Latent mosaic is caused by several strains of virus X, which are distinguished by the severity of the host reaction. In addition to causing more severe foliage symptoms, the stronger virus X strains depress the yield more than the weak strain.

It is shown that latent mosaic reduces the yield by 9 to 22 per cent, that the yield is depressed more in some varieties than in others, and that annual losses amounting to millions of bushels result from this disease.

Control measures are indicated involving propagation of seed potatoes on isolated fields, protective inoculation with a weak strain of the virus and the development of varieties immune from latent mosaic.

LITERATURE CITED

POTATO WART IN AMERICA

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From the time that potato wart Synchytrium endobioticum (Schilb. Perc.) was first found in the United States it has been considered a menace to potato production in this country. At that time it was prevalent in the principal potato-growing countries of Europe. It was reported from Hungary, Germany, France, Italy, Scandinavia, and the British Isles. Severe tolls occurred in many potato fields of Europe.

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1 Principal plant pathologist.
2 Assistant plant breeder.
and the disease was considered one of the most serious by most English authorities (3). In 1909 this disease was reported from Newfoundland (2), and soon thereafter the State and Federal authorities in the United States took precautionary measures to exclude it from this country. In 1912 the Federal Horticultural Board put a quarantine on importation of potatoes from Europe and other areas where this disease was prevalent, but the disease evidently had arrived the preceding year when several million bushels of seed potatoes had been imported from Europe.

In 1918, J. G. Sanders, Pennsylvania Department of Agriculture (3), found potato wart at Highland, Pennsylvania. A survey showed that the disease was scattered over an area including 27 cities and villages in Luzerne, Schuylkill, and Carbon Counties. In some villages only a few gardens were infested with the organism, whereas in other places the disease was found in as many as fifty gardens. In some gardens the attack was not severe, and in others the crop was destroyed.

That potato wart is still confined to the very small area from which it was first reported is due to the strict regulations that have been applied to the importation of foreign potatoes, as well as those governing the growing of potatoes in the infested areas. The finding of immunity in some well-known varieties has also helped very much in the control of this disease. Its establishment is supposedly controlled by temperature and moisture relationships. There are large areas in the United States with a climate similar to that of the districts of Pennsylvania, Maryland, and West Virginia in which wart has already been found, and unless precautions are continued the disease could be spread to other sections.

The wide occurrence of this disease in Europe gave impetus to breeding immune varieties (5), as this seems to be the best method of control. Fortunately a relatively large number of the current varieties in Europe and in the United States were found to be immune to the physiological races that were prevalent when the disease was first discovered. Recently the problem has become more critical, as Braun (1) has reported that at least three biotypes have been discovered in Europe and that a number of European varieties that were considered for years to be immune to wart have been found to be susceptible to the new races of the organism. So far there has been no evidence of the occurrence of new biotypes in the United States, but there is no assurance that new forms, which are more virulent and have a wider range of adaptation, will not be found.

Shortly after potato wart was reported in Pennsylvania work was begun cooperatively between the United States Department of Agricul-