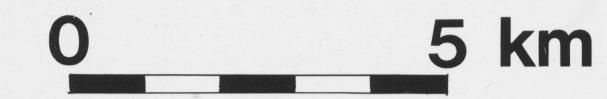


\$8.00 per set

GEOLOGY OF N.W. NIDDERY LAKE

NTS 105 0 - 12, 13, & 14



1:50 000 SCALE

Compiled by M.P. Cecile, 1984. Geology by M.P. Cecile, 1983 and the published maps of S.L. Blusson (1974) and J.O. Wheeler (1954)

LEGEND FOR MAP SYMBOLS

______ Geological boundary (defined, approximate, assumed, speculative) + X X M Bedding(horizontal, inclined, vertical, overturned) Foliation (inclined, vertical)

Normal fault (defined, approximate, assumed; symbol on hanging wall) Reverse Fault (defined, approximate, assumed; teeth on hanging wall) Overturned reverse fault (teeth on overturned hanging wall) Anticline, syncline (arrow in the direction of plunge) Minor folds (showing plunge of fold axis and inclination of axial plane) Anticline, syncline (overturned)

Strike-slip fault (arrows indicate relative direction of motion) X Location of valley bottom outcrops

ZnMs - Zinc moss, bright yellow-green sphagmnum moss that retains water in droplets at the moss surface. Analysis of waters associated with seven of these moss occurrences showed that all but one had normal aqueous zinc values. Zn - Water with zinc moss has a value of 240 ppb zn. - Vein deposits; Qtz - quartz, Ga - Galena, Py - pyrite, Cp - Chalcopyrite. F - Fossil locality

ACKNOWLEDGEMENTS

This map has been produced from a scanned version of the original map Reproduction par numérisation d'une carte sur papier

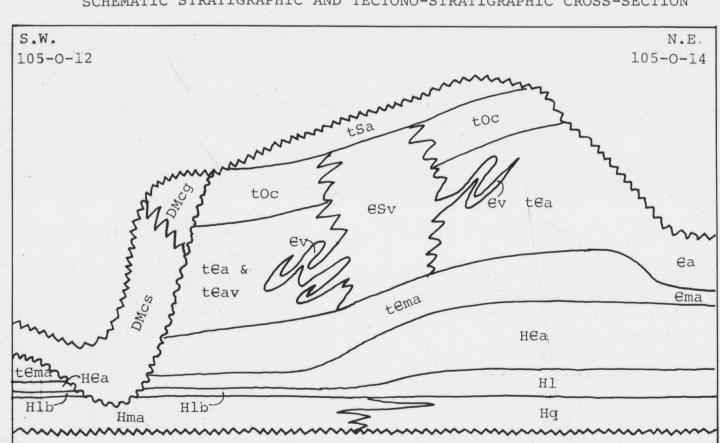
Map areas 105-0-12,13, and 14 were mapped mainly by ground traverses from fly camps, which were supplemented by minor helicopter mapping. Field assitance was provided by Hans Smit. Helicopter support was provided by Northern Mountain Helicopters (mainly piloted by Pete Bachinsky). Expediting support was provided by Ross River

GSC OPEN FILE

CAMBRIAN TO SILURIAN? LOWER CAMBRIAN TO LOWER? SILURIAN

Basic volcanic lapilli tuff, breccias, flows, sills, dykes, all of which are brown to green and generally massive; volcaniclastics, brown to green; intraclast breccia and conglomerate; thickness in excess of 200 m; unfossiliferous; this map-unit everywhere overlies the Ema mapunit and near Old Cabin Creek it is directly overlain by Sa argillite and chert, from which G. Abbott (per. comm., 1983) reports collecting Early Silurian groptolites; thus although this unit is clearly homotaxial with Cambrian argillites and volcanics, it may represent the remnants of distinct volcanic centers that persisted through the Cambrian and Ordovician to early Silurian time; conversely they may be mainly Cambrian in age and because of their relief were sites of erosion or non deposition during the Ordovician.

SCHEMATIC STRATIGRAPHIC AND TECTONO-STRATIGRAPHIC CROSS-SECTION



LEGEND

QUATERNARY

Rock avalanche, unconsolidated deposits comprised of varying size blocks of local rock types; most block never larger than 2 m in diameter; the deposit at 63°50' and 131°51' is relatively complete whereas the others are extensively eroded and covered by talus and valley bottom deposits.

CRETACEOUS

Alteration haloe; contact metamorphic zone around Kg intrusions; consists of well indurated slightly recrystallized argillite, shale, siltstone, schist, phyllite, crystalline carbonate and skarn; volcanic strata also produce skarns.

DEVONIAN AND MISSISSIPPIAN UPPER DEVONIAN AND LOWER MISSISSIPPIAN

CAMBRIAN

HADRYNIAN.

LOWER TO UPPER? CAMBRIAN

erate, dark grey, massive and thick bedded; minor siliceous shale and chert; thickness unknown; unfossiliferous.

Interstratified succession of $\mathcal{L}a$ and $\mathcal{L}v$ in which

volcanic strata are abundant and in some local-

·Limestone, grey, thick bedded; argillite, green

and buff, thin bedded; minor grey quartzite and

buff calcareous quartzite; occurs only south of

the Rogue River; estimated thickness ~100 m in

the north and decreasing to ~20 m in the south;

Argillite, maroon and green thin bedded; minor grey quartzite and buff calcareous quartzite;

estimated thickness >200 m; unfossiliferous.

unfossiliferous.

ities exceed 50% of the succession.

QUATERNARY

Area covered by unconsolidated Quaternary strata in which even speculative contacts cannot be drawn.

CRETACEOUS

Quartz monzonite and granite; b - with biotite; bh - with biotite and hornblende. Kg-b,bh

DEVONIAN AND MISSISSIPPIAN UPPER DEVONIAN AND LOWER MISSISSIPPIAN

DMsc Shale, black; chert, black; with major units of brown calcareous shale and/or siltstone; minor quartzite, brown to orange dolostone, grey limestone, and chert pebble conglomerate; thickness unknown; Late Devonian Pelecypods were collected from a limestone unit at one locality (identified by A.W. Norris). DMc Chert, black; shale, black; estimated thickness, where present, is 200 m; unfossiliferous; in places this unit cannot not be mapped and is included in the DMsc unit.

SILURIAN

LOWER TO UPPER SILURIAN

Argillite, rusty dark green to buff, thin bedded; minor black shale and chert as thin units or partings in the argillite; minor bright orange dolostone as a single medium to thick bed near the base of the argillite succession; measured thickness is 20 to 30 m; graptolites often are found in the shale beds.

ORDOVICIAN

MIDDLE AND UPPER ORDOVICIAN

Chert, black, thin bedded; with 20-30% shale, whitish black to black weathering; minor argillite, green near base of succession; measured thickness is 15 to 25 m; abundantly graptolitic, especially Diplograptids; this unit could not be distinguished from the LMOc and Sa units in maparea 105-0-12.

LOWER AND MIDDLE ORDOVICIAN



Chert, white, dark grey, pale green, and black weathering, drab grey from a distance, resistant; thin to medium bedded and argillaceous in lower part; more massive and extensively bioturbated in upper part; minor shale partings very minor limestone, buff to brown weathering as one to six thin beds near the base of the succession; measured thickness is 80 to 130 m; graptolites, especially multibranched forms, are often found in the shale beds.

CAMBRIAN

LOWER TO UPPER? CAMBRIAN

 $\frac{\mathcal{L}a}{bedded}$; anterstratified with the argillite are distinct, very thick successions of black shale, siliceous argillite and chert, green and brown calcareous volcaniclastic sandstone; intraclast conglomerate; lapilli tuff, volcanic breccia basic flows, sills and dykes, grey quartzite, quartz-pebble conglomerate, argillaceous quartzite; minor thin bedded, buff limestone; estimated thickness in northeastern 105-0-14 is ~400 m, elsewhere it is tectonically thickened; has the trace fossil Planolites, and 1/4 cm wide, criss-crossing, bedding-plane parallel grazing traces (unidentified). Ev -Mappable units of mainly volcaniclastic sandstone and intraclast breccia or conglomerate; minor lapilli tuff, volcanic breccia, basic flows, sills and dykes; most volcanic strata are calcareous; a single Archaeocyathid was collected from a unit of volcanic breccia.

Argillite, maroon and pale green, thin bedded; minor grey-white quartzite and quartz pebble conglomerate; minor buff argillaceous limestone; measured thickness in the Fault Range (105-0-15) is 50 to 120m; contains abundant trace fossils including Oldhamia?, Oldhamia radiata, Planolites, Gordia?, and others that have yet to be identified (see Hofmann and Cecile, 1981).

HADRYNIAN AND CAMBRIAN? HADRYNIAN AND LOWER CAMBRIAN?

Argillite, dark grey, green and buff, thin bedded; minor very thick units of grey quartzite and quartz-pebble conglomerate (5-20% of the succession); minor buff limestone and argillaceous limestone; measured thickness 400 m in the Fault · Range (105-0-15), but estimated at ~200 m in 105-0-13 and ~50 m in 105-0-12; unfossiliferous.

HADRYNIAN

Limestone, grey and dark grey; minor buff arenaceous limestone, zebra dolostone, green and dark grey argillite, and in the lowermost and uppermost beds units of arenaceous intraclast breccia and conglomerate; the map-unit can be divided into an upper resistant member of thick bedded grey limestone, and a lower recessive member of thin bedded dark grey limestone; argillite occurs in thin intervals between very thick successions of limestone; measured thickness at Einarson Lake is 253 m; unfossiliferous except for one occurrence of laterally-linked hemispherical stromatolites.

Quartzite, grey, thick bedded; calcareous quartzite, brown, thick bedded; argillite, green to dark grey, thin bedded; minor buff argillaceous limestone; minor maroon argillite west of Einarson Creek; the map-unit is comprised of an interstratification of all the above rock types, each in medium to very thick intervals; the amount of quartzite and calcareous quartzite decreases from ~80% to ~40% downwards; estimated thickness is >200 m; unfossiliferous.

DEVONIAN AND MISSISSIPPIAN UPPER DEVONIAN AND LOWER MISSISSIPPIAN

SILURIAN LOWER TO UPPER SILURIAN

tSa

TECTONO-STRATIGRAPHIC MAP-UNITS

ORDOVICIAN

tlmOc toc

Except in the northeastern corner of the 105-0-14 map all map-units from the Ema up to LOWER TO UPPER ORDOVICIAN and including Devonian units are thickened structurally. Most have been structurally 'piled' to in excess of 3 X their original thicknesses. The only exception is the Ema unit which, although generally in excess of 3 X its original thickness, has over limited areas a thickness equal to or less than its original stratigraphic thickness. Structural repetition is achieved by stacking of folds, isoctinat folds, and thrust fault repetitions. Individual stratigraphic units are detached from one another so that the resultant tectonic units are essentially composed of the same stratigraphic unit, although fault slices anticlinal, fold noses and synclinal fold keels of other units are often included in the map-unit. Tectonostratigraphic units are identified by the prefix 't' in front of the stratigraphic letter

CAMBRIAN LOWER TO UPPER? CAMBRIAN

LOWER CAMBRIAN

t1Ema