This sample is one of four collected on a west-east transect across the central region of the Scotia-Quaal metamorphic belt. Dating of hornblende from these samples aimed at obtaining a lower estimate of the age of the last regional metamorphic event in the area and at evaluating the thermal impact of the bounding plutons (early Late Cretaceous Ecstall to the west and Paleocene-Eocene Quottoon to the east) on the metamorphic belt.

The 110 ± 4.3 Ma date is interpreted as the age of cooling of the sample below hornblende K-Ar closure temperature after the last regional metamorphic event in the area. This date is the closest available estimate of the age of the last regional metamorphic event in the Scotia-Quaal metamorphic belt.

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GSC 91-6 Biotite
64.2 ± 2.7 Ma

Wt % K = 7.350
Rad. Ar = 1.868 x 10^{-5} cm^3/g
K-Ar 4113 % Atmos. Ar = 71.7

From a porphyritic biotite granite.
(93 L/14) Sampled at the Hudson Bay Mountain stock (Kirkham and Sinclair, 1988), diamond drillhole #70-2471 at 2491 feet, B.C.; 54°49'05" N, 127°17'50" W; UTM zone 9, 609415E 6075658N; sample 70-2471-91. Collected and interpreted by R.V. Kirkham.

The Hudson Bay Mountain stock is a large blind intrusion in the core of Hudson Bay Mountain. This date is consistent with previously-reported K-Ar dates for the area (Kirkham, 1970) but at present it is uncertain whether this is an emplacement age of the intrusion or a cooling age. Further geochronological studies are underway for rocks in the area.

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GSC 91-7 Biotite
173.4 ± 2.2 Ma

Wt % K= 6.868
Rad. Ar= 4.859x10^{-5} cm^3/g
K-Ar 4149 % Atmos. Ar= 2.8

From a serpentinite shear zone.
(93 J/14) Exposed along the McLeod River, elevation 777 m, 3.1 km 273° from the campsite at Warhorse Lake, B.C.; 54°56'33.3"N, 123°09'37.1"W; UTM zone 10, 489730E, 6088200N; sample SCB88-575b. Collected and interpreted by L.C. Struik.

This sample was collected from a northwesterly trending shear zone through Triassic-Jurassic Takla and upper Paleozoic Slide Mountain group greywacke and basalt exposed along the McLeod River in northern McLeod Lake map area (93J) in central British Columbia. Rocks of these two groups are caught up in a series of northwest and north trending faults, most of which appear to have dextral strike-slip motion. The biotite (0.5-2mm) is from a narrow vertical zone through a serpentine-chlorite rock invaded with calcite-quartz veins. The pod lies within a northwest trending shear zone, and the serpentine and biotite were interpreted as a hydrothermal reaction product generated during the formation of the shear zone. The shear zone was interpreted to be part of the family of northwest trending dextral strike-slip faults of the region; although the sense of motion of the shear zone was not determined.

The K-Ar date from the biotite was intended to date the hydrothermal activity along the shear zone and therefore the minimum age of motion along the zone. Should the biotite have formed during the formation of the fault, as interpreted, then the fault would have been active during or prior to the Middle Jurassic. The Takla and Slide Mountain groups were probably thrust onto the western North American continental margin rocks at that time (Struik, 1988), and the fault with the serpentinite may have been active then.

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GSC 91-8 Biotite
127.9 ± 2.4 Ma

Wt % K= 6.647
Rad. Ar=3.424x10^{-5} cm^3/g
K-Ar 4150 % Atmos. Ar=6.4

Sample SCB-85-376B. For location, interpretation and reference see GSC 91-9.

GSC 91-9 Muscovite
71.5 ± 2.1 Ma

Wt % K= 5.120
Rad. Ar= 1.452x10^{-5} cm^3/g
K-Ar 4151 % Atmos. Ar= 10.0

From a garnet-biotite-muscovite-feldspar-quartz schist.
(83 D/5) Outcrop is at elevation of 7000' (2133m), 2.85 km to 330° from a small tarn at the head of Manteau Creek, and 3.15 km to 116° from the northeast end of lake at head of Angus Horne Creek, B.C.; 52°25'48.8"N, 119°33'19"W; UTM zone 11, 326275E, 5811750N; sample SCB85-376b. Collected and interpreted by L.C. Struik.

These two determinations (GSC 91-8,9) are from a single schist sample from low in the Hadrynian Kaza Group in the southern Cariboo Mountains of British Columbia. The regional grade of metamorphism is staurolite. The biotite and muscovite of this sample were analyzed to provide a control on the cooling history of the area in comparison to the Eocene cooling history of the southern Omineca Belt (Parrish et al., 1988, Sevigny et al., 1990), the mid Cretaceous thermal event of the Monashee Mountains (Sevigny et al., 1990), and the Jurassic cooling history of the low-grade rocks of the central Omineca Belt. The sample is from the rocks in the hanging wall of the North Thompson River extension fault.

The disparity in ages between the biotite and muscovite is opposite to that expected from a simple cooling history. The Cretaceous ages of the two deter consistent with the hypothesis of cooling of below the 250-300°C blocking temperatu before the Eocene cooling of the Shuswap Complex to the south and after the Jurassic central Omineca Belt. The older age of probably due to excess argon and the musco 72 Ma is probably a better estimate of the c these metamorphic rocks.

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GSC 91-10 Hornblende
93.1 ± 1.4 Ma

Wt % K= 0.684
Rad. Ar= 2.540x10^{-6} $cm^3/$
K-Ar 4152 % Atmos. Ar= 8.2

From an amphibolite.
(93 A/8) Outcrop on Mount Bucha north shore of Azure La 7100' (2164m), 0.66km Buchanan Peak, B.C.; 120°04'31.5"W; UTM 698790E, 5813650 SCB85-512. Collected a by L.C. Struik.

This sample was collected from an amp that is part of a series of calc-silicate, m schist and amphibolite of the y Paleoz Group along the ridge north Azure Lake end of the Shuswap Metamorphic Comple are in regional sillimanite grade of metamo amphibolite consists primarily of hor plagioclase, and locally some biotite. Th hornblende was determined to compare its K age with that of kyanite grade hornblende t Quesnel Lake, where the northern most sill rocks of the Shuswap Complex are exposed 91-11). The Cretaceous age matches that of bodies to the north and the lower intercepts for the Quesnel Lake Gneiss of the regio 1985; Mortenson et al., 1987). This ma