Short Note 5.1:

The Case of the Dirty Scalpel

The following is an excerpt from Judge Fleet's ruling on July 18, 2003 in Broward Case #3 (Measurement and Testing Case), Case 00-18394 (08). The complete opinion is posted on the website. On July 21, 2004, the Fourth District Court of Appeals overturned Fleet's ruling, stating that the challenge to procedure must first be heard in Administrative Court.

The complete opinion and reversal by the Fourth DCA are provided on the website.

Diagnosis of Asian Strain Infection (page 4 of opinion):

Destruction is permissible only when based on a reliable diagnosis of Asian-strain infection. The evidence presented to the Court demonstrates the diagnoses conducted in the Plantation laboratory, which processes all samples of Miami-Dade, Broward and Palm Beach counties, are not reliable.

The Department developed a fourteen-step protocol for conclusively diagnosing Asian-strain infection. For virtually all of the samples from trees in southeast Florida, the Department uses only three tests. The Department's chief pathologists admitted those tests are insufficient to reliably distinguish Asian-strain canker from other citrus canker strains known to exist in Florida, i.e., nursery-strain and Wellington strain.(2) These strains are much less virulent than Asian-strain, the strain which was the subject of the Gottwald study. Because of varying levels of virulence, a detection of nursery- strain canker requires no destruction at all, while a Wellington-strain detection requires destruction of only the infected tree. The evidence shows other strains of canker could also exist undetected in Florida. Other strains, as happened with Wellington-strain, can appear suddenly and exist for years before detection. The Department is not conducting adequate testing to identify new strains. The Department is sufficiently testing far too few samples (as few as 2 in 5,000), the testing is based upon a preconceived notion about Wellington-strain and the Department has adopted what it terms "an emerging protocol" to conduct additional testing.(3)

The Department admitted there may have been wrongful tree destruction prior to adopting the new protocol. While the new protocol is an improvement, it is insufficient to reliably distinguish between strains of canker, whether known or presently unidentified.

Inexpensive tests are available to reliably diagnose Asian-strain canker infection but the Department is not conducting those tests. The Department argues additional testing is unnecessary since its diagnosis of Asian-strain infection would be accurate in a

vast majority of cases.[4] Such argument might have some appeal if the only tree destroyed as a result of the diagnosis was the "infected" tree; here all healthy trees on the 260 acres surrounding the "infected" tree are also destroyed. Given the level of destruction resulting from a single diagnosis, the Department must base destruction decisions on reliable diagnosis, not merely likelihood or pre-conceived notions with a demonstrated history of error.

Even if the Department's limited testing was otherwise sufficient to reliably diagnose Asian-strain canker infection, the Department's diagnoses fail because of the absence of, or systematic violation of, necessary chain-of-custody procedures. During the April 2002 temporary injunction hearing, Department witnesses indicated the Department carefully followed procedures to ensure it was able to reliably identify the property from which the tree sample came. The evidence shows either these procedures do not exist or they are not being followed. Merely by way of example, identifying information may be added to sample bags or forms well after the sample was collected, without any independent verification of actual address from which the sample came. Additionally, samples are not consistently secured. The Department's Chief Plant Pathologist conceded unauthorized individuals could tamper with the samples. The Department could easily have prevented these problems by complying with simple, written procedures, but has not done so. This Court finds the samples collected to date cannot be reliably considered to have come from the properties identified on paperwork which accompanies the sample bags, creating an unacceptable risk of wrongful destruction of private property.

Equally problematic is the Department's standard procedure after testing the sample is completed. The Department maintains a herbarium of samples so interested parties, including property owners, can verify diagnoses. However, on the day the sample is processed, the sample is placed in dryer which, for at least a significant percentage of the samples, immediately kills the bacteria, precluding the very verification the stored samples are supposed to provide. Visually observing the dried samples does not result in verification, since the visible symptoms may not have resulted from Asian-strain canker or from citrus canker of any kind. While the Department claims verification can be achieved through tests which can isolate the replicate bacteria, the bacteria replicated may, as discussed below, have been placed in the sample as a result of cross-contamination. Simply stated, the Department's procedures and practices prevent property owners from confirming the Department's diagnosis.(5)

Finally, the absence of quality control procedures has produced results which prevent the Department's diagnoses from being considered reliable. During the April 2002 temporary injunction hearing, and again during the recent depositions of Department scientists, the Department has consistently stated canker bacteria is highly infectious and spreads easily. When handling samples taken from trees in southeast

Florida for purposes of diagnosis, the Department has failed to observe even minimal care to prevent cross-contamination.

None of the work areas or tools in the Plantation laboratory are decontaminated between samples. Most problematic, perhaps, is the scalpel, used each day to dissect dozens of lesions presumed to contain canker bacteria, is not decontaminated between samples. While the Department conceded its practices could be cross-contaminating samples, it claims the amount of bacterial transfer is small, and therefore instances of significant cross-contamination should be few and far between. None of the reasons the Department asserts as supporting such limited risks, however, is factually accurate. For example, the Department claimed little bacteria would transfer because tree samples are dry, but later conceded some tree samples are wet at the time they are processed. The Department also claimed the bacterial transfer would not impact the important bacterial streaming test, but later stated under certain foreseeable circumstances it could impact the test or, alternatively, create a false illusion of bacterial streaming.(6)

As with chain-of-custody, decontamination is wholly within the control of the Department. The Department stated decontamination would have required nothing more than common alcohol and a Bunsen burner, items hardly foreign to laboratories. The lack of decontamination procedures, and the practices in Plantation violate those procedures. (7)

Since the procedures which result in cross-contamination of tree samples were revealed during a May 2003 deposition, the Department, while denying any past impropriety, has enacted comprehensive decontamination protocols which, effective July 1, 2003, will be utilized in between each tree sample tested in the Plantation laboratory. Although these protocols will be applied to all future testing, they cannot resolve past instances of cross-contamination. While it is presently impossible to quantify the extent to which test results have been compromised due to the above described practices, it is equally impossible to determine which results were compromised. Dr. Schubert, one of the Department's most tenured scientists, stated if there is any reason to suspect samples are cross-contaminated, those samples are of no use and must be rejected. This Court finds there is strong reason to suspect cross-contamination, and therefore rejects the samples previously collected by the Department as a reliable basis for any future destruction of trees pending reasonable discovery and trial.(8)

Notes on Judge Fleet's Opinion:

This could be a short note to either Chapter 3 on biological aspects or Chapter 5 on legal issues.

Judge Fleet's characterization of two different strains of Asian citrus canker needs a bit more elaboration. It is generally recognized that citrus bacterial spot (*Xanthomonas axonopodis* pv. *citrumelo) is a* different pathovar from citrus canker (*Xanthomonas axonopodis* pv. *citri)*. On the other hand, the Wellington strain is a genotype of *Xanthomonas axonopodis* pv. *citri* and lesions are identical to more prevalent genotypes (Miami , Manatee). The host range of the Wellington strain is limited to key lime citrus. Thus, if there are no key lime citrus within close proximity of a tree with this strain, then destroying the infected tree would be sufficient to stop natural dissemination by windblown rain. There are distinguishing characteristics between bacterial spot and citrus canker as discussed in Chapter3 of the book. The difficulties posed by the Wellington strain are also discussed in Chapter 3.

The Department's case was likely weakened because of exaggerated claims of the contagious aspects of the disease. It also is clear that Judge Fleet has real concern about the testing as it will not only condemn an owners tree but all trees with a 260 acre circle.

The Appellate Court overturned the ruling on January 21, 2004, not based on the merits of the case, but on the concept that the case should not be heard in the district court until all administrative appeals had been exhausted.

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