Bahamas, Key West and elsewhere on the Florida Banks, and also on Oahu and other Hawaiian Islands.

2. *Eolian transportation of volcanic ashes.* — The transportation of volcanic ashes usually takes place without drifting, and the bedding, therefore, is commonly horizontal. In 1812, ashes were carried from a volcano on St. Vincent to Barbados, 60 to 70 miles; and in 1835, from the volcano of Coseguina in Guatemala to Jamaica, a distance of 800 miles. In 1883, the dust from the volcano of Krakatoa, an island just west of Java, was thrown to a height of 50,000 feet, according to Verbeck, and continued to be projected for 36 hours; and it is supposed that the ashes made the circuit of the globe, and were the cause of the sunset glows of the *following* autumn. The bottom of the Pacific has been found to be very generally covered with volcanic ashes derived from its many volcanoes.

3. *Eolian transportation of living species or their relics.* — A tornado that becomes what is known as a "water-spout" over a large river or lake, carrying up at its center great quantities of water, will take up the ova and smaller life of the waters, and transfer them to other places, and may thus contribute new species to distant lakes or rivers. Land Birds and Insects are sometimes drifted far out to sea, and so reach oceanic islands, and sometimes in the case of Birds another continent. Seeds of many kinds go with the winds. A Spider of the ballooning kind, *Sarotes venatorius*, has probably traveled around the globe, according to H. C. McCook, crossing oceans and continents, and thus has gained a world-wide distribution. A related species is reported by Darwin as suddenly appearing on the rigging of the "Beagle" 60 miles from the land.

Showers of grayish and reddish dust sometimes fall on vessels in the Atlantic off the African coast, and over southern Europe (producing, when they come down with rains, "blood-rains"), the particles of which, as first shown by Ehrenberg, are largely microscopic organisms. The figures on the following page represent the species from a single shower, near Lyons, on October 17, 1846. The whole amount which fell was estimated by Ehrenberg at 720,000 pounds; and of this, one eighth, or 90,000 pounds, consisted of these organisms.

The species figured by Ehrenberg (*Passat-Staub und Blut-Regen*, 4to, 1847, and *Amer. Jour. Sci.*, II. xi. 372), include 39 species of siliceous Diatoms (Fig. 157, 1–65); 25 of what he calls Phytolitharia (Fig. 157, 66–104), besides 8 Rhizopods. The following are the names of the Diatoms:

Nos. 1, 2, *Melosira granulata;* 3, *M. decussata;* 4, *M. Marchica;* 5–7, *M. distans;* 8, 9, *Coscinodiscus atmosphericus;* 10, *Coscinodiscus (?);* 11, *Trachelomonas levis;* 12, *Campylodiscus clypeus;* 13–15, *Gomphonema gracile;* 16, 17, *Cocconema cymbiforme;* 18, *Cymbella maculata;* 19, 20, *Epithemia longicornis;* 21, 22, *E. longicornis;* 23, *E. Argus;* 24, *E. longicornis;* 25, *Eunotia granulata (?);* 26, *E. zebrina (?);* 27, *Himantidium Monodon (?);* 28–32, *Eunotia amphioxys;* 33, 34, *Epithemia gibberula;* 35, *Eunotia zebrina (?);* 36, *E. zygodon (?);* 37, *Epithemia gibba;* 38, *Eunotia tridentula;* 39, *E. (?) lævis;* 40, *Himantidium arcus;* 41, 42, *Tabellaria;* 43, *Odontidium (?);* 44, *Cocconeis lineata;* 45, *C. atmospherica;* 46, *Navicula bacillum;* 47, *N. amphioxys;*