

has been explored, the indications that it was once very extensively if not wholly covered by formations of Paleozoic age are both numerous and important. The lines of examination have been chiefly confined to the ordinary routes of travel followed by the fur traders, and these are not numerous. When the country comes to be more closely explored there is every reason to suppose that many other outliers, such as those of lakes St. John, Mistassini, Nipissing, and Temiscaming and the Ottawa river, will be found scattered over its surface, and that the evidence of the once wide-spread distribution of the Paleozoic formations will accumulate.

*Transgressions and Oscillations in Level.*—But here a word of caution and modification is necessary. While the evidence indicates that a covering of Paleozoic (Cambrian to Devonian) once spread over the Archean surface, it does not indicate that the rocks of the lower horizons were thus widely spread. On the contrary, it is to be noted that there are distinct evidences of the transgression of the formations of higher horizons over the limiting edges of the lower. Thus, on Lake Superior, the Nipigon rocks may be distinctly observed to overlap the northern edge of the Animikie formation and extend northward far beyond it. In the St. Lawrence and lower Ottawa region, rocks of Potsdam and Calciferous age are abundant. Further north these are absent, and in the upper Ottawa outliers the Chazy rests directly upon the gneiss. In the vicinity of Madoc this also is lacking, and the Birdseye and Black River beds rest directly upon the gneiss. This appears to be true also of the outliers on Lake Nipissing. Thus, in ascending the Ottawa, the Chazy overlaps or transgresses both Potsdam and Calciferous, while at Madoc and Nipissing all of these are transgressed by the Birdseye and Black River. This, in turn, and all older formations, were transgressed by the Niagara, as is indicated by beds of that age resting directly on the Archean on Lake Temiscamany.

In the Province of Quebec the same condition of affairs is found. In the vicinity of the St. Lawrence, the Chazy and Calciferous rocks abound. To the north of this, in the Saguenay country, Laflamme remarks as a noteworthy fact, that in all the points of contact which he has been able to observe between the Laurentian and the Trenton, the latter rests directly upon the former, no traces of Potsdam, Calciferous, or Chazy being seen. Moreover, whilst the Utica formation is present only in a few instances, still débris from it are found on the shores of the lake (St. John), and very often inland to such an extent that we are forced to conclude that the whole area of the Trenton was formerly covered with this formation.

Thus, while the evidence indicates that the Archean "nucleus" was once covered very extensively by Paleozoic formations of one horizon or another, it appears probable that it was not extensively submerged till the time of the Trenton, and that it was much more extensively submerged during the