

vegetable kingdom, on the contrary, acts upon our imagination by its continued presence and by the magnitude of its forms; for the size of a tree indicates its age, and here alone age is associated with the expression of a constantly renewed vigor.* In the animal kingdom (and this knowledge is also the result of Ehrenberg's discoveries), the forms which we term microscopic occupy the largest space, in consequence of their rapid propagation.† The minutest of the Infusoria, the Monadidæ, have a diameter which does not exceed $\frac{1}{3000}$ th of a line, and yet these silicious-shelled organisms form in humid districts subterranean strata of many fathoms in depth.

The strong and beneficial influence exercised on the feelings of mankind by the consideration of the diffusion of life throughout the realms of nature is common to every zone, but the impression thus produced is most powerful in the equatorial regions, in the land of palms, bamboos, and arborescent ferns, where the ground rises from the shore of seas rich in mollusca and corals to the limits of perpetual snow. The local distribution of plants embraces almost all heights and all depths. Organic forms not only descend into the interior of the earth, where the industry of the miner has laid open extensive excavations and sprung deep shafts, but I have also found snow-white stalactitic columns encircled by the delicate web of an *Usnea*, in caves where meteoric water could alone penetrate through fissures. *Podurellæ* penetrate into the icy crevices of the glaciers on Mount Rosa, the Grindelwald, and the Upper Aar; the *Chionæa araneoides* described by Dalman, and the microscopic *Discerea nivalis* (formerly known as *Protococcus*), exist in the polar snow as well as in that of our high mountains. The redness assumed by the snow after lying on the ground for some time was known to Aristotle, and was probably observed by him on the mountains of Macedonia.‡

* Humboldt, *Ansichten der Natur* (2te Ausgabe, 1826), bd. ii., s. 21.

† On multiplication by spontaneous division of the mother-corpuscle and intercalation of new substance, see Ehrenberg, *Von den jetzt lebenden Thierarten der Kreidebildung*, in the *Abhandl. der Berliner Akad. der Wiss.*, 1839, s. 94. The most powerful productive faculty in nature is that manifested in the *Vorticellæ*. Estimations of the greatest possible development of masses will be found in Ehrenberg's great work, *Die Infusionsthierchen als vollkommne Organismen*, 1838, s. xiii., xix., and 244. "The Mill Way of these organisms comprises the genera *Monas*, *Vibrio*, *Bacterium*, and *Bodo*." The universality of life is so profusely distributed throughout the whole of nature, that the smaller Infusoria live as parasites on the larger, and are themselves inhabited by others, s. 194, 211, and 512.

‡ Aristot., *Hist. Animal.*, v. xix., p. 552, Bekk.