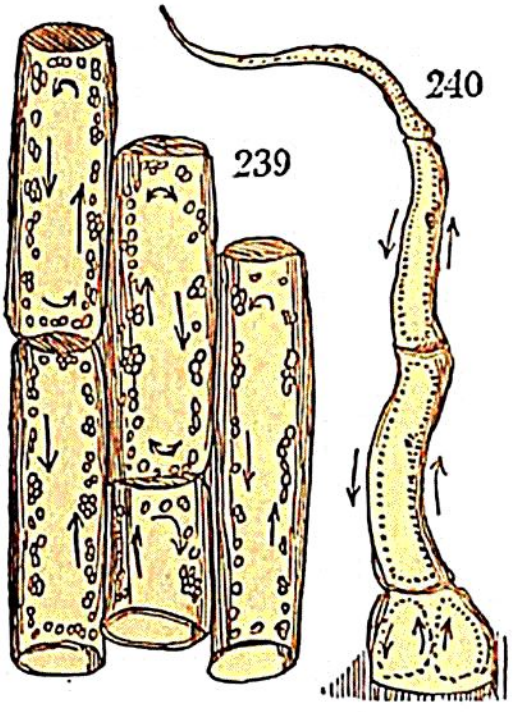
cuit very limited. The cause of these motions is not yet known; but probably they are ultimately referrible to a vital contraction of the vessels; for they cease the moment that the plant has received an injury, and are more active in proportion as the temperature of the atmosphere is higher.

These phenomena are universally met with in all plants that contain milky juices; but they have also been observed in many plants of which the juices are nearly transparent, and contain only a few floating globules, such as the *Chara*, or stone-wort, the *Caulinia fragilis*, &c.,* where the double currents are beautifully seen under the microscope, performing a complete circulation within the spaces of the stem that lie between two adjacent knots or joints; and where, by the proper adjustment of the object, it is easy to see at one view both the ascending and descending streams passing on opposite sides of the stem. Fig. 239 shows this circulation in the cells of the Caulinia fragilis very highly magnified, the direction of the streams being indicated by the arrows. Fig. 240 represents the circulation in one of the jointed hairs, projecting from the cuticle of the calyx of the *Tradescantia virginica*,† in each cell of which the same circulatory motion of the fluids is perceptible.



* Amici, Annales des Sciences Naturelles, ii. p. 41.

† Fig. 239 is taken from Amici, and Fig. 240 from that given by Mr. Slack, Trans. Soc. Arts, vol. xlix.