and part of this callus tissue will be from the sweet variety scion and part from the sour variety stock.

Next, if a bud forms in the sweet variety callus tissue and develops into a shoot, it will bear sweet apples. Likewise, if a bud forms in the sour variety callus tissue and develops into a shoot, that shoot will bear sour apples.

A third possibility is for a bud to arise from callus tissue which is part sweet variety and part sour variety. When such a bud develops into a shoot, one side may bear sweet apples and the other may bear sour apples. Or, better yet, part of a single apple may be sour and part may be sweet which is exactly the situation with this surprising variety.

When the chimera is composed of unlike tissues lying side by side, as indicated above in the case of the Sweet-and-Sour apple, it is called a sectorial chimera—that is, in sections. Apple fruits with strikingly colored segments or stripes are usually bud mutations which are also sectorial chimeras, as are oranges with similar color segments.

But sometimes the chimeral tissues are not side by side in sectors, but one within the other, like a hand within a glove, in which the hand is one tissue and the glove the other. This is called a periclinal chimera, and originates as shown in Figure 2. Thus, a bud pushes out from a section of the chimera so that, in the case of the Sweet-and-Sour apple, the inside of the apple might be sour and the outside might be sweet—or the reverse might be the case.

As a matter of fact, chimeras which occur due to natural mutation, are far more common than is frequently realized. Most variegated plants (mottled green and white, red and green, and so on) are chimeras. Many giant forms of fruits are chimeras. Many thornless plants are chimeras. Many color sports are chimeras. No wonder that plantsmen have been confused by some of the strange forms which they have observed—red roses that seemingly revert to white, sour apples that revert to sweet, thornless blackberries that revert to thorny, or nectarines that revert to peaches.

Some April Reports on Frost Damage

From Indianapolis, Indiana area—Early blooming varieties such as Redskin have been practically wiped out by the April 8 freeze. Colora and Belle of Georgia look the best, followed by Halehaven, Red Haven and Jubilee.

From Bedford, Kentucky—A grower reports a full crop of Mikado, Haleberta, Juneberta peaches, and half a crop of Halehaven, Fairhaven, Stoner, and Vedette. Hurt the worst were Brayberta, Elberta and Golden Gem. Apples were hurt, especially Red Delicious.

From Laporte, Indiana—Jonathan apple buds are badly hurt on all low spots. Of the peaches, the Haven varieties were hurt the worst, and Elberta the least by −10°F this winter followed by 13°F on March 13.—*C. L. Burkholder, Purdue Univ., Lafayette, Indiana.*

A new series of apple rootstocks known as **Malling-Merton** is being developed in England, with the purpose of eliminating the imperfections of the Malling rootstocks. Four from this series will soon be released in England. They are also now under test in this country.