

# Geological Survey of Canada

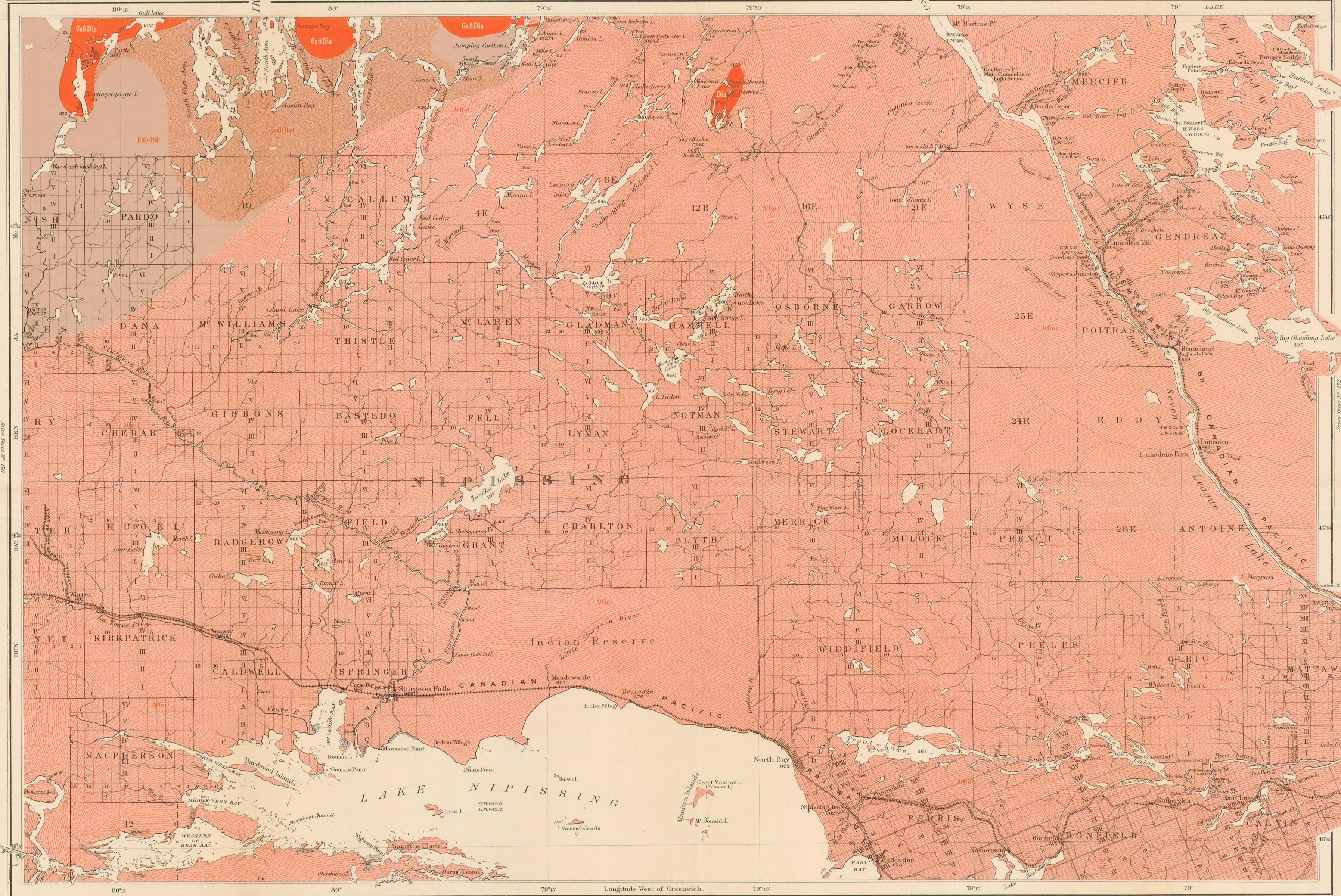
GEORGE M. DAWSON, C.M.G., L.L.D., F.R.S. DIRECTOR

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Joint Sheet No. 158

Sheet

No. 131



Compiled and drawn by Scott Barlow, assisted by L.N. Richard and C.O. Senécal

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Accompanying Part I, Vol. IX (New Series)  
Geologically surveyed by A.E. Barlow, M.A.

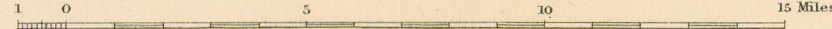
### SOURCES OF INFORMATION

Surveys by A.E. Barlow, 1892-94  
Plans of surveys by Crown Lands Depts. Ontario and Quebec  
Surveys by Canadian Pacific Railway

PROVINCES OF ONTARIO AND QUEBEC  
Nipissing District Ont. and Pontiac County Que.  
(Lake Nipissing Sheet)

Natural Scale 1:250,000

Scale 4 miles to one inch



### DESCRIPTIVE NOTES

#### NOTE 1—LAURENTIAN

The Laurentian is composed of a series of massive or schistose, and usually evenly foliated, crystalline rocks, the latter being commonly referred to as "gneisses." These gneisses are separable into two great sub-divisions, according to the prevalence of orthoclase or plagioclase as the feldspathic constituent, and are thus the foliated equivalents of the ordinary igneous plutonic rocks belonging to the granite and diorite groups. The frequent passage, often within a space of a few feet, of the granite-gneiss into the diorite-gneiss and vice versa, renders it impossible to separate them by any ordinary process of mapping, although sometimes large areas are characterized by the relatively greater or less abundance of rocks representing either the granite or diorite types. The granite-gneiss is by far the most prevalent type and often passes by insensible gradations into massive reddish granite in which little or no trace of foliation can be detected.

#### NOTE 2—HURONIAN

The breccia or breccia-conglomerate which lies at the base of the Huronian of this district, is the rock previously referred to and described by Logan and Murray as "slate conglomerate" or "chloritic slate conglomerate." It is composed of angular, sub-angular or rounded fragments of various plutonic rocks, of which a coarse red granite is by far the most abundantly represented. Diabases and occasionally diorites, of different varieties and degrees of texture, are also abundant, and are all characterized by somewhat extensive alteration, although in the case of the diabases the original optically structure may still be observed. Fragments of a slaty, halloisite-like rock and modified pieces of felspar, quartz and other simple minerals, may also be seen. These are imbedded in a matrix composed of the same materials in a finer state of division, the many interstices being filled by chlorite and sometimes sericite and the abundance of these decomposition-products gives a prevailing dark-green colour to the whole mass. This rock passes gradually upward into a greywacke or felspathic sandstone and slate, very similar in composition, but in which few if any fragments are apparent to the eye. Although on this map-shed a separation of the two rocks has been attempted, it must be distinctly understood that no sharp line exists in reality, while the often almost horizontal attitude of the strata and the unequal denudation to which the whole region has been subjected, renders the tracing out of such a line extremely difficult. If not impossible, except in those cases where the breccia or greywacke occupies large and distinctly continuous areas.

#### NOTE 3—DIABASE AND GABBRO

The masses of diabase or gabbro which are associated with the slates and greywackes in the north-western part of the sheet, have usually a distinctly optically structure, although the more coarsely crystalline portions have the distinguishing granular structure of gabbro. Plagioclase and augite are, as usual, the prevailing constituents, the latter mineral being usually almost, if not entirely, altered to hornblende. Biotite and quartz are usually abundant and much of the latter is evidently an original constituent. The mass of diabase which breaks through the gneissic rocks in the vicinity of Fanny, McDiarmid and Broadbent Lakes, is of a dark, almost black, colour, showing indistinct foliation in a direction corresponding with that of the enclosing gneissic rocks. It is composed of plagioclase and augite, both of which are rather fresh but the augite individuals are always surrounded by a very uniform border or reaction rim of feldt or matted scales and fibres of chlorite.

#### ECONOMIC NOTES

Gold and silver may be present in paying quantities in the numerous quartz veins which fill the fissures in the slaty rocks in the vicinity of the plutonic masses, especially the diabase and gabbro. Muscovite is the usual ferro-magnesian constituent of the pegmatite dikes, which so frequently cut the Laurentian gneisses and granites, and certain occurrences, especially in the township of Calvin, give promise of yielding mica which may be economically valuable. Felspar, often in large and pure masses suitable for pottery purposes, may be found at intervals, along the line of the Canadian Pacific Railway, near the Ottawa River and in other readily accessible localities. Andalusite and monybenite have been found, but only in small quantities. Clay suitable for the manufacture of bricks and common pottery, may be obtained, underlying the sand, from North Bay to Sturgeon Falls, and is also exposed at the surface in the valley of the Veuve River.