

way journey to London, Canon Kingsley gives a brief notice of the succeeding rocks up to the Bagshot Sand. Chapter 4 is on "The Coal in the Fire," and explains the origin of coal. Chapter 5, on "The Lime in the Mortar," treats of Limestones and Coral-reefs. And Chapter 6, on "The Slates on the Roof," deals with the older rocks and volcanoes; and here we may state that the notion of mountain chains being due mainly to contraction, needs correction on the part of the author, who remarks that "the loftiest mountain chains are nothing but tiny wrinkles." The new edition of Jukes's Manual will give the latest information on this subject. Otherwise we may congratulate the author on the easy and interesting, and yet accurate manner in which he has illustrated "Town Geology."

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CORRESPONDENCE.

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"A CRY FROM THE LAND OF EGYPT."

SIR,—While the *Source* of the Nile has been honoured by the concentrated attention of Geographers, it has been my own fate to suffer the cruellest mortifications—it pains me to have to add—"in the house of my friend," the Geologists.

The controversy on the origin of the Wealden, between the advocates of the Lake- and Delta-theory respectively, has been prolonged in its duration, and often doubtful in its results; but some have supposed this may be only a necessary consequence of the slowness of the methods of inductive research. Fortunately, however, the author of a paper in the last number of the *Quarterly Journal of the Geological Society* has discovered a summary way of settling this long-vexed question; discarding the old and tedious methods of inquiry, he has succeeded, by the application of a few very simple crucial tests, in so triumphantly establishing the Lake-theory, as actually to reduce it to an *axiom*, and to employ it as the basis of a number of highly curious speculations.

It is impossible to exaggerate the striking novelty of the views of Mr. Meyer on the subject of estuarine deposits. I quote the paragraph in which he enumerates the crucial characters which, found in the Wealden, demonstrate the impossibility of that formation having originated in a delta.

"The exceedingly quiet deposition of much of the sedimentary strata, the almost total absence of shingle, the prevalence, both numerically and specifically, of such species of mollusca as abound in quiet waters, the comparative absence throughout the greater portion of the series of broken shells such as always abound in tidal rivers, and, I believe I may say also, the total absence of drift wood perforated by mollusca in either the Purbeck or Wealden strata, all seem to me to point to the same conclusion—namely, to the accumulation of such strata beneath the waters of a wide but shallow lake, etc."—*Quart. Journ. Geol. Soc.*, vol. xxviii., p. 243.

In order to appreciate the high originality of these ideas, it is only necessary to reflect on the opinions which have hitherto prevailed on the subject. Earlier writers, whether travellers, physical

geographers or geologists, so far from anticipating the interesting discoveries of Mr. Meyer, would almost appear to have conspired to perpetuate the vulgar errors current upon the subject. Thus, in treating of existing deltas, they have actually represented their waters as ramifying in innumerable sluggish streams, or collecting into vast swamps, stagnant lagoons, and shallow lakes, often of great size; with remarkable unanimity they have dwelt on the extreme fineness of the sediments in these waters, and the slowness with which they were deposited; but, strange to say, the existence of the characteristic "*shingle*" they appear to have altogether overlooked. Further, they have described some of the grandest deltas in the world as formed in *tideless* seas. Unfortunately, too, the disseminators of these erroneous views have been aided by the naturalists, who have declared that the existing boring-molluscs are all *marine*; and they have been abetted by the palæontologists, who have described the ancient allies of these boring-molluscs as occurring in such strata as the London Clay and the "Lower Greensand," and never in *any freshwater beds at all*, whether of estuarine or lacustrine origin.

Where the error has been so universal, it may seem invidious to particularize individual authors; but I cannot refrain from pointing out what appears to have been almost infatuation, with respect to this subject, on the part of the author of "The Geological Observer." Not content with describing in great detail the muddy character and quiet mode of deposition of the delta sediments, Sir Henry De la Beche has actually stated that 400 miles from its mouth the waters of the Ganges can no longer move coarse gravel!—and so far is he from perceiving the necessary connexion between tides and deltas, that he even represents the action of the former as altogether inimical to the formation of the latter. So great, indeed, was his misapprehension on the subject, that he has actually founded the division into chapters of part of his great work on the (of course, erroneous) supposition that deltas are only formed in "tideless seas," or in those where, owing to the action of local causes, the tide is neutralized. I need not point out how uniformly these errors have been adopted by writers of less authority on physical geography and geology.

Of course, by the interesting discoveries to which I have alluded, large portions of our existing geological treatises are rendered obsolete, and will require to be re-written; but great revolutions (even of opinion) are seldom effected without causing some inconvenience to individuals. Perhaps, therefore, I have little right to complain of my own case, which is, nevertheless, one of some hardship.

Formed of deposits which all observers, from Herodotus to Horner have agreed to call "mud" and not "*shingle*,"—by streams which meandering over the level plains of Lower Egypt, and forming such lakes as Bourlos, Menzaleh, and Mareotis, finally empty themselves into the *tideless* Mediterranean,—streams in whose waters, moreover no naturalist has ever yet succeeded in detecting a single boring mollusc,—I stand convicted by Mr. Meyer as a gross impostor, in bearing the title by which I have so long been recognized, that of

"THE DELTA OF THE NILE."