

of the coal-tar colour industry has, we think, not been without its influence on the development of this branch of applied organic chemistry in this country. Dr. Knecht's translation merits a place on the bookshelf of every person engaged in the manufacture and use of the so-called coal-tar colours.

A Bibliography of Geodesy. By J. Howard Gore, B.S., Ph.D. (Washington: Government Printing Office, 1889.)

THIS valuable work forms Appendix No. 16 to the 1887 Report of the United States Coast and Geodetic Survey, and is another example of the disinterested energy displayed by our Transatlantic cousins in scientific matters. With great perseverance, and at the cost of much time and trouble, Mr. Gore personally explored thirty-four of the principal libraries of America and Europe, and numerous minor libraries by proxy; and, in addition, he checked and completed many of his references by correspondence with the living authors of both continents. The extent of his labours is shown by the four hundred columns of references, and short remarks where the title alone is not sufficiently explanatory. An alphabetical arrangement is adopted, and this includes authors, abbreviations, and subjects.

It is gratifying to note that our own country, besides the assistance rendered by its libraries, lends its aid to such an important work in the shape of a manuscript supplement by Colonel Herschel to his pendulum bibliography, which was placed unreservedly at Mr. Gore's disposal, through the courtesy of the Royal Society. After the offers of publication made by various institutions, including the International Geodetic Association at Berlin, no further testimony to Mr. Gore's fitness for the work is needed, and the compiler is justly proud "to see the results of his labours issuing from an institution of his own country, which throughout the world is the recognized advance guard in geodetic science."

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 intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

The Method of Quarter Squares.

I OMITTED any reference to Leslie in my review of Mr. Blater's table (NATURE, vol. xl. p. 573), as I have never supposed that he was an independent discoverer of the method, or an independent calculator of a table, of quarter squares. I have referred to his table in my Report on Mathematical Tables Brit. Assoc. Report, 1873, p. 23; and the passage quoted by Prof. Carey Foster (p. 593) is given in full in the preface to Mr. Blater's table. It seems to me that the words in question—"This application of a table of quarter squares, as it is derived from the simplest principles, might have readily occurred to a mathematician; yet I have nowhere seen it brought into practical use till, last summer, I met with, at Paris, a small book by Antoine Voisin, printed in 1817"—do not indicate an independent discovery; and this view is confirmed by the fact that, in the first edition of the "Philosophy of Arithmetic" (1817), Leslie makes no mention of quarter squares. It was only in the second edition (1820), after having seen Voisin's work in the previous year, that he added, at the end of the volume, an account of the method, and a table extending to 2000. The table was copied, I presume, from Voisin, as Leslie does not claim it as the result of his own calculation. In the British Association Report I have described it as "reprinted from Voisin," and have pointed out that it did not appear in the first edition. In the preface to Mr. Blater's letter it is described as "an extract from Voisin's table." Although we may, I think, infer, almost

with certainty, that the table is only a reprint,¹ it is to be regretted that Leslie did not say so explicitly.

J. W. L. GLAISHER.

Trinity College, Cambridge, October 26.

Darwinism.

MR. ROMANES states that it is "absurd" to call his essay on physiological selection an elaborate (I said "laborious") attack upon Mr. Darwin's theory of the origin of species. In that essay I find these words (p. 345), "the theory of natural selection has been misnamed: it is not strictly speaking a theory of the origin of species"; and on p. 403, "the theory of physiological selection [*i.e.* Dr. Romanes's theory] has this advantage over every other theory that has ever been propounded on the origin of species"; and again, "the problem of the origin of species which, as shown in the preceding paper [*viz.* the laborious essay], his [Mr. Darwin's] theory of natural selection serves only in small part to explain."

On the other hand, Mr. Darwin entitled his great work, "The Origin of Species by means of Natural Selection, or the preservation of favoured races in the struggle for life." He considered his theory of natural selection to be a theory of the origin of species. Mr. Romanes says it is not. I say that this is an attack on Mr. Darwin's theory, and about as simple and direct an attack as possible. Why Mr. Romanes wishes us to believe that he did not attack Mr. Darwin's theory it is difficult to conceive. That he should hope to persuade anyone that it is absurd to call his essay an attack on Mr. Darwin's theory when this is what it distinctly professes to be is curious. I trust you will not permit an empty discussion on this matter, but leave it to your readers to find out by reference to the Proc. Linn. Soc., vol. xix., where the absurdity exists.

E. RAY LANKESTER.

42 Half-moon Street, November 1.

Record of British Earthquakes.

WILL you allow me to ask your readers to help me in compiling notes of the earthquakes felt in this country during the present and following years?

Mr. Mallet's great Catalogue of all recorded earthquakes ends, as is well known, with the year 1842. Previously to this, Mr. David Milne had published a series of papers on the earthquakes of Great Britain in the *Edinburgh New Philosophical Journal* (vols. xxxi. to xxxvi. for the years 1841-44). These papers, which are of very great value, bring down our record to the end of August 1843. In recent years we have had the Catalogues of Prof. J. P. O'Reilly (Trans. Irish Acad., vol. xxviii. pp. 285-316 and 489-708) and the late Mr. W. Roper (published by T. Bell, Observer Office, Lancaster). The latter is a useful chronological list of shocks felt during the Christian era, down to February 10, 1889; but, except in a few cases, it is little more than a list. Prof. O'Reilly's important catalogues are arranged alphabetically according to the localities affected, and do not pretend to give detailed information with reference to the shocks themselves.

To make our seismic record more complete, I propose, therefore, to compile a descriptive list of British shocks noticed in newspapers and scientific journals from the time at which Mr. Milne's Catalogue closes down to the end of the year 1888; and I should be very grateful if your readers can in any way help me in this work.

What I wish particularly to ask for, however, is information relating to the shocks of the present and future years. For our knowledge of British earthquakes we must at present rely to a great extent on newspaper accounts; and these accounts, which for some points are fairly trustworthy, become difficult of access in after years. If any of your readers are willing to assist me in preserving these notices in a convenient and systematic form, may I ask if they would be good enough to send, to the address below, the names and dates of newspapers, and more especially local ones, in which any descriptions, however short, are given of British shocks? It is hardly necessary to say that any other notes, communicated by those who have felt the shocks or observed their effects, would be of great value, and would be most thankfully received.

The days are past for compiling earthquake catalogues for the

¹ After quoting the full title of Voisin's table, Leslie refers to his own table as "the specimen which I have given."