

former, and demands that reason shall be shown for not diverting to the service of the latter at least a large share of attention.

Remembering that measurement of arcs and elaborate study of the earth's irregularities by the plumb-line never can extend much beyond the continents and larger islands, and never will extend far in advance of civilisation; while pendulums can, and assuredly will some day, form part of the equipment of every scientific exploring party, it does seem passing strange that we should still be discussing the ratio of the axes of a convenient figure of reference (p. 287) as a more important question than the actual nonconformity of the earth to *some* approximate figure of known form.

What we would fain see, as the *geodetical* fruit of first-class surveys—if not done, then attempted; and if not even attempted, then at least inculcated as to be done or attempted—is, a comparison of the earth's surface, as actually measured, with some provisionally adopted form, showing where possible the relative position of the actual zenith, as determined by astronomical observations, with respect to the formal zenith. And then, a discussion of such results, showing, either a traceable continuity of the irregularities of the actual surface, if such exists; or evidence of discontinuity such as to justify a presumption that the irregularities are too small in area to be susceptible of study without closer distribution of stations.

Thus we might haply arrive at one of two conclusions—that large irregularities exist which may be mapped, or that the irregularities are such as to demand special investigation by a recurrence to observation in selected localities.

If to this suggestion it is objected that the thing has been done—and we know that the irregularity in the neighbourhood of Moscow has been investigated in some such way—we reply that, even so, a short paragraph noticing the fact (p. 288) is but a meagre presentation of what seems to us one of the principal results of methodic geodesy.

And now that we have done and have to lay down the pen, it is with a feeling of regret and a sense of incompleteness. The book deserves so much better than we have said of it. We have identified ourselves too entirely with the student looking for special instruction and too little with the author giving the best he had, and have quarrelled with him because it was too good for our needs. Once more be it said that the subject is too large for a single work—it needs a series. It is but the absence of a few apologetic words that has given this sense of a subject approached at many points only as it seems to be immediately quitted, in favour of others which have more attraction to the author. Now that he has dwelt on them, may he resume his task, and enlarge where we have shown the need.

J. HERSCHEL

OUR BOOK SHELF

The Fauna of Scotland, with Special Reference to Clydesdale and the Western District—Mammalia. By E. R. Alston, F.L.S. (Glasgow: The Natural History Society of Glasgow.)

THE Natural History Society of Glasgow, having resolved to publish a catalogue of the fauna of the western district

of Scotland, have secured the co-operation of Messrs. Alston, Young, Cameron, Robertson, Binnie, and Lumsden. Already one part of the catalogue of the Crustacea and one part of the catalogue of the Hymenoptera have been issued, and these have now been followed by the present part, treating of the Mammalia. The Society is doing a good work, and will be fortunate if all the parts as published come up to the standard of the one now before us. In the nomenclature of the Mammals, of which fifty-one are recorded, the author endeavours to reconcile the spirit and the letter of our British Association rules. Without entering into any details of description or economy, he has carefully worked out the geographical distribution of each species. A very interesting list is given of extinct and recent Scottish Mammals, arranged in the probable order of their arrival from the southward.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

Auroral Response in America

WHEN the full burst of auroral displays is upon us, and one brilliant demonstration treads close on the heels of another, there may be some trouble in ascertaining which corresponds to which on opposite sides of the earth. But the opening of the new cycle-season by the arc which I described in your pages on March 17, has proved so isolated a phenomenon in time, that it cannot be confounded with any other either before or since. And while your subsequent notice of the disturbance of the magnets at the Royal Observatory, Greenwich, on the same night, proved that the aurora seen in Edinburgh was an earth-ball phenomenon, and not a mere local atmospheric glimmer, the following letter, which has just reached me from Canada, shows a remarkable correspondence to have prevailed there.

The letter, written to me by Lieut.-Col. G. E. Bulger, late 10th (North Lincoln) Regiment, from Montreal on April 10, is word for word simply thus:—

"I have noticed your account (NATURE, vol. xxi, p. 492) of the aurora seen in Edinburgh on the 17th ult.; and it has occurred to me that it might interest you to hear of a similar display which I observed at this place on the same date. Your description would apply very well to the one witnessed here, excepting that the arch was higher in the sky, and its centre about N.E. The darkness below the light was very marked, although the moon was shining brightly at the time. Auroras have been singularly rare here this year, and that referred to is the only one I have seen or heard of since my arrival in August last. The weather on March 17 was bright and fine, with detached clouds, and a light N.W. breeze. The barometer (aneroid) at 9 p.m. was 30.36, therm. 14.7."

Thus far Col. Bulger; and now we have only to wait the arrival of Australian meteorological reports to ascertain whether south responded to north, as well as west to east, on the occasion of that remarkably isolated auroral display, abundantly observable, yet observed by so very few persons, in this country on March 17 last.

PIAZZI SMYTH

15, Royal Terrace, Edinburgh, April 26

The Antiquity of Oceanic Basins

I AM much obliged to my friend Prof. Alex. Agassiz for reminding me that his distinguished father, when reporting on the deep-sea dredgings carried on by the United States Coast Survey in 1866-68, explicitly endorsed the views previously put forth by Prof. Dana (to whom, however, he made no reference) as to the geological antiquity of the American Continent and the probable determination of the general outlines of the present Continental elevations and Oceanic depressions at the very beginning of the formation of inequalities upon the Earth's surface.