imagined to be separated from one another. Then (supposing it not to slip) each block would stand in its place without the support of the neighbouring blocks; for its vertical sides would be walls of ice needing no external support, like the ice-wall of the Glacier du Géant, 141 feet high near the Tacul, described by Tyndall*; or that of the Mer de Glace near the Augle, pictured by Forbes†. Needing no external support when thus placed asunder, they could need none when brought again together; nor could they, by the fact of their being so brought together, be made to exert any mutual pressure, or have any more or other tendency to move than each block had separately. If this reasoning be true, there is no physical property of ice, whether it be called viscosity or plasticity, which would cause it to descend by its weight alone on any surface along which it would not slide. It is plastic no doubt—Tyndall has proved that by the Hydraulic Press,—but not as to any pressure created in a glacier by the weight of the glacier. If it were, or if it were semifluid, then under those enormous pressures which it is supposed to sustain, it would bulge out at the ice-wall of the Tacul, and mould itself to the sides of its channel; for it is the character of a compressible substance, not less than of a semifluid, to yield not only in the direction in which pressure is applied to it, but in every other.

Nor if it were sufficiently a fluid to flow by its weight alone, however slowly, down slopes of 3° or 5°, could it descend otherwise than as a torrent down slopes, such as that of the Silberberg Glacier, of 40°, on which its descent is nevertheless several times slower. The phenomena of these secondary glaciers offer themselves as a test of rival theories of glacier-motion. They lie on slopes so steep that it is scarcely possible to conceive the ice, if solid, to be loosened from the face of the rock, and not to descend in fragments; or if viscous, not to become a torrent.

II. "Preliminary Note on the production of Vibrations and Musical Sounds by Electrolysis." By GEORGE GORE, Esq. Communicated by Professor TYNDALL. Received April 4, 1861.

If a large quantity of electricity is made to pass through a suitable good conducting electrolyte into a small surface of pure mercury,

* Glaciers of the Alps, p. 289. † Travels in the Alps, p. 76.

and especially if the mercurial surface is in the form of a narrow strip about $\frac{1}{8}$th of an inch wide, strong vibrations occur; and symmetrical crispations of singular beauty, accompanied by definite sounds, are produced at the mutual surfaces of the liquid metal and electrolyte.

In my experiments the crispations and sounds were readily produced by taking a circular pool of mercury from 1 to 3 inches in diameter, surrounded by a ring of mercury about $\frac{1}{8}$th or $\frac{1}{10}$th of an inch wide, both being contained in a circular vessel of glass or gutta percha, covering the liquid metal to a depth of about $\frac{1}{2}$ an inch with a rather strong aqueous solution of cyanide of potassium, connecting the pool of mercury by a platinum wire with the positive pole of a battery capable of forcing a rather large quantity of electricity through the liquid, and connecting the ring of mercury with the negative platinum wire. The ring of mercury immediately became covered with crispations or elevated sharp ridges about $\frac{1}{16}$th of an inch asunder, all radiating towards the centre of the vessel, and a definite or musical sound was produced capable of being heard, on some occasions, at a distance of about 40 or 50 feet. The vibrations and sounds ceased after a short time, but were always reproduced by reversing the direction of the electric current for a short time, and then restoring it to its original direction. The loudness of the sound depends greatly upon the power of the battery; if the battery was too strong the sounds did not occur. The battery I have used consists of 10 pairs of Smee's elements, each silver plate containing about 90 square inches of immersed or acting surface; and I have used with equal success six Grove's batteries, arranged either as 2 or 3 pairs, each platinum plate being 6 inches long and 4 inches wide. If the cyanide solutionwas too strong, the sounds were altogether prevented.

Being occupied in investigating the conditions and relations of this phenomenon with the intention of submitting a complete account of the results to the notice of the Royal Society, I refrain from stating further particulars on the present occasion.

April 18, 1861.

Major-General SABINE, R.A., Treasurer and Vice-President, in the Chair.