LEGEND FOR O.F. 829, 830, 831, 926, 927.

Geological Survey of Canada

STRATIFIED ROCKS

QUATERNARY
PLEISTOCENE AND RECENT

Qsl — landslide deposits (115G)

Qs — undivided surficial deposits: incl. glacial deposits, alluvium, and colluvium.

TERTIARY AND (?) YOUNGER
NEOGENE AND (?) YOUNGER
PLIOCENE AND (?) PLEISTOCENE

Pv — reddish brown basaltic flows; minor interbedded basaltic tuff, agglomerate, and conglomerate (predomin. basaltic clasts.); loc. a basaltic neck: (114P/15,16).

Pt — till, glacial and fluvial gravel, and sand: may incl. uppermost Miocene: (115G).

MIOCENE TO PLIOCENE AND (?) YOUNGER

WRANGELL LAVA: (Nw_1 to Nw incl.v.) (subaerial basic flows; minor acid pyroclastics, and non-marine volcaniclastics: 300 to 2000 m.)

Nw — undivided Wrangell Lava: rusty red brown basalt to andesite flows; minor creamy white to yellow acid pyroclastics and loc. acid flows: loc. may incl. $Ø_s$ and/or intra Wrangell sediments.

ST. CLARE PROVINCE: (115F(E¼)

Nwu — basalt, trachybasalt, andesite flows and pyroclastic rocks; minor volcanic conglomerate.

Nwm — porphyritic and non porphyritic basaltic andesite flows (minor pillow lavas), intbd. with abundant felsic ash flows, acid tuff, coaly tuff, and volcanic sandstone and conglomerate: acid pyroclastics are (?) related to Intra Wrangell (Mf) intrusive phase.

Nwcg — volcanic conglomerate - intra Wrangell; clasts all Wrangell derived.

Nwpy — acid tuff or ash flows - intra Wrangell: (?)related to Mf subvolcanic intrusions.

Nwl — thick, blocky, mainly non porphyritic basaltic andesite flows, loc. intbd. with white to light grey clay and coaly siltstone; overlain by thin, closely stacked basaltic flows.

ALSEK PROVINCE: (115B/9; 115A/12)

Nw_4 — thick, uniform basaltic andesite and andesite flows.

Nw_3 — felsic pyroclastics; loc. incl. acid breccia, ash flows, and air fall pumice: possibly related to Felsite Creek porphyritic rhyolite (Mf) subvolcanic emplacement.

Nw_2 — basalt and basaltic andesite flows and pyroclastics: possibly related to central conduit (breccia pipe).

Nw_1 — loc. rhyolite and/or dacite lava, thin to thick ash flows and pumice.

TERTIARY
NEOGENE AND (?) OLDER
MIOCENE TO PLIOCENE AND (?) OLDER

Nv — basaltic flows; minor rhyolitic flows and tuffs: probably equiv. to Nw_4 but may in part be equiv. to Pv_s: (114P/11,15).

PALEOGENE
OLIGOCENE AND, (?) OLDER AND/OR YOUNGER

Øs — AMPHITHEATRE FORMATION: yellow buff to grey buff sandstone, pebbly sandstone, polymictic conglomerate, siltstone, mudstone; minor brown grey carbonaceous shale and thin coal beds: (continental clastics; pred. fluvial deposits; loc. landslide, mass flow and lacustrine deposits: 0 to 1100 m): loc. may incl. Intra Wrangell; or older.

OLIGOCENE AND OLDER

Ps — sandstone, pebble conglomerate, polymictic conglomerate; minor carbonaceous shale; rarer thin coaly beds; may in part be equiv. to $Ø_s$: (114P/6,9,10,11,14).

Pvs — volcanic breccia, tuff; loc. intbd. predom. basaltic and andesitic flows: C. meta. by $Øg$: (114P/2,7,10,11).

EOCENE AND PALEOCENE

ⱣK — KULTHIETH FORMATION: light grey sandstone - in part arkosic, intbd. with dark grey siltstone, pebble conglomerate, and thin coal beds: (shallow marine and non-marine delta-beach bar deposits). (115C/7)

(?) PALEOCENE

ⱣH — HAYDON PEAK FORMATION: dark grey, partly slaty siltstone, loc. intbd. with sandstone, and rarer carbonaceous and tuffaceous sandstone, pebble conglomerate and basaltic tuff: (marine shelf deposits). (115C/7)

CRETACEOUS
UPPER CRETACEOUS

uKs — sandstone, conglomerate, shale, siliceous tuff: (shallow marine shelf deposits). (115C/15)

LOWER CRETACEOUS

lKc — CHISANA FORMATION: basalt, andesite flows, and pyroclastics: (shallow marine to subaerial). (115F/15)

CRETACEOUS AND (?) OLDER

YAKUTAT GROUP:
(deep marine; flysch, mélange: unseparated on map): (115C/7,8)

KY — "mélange facies": mélange blocks (to several km.) of greenstone, oolitic limestone, marble, granitic plutonic rocks, chert, greywacke, set in pervasively sheared matrix of black cherty and tuffaceous pelite. R. meta. commonly to (2b), loc. to (4). "flysch-facies" (loc.): grey to brown litho feldspathic greywacke and conglomerate, in thick channel deposits or intbd. with grey to black siltstone, argillite, or slate. R. meta. (1) to (2).

VALDEZ GROUP: (KV_{vm} to KV incl.v): (deep marine flysch, submarine basic volcanics, and meta. equivs.) (115C/7 to 10; 115B/5; 114P/8; 114P/3 to 6).

KV — dark grey argillite, greywacke. R. meta. to (2) or low (3).

KVm — meta. equivs. of Kv: incl. granitic dykes, sills, plugs (loc.): grades to brown schists and granitoid gneisses (Kvgn). R. meta. high (3) or low (4): in 114O,P incl. Kv and (?) $Kvgn_1$

KVgn — brown granitoid gneisses, minor dark brownish grey schist; incl. granitoid dykes, sills, plugs (loc.)

KVv — green pillow lava, breccia, tuff. R. meta. (1) to (2)

KVvm — very dark green amphibolite: meta. equiv. of Kv_4. R. meta. to high (3) or (4).

JURASSIC AND CRETACEOUS
UPPER JURASSIC TO LOWER CRETACEOUS

DEZADEASH GROUP:

JKD — intbd. light to dark buff grey lithic greywacke, sandstone, siltstone, thin dark grey shale, argillite, and conglomerate; mass flow conglomerate common in middle part; rare light grey tuff. (flysch; deep marine fan deposits, ~3000 m.) R. meta. generally (1), but up to (2a). (115A(W4), 115F/15; 114P/15).

TRIASSIC TO CRETACEOUS
UPPER TRIASSIC TO LOWER CRETACEOUS

uRKp — dark grey phyllite; minor greywacke and conglomerate: incl. JKD and upper noncalcareous member of McCarthy Fm., loc. may incl. uRM

TRIASSIC
UPPER TRIASSIC

uRM — McCARTHY FORMATION (lower calcareous member): thin intbd., light to dark grey argillaceous limestone and dark grey argillite: (marine: 0 to 400 m.)

uRC — CHITISTONE and NIZINA LIMESTONES: massive light grey limestone, limestone breccia, and darker grey, well bedded limestone: (shallow marine; lowest part intratidal - supratidal, local sabkha: 0 to 200 m.): loc. may incl. uRM.

uRe — white to creamy white gypsum and anhydrite

uRN — NIKOLAI GREENSTONE: dark green and maroon amygdaloidal basalt and andesite flows, loc. intbd. with maroon tuff and breccia, and rarer maroon and green shales and thin bedded bioclastic limestone; grey green volcanic breccia, pillow lava and conglomerate at base: (subaerial, loc. submarine: 0 to 1000 m.): loc. may incl. uRC, uRM and rare uRe. R. meta. commonly to (2b).

MIDDLE TRIASSIC

mRp — dark grey phyllite (loc. limy); minor thin grey limestone: (marine: 0 to 200 m.): (115F/10; 115G/3,5,6; 115B/16)

MESOZOIC AND (?) OLDER

Msm — bio. schist; minor amphibolite, gneiss: meta. JKD, "Kluane Schist", but prob. incl. older rocks: R. meta. to (4) or greater: (114P/9, 15,16).

Mc — marbles within Msm (?) maybe meta. Permian or Triassic limestone: R. meta. to (4) or greater: (114P/9,16).

PALEOZOIC AND/OR MESOZOIC

PMsv — schist, amphibolite, dark argillite, marble, conglomerate: may be Pv_s, uRN, uRC, and/or (?) older, and/or Kvm, $KVvm$: R. meta. to low (4): (115C/10).

PMvs — greenstone, greenschist, minor argillite, and greywacke: equiv. to Pv_s, but may incl. older; may incl. JKD; and (?) PRb, Mb, lKb, or KTb: (115D/16; 115A/13).

PMvm — amphibolite, greenstone; minor greenschist; may incl. greywacke, argillite: may be equiv. to PR_{vs}, or PM_v or meta. PR_v, or incl. older; may incl. meta. JKD: R. meta. to (4): (114P/9,15,16).

PRv — basic volcanics (loc. pillowed), greenstone; loc. may incl. sediments: may be Pv and/or uRN, and incl. PRb; loc. may incl. older: R. meta. to (2): (115A/3; 114P/9,14,15,16).

PRvs — meta. basic volcanics, schist, marble; minor granitic rocks and granitoid gneiss: may in part be equiv. to Pv, Pc, Ps, uRN, uRC; (?) loc. may incl. older or younger: (115F/9,16).

PPsv — Logan, Walsh Glacier area (115C/9,15,16): undivided Skolai Group: volcaniclastic sediments, argillite; loc. limestone, marble, chert: incl. felsite dyke swarms, minor syenite (Mp); R. meta. (1) to (2). Upper Art Lewis, Reynolds, and Grand Pacific Glacier areas (115B/2,3; 114O/8,9; 114P/3,5,6): dominantly greenstone; incl. argillite, meta. chert; loc. marble, diorite, gabbro; rarer lenses serpentinite: may in part be equiv. to Skolai Group rocks; could also incl. Upper Trias., Kvm, Kvm, or older rocks: rocks are moderately to highly deformed with R. meta. generally to low (3).

PALEOZOIC AND/OR MESOZOIC, OR (?) OLDER

PMgn — gneiss; minor schist: R. meta. (4) or greater: (114P/9).

CARBONIFEROUS TO PERMIAN
PENNSYLVANIAN TO LOWER PERMIAN

SKOLAI GROUP: (Pvx to Ps incl.v.).

(?) LATEST PENNSYLVANIAN TO LOWER PERMIAN

HASEN CREEK FORMATION:

Ps — thin bedded siliceous argillite, siltstone, minor greywacke and conglomerate; loc. thin basaltic flows (some pillowed), breccia and tuff: (marine: 0 to 800 m.): may loc. incl. Pv, Pc, PRub, PRb: R. meta. to (2): may incl. M. and U. Trias., JKD in 114P/15.

Pc — buff bioclastic limestone, calcarenite; local conglomerate at base: (0 to 100 m.) equiv. to Golden Horn Limestone, McCarthy Quad. Alaska. R. meta. to (2).

PENNSYLVANIAN TO (?) EARLIEST PERMIAN

STATION CREEK FORMATION:
(island arc volcanics and volcaniclastics)

Psv — tuff, breccia, siliceous argillite, rare andesite flows: may loc. incl. Ps: R. meta. to (2) (115A/3,6; 114P/14,15).

Pv — area NW of lower Duke R. (115G & F(E½)), pred. pyroclastics; incl. medium grey green massive volcanic breccia and agglomerate (clasts basalt and plag. porphyry), grading up into lithic vitric tuff (plag. clasts), and well bedded pale green and white siliceous tuff; rare argillite and basic flows:
Duke to Slims R. area (115G/2; 115B/16), increasing amounts of flows, lessor amounts of pyroclastics:
Mush Lake area (115A/3,6), pred. flows; incl. dark green massive porphyritic (augite) basalt to andesite flows (loc. pillowed); minor volcanic breccia, rare argillite; also in 114P/15; loc. Pv unit may incl. PRub, PRb, uRN: R. meta. commonly to (2b).

Pvx — pillowed basic flows, Mush Lake area only: (115A/6).

STRATIFIED ROCKS

UPPER PALEOZOIC AND/OR TRIASSIC
UPPER PALEOZOIC AND/OR UPPER TRIASSIC

Pv — dark greenish grey basalt to andesite pillow lavas and flows; incl. intbd. limestone, argillite and siltstone, and basic intrusives; minor greenstone, greywacke, dacite, and acid and basic pyroclastics-(?)volcaniclastics; rare gypsum: early Norian at Windy Craggy ore body; rocks of this unit may all be Upper Triassic, or in part be older (? Upper Paleozoic equiv. to uPv_v,uPv_s due to possible complex structural and/or unconformable relationships, older (?) lowest Paleoz. volcanics may also be present in this unit: rocks are moderately to complexly deformed, with R. meta. (2) to mid (3): (114P/7,8,12,13).

UPPER PALEOZOIC AND (?) OLDER AND YOUNGER
DEVONIAN TO LATEST TRIASSIC AND (?) OLDER

Adjacent to Duke R. Fault (S.W. side): (uPs to uPe incl.v.): rocks of this grouping are pervasively deformed with R. meta. commonly to (2) or mid (3): all (except uPe) exhibit lithological similarities to Penn.-Upper Trias. age rocks occurring immediately to NE of Duke R. Fault: units uPp, uPpc, uPe may in part be equiv., and in part may be equiv. to uPcp, uPcs, uPp', Dp, Dpc, Dcp, and Psp: units of this grouping not necessarily in order of age.

uPe — white to creamy white gypsum and anhydrite; loc. size of lenses are exaggerated to show on map: (?) equiv. to uRe: (115B/16; 114P/10,14).

uPp — black siliceous argillite, argillite (loc. calcareous); incl. intbd. argillite, dark siltstone; rarer buff limestone or marble, and black ultramafic "pods" and dykes:
in 115B/16: (?) equiv. to mP_p, Ps, or Dp, with PRub.
in 115A/3, 114P/10,14,15: incl. mid Dev., mid and upper Trias., with suspected L. Perm.

uPvs — green and purple volcanic breccia, tuff, agglomerate; rarer cherty sediments, black argillite, grey phyllite: (?) equiv. to uPv, Pv, Psv, uRN, or older: (115B/16).

uPv — dark green (occasionally purple), porphyritic (augite and/or plagioclase), or non porphyritic basalt to andesite flows; loc. volcaniclastic sediments, grey limestone or marble, and basic intrusions: commonly is underlain by mDc, therefore mid Dev. or younger: (115B/16).

uPc — massive light grey and thin bedded dark blue grey limestone or marble, loc. buff grey crinoidal limestone:
in 115G/4, 114P/10,14,15: incl. mid Dev., (?) Carb.-L. Perm., and Upper Trias.

uPpc — dark argillite, calcareous argillite and intbd. dark siltstone-argillite; minor thin bedded dark blue grey limestone: loc. "lenses" of more massive light grey limestone and greenstone: (115B/15,16; 115G/2 to 5).

uPa — intbd. buff to darker buff grey qtz.-rich, siltstone-sandstone-siliciic argillite; loc. incl. quartzite and rarer conglomerate and meta. equiv.: in part could be equiv. to OS_{wp} or Psc: C. meta. by Og: R. meta. low to mid (3): (114P/10,14,15).

uPs — undivided uPa, uPc, uPp: R. meta. (?) cf. to uPa; C. meta. by Og: (114P/8,9,10).

Icefield Ranges: (uPv to uPcp incl.v.): rocks of this grouping are complexly deformed: R. meta. loc. (1), but generally (2) to (3): all exhibit lithological similarities to units in uPs to uPp incl.v. (no uPe): (115B; 115G/4; 115A/5): NB. units of this grouping not necessarily in order of age.

uPcp — thin bedded, dark bluish grey limestone or marble; loc. light grey thicker bedded limestone; minor dark grey calcareous argillite: may be Upper Trias. and/or older.

uPcs — laminated dull ochre yellow calcareous siltstone-sandstone, silty limestone, grey phyllite; minor intercalated thin bedded dark blue grey limestone: loc. may incl. uPcp: may be (?) Carb.-L. Perm. to U. Trias. and/or (?) older.

uPp' — black graphitic argillite, commonly siliceous, and dark qtz.-rich argillaceous siltstone; minor sandstone and impure quartzite: loc. dull ochre calcareous sandstone-siltstone, dark calcareous argillite and dark grey limestone or marble: (?) equiv. in part or all to uPp, uPpc, uPa.

uPv' — green and purple basalt to andesite flows: Alsek R. valley, between Marble Creek and terminus of Lowell Gl.: U. Trias., (?) Carb.-L. Perm. and Dev. close by: (115A/5); (?) equiv. to uPv, uPv_s.

UPPER PALEOZOIC AND OLDER AND YOUNGER
DEVONIAN TO UPPER TRIASSIC AND OLDER

"ICEFIELD RANGES PELITIC ASSEMBLAGE":

Psp — black graphitic argillite, phyllite, and schist (generally siliceous, but loc. dominantly calcareous), and dark quartz-rich argillaceous siltstone; subordinate to minor thin bedded mica quartzite, and mica quartz-rich sandstone-siltstone; rarer dark blue grey platy limestone or marble, and thin bedded grey limestone or marble: occasionally more thickly bedded grey limestone or marble: (highly variable grouping of dark pelitic and fine to v. fine grained quartz-rich clastic rocks; thickness unknown): incl. mid Ord. to early Sil., Sil.-Dev., mid Dev., (?) Carb.-L. Perm., latest Trias.; may largely be upper Paleoz. to Upper Trias.; equiv. to uPv' to uPe incl.v. and Dp to Dcp incl.v.; incl. carbonates SDc, Dc, (?) Carb.-L. Perm., and U. Trias.; incl. rarer basic volcs. or greenstone, uPv' (latter known 115B/1,10,11) and occasional gypsum (?) uPe (known 114P/11): may also incl. finer clastic (distal) equiv. of Psa (and Psa_{ss} unit), $ØO_{wb}$, $ØO_{wc}$, $ØO_{wm}$, OS_{wp}, and ODcs (? loc. ODcs unit): rocks are very complexly deformed, with R. meta. commonly to high (2), but up to mid (3): (115A/5; 115B; 115G/4; 114O/15,16; 114P).

DEVONIAN
MIDDLE DEVONIAN

mDc — "BULLION CREEK LIMESTONE": massive to well bedded light grey limestone or marble (Ireland limestone), thin bedded dark grey limestone or marble, and minor dark blue grey calcareous argillite at base; loc. limestone are quite fossiliferous, but preservation is generally poor, due to deformation and recrystallization: (0 to ~300 m.): may loc. incl. both upper and lower Dev.: R. meta. (1) to commonly (2)

DEVONIAN AND (?) OLDER

Adjacent to Duke R. Fault (SW side): (Dp to Dcp incl.v.): rocks are fairly intensely deformed: probably mainly Dev., but may be older: R. meta. mainly (2) to v. low (3), rarely (1): (115G/2,3; 115B/9,15,16; 115A/3,5,12).

Dcp — thin bedded blue grey limestone and dark grey calcareous argillite

Dc — massive to well bedded light grey limestone or marble; minor thin bedded darker grey limestone: (? 0 to 300 m.): prob. equiv. to mDc, but may be older, and may incl. younger.

Dpc — sheeny grey argillite or phyllite, loc. with thin bedded dark grey limestone, and massive light grey limestone: (?) equiv. to Dp; loc. may incl. Dc, Dcp.

Dp — dark blue grey argillite, phyllite; minor greywacke siltstone - sandstone; more calcareous towards top, and increasing greywacke siltstone - sandstone towards base: loc. may incl. more massive limestone (?) Dc, and greenstone uPv, or uPbv.

DEVONIAN AND OLDER

Icefield and Alsek Ranges:

SDc — massive to thick bedded light grey limestone or marble, and well bedded dark blue grey limestone or marble; minor calcareous argillite or phyllite: (up to ~2000 m.): Dev., but may incl. (?)Sil., (?)Ord, and loc. (?)Upper Trias.; possibly equiv. in part to ODcs: R. meta. (1) to (3), loc. to (4).

(?) ORDOVICIAN TO (?) SILURIAN, OR (?) YOUNGER*

OSwp — dull rusty buff or green grey greywacke siltstone - sandstone, and argillite or phyllite; minor grit; rarer limestone, pebble conglomerate, conglomerate; may loc. incl. calcareous argillite, argillite (Dp_u): (? 0 to ~1000 m.): rocks are pervasively deformed; R. meta. (2) to low (3)

ORDOVICIAN AND (?) OLDER AND YOUNGER
EARLIEST ORDOVICIAN TO DEVONIAN AND (?) OLDER AND YOUNGER

ODcs — "laminated carbonate-calc. mudstone, siltstone facies"(A): dominantly intbd. yellow to ochre buff calcareous mudstone-siltstone, grey silty limestone and platy to thicker bedded blue grey, cryptocrystalline limestone; occurs generally in lower to mid parts of unit: incl. Ordovician (? early to middle Ord.); (?) facies equiv. in part to Psa:
"thicker bedded to massive carbonate facies"(B): thick to massively bedded, light to medium grey, loc. well bedded, mid to dark blue grey limestone: occurs generally in middle to upper parts of unit: prob. equiv. to SDc, but incl. earliest Ord., Sil.-Dev., mid Dev. and loc. latest Trias.
Fairly abrupt facies changes, diachronous and unconformable relationships are strongly suspected within this unit: loc. facies (A) quite rapidly grades upward and laterally into (B): loc. (A) grades downward into greywacke-argillite ($ØO_{wb}$) (Range Ck. area): indications are this unit grades rapidly into part of $Psa_{(Marble\ Ck.\ area)}$: (uncertain: to or >1000m.): rocks of this unit are moderately to complexly deformed: R. meta. (2) to mid (3): C. meta. loc. by JKg and basic intrusions.

(?) CAMBRIAN TO (?) ORDOVICIAN AND (?) YOUNGER

"DONJEK RANGE GREYWACKE - GREENSTONE ASSEMBLAGE": ($ØO_s$ to $ØO_{wv}$ incl.v.): rocks of this grouping are largely volcanic derived, with minor basic volcanics and intrusives: (estimates up to ~2000 m.): R. meta. commonly to upper (2) or low to mid (3), with pervasive deformation.

$ØO_{wv}$ — massive to well bedded buffish green, coarse to medium grained greywacke and/or volcaniclastic sandstones (clinopyroxene and plagioclase clasts very abundant); minor greywacke siltstone - sandstone, argillite, phyllite or schist, and basic intrusions; rare conglomerate, basic flows and pyroclastics(?), and thin limestone or marble.

$ØO_w$ — greenish to maroonish buff greywacke siltstone - sandstone, and argillite, phyllite or schist; minor coarser greywacke and/or volcaniclastics (with augite/plag. clasts.); rare conglomerate, and limestone or marble.

$ØO_s$ — undivided $ØO_{wv}$, $ØO_w$, with or without OS_{wp}.

"NORTHERN ALSEK RANGES GREYWACKE - GABBRO ASSEMBLAGE": ($ØO_{wb}$, $ØO_c$): (estimate, > 1000 m.): (?) equiv. to $ØO_{wv}$, $_w$, $_s$; (?) in part facies equiv. to, or in part or all younger than, $Ç_{vs}$, $Ç_c$, $Ç_v$: deformation is only loc. intense: R. meta. generally (2); C. meta. present where sill/dykes ($ØO$) are abundant. (115A/4,5; 115B/1; 114P/13).

$ØO_{wb}$ — greenish grey greywacke sandstone - siltstone (volcanic derived) and dark argillite; minor laminated buff grey silty limestone and limy siltstone, and basalt to andesite flows (some pillowed); rarer more massively bedded blue grey limestone ($ØO_c$): grades upwards into $ØO_{cs}$: includes abundant gabbro sills/dykes ($ØO$).

$ØO_c$ — light grey laminated silty limestone and limy siltstone, and well bedded limestone or marble: ("mappable" carbonates in $ØO_{wb}$)

CAMBRIAN AND YOUNGER

"FIELD CREEK VOLCANICS": ($Ç_v$, $Ç_c$, $Ç_{vs}$) (subaerial, loc. submarine, basic flows; minor carbonate and volcaniclastics: estimate, > 2000 m., base not exposed): deformation only loc. intense; R. meta. (2) to low (3). (115A/3,4)

UPPER CAMBRIAN AND YOUNGER

$Ç_{vs}$ — calcareous tuff, volcanic breccia; dark green and rare purple porphyritic andesite flows: loc. intercalated with thin bedded limestone, and "lenses" of purple and green tuffaceous sandstone and pebble conglomerate.

$Ç_c$ — light grey massive limestone and thin bedded silty limestone, or marble: ("main is, 0 to 300 m., + several, much thinner, discontinuous beds)

UPPER CAMBRIAN AND OLDER

$Ç_v$ — massive dark green (rare purple) porphyritic (plag.) andesite and basalt flows (loc. pillowed), volcanic breccia; minor tuff and tuffaceous sandstone; rare thin limestone or marble. (Base not observed)

PALEOZOIC
LOWER PALEOZOIC AND (?) YOUNGER
(?) ORDOVICIAN TO (?) SILURIAN OR (?) YOUNGER*

"LOWER ICEFIELD RANGES CLASTIC ASSEMBLAGE":

Psa — thin to medium bedded, fine to fine medium grained, kharki buff, quartz-rich, micaceous, generally slightly to moderately calcareous siltstone and sandstone, mica quartzite, psammitic schist, intercalated with minor thin grey phyllite, argillite and schist; incl. minor volcanic wacke, and rarer thin buff ochre-orange limestone or marble, and silty limestone: (monotonous sequence of intbd. quartz-rich, somewhat calcareous clastics (? quartz-rich wackes) and thin pelites; thickness unknown): may partly be equiv. to OS_{wp} or partly facies equiv. to ODcs: may incl. distal equiv. of $ØO_{wv,w,s}$: rocks are very complexly deformed, with R. meta. high (2) or low to mid (3): (115A/5; 115B; 115G/3,4).

LOWER PALEOZOIC OR (?) YOUNGER**

lPcs — rusty brown, thin bedded limestone, marble; minor greenstone: R. meta. variable (2) to (4). (115C/15; 115F/2).

(?) CAMBRIAN TO (?) ORDOVICIAN OR (?) YOUNGER**

lPvs — greenstone, amphibolite; minor schist, argillite, greywacke, mica quartzite; loc. incl. marble: R. meta. to low (4): (115B/5,12; 115C/15,16; 115F/2,7; 114O/15).

(?) CAMBRIAN OR (?) YOUNGER**

lPvm — massive dark green to black amphibolite: (meta (?) basic volcanics): R. meta. to (4): (115B/2,7; 114O/9,15,16).

PALEOZOIC AND/OR (?) OLDER

Pgn — grey gneiss and granitoid gneiss; incl. amphibolite schist, qtz.-rich schist, metaquartzite, and marble: complexly deformed; R. meta. to (4) or greater: (114O/9,10,15).

INTRUSIVE ROCKS

TERTIARY
MIOCENE

"WRANGELL INTRUSIONS"

Mf — "subvolcanic intrusives": white to creamy white hbde. and/or bio. rhyolite, rhyodacite, dacite, and trachyte; felsite: incl. domes, sills, dykes: in part or all Intra Wrangell Lava; may incl. Of: C. meta. effects incl. varying degrees of bleaching, silicification, brecciation, and pyritization.

"high-level plutons"

Mg — fine medium grained, grey bio. adamellite, hbde., bio. granodiorite: Mt. Steele (115F/1)

Mdi — "Bock's Brook Stock": zoned; narrow border phase of dark grey pyx. gabbro, cored and intruded by light buff grey, uniform bio. diorite: C. meta. of gabbro by diorite: younger Wrangell dyking intrudes both phases.

OLIGOCENE

Of — white to creamy white felsite, bio. and/or hbde. qtz. latite porphyry: mainly sills and dykes; some plugs: may incl. Mf: throughout Kluane Ranges: (114P/2,6,7,9,10,14,15); in 114P/9 incl. crowded fsp. porphyry.

"TKOPE RIVER INTRUSIONS"

granite-qtz. monzonite; lesser microgabbro-gabbro, granodiorite, granodiorite porphyry, qtz. diorite, granophyre: high-level intrusions; incl. multiphase elongate batholiths and stocks; contacts are generally discordant, sharp, and variably inclined; are cut by diabase and qtz. fsp., porphyry dykes: may incl. younger and (?) older intrusions: C. meta. effects (1) to (2): (114P/7,8,9,10,11).

Og — undivided "Tkope River Intrusions"

Ogp — light, pink, fine grained granophyre.

Ogr — fresh, pink, medium grey, homogeneous granite-quartz monzonite.

Ogd — massive, dark grey, heterogeneous, very fine to fine grained, altered, porphyritic (plag.) granodiorite.

Ogdp — massive, grey, medium grained, altered granodiorite porphyry; phenocrysts of plag. and qtz.

Oqd — massive, white to light grey, medium grained quartz diorite.

Ogb — dark grey to black microgabbro to gabbro pegmatite.

EOCENE

lTg — bio. hbde. tonalite, altered bio. hbde. tonalite, bio. hbde. qtz. diorite; loc. bio. musc. granodiorite: high-level plutons: may range Paleocene to Oligocene in age: incl. King Pk., Mt. Vancouver, Newton Glacier, Mt. Cook and (?) Mt. Owen plutons: NB. in Alaska, Mt. Owen "pluton" incl. a Miocene bio. hbde. fsp. porphyry phase intruding the lTg "type": (115C(E½), 115B/5): incl. hbde. bio. granite, granodiorite (114P/3 to 6).

CRETACEOUS TO TERTIARY

COAST PLUTONIC COMPLEX:

KTg — bio. hbde. granodiorite, bio. hbde. qtz. diorite: multiphase plutonic complex: regional C. meta. of JKD to give "Kluane Schists": (115B/16; 115A/2, 114P/9,15,16).

KTb — medium to coarse grained, dark grey hbde. pyx. gabbro; minor hbde. qtz. diorite, diabase: (?)equiv. to lKb or Tert.: (115A/2; 114P/7,15).

JURASSIC TO CRETACEOUS, OR TERTIARY

MTg — Mt. Steele, Mt. Wood area: (115F/1,2; 115C/16): hbde. bio. granodiorite; incl. mafic poor phases: probably mainly JKg, but full extent of Mg not known.
S. side Logan Gl.: (115C/15): uniform light grey pluton: (?) lTg or uniform phase of "Mt. Logan Batholith".

CRETACEOUS

"KLUANE RANGES INTRUSIONS":

mainly granodiorite, qtz. diorite and diorite; rarer qtz. monzonite: fairly high-level intrusions; incl. elongate batholiths and stocks, and "plugs"; loc. may incl. younger intrusions: C. meta. effects range (1) to (2).

Kg — undivided "Kluane Ranges Intrusions"; mainly multiphase intrusions.

Kgd — buff to mid grey, coarse medium grained bio. hbde. granodiorite.

Kqd — mid grey, coarse medium grained bio. hbde. qtz. diorite.

Kdi — mid to dark greenish grey, coarse medium grained hbde. diorite.

Kqm — buff mid grey, coarse medium grained bio. hbde. qtz. monzonite.

LOWER CRETACEOUS

"PYROXENITE CREEK ULTRAMAFIC COMPLEX":

Alaskan-type complex: incl. 3 crudely concentric clinopyroxenite phases; is cut by basic and ultramafic dyking and basic plugs: C. meta. effects to (3) for 3m. adjacent to complex: (115A/12).

lKb — medium grained hbde. pyx. gabbro, and bio. hbde. diorite: small bodies intruding ultramafite.

lKub — 2 central phases, (a) coarse grained olivine clinopyroxenite (minor bio.), (b) magnetite clinopyroxenite (minor hbde.); narrower border phase of hbde. clinopyroxenite.

JURASSIC TO CRETACEOUS

"SAINT ELIAS INTRUSIONS":

mainly granodiorite; lessor qtz. diorite; minor qtz. monzonite and diorite; loc. hornblendite: fairly high-level intrusions; range from large elongate multiphase batholiths to smaller elongate to rounded multi or single phase stocks, and plugs: contacts are generally discordant, sharp, and fairly steep: may incl. younger intrusions: C. meta. effects range (1) to (2)

JKg — undivided "St. Elias Intrusions"; mainly multiphase intrusions.

JKgd — buff to mid grey, coarse medium grained hbde. bio. granodiorite; occasionally porphyritic (Kfsp.)

JKqd — mid to dark grey, coarse medium grained bio. hbde. qtz. diorite.

JKdi — dark greenish grey, medium to coarse medium grained bio. hbde. diorite.

JKqm — mid buffish grey, coarse medium grained bio. hbde. qtz. monzonite, occasionally porphyritic (Ksp.)

MESOZOIC AND/OR OLDER
(?) LATE PALEOZOIC AND/OR MESOZOIC

"SQUAW-DATLASAKA RANGES GABBRO-DIABASE SILLS":

Mb — medium to dark rusty grey green, massive to schistose greenstone: pred. meta. hbde. gabbro or diabase sills; loc. may incl. basic volcanics: (?) equiv. to PRb, but have similarities to ØOb: sills are folded and faulted with R. meta. (2) to low (3): (115A/3; 114P/10,14,15).

POST LOWER PERMIAN

My — syenite plugs: these, and associated, unmapped, brick red, mostly felsite sill and dyke swarms, intrude PP_{sv}: (115C/9,16).

PERMIAN AND/OR TRIASSIC AND/OR (?) CRETACEOUS

PRb — medium grey green, massive, medium grained pyx. gabbro sills: highly variable in thickness: R. meta. (2) to v. low (3); C. meta. by larger sills, (1) to (2).

PRub — sheeny black peridotite; rare dunite: sills, "pods": R. meta. to (2) or v. low (3); C. meta. by larger bodies to (3).

UPPER PALEOZOIC AND/OR YOUNGER
(?) DEVONIAN AND/OR YOUNGER

"MT. CAIRNES GABBRO-GREENSTONE COMPLEX":

uPbv — complex of massive coarse to coarse medium grained, mid to dark rusty grey green hbde. pyx. gabbro, minor medium grained gabbro - diabase and gabbro pegmatite intrusions, and rare small black peridotite "pods"; with screens of green or lessor purple flows, pyroclastics, and volcaniclastics, minor dark siliceous argillite, and rare chert: may incl. PRb, PRub, Mb, lKb, KTb, and (?) Msm; with screens of uPv, uPvs; has some similarities to Pbc: rocks are highly variably deformed, with R. meta. (2) to low or mid (3): (115G/2; 115B/15,16; 115A/12).

PALEOZOIC AND MESOZOIC

PMvb — greenstone-gabbro-diorite complex; may incl. minor metasediments: greenstone may be $Ç_v$, $Ç_{vs}$, $ØO_{wb}$, and/or Pv_s; may incl. $ØO_b$, Mb, KTb, and contain intrusives related to Pv_s, Og, or Nv: (114P/10, 11,14).

PENNSYLVANIAN TO PERMIAN

"ICEFIELD RANGES PLUTONIC COMPLEXES":

fairly high-level intrusions; incl. agmatite and multiphase plutonic complexes, and fairly homogeneous plutons: may incl. younger intrusions: C. meta. effects difficult to assess; more uniform intrusions, (1) to (2).

ⱣPdi — diorite-qtz. diorite complex, agmatite.

ⱣPydi — syenodiorite complex.

ⱣPqm — mid buff-grey, coarse medium grained porphyritic (Ksp. phenocrysts) hbde. bio. qtz. monzonite: fairly homogeneous batholith and stock: (115F/1; 115B/2).

ⱣPgd — granodiorite-diorite agmatite complex: (1140/15).

CAMBRIAN TO ORDOVICIAN, AND (?) YOUNGER

"NORTHERN ALSEK RANGES GABBRO-GREENSTONE COMPLEX":

Øb — variably sized, massive, dark rusty grey green, gabbro or diabase sills and dykes (>80%), with screens of rusty $ØO_{wb}$, $ØO_c$: incl. basic volcanics (? $Ç_v$, $Ç_{vs}$, and/or $ØO_{wb}$); sills have similarities to Mb; may incl. younger intrusions: R. meta. generally (2); C. meta. by larger sills to (1) or (2): (115A/4,5; 114P/13,14).

PALEOZOIC
PRE LOWER PERMIAN

"STEELE CREEK GABBRO COMPLEX":

Pb — complex of massive, fractured, dark rusty grey green hbde. pyx. gabbro, gabbro pegmatite and diabase: (115G/5).

MAP SYMBOLS

Geological boundary
- defined, approximate, assumed
- gradational
- outcrop limit/drift boundary
- limit of geological mapping

High-angle Fault
- defined, approximate, assumed
- relative displacement: strike-slip; downthrow (barb)

Thrust Fault (teeth upthrust side)
- defined, approximate, assumed

Holocene Fault Scarp
- defined, assumed

Fold
- anticline : overturned anticline
- syncline : overturned syncline
- antiform : synform
- homocline : plunge of fold
- fold axial trace defined approximate, assumed

Bedding: strike/dip
- tops known: horiz., inclin., vert., overturned
- tops unknown: inclined, vertical

Foliation, cleavage: strike/dip
- horizontal, inclined, vertical

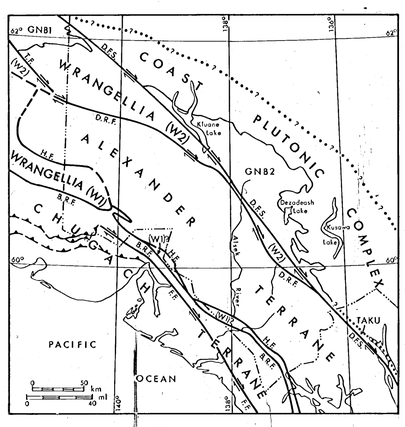
Lineation: minor fold axes

Eruptive centre

Breccia pipe — "b.p."

Hydrothermal alteration zone — "h.a.z."

SUSPECT TERRANES


62° GN81
COAST
PLUTONIC
COMPLEX
WRANGELLIA (W2)
ALEXANDER
TERRANE
WRANGELLIA (W1)
CHUGACH
TERRANE
GN82
Dezadeash Lake
Kluane Lake
Duke R.
Alsek R.
Tatshenshini R.
TAKU
PACIFIC
OCEAN
0 50 km
0 40 mi
140°
130°
60°