NOTES

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INTRODUCTION: This map shows the bedrock geology for an area 200 by 200 km in western Ontario and southeastern Manitoba. This region is on the western flank of the Precambrian Shield, in the Superior Province (McGlynn, 1968).

It was compiled from reports by Ferguson et al., 1966; Davies and Pryslak, 1967; Breaks et al., 1975 a,b,c,d,e,f; Lamb, 1974; McRitchie, 1971; and other reports of the Ontario Department of Mines, Geological Survey of Canada, and the Manitoba Department of Mines and Resources, plus field checks by the author.

ROCK TYPES:

(1) Early Gneissic Suite. A heterogeneous and structurally complex mixture, mostly orthogneisses, plus uncommon amphibolites. Igneous phases of tonalitic to granitic composition are common.

(2) Metasedimentary Gneiss. Complexly layered gneisses with psammitic and semipelitic layers common. The leucosomes are granitic, granodioritic, and tonalitic pegmatite. Garnet is common, cordierite and sillimanite uncommon.

(3) Diorite Suite. This suite varies in composition from diorite to quartz-diorite and contains abundant mafic inclusions.

(4) Trondjemite-Granodiorite Suite. These batholithic rocks vary in composition from quartz-diorite to trondjemite to granodiorite. They are recrystallized and often deformed. They intrude rocks of the Early Gneissic Suite, Sedimentary Gneiss, and Metavolcanic rocks.

(5) Granodiorite-Granite Suite. These batholithic rocks vary in composition from granodiorite to quartz-monzonite to granite. They are intrusive into all other rock types, and lack deformational structures.

(6) Metavolcanic Rocks. In the central part of the map there are remnants of greenstone belts with metavolcanic rocks deformed and metamorphosed at conditions of medium or upper amphibolite facies. They are deformed with gneissic rocks, and intruded by the igneous rocks of suites 3, 4 and 5.

In the greenstone belts metavolcanic rocks are common; they are mildly deformed by intrusion of diapir-form batholiths, and metamorphosed at conditions of greenschist facies. In this map area, the greenstone belts are on the northern and southern flanks of the gneissic belt. Greenstones of the northern belt (Uchi), at Bissett and Red Lake, wrap around a region of granitoid rocks. Greenstones of the southern belt (Wabigoon, or Kenora), in the area Shoal Lake, to Lake of the Woods, to Eagle Lake, wrap around several granitoid batholiths.

(7) Metasedimentary Rocks. Metasedimentary rocks form an integral part of low-grade greenstone belts.

(8) Granitoid Rocks. In the greenstone belts in the northern and southern parts of this map area, there are batholiths of granitoid rocks that intrude greenstone metavolcanic and metasedimentary piles in a diapiric style. These batholiths are heterogeneous, varying in composition from diorite, to tonalite, to granodiorite, to granite and have not been subdivided on this map.

BELT STRUCTURE: This map area covers the western portion of the English River gneissic belt, plus parts of the Uchi greenstone belt adjacent to the north, and the Wabigoon (also called Kenora) greenstone belt adjacent to the south. These belts run east-west; their extent and definitions are described by McGlynn (1968).

The English River gneiss belt is divided into two portions. The Ear Falls-Manigotagan gneiss belt is characterized by the predominance of middle to upper amphibolite facies metasedimentary rocks and their anatectic derivatives, plus subordinate felsic plutonic and gneissic rocks. The Winnipeg River batholithic belt is characterized by the predominance of felsic plutonic rocks, plus subordinate felsic gneissic rocks.

In this area, the subprovinces and their boundaries have been described by Wilson, 1971; Beakhouse, 1977; and by Break et al., 1978. Figure 1 shows the boundaries.

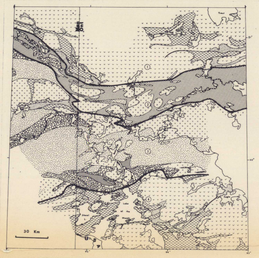

FIGURE 1. Subprovinces: (1) Uchi greenstone belt. (2) Ear Falls-Manigotagan gneiss belt. (3) Winnipeg River batholithic belt. (4) Kenora-Wabigoon greenstone belt (after Beakhouse, 1977)

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: LEGEND

NO AGE RELATIONS IMPLIED

- Granitoid Rocks
- Metasedimentary Rocks
- Metavolcanic Rocks
- Granodiorite - Granite Suite
- Trondhjemite - Granodiorite Suite
- Diorite Suite
- Metasedimentary Gneiss
- Early Gneissic Suite

GEOLOGY OF THE WINNIPEG RIVER - ENGLISH RIVER AREA MANITOBA and ONTARIO

COMPILED AND MODIFIED BY G. P. BEAKHOUSE 1977

MAIN SOURCES OF INFORMATION ARE PUBLICATIONS OF THE ONTARIO DEPT OF MINES AND MANITOBA MINES BRANCH AND INVESTIGATIONS OF THE CENTRE FOR PRECAMBRIAN STUDIES

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