THE ARCHAEAN ROCKS FORM A BASEMENT COMPLEX PREDOMINANTLY OF GRAN-

ITOID GNEISS (Aggdn), LAYERED QUARTZO-FELDSPATHIC GNEISS (Agn) AND FOLIATED GRANTIC ROCKS (Ag, Ag, and Ag, ), WITHIN WHICH ARE RELATIVELY MINOR AMOUNTS OF AMPHIBOLITE (Am) AND METASEDIMENTARY AND METAVOLCANIC ROCKS OF THE PRINCE ALBERT GROUP. THE GNEISSIC AND PLUTONIC ROCKS ARE LARGELY QUARTZ MONZONITIC TO GRANODIORITIC IN COMPOSITION; LEUCOCRATIC AND MAFIC (Aga) VARIETIES ARE COMMON BUT DO NOT CONSTITUTE A LARGE VOLUME OF THE COMPLEX. GNEISSIC LAYERING AND MINERAL FOLIATION FORMED OF BIOTITE AND HORNBLENDE ARE UBIQUITOUS BUT NOT ALWAYS CLEARLY VISIBLE, METAVOLCANIC (AAM), Aab, Aava, Aaub) AND METASEDIMENTARY (Aan, Aanm Aaif, Aag) ROCKS OCCURING AS DISCONTINUOUS ZONES AND LENSES WITHIN THE BASEMENT COMPLEX OF THE FOXE FOLD BELT ARE CORRELATED WITH THE PRINCE ALBERT GROUP OF THE NORTHWESTERLY ADJACENT COMMITTEE FOLD BELT ON THE BASIS OF CONSIDERABLE LITHOLOGIC SIMILARITY. THE STRATIGRAPHY OF THAT PART OF THE GROUP WITHIN THE FOXE FOLD BELT IS UNKNOWN BUT IT HAS BEEN DESCRIBED BY CAMPBELL (1974) AND SCHAU (1975A) WITHIN THE COMMITTEE FOLD BELT. A LENSOID SILL OF ANORTHOSITIC GABBRO (AAb) AND LAYERED AMPHIBOLITE (AAM), AS WELL AS POSSIBLY RELATED AMPH-IBOLITIC DYKES (AAM2) MAY INTRUDE OR BE GENETICALLY RELATED TO THE GROUP.

AMONGST THE GNEISSIC ROCKS OF THE COMPLEX ARE PRESUMED TO BE SOME THAT FORM THE BASEMENT TO THE PRINCE ALBERT GROUP BUT UNCONFORM-ABLE RELATIONS, IF PRESENT ARE MASKED BY DEFORMATION AND PLUTONIC ACTIVITY. SOME GNEISSIC UNITS, PARTICULARLY PARTS OF UNIT Agn, MAY BE DERIVED FROM THE PRINCE ALBERT GROUP OR SOME STILL OLDER METASEDIMENTARY SUCCESSION BY MIGMATITIC PROCESSES. GRANITOID GNEISS UNITS OF PROBABLE PLUTONIC ORIGIN (Ag, Ag, Ag) MAY BE OLDER AND YOUNGER THAN THE PRINCE ALBERT GROUP. IN THE COMMITTEE FOLD BELT, PORPHYRITIC GRANITE RESEMBLING THAT OF UNIT Ag HAS INTRUDED THE GROUP (SCHAU, 1975A). ELSEWHERE, AGE RELATIONS ARE COMMONLY EQUIVOCAL. MORE DETAILED STUDIES OF THE BASEMENT COMPLEX HAVE BEEN MADE BY FRISCH (1974, 1975) AND SCHAU (1975A, 1975B).

THE PENRHYN GROUP CONSISTS OF PARAGNEISS (Alpn, Alpnc) AND MARBLE (ALPC) WITH SOME QUARTZ-MICA PSAMMITE (ALPQD, ALPQM) AND CALCIUM-SILICATE GNEISS (ALPCS). MINOR ORTHOQUARTZITE (ALPQ), AMPHIBOLITE (Alpm), PELITE (Alpp) AND VERY MINOR IRON FORMATION (Alpif ) ARE ALSO PRESENT. COMPLETE UNDERSTANDING OF THE STRATIGRAPHIC SUCCES-SION IS LACKING AS MOST UNITS ARE DISCONTINUOUS AND LENSOID AND THE POSSIBILITY OF THE EXISTENCE OF FACIES CHANGES, UNCONFORMITIES AND CRYPTIC EARLY STRUCTURES RENDERS ITS DELINEATION DIFFICULT. A GENERAL ORDER TO THE UNITS CAN BE INDICATED NONETHELESS. A THIN (50-100 m) BASAL SEQUENCE INCLUDES ORTHOQUARTZITE, RUSTY SILLIMANITE SCHIST, A SUSPECTED METAREGOLITH AND MINOR AMPHIBOLITE, DOLOMITIC MARBLE QUARTZO-FELDSPATHIC GRIT, RUSTY PYRITE-MAGNETITE IRON FORM-ATION AND CONGLOMERATE WITH QUARTZ AND HEMATITE CLASTS. THIS SEQ-UENCE IS OVERLAIN BY A PREDOMINANTLY CALCAREOUS UNIT OF MARBLE, CALCIUM-SILICATE GNEISS AND SOME PARAGNEISSIC INTERBEDS. THE CALC AREOUS UNIT IS FOLLOWED BY A THICK UNIT OF PARAGNEISSIC ROCKS AND A UNIT OF MARBLE, CALCIUM-SILICATE GNEISS AND BIOTITE QUARTZITE. AT THE HIGHEST OBSERVED STRUCTURAL AND STRATIGRAPHIC LEVELS IS A UNIT OF QUARTZ-BIOTITE AND/OR MUSCOVITE PSAMMITE AND METAGREYWACKE THIS UNIT IS VARIABLE IN GROSS LITHOLOGY AND VARIOUSLY INTERBEDDED AND COMPOSITIONALLY GRADATIONAL WITH PARAGNEISS (Apngb), CALCIUM-SILICATE GNEISS AND MINOR MARBLE. THE TOP OF THE PENRHYN GROUP HAS NOT BEEN OBSERVED. THE RELATIONSHIP BETWEEN PRESENT AND ORIGINAL THICKNESS OF THE GROUP IS WELL DISGUISED BY THE RIVAL PROCESSES OF THINNING DURING DEFORMATION, REPETITION BY FOLDING AND DILATION BY SYNTECTONIC PLUTONISM.

THE PENRHYN GROUP APPEARS TO LIE UNCONFORMABLY ON THE BASEMENT COMPLEX. TECTONISM HAS OBLITERATED ANY ANGULAR DISCORDANCE AND UNCONFORMABLE RELATIONSHIPS ARE INFERRED BECAUSE OF THE CLEAR LITHOLOGIC CONTRAST AND THE COMMON PRESENCE OF THE THIN ORTHO-QUARTZITE UNIT WITH RARE FELDSPATHIC GRIT AND HEMATITE-CLAST CON-GLOMERATE BEDS LYING UPON A VARIETY OF ROCK TYPES IN THE COMPLEX. METAMORPHISM IN THE FOXE FOLD BELT PRODUCED THE ASSEMBLAGES GARNET BIOTITE-SILLIMANITE AND CORDIERITE-SILLIMANITE-GARNET IN PARAGNEISS AND, IN MARBLE, DIOPSIDE-FORSTERITE-CALCITE AS WELL AS SCAPOLITE AND A HUMITE GROUP MINERAL. IN PELITIC AND SEMI-PELITIC ROCKS, THE REACTIONS: MUSCOVITE + QUARTZ → SILLIMANITE + K FELDSPAR

ANDALUCITE -> SILLIMANITE CAN BE DELINEATED IN RESTRICTED AREAS. RETROGRADE, OR LATER LOW GRADE METAMORPHISM IS PROBABLE BECAUSE OF EXTENSIVE ALTERATION OF HIGH GRADE MINERALS.

POLYPHASE STRUCTURES INDICATING NUMEROUS EPISODES OF DEFORMATION OF THE BASEMENT COMPLEX, THE PRINCE ALBERT GROUP AND THE PENRHYN GROUP EXIST THROUGHOUT THE TWO FOLD BELTS BUT UNEQUIVOCAL SEQUEN-TIAL RELATIONSHIPS AMONG THEM ARE RARE. THE EARLIEST DEFORMATIONAL PHASE IS INFERRED TO HAVE AFFECTED THE BASEMENT COMPLEX PRIOR TO DEPOSITION OF THE PENRHYN GROUP. TECTONIC TRENDS IN THE BASEMENT COMPLEX AND THE PRINCE ALBERT GROUP WITHIN THE FOXE FOLD BELT ARE FOR THE MOST PART CONFORMABLE WITH THOSE OF THE OVERLYING PENRHYN GROUP AND PRE-PENRHYN STRUCTURES ARE NOT READILY DISTINGUISHABLE. STRUCTURES IN THE COMMITTEE FOLD BELT HAVE BEEN DESCRIBED BY CAMPBELL (1973, 1974), FRISCH (1974), REESOR, ET AL. (1975) AND SCHAU (1973, 1974, 1975A, 1975B). SOME DEFORMATION OF THE PRINCE ALBERT GROUP MAY HAVE ALSO PRECEDED DEPOSITION OF THE PENRHYN GROUP. A SECOND PHASE OF FOLDING, THE EARLIEST OBSERVED IN THE PENRHYN GROUP, IS BELIEVED TO HAVE FORMED ATTENUATED ISOCLINAL FOLDS AND UBIQUITOUS FOLIATION. IN ALL BUT A FEW OUTCROPS THIS FOLIATION IS PARALLEL TO BEDDING. MEAGRE EVIDENCE SUGGESTS THAT THE TREND OF EARLY PENRHYN STRUCTURES MAY HAVE BEEN NORTHERLY. THE EFFECTS OF THIS FOLDING EPISODE ON THE PENRHYN GROUP REMAIN PROBLEMATICAL, BUT MAY HAVE RESULTED IN SOME OF THE OBSERVED DISCONTINUITY OF UNITS DESCRIBED ABOVE.

LATER EPISODES OF FOLDING PRODUCED PROMINENT MESO- AND MEGASCOPIC FOLDS THAT IMPOSE AN EAST-NORTHEAST STRUCTURAL GRAIN ON THE FOXE FOLD BELT. TIGHT TO NEARLY ISOCLINAL RECUMBENT STRUCTURES ARE FOLDED BY LATER NEARLY COAXIAL, MORE OPEN, UPRIGHT TO OVERTURNED FOLDS. THESE LATER FOLDS CAN OFTEN BE OBSERVED TO HAVE DEFORMED EARLIER STRUCTURES.

IN NUMEROUS PLACES GNEISSIC BODIES OF THE BASEMENT COMPLEX CAN BE SEEN TO LIE ON AND POSSIBLY WITHIN THE PENRHYN GROUP. SUCH REL-ATIONSHIPS SUGGEST EITHER THE PRESENCE OF LARGE ALLOCHTHONOUS NAPPES OR SMALLER SCALE, LOCALLY OVERTURNED FOLDS AND THRUST FAULTS. THE TIME OF MOVEMENT OF THE BASEMENT MASSES IS UNCERTAIN BUT AS THEY ARE FOLDED ABOUT NORTHEASTERLY TRENDING AXES, THEY ARE PRE-SUMED TO HAVE BEEN EMPLACED DURING THE EARLY DEFORMATION OF THE PENRHYN GROUP.

NORTH TO NORTHEASTERLY TRENDING BROAD TRANSVERSE FLEXURES ALTER THE PLUNGES OF PRE-EXISTING FOLDS. FEW MESOSCOPIC STRUCTURES ASSOCIATED WITH THIS PHASE WERE OBSERVED. IT MAY BE RELATED TO SYN- AND POST-TECTONIC PLUTONIC INTRUSION. STEEPLY DIPPING FRAC-TURES AND FAULTS, MANY WITH NORTHERLY AND NORTHWESTERLY TRENDS ARE EVIDENCE OF THE LAST MAJOR PHASE OF DEFORMATION. MOST FAULT DISPLACEMENTS APPEAR TO BE LEFT LATERAL AND EAST-SIDE-UP. MINOR EVIDENCE OF EAST-WEST FAULTING THAT MAY HAVE AFFECTED LATE PROT-EROZOIC DIABASE DYKES (HId) HAS BEEN OBSERVED.

METAMORPHISM I'S BELIEVED TO HAVE ACCOMPANIED ALL PHASES OF DEFORM-ATION UP TO THE LATE NORTHEASTERLY TRENDING OPEN FOLDING. IT POSSIBLY REACHED ITS ZENITH DURING THE PRECEDING NORTHEASTERLY-TRENDING ISOCLINAL PHASE, BUT MINERAL RECRYSTALLIZATION OUTLASTED MUCH OF THE PENETRATIVE DEFORMATION. RETROGRESSIVE METAMORPHISM MAY HAVE ACCOMPANIED LATEST FOLDING EPISODES OR BEEN POST-TECTONIC CONTACT METAMORPHIC AUREOLES ARE LIKELY PRESENT AROUND POST-

TECTONIC GRANITIC PLUTONS (Alg). Massive and foliated plutonic rocks (Ag1, Ag2, Ag3, Ag), CHIEFLY OF HORNBLENDE AND BIOTITE GRANODIORITE, QUARTZ MONZONITE AND GRANITE INTRUDE THE BASEMENT COMPLEX AND THE PENRHYN GROUP. FOLIATED PLUTONIC ROCKS, EXCEPT WHERE OBSERVED TO HAVE INTRUDED THE PENRHYN GROUP ARE ASSIGNED TO THE COMPLEX. WHERE INTRUSIVE INTO THE GROUP (A) THEY ARE CONSIDERED TO BE PRE- OR SYN-TECTONIC TO THE MAIN PHASES OF DEFORMATION. COMMON LOCAL GENERATION OF PEGMATITE AND LEUCOCRATIC GRANITIC ROCK (Alg) IS BELIEVED TO BE COEVAL WITH DEF-ORMATION ALSO, MASSIVE, OFTEN CROSS-CUTTING PLUTONS (A) IN-

VADED THE PENRHYN GROUP AFTER CESSATION OF DEFORMATION. AVAILABLE RESULTS OF RADIOMETRIC ANALYSES INDICATE FORMATION OF THE BASEMENT COMPLEX PRIOR TO 2500 MA AGO, WITH SOME EVENTS OCCUR-RING POSSIBLY AS LONG AS 2900 MA AGO (R.K. WANLESS, PERSONAL COM-MUNICATION, 1976). ACID VOLCANIC ROCKS OF THE PRINCE ALBERT GROUP ON THE WEST SIDE OF MELVILLE PENINSULA HAVE YIELDED A PRELIMINARY

DATE OF ABOUT 2700 Ma (R.K. WANLESS, PERSONAL COMMUNICATION, 1977). DEFORMATION OF THE BASEMENT COMPLEX AND THE PENRHYN GROUP MAY HAVE TAKEN PLACE 2134 MA AGO (JACKSON AND TAYLOR, 1972) AND AGAIN DURING THE HUDSONIAN OROGENY (CIRCA 1700 MA AGO). POST-TECTONIC PLUTONS (1600 Ma old, Heywood, 1967) WERE EMPLACED INTO THE FOLD BELT LATE IN THE OROGENIC HISTORY. FOLLOWING EXTENSIVE UPLIFT AND EROSION, DIABASE DYKES (Hd) PRESUMED TO BE PART OF THE MACKENZIE DYKE SWARM OF ABOUT 1000 MA AGE (FAHRIG, 1970), CUT ROCKS OF THE FOLD BELT. THESE ARE SPACIALLY ASSOCIATED WITH FAULTS AND FRACTURES TRENDING NORTHWEST. SUBSEQUENT UPLIFT AND EROSION WAS FOLLOWED BY DEPOSITION OF SILURIAN AND ORDOVICIAN CARBONATE ROCKS (OSC) REMNANTS OF WHICH LIE NORTH AND SOUTH OF THE COMMITTEE AND FOXE FOLD BELTS AND BORDERING FOXE BASIN.

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DESCRIPTIVE NOTES

MAP-AREA 46 0/9 CONTAINS THE BASEMENT COMPLEX IN ITS NORTHWEST QUARTER AND THE PENRHYN GROUP ELSEWHERE. GNEISSIC UNITS (Agadn) OF THE COMPLEX HAVE NOT BEEN DIFFERENTIATED IN THIS AREA EXCEPT IN THE VICINITY OF SOME OUTCROPS OF METASEDIMENTARY ROCKS (AAQ AAN, AANM, AAIf ) CORRELATED WITH THE PRINCE ALBERT GROUP. MINOR AMOUNTS OF LAYERED GNEISS (Agn), GRANODIORITIC ORTHOGNEISS (Ag1) AND PINK FOLIATED AUGEN GRANITE (Ag2) ARE PRESENT BUT THEIR RELATIONSHIPS TO THE PRINCE ALBERT GROUP ARE NOT KNOWN IN THIS AREA. BASEMENT GNEISS CONTAINING LENSES OF ORTHOQUARTZITE OVERLIES THE PENRHYN GROUP IN A STRUCTURALLY COMPLEX NORTHEASTER-LY TRENDING ZONE. ORTHOQUARTZITE (APQ) OF THE BASAL SEQUENCE OF THE GROUP IS NEARLY CONTINUOUS ALONG THE CONTACT BUT OTHER LENSES OF ORTHOQUARTZITE (?AAQ) LYING WITHIN GNEISSIC UNITS ARE OF UNCERTAIN AFFINITY. BECAUSE SOME CONTAIN FUCHSITE (CHROMIUM-BEARING MICA), TYPICAL OF ORTHOQUARTZITE OF THE PRINCE ALBERT GROUP, THEY MAY BE PART OF IT, HOWEVER THEIR PROXIMITY TO UNIT APQ SUGGESTS THEY MAY BE INFOLDS OR TECTONIC SLIVERS OF PENRHYN

ORTH CUARTZITE. THE OVERTURNED BASAL SEQUENCE OF THE PENRHYN GROUP BECOMES LESS PURE TO THE NORTHEAST. ORTHOQUARTZITE THINS OR PASSES GRADATION-ALLY INTO A UNIT (APNC) OF VERY RUSTY PARAGNEISS AND QUARTZ-MUSCOVITE SCHIST. UNIT APNC IS FOLLOWED BY THICK, FAINTLY FOLIATED MARBLE (ALPC) AND A THICK UNIT OF PARAGNEISS (ALPN) CONTAINING INTERBEDS OF MARBLE AND CALCIUM SILICATE GNEISS. CAR-BONATE UNITS APPEAR TO THICKEN EAST- AND NORTHEASTWARD AT THE EXPENSE OF PARAGNEISS. THE PARAGNEISS IS FOLLOWED BY A UNIT OF MARBLE, RUSTY PARAGNEISS AND CALCIUM SILICATE GNEISS EXPOSED IN WHAT MAY BE THE CORE OF A MEGASCOPIC ISOCLINAL FOLD THAT EXTENDS IN AN EASTERLY TRENDING BELT ACROSS THE CENTRAL PART OF THE AREA. PARAGNEISS WITH MARBLE INTERBEDS SOUTH OF THIS HYPOTHETICAL FOLD IS CORRELATED WITH THAT LYING NORTH OF IT. FURTHER REPETITION OF THE STRATIGRAPHIC SUCCESSION LIKELY OCCURRS IN THE POORLY EX-POSED SOUTHERN HALF OF THIS AREA.

THE EARLY POLYPHASE STRUCTURAL HISTORY OF THIS AREA INCLUDES THE DEVELOPMENT OF FOLIATION AND ATTENUATED FOLDS IN THE BASEMENT COMPLEX, AND THE EMPLACEMENT OF THE COMPLEX OVER THE PENRHYN GROUP, THIS EMPLACEMENT WAS BY EITHER LOCALLY DEVELOPED FOLDING AND THRUST FAULTING OR BY LARGE SCALE NAPPE-LIKE MOVEMENTS. DEVEL-OPMENT OF PERVASIVE FOLIATION AND EARLY ISOCLINAL FOLDS IN THE PENRHYN GROUP MAY HAVE ACCOMPANIED THIS LATTER TECTONISM. PRES-ERVATION OF THE BASAL SEQUENCE OF THE PENRHYN GROUP SUGGESTS THAT ONLY LIMITED MOVEMENT MAY HAVE OCCURED ALONG THE UNCONFORMITY, EXCEPT WHERE THE BASAL SEQUENCE AND THE ADJACENT MARBLE UNIT ARE ABSENT NORTH OF THE CENTRE OF THE AREA. THE EXTENT OF POSSIBLE FAULTING WITHIN THE BASEMENT COMPLEX OR HIGHER LEVELS OF THE PEN-RHYN GROUP IS IMPOSSIBLE TO ASSESS.

TIGHT TO ISOCLINAL NORTHEASTERLY TRENDING FOLDING PRODUCED STRUC-TURES OF ALL SCALES WITHIN THE PENRHYN GROUP AND THE BASEMENT COMPLEX NEAR IT. ABOUT 3 KM SOUTH OF THE JENNESS RIVER, THE CONTACT IS TIGHTLY FOLDED WITH PENRHYN GROUP ORTHOQUARTZITE APPEARING IN ANTIFORMAL FOLD CORES. OVERTURNING OF THE SECTION PRECEEDED THIS DEFORMATION. LATER, MORE OPEN FOLDING ALSO ABOUT NORTHEAST TRENDS AFFECTED EARLIER STRUCTURES. STILL LATER TRANS-VERSE WARPING ABOUT POORLY DEFINED NORTHERLY TRENDS GAVE RISE TO VARIATIONS IN PLUNGE OF PRECEDING FOLDS AND FORMED DOMAL FEATURES SUCH AS THE LARGE STRUCTURE CORED BY CALCIUM SILICATE: -GNEISS NORTH OF THE CENTRAL PART OF THE AREA AND THE SMALL DOUBLY PLUNGING FOLDS OUTLINED BY MARBLE IN THE SOUTHEAST QUARTER.

NORTHWEST TRENDING FAULTING HAS OFFSET UNITS AND STRUCTURES OF THE BASEMENT AND THE PENRHYN GROUP. LATER EAST-WEST FAULTS, THE MOST PROMINENT OF WHICH DISPLACES THE BASEMENT-PENRHYN CONTACT SOUTH OF THE JENNESS RIVER, MAY POST-DATE EMPLACEMENT OF DIABASE DYKES (Hd) BUT AGE RELATIONSHIPS ARE UNCERTAIN.

PHANEROZOIC PALAEOZOIC

ORDOVICIAN AND SILURIAN OSc BUFF AND LIGHT GREY DOLOMITE

UNCONFORMITY

HADRYNIAN

LATE(?) PROTEROZOIC

HId BROWN WEATHERING, DARK GREEN TO BLACK, FINE TO MEDIUM GRAINED INTRUSIVE CONTACT

EARLY PROTEROZOIC APHEBIAN AND YOUNGER (?)

Ag ORANGE AND BUFF WEATHERING, WHITE, TAN AND GREY, MASSIVE AND FOLIATED, MEDIUM TO COARSE GRAINED, BIOTITE AND HORNBLENDE GRANDDIORITE, QUARTZ MONZONITE, GRANITE AND LEUCOCRATIC
EQUIVALENTS. SOME PORPHYRITIC VARIETIES. PEGMATITE COMMONLY
CONTAINING QUARTZ, FELDSPAR, MUSCOVITE AND BIOTITE; RARELY
TOURMALINE. PRE-AND POST-TECTONIC PLUTONS ARE NOT DIFFERENTIATED. INCLUDES ZENOLITHS OF OLDER UNITS. INTRUSIVE CONTACT

LEGEND '

APHERIAN

PENRHYN GROUP APqm GREY, FINE TO MEDIUM GRAINED, THIN TO THICK BEDDED, QUARTZ-MUSCOVITE-FELDSPAR PSAMMITE, SOME WITH ANDALUCITE(?)

PORPHYROBLASTS; MUSCOVITE SCHIST, META-GREYWACKE. APD BLACK, FISSILE, VERY FINE GRAINED, "SOOTY" PELITE. BREY, FINE TO MEDIUM GRAINED, THIN TO THICK BEDDED, QUARTZ-

BIOTITE-FELDSPAR PSAMMITE AND META-GREYWACKE, SOME WITH GARNET AND RARELY CORDIERITE. GRADATIONAL CONTACTS WITH UNIT AND IN APD BROWN, RUSTY AND TAN WEATHERING, BUFF AND GREY, FINE TO MEDIUM GRAINED, QUARTZ-BIOTITE-FELDSPAR, QUARTZ-FELDSPAR-BIOTITE
GARNET-SILLIMANITE AND QUARTZ-FELDSPAR-BIOTITE-GRAPHITE
PARAGNEISS AND MINOR SCHIST. MINOR CORDIERITE-BEARING ARAGNEISS. INCLUDES SOME INTERBEDS OF UNITS APRIC , APC

Alphab Units Alpab AND Alph; INTERBEDDED, GRADATIONAL AND UNDIFFERENTIATED. GREY AND GREY-GREEN, MEDIUM TO COARSE GRAINED THIN BEDDED, ALCIUM-SILICATE GNEISS AND MARBLE-QUARTZITE WITH QUARTZ-CALCITE-PLAGIOCLASE-DIOPSIDE AND ACCESSORY SCAPOLITE, ACTINOLITE, GRAPHITE, EPIDOTE AND BIOTITE. COMMONLY INTERBEDDED WITH AND

APC WHITE, GREY AND GREY-BLUE, MEDIUM TO COARSE GRAINED, MASSIVE AND BEDDED MARBLE WITH CALCITE-DIÓPSIDE-MICROCLINE-QUARTZ AND MINOR DOLOMITE, SCAPOLITE, PHLOGOPITE, GRAPHITE, A HUMITE GROUP MINERAL AND TREMOLITE. INTERBEDDED WITH AND PASSING LATERALLY INTO UNIT APCS. INCLUDES SMALL BEDS OF UNIT APN. PEGMATITE OF UNIT AG

APNC RUSTY, FINE TO MEDIUM GRAINED, GRAPHITIC PARAGNEISS WITH PYRITE AND PYRRHOTITE.

A DARK GREEN, FINE TO MEDIUM GRAINED, MASSIVE AND FOLIATED \_\_\_ AMPHIBOLITE; SOME BIOTITE-GARNET AMPHIBOLITE.

MHITE TO GREY-BLUE, MEDIUM TO COARSE GRAINED, MASSIVE AND FAINTLY BEDDED, ORTHOQUARTZITE WITH MINOR FELDSPAR, WHITE MICA AND PHLOGOPITE. MINOR QUARTZO-FELDSPATHIC GRIT, CONGLOMERATE WITH HEMATITE CLASTS, GREY-GREEN DIOPSIDE-CHLORITE ROCK (META-REGOLITH?). BIOTITE-GARNET-SILLIMANITE SCHIST AND AMPHIBOLITE

Apif Rusty, Massive Pyrite, Magnetite IRON FORMATION. UNCONFORMITY

Ag1 FOLIATED, MASSIVE AND PORPHYRITIC GRANITE AND GRANITOID GNEISS. FOLIATED FELDSPAR AUGEN GRANITE; MINOR GRANITOID GNEISS. FOLIATED HORNBLENDE GRANODIORITE AND AMPHIBOLITIC GRANITOID

Agn LAYERED GRANODIORITIC GNEISS; MINOR AMPHIBOLITE. Ang MIGMATITE OF UNITS Ag, Ag AND/OR Agn.

ORANGE, GREY AND TAN, MEDIUM TO COARSE GRAINED, LAYERED AND FOLIATED, BIOTITE AND HORNBLENDE GRANDDIORITIC, QUARTZ MONZONITIC AND LEUCOCRATIC GNEISS. INCLUDES ROCK OF UNITS Ag, Ag, Ag, Agn Ang AND SMALL BODIES OF Am. DARK GREEN FOLIATED AMPHIBOLITE, META-GABBRO AND HORNBLENDE

PRINCE ALBERT GROUP

AAM | FOLIATED AMPHIBOLITE DYKES.

AAM, LAYERED AMPHIBOLITE. DLIATED AND MASSIVE, DARK GREY, COARSE GRAINED ANORTHOSITIC GABBRO; MINOR AMPHIBOLITE.

AAUD FOLIATED, SERPENTINIZED ULTRAMAFIC ROCK.

AAn QUARTZ-BIOTITE-FELDSPAR PARAGNEISS, SOME HORNBLENDE-BEARING. AAnm MUSCOVITE-QUARTZ-FELDSPAR PARAGNEISS.

AAIF DARK BLUE-GREY LAYERED OXIDE FACIES IRON FORMATION. AAq WHITE, MEDIUM TO COARSE GRAINED, MASSIVE ORTHOQUARTZITE; MUSCOVITE- AND RARELY FUCHSITE-BEARING.

AAVO LIGHT GREY, FINE GRAINED LAYERED ACID VOLCANIC ROCKS.

----- GEOLOGICAL BOUNDARY (DEFINED, APPROXIMATE). ..... Boundary of AREAS EXTENSIVELY DRIFT-COVERED.

----- GEOLOGICAL BOUNDARY GRADATIONAL, POORLY-EXPOSED, IMPRECISELY LOCATED OR NOT OBSERVED. PLANAR STRUCTURES

BEDDING AND COMPOSITIONAL LAYERING (HORIZONTAL, INCLINED, VERTICAL) FOLIATION, SCHISTOSITY, GNEISSIC LAYERING AND CLEAVAGE (HORIZONTAL, INCLINED, VERTICAL, DIP UNKNOWN); EARLIEST OR

AXIAL PLANES (INCLINED, VERTICAL) ASSOCIATED WITH FOLDS DEFORMING BEDDING AND COMPOSITIONAL LAYERING. EARLIEST OR

AXIAL PLANES (INCLINED, VERTICAL); ASSOCIATED WITH FOLDS OF LATER PHASES OBSERVED TO HAVE DEFORMED BEDDING OR EARLY FOLIATION. / / LINEATION (PLUNGING, HORIZONTAL); FORMED BY FOLD AXES, BEDDING FOLIATION INTERSECTION (X), MINERAL GROWTH OR RODDING (R),

MULLION (M), AND BOUDIN AXES (B); EARLIEST OR ONLY OBSERVED. LINEATION (PLUNGING, HORIZONTAL); FORMED BY BEDDING-FOLIATION AND FOLIATION-FOLIATION INTERSECTION (X), MINERAL GROWTH OR RODDING (R) AND MULLION (M) AND FOLD AXES ASSOCIATED WITH FOLDS OBSERVED TO HAVE DEFORMED BEDDING OR EARLY FOLIATION.

HIGH ANGLE FAULT (DEFINED, APPROXIMATE); ARROWS INDICATE APPARENT RELATIVE MOVEMENT. ▲ \_ LOW ANGLE FAULT (DEFINED, APPROXIMATE); TEETH IN DIRECTION OF

NOTE ON DATA PRESENTATION

LITHOLOGIC AND STRUCTURAL DATA SHOWN IS THAT OBTAINED IN THE FIELD AUGMENTED BY ONLY LIMITED INTERPRETATION. NO ATTEMPT HAS BEEN MADE TO EXTEND LITHOLOGIC UNITS TO CONSTRUCT AN INTEGRATED STRATIGRAPHIC AND STRUCTURAL MODEL. LITHOLOGIC UNITS IN THE LEGEND ARE NOT ARRANGED IN TEMPORAL ORDER, AS THIS IS LARGELY UNCERTAIN, EXCEPT THAT BASAL UNITS OF THE PENRHYN GROUP ARE LISTED BELOW OTHER PARTS OF THE GROUP. DESCRIPTION OF MESOSCOPIC STRUCTURES IS LIMITED TO MORPHOLOGY OF COMMON TYPES. MESOSCOPIC STRUCTURES ARE ASSIGNED A POSITION (EARLY OR LATE) IN THE TECTONIC HIERARCHY BASED UPON INTERPRETATION OF LOCAL FIELD RELATIONSHIPS ONLY. THIS POSITION CANNOT BE DIRECTLY RELATED TO DEFORMATIONAL PHASES WHICH FORMED LARGE FOLDS OR TO MESOSCOPIC STRUCTURES IN NEARBY AREAS. NO ATTEMPT HAS BEEN MADE TO INTEGRATE MESOSCOPIC FEATURES INTO A MEGASCOPIC STRUCTURAL SYNTHESIS. AXIAL TRACES OF MEGASCOPIC FEATURES ARE NOT PORTRAYED AS THOSE OF EARLY FOLDS ARE LARGELY INTERPRETATIVE AND THOSE OF LATE FOLDS CAN BE DEDUCED FROM ATTITUDES OF PLANAR STRUCTURES ON THE MAP.

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NOTICE OF ANY REVISIONS OR ADDITIONAL GEOLOGICAL INFORMATION KNOWN TO USERS OF THESE MAPS WOULD BE GRATEFULLY RECEIVED BY

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