

OUR BOOK SHELF

Vestiges of the Molten Globe. By W. L. Green, Minister of Foreign Affairs to the King of the Sandwich Islands. (Stanford and Co., 1875.)

IT is a pity that books of this sort are published, as they can do no good. It is one of that class which attempts to account for the general features of the earth by some extravagant hypothesis, for the proof of which some superficial observations of well-known facts and some show of quotations from well-known writers are all that is offered. Who besides the author can believe that the shape of the earth, deprived of its oceans, would be a tetrahedron, the four angles representing the four continents? Yet the author announces himself as following in the footsteps of Elie de Beaumont in his theory of the *réseau pentagonal*, as the following lucid sentence on page 2 shows:—"The form (of the earth) is included in his *réseau triangulaire*, and is, as I propose to show, the six-faced tetrahedron; the easterly sag or twist of the southern hemisphere on a twin plane, the apparently macled form of the crystal, having caused the lines of relief and depression of the earth's surface to elude solution whilst the *réseau* of that crystal in its simple form alone was applied to them." We quite agree with the author that "only the imperfection of the ideas or of the language in which they are conveyed can prevent the following pages being intelligible to every reader." However untenable De Beaumont's theory was, it was conscientiously and laboriously worked out, and the conclusions were commensurate with the offered proof, even if they were erroneous; but Mr. Green, who would be his follower and improver, jumps to conclusions far wider on the basis of supposition only. The present short volume is only the first part of three that are promised on the figure of the earth, volcanic action, and physiography; and we must hope that the second part, at least, which is to contain "observations of the great active volcanoes and the great extinct volcanic range of the Hawaiian group," which the author must have had good opportunities of making, will be somewhat more solid than this first. Mr. Green is plainly capable of better things than wild speculation, which anyone can make and no one can prove. There are no doubt many remarkable features in the distribution and shape of land and the direction of its coast lines, some of which are here pointed out; but the meaning of these things will only be arrived at by a wider knowledge of facts and sober induction from them. The large map that accompanies the volume shows some of these features well, and is beautifully executed.

Stanford's Elementary Atlases. I. *Physical Atlas* (sixth edition); II. *Outline Atlas*; III. *Projection Atlas*; IV. *Blank Sheets for Maps.* By the Rev. J. P. Faunthorpe, M.A., F.R.G.S. (London: Edward Stanford, 1875.)

THIS is really an admirable apparatus, not merely for the purpose of teaching the construction of maps, but for the giving of a real knowledge of what Physical Geography means, and for the conveyance of an impressive idea of the prominent physical features of the particular countries embraced in the set of maps. There are sixteen maps altogether, and in the *Physical Atlas* the chief physical features of the various countries are clearly brought out—mountain ranges, table-lands, and river-courses. The mountain ranges are simply but sufficiently indicated by thick lines, the principal summits being shown by small circles; the table-lands are shown by simple shading. Besides these features, each map contains one or more of the principal cross-sections of the country, which convey a vivid idea of its conformation. Prefixed to the *Physical Atlas* are a few useful hints on Map-drawing, on Mercator's Projection, on the Shape and Position of the Land Masses, and a few notes illustrating each map. Atlases II., III., and

IV. are intended to lead the student gradually to skill in map-drawing, and are well calculated to serve the purpose. Anyone who goes faithfully through the course indicated by this excellent set of books will have a more real knowledge of the main features of the land-masses of the globe than any amount of mere reading can give. The fact that the *Physical Atlas* has reached a sixth edition, which contains several new maps and additional letterpress, proves that Mr. Faunthorpe's design has been appreciated.

LETTERS TO THE EDITOR

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The Meteors of November 14

THE writer some time since called attention to the fact that the dates of certain meteoric showers, given by Humboldt and Quetelet as belonging to the November stream, indicated the existence of two distinct and widely separated clusters moving in orbits very nearly identical. The years thus designated were 1787, 1818, 1820, 1822, 1823, 1841, and 1846. As the last two were subsequent to the great display of 1833, the meteors seen were noticed only in consequence of their being specially looked for; and as the number conformable to the radiant of the Leonids is not given, there may be some doubt whether those observed really belonged to the November stream. The former displays occurred before the periodicity of such phenomena had been suspected, and the number of meteors would seem to have been considerable. As the shower of 1787 preceded by twelve years the great meteoric fall witnessed in South America by Humboldt, the group from which it was derived had passed beyond the orbit of Saturn at the time of the latter display. The phenomena of 1818, 1820, 1822, and 1823 indicate that, as in the case of the major group, which passed its descending node between 1865 and 1870, the meteoroids are extended over a considerable arc of their orbit. From November 1787 to the middle of the nodal passage of 1818-1823, is about 33½ years—a period nearly the same as that of the principal cluster. These facts alone were regarded by the present writer as giving reasonable probability to the hypothesis of an approximate identity of orbits. In NATURE, vol. xi. p. 407, it was shown that the meteor-showers of October 855 and 856 were probably derived from the stream of Leonids, and it is certainly remarkable that the interval from 855 to 1787 is equal to twenty-eight periods of 33.293 years. Again, the shower observed in China, Sept. 28, A.D. 288, making proper allowance for the nodal motion, corresponds to the same epoch; the interval between 288 and 855 containing seventeen periods of 33.35 years. In view of the fact that the shower from this cluster was due between 1851 and 1855, the following extract from the writer's note-book is not without interest:—

"Newark, Delaware, Nov. 13, 1852. . . . On the evening of the 11th, from 7 to 10 o'clock, an aurora borealis of ordinary brilliancy was constantly observed. About midnight the sky became overcast with clouds, thus preventing our watch for meteors which we were about to commence. On the 12th, from about 3 to 9 o'clock A.M., rain fell almost incessantly. About noon the clouds broke away, and the night between the 12th and 13th was quite clear. During six hours—from 10 P.M. to 4 A.M.—constant watch was maintained at four windows, facing north, south, east, and west. From 10 to 1 o'clock the observations were conducted by Prof. Ferris and myself with assistants. At 1 the place of Prof. Ferris was taken by Prof. Porter, who remained, with myself and assistants, till 4. We observed—

From 10h. to 11h.	...	...	20 meteors.
" 11 " 12	...	...	35 "
" 12 " 1	...	...	40 "
" 1 " 2	...	...	52 "
" 2 " 3	...	...	75 "
" 3 " 4	...	...	59 "
Total	...	...	281

When the meteors were most numerous, near 3 o'clock, the common point of divergence in Leo was distinctly observed."

I may here add, although the fact is not stated in my memoranda, that the conformable meteors, or a majority of them,