A CHRONOLOGY OF THE EFFORTS MADE BY J.O. WHITESIDE TO PROVIDE A REALISTIC APPRAISAL OF CITRUS CANKER, AND A PLEA FOR IFAS TO RESOLVE THE CONTINUING CONFLICTS CAUSED BY THIS DISEASE(1)

— Setting the Record Straight

An increasing number of plant pathologists both within and outside Florida, as well as individuals in the citrus industry, have suggested I write a book on citrus canker. They believe I have a responsibility to set the record straight and to dispel the many myths that have developed about this disease over the past 75 years. They believe that such a publication is needed to better inform plant pathologists, government regulators and the general public about citrus canker. Otherwise, they consider that the fear and emotionalism currently associated with this disease will continue indefinitely.

Even if canker "disappears," and claims are made that it has been successfully eradicated, we still have to face the probability that it will reappear. If this should occur, it would be most unfortunate if the Florida citrus industry had to suffer another canker trauma, similar to the present one.

While I realize that plant pathologists owe it to posterity to clearly document what led to the present canker impasse, I am not sure that I relish the idea of authoring a book on the subject. It would be virtually impossible to explain what led to the current misunderstandings and misstatements about the disease without revealing the professional ineptitude of some of the plant pathologists involved. This would include myself because it was not until 1984 that I began to wake up and seriously question the statements that were being made about canker (meaning canker A).

Also, it would be difficult to explain why it took so long for some individuals to speak out on the issue and why, in fact, many personnel are not even prepared to do so today. The most obvious interpretation for their silence would be that they were, or still are, reluctant to express a view that might be considered contrary to the current policy of IFAS, USDA or the Division of Plant Industry.

Their fears of censure for expressing a contrary viewpoint may, of course, be more perceived than real. However, I have learned from personal experience over the past 5 years that the expression of views and facts that contradict current canker policies has not been encouraged by some IFAS administrators.

While it might be inappropriate for me to write a book on canker, I do feel obliged to record at least some of my experiences with this disease. Furthermore, I need to record some of the administrative reaction to my revelations and viewpoints on the subject. Only after* recognizing and admitting how we mishandled canker will it be possible to resolve the present conflict and to provide for a more realistic and scientific appraisal of any "exotic disease" or canker discovery that might arise in the future.

In trying to keep this report as brief as possible, I might fail to place all events or statements in full context. Where necessary, I would be prepared to elaborate further on specific deficiencies in this respect by providing additional information on request.

Initial Misguided Impressions

---Rhodesia

My misguided impressions of canker as a devastating disease really began while I was in Rhodesia (now Zimbabwe), Africa where I was employed as a plant pathologist from 1948 to 1967. In that country, as in many others, canker was included on a list of proscribed exotic diseases, for which a compulsory eradication campaign could be legally conducted if the disease should ever appear. One of my responsibilities, after I was promoted in 1963 as the Chief Plant Pathologist for Rhodesia, was to advise the plant regulatory service on how to handle outbreaks of exotic diseases. As far as citrus canker was concerned, I was aware of the claim that canker was eradicated in Florida earlier this century.

At that time, I had no reason to doubt such claims. U.S. plant pathology had a sound reputation overseas and no one suspected that Florida's eradication claims might be fictitious. Furthermore, many plant pathology textbooks mentioned canker as an example of a disease that had been eradicated by the procedure of burning infected trees on-site. I remember being amazed by this stated achievement.

To my knowledge, it has never been accomplished with any other tree disease. But, I assumed that the Florida reports were correct. After all, the "eradication" had not been accomplished easily. It was not until 12 years after 1915, when tree burning began, that canker was reportedly found for the last time, i.e., prior to 1984.

When I began working at CREC, Lake Alfred in 1968, 1 was already obsessed with the idea of canker being a devastating disease and of it being eradicable in groves, if drastic and immediate action were taken to prevent its spread.

--- Assistant Director of CREC, E.P. DuCharme and Argentina experience

At CREC, Lake Alfred, one of the most vocal proponents of the devastating disease image of canker was E. P. DuCharme (Plant Pathologist and Assistant Director, CREC, now retired). DuCharme had observed canker in Argentina during frequent visits as a private consultant to the leading citrus producer in that country. In a handout of a talk he gave at the 15th Annual Citrus Packinghouse Day at CREC, Lake Alfred on September 8, 1978, DuCharme wrote that "conditions in Florida are very favorable for canker to develop ... " "Should canker be brought again to Florida, the effects would be disastrous. At present, there is no reliable control for canker and, when the disease occurs, production of grapefruit and oranges has to be abandoned in favor of mandarin oranges that are tolerant to the disease. The only effective control is best summarized as total destruction of trees and even groves as soon as the disease is found." There were no other plant pathologists at Lake Alfred at that time who were familiar with the disease, and I naively accepted DuCharme's reports.

In the late 1970's, a succession of IFAS plant pathologists visited Argentina to observe canker. R. E. Stall (Plant Pathology Dept., Gainesville) was the first Florida plant pathologist to conduct research on the disease in that country. From the research standpoint, Stall was lucky. He was in Argentina at a time of above-normal rainfall, which promoted sufficient canker in a few groves, mostly of young grapefruit trees, for him to conduct some useful spray trials. J. W. Miller (Division of Plant Industry) and D. Zagory (temporary plant pathology researcher, IFAS), who spent time in Argentina in succeeding years were less successful in their efforts to conduct field research on canker, because by this time canker had abated in most groves, following a return to more normal rainfall. Canker has continued to remain at low ebb in most Argentine groves to this day and this has hampered efforts by L. W. Timmer (plant pathologist, CREC, Lake Alfred, and coordinator for the Citrus Canker Project in Argentina) and his associates to conduct field research on canker in that country and to provide meaningful information on this disease.

--- Visit to Japan, 1980

Japan is another country with citrus canker. Before visiting Japan in 1980, 1 had been informed by DuCharme that canker was so severe in that country that only the more resistant cultivars could be grown. I saw no canker in any of the orchards I visited. However, Japanese plant pathologists told me that it was troublesome at some other localities but was controllable with copper sprays. DuCharme informed me that I did not see any canker in Japan because Satsuma mandarin, the major variety grown there, is resistant. I remained somewhat puzzled because I did not see the disease on Washington navels either and these are susceptible to canker. Because I was not directly involved in canker research, I gave the matter little further thought, but subsequent events indicated that I was delinquent in not questioning at that time Florida's impression of the canker situation in Japan. (Florida still seems to have the impression that no grapefruit and few oranges are grown in Japan because of their susceptibility to canker. This is incorrect. Japan is too cold for the successful production of grapefruit and most orange varieties).

On February 11, 1981, I attended, as an observer, a meeting of the Citrus Canker Coordinating Committee held at DPI, Winter Haven. Reports were presented by DuCharme, Stall and Miller on the canker situation in Argentina. I came away from that meeting still believing that canker was a devastating disease and a serious threat to Florida citriculture.

I attended another meeting on canker in Gainesville in December 1983. S. R. Poe (plant pathologist, USDA-APHIS) reported on the "canker" situation in Mexico. I recall that two representatives from the Florida citrus industry, J. T. Griffiths (with Citrus Mutual at that time) and C. I. Hannon (private consultant and plant pathologist, Haines City), pressed Poe for more stringent restrictions on the importation of citrus fruit from Mexico. Griffiths and Hannon were both under the impression, as I was, that the disease in Mexico was a form of canker and, therefore, a threat to U.S. citrus production. (More recently, it has been admitted that the "so-called canker" in Mexico is not even a bacterial disease but a leaf spot caused by an Alternaria fungus.) Again, I naively accepted all the dogma being expounded about canker at that meeting.

Changing Perceptions in 1984 based on unusual behavoir of canker in Argentina

It was not until 1984 that I learned for the first time that canker was not behaving in Argentina like a devastating disease. At the International Citrus Congress in São Paulo, Brazil in July 1984, 1 met D. R. Hogg (Director of Citrus Research for Entre Rios Province, Argentina). He informed me that in Argentina several other leaf and fruit diseases were of greater concern than canker. He asked me to visit Argentina to look at some of the fungal disease problems. At the time, I felt I could not justify such a project because so many other U.S. plant pathologists were frequently visiting that country.

Outbreak of "Citrus Canker" in Ward's Nursery, 1984 (no lesions?)

In August 1984, a bacterial disease, which was designated as canker, was discovered in Ward's Nursery, Highlands County, Florida. I need not go into detail here about why or how the disease in this and other nurseries was misidentified as canker. The history of this debacle has been reported by others and also forms part of the court records in the case of R. O. Polk vs. Florida Department of Agriculture in Bartow November 30 to December 3, 1987. While I was aware that the symptoms of this disease were not typical of canker (meaning Asiatic canker or canker A), I had no reason at that time to question the decision made by USDA-ARS, USDA-APHIS, IFAS and DPI to designate the disease as canker. What did concern me were the statements being made publicly by some of the plant pathologists involved, that if immediate action were not taken to burn all the affected nurseries and all trees transplanted therefrom (so-called exposed trees), the disease would cripple the Florida citrus industry.

One of the most vocal panicmongers was DuCharme who, by this time, was not only a member of the Citrus Canker Task Force but also a paid consultant to USDA-APHIS and the Florida Dept. of Agriculture. On September 26, 1984 1 viewed a videotape of the disease taken in Ward's Nursery. Even though my knowledge of canker was still limited, I began to have serious doubts about how much injury the disease was really causing. The leaf spotting did not seem to be as severe as that commonly experienced with some of our fungal-induced leaf spots and there were no dead trees. Furthermore, the symptoms seemed different from those caused by canker.

About this time, I learned from H. C. Burnett (Plant Pathologist, DPI, Winter Haven, now retired), who was the first plant pathologist to see the disease in Ward's Nursery, that the leaf spots were confined to the nursery. No lesions were found on nearby grove trees, even though these trees were close to the nursery perimeter. I then began to have serious doubts about the devastating disease image which was being expounded about canker A. I remembered the comments made by Hogg about canker in Argentina, but was puzzled why so many U.S. plant pathologists had returned from that country with tales of doom about the disease.

Nov 1984 Concern rises, but canker seems restricted to nurseries, groves less vulnerable

On November 5, 1984, at the annual meeting of the Florida State Horticultural Society, K. R. Tefertiller (the then Vice President for Agricultural Affairs) expressed his concern to me about the recent "canker" discoveries and asked me what it might do to Florida citrus production. I expressed certain optimism, based on the fact that the disease seemed confined to nurseries. I suggested that the grove environment might be less conducive to attack. He seemed impressed by this suggestion, saying that he had not previously thought about the situation from such a viewpoint.

Department of Plant Industry Involvement, Concerns of "devasting disease rhetoric"

On November 7. 1984, I happened to exit my office just as J. H. Graham (Soil Microbiologist, CREC, Lake Alfred) was leaving with C. L. Schoulties (then Chief Plant Pathologist, DPI) for a visit to the site of Ward's Nursery. Graham had recently been appointed by W. J. Kender (Director, CREC, Lake Alfred) to study the "canker" disease in Florida citrus nurseries. When Graham asked if I would like to join them, I readily agreed. The nursery had, by this time, been destroyed but I wanted to become familiar with the geography of the area and to see the nearby grove trees. Furthermore, I considered this would provide an opportunity for me to communicate with DPI. Until then, my only conversations about "canker" had been with Burnett.

Despite my long experiences with other kinds of leaf and fruit spotting diseases, DPI had apparently chosen not to consult me on the "canker" situation. There seemed to exist at that time a mistaken attitude by both DPI and IFAS administrators that bacteria behave very differently from fungal pathogens (which had been my sole area of research activity since coming to Lake Alfred) and that I would be unable to provide any useful input. Little did they realize that canker shows some epidemiological parallels to citrus scab and some other fungal diseases, and that I could have contributed some practical suggestions on how to regard the newly discovered bacterial disease.

During the visit to Ward's Nursery, I voiced my concerns to Schoulties about the devastating disease rhetoric being expounded publicly by regulatory personnel, and especially by DuCharme. For example, at, a public meeting with citrus growers a few days previously, DuCharme was asked if the industry would be able to live with canker. He answered "yes, but only if we replace all our orange and grapefruit with resistant tangerines." I suggested to Schoulties that DuCharme might be overreacting, but Schoulties would not respond to my comment. DPI and USDA-APHIS seemed to accept everything DuCharme told them. These Agencies were apparently unaware that DuCharme had a history of shooting from the hip and engaging in fantasy. However, DuCharme always seemed to maintain sufficient support from IFAS and DPI administrators to override the criticism of his peers and most of his misstatements went unchallenged. We are all suffering now for the failure of previous administrators to recognize DuCharme's failings. DuCharme's exaggerated pronouncements over the years about canker have caused much unnecessary distress and concern to the Florida citrus industry and it is proving very difficult to rectify this situation. Furthermore, even though DuCharme retired 10 years ago, his poor handling of the canker fiasco is bound to reflect on IFAS.

Difficulty identifying a source as spread intensifies

It soon became evident, once nursery inspections were intensified, that the bacterial disease present in Ward's Nursery was present in many other nurseries as well. Obviously, the disease was already widespread and there appeared to be no common source. **In fact, there was no evidence to suggest that it was a recently introduced exotic disease.**

Gross overreaction and loyalty to the organization in 1984

By the end of 1984, 1 suspect that at least some of the plant pathologists involved with "canker," including some on the Task Force, had begun to realize that there had been a gross overreaction to the discovery of the leaf spotting disease in the nurseries. But apparently none of them was prepared to discuss this matter publicly. One of the most amazing and seemingly unnatural phenomenon displayed by members of the Task Force was the unanimity expressed on matters concerning canker. This is something that rarely occurs among a gathering of scientists. This poses a question as to whether the members felt under political pressure to always say the "right thing" for fear of being considered disloyal to the canker eradication campaign.

In 1984, 1 could not openly question the attitude of IFAS and DPI towards the bacterial disease in the citrus nurseries. However, based on my experience with other leaf spotting diseases, I could not visualize this disease, which was being called canker, of being able to kill trees as was stated in some government circulars and many media reports.

The panic over the disease in the nurseries was based on a belief it was canker. If canker A had not been given such a devastating disease image, there would have been little concern about the newly observed leaf spotting disease. Yet, I still felt I could not express my views publicly. I was hamstrung because I had not yet observed real canker. I needed to see the situation in Argentina firsthand. I was beginning to have some doubts about the accuracy of reports made by some personnel on their return from Argentina. IFAS personnel who came back from Argentina with alarming reports about canker included Stall, Timmer and Kender. Kender's report was of particular interest to me because it stated that "groves with no canker control showed extensive incidence of the disease with leaf and fruit abscission." When I visited Argentina 2 months later, I gained a distinctly different impression. I saw very little leaf or fruit injury in the Province that Kender visited and most orchards showed no disease at all. Hogg (Director of the Concordia Citrus Station), who conducted Kender on his tour, told me he was puzzled by Kender's report.

More "Problems" in Argentina in 1985- they can manage canker without eradication

While I was in Argentina from March 10 to 23, 1985, 1 discovered that two Florida citrus growers had visited Entre Rios and Corrientes Provinces privately the previous September. On their return to Florida, they had reported to the Florida Citrus Production Managers Association that canker was causing little concern in

that country: that it was easily controlled with copper sprays and by planting wind breaks, and that it tended to disappear as trees grew older. The Florida Citrus Production Managers Association decided to investigate this matter further by sending three of their members to Argentina to make an objective appraisal. The Association selected a non-member, H. J. Reitz (former Director of CREC, Lake Alfred), to lead the group. By coincidence, the group made their 3-day visit to Argentina a few days after I arrived there. I had already confirmed that the seriousness of canker in Argentina had been overrated by Florida personnel and I had already realized that, even with the best intentions, it would be impossible to eradicate the disease by man's efforts alone.

To save time and transportation, I joined the Production Managers Association group for most of their visits to groves. However, I considered it important to refrain from expressing my views on canker to the group, but I could not avoid overhearing some of their comments. For example, it was not long before one member was saying that the disease was so severe that Florida would have to be protected from it, however much it cost to eradicate. Another member expressed the view that they should all report the same things about canker to the Association on their return. Reitz expressed some of his feelings to me privately, saying that he doubted whether it was ever really possible in practice to eradicate an exotic disease pathogen or a pest on citrus trees if the environment was favorable for its survival. But, he added that he learned a long time ago never to argue with decisions made by regulators. I hope this view is not shared by the IFAS administration today. It would be most unfair to DPI and USDA-APHIS if we in IFAS did not provide regulators with the correct information about a disease. We would be failing in our - responsibilities if we allowed the regulators to proceed unchallenged with an eradication campaign which was scientifically unrealistic and which was based on exaggerated impressions as to the potential economic importance of a disease. Also, IFAS would be negligent if it failed to repudiate any incorrect information it had previously imparted to the Regulatory Agencies.

Reporting on the Argentina 1985 Meeting to the Citrus Production Managers Association

At the next meeting of the Citrus Production Managers Association, the members of the group that visited Argentina reported separately on their observations. All had reached the same conclusions; that it would be too expensive to live with canker because of the extra copper sprays required, and, therefore, the eradication effort should continue. We should remember that, at that time, the disease in the nurseries was still being equated with canker A in Argentina. The citrus industry had still not been informed that the disease in the nurseries was different from canker A.

Perhaps No Florida scientist was ever going to question the canker eradication policy

After hearing the reports from the members of the Production Managers Association's investigatory team, I felt very much alone. It was obvious to me that canker had been so dramatized and politicized that perhaps no Florida scientist was ever going to question the canker eradication policy. I hoped that some revision of thinking might result from the "Canker Symposium" which was held at CREC,

Lake Alfred on April 19, 1985 as part of the IFAS Centennial Celebration.

One of the contributors was Hogg from Argentina. He had given me a copy of his manuscript before the meeting. In his closing remarks, which formed the last paragraph of the manuscript, Hogg emphasized that canker was not proving to be a very serious problem in that country. Some citrus growers in the audience remarked to me afterwards that Hogg had done a disservice to the Florida citrus industry by undermining the canker eradication policy. In the published version of Hogg's manuscript which was printed 6 months later, I noticed that his last paragraph was missing. Probably, we will never know for sure if this omission was the fault of the printer or whether it was edited out.

Editted Symposium Proceedings of April 1985

The initial editing of the Symposium Proceedings was done by Timmer and the last paragraph was still intact when it left his desk. The final editing and proofing was done by Schoulties. When I drew Schoulties attention to the omission, he blamed the printer and apologized to Hogg accordingly. Because I was known to be conducting research on leaf and fruit diseases, it was inevitable that I would eventually be asked for my views on canker. After observing the disease in Argentina, I had no choice but to report objectively on this subject and to inform the public accordingly. Yet, I was in a quandary. My conclusions conflicted with those of Kender and the Chairman of the Plant Pathology Department, Gainesville (who at that time was C. L. Niblett, but who has since become more enlightened about canker).

Submission of an article "How severe a threat is canker to Florida Citrus Production"

After much deliberation, I decided that my only recourse was to follow the standard procedure for publicizing new information, i.e., to write a manuscript on the subject, have it peer-reviewed and submit it for publication. The manuscript was entitled "How Severe a Threat is Canker to Florida Citrus Production?".

It was reviewed by eight plant pathologists. None of them recommended that it not be published, but two of them were critical. Stall stated that "it is all speculative." This did not offend me because I realized that as Chairman of the Citrus Canker Task Force, as he was at that time, he could hardly have supported my viewpoint without exposing himself to a charge of disloyalty. Timmer agreed that my article would serve to counteract some of the canker overkill (which he blamed only on the press) but he was highly critical of some of my conclusions. It was obvious to me that Timmer was accepting without question the statements made by regulatory personnel and some plant pathologists back in the early part of this century. He also disagreed with my conclusions that the Florida climate was even less conducive to canker attack than that in Argentina. He also exaggerated the importance of canker in Argentina. (To his credit, however, Timmer has more recently made some 180 degree turns on some aspects of canker, but he still speculates that canker could be serious in Florida in some years.)

According to usual IFAS procedures, the manuscript was sent to the CREC

Publication Committee for review and the faculty was informed of its existence, to give anyone interested a chance to read or review it prior to publication. It was also sent to the Plant Pathology Department Review Committee in Gainesville. At Lake Alfred, as I learned 2 weeks later, at least two faculty members checked out the copy available from the Director's office. They then copied it and gave it to individuals in the citrus industry. From thereon, the manuscript was further copied and widely circulated, long before it was eventually published.

Some People Spoke out

Some members of the public commented on the manuscript at that time. One of them was J. T. Griffiths (Citrus Grower Associates, Inc., Lakeland). After being one of the staunchest supporters of the devastating disease concept, Griffiths began to have doubts about canker. I believe he already suspected something was wrong with the canker story and my article had further stimulated his curiosity. He soon began his appeals for open public discussion on canker, particularly on the identification of the bacterial disease found in the nurseries.

Truth is revealed about what happen in 1916

Another person who commented on my manuscript was P. F. Smith (retired citrus physiologist, USDA Horticulture Research Laboratory, Orlando). He informed me about J. R. Winston's appraisal of canker in Florida earlier this century. Winston was appointed in 1916 by the USDA to conduct research on several citrus diseases, including canker and he became a respected plant pathologist. Winston never published any papers on canker because very little canker was found in Florida after 1916 (this fact can be verified from the Florida Department of Agriculture Plant Board records) and the Plant Board would not allow him to conduct any field studies anyway. Apparently, there are no written records of Winston's views on canker. Nevertheless, Smith recalled that Winston told him many times over his 40-year association with him that the canker scare was an overreaction and that it (canker) never did a nickel's worth of damage. Smith also informed me that Winston was firmly convinced that canker died out naturally rather than being eradicated. I had really wanted to express the same hypothesis in my article, but did not have enough courage to do so at that time.

Paying the Price for Disclosure

My intent was to encourage people to approach the subject of canker more realistically and to stimulate open discussion. Little did I realize at that time that it would take so long for this to happen. In fact, we are still waiting for this to happen today. Between the time that my manuscript was first submitted for review and its eventual publication in November 1985, it was discussed at several in-house meetings of IFAS and DPI. Strangely, I was never invited to attend any of these meetings to provide further data or to defend my statements about canker. Kender never discussed the content of the manuscript with me, although I know he discussed it with other CREC personnel.

For example, at a meeting in early October 1985 with several of the extension personnel based at Lake Alfred, he asked those present how they thought the citrus

growers might react to my article. I do not know what the response was to this question. However, I was later informed by two extension personnel that when Kender asked if the manuscript should be squelched there was an immediate response to the effect that no ideas, however seemingly outrageous, should ever be squelched.

Publish and Perish

Another regrettable incident in which Kender was involved occurred about one month after he had signed the publication transmittal form on September 17, 1985, and after the manuscript had already been accepted for publication by R. R. Frisbie, the editor of the Citrus Industry Magazine. Frisbie had decided-to have one of his staff writers, Ms. N. Hardy, write a companion report on canker after interviewing all members of the Task Force and Kender.

Ms. Hardy made an appointment to visit with Kender at 1:00 p.m. Oct. 16, 1985. At 11:30 a.m. that day, Kender summoned me to his office to explain his predicament. He thought that Ms. Hardy was likely to question-him about my professional record and credibility. Kender imparted the idea to me that if I insisted on having my article published (which was my right under the. University of Florida's academic freedom policy) this would place him in a difficult situation. To disagree with the substance of my manuscript, which he intended to do, at least in part, would leave Ms. Hardy with the impression that I was professionally unreliable. If, on the other-hand, I withdrew the manuscript, he would still be able to comment favorably on my professional record.

Thereupon, I reluctantly agreed to withdraw the manuscript to avoid the possibility of having my credibility publicly questioned. I believed that by withdrawing the manuscript I could not be accused of holding back information from the public, because the manuscript had already been widely circulated.

In essence, it had already served its purpose, to promote a new look at canker and to consider if the disease was potentially serious enough to justify the tree-burning policy. I may never learn whether the idea of persuading me to withdraw the manuscript was Kender's alone or whether it was encouraged by other administrators or regulators. For the record, however, I need to emphasize here that on no occasion have I ever been ordered by anyone in IFAS not to publish articles on canker.

On the afternoon of October 16, 1985, 1 met with the editor of the Citrus Industry Magazine and withdrew the manuscript. The Ledger Newspaper, Lakeland, soon heard about this. On October 18, a reporter from that newspaper asked me by phone if I had been pressured to withdraw it. My answer was no noncommittal. Apparently, he asked several IFAS and DPI administrators the same question.

IFAS Dean asks that the manuscript be publish

Later that day., V. Perry (then IFAS Dean for Research) asked me to reconsider my decision not to publish and-he assured me that if I resubmitted the manuscript to the Citrus Industry Magazine I "would not get into trouble-" I took the manuscript

back to Frisbie immediately, but it was too late to prevent a sensational report appearing in the Ledger two days later suggesting that I had been pressured not to publish my report on canker.

After my article was published in November 1985, I received a highly significant reaction from C. I. Hannon, who was a member of the Citrus Canker Technical Advisory Committee. Hannon had previously publicly voiced his support for the canker eradication program, believing that canker was a devastating disease and that drastic measures were justified for dealing with it. He read my article only after it had been published. I regret now that he had not seen it earlier.

He drew my attention to a major error in my report. I had stated that "canker is the only recorded example of a disease affecting a tree crop that has ever been eradicated by the on-site destruction of visibly infected trees as well as an area of apparently healthy trees around the infection focus." I knew that the inspectors would never have been able to find every canker spot. Therefore, I had assumed that some of the apparently healthy trees around visibly infected ones would also have to be destroyed to provide a reasonable chance of removing all the inoculum that was spreading from an infection focus.

Hannon informed me that, according to the Florida regulations of the teens and 1920's, it was only mandatory to destroy the tree or trees on which spots were actually observed. I realized it would have been impossible to eradicate the disease by such limited destruction of trees. Yet, the disease soon "disappeared" in most previously infected groves. Hannon's revelation of the procedures used in the previous canker eradication campaign provided additional support for the idea that the pathogen must have been mostly self-eliminating

Important discoveries follow, it was not canker A in the nurseries. Risk Assessment begins

There were several important developments following the publication of my article. At a press interview, Schoulties told the reporter that my article was about canker A and that "I don't think we know enough about it (canker in Florida nurseries) to say how severe this particular strain is going to be." My article had inadvertently provoked an employee of DPI into announcing publicly that the disease in Florida nurseries was not canker A. Previously, the authorities had been adamant that the disease was canker (implying canker A). The cat was now out of the bag.

Another important development that followed soon after my article was published, and which I like to believe resulted from it, concerned a change in the eradication procedures. Instead of burning a whole nursery if only a few spots were found, the regulators decided to adopt a policy of "risk assessment" whereby only limited tree burning was done if the disease was very localized. Also, it was decided not to burn "exposed" transplanted trees but to observe them for one year to see if any disease developed. (None of the transplanted trees in question have ever shown the disease).

Nursery Disease reviewed, different from canker

My expositions on canker caused Griffiths to plead for open discussion on canker and to consider whether the disease in the nurseries really posed any threat to Florida citriculture, and if, in fact, it should even be regarded as a form of canker. A workshop was held in Orlando on December 5 and 6, 1985 to discuss the nursery disease. I was invited to attend but did not do so because the meeting was called to address only the nursery disease. I was not concerned with that.

In fact, it was not until September 1987 that I was even shown the nursery disease. My mission was to reveal the myths that had developed about canker A and to try and prevent posterity suffering from the same delusions which are facing the Florida citrus industry today. If we could only have put canker A into proper perspective, the considered importance of the "new nursery disease" would have greatly diminished.

It was obvious by this time that the nursery disease was nothing more than a minor leaf spot. If it had not been designated canker, it would have been dismissed as just another relatively unimportant leaf spotting disease.

More experience in Argentina showing that copper sprays are effective if timed correctly

I visited Argentina again in November 1985. This time I particularly wanted to investigate why a few groves that I saw in Corrientes Province had more than an acceptable amount of canker on the fruit. These were the groves that the delegates from the Production Managers Association had seen during their brief visit and which must have had a major influence on their reports, because these groves were stated to have been sprayed 5 times per year with copper. I observed that the leaf infection was too light to be affecting tree growth. It was the fruit spot that caused concern, because of its effects on packout. It was not until this follow-up visit that I discovered what had gone wrong with the spray treatments in these groves. Yes, 5 sprays had been applied but none of them had been applied during the 2-3 months after petal fall when the fruit is most susceptible to attack.

As consultant to the owner of the groves, DuCharme had emphasized that sprays needed to be applied only when there was a new flush of growth. Therefore, one spray was applied in the spring before bloom when the growth 'flush had half expanded; the next one was applied when the next flush appeared which was about 3 months later, and the other treatments were applied each time further shoots emerged in the summer and fall.

I estimated that two spray treatments of copper applied postbloom to young fruit should have provided acceptable control and this was confirmed by an Argentine plant pathologist. Infection of leaves was not severe enough to justify their protection from canker. If the treatments had been properly timed, there would probably have been little fruit infection and the Production Managers Association group might have formed a different impression of canker A during their visit to Argentina, because none of the other groves they saw had much canker.

Unpopular views with IFAS and USDA-APHIS

At this point in my narrative, I need to refer to the attitude of IFAS Extension with regard to my first article on canker. A report of an in-house briefing held in Gainesville on November 12, 1985, that was circulated to County Extension Offices, acknowledged my article of November 1985 in the Citrus Industry Magazine. Nevertheless, the extension report states "However, IFAS continues to advocate and support the Canker Eradication Program carried on by DPI."

I have tried to discuss canker with certain IFAS extension personnel, but every time I do so they clam up. The IFAS Extension Service seemed to accept my pronouncements on other diseases of citrus fruit and leaves without hesitation or question. Why then was there so much reluctance to consider my viewpoint on canker? Even if the subject was regarded as controversial, I would still expect individuals to feel secure enough to discuss it.

It was obvious to me that my revelations and deductions about canker were unpopular both with IFAS Research and Extension, USDA-APHIS and with the Florida Department of Agriculture. I considered it important, therefore, to avoid making any statements orally, in case they were subsequently taken out of context by those with opposing viewpoints or motivations. Mostly, I have recorded my findings and viewpoints in writing.

Of course, I had to make some exceptions to this, as for example, in cases where I received or was threatened with the issuance of a subpoena to attend a public meeting. After December 1985, 1 decided to avoid spending time at the numerous meetings called by IFAS, the Canker Task Force and Technical Advisory Committee to consider canker policy. There was much discussion from thereon about the nursery disease, but none of the regulators wanted to address the matter of canker A.

I decided to continue my efforts to enlighten the public about canker A. I considered this would be best accomplished by writing further articles on the subject. Furthermore, because of the hostile attitude exhibited by many regulators and IFAS personnel toward me, I felt I should be extra careful to ensure that what I said was on record either as a publication, memorandum or court record.

Committee Meeting on January 3, 1986 to silence opinions

The few meetings that I attended on canker after December 1985 were mostly in response to court subpoenas. One meeting of the Citrus Canker Technical Advisory Committee that I was asked to attend by Kender was on January 3, 1986. My attendance was actually requested at the insistence of J. T. Griffiths who threatened me with the issuance of a court subpoena if I did not attend voluntarily.

I recall that prior to that meeting, IFAS and USDA administrators held a briefing with all those scientists, including myself, who were requested to attend. The main theme of the briefing was to warn us that no one should say anything about canker that could not be supported by scientific fact.

Of course, this made good sense. But, I obtained no response from the administrators when I raised the question about there being no scientific data to

support the idea of canker being a serious disease under Florida conditions .

We obviously had a double standard. It was acceptable to pronounce canker a devastating disease without providing data, but it was unacceptable to challenge the devastating disease rhetoric.

The essence of my testimony before Commissioner of Agriculture, Doyle Connor, and the Technical Advisory Committee on January 3, 1986 was as follows. First, I had to explain to Doyle Connor that I had no experience with the disease labelled canker in the nurseries, only with canker A. My statement seemed to surprise him, perhaps because he had not yet been informed that the disease in the nurseries was different from canker A. The main thrust of my testimony was that 1) canker A is not a serious disease in Argentina, 2) by extrapolation, it could be concluded that the climatic conditions in Florida were even less favorable for canker attack than were those in Argentina, 3) that the old Plant Board records of the teens and twenties indicated that canker A disappeared in most groves very soon after the authorities stopped any more trees from infected nurseries from being planted in groves.Therefore, the inoculum that had already reached groves during the 3 to 4 year period before the eradication campaign began had presumably mostly died out on its own. 4) 1 had learned in Argentina of the practical difficulties of inspecting citrus trees for canker.

Canker symptoms are not conspicuous enough for the human eye to detect them unless the disease becomes more severe. Furthermore, the disease does not always become more severe. It could remain in trace amounts, thus making it very difficult or impossible to determine the extent of an outbreak.

No changes towards canker after January 3, 1986 meeting

I was fairly optimistic after that meeting that there would now be a chance for more open discussions on canker. Unfortunately, I was proven wrong by subsequent events. The only changes in thinking that have occurred since that meeting is that a more tolerant view has evolved regarding the nursery disease.

However, the regulators and some IFAS administrators and scientists still insist that it is just another form of canker. In early 1986, 1 began writing another article on canker (meaning canker A). This was after my second visit to Argentina and after I had made a more in-depth search through the old Florida records to determine what had occurred between 1912 when canker was first observed and 1927 when it was last detected.

Published Article in 1986 without problems

This article was entitled "Citrus Canker: some facts, speculations and myths about this highly dramatized disease." It was eventually published in the Citrus and Vegetable Magazine in September 1986. This manuscript was subjected to the same review process as the previous one. It had first proceeded through the review system without much criticism, but shortly before it was read by Kender and Niblett in June 1986, a significant new development occurred. The presence of canker A was confirmed in Pinellas and Manatee Counties on dooryard trees.

Both Kender and Niblett expressed certain qualms about the manuscript in the light of these new reports. They thought that my statements about the climatic conditions in Florida being unfavorable for serious canker attack were less convincing than hitherto because the disease had been found on bearing trees. I understood their concerns and did delay publication for a while.

But, after a month or two I decided to go ahead with publication anyway. To me, it seemed that the way the-disease was behaving in West Central Florida provided additional evidence that canker A could not become a major disease under Florida conditions. Canker had obviously been present in Pinellas and Manatee Counties for several years (and probably much longer) and it was still not causing significant fruit damage. The symptoms were very localized, present on some trees, but absent on others, even on those just a few yards away.

Juvenile Spot found in St Petersburg turns out to be canker A, May 1986

At this point in my narrative, I need to explain that it was partly because of my involvement, that canker A became recognized as such in Pinellas and Manatee Counties. I find this matter very embarrassing and I take no credit for what happened. In late May 1986, Schoulties brought to my office at Lake Alfred some citrus leaves with erumpent pustules which resembled canker A. However, he assured me they had tested negative for canker at the DPI laboratory in Gainesville. Nevertheless, he wanted to know what was causing the disease.

DuCharme had labelled it "juvenile spot," which is a disease of unknown cause first described in Argentina. The literature on juvenile spot is very vague and, in fact, the only publication I am aware of was from Argentina in the early 1950's. I decided to investigate the disease first in the field. In the company of Miller and some DPI inspectors, I visited a residential property in St. Petersburg on June 11, 1986, from which the "juvenile spot" symptoms originated. I learned that the owner of the property had first reported the disease to DPI in September 1984 after thinking it was similar to a photograph of canker he had seen in the local newspaper.

The press was giving much publicity to canker at the time, following the discovery of "canker" in Ward's Nursery. Further specimens from the dooryard trees were examined by DPI in May 1986 and again DPI ruled out canker as the cause. I remember telling Miller that it looked remarkably like canker, but he assured me it was not.

I was even allowed to bring material back to Lake Alfred for laboratory examination. I also collected samples of the same disease from some dooryard trees on Anna Maria Island, Manatee County, which we visited the same day. On my return to Lake Alfred, I mentioned to R. F. Lee, (Plant Pathologist CREC) that I was puzzled-about the symptoms and that DPI had ruled out canker. He was less gullible than I and decided to check for canker bacteria serologically. Two hours later he reported that it reacted positively for canker A. Almost simultaneously, I received a phone call from Schoulties saying that DPI now suspected canker and that my samples must be destroyed immediately.

Perhaps if it had not been for my visit of June 11, 1986, the canker on Florida's West Coast might still be labelled juvenile spot and be regarded as unimportant. I mailed a report on my visit of June 11, 1986 to St. Petersburg and Anna Maria Island to S. A. Alfieri (Director, DPI) on July 2, 1986.

I need to emphasize here that DuCharme had once again made an incorrect diagnosis. In fact, this represented the fourth time he had diagnosed canker or, a canker-like disease incorrectly. Firstly, in Argentina, he did not admit to the existence of canker A until 1975. Prior to that year, he had been diagnosing all canker cases as canker B (cancrosis B). This form of canker has been known in Argentina since the 1940's and is perhaps endemic to that country. Canker A is now known to have been present in Argentina since 1964. Secondly, DuCharme was also involved in the misidentification of the disease of Key lime leaves in Mexico. He considered it a strain of canker, whereas evidence has since been obtained that it was due to a fungal disease. His third misidentification was at Ward's Nursery in September 1984, when he diagnosed the disease as canker A.

Hearing of October 21, 1986

The only other incident I will report here for 1986 occurred shortly after the publication of my second article. I received a subpoena at the request of an attorney for the Florida Nurseryman's Association to appear at a hearing to be held at Lake Alfred by the Florida Department of Agriculture on October 21, 1986. The main purpose of the meeting was to consider certain proposed rule amendments to the canker eradication plan. I was to be called to testify about the considered potential economic importance of canker as it might relate to any relaxation of the exiting canker eradication regulations.

Soon after being called to the witness stand, I was dismissed for the reason that the agenda for this "quasijudicial" hearing had made no provision for such testimony or discussion. This demonstrated the reluctance of DPI to listen to any information which might fail to support their current canker policy.

Case of R.O. Polk vs Florida Department of Agriculture Nov 1987 Canker goes on trial even though it wasn't present at Polk's Nursery

It was not until July 1987 that I again became involved in matters concerning canker. On July 15, 1 was subpoenaed by the plaintiff's attorney in the R.O. Polk vs. Florida Department of Agriculture action for the taking of a deposition. I explained to the attorney that I had not been personally involved in the identification of the disease in the nurseries that was being called canker. Nevertheless, he thought my two articles on canker A were relevant. Furthermore, this attorney already knew about my involvement in the identification of canker in Pinellas and Manatee Counties in 1986. He had found my report to Alfieri in the DPI files in Gainesville.

I was later subpoenaed to appear in court to testify in the case of Polk vs. Florida Department of Agriculture on November 30, 1987. **Considering that my testimony referred only to canker A, I was surprised that my testimony was admitted by the Court, but it should be remembered that at the time Polk's**

nursery was destroyed, the regulators were not differentiating the disease in the nurseries from canker A.

In the final judgment, Circuit Judge J. T. Strickland referred to some of the testimony as follows. Whiteside testified that historically canker A was considered devastating but in Argentina it is considered a controllable disease with minor economic impact. Stall testified that properly timed copper sprays provided 95% control and that the Argentinians had found the disease not to be nearly as contagious as historically believed. Judge Strickland ruled that "Faced with the persuasiveness of the testimony presented at trial, this Court has no choice but to conclude that **the disease for which Polk Nursery was destroyed, canker A, did not constitute an imminent danger, and that the disease actually present in Polk Nursery was even less of a threat.** This Court must, therefore, conclude that the regulation as applied in the instant case was arbitrary and capricious...". This judgment was made on January 7, 1988.

Following the Hearing

On January 29, 1988, at an in-house meeting of the plant pathologists at Lake Alfred, Kender made a comment about my testimony in Court, which I considered unjustified. He accused me of speculating, as he had done several times before with respect to my articles; however, this time I took major exception to his remark. He seemed to forget I had testified under oath. When I questioned him as to how he had formed such an opinion, considering that he was never in the courtroom, he conceded that Gaskalla (then Assistant Director DPI) had told him that I speculated.

For the record, I must emphasize here that none of my testimony was refuted by other witnesses, nor was my testimony challenged by the attorney for the defendant. It had become very obvious to me by this time that the IFAS administration was continuing to support and defend the policies of the Florida Department of Agriculture despite the Court's revelations that "canker" had been misdiagnosed as canker A in the citrus nurseries. I am not sure, even today, that the IFAS administration fully recognizes the significance of this Court's proceedings.

The judgment in the Polk vs. Department of Agriculture case had a major impact on the continuing canker saga, by revealing to the public what most citrus plant pathologists had hesitated to state, except when they were put under oath. It explained in layman's language that the bacterial disease in Florida citrus nurseries was not canker (meaning canker A).

Freedom and Openness in Research

Nevertheless, because of 75 years of devastating disease rhetoric, the press and public were left with the impression that canker A was still a disease to be feared, even if the nursery disease was not.

Some readers of my previous articles thought my remarks about canker not being a potentially serious disease applied only to the nursery disease. I addressed this matter in my next article which was published in the Citrus and Vegetable

Magazine in April 1988. It was entitled "The History and Rediscovery of Citrus Canker in Florida." This article went through the same review process as the previous two. Kender said he found it interesting but wondered how the Department of Agriculture would regard it. I remember responding by saying that I did not think we should be concerned about that.

As a research plant pathologist, I am unable to subscribe to any idea or implication that I should hesitate to reveal information about a disease for fear of embarrassing another agency of government. Nor do I consider it fair to blame only the DPI for the canker fiasco. After all, if DPI had been supplied with the correct information about canker in the first place, the Department of Agriculture would not have reacted so dramatically to the discovery of "canker" in Ward's nursery.

Some plant pathologists from IFAS were present at Ward's nursery on September 5, 1984, when the decision was made to call the disease canker. They included Stall, Timmer and DuCharme. If any of those IFAS plant pathologists disagreed with the original diagnosis, I assume they would have recorded their objections in writing at the time, considering the gravity of the decision to call it canker. Judge Strickland's ruling on the Polk vs. Department of Agriculture case brought out of the closet the fact that the disease in the nurseries was not canker (-meaning canker A).

As one of the attorneys said to me afterwards, it was unfortunate that this scientific information could not have been revealed earlier. Attorneys, he continued, are not scientists and should not be expected to resolve scientific controversies. This should have been the responsibility of IFAS and the other research organizations involved. I felt compelled to agree with him.

We have to admit, however, that the Judge's ruling had an immediate catalytic effect. Researchers who had previously hesitated to announce that the disease in the nurseries was not canker A (or not even a form of canker) at last felt free to publish their data: to emphasize the genetic differences between the bacterial organisms involved and to even suggest that the disease was unimportant and endemic.

Nevertheless, few plant pathologists, other than myself, have come out into the open and publicly announced that even canker A has been overplayed and that it also represents no real threat to the Florida citrus industry. Researchers, government disease regulators, citrus growers and nurserymen and the news media have been sidetracked and in many instances baffled by the ongoing technical discussion on the taxonomic status of the bacteria causing citrus bacterial spot.

It was obvious to many plant pathologists right from the time it was first discovered at Ward's Nursery that this bacterial disease was not canker A. Classical procedures alone could have served to distinguish this Xanthomonad-induced bacterial disease from canker. However, because of the circumstances in this case and the potential for litigation, this was not considered sufficient. Additional proof was required based on serology, fatty acid analysis, DNA analysis and other tests.

This was all very laudable but the attention given to it by the press has obscured the real issues. Press reports became highly technical. Understandably, the public has been baffled by all the technical discussion about canker and other Xanthomonad-

induced diseases. Regulators and some plant pathologists have magnified the differences of opinion which exist between taxonomists on how to label the Xanthomonad bacteria on citrus, perhaps to justify or cover up the original misidentifications of the disease in Ward's Nursery.

Some of the technical arguments have found their way into the popular press and magazine articles. The public has gained an impression that canker must be a very obscure disease. Readers think that if the authorities are still uncertain about the potential importance of the nursery disease, how can they make an appraisal about canker A. They get the impression that much more research is required before the regulators can make any decision on how to deal with canker A. In actual fact, much is known about canker A.

So why pretend that more research will be required in Florida before we can say it is unimportant and controllable?

Next, I need to report on the first meeting I had with G. N. Agrios after he became Chairman of the Plant Pathology Department, and when he visited Lake Alfred on October 20, 1988. 1 was surprised to learn that Agrios had already accepted the devastating disease rhetoric about canker A expounded by Stall. Apparently, he was unaware of my efforts to put a different and more realistic complexion on canker. He had not read my articles. He accepted, apparently without question, the idea that canker was successfully eradicated by man's efforts alone during the campaign of the teens and 1920s. I told him how difficult it was to detect "trace" infections on citrus trees but he seemed unimpressed by this information. He was adamant that the disease in the citrus nurseries was a form of canker.

I had hoped that Agrios, with his broad perspective of plant pathology, as exemplified by the comprehensive text book he has authored, would have taken time to become more familiar with canker before drawing definite conclusions about the disease. At the request of J. T. Woeste (Dean for Extension), Agrios and Kender authored a manuscript entitled "IFAS report on the status of citrus canker and canker-like diseases in Florida and the pathogens that cause them as of February 16, 1989."

Agrios had asked me to attend a meeting in Gainesville to discuss this manuscript. I had already seen a draft of the manuscript and realized that it really dealt with the nursery disease. Because I had not been involved with the naming of this disease, the identity of its causal agent and the long-standing arguments as to whether it should even be considered a form of canker, I felt I should not attend. I told Agrios that the real issue, namely the importance of canker A, was still not being addressed by IFAS and that I was very concerned about that. If only canker A could be placed in its rightful perspective, all the long and tedious discussion about the nursery disease would diminish.

The only reason why the nursery disease had caused alarm was because it had been called canker. I again asked Agrios if he had read my articles on canker A and he answered no. It has become increasingly obvious to me that IFAS is not yet prepared to face the issue of canker A. Apparently, Kender and Agrios prefer to listen to the devastating disease rhetoric expounded by Timmer, Graham and Stall than to the facts and deductions provided by me, and which are acknowledged by

most of my other colleagues as scientifically objective and reasonable.

Concluding Comments

--- A resistance to change long held views

My viewpoint has been expressed in three publications, and I have written many in-house memoranda on the subject, most of which have been ignored by my administrators. The reason for the continuing obstinacy of certain members of IFAS to face the realities of canker A baffles me, unless it has something to do with the availability of grant funds for canker research. I, along with several other IFAS personnel, was requested by a Joint Select Committee on Citrus Canker of the Florida Legislature to give testimony on canker at a hearing held in Tallahassee on April 3, 1989. Kender thought it unnecessary for me to respond, but I decided to attend anyway.

The Chairman of the Joint Select Committee had asked for testimony "from those scientists who have had impact on the citrus canker program between August 1984 and February 1989." I included myself as one of those scientists. Kender was asked to organize the agenda, and prior to the meeting he had a briefing with all participants in the presence of certain legislative staff.

In addressing the scientists as a group, Kender warned them that they should only present information that could be supported by research data. He conceded, however, that there would be one exception to this because Whiteside would be philosophizing. I took his comment seriously because I believe it reflects a certain misunderstanding on his part as to what we really mean by canker research.In my opinion, it would include the following: 1) field observation on canker A in Argentina and Florida, 2) scrutiny of the old Florida official records and publications to ascertain what happened during the previous canker eradication campaign and 3) research data from other countries, particularly from Argentina, Japan and India on canker epidemiology and control.

I have certainly been involved in revealing and recording some of this information over the past five years, and, therefore, I consider myself as a part of the IFAS canker research team. Despite my revelations, Kender still seems to prefer to support the concept that canker (and perhaps even the nursery disease) is a potential threat to Florida citriculture and that canker can be eradicated. This view is still being propounded by his foremost adviser, L. W. Timmer.I have repeatedly challenged Timmer on this issue mostly through the accepted procedure of making written comments about his published statements or about those contained in manuscripts intended for publication. Such memoranda have been mostly ignored. My latest memorandum to Timmer, which was copied to Kender, was dated July 14, 1989. It questioned and criticized certain statements made in a manuscript which Timmer intended for publication in a California magazine.

Kender actually responded to this memorandum, but not by questioning the matters I had raised in my review, but by accusing me of engaging in a personal attack on Timmer. Eventually, IFAS, USDA and the Florida Department of Agriculture will have to face reality. These agencies have been evading the real issues about canker

A by focusing most of their attention on the newly discovered bacterial disease in Florida nurseries.

Even the hardliners will eventually have to admit that the nursery disease was misidentified as canker and that it poses no threat to Florida, not even to nurseries, and that it is probably an endemic disease anyway.

The public has been baffled by all the technical discussion that has emanated from numerous meetings Of the Canker Task Force and Technical Advisory Committee. I hope this will soon come to an end so that the public can be properly informed about canker A. After all, it was the fear and misunderstanding about canker A that led to the nursery disease fiasco in the first place.

--- Exagerrated Claims Continue

The regulatory agencies, with apparent support from the IFAS administration, continue their myopic philosophy of justifying the canker eradication campaign, by exaggerating the potential economic importance of canker. They dismiss the idea of the Florida climate being unfavorable for serious attack as speculative. They continue to believe that canker can be eradicated just because regulators said it was back in the 1920's. They argue that if canker had persisted after that time someone would have found it and that, therefore, this proves it was eradicated. They assume that canker is easy to detect.

--- Facts are ignored

They overlook the fact that it was not the plant regulators or plant pathologists who reported the localized occurrence of canker A in West Central Florida in 1984 but the owner of the property and that the owner only did so after seeing photographs of the disease in the local newspaper. They know that in both of the commercial groves that have since shown canker in Manatee County, that the discovery was made by the owners: not by the canker inspectors.

They fail to acknowledge that trace infections may not necessarily increase to a level where they could be more easily detected. They seem to forget that canker was first found in Pinellas County in 1984, but that due to a misidentification of the symptoms, no action was taken to eradicate it until 1986, and that it did not explode into a devastating disease during this 2-year period

They seem to ignore the fact that canker is still present in the Manatee Fruit Company Grove: that it has been there at least since 1984 (some of the stem lesions seen there in 1986 were at leas 2-years-old) and that it has still not caused significant injury to fruit or foliage.

More recently, the regulatory agencies have been announcing that canker is confined to Pinellas, Sarasota and Manatee Counties. How can they be so certain about that? Are the grove inspections really being conducted thoroughly enough in other counties to conclude that the disease does not exist elsewhere? After all, if it had not been for the vigilance of the owners of certain dooryard trees and the two commercial groves involved in West Central Florida, we would probably be

unaware of the existence of canker A in Florida today. Furthermore, if no one had questioned the "juvenile spot diagnosis, it might still be labelled as such, and have been dismissed as a disease of no concern.

One of the reasons given for trying to eradicate canker is that California, Arizona and Texas may continue to regard fresh fruit from Florida with suspicion. We need to inform those other citrus-producing states that canker is not considered serious after all and to regard it just like some of the other diseases that infect Florida fruit. California, for example, has never expressed any concern about scab, Alternaria brown spot or greasy spot, even though these diseases have not been recorded there. Why not? Simply because these other diseases were never described as devastating and uncontrollable (it would be too dry for them in California anyway, just as for canker).

Conversely, Florida has never worried about certain fruit diseases which exist in California, but which have not been recorded in Florida. This is simply because they were never labelled "devastating." It is frequently stated that no relaxation of the canker eradication policy can be considered unless supported by new research findings. This really means that canker first has to be proven as unimportant or incapable of eradication.

The regulators know, of course, that it would be impossible to prove such negatives without leaving an infected grove alone to see what the disease would do if left uncontrolled. They also know that after several generations of indoctrination, some members of the public will remain fearful of the disease and oppose such research, particularly if conducted in their own neighborhood. Should we, therefore, give up and allow the misunderstanding and consequent stalemate to continue? No, because this would mean abandoning our responsibilities to the public.

One of the reasons why uncertainties about canker continue is because certain plant pathologists in IFAS are still expounding the devastating disease rhetoric and trying to convince the public that eradication is feasible. It is time that they were asked by IFAS administrators to explain why they still cling to these speculative viewpoints. At the same time, the administration should ask other citrus plant pathologists who have experience with canker for their frank appraisal of the canker situation. If IFAS is going to provide the necessary leadership to bring the canker saga to an end, there will have to be a much more scientific and objective review of the situation. To achieve this, plant pathologists and other personnel must feel free to speak out on the issue without fear of reprisal.

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1) Memorandum to Dr. G. L. Zachariah, Vice President for Agricultural Affairs, October 4, 1989 From: J. O. Whiteside, Plant Pathologist, Institute of Food and Agricultural Sciences, University of Florida, Citrus Research and Education Center in Lake Alfred Florida

cc: J. M. Davidson, Dean for Research J. T. Neilson, Assistant Dean for Research N. P. Thompson, Associate Dean for Research J. T. Woeste, Dean for Extension W. J. Kender, Director, CREC, Lake Alfred

The Titles and subtitles did not appear in the original memorandum but have been added by me to add clarity. Some statements have been put in bold lettering. Some paragraphs have been divided into two paragraphs for clarity.. No wording has been altered intentionally. Dr. Whiteside has not given permission to publish his memorandum, but has freely distributed it to others.