

INTERNATIONALISM IN PLANT PATHOLOGY

BY

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The idea of internationalism is not new, although we sometimes like to think it is. From early days of tribalism and through many centuries of nationalism different peoples have been curious about each other or have wanted something from each other. And therefore they either visited each other just to exchange visits or to exchange goods. Mutuality of interest and community of objective often led to more or less formal association for specific purposes and for limited time. The idea of trade agreements and alliances to attain common ends goes back to remote antiquity. Cultural exchange also started early. The Olympic Games between the Greek city states included not only athletic contests but also competitions, presumably friendly, in science, literature, and the arts. Unfortunately, however, what started as friendly competition often degenerated into bitter contention, a phenomenon which is not unknown today.

Botanists were among the pioneers in scientific interchange in modern times. Four centuries ago when botany was reviving, the herbalists became curious about the plants in other countries; therefore they exchanged specimens and established reference herbaria. Botanists had certain advantages over zoologists, because plants were easier to preserve. It is true that entomologists learned to impale insects on pins, but even this was more difficult in some respects than pasting plants on paper. Nevertheless, the fathers of botany deserve some credit for trying to internationalize their science.

As various sciences, scientific societies, scientific meetings and scientific publications developed, exchange of scientific facts and ideas was greatly facilitated. Gradually more and more international societies were organized and more and more international meetings were held. Finally, the international societies agglomerated into international unions and then attempts were made to unite the unions. These were worthy efforts, for many of them have promoted the cause of science and some of them have rendered direct or indirect service to society. Nevertheless, the machinery for rendering international social service by important deeds often has been so weak or so cumbersome that many good intentions and elaborate plans have remained in the minds and on the drawing boards where they were drafted. And yet, international cooperation is more desirable than international contention, and in some cases it is essential to general progress and to the solution of specific problems.

In the field of plant pathology international cooperation is always desirable and sometimes essential, because many pests and pathogens are quite as international as scientists themselves. As disease problems are international in scope, so must the fight against them be international in scope. The needs are clear; the ways of meeting them are not always equally clear.

There can be no pathologic isolationism as long as wind and man exist. Wind-borne pathogens such as the cereal rusts, various kinds of mildews, *Phytophthora* of potato, and numerous others are international problems, and international cooperation is needed to understand their ways and to reduce their ravages.

Wind may carry inoculum of many pathogens across many national boundaries, sometimes carrying new pathogens or physiologic races of old ones to new homes where they may intensify old problems and create new ones. Man, too, continually creates new problems for himself by distributing pathogens far and wide with propagative parts of plants. Despite quarantines and other restrictive measures, man will continue to distribute pathogens unless he can devise better ways to protect himself than in the past.

To state the problem of migratory pathogens is easy; to devise concrete and feasible measures for solving it is harder. It is obvious, however, that there are several requisites: 1. precise identification of pathogens and their physiologic races; 2. knowledge about their persistence and dissemination; 3. methods for detection on or in plants and plant parts; 4. wise regulation based on knowledge; 5. ethical conduct in international trade. The problem involves both pathogens and people. Any successful international undertaking, legal or otherwise, requires intelligence, good faith, and a simple and feasible system of procedures.

A good system is one that works, that attains its objectives. Some of the international attempts to do things, instead of merely talking about them, were too broad and visionary. It probably is better to concentrate on concrete objectives and gradually evolve toward more general ones. For attitudes and plans will develop as needs and opportunities appear.

It can hardly be inappropriate to pay tribute here to the direct contributions that Holland has made toward international cooperation. To give only three examples does not mean that there were not many more. But these three are especially pertinent to the present discussion, because they illustrate the value of international services in the identification, the dissemination, and the detection of plant pathogens.

Who has not heard of the Centraal Bureau voor Schimmelcultures at Baarn in Holland, and who, among plant pathologists, has not utilized its resources when there was need to identify or compare living cultures of fungus pathogens? Is there anyone, seriously engaged in the study of the identity of fungus pathogens, who does not realize that this Centraalbureau was organized and maintained by the vision and the talented devotion of Dr. JOHANNA WESTERDIJK, justly famous throughout the world for her services to international plant pathology? Various kinds of contributions from many countries have helped make the Bureau internationally important, but the determining factors have been the enterprise of the Directrice and the confidence that all have had in her and in the country where the Bureau has its home.

"As rust diseases in general are not bounded by frontiers, it is our opinion that we can solve the problems – posed for us by yellow rust – only if we cooperate on an international scale. Therefore we did not limit the yellow rust trials to the Netherlands, but we asked for, and obtained the collaboration of many interested people throughout Europe." This quotation from News-letter No. 1, July 1st, 1957, of the Netherlands Graan-Centrum expresses clearly the need for international study of such fungi as *Puccinia glumarum*. The real contribution, however, is in effecting an organization to meet the need. This has been done, and Holland deserves much credit, as do also the other cooperating countries.

Thus the international testing of wheat varieties against yellow rust was begun

and is being continued. At the First European Yellow Rust Conference, held at Brunswick, Germany, in February, 1956, the following agreements were made.

“1. The determination of the physiologic races of yellow rust will be done for Europe at a central point, in this case the “Institut für Physiologische Botanik” of the Biologische Bundesanstalt at Brunswick (Germany), which has long experience in this work and is well equipped for that purpose.

2. The multiplication of the seeds of the test-varieties used for the determination of the physiologic races of yellow rust will be done also at a central point, in this case the “MAX-PLANCK-Institut für Züchtungsforschung” at Köln-Vogelsang (Germany).

3. Data concerning the yellow rust resistance of wheat varieties and breeding parents will be exchanged internationally.

4. Certain scales to be used for defining stage of development of wheat and the prevalence and severity of rust.”

This is indeed progress toward effective internationalism.

It is especially appropriate to pay tribute in this van SLOGTEREN number to the manifold and long-continued contributions of this pre-eminent apostle of internationalism in plant pathology. VAN SLOGTEREN broadened, deepened, and liberalized concepts about international cooperation. At the International Plant Science Congress, in 1926, VAN SLOGTEREN made such a good speech on international cooperation in scientific research that he was made chairman of an international committee to study the biological basis of plant quarantines. He also gave addresses before the phytopathological section of the VI International Botanical Congress in 1935 and the VII Congress in 1950. VAN SLOGTEREN says in his 1950 address that „international phytopathological cooperation had perhaps aimed too much at „bug hunting” and at plant protection by legislative measures and plant quarantines”. He always stressed the fact that quarantines must be scientifically sound, reasonable, and fair to exporting and importing countries alike. His efforts did much to bring the question of plant quarantines into proper perspective and to broaden the scope of international cooperation.

There is, of course, a dilemma in the question of quarantines. International exchange of plants and plant products is desirable, and often necessary; but there is danger of thereby distributing pests and pathogens also. And nationalistic quarantines have not always been sensible and ethical; consequently they sometimes promoted international friction rather than cooperation. VAN SLOGTEREN’S solution was this: Use quarantines sensibly and honestly; do not do to any country that which you would not wish that country to do to you. Quarantine controversies, in VAN SLOGTEREN’S view, become less numerous and bitter if the need for quarantines can be reduced by a reliable international reporting service on the distribution and importance of diseases; by devising better control measures, by international effort; by producing and guaranteeing disease-free plant materials for international trade.

That VAN SLOGTEREN made notable contributions, not only by words but also by deeds, to all these phases of a complex and vital problem is on the record. The man himself and the Laboratorium voor Bloembollenonderzoek at Lisse are embodiments of friendly and effective internationalism in plant pathology. They have taught us much about many things. May they have their reward!