk phyl, turning grey in 5' & grn in 15', q-se. Turns bryt grn agnst.

@184

This % ends agnst partly bound talus 50' NE of @, base now curving up to here

K photo 3

Small pink flowers agnst red.

@185

W cr of a higher %, rising to a bluff to NE, on bryt grn phyl.

@186

On top of this bluff, 15' fr edge; on SW etc of side'd grn phyl. or qs, sp. 81. 4' NE to 5' band of ls; this appears to pinch in 25', then abruptly widens & is still 5' wide at end % 60' SE. Fr a 1/6 phyl. ls, 2' th, on NE, pass over 8' of side'd qs, 8' of cruddy, rusty ls that appears to ctn some grn phyl, then 20' of clean ls, abt 3' of cruddy ls, & 16' of side'd qs or phyl. to 1st ls. band on SW.

cr of % is 50' NE of ls of @158, mostly bryt grn phyl.

16
19
39
47
55
57

Sat, Aug. 3/57

Glorious AM, with warm front slowly moving in fr SW & called 'g' cold front. Rtn fr Ferguson & clean up betw @158 & @175, then start on NE side of basin.

MAY - @187

5' cr of 25' wide % band of bryt grn phyl running up str. fr cr NE of @158. Abt 30' fr wedge of talus slide, it having crossed % band ntry 1/2 way down to cr " " ". Fr cr nr @187 go 48' at 215° to 1/2 of NE edge of 20' long % of phyl. ext. 22' SW across d; pale grn for 3', grey for 10', bryt grn for 9'.

@188

Base of %, ext. 39' at 315° to cr. scrub balsam hillside beyond, running NW to bluff & W to cruddy ls of the upraised %. % is abt 90' wide at NW end, all bryt grn phyl, 325° 55 SW. A 20' jog down of % 15' SE of @, lasting 20', still on bryt grn phyl.

@189

Foot pt of 30' jog down in base %, still bryt grn phyl. Fr ^{th. 30'} here base essentially ls rt across

@190

str to @190, forming top of ^{talus} slide. Fr @190 SE end of % texts up edge of talus slide almost to % of @163.

@191

on %, 10' past N cr j; base runs 50' along str SE & fr str. < up hill. Mostly grey phyl in last 10', but bryt grn to SW, with thin interc. bands of grey & blk grn. 20' SW of @ is a 15' band of pale grn phyl. Thence mostly bryt grn phyl to < of %, 10' past 10' rt of @192.

@192

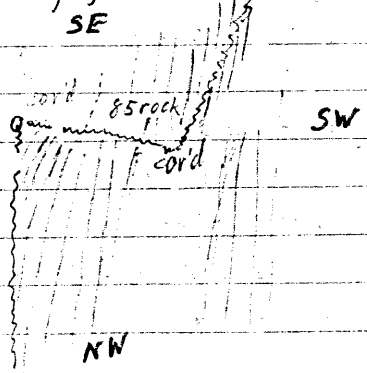
Abt 20' sw of @192 there is a good bit of brnsh-grn phyl, sp. 82. Sps 83 & 84, 40' s of @ are prob. transitional to gs. If so, etc. is migrating NE by df as go SE. 30' re-entrant in edge of % agnst snw 30' ssw of @192, 40' wide, otherwise edge runs to nr @169. To sw there appear to be tails of lgt grn phyl. in the gs. Sp. 83 may repr the blk phyl. at etc.

MA7-@193 Top of lower %, on bryt grn phyl.

@194 E cr of " " " " " "

@195 NW tip of % of bryt grn phyl, widening to abt 50' in 20' SE. 45' NE across talus-filled gully to base of main % on this side; rather lgt grn phyl. for 6', then gray with rock of sp. 85 in it. Also a spit % 50' NN.

@196 Intersect (proj'd) of X-fault, 055°85'SE, with str fault, 319°28'SW. The str, essentially, fault is betw the dk grey phyl. on SW & lgt grnsh grey to grn on NE; var. mths sug. SW block moved down NW at abt 20'. The X/f has bot. rock of sp. 85 on str. SE with dk grey for abt 10' SW of @, whence dk grey ctus SE on SW side of 85 rock. But this etc. is across str, so it is also a fault.



Aug. 5 '57 Cumu. 75. P/T NE side of Index Basin

Define a complex memb. abt @196, consisting of closely interlensed blk phyl. of volc- looking rock of sp. 85, some of which is consid. side'd. etc with bryt grn phyl. on str. is sharp, but seems gradational on NE.

MA7-@197 etc. of blk phyl. of CM with bryt. grn phyl. on str, exp. in 5' x 10' lobe of %. 20' fr it across talus draw to % of @195. Actually, this % of @195 has 10' of CM on NE edge, to abt 30' NW of @197. It is closely df, showing good fold S, sp. 86, & appears to be synclinal. NE etc of this 10' band is 6' exp. 15' SE of opp @197; rock on NE is an unusual type of phyl.

@198 bryt grn phyl, sp. 87. This skin of bryt grn phyl. plunges SE under CM, which here lobes out 10' on NE edge of % of @195. Still 10' fr SW etc. At same time a synclinal band of bryt. grn phyl. starts 5' NE of @.

@199 SE tip of % of @195, on CM, 5' fr % band of grn phyl, 10' fr SW etc (left proj'd); 30' NW % lobes out 30' to exp. 30' of bryt grn phyl SW of CM. 45' NE a skin of % grn phyl. comes in on SW side main %

@200 NE etc of main CM band; bryt grn phyl. on NE shows good df for % SW.

@201 cr. of main % of 25' recess in small xldraw, on CM. Appr. no offset in draw, etc., even of grn phyl. skin, proj'g thru.

M A7 - 202

SW edge of % of 201, which exts 10' farther SW 1/2 way betw on aggl. gs. of CM sp. 87; 10' short of cr. of % at mouth of next draw.

203

6' SW of slyt. % of % which cuts off the 10' of CM which has followed edge since jogover fr 202. On NE is alt 15' of rusty lgt grn phyl. ctg. partings of schlierens of blk phyl., then bryt. grn phyl. with tendency to frags. etc relns seem to indic. CM overlies lgt grn phyl.

204

10' past base of %, 3' SW of CM, & 7' NE of 6" bed of brn to grn qtz in the grn phyl., which shows good df & P-fcl for % NE. Bryt grn phyl. for 25' SW of CM, then mixed grn & grey phyl., quite sed-looking. SW etc of CM is carried consid NE by dip in climbing hill, so it passes 25' NE of 183. This CM band is only 12' wide here & plunges into bluff 25' SE. Proj'g NE etc of 1/2 band of CM down fr base of %, it would be 45' wide at 204. Mostly vels, with a little blk phyl. at extra top.

205

Base of % on SW etc at new CM band, ext. 25' NE to edge %. Edge of next % is 60' NNE, also CM, & ctg frags of blk ls. SW etc of 205 would pass just NE of 184. S ^{same} of next % is 70' at 322° fr 184, still CM.

206

(If we ever get it) NE etc of CM. Maybe faulted at 5' NW. 40' NE the bryt grn phyl. dips to grey & passes into a subdued kind of CM that appears to lie in a %.

207

NE etc of subdued CM band & 20' fr NE edge of %. 35' fr % of clean grey ls. To NW there is 15' of rusty gs betw ls & the 20' of grn phyl. NE of subdued CM.

208

W cr. of above ls % , essentially on etc, as P curves rt going NW.

209

S cr. of ls % to NW, essentially on etc.

210

NE etc of ls: 3' of rusty gs exp. on NE of 0, 3' of clean ls on SW, foll'd by 10' of combined rusty gs & cruddy ls, then main mass of clean ls. % peters out to SE. Scattered exps of ls up ind. bluff % line up & sug. there is no str-slip X-fault in here.

211

SW etc of ls at base of bluff %. A few phyllitic partings in the ls. Rusty gs on SW is much df so is 25' wide at base, narrowing up bluff foreslope. SW of the rusty gs. is 25' of intensely grn phyl., fr. 315° 65' SW (prob = 1), 25' more rusty gs., then bryt grn phyl. to cr. Climb up SW etc of ls to foot of bluff proper, & a No of things happen: add'l ls beds seem to keep coming in on SW; intensely grn phyl. ends, & 2 bands of rusty gs join; then in face of bluff find another band of intensely grn phyl., abt 30' wide, betw = rusty gs bands, & 9 in line with ls. etc. Pick up ls. etc to NE, here unquestionably df for % NE.

212

2' short of SW etc of ls at base of bluff proper; df carries to 4' 1/2 in 1' up. Funny thing is that ls is only abt 20' at base of bluff, with some red of gs on NE. admittedly calc.

Aug 6 '57

Rain let try to work on ls anyway. Sharp draw is not X/f. Might be a fault on NE, as all ls looks like SW limb. In sharp hill to NW ls peters out into gs, not appar. by X-faulting, but just by original substitution.

SW of sharp hill there are a series of $\frac{1}{2}$ bands of ls which P144
plunge under at no. 1 dist. SE.

Tip of all $\frac{1}{2}$ of grey phyl. is ^{at} 200' E of SE pit of SE Inver
showings.

Oct. 5 '57

P. 73

Look at ~~index~~ core

- HT1:- 0-14 $\frac{1}{2}$ - Index fm pale grn phyl. with small sid. lenses.
14 $\frac{1}{2}$ -15 - Dk grn ign-lookg sch., also with " " "
15-35 - As 0-14 $\frac{1}{2}$; banded with darker grn at 16, 23-24; crumpled brkn df 26-35; with flaser-like sid. lenses.
35-49 - Strongly banded dk & pale grn phyl. with some lenses of qz & sid.
49-79 - Rel. uniform dk grn phyl. with fainter banding.
79-84 - Lgt & dk grn banded "; 6" qz vein with minor gal. at 82'
84-86 - " grn phyl. i/b. with ls.
86-94 - cream to buff ls ctg. occas * 1/8" beds of grn phyl.
94-98 $\frac{1}{2}$ - Ls mostly sidz'd but ctg. some ign-lookg dk grn phyl. minor py.
98 $\frac{1}{2}$ -104 - Calc. pale grn phyl.
104-106 $\frac{1}{2}$ - vein qz ctg. small veinlets of py & gal.
106 $\frac{1}{2}$ -109 $\frac{1}{2}$ - i/b ls & grn phyl.; sidz'd, & ctg. sparsely dissem. py & gal. minor gal. veinlets
109 $\frac{1}{2}$ -110 $\frac{1}{2}$ - gal. thickly dissem. in sidz'd ls.
110 $\frac{1}{2}$ -115 - gal sparingly to mod. dissem. in sidz'd ls.
115-117 - thickly " " "
117-124 $\frac{1}{2}$ - gal & py very sparsely dissem. in mixt. of grn phyl., vein qz, & sidz'd ls.
124 $\frac{1}{2}$ -134 - Fairly massive buff to grey ls.
134-138 - pale to med. green phyl. ctg. some small sid. lenses.
138-142 - Qz, sid., & ls ctg. sparing gal. Rusty zones 139 $\frac{1}{2}$, 141-141 $\frac{1}{2}$
142-143 - Lgt grey ls, minor phyl. partings.
143-145 - Rusty sid. ctg. py & some gal. Ends abruptly with gal. veinlet against med grey ls.
145-156 - med grey ls with minor gal. dissem. at 149
156-159 $\frac{1}{2}$ - ground core
159 $\frac{1}{2}$ -163 - Med grey ls.
163-165 - Qz then sidz'd ls ctg. sparing scattered blobs of py & gal.
165-170 $\frac{1}{2}$ - Buff ls with remnants of unretxed grey ls. & widely scattered small lenses of gal & mag.
170 $\frac{1}{2}$ -191 - Pale grn phyl. banded with both lgt & dk bands & flecks.
191-219 - Ditto; widdy scattered blobs of py.
219-246 - Lgt. grn-ish-grey phyl., only sly. banded; py blobs cfa. End hole.

- HT2:- 0-48 - Dk grn phyl. irreg. banded with qz & sid. Consider. dissem. mag 43-45.
48-54 - Unbanded grn-ish-grey phyl.
54-79 - Sly to mod. banded grn-ish-grey phyl. some qz strgrs.
79-84 - Dk grn phyl., med to strongly banded with qz.
84-91 - "porphyritic" "gs" (sp fr 140' in HT6) - sp. 251
91-101 - Lensy dk grn phyl. or gs.
101-142 - fca to sly qz-banded dk grn phyl. or gs. Speckled with sid. 101-103. & 131-142
142-189 - Dk grn-ish-grey phyl. banded with qz. Qz vein 176-177

189-189 1/2 - rusty rock

-194 - grayish-gray phyl. $\frac{2}{3}$ with qz & ls.

-199 - grey to white ls cty some phyl., pres some gal.

199 - ls & phyl. repl. by sil. & mineral with gal.

Index Basin

The Index Basin is a composite cirque carved into the NW slope of Redcliff Peak across Gainer Sch. for the mollic mac mine. Silver Chief ridge rises steeply on the NE side of the basin, & is connected with Redcliff Ph by a narrow headwall arête. On the SW side of the basin the buttress of Redcliff Ph rises in a wall.

The central part of the basin is underlain by mixed red & white rock of the 3rd group. These are overlain in the SW small & on Redcliff Ph by the Triassic, Ogish, Sharon Sch. & Laramie fm. On the slope up to Silver Chief ridge 3 major ^{1/2} c's exp. the Lade Ph ls. at the base of the Index fm.

The principal mineral showings are the white Quail & the Fr., at the outlet to Gainer Sch., the Index, or the centre of the basin, & the Silver Chief group showing on Silver Chief ridge. The first 3 are in a situation of the mollic mac ls across Gainer Sch., the Silver Chief showings are in two of the ^{1/2} c bands of Lade Ph ls. A part of the basin surrounding the Index property was plan-tabled at 200' to 1/2"; circumstances did not permit extending this mapping over the Silver Chief showings, i. they are shown only on Fig. —.

The internal stratigraphy & structure of the Index fm in the Index Basin are imperfectly known, in spite of detailed mapping of moderately good exp., due to close folding & intense squeezing of the phyllitic rock & to extensive alteration of the rocks. The full geological sequence can be recognized in the Index Basin & at the main mine:

- Triassic fm
- Index fm

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INDEX

- Redcliff volcanics, largely altered to chlorite-siderite rock
- Upper phyllites, lgt to med grn in colour, locally grey; thin
- mollic mac ls, white to red ls, in part replaced by siderite; thin.
- Lower phyllites: dom. lgt to med grn in colour, but etc. a broad band of grey phyll. in NW 1/2 of basin. Some intense pyroclastic in SE 1/2 of basin
- Lade Ph ls: white or lgt grey ^{1/2} c ls overlying blk phyllitic ls.

Bare rock exposed

The Lade Ph ls is exp. in the cores of 3 ^{1/2} c's on the slope up to Silver Chief ridge known as the Silver Chief ^{1/2} c's. Parts of two of these ^{1/2} c bands are shown in Fig. —. The blk phyllitic ls is not exp. on the SW ^{1/2} c. On the middle ^{1/2} c exp. the clean ls has been shown by a strike fault, bringing blk phyllitic ls in etc. with gr phyl. On the NE ^{1/2} c the clean ls has been removed in the NW face of Silver Chief ridge, but is present in normal dip etc. with gr phyl. on the crest & SW slope of the ridge. Grn & greyish-grn phyl. occupies narrow deep spots between the bands of Lade Ph ls. For the SW ^{1/2} c the rock of the ls lies in general succession on its SW limb. F¹ dips SW at 55 to 85°. Where it can be seen it is generally 11 ft. Small folds can be seen in many small exp., & it is concluded that the whole of the fm above the Lade Ph ls is closely folded on this limb. Phyllites above & below the main ls cannot be distinguished where the ls is absent. They are generally well-foliated but range from fissile to compact. In colour they range from white or buff through pale & med grn to grayish-grey & med to dk grey. The var. colours are closely interbedded. It is not known to what extent the colour variation

are due to leaching & other metamorphic processes, & to extent due to original stratigraphic variations coupled with close folding. One broad band of dk grey phyl. underlies the mm ls in the lower part of the basin but is sep'd fr it by as much as 100' of gr phyl. adjacent to the Index showings & is absent in the upper part of the basin. In TS the ^{cream} white & buff phylls are seen to ctn much more qz (Expos. F) than other phyllites. The pale & medium gr phyls differ largely in the ratio of muscovite to chlorite, & in the grey phyls the colour of both minls is masked by carbonaceous dust. A few silty lenses were f. in the phylls along the lower course of W Index ad. & betw the mid & NE ^{silver blif} %c. In one small %c ^{of the upper phyl} S of the Index showings a 3' band resembles a discoidal cp. with squaroid org. sp. ; it was not f. elsewhere. In TS it is a banded chloritic, silty ls; it may be a metamorphosed & squeezed limy tuff.

Interbedded with the phylls in the mid & upper parts of the basin are sev bands of rock that is partly or wholly repl. by ss. One such band S of the Index showings is consid. to be a ^{to be} ~~overlaid~~ ^{in part} of Peddliff volcs & is disjoined there with sev. other bands ^{of mixed ls. & carbonate rock} occur in ls in the SW %c in the upper part of the basin. One such band is anticlinal & was traced for 1200' NW fr the pt at which it plunges end. The max. width seen was 90'. It comprises bodies of greenstone, variably replaced by siderite, embedded irregularly in mixtures of jet-bk silty org. & quartz to ss. The greenstone ranges from greyish-green chlorite phyll cty only scat'd grains & frags of aid to deep yellowish-brown, poorly foliated aid rock. In places breccia frags, including one chunk of ls, are clearly vis. in it, & it is likely that most of the gr. is ^{approx. ls.} fragmental rock, with some admixture of red ls. The blk silty org. differs markedly fr Index grey phylls, in colour, texture, & structure. A thin rock occurs sporadically at the base of the Peddliff volcs; in this section it is seen to consist of 75% qz & 25% sericite & carbonac. mth, the qz ranging fr mly down to dust. The qz & grts in the %c band are subordinate to the blk org. & irreg. mixed up with it, with ^{only very local} ~~but few~~ suggestions of any stratigraphic order. In this ^{containing abt} ~~band~~ ^{50% qz &} ~~the~~ ^{20% feldspar.} Even intense & intricate folding & faulting appear inadequate to explain the chaotic pattern of lithologies in the %c band, in it is suggested that the zone ejecta were disturbed by slump or by mudflows after partial consolidation of rim rock 50' to 100' NE ^{was a} ~~was~~ ^{series of} blk ls; it is prob. a repetition of the %c band. ^{These bands were not f. in the central part of the basin.} Yellowish-brown phyllitic siderite rock immediately overlies the pale Ph ls on the SW silver blif %c in the upper part of the basin, & in places is interbedded with it. The phyllitic chngc. ^{dictates} its fr aid. repl. of ls elsewhere & raises the zone that tuffs were ill ⁱⁿ with the upper part of the ls.

The mm ls has been f. only at the mm mine & along the SW side of the Index Basin; it does not recur NE of the silver blif %c, & it disappears across Bunker Hill bk & at the head of Index Basin. In the central part of the basin it is in 2 bands, the only 1 band can be f. to NW & SE. The SW band is clearly %c, plunging into a bluff face 1,500' SE of the Index adit. Rapid thinning of this band in an %c 500' SE of the adit suggests that it may

midway breached moraine

Basin ÷ 3 for drawing

meas.

Central part approx. 1/2 mi \square , closed by fairly ready access up both walls of basin, by areas of alder, scattered patches of scrub timber, & by genl. cov'g of grass & weeds on talus & moraine

Upper part down by bare rock & talus & by snow & ice.

The Index Basin is SE of Gainer Lake, almost opp. the main mine. It is reached via the Gainer Lake & a by-over Gainer Lake. A jeep rd leads up past the main cabin & up to Index Lake only 1/2 way to the head of the basin. Fr this pt. a tractor rd climbs to the Index always on the SW side of the basin, & a trail climbs to the Silver Chief above on the opp. side.

In the part of the basin it is roundly more than 50' wide
 is 100' wide at the Index cliff &
 he picked out ^{to the SE} over a length of 500'. The NE land can be traced SE to the same
 bluff on the SW bank, where it appears to be involved in a large df; the recording line
 is but 30' thick,
 passes under cover, & is not seen again on the SW side of the basin. At the SE extremity of
 the area mapped in detail a 6.5' bed of coarsely fine cream-colored ls in a low cliff may
 be a remnant of the NE land. Small lenses of ls were found up toward the crest at the
 head of the basin & on the upper part of the Stevens sh. along in the course of the regional
 mapping; these are believed to be struct. lenses of the mm ls. In the Index Basin the mm
 ls is normally white to cream-colored & fine, & lacks recognizable C. On the Index
 claim parts of the NE land are repl. by red & more or less mixed with gal.

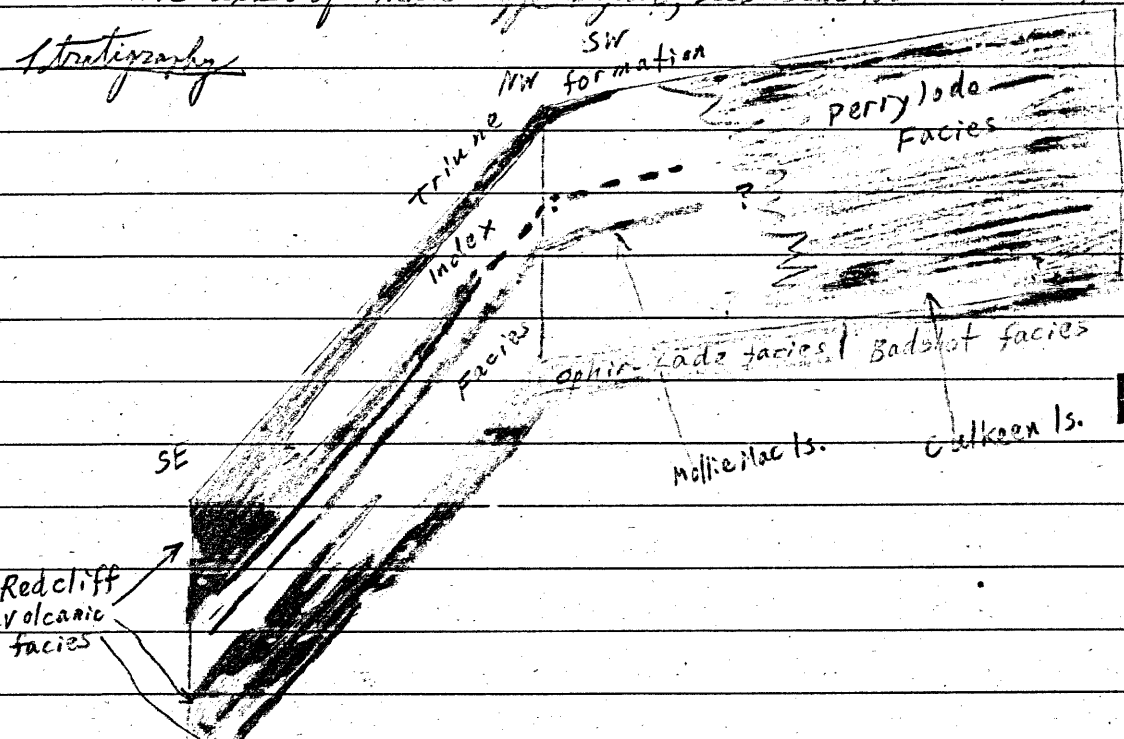
The Redcliff vales have been traced along the top of the Index from the head
 of marsh-aldama sh. SE to the head of Stevens sh. They occur in the core of the SE
 Mc but have not been seen NE of the Silver Chief q/c. In some places they are
 lightly altered and show outlines of small, irreg. pillows, but in the Index Basin they
 have been largely converted to chloritic siltstone rock. This rock weathers yellowish-
 tan to dk reddish-tan &, forming the lower SW wall of the upper part of the basin,
 gives a name to the Redcliff claim, for which in succession, ^{the rocks of} Redcliff Peak & the Redcliff
 vales are derived. Along the SW wall of the upper basin the unit forms a
 single dfd band, generally underlain by a few ft of silty, jet-^{black} arg., but in the
 central part of the basin 3 bands are observed or inferred. The SW band is clearly ^{SW of} the Index
 main, ^{when it is underlain by some 25' of dk. phyl. & argill.} but only sporadically to the SE. It may be chaotic with a band of
 lgt tan phyllitic carbonate rock which ascends the bluff into which the SW sand
 of the valley mac ls plunges, & appears to join the single band of the upper basin.
 Structural evidence conflicting; this NE land is most simply interp. as a gradual. A
 middle band is inferred to underlie talus below Triassic rock & gray phylls, since phylls
 have nowhere been seen overlying Redcliff vales. On fresh surface the rock ranges
 from tan thru grey to locally green. In TS however even the green rock are ^{generally} seen to
 be largely repl. by red, the principal relicts being chlorite & qz & feldspar. The
 2 fresh exposures were taken close to the ^{upper} ~~lower~~ ^{face} of it. One is a chlorite-siltstone and
 overprinted with carbonate knots, the other a micrite-chlorite amphibole rock etc,
 recognizable glaucophane & lacking carbonate. There appears no reason to doubt that
 the Redcliff blocks are at least predom. vales, in origin, but it is not given in the
 Index Basin to decide what proportion may have been lava. I what is proposed.

Folding has necessarily been discussed in description of lithology & stratigraphy, &
 need not ^{nor cannot} be elaborated. Faults dip steeply & strike either N to ^{or} at large to the
 strike of the rock. The strike faults are the 2 mentioned above that have sliced out
 the claim ls on the NE limbs of the Silver Chief and NE 400, & a 3rd on
 the SW side of the basin which has elim. parts or all of the Triassic & of the form,
 locally fringing the Stevens sh. from it with the Redcliff vales. Several smaller
^{strike} faults were detected in detailed studies of good exposure, & the total no. in the Index
 Basin may be large; their significance is not understood, & none are shown on Fig.
 —. Sev. of the diagonal & X-faults were seen in Mc, others are inferred for effects

Rock types

1. Phyllites: light green, pale green, grey, cream, and salmon-colored or green. Rarely red-oxidized. The last 3 are mostly predominant, & together are typical of the Index facies. Some of the light green and greenish-grey look like tuff may be mixed with sediments. On admittedly insecure evidence most of these phyllites are believed predominantly sedimentary. 2 or 3 horizons of aqueced lenses in light green phyll. sug. aggl. or eq., but no proof.
2. "gs" and "ochre rock". These ~~two~~ constitute most of the upper part of the Redcliff facies. The ochre rock is rusty siderite rock ^{with small or less calcite} showing variable amounts of iron, and no grading over to partly ind'g. The "gs" ranges from good green, igneous-looking rock to a grey-tuff, poorly-foliated rock which does not weather readily. These rocks have been especially susceptible to red. sap. since the cause does not appear to be struct. it must be sought in composition. Hills cannot be ruled out, but the presence of redimentary pillars in it in the Banker Hill basin and in the core of the SC 1/2 in the Toriere Basin suggest volcanic origin. It is suspected that much of this rock may be fragmental.
3. Limestones: One ls. occurs within the sequence, while the Ophir Leds. ls. (Badshot equivalent) occurs at the base. The mid-sequence ls. would appear to be the mollie mac ls., although it has not been traced through. This and the upper part of the Ophir Leds. ls. are clean & fine for the most part, although the mid-sequence ls. has phyllite or phyllitic partings in places.
4. Volcanic-sediment complex: mixtures of black phyllite and gritty phyllite, grey to brown ggs & grit, and poorly-foliated, sideritic rock which more or less resembles the more typical sideritic gs. Some of it is clearly agglomeratic and/or conglomeratic, a ls. frag. being fr. in one place. The black rocks are jet-black and ~~fairly~~ ^{fairly} perrylode-like, not at all like the grey phyllites above. They intertuff and lense in and out of the gs. to such a degree as to suggest chaotic sedimentation. The volcanic part is believed to be almost entirely pyroclastic.
5. mixed lenses of brown ggs & grit, scattered at random through the seq.

Stratigraphy



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The above diagram illustrates, in part schematically, in part factually, the relation among the 4 principal lithologic types. Mapping by Fyfe has been freely drawn on for the NE part. It is conceived that farther S the Redcliff volcanics will displace the Index phyllites as completely as the Perryglade black phyllites and gritty phyllites do in the NE. Thus away from the area of transition it should be possible to speak of these facies as forms. Possibly the Redcliff also displaces the remainder of the Ophir Lade ls. and part or all of the mollics to the S or SE. Since the Triune shows no volcanics in the Index Basin, though it does ⁱⁿ the Triune Basin, possibly there is an U between it and the Redcliff in the NE.

Within this complex unit there appear to be several members, really lenses, which carry through for regionally short distances. Foremost are the mollic mac and bulkesa ls. Beneath the mollic mac ls. there is generally a fairly thick section of grey phyls of Index type, but ~~is~~ ^{they} are replaced in many places by a var. thickness of grn. phyls. Within the Perryglade there appear to be several distinctive horizons - blk platy ls, curly gritty phyls, and lenses of brn qtz. Some of these qtz lenses may carry over into the Index, though generally they have very restricted ~~dist~~ area, and few could be traced any distance even in the Index Basin. It is not known whether the band of blk phyl & grits above the min ls. is a true strat. horizon, a long tongue of Perryglade, or an associate of the overlying Redcliff tongue. By analogy with lower Redcliff tongues the latter seems the most likely.

- Redcliff tongues:
- Upper, beneath Triune - mostly rusty qtz. (Index pale & brnt grn phyls.)
 - Upper middle - rusty & v. fresh qtz, with blk phyl. - grey grit sand. ^{locally} (Index pale & brnt grn phyls.)
 - (mollic mac ls.)
 - (Index grey & brnt grn phyls, locally pale qtz)
 - midway tongue - complex of blk phyl. & rusty fragmentals, ^{latter predominant} ^{third step} (Index brnt grn phyl.)
 - Lower tongue - mostly blk phyl. with variably admixed fragmentals. (Thin tongue of Index brnt grn phyl. - ca. 20')
 - Basal tongue - rusty, rather phyllitic qtz overlying and interfingering with clean ls. memb. of Ophir Lade.

Structure

The rocks are closely folded, the ^{Index} phyls intricately so. The ^{NE} ^{ones} which bring up the Ophir Lade appear to be the largest. In general there is a migration of ^{to the SW} ^{the} ^{SE} of these going SE. The NE 2 large ^{ones} are broken by faults, and the SW one prob. has faults along parts of both ^{the} ^{SE} ^{and} ^{SW} ^{toward} its plunge under.

A faults may be common elsewhere, but are not apparent within blocks of

uniform lith. The Sharon ls - chert etc NW of the gulch di-slip fault look like a P fault, ^{as} does the Triassic pedregal etc. just off the area of mapping up the running status slide. Read of a P fault within the Triassic SE of the gulch fault.

Transverse faults are diagonal or vertical, di-slip, or oblique-slip (mostly strike, ^{the} not been named), and the oblique-slip ~~includes~~ ^{includes} both right and left hand faults. No uniformity of pattern could be discerned, but the approximate horizontal offset is left hand. Probably the ~~approx~~ ^{approx} vertical movement is downthrown on the NW, opposing the SE plunge of the folds. The gulch fault appears to be the largest di-slip ^X fault.

Intrusions

- Leucodiorite sills in Triassic et gulch fault
- Andesitic gabbro further SE X
- Basaltic gabbro SW of ridge X
- maximo " further SE, at head of running status slide.

There is no reason to believe these different in age. Nos. 2 & 3 are just in fault etc, faulted since mt. alt. Nos. 2 to 4 are prob. the remains of a single stock, and No. 1 an offshoot.