I was invited to speak for a few minutes this morning without making a speech. My only mandate is to occupy ten minutes or less of your time. Now that you know why I am here, I propose to spend the rest of my allotted time in trying to figure out why you are here. And that is a complex undertaking.

Collectively you are an awesome and wonderful sight. According to a preliminary count, you number some 1,600 individuals; you have come from at least 60 different countries, with diverse and sometimes conflicting political philosophies and national aspirations. You speak a score or more distinct languages or dialects, and you have various religious affiliations and cultural traditions. Professionally, too, you are very diverse, representing numerous more or less sharply distinct specialties within the vast field of plant pathology. You really are a very heterogeneous group; you are an awesome aggregation of individual intellects. Yet here you are, temporarily under one roof in the “Land of Sky-Blue Waters”, prepared to pool your knowledge and ideas for the edification of all. What motivates this spirit of sharing?

There appear to be several general reasons for the “Unity in Diversity” among plant pathologists: enlightened self-interest; a sense of social obligation; and a spirit of human compassion. Of course, motives and reasons for human attitudes and actions seldom exist in chemically pure form; they are likely to be mixed or even contradictory. My statements regarding motivation may therefore be subject to some debate, but I believe and hope they are basically true.

As concerns enlightened self-interest, plant pathologists are extraordinarily sensible scientists. It is necessary for us to be sensible; the nature of our work requires it. Moreover, the international nature of many plant diseases virtually demands international efforts if we are to control them. And surely, the control of plant diseases should still be the primary business of plant pathologists. Accordingly we must strive to run that business wisely and well; otherwise our business will suffer and we ourselves will suffer in diminution of professional opportunity and prestige. Worse still, millions of humble people in the world will suffer the physical pains of hunger if plant pathologists fail to discharge their self assumed obligation of protecting plants against disease.

Because of the very nature of our profession, then, plant pathologists, and other guilds of plant protectionists, have a special social obligation, for we have committed ourselves to safeguarding man’s most basic renewable resource—his plants—without which man himself could not exist upon this Earth and plant pathologists would find it a very lonely place indeed. We need to remind even ourselves occasionally of man’s basic dependence on plants for food to sustain his own life and that of his friends and foes in the animal kingdom. When we contemplate the vast variety of plants and plant products which we have undertaken to protect against plant pathogens and other destructive agents, we could be almost overawed by the importance and multiplicity of our responsibilities.

Of course, many guilds of plant scientists contribute to the establishment and maintenance of efficiency in plant production. But plant pathologists have an especially broad and exacting obligation. Not only are they expected to help maintain the health of all kinds of plants while they are still developing, but pathologists are also expected to protect them against deterioration or destruction after they are well-developed and the potential profits from the investments already made in their development are in jeopardy.

Ironically, some of the most fearsome diseases of the world’s principal food- and feed-crops become destructively epidemic late in the season, devastating fields which promised a good harvest and blighting the hopes of farmers who expected to reap the reward of their labors. Plant diseases, as well as human diseases, still cause too many human tragedies in too many areas of the modern world. Plant pathologists cannot be indifferent to hunger, famine, and disease, for plant diseases are too often contributing causes. It is only human to try to banish hunger and its tragic consequences insofar as humanly possible.

Plant pathologists are among the most important of all hunger fighters, for we have seen many tragedies of hunger caused by plant diseases. Moreover, we avow that “Healthy plants are our concern”, “Plant medicine is our business”, or “We aim to elevate plant doctoring to the status of a reliable and respected profession”. If we really mean what we say, a genuine feeling of human compassion and realistic altruism should fortify our aims and humanize our efforts toward the conquest of hunger. And may it be so, for the conquest of hunger is essential to the maintenance of our present civilization and the improvement of future civilization.

Historical records show that hunger—the food-population problem—is as old as civilization itself. Many civilizations of the past failed because their science, statecraft, and ethics were inadequate to the essential task of conquering hunger. During the past century, however, science has enabled man to become the potential master of his own fate in problems of human subsistence; it has shown how to reduce the rate of human reproduction humanely and it has shown how to increase the efficiency of food production substantially—and sometimes spectacularly. The sharp decline in the rate of population increase in Western Europe within the present century shows that population brakes can be applied successfully in societies which have the will to apply them. And the sharp increases in food production in recent decades, as exemplified by the “Green Revolution”, prove that progress is possible, even in some “areas of lasting
difficulties”. Although there is no evidence that plant
pathologists contributed significantly to population
control, they did contribute very significantly to plant
disease control and thereby to the success of a series of
“green revolutions”.

Whether or not designated as green revolutions, there
have been revolutionary increases in acre yields of the
world’s principal food crops during the past fifty years.
The increases came first, of course, in those areas where
science was first applied effectively to practical
agriculture, where theory and practice supplemented each
other. By developing and utilizing better varieties,
nourishing them better, and protecting them better
against diseases and pests, agricultural scientists helped
farmers in various areas to increase yields of wheat, rice,
and maize three- or fourfold. And “The Green
Revolution” in the Indian Sub-continent, which began
about fifteen years ago, has demonstrated that intelligent
and concentrated effort can effect revolutionary changes
even in so-called backward areas.

These green revolutions are certainly the most
important contributions toward the conquest of hunger
in recent times; if continued and adequately supported,
they can constitute the greatest contribution of all time. If
supplemented by comparable efforts for reducing the rate
of population increase, hunger can be at least demoted
from a major impediment to a minor one in the progress
of civilization. And surely I need not remind you how
important plant pathologists are to the attainment of that
goal. Individually you can do much; collectively you can
do more.

The clock has been ticking, leaving time for a few short
words only. So, I hope that this Congress will profit all
of you, individually and congressionally; and your
countries; and all countries; and all people, especially
those who are hungry and needy, wherever they may be.

And may the Guild of Plant Pathology discharge its
scientific and human obligations faithfully and well.

Impact of Agricultural Development on
Population Growth and Economic Progress

James H. Jensen

President emeritus and Professor of Botany and Plant
Pathology, Oregon State University, Corvallis.

It is a great pleasure, and indeed a privilege, to be in
attendance at the Second International Congress of Plant
Pathology. The Congress represents for all of us a golden
opportunity to renew our personal international
acquaintances and to review our own profession from a
world-wide vantage point. Let us hope that the tone of
this Congress will be truly international and not appear to
be mainly concerned with the problems of one or two
continents.

A meeting such as this International Congress does not
fall together without effort. We are mindful of the
arduous advance-planning by the International officers
and local committee members that has been put into
preparations for this Congress. We are indebted to all
who have worked so diligently.

The assigned topic, “Impact of Agricultural
Development on Population Growth and Economic
Progress”, is a very broad one upon which virtually
everyone has basis for his own conclusion. Certainly the
publication and popular informational media have been
active in covering the statistical projections of availability
of food and of the importance not only of quantity but
also the importance of caloric content and protein needs
as well. The subject of human population growth has been
the center of formal and informal discussions almost
everywhere. Economic development or material progress
has been the deep concern of every governmental unit on
earth. It is clear that these topics also concern us mightily,
both professionally and personally. The three items in the
title clearly have direct interrelationships. But it is also
clear that there is no direct, universal, infallible coupling.
The relationships are not only complex, but highly
transitory.

The increase in number of human beings on earth and
the projected figures for estimated further populations
have great shock effects, largely because the numbers run
beyond our comprehensions. Each one of us is conscious
of our population densities today. Many of us digest the
projections not only in terms of food requirement figures
but also in terms of the teeming world in which our
children and grandchildren will live. The prospects are
not heartening. To most serious students of the problem,
the outlook is rather grim. As a layman in this field, I get
the impression that some of the national and
international programs designed to control the rates of
increases are just beginning to show some results.
Unfortunately, there seems to be evidence also that the
rates of increase have only been slightly slowed world-
wide and that the total population is continuing its steep
climb. One can be fairly certain that long before the
“standing room only” sign is hung out, other reductive
processes will emerge. All of the ones I can think of that
might occur are highly undesirable.

From our professional agricultural standpoint, our
responsibilities include lending every effort to aid the
dependable and economical production of nutritious
food. More on this point later, but there are many
improvements that can and should be made in
production, harvesting, storage, and marketing methods.
Substantial areas of land not now productive can and will