

by 300 feet in a somewhat shorter course. The Raquette and St Regis have a slope somewhat less, but yet over 15 feet to the mile. These are considerable slopes for streams of the size, and excavation of their beds is going on at a fairly rapid rate. The drift deposits were rapidly cut into and the top of the rock knolls of the valley floors, which lay underneath the stream where it was not over its old channel, were uncovered. The rapid down-cutting would be at once checked at these points, but on the downstream side of the obstruction the cutting in the drift would continue actively, causing a fall or rapid at the point, which would commence to saw back a gorge into the rock obstruction. Upstream, however, the drift could not be cut out to a greater depth than the level of the obstructing rock ledge, though it would be quickly worn down to that level and a wide valley rapidly eaten out in the yielding drift materials. In this way the stream courses would be divided into sections of slight declivity and of mature character, commencing and terminating with rapids over rock ridges.

Most of the Adirondack streams illustrate well these general principles. Their head waters are in chains of lakes, and their courses below consist of reaches, or stillwaters or levels as they are locally called, interrupted by rapids and gorges. The Saranac serves well as a type. It rises in Lake Clear, passes thence into Upper Saranac lake, Round lake and Lower Saranac lake and leaves the latter near the middle of its eastern side in a wholly postglacial channel. At the rapids at Saranac village the river is only 6 miles distant from Lake Clear in an air line, while by water it is from 25 to 30 miles distant. Below the village the first considerable rapid is at Franklin Falls some 20 miles away, where the river falls 40 feet within the space of half a mile. In the 20 miles above it has fallen less than 100 feet, or only about 4 feet a mile. Below the falls it flows through a gorge half a mile long, with walls 100 feet high, which apparently marks the channel of a small preglacial stream, or else a low divide between two small streams. Below the gorge a wide marshy valley opens out, through which the river flows in a beautiful series of meanders. Heavy drift filling turns it aside over the rock ledge in the gap at Union Falls. At Clayburg, 8 miles below, it meets the north branch and turns abruptly into the larger valley, occupied by