

PROFESSOR DR. E. VAN SLOGTEREN,
PROTECTOR OF DUTCH BULBS

BY

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I am honored to be asked to write of my good friend in the VAN SLOGTEREN number of "Tijdschrift over Planteziekten". It was my privilege to first meet the Professor, as he is affectionately known to all of us in America, during the summer of 1948. His cordiality and kindness then and in our several meetings since that time are bright memories for me.

We in the United States who grow bulbs, and especially daffodil bulbs, owe the Professor a debt of gratitude. When daffodil culture in the British Isles and the Netherlands was suffering from the ravages of the bulb and stem nematode (eelworm), *Ditylenchus dipsaci* (KÜHN) FILIP., in the early 1920's, he and J. K. RAMSBOTTOM, an English scientist, worked out a method of treating daffodil bulbs to free them of the eelworm. This treatment, soaking in hot water at 43° C for four hours, killed the pest but permitted the bulbs to grow and in some cases increase in weight, even more than untreated bulbs. Thus, a major threat to the daffodil industry was eliminated, and from my own experience I know that today it is most unusual to find the nematode in the narcissus plantings of Holland. That treatment, plus the careful inspection work of the Netherlands Phytopathological Service, gives the world daffodils free of eelworm.

The hot water bulb treatment not only eliminated nematodes when properly given, but it also killed the bulb fly larvae and bulb scale mites, pests of considerable importance when not controlled. However, much careful work had to be done before the treatment was finally perfected to the point where the pests were killed without damaging the bulbs. When that was accomplished, crop production increased through elimination of the pests, and in some cases the treatment appears to have a stimulatory effect on the growth of the bulbous plants.

In later years, following World War II, another nematode became troublesome. It was the one usually identified as *Ditylenchus destructor* THORNE, and it had chosen bulbous iris varieties for attack. When certain infected shipments were given a hot water treatment following arrival in the United States, the outcome was disastrous to the bulbs. By 1948 the problem had become so serious that representatives of the United States Department of Agriculture were invited to visit the Netherlands to confer on the matter with growers, plant protection officials, and plant pathologists. Then it was I had the pleasure of meeting Prof. VAN SLOGTEREN, whose fame as a plant pathologist and scientist had reached many parts of the world. Out of that meeting has come a friendship I have valued through the years, since the Professor is a man of many and varied interests.

When studying the iris nematode in the bulb fields and in the facilities provided at the Laboratorium voor Bloembollenonderzoek at Lisse, we discovered

the Professor had anticipated the need for a remedy and had already worked out a treatment that would eliminate the nematode without damaging the iris bulbs. By careful experimentation he had found that the timing of the treatment was the really important matter, if bulb injury was to be avoided. During that summer (1948) the treatment was given to the iris shipped to the United States, not without fear by some of the exporters, but the success of the treatment once again demonstrated how carefully the Professor and his staff had carried out their research.

Growing out of the Professor's bulb treating work has been a lessened plant quarantine problem, the thing of primary interest to the Plant Quarantine Division of the U. S. Department of Agriculture. By the routine use of the hot water treatment, virtually all animal pests can be eliminated from several of the bulbous crops produced in the Netherlands. Prior to the use of those treatments, bulb pests, and especially nematodes, were a real problem. Hence the quarantine workers of the U. S. Department of Agriculture salute Prof. VAN SLOGTEREN for his very evident accomplishments in the field.

Not so evident when inspectors of the Department examine the dry bulbs offered for entry into the United States is the work he has done in the field of virus research. The inspection of dry bulbs or roots of iris, dahlias, daffodils, and hyacinths does not tell of virus diseases within. Therefore, their detection must be done in other ways. Early in his work the Professor recognized the virus diseases as a serious problem in plant growth and began his campaign against them. In some cases he had first to prove the suspected conditions were actually caused by transmissible viruses, a task sometimes most difficult to accomplish. Such proof frequently took years of work to produce, and even when it was announced, all growers were not at first convinced. They had seen the symptoms of the virus diseases for as long as they had known the infected varieties, but they had noticed no sign of rapid deterioration, so they were not convinced that they had an important disease problem. In the beginning, too, the manner in which the virus diseases spread was not known, although many theories were propounded on the subject. Later, as knowledge increased, insect vectors were suspected. Prof. VAN SLOGTEREN and his associates studied that possibility and in 1940 were ready to publish their findings which dealt extensively with the problem of virus diseases of daffodils. World War II prevented the sending of the article to England for publication in the Daffodil and Tulip Yearbook of the Royal Horticultural Society. As a result, it was originally published in the Netherlands in 1941. Following the end of the war, this article by Prof. VAN SLOGTEREN and his colleague, Dr. MARIA P. DE BRUYN OUBOTER, did appear in the Daffodil and Tulip Yearbook for 1946 and carried certain additional information developed during the war years. In the article we not only have pictures in black and white but also in color of the daffodil virus diseases, and we have information on the species of aphids responsible for their spread from plant to plant.

These investigations at the Lisse Laboratory have not only given bulb growers of the world better knowledge of the importance of keeping virus diseases out of their stocks, but they have also given better ways of detecting the presence of virus diseases by serology. That development is especially important to the grower who is trying to produce disease free bulbs, since virus diseases may be masked in certain varieties. Such hidden infection can be more easily detected by serological methods.

Growing out of our knowledge of the Professor's long years of research which could only be recorded in many volumes of writing, is our appreciation of what he has done for the people of the world who enjoy bulbous flowers, whether the bulbs are grown in America, the Netherlands, South Africa, or other temperate parts of the world. He has not hidden his knowledge and his discoveries, but as a true scientist he has freely sent out the story of his learning to the world, to be used for the betterment of all mankind.

It has been a privilege to know the Professor and to write briefly of his work which has been so important in improving Dutch bulbs and has accordingly reduced the problems of the Plant Quarantine Division of the U. S. Department of Agriculture. During our many conversations he has always agreed that the buyer is entitled to pest-free bulbs, and he has unceasingly worked to help the bulb grower produce such bulbs.