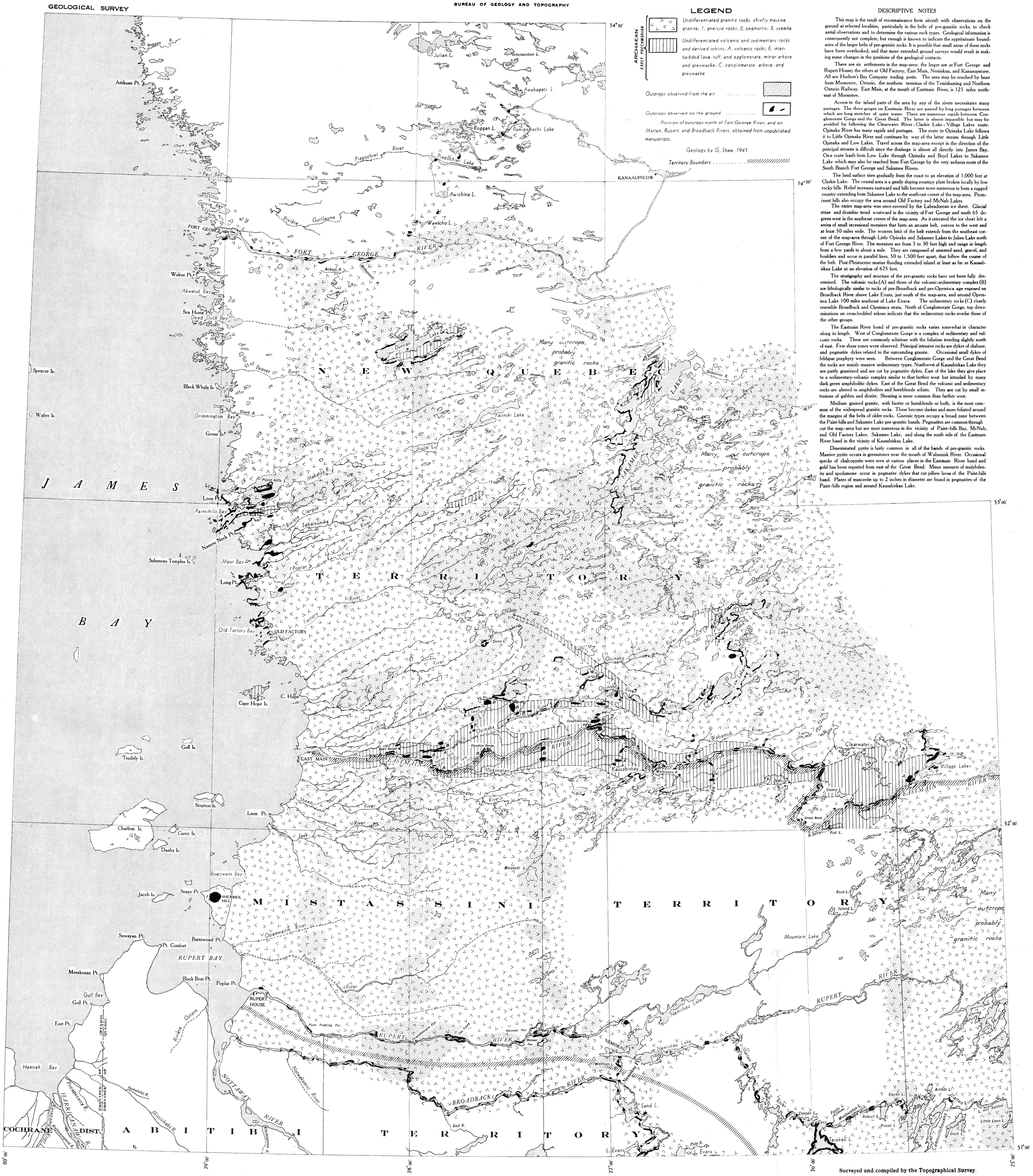
CANADA

DEPARTMENT OF MINES AND RESOURCES

MINES AND GEOLOGY BRANCH

BUREAU OF GEOLOGY AND TOPOGRAPHY

GEOLOGICAL SURVEY



DESCRIPTIVE NOTES

This map is the result of reconnaissance from aircraft with observations on the ground at selected localities, particularly in the belts of pre-granitic rocks, to check aerial observations and to determine the various rock types. Geological information is consequently not complete, but enough is known to indicate the approximate boundaries of the larger belts of pre-granitic rocks. It is possible that small areas of these rocks have been overlooked, and that more extended ground surveys would result in making some changes in the positions of the geological contacts.

There are six settlements in the map-area: the larger are at Fort George and Rupert House; the others at Old Factory, East Main, Nemiskau, and Kanaaupscow. All are Hudson's Bay Company trading posts. The area may be reached by boat from Moosonee, Ontario, the northern terminus of the Temiskaming and Northern Ontario Railway. East Main, at the mouth of Eastmain River, is 125 miles northeast of Moosonee.

Access to the inland parts of the area by any of the rivers necessitates many portages. The three gorges on Eastmain River are passed by long portages between which are long stretches of quiet water. There are numerous rapids between Conglomerate Gorge and the Great Bend. The latter is almost impassible but may be avoided by following the Clearwater River - Clarkie Lake - Village Lakes route. Opinaka River has many rapids and portages. The route to Opinaka Lake follows it to Little Opinaka River and continues by way of the latter stream through Little Opinaka and Low Lakes. Travel across the map-area except in the direction of the principal streams is difficult since the drainage is almost all directly into James Bay. One route leads from Low Lake through Opinaka and Boyd Lakes to Sakamee Lake which may also be reached from Fort George by the very arduous route of the South Branch Fort George and Sakamee Rivers.

The land surface rises gradually from the coast to an elevation of 1,000 feet at Clarkie Lake. The coastal area is a gently sloping swampy plain broken locally by low rocky hills. Relief increases eastward and hills become more numerous to form a rugged country extending from Sakamee Lake to the southeast corner of the map-area. Prominent hills also occupy the area around Old Factory and McNab Lakes.

The entire map-area was once covered by the Labradorean ice sheet. Glacial striae and drumlins trend westward in the vicinity of Fort George and south 65 degrees west in the southeast corner of the map-area. As it retreated the ice sheet left a series of small recessional moraines that form an arcuate belt, convex to the west and at least 50 miles wide. The western limit of the belt extends from the southeast corner of the map-area through Little Opinaka and Sakamee Lakes to Julian Lake north of Fort George River. The moraines are from 5 to 30 feet high and range in length from a few yards to about a mile. They are composed of unsorted sand, gravel, and boulders and occur in parallel lines, 50 to 1,500 feet apart, that follow the course of the belt. Post-Pleistocene marine flooding extended inland at least as far as Kausabiskau Lake at an elevation of 675 feet.

The stratigraphy and structure of the pre-granitic rocks have not been fully determined. The volcanic rocks (A) and those of the volcanic-sedimentary complex (B) are lithologically similar to rocks of pre-Broadback and pre-Opemisca age exposed on Broadback River above Lake Evans, just south of the map-area, and around Opemisca Lake 100 miles southeast of Lake Evans. The sedimentary rocks (C) closely resemble Broadback and Opemisca strata. North of Conglomerate Gorge, top determinations on cross-bedded arkose indicate that the sedimentary rocks overlie those of the other groups.

The Eastmain River band of pre-granitic rocks varies somewhat in character along its length. West of Conglomerate Gorge is a complex of sedimentary and volcanic rocks. These are commonly schistose with the foliation trending slightly north of east. Few shear zones were observed. Principal intrusive rocks are dykes of diabase, and pegmatite dykes related to the surrounding granite. Occasional small dykes of feldspar porphyry were seen. Between Conglomerate Gorge and the Great Bend the rocks are mainly massive sedimentary types. Northwest of Kausabiskau Lake they are partly granitized and are cut by pegmatite dykes. East of the lake they give place to a sedimentary-volcanic complex similar to that farther west but intruded by many dark green amphibolitic dykes. East of the Great Bend the volcanic and sedimentary rocks are altered to amphibolites and hornblende schists. They are cut by small intrusions of gabbro and diorite. Shearing is more common than farther west.

Medium grained granite, with biotite or hornblende or both, is the most common of the widespread granitic rocks. These become darker and more foliated around the margins of the belts of older rocks. Gneissic types occupy a broad zone between the Paint-hills and Sakamee Lake pre-granitic bands. Pegmatites are common throughout the map-area but are most numerous in the vicinity of Paint-hills Bay, McNab, and Old Factory Lakes, Sakamee Lake, and along the south side of the Eastmain River band in the vicinity of Kausabiskau Lake.

Disseminated pyrite is fairly common in all of the bands of pre-granitic rocks. Massive pyrite occurs in greenstones near the mouth of Wabamisk River. Occasional specks of chalcopyrite were seen at various places in the Eastmain River band and gold has been reported from east of the Great Bend. Minor amounts of molybdenite and spodumene occur in pegmatite dykes that cut pillow lavas of the Paint-hills band. Plates of muscovite up to 2 inches in diameter are found in pegmatites of the Paint-hills region and around Kausabiskau Lake.

Surveyed and compiled by the Topographical Survey.
Issued 1942.

PRELIMINARY MAP 42-10

EASTMAIN

ABITIBI, MISTASSINI AND NEW QUEBEC TERRITORIES, QUEBEC,
KEEWATIN DISTRICT, NORTHWEST TERRITORIES

Scale:- 1 inch to 8 miles

8 4 0 8 16 24 32 40

Note:- Islands in James Bay are in Keewatin District, Northwest Territories

This document was produced by scanning the original publication.

Ce document est le produit d'une numérisation par balayage de la publication originale.