

tribution of heat over the surface of the earth, and when the arrangement of vegetable forms in natural families admitted of a numerical estimate being made of the different forms which increase or decrease as we recede from the equator toward the poles, and of the relations in which, in different parts of the earth, each family stood with reference to the whole mass of phanerogamic indigenous plants of the same region. I consider it a happy circumstance that, at the time during which I devoted my attention almost exclusively to botanical pursuits, I was led by the aspect of the grand and strongly characterized features of tropical scenery to direct my investigations toward these subjects.

The study of the geographical distribution of animals, regarding which Buffon first advanced general, and, in most instances, very correct views, has been considerably aided in its advance by the progress made in modern times in the geography of plants. The curves of the isothermal lines, and more especially those of the isochimenal lines, correspond with the limits which are seldom passed by certain species of plants, and of animals which do not wander far from their fixed habitation, either with respect to elevation or latitude.* The

* [The following valuable remarks by Professor Forbes, on the correspondence existing between the distribution of existing faunas and floras of the British Islands, and the geological changes that have affected their area, will be read with much interest; they have been copied, by the author's permission, from the *Survey Report*, p. 16:

"If the view I have put forward respecting the origin of the flora of the British mountains be true—and every geological and botanical probability, so far as the area is concerned, favors it—then must we endeavor to find some more plausible cause than any yet shown for the presence of numerous species of plants, and of some animals, on the higher parts of Alpine ranges in Europe and Asia, specifically identical with animals and plants indigenous in regions very far north, and not found in the intermediate lowlands. Tournefort first remarked, and Humboldt, the great organizer of the science of natural history geography, demonstrated, that zones of elevation on mountains correspond to parallels of latitude, the higher with the more northern or southern, as the case might be. It is well known that this correspondence is recognized in the general *facies* of the flora and fauna, dependent on generic correspondences, specific representatives, and, in some cases, specific identities. But when announcing and illustrating the law that climatal zones of animal and vegetable life are mutually repeated or represented by elevation and latitude, naturalists have not hitherto sufficiently (if at all) distinguished between the evidence of that law, as exhibited by *representative species* and by *identical*. In reality, the former essentially depend on the law, the latter being an *accident* not necessarily dependent upon it, and which has hitherto not been accounted for. In the case of the Alpine flora of Britain, the evidence of the activity of the law, and the influence of the accident, are inseparable, the law be