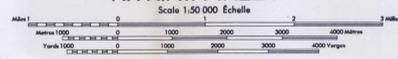




GEOLOGY OF THE SCOTIA-QUAAL METAMORPHIC BELT, COAST PLUTONIC COMPLEX, BRITISH COLUMBIA
KITKIATA INLET



LEGEND

This legend is common to all four maps in this open file
Blank boxes indicate units that are not present on this map

Area between the heavy dotted lines

QUATERNARY
PLEISTOCENE AND RECENT
Gravel, sand, silt, and clay

TERTIARY
Eocene
Garnet-biotite quartz diorite dykes; unfoliated and crosscutting

LATE PALEOCENE-(?)EARLY EOCENE
Quotzon pluton: hornblende ± biotite quartz diorite and tonalite; in 103H/4 includes felsic biotite ± garnet-bearing tonalite; medium to coarse grained; strongly foliated and locally lineated

CRETACEOUS
ALBIAN-CENOMANIAN (?)
K_g Dyke complex adjacent to and probably partly comagmatic with Ecstall pluton; dykes constitute 40-50% of area, country rock forms the remainder. Dyke lithologies include straight, crosscutting garnet aplite and leucocratic pegmatite; fine grained, leucocratic garnet-biotite quartz monzonite and granodiorite; titanite-epidote-biotite quartz diorite and granodiorite, and amphibolite

ALBIAN-CENOMANIAN
K_{Eg} Ecstall pluton: epidote-hornblende-biotite quartz diorite to granodiorite; unfoliated except within 1 km (generally less than 300 m) of its margin; in 103H/11 includes foliated, fine grained, epidote-free, leucocratic garnet-biotite quartz diorite

JURASSIC-EARLY CRETACEOUS (?)
Mafic and ultramafic plutonic rocks; coarse grained, locally weakly lineated hornblende diorite, gabbro and rusty weathering coarse hornblende

JURASSIC
EARLY JURASSIC
J_{Fo} Foch Lake orthogneiss: titanite-epidote-biotite tonalite gneiss; medium grained, typically contains plagioclase megacrysts; weakly to strongly foliated
Johnson Lake orthogneiss: epidote-biotite-hornblende tonalite gneiss; medium grained; strongly lineated and weakly to strongly foliated

DEVONIAN
MIDDLE DEVONIAN
D_{Bo} Big Falls orthogneiss: muscovite-biotite-hornblende tonalite augen gneiss; locally garnet- and epidote-bearing; medium grained; well foliated

PROTEROZOIC(?) - PALEOZOIC
MIDDLE DEVONIAN AND/OR OLDER
P_v Metavolcanic unit: P_v mafic and intermediate metavolcanic rock with minor metasedimentary and felsic metavolcanic interlayers; locally pyritic; strongly foliated and lineated; mafic component is fine grained amphibole ± chlorite schist, locally with relict clastic texture; intermediate component is biotite quartzofeldspathic semi-schist; minor quartzite, semi-pelitic to pelitic schist, and quartz-rich semi-schist of probable volcanic protolith. P_vm: marble [103H/13]
P_{sc} Metasedimentary clastic unit: epidote-rich, hornblende-biotite gneiss; fine to medium grained; locally contains epidote-rich and granitoid clasts; well developed foliation and lineation
P_{sq} Quartzite unit: P_{sq} white to grey, locally pyritic quartzite interlayered with lesser amounts of biotite-hornblende gneiss, feldspar mica schist, black phyllite to meta-argillite, semi-pelitic to pelitic schist; well foliated. P_{sqm}: amphibolite bands, probably dykes [103H/14]. P_{sqm}: marble [103H/13, 14]
P_n Layered gneiss unit: epidote-hornblende-biotite quartz diorite and granodiorite gneiss and garnet amphibolite; some epidote-garnet pods; medium grained; well defined compositional layering on a scale of tens of centimetres; strongly foliated and locally lineated

Areas outside the heavy dotted lines

QUATERNARY
PLEISTOCENE AND RECENT
Gravel, sand, silt, and clay

TERTIARY
LATE PALEOCENE-(?)EARLY EOCENE
T_{Qg}, T_{Qgd} Quotzon pluton: T_{Qg}: hornblende biotite granodiorite; T_{Qgd} [103H/11, 14]: biotite-hornblende quartz diorite; T_{Qgd}: quartz diorite, minor diorite and granodiorite; T_{Qm}: migmatitic plutonic rock

CRETACEOUS
ALBIAN-CENOMANIAN
K_{Egd}, K_{gd} Ecstall pluton [104H/11, 13]: K_{Eg}: hornblende-biotite quartz monzonite; K_{Egd}: biotite-hornblende granodiorite, hornblende-biotite granodiorite; K_{gd}: biotite-hornblende quartz diorite. Ecstall pluton [103H/4]: K_{Eg}: quartz monzonite, minor granodiorite; K_{Egd}: granodiorite, minor quartz diorite and quartz monzonite; K_{Eg}: quartz diorite, minor diorite and granodiorite; K_{Eg}: diorite, minor quartz diorite

JURASSIC-CRETACEOUS(?)
Gneissic diorite-migmatite complex
Aplitic, garnetiferous quartz monzonite (may in part or whole be Paleozoic)

PROTEROZOIC(?) - PALEOZOIC
P_{Msa} Mainly metasediments: hornblende-biotite-plagioclase amphibolite and schist; biotite schist (locally garnetiferous); sericite-epidote schist; graphitic schist; quartzite; crystalline limestone; conglomerate; minor ill-pair-ill gneiss, agmatite, and granitic rocks; may in part be equivalent to P_{sc}, P_{sq} and P_n
In 103H/4: grey biotite ± hornblende gneiss and amphibolite; minor sillimanite ± garnet gneiss. In 103H/14: granitoid gneiss, gneissic quartz diorite, rusty fine grained gneiss and schist, migmatite; minor garnet-sillimanite-biotite schist and crystalline limestone. May be equivalent to P_{sq} and P_n
Massive to thickly layered crystalline limestone

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van der Heyden, P. 1985: U-Pb and K-Ar geochronometry of the Coast Plutonic Complex, 53°N to 54°N, British Columbia, and implications for the Insular-Intermontane superterrane boundary; Ph.D. thesis, University of British Columbia, Vancouver, 392 p.
Woodsworth, G.J., Loveridge, W.D., Parrish, R.R., and Sullivan, R.W. 1983: Uranium-lead dates from the Central Gneiss Complex and Ecstall pluton, Prince Rupert map area, British Columbia; Canadian Journal of Earth Sciences, v. 20, p. 1475-1483.

SYMBOLS

Limit of detailed mapping by Gareau
Geological contact (defined, approximate, assumed)
Fault (assumed)
Foliation (inclined, vertical, absent)
Lineation (inclined mineral, inclined stretching, vertical)
Dominant or average axial surface in area of intense small-scale folding (inclined, vertical)
Dominant or average hinge line in area of intense small-scale folding (unspecified vergence, s-fold, z-fold, vertical)
Axial trace of synform (arrow indicates plunge)
Axial trace of antiform (arrow indicates plunge)
Dominant fracture set
Plagioclase megacrysts
K-feldspar megacrysts
Radiometric dates (Ma):
hk = K-Ar date on hornblende
bk = K-Ar date on biotite
zu = U-Pb date on zircon
Sources of data: (1) this study; (2) Woodsworth et al. (1983); (3) van der Heyden (1989)
Mineral deposit (number is MINFILE number; see sheet 2 for list)

SOURCES OF INFORMATION

Present work: S.A. Gareau, 1987-1989
Previous work:
Hutchison (1982) [103I/4]
Roddick (1970) [103H/11, 103H/13, 103H/14]
Padgham (1958) [103H/11, 103H/13, 103H/14]
Money (1959) [103H/11]
Kenah (1979) [103I/4]
Runkle (1979) [103H/11]
Compilation: S.A. Gareau, 1990

Area between the lines is the approximate extent of the Scotia-Quaal metamorphic belt and of the area mapped in detail during this study