

nation. The stamens are now noticeably larger and somewhat longer; the inner three stand erect in the middle of the flower around and overtopping the pistil and facing away from it; the outer set of six stamens stand at an angle of about 45 degrees. Not long after these flowers open, pollen begins to be shed. The pollen is ingeniously lifted out of each of the four chambers of an anther by a spoon-shaped valve that opens quite like a trap door and bends upward. A somewhat sticky mass of pollen is gently held within the infolded margin of each valve, somewhat as one might hold a ball of popcorn in an upraised hand. Thus the nine rod-shaped stamens of each flower stand bristling in different directions with pollen exposed in several directions from their summits. (Fig. 2). Below at the base of the outer set of stamens and between the stamens, a set of short-stemmed dome-shaped nectaries excrete thick films of nectar. In their efforts to obtain this nectar bees and other insects climb over the stamens, push in between them, and their hairy bodies become more or less smeared with the sticky pollen. But if pollen is not carried away by insects the sticky substance about and between the grains hardens and binds the pollen grains of each valve into a mass which then soon falls to the ground.

A careful census of the many flowers open on a tree of the A group during the afternoon will reveal that all the flowers that are open are in the same condition. They all shed pollen with the maximum of pollen shedding during the middle of the afternoon. Late in the afternoon the flowers of this set close almost in unison never to open again.

The Daily Alternation of Sets:—Thus during the hours of daylight two different sets of flowers open and close on trees of the A group and their periods of opening alternate. One set opens for the first or female opening during the forenoon; another set opens for the second or male opening in the afternoon. The maturity of the pistil or pistils and the stamens of the same flower at different times is known as dichogamy (14)*. In avocados the dichogamy is synchronous for the entire tree.

The Cycle of Dianthesis:—The A varieties have flowers which open for the first period during the forenoon, close around midday and remain closed during that afternoon, the night following and the forenoon of the next day, and then open for the second period during the afternoon of the next day. Thus for a single flower

*Numbers in parentheses (*Italic*) indicate references to literature to be found on page 44.