determine whether infection was as abundant under such a cover as in the open. Infection was fully as abundant. Conclusions could not be satisfactorily drawn, however, because it was found that the mesh of screen used was large enough under the conditions to allow the entrance of a large number of very small insects. The conditions of the experiment were, therefore, revised this year with the hope of making them crucial. Twelve-mesh wire screen cylinders, 15 cm. in diameter and 30 cm. long, were constructed to enclose parts of single branches. To prevent contact with the branches to be enclosed, cords were run four times transversely through each cylinder. Some of the cylinders were slipped into closely fitting sleeves of fine bolting cloth (124 threads per linear inch). For durability, the bolting cloth was sewed into canvas which formed the ends of the sleeves, covering the rough ends of the wire, and extending past the wire about 14 cm., sufficiently to permit secure tying. The ends of other cylinders were similarly covered with canvas and the exposed part of the wire was painted with a mixture of tanglefoot and benzene. The cylinders were slipped over branches including either last year's terminal shoots or bearing wood. In the former case the cylinders were extended far enough past the ends of the branches to allow for this year's terminal growth. All this was done before any of the blossoms opened, at the beginning of the pink-bud stage. The cylinders treated with tangle-foot were repainted frequently enough to maintain a sticky surface. No insects and no traces of them of any sort were found in any of the cages with one exception.[8]

There were ten cylinders enclosing flowering wood. Flowers in two of these cages blighted, as was shown by their appearance and as was verified by microscopic examination. The blight evidently entered through the calyx. Blossom blight was not abundant this season in this orchard.

Forty cylinders, twenty of the bolting cloth and twenty of the tangle-foot type, were used to include terminal growth. Of this year's shoots four in the bolting cloth cylinders and eight in the tangle-foot cylinders blighted, a total of twelve in forty, or thirty per cent. This was practically the same proportion of blighted terminal shoots as prevailed among the unenclosed shoots, as was shown by a count of a thousand terminal shoots on these and adjacent trees of the same variety and age.

From the above facts it appears that there must have been some agency of dispersal other than insects, and that insects were not even of primary importance as carriers. The only tenable hypothesis is that wind was the chief agent of transmission. Supporting evidence for this conclusion is found in two facts: (1) in the lack of insects in the orchard in sufficient numbers to account for the large amount of twig blight and (2) in the entire absence of insects from exuding cankers, whence they might receive their initial contamination. In three years' close observation at blooming time one of the authors (Ruth) has not observed a single case of insect visitation to exuding cankers. Aphids were entirely absent through the season of floral and twig infection. Leafhoppers became evident in rather small numbers only after the period of infection had passed. No other insects were present in sufficient numbers to be considered primary agents.

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[8] One cylinder was accidentally allowed to dry. Two insects were found in it. The shoot was not blighted.

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