LETTERS TO THE EDITOR.

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Prints of Scars.

THE accompanying print is sent with a two-fold object. First, for its intrinsic interest in showing how thoroughly and definitely a grafted slice of skin and flesh has established itself under its new conditions, retaining its original characteristics unchanged during thirty years. Secondly, because of its probable interest to surgeons in illustrating the ease and completeness with which a record can be kept of the process and results of the cicatrisation of wounds.

Prints are more clear, more cheap, and more trustworthy than photographs. They are not distorted through perspective, nor blurred owing to differences of focus; they can be taken in any light, and their scale is absolutely correct. They are made by rolling the scarred part on a porcelain pallet or metal slab, that has been covered evenly and very thinly with printer's ink; or, conversely, the pallet and paper are rolled upon the scar. As many duplicate prints can be taken as desired. I have written at so much length about these and alternative methods of printing in my book, "Finger Prints," and elsewhere, that I need say no more about them now. The print sent herewith is a photographic

Enlarged print of a misplaced graft of flesh on the side of a thumb, thirty years after it was made.

enlargement, being more suitable for rough process-printing than the somewhat minute originals; but one of these is also enclosed. The history of the graft is as follows: J. R. H., who is a solicitor in large practice, when he was twenty-five years old, sliced a piece clean off the thumb of his left hand. He was cutting cardboard with a sharp knife guided by a rule, upon which the thumb pressed, and which it slightly overlapped. The piece that was cut off fell on the table; it was at once picked up, clapped upon the wound, and the thumb was tightly bandaged. After a few days reunion had taken place, and the wound was healed. It then proved that the graft had not been replaced in its original position, but crossways to it, as seen by the papillary ridges in the accompanying print, taken in 1895, thirty years after the accident. FRANCIS GALTON.

The Cause of an Ice Age.

SIR ROBERT S. BALL appears to admit the correctness of Mr. Culverwell's argument against Croll's astronomical theory of an Ice Age so far as, that "the direct sun-heat received on any parallel at the time of greatest eccentricity is the same as that now received on the parallel not more than three or four degrees north"; and then proceeds to explain, with perfect truth, that "the actual temperature in a region depends, not merely upon the sun-heat there received, but also upon the transference of heat across the boundaries of that region."

Now the causes upon which the transference of heat depend, viz., the prevailing winds and the ocean currents, rest ultimately upon the sun-heat received over the whole globe. The soundness of Mr. Culverwell's argument therefore seems to hinge upon whether the general shift of the isotherms of *sun-heat* three or four degrees southward would be incapable of greatly altering the winds and currents. If this were so, it might be admissible to reason upon the sum total of the local climatal effects at a period of great eccentricity, with the winter in aphelion, from the conditions of temperature as they now exist. If a shift three or four degrees southward would not appreciably alter these currents, I think Mr. Culverwell's argument against Croll's theory a strong one; and to reply effectually to it, it ought to be explained that such a slight shifting of the isotherms of sun-heat would be likely to affect those currents to so great an extent that the then conditions of local temperature would not bear comparison with the present—as, for instance, of Cornwall then with Yorkshire now. O. FISHER.

Harlton, Cambridge, January 17.

Barisal Guns and Similar Sounds.

IN Colonel Godwin-Austen's interesting letter on the Barisal guns (page 247 *ante*), he mentions as suggested sources of these remarkable sounds fireworks (*i.e.*, bombs, cannon), bursting bamboos in jungle-fires, thunder-claps, landslips, the falling of river-banks or sand-banks, and seismic disturbances; but he does not add what seems to me to be a more probable source of the sounds, namely, ball or globular lightning, known to the French as *éclairs en boule*.

It is true, as I stated in my letter to the *Times* in August last, that Faraday, so late as 1838, said:—"That phenomena of balls of fire may appear in the atmosphere I do not deny, but that they have anything to do with the discharge of ordinary electricity, or are at all related to lightning or atmospheric electricity, is much more than doubtful." ("Researches," sec. 1641.)

Snow Harris, however, in his book on "Thunderstorms," 1843, recognises the phenomenon as a case of glow discharge, often terminating in disruptive discharge, as in the case of H.M.S. *Montague*. After this, the reported cases of ball-lightning and the damage caused by their violent explosion are numerous, and some remarkable ones have been described lately in NATURE. When of lower tension, these fire-balls, as they were called by the older physicists, may envelop the person without doing any harm, a striking example of which is given in Shakespeare's *Julius Cæsar*, Act i. Scene iii.

The explosive sounds heard by the Rev. W. S. Smith, while skating on Lough Neagh, may still be due to globular lightning. The dry atmosphere occasioned by frost is highly favourable to the development of atmospheric electricity; and we have still to learn whether these electrical globes will not account for the observed phenomena. C. TOMLINSON.

Highgate, N., January 20.

IN connection with the correspondence on mysterious atmospheric sounds, which originated with Prof. Darwin's communication in the issue of NATURE for October 31 last, I have official sanction for forwarding the following extracts from the meteorological logs of vessels visiting high latitudes.

S.s. *Resolute*, Captain W. Deuchars; 8 p.m., July 30, 1883, in 71° 9′ N., 12° 28′ W.—"Six reports like those of guns heard to the westward, supposed to be caused by electricity, as no ships are thought to be in the vicinity." Wind during the day calm to very light easterly airs; weather foggy; sea smooth, with a very slight south-easterly swell; pressure and temperature as follows:

	Barometer.	Air temperature. Dry bulb.	Damp bulb.	Sea temperature.
	In.	°	°	°
Noon ...	30·08 ...	50·0	48·8 ...	41·5
4 p.m. ...	30·09 ...	42·0	41·8 ...	37·0
8 p.m. ...	30·10 ...	40·8	40·5 ...	37·0
Midnight	30·11 ...	46·5	46·5 ...	35·0

S.s. *Windward*, Captain A. Murray; 4 a.m. June 12, 1883, in 71° N., 7½° W.—"There is a distinct murmur as of a waterfall from the island" [of Jan Mayen]. Calm; weather foggy;