

ence of the mild temperature of spring and summer ; they melt away at their base ; and in this manner create inexhaustible springs and innumerable water-courses. Ascend the bed of an Alpine torrent ; follow it up the course of the miry ravine which encloses it, and you will come upon a glacier. A glacier is, in fact, neither more nor less than a vast reservoir of congealed waters, which melt very slowly, and drag on their lingering way into the lower valleys, where they form a rapid stream or broaden into a noble river. And if we would unveil the whole series of nature's operations in this branch of her chemistry, we must add that, in the plains and the valleys, the heat of the sun, evaporating the water of brook and river, returns it to the atmosphere in the condition of *vapour* ; which, after awhile, descends again to earth in the form of *snow*, to be anew converted into ice, and then into vivifying springs ; accomplishing thus the most complete and marvellous circle of natural operations, a circle everlasting, which, like its Author, has neither beginning nor end.

We have said that the glaciers are gifted with a slow progressive movement, which apparently represents the final cause of their existence.

It is singular that a phenomenon so impressive should have long escaped the observation of mankind. Yet, most undoubtedly, it has only been detected within a comparatively recent period. De Saussure had remarked it, and recorded the fact in his great work ; but the world of science attached no importance to it.* To an unlettered

* We quote from Saussure's Travels the following illustrative passage :—

“ Another cause which efficaciously opposes the excessive accumulation of the ice and snows, is their excessive weight, which drags them with greater or less rapidity down into the low valleys, where the summer heats are sufficiently strong to melt them.

“ It is the slow but continuous gliding motion of the ice on its inclined base which propels them into the lower grounds, and continually piles up masses of ice in valleys warm enough to produce great trees and even fertile harvests.

“ In the bottom of the Chamounix valley, for instance, no glacier is formed ; even the snows disappear there in the months of May or June ; and yet the Glacier des Bossons, the Glacier des Bois, and the Glacier d'Argentière, descend into the depths of their respective valleys.

“ But the lower ice of these great glaciers was not formed in the valleys ; and they carry with them, as it were, a certificate of their place of birth in the fragments of rocks embedded in their bulk, which belong to the uppermost extremity of the valley of ice ; these rocks being composed of strata whose like cannot be found in the mountains bordering the lower extremity of this very same valley.”—DE SAUSSURE, “ Voyages dans les Alps,” ii. 251.