

cation, geographical distribution, and literature, which renders the book a model of what such a work should be. The Kingfishers, although represented in our country by only one species, are especially abundant in the Eastern Tropics, where they exhibit a great variety of form and the most exquisite beauty of plumage. A considerable number of them are inhabitants of the forests, and never frequent water, subsisting on insects, small crustacea and mollusca, and the larger species even on snakes, lizards, and other reptiles, which they capture by darting down upon them from a branch just as our own species pounces upon a fish. Mr. Sharpe has been fortunate in securing the services of a young Dutch artist, Mr. Keulemans, who has himself studied birds in the tropics, and seizes upon their various attitudes with the happiest fidelity. He also surrounds his figures with little bits of appropriate scenery, so that a considerable number of the 120 plates with which the book is illustrated are beautiful pictures, as well as admirable representations of the several species. We do not hesitate to say that many of these plates are equal to the very best that have appeared in any illustrated work of Natural History. The body of the work consists of coloured figures of every known species of kingfisher, with full synonymy, careful description, and record of whatever is known of its habits. In the introduction, the classification of the species is carefully considered, only those generic groups being retained which can be characterised by marked structural differences. The whole family is first divided into two sub-families: the Alcedinidæ, or true kingfishers, characterised by a compressed keeled bill; and the Daceloninæ, or king-hunters, which have a depressed bill rounded or furrowed above. These are subdivided into nineteen genera, in which are grouped the 125 species of kingfisher now known. The groups are all characterised by modifications of the bill, feet, or tail, and a plate exhibits these generic characters at one view. There is also a tabular key of the species in every genus and of the genera in each sub-family, and the reasons are given for rejecting numerous genera proposed by other authors on insufficient characters. The geographical distribution of the species is then discussed in the same careful manner, an exact account of the known range of every species being given, as well as tables showing at a glance the distribution of all the species of a genus or group of allied genera; after which the results of the examination are ably summed up. Kingfishers present us with some of the most curious anomalies of distribution to be found in the whole class of birds. There is no part of the world so rich in peculiar forms of bird-life as America, more especially the southern half of it, yet it is the poorest of all parts of the world in kingfishers, only eight species being found in the whole continent,—a continent with more rivers and more fish than any other! The single island of Celebes actually contains as many different kinds of kingfisher as all North and South America, while New Guinea contains more than twice as many. It is perhaps even a more extraordinary fact that there is no peculiar type of kingfisher in America, all the eight species belonging to one genus, and that genus found also in Europe, Asia, and Africa. In Africa we have three peculiar genera of kingfisher, and twenty-four peculiar species. In continental India there are only five peculiar species, and not one genus. The western Malay Islands (Indo-Malayan sub-region) have one peculiar genus, and eleven peculiar species; the Philippines, seven peculiar species; but the Australian region has no less than ten peculiar genera and fifty-nine peculiar species, or nearly half those of the whole world. The peculiarities of the island of Celebes are well shown by the kingfishers, for not only has it eight peculiar species and three peculiar genera, but one of the latter has affinities with an African genus. In discussing the general relations of this isolated group of birds to the rest of the order, and the mutual affinities of the genera, the conclusion is arrived at that they are most nearly

allied to (although still very remote from) the hornbills; and their relations are expressed by a branching diagram, as well by a map of the genus on the plan of Professor Flower. A copious account of the literature of the family is also given, no less than 135 separate works being enumerated, with references to every species of kingfisher described or noticed in them. An elaborate paper on the anatomy of these birds by Dr. Murie, with a full index, completes this exceedingly valuable work, which will be equally acceptable to the naturalist for its detailed and accurate information, and to all who love nature for its beautiful and artistic illustrations.

ALFRED R. WALLACE

The Wind in his Circuits, with the Explanation of the Origin and Cause of Circular Storms and Equinoctial Gales. By Lieut. R. H. Armit, R.N. (London: J. D. Potter, 1870.)

ACCORDING to Lieut. Armit "all the various phenomena which occur in Nature are accounted for by one theory forming one law, and the force which governs and regulates everything, even to imparting perpetual motion to the world, is Electricity" (p. 122). When the reader is informed of the author's opinion that the east wind is formed of compressed vapour or steam (p. 57), that lightning and thunder are caused by the Arctic current descending to fill any vacuum that may suddenly be found in the warm currents below it, the "grating" of the currents against each other causing friction and lightning, and the sudden shock of the impenetrable masses the thunder (p. 68); and that, by an attentive study of his theory, it will in future "be as easy to foretell and evade a storm and keep in a fair wind, as it is to drive over good roads and evade the bad ones, when you know the country you are driving through" (p. 126), he will understand that the book may be consulted out of curiosity, or for its psychological interest, but not for instruction in what concerns atmospheric phenomena and the laws which govern them.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his Correspondents. No notice is taken of anonymous communications.]

Pangensis

ON the introduction of Mr. Charles G. Leland, the author of the famous "Breitman Ballads," who was present at the reading of Mr. Galton's paper on Pangensis before the Royal Society on the 30th ult., I have seen Mr. Lewis Ware, a young American gentleman who has been studying science in Paris since 1868.

By him I am informed that M. Leconte (I presume the physiological chemist of that name) is accustomed to mention in his lectures that he had frequently transfused the blood of one kind of animal into the veins of another; but it does not appear, in reference to those experiments, that any subsequent effects were noticed, as regards the offspring of such animals.

M. Leconte, however, further relates that once, not by way of experiment, but in order to save life, endangered, it must be supposed, from the occurrence of previous hemorrhage, he transfused into the veins of a white man blood drawn from a negro, and that the subsequent offspring of this white man by a white mother were *swarthy* in complexion.

Now, I cannot find any *published* record of M. Leconte's operation and its singular consequences, and it is impossible at the present moment to reach him by letter. I desire therefore to give publicity to what *seems* to be a conclusive proof of the theory of "pangensis," with the view of eliciting a confirmation or refutation of the statement from some one who may chance to read this note, and who may have the necessary opportunities and leisure for further inquiry into the particulars of so very remarkable an incident. It is obvious that the number of children so affected, and the coincidence or absence of other changes in the hair, the form of skull, &c., require to be investigated, and the *credibility* of the parents fully authenticated.

10, Savile Row, W., April 8

JOHN MARSHALL