

quency and violence of lightning to the different parts of the storm-area, or for discovering its possible preference for one or another topographical or geological district when it 'strikes.' Some of these points have been studied in Europe, but much remains to be done even there. Indeed, there is no department of meteorology in which local and closely placed observers can attain an end so distinctly original, and so far out of reach of the government service, as in this; and ten years' observations from stations near one another, and numerous enough, would yield results of the greatest practical and theoretical interest.

LETTERS TO THE EDITOR.

*** Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

Mr. Francis Galton's proposed 'family registers.'

MANY obliging letters reach me from America, offering family information for my use, of the kind described by my friend, Mr. Henry F. Osborn, in your issue No. 39, as that which I want.

The scheme there described is one that I circulated to gather opinions and to obtain guidance before determining its precise form. This is now done, and with your permission I will say a few words upon it.

The information wanted applies to so many different individuals in the same family group, and differs so much in minuteness, according to the degree of kinship, and it has to be arranged in so special a manner, that a copious explanatory description and numerous tables are requisite. There is no real complexity; nevertheless, I feel assured, that, without considerable guidance, endless mistakes will arise. Correspondents will send pages of useless matter; and, on the other hand, they will be silent about simple facts, the absence of which will seriously diminish the value of otherwise copious returns. I therefore found it necessary to prepare a book containing a full account and explanation of what was wanted, in order to exhibit the various hereditary tendencies that converge upon any given person, and containing at the same time all the necessary schedules. This I have done: it is in the press, and will be published about Christmas by Macmillan, and will be procurable in America.

As regards the prize scheme, I found it inadvisable to restrict it to medical men, and I have thrown it open to 'British subjects resident in the United Kingdom.' I could not extend it farther, owing to the extreme difficulty of verifying statements of facts alleged to have occurred abroad. My self-imposed task will be hard enough as it is. The conditions of the prizes are fully explained in a fly-leaf to the English edition.

Let me take this opportunity of saying a few words about another book to which my name is attached as editor, and which will appear at the same time. It is called the 'Life-history album,' and was prepared by a sub-committee, of which I was asked to be chairman, who acted by direction of the Collective investigation committee of the British medical

association. This book gives explanations and schedules for the registration of *personal* data as life advances, just as the *Record* gives for a comprehensive account once for all of *family* data; the details, however, being very different in the two books: they are much more medical in the 'Album.' It is believed by the Life-history sub-committee that the medical value to the possessor, of his own life-history up to date, would be considerable, and of great service to the children. They also feel, that, if these albums are commonly kept, it will be possible hereafter to obtain extracts of a great many of them for purely statistical purposes, which would be of high scientific value. The albums will contain a vast amount of information which is now left to perish, and the lack of which is a great hindrance to obtaining that complete and comprehensive knowledge of the family antecedents of numerous persons, which is at present the paramount desideratum to inquirers into heredity.

I shall be very grateful to any of your readers who may see my forthcoming 'Record of family faculties,' and may make themselves acquainted with what I want, who will send me information concerning their own families. But I cannot explain my wants with sufficient brevity either here or by letter, and must, perforce, refer those who care to know them to the book itself.

FRANCIS GALTON.

42 Rutland Gate, London, December, 1883.

The red sunsets.

I have recently noticed several articles upon the gorgeous sunsets lately seen in this country, and desire to put down a few notes on the same.

The red glare was so brilliant the evening of Nov. 27, that the fire-alarm was sounded in New Haven, Conn., calling out the engines. On the succeeding night the deep red glow was magnificent, appearing far above blocks in the busiest part of the city. Careful observation has shown the phenomenon very nearly as brilliant at sunrise as at sunset. The deep red has appeared the last of all the *colors* in the sky at sunset, and invariably the first in the morning. There has been, in addition to this, a grayish afterglow at night, and in the morning a slight effulgence betokening the rising sun. This afterglow, or effulgence, has made it possible to observe the sky directly at the region where the deep red had just appeared, or was soon to appear; and this invariably showed fine fleecy clouds at a great height, generally stratified horizontally, and extending with slightly increasing density to the south-west or south-east horizon. These light stratified cloud-appearances were visible, even though the sky appeared absolutely cloudless a few minutes before and after the effulgence. The stars the past month have shown, night after night, most extraordinary twinkling, and the air has been saturated with moisture. Again and again, with a high barometer and a perfectly clear sky, sometimes even with a cold north-west wind, I have been astonished to find the relative humidity a hundred per cent.

As to a probable explanation, the wildest theories have been advanced: meteors, cosmic dust, zodiacal light, comets, electricity, volcanic gases and ashes, etc., have each had their adherents. Of these, the last is the only one worthy of consideration. The recent (?) eruptions at Java, 11,000 miles distant, are advanced as a sufficient cause for the presence of the ashes.

That volcanic ashes may be carried great distances is well known. Loomis's 'Meteorology,' p. 77, gives an instance in which ashes were carried 700 miles to the north-east and 1,200 miles to the west of the volcano Coseguina. Notwithstanding this evidence, it