Summary

mosaïque du tabac. Les symptômes produits par ces deux types de souches sur divers hôtes sont décrits. En outre, une souche à mosaïque blanche, très virulente, a été isolée.

Le *virus de la mosaïque de la luzerne* est assez répandu, mais peu redoutable. Les symptômes provoqués sur le tabac par diverses souches de ce virus sont décrits.

Le *virus X de la pomme de terre* est très rare sur le tabac.

Au point de vue économique, le virus Y de la pomme de terre est le plus redoutable des virus qui attaquent le tabac en Suisse. Cependant, l'importance des virus de la mosaïque du concombre et de la mosaïque de la luzerne n'est pas négligeable non plus. En revanche, le virus de la mosaïque du tabac et le virus X de la pomme de terre n'ont aucune influence sur l'état sanitaire des plantations de tabac.

SUMMARY

The following viruses were isolated from Swiss tobacco fields : Potato virus Y, Tobacco mosaic virus, Cucumber mosaic virus, Alfalfa mosaic virus and Potato virus X.

Potato virus Y occurred abundantly as the *typical* strain which was harmless to tobacco, and as a *necrotic* strain which caused a disease called *tobacco veinal necrosis*. Until 1957, the necrotic strain had only attacked tobacco of the Burley type. Then in 1958, a new variant appeared which infected the previously resistant Mont-Calme Brun and Mont-Calme Jaune varieties as well as the Burley tobacco.

In greenhouse tests various solanaceous plants were inoculated with the typical and the necrotic strains. The symptoms were compared.

The physical properties of necrotic virus Y were established. The dilution end point was as high as 1/100 000. The temperature of inactivation was at 60° C. The longevity *in vitro* varied from 30 to 70 days depending upon the method of conservation.

Typical and necrotic strains were serologically related, but the presence of the typical strain in the host plant failed to prevent subsequent infection and multiplication of the necrotic strain, and vice-versa.

The necrotic virus Y was transmissible mechanically and by aphids, but it was not seed-borne.

Isolates of lesser virulence could readily be obtained from necrotic virus Y. One such isolate caused little necrosis. Another none. Both were not readily transmitted by aphids. Cross protection studies

showed these isolates to be related more closely to the necrotic rather than to the typical virus Y. They were therefore considered as attenuated variants of the necrotic strain.

Tobacco mosaic virus rarely occurred in tobacco fields. It was never found in plants of the variety Burley R. This variety showed a hypersensitive reaction with the formation of necrotic local lesions.

Cucumber mosaic virus was extremely wide-spread, but did not give very apparent symptoms. Two strains were identified. The first strain occurred frequently and caused a fine mosaic. The second one was rare and caused a mosaic similar to that caused by Tobacco mosaic virus. Various host plants were inoculated with two strains, and the symptoms were described. Another strain of Cucumber mosaic virus was isolated. It was very virulent and caused a white mosaic.

Alfalfa mosaic virus was fairly wide-spread but caused little damage. Tobacco plants reacted differently to the various strains tested.

Potato virus X very rarely occurred in tobacco fields.

From an economical stand point, Potato virus Y was the most damaging virus on tobacco in Switzerland. Less damaging, but still to be reckoned with, were Cucumber mosaic virus and Alfalfa mosaic virus. On the other hand, Tobacco mosaic virus and Potato virus X were of no economical importance.