

LABRADOR GEOCHRONOLOGY

compiled by

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Recent Radiometric Age Determinations

Rock Unit or Mineralization	Method and Geochronologist	Date (Ma)	Interpretation
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Central Labrador Trough

Shabogamo Intrusive Suite gabbro-McLean Outlier (Unit 12, Ware & Wardle, 1979)	Ar ⁴⁰ /Ar ³⁹ biotite (D. Dallmeyer)	1352+18	Age agrees well with Sm-Nd determination - see below - no effects seen of Grenvillian thermal overprinting.
"	Sm - Nd (C. Brooks)	1390	Supersedes previous erroneous Rb-Sr determination of 1685 Ma (see Current Research 80-1)

Southern Labrador
Trough

Phyllites from Menihek Fm., Knob Lake Group (Unit 9, Rivers, 1980)	Ar ⁴⁰ /Ar ³⁹ _{w.r.} (D. Dallmeyer)	"	873+15	Phyllites collected from low grade metamorphic zone along western margin of Trough. Metamorphism is entirely of Grenvillian age with no evidence of a Hudsonian disturbance.
"	"	"	1006+20	
"	"	"	936+18	

Red Wine Mountains
area, central Grenville
Province

Letitia Lake Porphyry (Thomas, 1981)	Rb-Sr w.r. isochron (B. Fryer)	1067+86	Grenvillian metamorphic age on quartz-feldspar porphyry from upper Letitia Lake Group.
Wapustan Gneiss (Thomas, 1981)	"	1660+37	Hudsonian gneiss, age of which has been reset by thermal metamorphism associated with intrusion of granitoids belonging to North Pole Brook Intrusive Suite.

Red Wine biotite-hornblende grano-diorite - quartz monzonite (Unit 7a, Thomas, 1981)	Rb-Sr w.r. isochron (B. Fryer)	1667 ₃₈	Late Hudsonian postkinematic granodiorite belonging to North Pole Brook Intrusive Suite, cooling age.
Red Wine leuco-granodiorite (Unit 7a, Thomas, 1981)	"	1638 ₁₃	More differentiated equivalent of above unit, also part of North Pole Brook Intrusive Suite, cooling age.
Red Wine grano-diorites combined (Unit 7a, Thomas, 1981)	"	1657 ₂₆	
Megacrystic grano-diorite - quartz monzonite (Unit 7a, Thomas, 1981)	"	1703 ₁₇₆	Late Hudsonian, postkinematic granodiorite, belonging to North Pole Brook Intrusive Suite, cooling age.
Combined grano-diorites - quartz monzonites (Unit 7a, Thomas, 1981)	"	1654 ₂₂	Age of intrusion of North Pole Brook Intrusive Suite as a whole.
Equigranular grano-diorite - quartz monzonite (Unit 7a, Thomas, 1981)	"	1503 ₉₃	Late Hudsonian postkinematic granodiorite belonging to North Pole Brook Intrusive Suite, cooling age.

References

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1981: Geology along the southwestern margin of the Central Mineral Belt. Newfoundland Department of Mines and Energy, Mineral Development Division, preliminary report, in press.

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1980: Sawbill Lake, Newfoundland-Quebec. Newfoundland Department of Mines and Energy, Mineral Development Division, preliminary map 80-2.

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1979: Geology of the Sims-Evening Lake area with emphasis on the Helikian Sims Group. Newfoundland Department of Mines and Energy, Mineral Development Division, Report 79-5.