advances or retreats as the basin is tipped. Consider, for example, Lake Superior. On the map (fig. 7) a line has been drawn through the outlet at the head of St. Marys River in a direction at right angles to the direction of tilting. All points on this line, called the isobase of the outlet, are raised or lowered equally by the tilting and are unchanged with reference to one another. All points southwest of it are lowered, the amount varying with their distances from the line, and all points to the northeast are raised. The water, always holding its surface level and always regulated in volume by the discharge at the outlet, retreats from the rising northeast coasts and encroaches on the sinking southwest coasts. Assuming the rate of tilting to be 0.42 foot per 100 miles per century, the mean lake level is rising at Duluth 6 inches per century and falling at Heron Bay 5 inches. Where the isobase intersects the northwestern shore, which happens to be at the international boundary, there is no change.

Lake Ontario lies altogether southwest of the isobase of its outlet, and the water is encroaching on all its shores. The same tilting that enlarged it from the area marked by the dotted line of figure 2 is still increasing its extent. The estimated vertical rise at Hamilton is 6 inches per century. The whole coast of Lake Erie also is being submerged, the estimated rate at Toledo and Sandusky being 8 or 9 inches per century.

The isobase of the double lake Huron-Michigan passes southwest of Lake Huron and crosses Lake Michigan. All coasts of Lake Huron are therefore rising as compared to the outlet, and the consequent apparent lowering of the mean water surface is estimated at 6 inches per century for Mackinac and at 10 inches for the mouth of the French River, on Georgian Bay. In Lake Michigan the line of no change passes near Manistee, Mich. At Escanaba the estimated fall of the water is 4 inches per century; at Milwaukee the estimated rise is 5 or 6 inches, and at Chicago between 9 and 10 inches.

These slow changes of mean water level are concealed from ordinary observation by the more rapid and impressive changes due to variations of volume, but they are worthy of consideration in the planning of engineering works of a permanent character, and there is at least one place where their influence is of moment to a large community. The city of Chicago is built on a smooth plain, little above the high-water level of Lake Michigan. Every decade the mean level of the water is an inch higher, and the margin of safety is so narrow that inches are valuable. Already the older part of the city has lifted itself several feet to secure better drainage, and the time will surely come when other measures of protection are imperatively demanded.

Looking to the more distant future, we may estimate the date at which the geographic revolution prophesied by Spencer will occur. Near Chicago, as already mentioned, is an old channel made by the outlet of a glacial lake. The bed of the channel at the summit of the