

While, on the loftiest summits of the Alps, only Lecideæ, Parmeliæ, and Umbilicariæ cast their colored but scanty covering over the rocks, exposed by the melted snow, beautiful phanerogamic plants, as the *Culcitium rufescens*, *Sida pinchinchensis*, and *Saxifraga Boussingaulti*, are still found to flourish in the tropical region of the chain of the Andes, at an elevation of more than 15,000 feet. Thermal springs contain small insects (*Hydroporus thermalis*), Gallionellæ, Oscillatoria, and Confervæ, while their waters bathe the root-fibers of phanerogamic plants. As air and water are animated at different temperatures by the presence of vital organisms, so likewise is the interior of the different portions of animal bodies. Animalcules have been found in the blood of the frog and the salmon; according to Nordmann, the fluids in the eyes of fishes are often filled with a worm that lives by suction (*Diplostomum*), while in the gills of the bleak the same observer has discovered a remarkable double animalcule (*Diplozoon paradoxum*), having a cross-shaped form with two heads and two caudal extremities.

Although the existence of meteoric Infusoria is more than doubtful, it can not be denied that, in the same manner as the pollen of the flowers of the pine is observed every year to fall from the atmosphere, minute infusorial animalcules may likewise be retained for a time in the strata of the air, after having been passively borne up by currents of aqueous vapor.\* This circumstance merits serious attention in reconsidering the old discussion respecting *spontaneous generation*,† and the

\* Ehrenberg, op. cit., s. xiv., p. 122 and 493. This rapid multiplication of microscopic organisms is, in the case of some (as, for instance, in wheat-eels, wheel-animals, and water-bears or tardigrade animalcules), accompanied by a remarkable tenacity of life. They have been seen to come to life from a state of apparent death after being dried for twenty-eight days in a vacuum with chloride of lime and sulphuric acid, and after being exposed to a heat of 248°. See the beautiful experiments of Doyère, in *Mém. sur les Tardigrades et sur leur propriété de revenir à la vie*, 1842, p. 119, 129, 131, 133. Compare, also, Ehrenberg, s. 492-496, on the revival of animalcules that had been dried during a space of many years.

† On the supposed "primitive transformation" of organized or unorganized matter into plants and animals, see Ehrenberg, in Poggen-dorf's *Annalen der Physik*, bd. xxiv., s. 1-48, and also his *Infusions-thierchen*, s. 121, 525, and Joh. Müller, *Physiologie des Menschen* (4te Aufl., 1844), bd. i., s. 8-17. It appears to me worthy of notice that one of the early fathers of the Church, St. Augustine, in treating of the question how islands may have been covered with new animals and plants after the flood, shows himself in no way disinclined to adopt the view of the so-called "spontaneous generation" (*generatio æquivoca*,