ed gold, have the power of destroying its ductility.* In the experiments made by Sir John Herschel on some remarkable motions excited in fluid conductors by the transmission of electric currents, it was found that minute portions of calcareous matter, in some instances less than the millionth part of the whole compound, are sufficient to communicate sensible mechanical motions, and definite properties to the bodies with which they are mixed.†

As Silica is among the densest and least soluble of the earths, we might naturally expect that any quantity of it taken into the vegetable system in a state of solution, would very early be precipitated from the sap, after the exhalation of the water which held it dissolved; and it is found, accordingly, that the greater portion of this silica is actually deposited in the leaves, and the parts adjacent to them. When once deposited, it seems incapable of being again taken up, and transferred to other parts, or ejected from the system; and hence, in course of time, a considerable accumulation of silicious particles takes place, and by clogging up the cells and vessels of the plant, tends more and more to obstruct the passage of nourishment into these organs. This change has been assigned as a principal cause of the decay and ultimate destruction of the leaves: their foot-stalks, more especially suffering from this obstruction, perish, and occasion the detachment of the leaves, which thus fall off at the end of each season, making way for those that are to succeed them in the next.

§ 6. *Secretion in Vegetables.*

While the powers of the simpler kinds of cells are adequate to produce in the returning sap the modifications above described, by which it is converted into gummy, saccharine, amylaceous, or ligneous products; there are other cellular organs, endowed with more extensive powers of

* Hatchett. † Philosophical Transactions for 1824, p. 162.