

sudden change can occur without the most destructive tempest or tornado. In Britain the tenth of an inch of barometric fall in an hour is regarded as a large amount, such as only accompanies great storms.¹ The rate of movement of the air depends on the difference of barometric pressure between the regions from and to which the wind blows. Since much of the potency of the air as a geological agent depends on its rate of motion, it is of interest to note the ascertained velocity and pressure of wind as expressed in the subjoined table:²

	Velocity in Miles per hour	Pressure in Pounds per square foot
Calm.....	0	0
Light breeze.....	14	1
Strong breeze.....	42	9
Strong gale.....	70	25
Hurricane.....	84	36

While the paramount importance of the atmosphere as the vehicle for the circulation of moisture over the globe, and consequently as powerfully influencing the distribution of climate and the growth of plants and animals, must be fully recognized by the geologist, he is specially called upon to consider the influence of the air in directly producing geological changes upon the surface of the land, and in augmenting the geological work done by water.

§ 1. Geological work of the atmosphere on land

Viewed in a broad way, the air is engaged in the twofold task of promoting the disintegration of superficial rocks and in removing and redistributing the finer detritus. These two operations, however, are so intimately bound up with

¹ Buchan's "Meteorology," p. 266.

² For another statement see Czerny, Peterman. Mitt. 1876, Ergänzungsheft.