NOTE ON VIRUS-LIKE SYMPTOMS INDUCED ON YOUNG CUCUMBER LEAVES BY *PRUNUS* SAP¹

Certain stone-fruit viruses can be transmitted to cucumber plants from Mahaleb and Montmorency cherry trees by triturating young infected leaves in water and rubbing the resultant juice on the cotyledons of cucumber seedlings previously dusted with carborundum (1, 2, 3, 4). In the course of indexing Mahaleb seedlings and Montmorency clones by this technique, virus-like symptoms developed on the first true leaf of some inoculated plants. These symptoms included a leaf puckering, or distortion, with yellowing along the veins and the terminal edge of the leaf, and green darkening of interveinal areas (Figure 1, A). Affected leaves were smaller than those of uninoculated plants (Figure 1). It was observed that these symptoms developed only on those primary cucumber leaves that had been inadvertently exposed to the inoculum while they were still folded during the rubbing of the cotyledons in the indexing procedure. Tests disclosed that when triturated *Prunus* inoculum was placed on young folded cucumber leaves with a pipette, the distortion and marginal leaf yellowing developed on all such treated leaves when they expanded. Symptoms could be induced thereafter on all cucumber leaves if they were treated before they unfolded; they were not expressed, however, on untreated leaves that developed subsequently, nor did they appear on cucumber plants mechanically inoculated with the juice of symptom-bearing cucumber leaves. Symptoms similar to those on cucumber were induced on squash and watermelon and varying degrees of yellowing were observed on young leaves of tobacco, petunia, and cowpea plants.

Though the symptoms were similar to those induced by some viruses, the non-virus nature of this phenomenon was demonstrated by the production of symptoms in response to the application of boiled or frozen juice to young folded leaves with a pipette. The symptoms were probably induced by a toxin or growth hormone in the triturated *Prunus* leaves. This principle was effective when 1 gram of leaf was triturated in 5 grams of water, but not at a dilution of 1:100. Leaves were affected by the juice after only a few minutes' contact prior to rinsing with water, a routine procedure in virus inoculation at this laboratory.

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FIGURE 1. A, Virus-like symptoms induced by Mahaleb leaf juice on cucumber;
B, Normal cucumber plant.