1. Problems and Progress. "Problems settled in the rough and ready way by rude men, absorbed in action, demand renewed attention and show themselves to be still unread riddles; when men have time to think . . . . doubt . . . refuses to be cast out." In such a condition was our knowledge of the history of the Great Lakes, tributary to the St. Lawrence, when the writer commenced his fragmentary studies fifteen years ago. In these studies of the lakes some of the most interesting and important questions in dynamical, agricultural, and artistic geology are involved. Even if the Great Lakes had attracted the attention due them, their study would have been impracticable at an early date, at least until after numerous soundings had revealed their character; and until the railway surveys were made, for these furnish data for quantitative measurements. Many deep well-borings were needed to discover the buried valleys; and the surveys of the deserted shores have delimited the boundaries of the shrinking lakes, and made known the deformation of the earth's crust.

From intimate familiarity with the topographic features of the southern states, and by comparing them with those of the lake region, one can easily see that there would be very little difference between the features of the two areas, if the superficial drift at the north were removed and the country were then compared with that at the south where there is no such mantle. Accordingly the meteoric origin of the great St. Lawrence basin suggests itself; but the basin has been obstructed and several great lakes now occupy what were once broad rolling plains. Before men had time to study the lake history we were told that the lakes were valleys of erosion, but how they were made was hardly a question worthy of consideration. Later, it was an equally rough and ready method to tell us that the basins were excavated by glaciers. Their whole history is not yet written, but many chapters are now before us. Extracts of these will be given in their natural order (not in that of the discoveries), so that a short story of the lakes can be told.

2. Former High Continental Elevation. As will be shown in the next paragraph, the basins of the lakes are more or less like erosion valleys. The deepest sounding of lake Ontario is