

along its border. Although the production of germs from the axis, as maintained by some high botanical authorities, is not antecedently very improbable, I cannot consider it as established by any good evidence, and it supposes so remarkable an anomaly in the mode of fertilization, as cannot be admitted without certain proof. Again, each carpel, according to the analogy of the leaf, has an upper and under surface, and a middle portion containing the vascular system. The under surface, which forms the external covering of the fruit, is called the epicarp; the vascular layer, the mesocarp; and the upper surface, which lines the interior of the carpel, the endocarp. The differences in the mode of development of these parts, explain the membranous, coriaceous, woody, fleshy, or pulpy character of fruits, or certain portions of them; and it thus appears why these differences are of minor importance, and may occur between fruits of the same essential structure.

The number of germs produced in a carpel depends partly on the productive tendency inherent in the species, arising from its elemental structure and vital energy; much, also, on the space afforded to it and the amount of nutriment it receives. It is common for a carpel to be single-seeded, and not uncommon for the seed so closely to fill the folded carpel that the whole passes for a naked seed. It may have two or several seeds; and in a few instances the germ-producing or placental portion of the edge of the carpel is extended and crowded with germs so as greatly to multiply the seeds. The coherence of carpels in a circle is very common, and may either be slight and partial, producing a lobed fruit, or more complete—either by the edges only of the carpels, causing a one-celled capsule with parietal placentæ, by their meeting on the axis so as to cause axillary placentæ, or by their turning inward from the axis, so that the placentæ project into the cells; and in these cases, if the substance be membranous, coriaceous, or woody, the opening may be by the separation of the carpels, by the splitting asunder of the midrib of the carpel, by separation of the external portion from the firmly united infolded parts, by the turning back of valves at the upper part, by circumscission, or by pores formed to allow of the escape of the seeds. If we add to these circumstances the various adherences of exterior parts, we have the means of explaining the nature of all known fruits. We endeavour to express the facts with as many distinct names for varieties of fruits as we have found adopted by good authorities, and can perceive to be