



LEGEND

- UNFOLDED AND GENTLY FOLDED ROCKS ON PRECAMBRIAN OROGENS**
- Rc Cratonic cover of Proterozoic rocks
- UNFOLDED AND GENTLY FOLDED ROCKS ON GREENVILLE OROGEN**
- Gc Cratonic cover of sandstone and conglomerate; probably Hadrnyian
- GREENVILLE OROGENY (late Neohelikian)**
- Gg Granite and syenitic intrusions emplaced during the Grenville orogeny; probably includes granitic and syenitic rocks emplaced during other orogenies; Ggt, discordant
 - Gy Nepheline syenite, alkaline syenite
 - Gs, Gq, Gp Gs, Neohelikian rocks folded during the Grenville, mainly argillite, sandstone, quartzite, conglomerate, dolomite, basalt, basic sills, stromatolites present; Gq, metamorphosed equivalents; Gp, probably Neohelikian, quartzite, phyllite, paragneiss crystalline limestone; basic sills
 - GEl, GEs Basic intrusions emplaced during the Elsonian and metamorphosed during the Grenville; GEl, mainly gabbro; GEs, mainly anorthosite, troctolite
 - GAr, GAs Probably Acheban, folded during the Hudsonian and reworked during the Grenville; GAr, quartzite, conglomerate, limestone, parashist, metavolcanics; GAs, gneissic equivalents; undivided migmatite and granitic intrusions; may include upfolds of Archaean rocks
 - GKq Granite intrusions, probably emplaced during the Kenoran and reworked during the Grenville
 - GAr, GAs Probably Archaean, sedimentary and volcanic gneisses involved in Kenoran orogeny and reworked during the Grenville; undivided migmatite and granitic intrusions
 - Gs, Gq Undivided Helikian or older; Gs, sedimentary and volcanic gneisses, granitic gneiss, granitic intrusions; Gq, in largely unmapped areas
- UNFOLDED AND GENTLY FOLDED ROCKS ON ELSONIAN OROGEN**
- Eh Marginal homocline of Neohelikian sedimentary rocks
 - Ec Cratonic cover of Neohelikian or younger conglomerate, arkose, siltstone
- ELSONIAN OROGENY (late Palaeohelikian)**
- Eg Granite and syenitic intrusions emplaced during the Elsonian
 - Eh, Ec Basic intrusions emplaced during the Elsonian; Eh, mainly gabbro; Ec, mainly anorthosite, troctolite
 - Ea Palaeohelikian or older; sedimentary and volcanic gneisses, migmatite, granitic gneiss
- UNFOLDED AND GENTLY FOLDED ROCKS ON HUDSONIAN AND KENORAN OROGENS**
- Hh Marginal homocline of Helikian - Hadrnyian conglomerate, sandstone, argillite, dolomite (stromatolites present), basalt; gabbro sills
 - Hc, Hs Cratonic cover of Helikian conglomerate, sandstone, quartzite, dolomite, limestone, basalt, intermediate volcanics; basic sills; Hc', Palaeohelikian conglomerate, quartzite, gabbro sills; Hs', Helikian - Hadrnyian conglomerate, sandstone, argillite, dolomite, basalt; gabbro sills
- HUDSONIAN OROGENY (late Acheban)**
- Hg, Hgt Hg, granitic intrusions emplaced mainly during the Hudsonian, including some highly granitized rocks; Hgt, discordant; Hgk, emplaced during the Kenoran and reworked during the Hudsonian; Hgk, emplaced during the pre-Kenoran and reworked during the Hudsonian
 - Hs, Hsa Basic intrusions, some may be Archaean; Hs, mainly gabbro; Hsa, mainly anorthosite
 - Hp, Hpg Hs, Acheban paragneiss, parashist, volcanic gneiss, quartzite, graphitic schist, crystalline limestone, conglomerate; Hpg, mixed with granitic material, migmatite
 - Hs Acheban conglomerate, sandstone, quartzite, greywacke, argillite, limestone, dolomite, iron formation, basic and intermediate volcanics (stromatolites common); basic and ultrabasic sills
 - HAr, HAs Archaean rocks folded during the Kenoran and reworked during the Hudsonian; HAr, mainly slightly metamorphosed acid and basic volcanics, greywacke, conglomerate, iron formation, basic sills; uncorrelated unconformities present; HAs, gneissic equivalents commonly mixed with granitic material
 - Hsu, Hsu' Hsu, Acheban and/or Archaean sedimentary and volcanic rocks, slightly metamorphosed; Hsu, gneissic equivalents
 - Hu, Hsu' Hs, Acheban and/or Archaean sedimentary and volcanic gneisses commonly mixed with granitic material, migmatite, granitite; granitic gneiss; Hsu, with undivided granitic intrusions in largely unmapped areas
- UNFOLDED AND GENTLY FOLDED ROCKS ON KENORAN OROGENS**
- Kh Marginal homocline of Acheban greywacke, quartzite, dolomite, iron formation, intermediate and basic volcanics; basic sills
 - Kc Craton cover of Acheban rocks; Kc', may be younger
- KENORAN OROGENY (late Archaean)**
- Kg, Kgt Granite intrusions, undivided gneisses; Kg, emplaced mainly during the Kenoran orogeny; Kgt, discordant; Kgt', moderately altered during the Hudsonian and possibly including late Acheban granitic intrusions; Kkg, emplaced during the pre-Kenoran and reworked during the Kenoran
 - Ks, Ksa Basic intrusions; Ks, mainly gabbro; Ksa, mainly anorthosite
 - Ky Nepheline syenite
 - Ka, Ksa' Ks, Archaean paragneiss, parashist, local volcanic gneiss, minor greywacke; commonly mixed with granitic material, migmatite; Ks', variously affected during younger orogenies (in Labrador); Ksa', moderately altered during Hudsonian orogeny
 - Ks, Ksa' Ks, Archaean sedimentary and volcanic rocks, mainly acid to basic volcanics, greywacke, conglomerate, iron formation, basic sills; uncorrelated unconformities present; Ksa', moderately altered during Hudsonian orogeny

KEY TO PRECAMBRIAN CLASSIFICATION AND NOMENCLATURE

EON	ERA	SUB-ERA	OROGENY	AGE
PROTEROZOIC	HADRYNIAN			600
				MM 780
	HELIKIAN	NEOHELIKAN	GREENVILLE, M 945	
		PALAEOHELIKAN	ELSONIAN, M 1370	
ACHEBAN		MM 1040		
		HUDSONIAN, M 1735		
ARCHAEN			MM 2390	
			KENORAN, M 2490	

*M, mean age of orogeny in millions of years.
 **MM, mean age minus the standard deviation, determinations by the potassium-argon method on orogenic rocks.

- SYMBOLS**
- Contact; defined, assumed
 - Trend of gneissic and schistose structure; trend of bedding
 - In situ metamorphosed rocks
 - Crest line of positive magnetic anomaly
 - Trend of Bouguer anomaly; high, low
 - Fault; defined, assumed
 - Thrust fault; sawtooth indicates direction of dip
 - Syncline; dip of axial plane unknown
 - axial plane upright
 - axial plane dips in direction indicated
 - Anticline; dip of axial plane unknown
 - axial plane upright
 - axial plane dips in direction indicated
 - Large basin
 - Periodicite, damite (various ages)

DESCRIPTIVE NOTES

The Canadian Shield is divided into four main orogenic regions, the Kenoran, the Hudsonian, the Elsonian and the Grenville. As a general rule, each orogenic episode was followed by a long period of erosion and by the unconformable deposition of overlying sedimentary and volcanic materials. Boundaries between time-stratigraphic units of Eon, Era, and sub-Era rank are drawn at the close of each orogeny. The precise ages of these boundaries is difficult to determine but the mean potassium-argon age of the orogeny minus the standard deviation is an objective figure that approximates the time of the close of an orogeny. In areas not affected by orogeny the dating of volcanic materials and anorthogenic intrusions helps to correlate with the time units defined in orogenic regions.

The principles used in the construction of the tectonic map differ from those employed in making geological maps. On geological maps the age of deposition and intrusion is shown. On the tectonic map, rock units are depicted according to the age of their involvement in orogeny, that is, according to age of folding, metamorphism, and essentially contemporaneous emplacement of granitic rocks. Where an older orogen has been modified or reworked during a younger orogeny, an attempt is made to indicate the rock units involved in each. Main headings in the legend show the last orogeny affecting any particular region; subdivisions indicate the general lithology and age of deposition of the units involved and, it may be noted, formations of equivalent age are placed in different map units depending on their tectonic history.

A second main category includes undivided and gently folded rocks which have not been affected by orogeny. These are subdivided into gently dipping homoclines and virtually flat-lying cratonic cover, and their age of deposition is indicated. A third category includes post orogenic features, such as certain alkaline intrusions, certain volcanic rocks, and dikes of diabase and gabbro.

GEOLOGICAL SURVEY OF CANADA
 DEPARTMENT OF MINES AND TECHNICAL SURVEYS
 MAP 4-1965
TECTONIC MAP OF THE CANADIAN SHIELD
 Scale 1:5,000,000
 Miles 100 0 100 200
 Kilometres 100 0 100 200 300
 Prepared by the Tectonic Map of Canada Committee comprising representatives of the Ontario Department of Mines, the Quebec Department of Natural Resources, and the Geological Survey of Canada, under the chairmanship of C. H. Stockwell of the Geological Survey of Canada