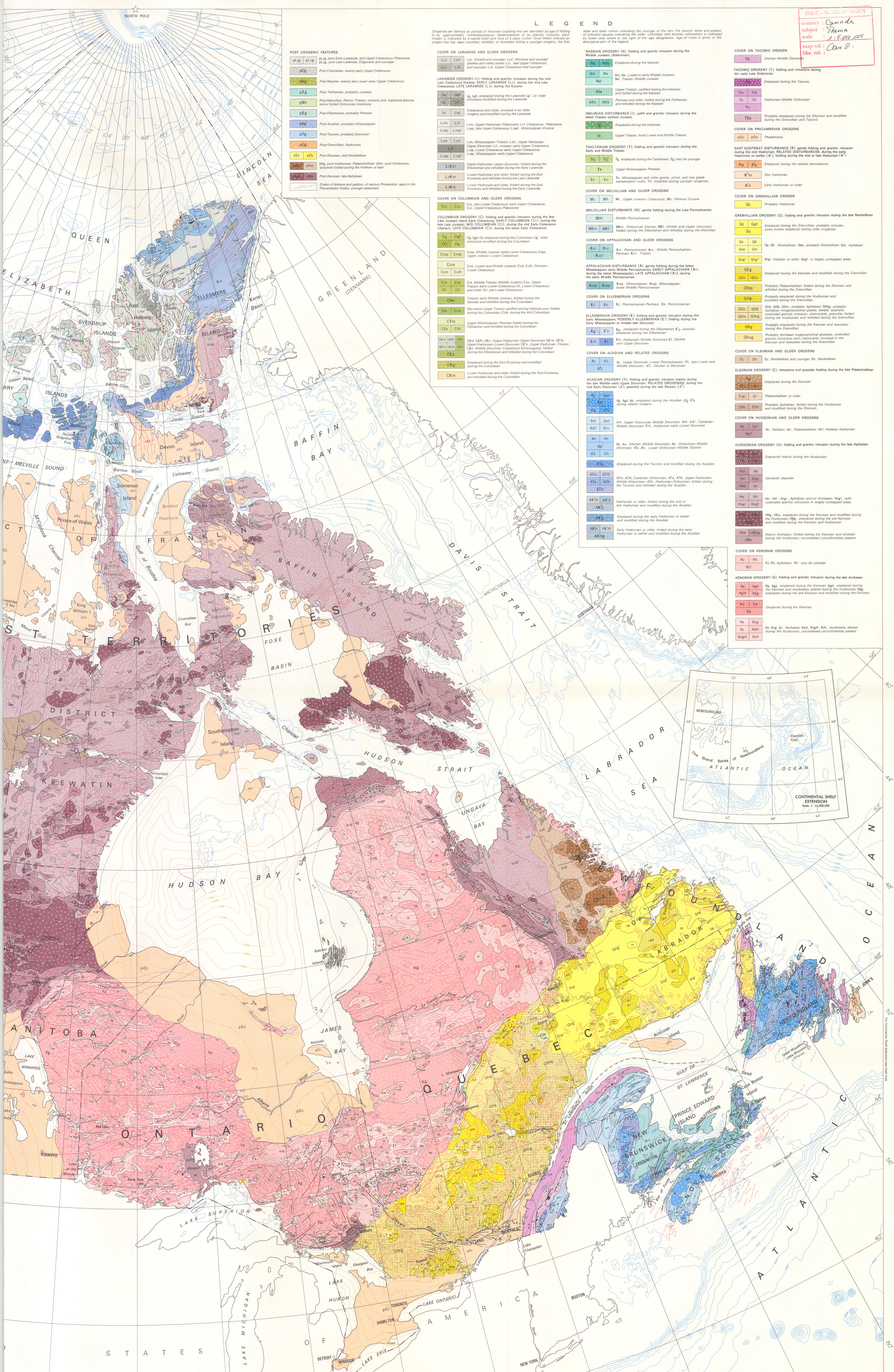

L E G E N D

Orogenies are defined as periods of mountain building and are identified by age of folding or by approximately contemporaneous metamorphism or by granitic intrusion. Each orogen is indicated by a capital letter and tints of a basic colour. Dual letters indicate an orogen that has been modified, refolded, or reworked during a younger orogeny, the first letter and basic colour indicating the younger of the two, the second letter and pattern of coloured squares indicating the older. Lithologic and tectonic information is indicated by lower case letters to the right of the age designation. Age of rocks is given in the descriptive part of the legend.

POST OROGENIC FEATURES

pL1g pL2g	pL1g, *post Early Laramide, mid Upper Cretaceous-Paleocene;* pL2g, *post Late Laramide, Oligocene and younger*
pCg	*Post Columbian, mainly early Upper Cretaceous*
pNg	*Post Nassian, mainly late Lower-early Upper Cretaceous*
pTg	*Post Tahltanian, probably Jurassic*
pMv	*Post Melvillian, Permo-Triassic, volcanic and explosive breccia, minor folded Ordovician limestone*
pEg	*Post Ellesmerian, probably Permian*
pAg	*Post Acadian, probably Mississippian*
pTg	*Post Taconic, probably Devonian*
pGg	*Post Grenvillian, Hadrynian*
pEy pEb	*Post Elsonian, mid Neohelikian*
pHg pHm	pHg, *post Hudsonian, Palaeohelikian;* pHm, *post Hudsonian, dolomite folded during the Helikian or later*
pKg pKy	*Post Kenoran, late Aphebian*
	Dykes of diabase and gabbro, of various Proterozoic ages in the Precambrian Shield, younger elsewhere

COVER ON LARAMIDE AND OLDER OROGENS

L2c L2c^1 L1c L1h	L2c, *Eocene and younger;* L2c^1, *Miocene and younger plateau and valley basalt;* L1c, *late Upper Cretaceous and younger;* L1h, *Upper Cretaceous and younger*

LARAMIDE OROGENY (L), folding and granitic intrusion during the mid Late Cretaceous-Eocene; EARLY LARAMIDE (L1), during the mid Late Cretaceous; LATE LARAMIDE (L2), during the Eocene

Lg Lgd Lg^1 Lb^1	Lg, Lgd, *emplaced during the Laramide;* Lg^1, Lb^1 *older intrusions modified during the Laramide*
Ln Lng	*Cretaceous and older, involved in an older orogeny and modified during the Laramide*
L2m L2f L2ep L2ep^1	L2m, *Upper Hadrynian-Paleocene;* L2f, *Cretaceous- Paleocene;* L2ep, *late Upper Cretaceous;* L2ep^1, *Mississippian-Eocene*
L1m L1m^1 L1f L1ep L1ep^1	L1m, *Mississippian-Triassic;* L1m^1, *Upper Hadrynian-Upper Devonian;* L1f, *Jurassic-early Upper Cretaceous;* L1ep, *Lower Cretaceous-early Upper Cretaceous;* L1ep^1, *Mississippian-early Upper Cretaceous*
L1Em	*Upper Hadrynian-Upper Devonian, folded during the Ellesmerian and refolded during the Early Laramide*
L2Km	*Lower Hadrynian and older, folded during the East Kootenay and refolded during the Late Laramide*
L1Km	*Lower Hadrynian and older, folded during the East Kootenay and refolded during the Early Laramide*

COVER ON COLUMBIAN AND OLDER OROGENS

C2c C3c	C2c, *late Lower Cretaceous-early Upper Cretaceous;* C3c, *Upper Cretaceous-Paleocene*

COLUMBIAN OROGENY (C), folding and granitic intrusion during the late Late Jurassic-latest Early Cretaceous; EARLY COLUMBIAN (C1), during the late Late Jurassic; MID COLUMBIAN (C2), during the mid Early Cretaceous (Aptian); LATE COLUMBIAN (C3), during the latest Early Cretaceous

Cg Cgd Cb Cg^1	Cg, Cgd, Cb *emplaced during the Columbian;* Cg^1, *older intrusions modified during the Columbian*
C2ep C3ep	C2ep, *Middle Jurassic-early Lower Cretaceous;* C3ep, *Upper Jurassic-Lower Cretaceous*
C2m C3m C3m̄	C2m, *Lower and Middle Jurassic;* C3m, C3m̄, *Permian-Lower Cretaceous*
C1e C2e Cn Cn^1	C1e, *Middle Triassic-Middle Jurassic;* C2e, *Upper Triassic-early Lower Cretaceous;* Cn, *Lower Cretaceous and older;* Cn^1, *pre Lower Cretaceous*
CNe	*Triassic-early Middle Jurassic, folded during the Nassian and refolded during the Columbian*
CIe C2Ie	CIe, *mainly Upper Triassic uplifted during Inklinian and folded during the Columbian;* C2Ie, *during the mid Columbian*
CTm CTe CTē	*Upper Mississippian-Permian folded during the Tahltanian and refolded during the Columbian*
CEm CEm̄ CEn CE^{1}m CE^{1}m̄ CE^{1}n CEe	CEm, CEm̄, CEn, *Upper Hadrynian-Upper Devonian;* CE^{1}m, CE^{1}m̄, *Upper Hadrynian-Lower Devonian;* CE^{1}n, *Upper Hadrynian-Triassic;* CEe, *Middle Devonian-Lowermost Mississippian; folded during the Ellesmerian and refolded during the Columbian*
CKg	*Emplaced during the East Kootenay and modified during the Columbian*
CKm	*Lower Hadrynian and older, folded during the East Kootenay and refolded during the Columbian*

NASSIAN OROGENY (N), folding and grantic intrusion during the Middle Jurassic (Bathonian)

Ng Ngd	*Emplaced during the Nassian*
Nm Ne Ne^1	Nm, Ne, *Lower to early Middle Jurassic;* Ne^1, *Triassic-Middle Jurassic*
NIe	*Upper Triassic, uplifted during the Inklinian and folded during the Nassian*
NTe NTē	*Permian and older, folded during the Tahltanian and refolded during the Nassian*

INKLINIAN DISTURBANCE (I), uplift and granitic intrusion during the latest Triassic-earliest Jurassic

Ig	*Emplaced during the Inklinian*
Ie	*Upper Triassic, local Lower and Middle Triassic*

TAHLTANIAN OROGENY (T), folding and granitic intrusion during the Early and Middle Triassic

Tg Tg^1	Tg, *emplaced during the Tahltanian;* Tg^1, *may be younger*
Te	*Upper Mississippian-Permian*
Tn Tn^1	Tn, *Mississippian and older gneiss, schist, and low grade metamorphic rocks;* Tn^1, *modified during younger orogenies*

COVER ON MELVILLIAN AND OLDER OROGENS

Mc Mh	Mc, *Upper Jurassic-Cretaceous;* Mh, *Permian-Eocene*

MELVILLIAN DISTURBANCE (M), gentle folding during the Late Pennsylvanian

Mm	*Middle Pennsylvanian*
MEm MEf	MEm, *Ordovician-Silurian;* MEf, *Middle and Upper Devonian; folded during the Ellesmerian and refolded during the Melvillian*

COVER ON APPALACHIAN AND OLDER OROGENS

A1c A2c A2c^1	A1c, *Pennsylvanian;* A2c, *Middle Pennsylvanian-Permian;* A2c^1, *Triassic*

APPALACHIAN DISTURBANCE (A), gentle folding during the latest Mississippian-early Middle Pennsylvanian; EARLY APPALACHIAN (A1), during the latest Mississippian; LATE APPALACHIAN (A2), during the early Middle Pennsylvanian

A1ep A2ep	A1ep, *Mississippian;* A2ep, *Mississippian-lower Middle Pennsylvanian*

COVER ON ELLESMERIAN OROGENS

Ec Eh	Ec, *Pennsylvanian-Permian;* Eh, *Pennsylvanian*

ELLESMERIAN OROGENY (E), folding and granitic intrusion during the Early Mississippian; POSSIBLY ELLESMERIAN (E^1), folding during the Early Mississippian or middle-late Devonian

Eg E^{1}y	Eg, *emplaced during the Ellesmerian;* E^{1}y, *possibly emplaced during the Ellesmerian*
Em Ef	Em, *Hadrynian-Middle Devonian;* Ef, *Middle and Upper Devonian*

COVER ON ACADIAN AND RELATED OROGENS

Ac A^{1}c A^{2}c	Ac, *Upper Devonian-Lower Pennsylvanian;* A^{1}c, *late Lower and Middle Devonian;* A^{2}c, *Silurian or Devonian*

ACADIAN OROGENY (A), folding and granitic intrusion mainly during the late Middle-early Upper Devonian; RELATED OROGENIES, during the mid Early Devonian (A^1); possibly during the late Silurian (A^2)

Ag Agd Ab A^{2}g A^{2}b	Ag, Agd, Ab, *emplaced during the Acadian;* A^{2}g, A^{2}b, *during related orogeny*
Am Am^1 Am̄^{1} A^{1}m	Am, *Upper Ordovician-Middle Devonian;* Am^1, Am̄^{1}, *Cambrian-Middle Devonian;* A^{1}m, *Hadrynian-early Lower Devonian*
Ae An Ae^1 A^{2}e A^{2}n	Ae, An, *Silurian-Middle Devonian;* Ae^1, *Ordovician-Middle Devonian;* A^{2}e, A^{2}n, *Lower Ordovician-Middle Silurian*
ATg	*Emplaced during the Taconic and modified during the Acadian*
ATm ATm̄ ATe ATē ATn	ATm, ATm̄, *Cambrian-Ordovician;* ATe, ATē, *Upper Hadrynian-Middle Ordovician;* ATn, *Hadrynian-Ordovician; folded during the Taconic and refolded during the Acadian*
AK^{2}m AK^{2}ē AK^{2}n	*Hadrynian or older, folded during the mid or late Hadrynian and modified during the Acadian*
AK^{1}g	*Emplaced during the early Hadrynian or earlier and modified during the Acadian*
AK^{1}e AK^{1}m̄ AK^{1}ng	*Early Hadrynian or older, folded during the early Hadrynian or earlier and modified during the Acadian*

COVER ON TACONIC OROGEN

Th	*Silurian-Middle Devonian*

TACONIC OROGENY (T), folding and intrusions during the early Late Ordovician

Tb	*Emplaced during the Taconic*
Tm Tm̄ Te Tē Tn	*Hadrynian-Middle Ordovician*
TEa	*Probably emplaced during the Elsonian and modified during the Grenvillian and Taconic*

COVER ON PRECAMBRIAN OROGENS

p€c p€h	*Phanerozoic*

EAST KOOTENAY DISTURBANCE (K), gentle folding and granitic intrusion during the mid Hadrynian; RELATED DISTURBANCES, during the early Hadrynian or earlier (K^1); folding during the mid or late Hadrynian (K^2)

K^{1}g K^{2}g	*Emplaced during the related disturbances*
K^{2}m	*Mid Hadrynian*
K^{1}e	*Early Hadrynian or older*

COVER ON GRENVILLIAN OROGEN

Gc	*Probably Hadrynian*

GRENVILLIAN OROGENY (G), folding and granitic intrusion during the late Neohelikian

Gg Ggd Gy	*Emplaced during the Grenvillian; probably includes some bodies emplaced during older orogenies*
Ge Gē Gep Gm	Ge, Gē, *Neohelikian;* Gep, *probably Neohelikian;* Gm, *Aphebian*
Gng^1 Gng^2	Gng^1, *Helikian or older;* Gng^2, *in largely unmapped areas*
GEg GEb GEa	*Emplaced during the Elsonian and modified during the Grenvillian*
GEep	*Probably Palaeohelikian; folded during the Elsonian and refolded during the Grenvillian*
GHg	*Probably emplaced during the Hudsonian and modified during the Grenvillian*
GHe GHē GHm GHng	GHe, GHē, GHm, *probably Aphebian;* GHng, *probably Aphebian miogeosynclinal gneiss, marble, quartzite, undivided granitic intrusion, charnockite, granulite; folded during the Hudsonian and refolded during the Grenvillian*
GKg	*Probably emplaced during the Kenoran and reworked during the Grenvillian*
GKng	*Probably Archaean eugeosynclinal gneisses, undivided granitic intrusions and charnockite; involved in the Kenoran and reworked during the Grenvillian*

COVER ON ELSONIAN AND OLDER OROGENS

Ec Eh	Ec, *Neohelikian and younger;* Eh, *Neohelikian*

ELSONIAN OROGENY (E), intrusions and possible folding during the late Palaeohelikian

Eg Eb Ea	*Emplaced during the Elsonian*
Eng^1 Er^1	*Palaeohelikian or older*
EHe EHn	*Probably Aphebian, folded during the Hudsonian and modified during the Elsonian*

COVER ON HUDSONIAN AND OLDER OROGENS

Hc Hc^1 Hc^2	Hc, *Helikian;* Hc^1, *Palaeohelikian;* Hc^2, *Helikian-Hadrynian*

HUDSONIAN OROGENY (H), folding and granitic intrusion during the late Aphebian

Hg Hgd Hb Ha	*Emplaced mainly during the Hudsonian*
Hm He Hn Hng Hep Hr	*Aphebian deposits*
He^1 Hn^1 Hng^1 Hng^2	He^1, Hn^1, Hng^1, *Aphebian and/or Archaean;* Hng^2, *with undivided granitic intrusions in largely unmapped areas*
HKg HKa H$\underline{K}$g	HKg, HKa, *emplaced during the Kenoran and modified during the Hudsonian;* H$\underline{K}$g, *emplaced during the pre-Kenoran and modified during the Kenoran and Hudsonian*
HKe HKng HKr	*Mainly Archaean, folded during the Kenoran and refolded during the Hudsonian; uncorrelated unconformities present*

COVER ON KENORAN OROGENS

Kc Kh Kc^1	Kc, Kh, *Aphebian;* Kc^1, *may be younger*

KENORAN OROGENY (K), folding and granitic intrusion during the late Archaean

Kg Kgd KgH K$\underline{K}$g	Kg, Kgd, *emplaced during the Kenoran;* KgH, *emplaced during the Kenoran and moderately altered during the Hudsonian;* K$\underline{K}$g, *emplaced during the pre-Kenoran and modified during the Kenoran*
Kb Ka Ky	*Emplaced during the Kenoran*
Ke Kng Kr KeH KngH KrH	Ke, Kng, Kr, *Archaean;* KeH, KngH, KrH, *moderately altered during the Hudsonian; uncorrelated unconformities present*

Copies of this map may be obtained from the Geological Survey of Canada, Ottawa