

a block situated on the lateral portion of the glacier descends at the rate of 185 yards per annum, which would give a progressive motion of fully 250 yards yearly for the centre.

Glaciers of the second rank move much more slowly ; their annual displacement scarcely exceeds 25 yards.

Moreover, a sensible influence is exercised on this displacement by the seasons. It attains its maximum of speed in the spring, and decreases as the winter draws nearer. On the other hand, accidents of soil also modify the rate of advance. Professor Tyndall proved, in 1857, that the whole eastern side of the Mer de Glace moves more quickly than the western.

The movement of progression of the glaciers is arrested by the fusion which takes place at their base in the valleys, but is only partially arrested by this cause. It is an established fact that most existing glaciers are positively advancing at their base. Their sources of supply above counteract their destruction from below. The glaciers of Aletsch, of the Aar, of Grindelwald, descend with majestic certainty, though with stately slowness, towards the green valleys lying at their feet, and destroy by their irresistible inroads the forests of larch and fir they encounter on their path.

“The encroachments of the Alpine glaciers during the last centuries,” says M. Hogard, “appear to be as incontestably demonstrated by historical documents as their recent and actual invasions are proved by the undeniable traces of their incessant destruction. Vast breadths of pasture are laid waste, forests of ancient trees invaded and demolished, and, finally, isolated châteaux or groups of houses, formerly situated at considerable distances from these masses of ice, are incessantly attacked, overthrown, and devastated under our eyes. Will this progressive march one day slacken, and that in an immediate future, before new calamities shall have fallen heavily on populations already threatened or sorely tried? No one can venture to affirm it.”

One would be inclined to believe that this extension of the glaciers is due to a gradual cooling of our hemisphere. And, moreover, a careful observation of the glacier-system shows that they not