

water course. These head waters are often upon nearly the same elevation and interlocked with the sources of other rivers flowing in opposite or different directions, and separated by narrow necks of land at a low "divide," rendering diversion from one to another possible, a feature which has in some places been utilized by lumbermen fearless of any legal injunction.

This terrace-like profile of the rivers and their frequent expansion into lakes, often dotted with islands, not only enhances the beauty of the scenery, but, for utilitarian purposes, constitutes a series of elevated natural mill ponds, containing latent power of unknown extent and value, awaiting that demand upon them which is now being made in consequence of the discovery that our second rate forest growth which has hitherto served chiefly to ornament their shores and islands, has become the most important, and can be ground into pulp and rolled into paper to meet the ever increasing demands of the newspaper, the bookmaker, and the innumerable forms into which wood pulp can be compressed for useful or ornamental purposes,—or as a substitute for wood or metal.

These steps from high to lower levels in every rivulet, branch, tributary or main stream of nearly every one of our northern rivers produce more or less broken water which never freezes over but remains open during the coldest weather, giving an alternation of closed and open water sections, of ice covered lakes and of broken water in rapids, which may cover miles in extent, as well as at chutes or cataracts with more or less open water above and below them.

It is an interesting question for specialists to determine what effect, if any, this often large percentage and almost general distribution of open water during the coldest weather (of which every stream large or small has a portion) may have in modifying the extremes of temperature in these northern latitudes. When all the ground is frozen solid and covered with a deep mantle of snow, extending over the lakes and checking increasing thickness of their ice covering, large bodies of water are impounded and maintained at a temperature above the freezing point, although there may be fifty degrees of frost in the air, and are constantly poured forth into this frigid atmosphere.

It is conceded that our Great Lakes modify the temperature of their border lands, and although these open water spaces in our northern rivers may be inferior in surface, they exist on every river having rapids or falls, and extend over such a vast field that their aggregate area must be very large. Unlike the Great Lakes these open spaces are constantly receiving fresh supplies of warmer water to temper the severity of the air. Such "breathing holes" (as they are sometimes called) are nec-