

Speaking generally we may say that the southern limit of this area extends from Lake Superior in a north-easterly direction along the Lower St. Lawrence as far as Labrador, and north-westerly to the mouth of the Mackenzie River on the Arctic Ocean. North of these limits, as far as the coast of the Arctic Ocean, almost the whole area is composed of the old crystalline rocks, and although subordinate areas of Huronian rocks are found in these enormous tracts of land by far the greater part belongs to the lower Archæan or the Laurentian system.

This great rock complex consists principally of orthoclase gneiss, of nearly every variety, both as regards structure and composition. In many places these gneisses show only the most obscure foliation and resemble granite, in other areas, of great extent, they appear as perfectly stratified as any Palæozoic formation and they then lie over great areas quite flat or in low undulations. A great part of the obscurely laminated gneiss is probably eruptive, and in some instances this has been established beyond doubt. On the other hand, we have good reason to believe that many of the stratified portions of the system are of sedimentary origin.

In certain areas, where the stratified gneiss occurs, we find in it bedded layers of crystalline limestone, quartzite, amphibolite and other rocks often of considerable extent. In such cases, the gneiss itself is usually richer in varieties, and certain of these varieties almost invariably accompany the limestone beds. These are chiefly garnetiferous gneiss and a peculiar sillimanite gneiss which weathers in a remarkably rusty manner. These gneisses, together with the accompanying granular limestones, quartzites, &c., Logan regarded as a higher division of the Laurentian, resting conformably upon a lower gneiss, which holds no limestone or quartzite, and possesses a more uniform character.¹

He called this upper division "The Grenville Series" after Grenville,² in the Province of Quebec, where it was

¹ Logan, Report of the Geol. Survey of Canada 1863, p. 45, and earlier reports of the Geol. Survey of Canada from 1845-48.

² Logan, Rep. of the Geol. Survey of Canada 1863, page 839.