velopment, which usually takes place when the genial warmth of spring has penetrated beyond the surface, and expanded the fibres and vessels of the plant, there arises an urgent demand for nourishment, which the roots are actively employed in supplying. As the leaves are not yet completed, the sap is at first applied to purposes somewhat different from those it is destined to fulfil at a more advanced period, when it has to nourish the fully expanded organs: this fluid has, accordingly, received a distinct appellation, being termed the *nursling sap*. Instead of rising through the alburnum, the nursling sap ascends through the innermost circle of wood, or that which is immediately contiguous to the pith, and is thence transmitted, by unknown channels, through the several layers of wood, till it reaches the buds, which it is to supply with nourishment. During this circuitous passage, it probably undergoes a certain degree of elaboration, fitting it for the office which it has to perform: it apparently combines with some nutriment, which had been previously deposited in the plant, and which it again dissolves; and thus becoming *assimilated*, is in a state proper to be incorporated with the new organization that is developing. This nursling sap, provided for the nourishment of the young buds, has been compared to the milk of animals, which is prepared for a similar purpose at those times only when nutriment is required for the rearing of their young.

Several opinions have been entertained with regard to the channels through which the sap is conveyed in its ascent along the stem, and in its passage to its ultimate destination. Many observations tend to show, that, in ordinary circumstances, it is not transmitted through any of the distinguishable vessels of the plant: for most of these, in their natural state, are found to contain only air. The sap must, therefore, either traverse the cells themselves, or pass along the intercellular spaces. That the latter is the course it takes, is the opinion of De Candolle, who adduces a variety of arguments in its support. The sap, he observes, is found to rise equally