and that these are all produced in their several seasons and stations by the action of some physical powers upon their varied organization, and by means of the soil in which they are planted, we shall think it nearly as wonderful and unaccountable as the instinctive operations of the various creatures that feed upon them. That the same action should unfold such an infinite variety of forms in one case, and instincts in the other, is equally astounding and equally difficult to explain. Compare the sunflower and the hive-bee, the compound of flowers of the one, and the aggregate of combs of the other—the receptacle with its seeds, and the combs with the grubs.

Again, as all plants have their appropriate fructification, so they have other peculiarities connected with their situation, nutriment, and mode of life, corresponding in some measure with these instincts that belong to other parts of an animal's economy. Some with a climbing or voluble stem, constantly turn one way, and some as constantly turn another. Thus the hop twines from the left to the right, while the bind-weed goes from right to left;* others close their leaves in the night, and seem to go to sleep; others show a remarkable degree of irritability when touched; the blossoms of many, as the sunflower, follow the sun from his rising to his setting; some blossoms shut up, as in the anemone, till the sun shines upon them; others close at a certain hour of the day, as the goats-beard;† another, *Hedysarum gyrans*, slowly revolves. The same physical action upon a peculiar organization produces all these effects.

We may further observe that the great majority of plants send forth radicles which, presenting their points to the sources of vegetable life and nutrition on all sides, absorb

* See Willd. Princip. of Botany, § 18. n. 51. a. b. Plate ii. f. 32, 25.

† Tragopogon.