pe

dr

CI

re

C

51

8

n

0

n

F

t

ŀ

C

is whether this mean height to any given period is constant, or returns periodically, to be in the same invariable plane, or whether it is altering from this in only one direction in relation to a given height. However, it is obvious from the above, that the supply is the effect of these two powers, or laws, from their opposite tendency, acting in the same time, and the variations of this can only oscillate within narrow limits, with some small and gradual alteration from such plane, which effect may be considered to be the special physical law governing the discharge of the St. Lawrence issuing from Lake Ontario.

To follow our inquiry in the absence of registered observations, we shall now call in common observation of cause and effect within our daily and ordinary experience, which may lead us to conclude at least, upon some, or the most probable results, to be expected from the operating powers now directly producing the supply of water on those lakes,—also regarding its change or variations in quantity, from other or indirect physical influences to which these powers may become, or are now subject.

We have seen the effect of the two powers is this supply arising from their opposite tendency,---the one filling by the rains and the other diminishing by evaporation, and it is evident that in the event of the evaporative power being the greatest, that the supply by the other would come to be successively reduced ; so as to afford no discharge, and ultimately render those lakes totally dry ;---On the other hand were the supply by the rains greater than the evaporative power can raise, the result would be a discharge, and if both equal, any discharge existing at the time of their becoming so, would be reduced to the bed of the outlet, at which level the surface of the lake would afterwards remain stationary with no discharge; and in every case of discharge, the quantity discharged, together with that raised by the evaporation over all the lakes, will always be equal to the whole or full supply made by the rains in the same annual time : but if the supply was only increased, this would not alter the last equality, but would raise the altitude of the lakes surface, and consequently its mean hydraulic height, * always sup-

• The mean hydraulic height is that which would uniformly give the discharge equal to the discharge made by variations of level in the same time.