In addition to the areal mapping, some time was given both in 1917 and 1918 to a detailed study of the gold-bearing deposits of Powell township, the geology of which had previously been done by Burrows.

The writer was assisted in 1917 by D. J. Fisher and H. A. Barnett and in 1918 by W. W. Boyer.

GENERAL CHARACTER OF THE DISTRICT.

MEANS OF ACCESS.

The shortest and most convenient route to Matachewan district starts at Elk Lake, the terminus of a short branch of the Timiskaming and Northern Ontario railway. From this village, situated on Montreal river, a line of motor launches makes daily trips up the river for 30 miles to the mines in Powell township. The trip may also be made in canoes, but the rapid current throughout the greater part of the distance makes the ascent toilsome. The launch trip is broken in two places; at Indian chute, where there is a 23-foot fall passed by a portage about 10 chains in length; and at the so-called Long rapid, really a series of flat rapids separated by stretches of dead water, passed by a portage road about 3 miles long. A wagon and team for hauling freight is now placed on each of these portages, as well as on the mile of road between the river and the mines.

A good alternative canoe route to the mines is the route from Long Point lake. From Elk Lake it is 13 miles by stage or wagon along the Elk Lake-Gowganda road to Long Point lake. After a trip of 11 miles down this lake and the creek which empties it, three short portages lead to West lake on the east branch of Montreal river, from which it is a rapid and easy trip downstream to the forks of the Montreal, about a mile south of the mines.

TOPOGRAPHY.

In its general aspect the country exhibits the monotonous succession of low rocky hills and lake-containing depressions characteristic of the Pre-Cambrian shield. Seen from the summit of any large hill the horizon line appears almost perfectly even, broken here and there by a prominence of unusual height. The relief in general is low, especially so in the northern part of the area under discussion, where a hill 100 feet in height is a rarity. The maximum relief, found only within areas of the Cobalt series, is about 500 feet. An elevation of this height is conspicuous and visible for long distances. Rocks not belonging to the Cobalt series rarely form hills over 100 to 200 feet in height.

The topographic forms fall into two main classes: those of pre-Glacial age, resulting from differential erosion, and dependent, therefore, on the kind of rock affected and its structure; and those of glacial origin, independent of the nature and structure of the underlying rock.

Among the topographic forms of the first class the most prominent are those resulting from the erosion of the folded Cobalt series. The rocks of this series have been gently folded along north-south axes; the erosional forces acting on the folded rocks have scooped out valleys along the anticlines, and the synclinal portions, less jointed and broken, and, therefore,