

Periodic Variations of Glaciers.—M. F. A. Forel, of Morges, presented to the first general meeting of the Swiss Society of Natural Science his investigations upon the periodic variations of glaciers. The present remarkable period of glacial retreat began about 1840 in some places, but the Unteraar glacier did not begin to diminish until about 1871. The period is now coming to an end and many of the glaciers are beginning to increase again. The differences of length are immediately traceable to periodic variations in the velocity of flow, which are due to corresponding variations in the thickness of the glacier. These are due partly to differences of snow-fall upon the summits, partly to variations in the summer heat; the latter cause has probably only secondary influence. The retreat which is just ending is attributable to a deficit of snow which dates back from 40 to 60 years and a series of warm summers for the past 20 years.—*Les Mondes*. C.

Influence of Dust upon Explosions.—M. L. Aguilon gives a summary of the principal facts which seem to have been established by Prof. Abel's experiments upon the influence of dust on mine explosions. One of the most sensitive of the Seaham powders contained the least proportion of carbon, and more than one-half of its material was incombustible. The special experiments which were suggested by this observation showed that powders which are entirely incombustible, and are not susceptible of any chemical change through the action of flame, become very dangerous when brought in contact with a mixture of air and fire-damp. This effect seems to be attributable, at least in part, to the fact that the particles, in passing through a flame, become incandescent so as to localize and increase the heat. One of the powders formed an explosive mixture in air containing only 2 per cent. of gas, and when a current of air was blowing with a velocity of only 5 decimetres (19·7 inches) per second, one and a half per cent. of gas was sufficient to make the mixture explosive. The coal dusts in mines not only develop and extend explosions, but through their rapid inflammability and their disposition to remain suspended in currents of air, but they may also intervene as a means of propagating a flame rapidly as far as they extend, and rendering a proportion of fire-damp explosive which would not otherwise be dangerous.—*Ann. des Mines*. C.