(2) The names of local Societies, or persons who are willing to arrange for a photographic survey for geological purposes in their district.

The information afforded me will be placed before the Geological Section of the British Association at their next meeting, and I trust to receive many offers of valuable assistance from different parts of the country. If copies of photographs are sent me they will be carefully kept for exhibition at the meeting. Several geological friends have favoured me with suggestions in regard to size of photograph, scales of height, length, and other details, which will all be carefully considered. Photography is now so popular and easy of accomplishment that there should be no difficulty in organizing local photographic surveys for the purpose I have indicated.

It was arranged at Bath that the delegates should get their Societies to think the matter over, and that I should meanwhile endeavour to prepare a list of local geological photographs already available for study. I am communicating with the Societies with this object, but your insertion of this letter will further aid me in directing attention to the subject over a wider circle than I am able to reach.   OSMUND W. JEFFS.

12 Queen's Road, Rock Ferry, Cheshire, April 23.

Columnar Structure in Ice.

I HAVE just read Mr. James McConnel's interesting and important paper on the plasticity of ice (NATURE, vol. xxxix. p. 203), and as he remarks that it would be interesting to know whether the columnar structure he describes as occurring in the ice of the St. Moritz Lake has been observed in England, I venture to ask you to record the fact that I recollect seeing a precisely similar structure in the ice of the lake in Kew Gardens in February 1880. The phenomenon occurred *during a thaw* that preceded by a day or two the memorable snowstorm of that month, and the aspect of the ice, where it had been broken through, recalled to my mind that of the well-known fossil *Lithostrotion basaltiforme*, as it was built up of vertical columns, irregularly hexagonal in section, about a quarter of an inch in diameter and of equal length with the thickness of the ice, about 4 or 5 inches. If I remember aright, bright sunshine had been thawing the ice during the day. I made a note on the occurrence at the time, but as I came to India shortly after I do not know what has become of it.

     T. D. LA TOUCHE,
     Geological Survey of India.

Camp near Cherrapunji, Assam, March 4.

Brilliant Meteor.

I SEND you an account of a meteor I saw on Saturday evening last, thinking it may interest others as much as it has myself. I was lamp-signalling at the time (8.55 p.m.), and saw far the largest meteor I have ever seen. It was far brighter than any planet, or even than a good rocket. It seemed to start from the Great Bear, and fall in a north-east direction half-way to the horizon. I immediately stopped my message, and asked my companion (a mile distant) if he had seen the meteor. He replied he had not, which surprised me, though he had the town lights not far behind him, and he was looking away from the north-east. I had not finished asking him about the meteor, when I heard a loud but distant report, which I can only put down to the same source. It sounded like distant artillery, or more particularly like a six-pounder at six miles distance on a still evening. The interval of time between the sight and the sound I should estimate at a minute.   T. HERBERT CLARK.

Wingfield, Trowbridge, April 30.

A New Mountain of the Bell.

HAVE the kindness to correct two typographical errors in my communication describing the "New Mountain of the Bell," printed in your issue of April 25. On p. 607, col. 2, line 7, an unfortunate superfluous comma after the word quartz should be expunged, so as to read quartz pebbles and veins.

Near the bottom of the same column "modern gong" should read "wooden gong." As a matter of fact the *Nagous* is far from "modern." It consists of a heavy plank nearly 2 inches

thick, 14 feet long, and suspended by ropes at two points 4 feet from either end. When struck with a wooden mallet, this primitive gong emits a loud sound. At the Monastery of St. Catherine, three of these are in use, one small one to call to their noonday meal the numerous *cats* which inhabit the rambling old building.   H. CARRINGTON BOLTON.

London, May 1.

KLEIN'S "IKOSAHEDRON."[1]

IT has recently been said, with great truth, that pure mathematics is at the present moment the most progressive of all the sciences. It is, we must confess with sorrow, equally true, that the means at the disposal of English pure mathematical students for making themselves familiar with the recent advances in their science are deplorably scanty. This is not the place to discuss the reasons why it has so long been the case in this island that the stars of our mathematical firmament have been

"Étoiles qui filent, filent et disparaient !"

and not fixed suns, with minor but still useful bodies around them, receiving their light and completing their systems. But it is obvious that this shortcoming has been closely associated with the backward state of our text-book literature in pure mathematics. There exist in the English language so few books through whose pages the reader can so much as descry the frontier land of pure mathematics that every addition is an event of importance. Such an addition is Mr. Morrice's translation of Klein's "Ikosahedron." Klein's book is in many respects the most charming piece of modern mathematical writing that has appeared for many a day. It is a rare combination of great originality with wide and far-reaching views, Teutonic minuteness of scholarship, and a candour in dealing with the work of others which does not always accompany the other high qualities just mentioned. If we were asked to name a single book that would beyond others give the reader a comprehensive glance over the wide field of modern pure mathematics, and give him an introduction to this study which would at once both interest and instruct him, we should without hesitation name Klein's "Ikosahedron." The work interweaves, in a singularly felicitous and natural way, the most remote and apparently unconnected branches of higher pure mathematics. In the course of its perusal the reader will make acquaintance with the geometry of the regular solids, the theory of substitutions, the theory of functions of a complex variable, invariants, the theory of linear differential equations, Riemann's researches on the hypergeometric series, Galois's theory of the resolution of algebraic equations, elliptic functions, Plücker's line geometry, and the special theory of quintic equations. This enumeration will sufficiently indicate the wide sweep of the work; but let not the reader be alarmed. If he is ignorant of all these subjects, so much the more will he enjoy the pleasure of Prof. Klein's introduction to them. He will find that he is led, by easy and pleasant ways, first to see the interest and importance of these subjects, then to panoramic aspects of them, and finally to just so much detail as will make him (if he be right-minded) thirst for more. Speaking from past experience, we should say that one of the greatest disadvantages of modern specialism is the repulsive force which it establishes at every point to the entrant. Let an English student sit down, for example, to Jordan's "Théorie des Substitutions." He is at once plunged into a sea of new terms and definitions. He is baffled by a kaleidoscopic array of subtle distinctions between con-

[1] "Lectures on the Ikosahedron, and the Solution of Equations of the Fifth Degree." By Felix Klein. Translated by George Gavin Morrice, M.A., M.B. (London : Trübner and Co., 1888.)