

## OPENING ADDRESS

BY

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*Ladies and Gentlemen,*

It is a great honour to me to welcome you at the second Symposium on Virus diseases of Fruit Trees in Europe. We highly appreciate that so many distinguished workers in this field accepted our invitation.

There are participants not only from 10 European countries, but Canada, U.S.A., New Zealand and Equador are also represented. It is of course impossible to welcome every guest individually, but you will allow me to make a few exceptions. In the first place we are very glad to have with us Dr. BLUMER from Switzerland, who took the initiative for the first conference on fruit tree virus diseases in Europe, which took place last year.

A special welcome is also due to Dr. BERKELEY from Canada. As many of you will know Dr BERKELEY was one of the three compilers of the Handbook of virus diseases of stone fruits in North America. This book was published as early as 1942 by the Michigan Agricultural Experiment Station. Dr BERKELEY was also a member of the publication committee which revised and extended this book to the wellknown and excellent Agriculture Handbook nr. 10, issued by the United States Department of Agriculture in 1951. Therefore Dr BERKELEY seems certainly in a position to act as a liaison officer between the American and European scientists in this field.

It seems rather astonishing that until recently Europe as a whole has paid but little attention to virus diseases of fruit trees, whereas American plant pathologists have been concerned with these diseases for more than 25 years. This is partly due to the fact that at that time these diseases were less important in Europa. It may also be that one did not realize the economic losses due to fruit tree viruses. The same happened with potato latent mosaic (or virus X) in U.S.A., where until recently it was present in practically every potato plant grown. It was not before 1945 that its damage was measured. Then it was found that it gave an average loss of 13 % of the crop. According to Dr CHESTER this average loss is four times the annual average loss from potato late blight! This undoubtedly is a serious warning not to underestimate the losses caused by fruit tree viruses even if they seem rather harmless in many cases.

I got an unexpected confirmation of this statement in a letter from Dr VAN DER WANT, one of our virologists working on a fellowship in U.S.A.. Dr. MILBRATH from Corvallis explained to him that many young cherry trees in Oregon nurseries are infected with latent viruses. By distributing virus free material of some cherry varieties it was found that these so-called latent viruses caused a severe growth retardation. This is clearly demonstrated by the fact that nursery trees with latent viruses could only be delivered after five years whereas young virus free trees grew so rapidly that two years were sufficient for delivery. Growers even complained that these virus free trees grew too fast!

As Dr VAN DER WANT points out in his letter one can well imagine that those virus free trees will also produce fruits earlier and more abundantly than infected trees even if the latter do not show any symptoms of disease.

Although disastrous outbreaks such as the charka disease of plums in Yugoslavia and the Pfeffinger disease of cherries in Switzerland are still exceptional, it is clear that many virus diseases of fruit trees do occur in Europe and that they form a menace to our fruit orchards.

As with all crops propagated vegetatively there is always the often hidden danger of rootstocks or grafts becoming virus infected without this being recognized in the beginning. This danger was put forward very clearly by Dr HARRIS in his lecture on 'The maintenance of healthy fruit clones', which he held at the Thirteenth International Horticultural Congress in 1952. Dr HARRIS formulated this point as follows: 'The majority of fruit virus diseases so far identified are more or less slow decline-diseases, infection with which unfortunately does not therefore cause the rapid elimination of the diseased host plant but, failing early removal by human agency, initiates a long career of evil-doing as a potential source of infection and of infected vegetative progeny... In the case of the long-lived tree-fruits roguing in established orchards is, on our present knowledge, a serious undertaking of problematic efficacy. In all affected crops, however, the primary theatre for virus disease roguing is in the source of nursery material.'

With strawberries and raspberries much progress has been made. Here the use of indicator plants and vectors enables us to select entirely healthy clones which can be used as foundation stock. With fruit tree viruses, however, the problem seems more complicated. In the first place we lack reliable and quick testing methods. Still such methods are essential in order to be sure that both rootstock and scion are practically virus free. Secondly our knowledge of indicator plants and vectors is still very limited.

Compared with the situation in U.S.A. and Canada, where many scientists study virus diseases of fruit trees, particularly of stone fruits, we in Europe are generally speaking rather in the beginning. We should therefore intensify our efforts a.o. by appointing more research workers in this field. This certainly holds for the Netherlands, where we are still in the diagnostic stage. In England research has already advanced further and some virus free clones have been produced.

Much work has to be done in order to find possible vectors of the diseases. Also the identification of fruit tree viruses is difficult, for one thing because we cannot introduce virus diseased material from other countries. Moreover the symptoms may vary as a result of different climatic conditions. Should one succeed in finding more suitable herbaceous indicator plants rapidly developing characteristic symptoms this could at least solve part of the difficulties of identification.

Symposia like the present one are of the greatest importance. Here only a rather small group of specialists discuss their problems. Contrary to the often very crowded international congresses this offers the opportunity for easy and if necessary extensive discussions between research workers speaking the same scientific language. I foresee that our ever increasing specialism will finally bring us to a stage where big international congresses will be of no use anymore. Then only small group conferences like this one will be accepted.

The last day of this symposium will be confined to international cooperation in fruit tree virus research. This is I think a very good idea. In order to have the full profit of this research work this cooperation should be widened into a world wide contact of research workers including those in Canada, New Zealand, U.S.A., U.S.S.R. and other countries.

Herewith I declare this second symposium on virus diseases of fruit trees open and wish you all a most successful and pleasant conference to be followed by further discussions in the near future.

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## UNUSUAL FEATURES OF SOME NEW ZEALAND FRUIT TREE VIRUSES

BY

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It is only during the past nine years that we have recognised virus diseases in the fruit trees of New Zealand. No great progress has been made but I would like to mention some features of our fruit tree viruses that may be of interest. It would be of considerable assistance if you could bring up in discussion unusual features of similar diseases that you have encountered.

### GREEN CRINKLE OF APPLES

This was not recognised as a separate disease until 1934 when an investigation was made into the much more serious problem of internal cork. During a survey of orchards in the Nelson area, several growers pointed out trees of Dunn's or Granny Smith that consistently produced distorted apples bearing a superficial resemblance to those affected by internal cork. When apples were cut open it was at once obvious that the disorders were not identical as there was no internal pitting in fruit infected with green crinkle. In the following season, when it was found that borax eliminated symptoms of internal cork but not those of green crinkle, the difference was confirmed.

An unusual feature of green crinkle is that the symptoms may remain confined to one branch of a tree for at least ten years. During that period one infected branch consistently produced distorted apples but no symptoms were observed in other parts of the tree. It is not known whether the virus is present though masked in other parts of the tree. This localisation of symptoms has also been noted in stony pit of pears. In one tree observed for four years, severe symptoms appeared regularly on one main branch while the rest of the tree produced apparently normal fruit. Scions taken from this infected branch caused systemic infection in healthy trees to which they were grafted. Lack of material has prevented the testing of other parts of the tree for the presence of the stony pit virus in masked form.

Another feature of green crinkle that is a little unusual for a plant virus is