While these differences are by no means so obvious as those which serve to separate the basal beds from the remainder of the formation, they are sufficiently distinct to enable one to recognize the horizon dealt with in good exposures, provided the extension of van Ingen's work over a larger area shows them to be persistent. The writer's work in the district has been mainly that of hurried areal mapping, and is not therefore of sufficiently detailed character to enable him to express an opinion of any value on this work of van Ingen's, though, so far as it goes, he is disposed to coincide. Precisely the same differences which van Ingen notes have been observed, but the work was not done in sufficient detail to warrant publication. In addition it may be stated that frequent pebbly beds occur throughout the formation, in which the pebbles are almost exclusively of white quartz, with a tendency to concentration on the upper surfaces of layers which are otherwise of pure sand, instead of being disseminated through the layer. Such pebbly horizons seem much more characteristic of the middle division than of the upper.

The thickness of the Potsdam in Clinton county is unknown. The thickest measured section is that in the Ausable chasm, but the section there is complicated by faulting and is by no means complete, all the basal portion being lacking. Walcott's measurement gives 350 feet, and van Ingen's "at least 455 feet" as the thickness here. In the Morrisonville well, with the drill resting at 1250 feet in the Potsdam sandstone, at least 750 feet of the formation had been drilled through, and the bottom samples were of clear, glassy quartz sand, with no trace of the feldspars which characterize the basal portion, indicating that it had not been reached.[1] From this record alone it seems perfectly safe to say that the formation has a thickness considerably in excess of that amount in Clinton county. The writer's estimate, based on the broad belt of outcrop in the northern part of the county, assigns a minimum thickness of at least 1,000 feet to the formation, with a likelihood that it is considerably in excess of that amount.

[1]19th An. Rep't State Geol. p.r69.