A Collective Account of the History of The Department of Plant Pathology at The University of Georgia (Origins to 1999)

Collation of contributions from
Everett S. Luttrell
(Origins to 1985)
and
Richard T. Hanlin
Donald R. Sumner
Jerry T. Walker
(1985 to 1999)

Department of Plant Pathology
The College of Agricultural and Environmental Sciences
The University of Georgia
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Foreword

Documenting the history of an organization is beneficial as a retrospective and as an aid in making wise decisions for the future. Dr. E.S. Luttrell penned, apparently under some duress, the first comprehensive historical account of the units of plant pathology at The University of Georgia. Although Dr. Luttrell did not view his account as a true history, it likely provides the most insightful perspective on how we got on the road we are today. That document was published in 1985 as Special Publication 35 of The Georgia Agricultural Experiment Stations and entitled "An Account of the Origins and Development of Plant Pathology in The University of Georgia and the Several Experiment Stations." That Special Publication is no longer in press, but the contents are reproduced herein. Drs. Richard Hanlin, Donald Sumner and Jerry Walker were kind in taking the time to provide an account of changes that occurred at the Athens, Tifton and Griffin campuses, respectively, between 1985 and 1999. Thus, this document provides a collective perspective on the history of our current status as a Department of Plant Pathology in the College of Agricultural and Environmental Sciences at The University of Georgia. My role in this process has been one of collector, not editor.

As an addendum to Special Publication 35, I would like to note the contributions of Ms. Gwendolyn Burton Caldwell. Ms. Caldwell, at the time Ms. Burton, was a member of the faculty in the early 1940s and worked with Dr. Julian H. Miller. Ms. Caldwell was co-author on several significant papers on the life histories and morphology of ascomycetes that led to the foundation of using the developmental morphology and the internal structure of the ascocarp as a basis for classifying these fungi. These papers included: Miller and Burton. 1942. Mycologia 34:1; and Miller and Burton. 1943. Mycologia 35:312.

I would appreciate any comments and corrections you may have to this perspective so that a complete and correct documentation of our history can be maintained. A list of personnel currently in the Department and other information about the Department can be found at http://www.plant.uga.edu.

John L. Sherwood
Professor and Head
August 2000

An Account of the Origins and Development of Plant Pathology in The University of Georgia and the Several Experiment Stations (Origins to 1985)

Everett S. Luttrell[1]

Introduction

This account of the development of the Division of Plant Pathology in the College of Agriculture of the University of Georgia, hastily prepared on the occasion of the Bicentennial of the University in response to a request trickling down from some source in the upper reaches of the administration, does not deserve the title of "History." The only source listed in the references at the end of this introduction that is the work of a professional historian is the background volume by Range (1954). My account is not a collection of personal reminiscences because I have never looked back, and my memory is a source of little but biases. Anecdotes stick longer than more pedestrian facts and dates. I have relied, without great faith, on the memories of others. Homer Wells, USDA, Tifton; Jerry Payne, USDA, Entomologist, Byron; Andy Campbell, U.S. Forest Service, Athens, retired; Sam Thompson, Extension, Tifton; and Dan Phillips, Griffin, have been most helpful. The most readily available written records are the bulletins of the experiment stations and of the University, the most important of the latter being the catalogues of courses, but even these have been given only a cursory glance. The older catalogues contained lists of faculty and of instructors of individual courses and are useful historical documents. Current catalogues are of little present or historical value.

The overlapping tenures of B. B. Higgins (1913-1955) and mine (1942-1985) cover essentially the entire history of plant pathology in Georgia. At some points this experience may be helpful. On the whole, however, a fairer account could be written by one without personal knowledge of people or events and dependent entirely on documentable sources. This would require a professional historian, three lawyers--at least one from Philadelphia--and a long time. The difficulty in extracting the simplest fact or date is amazing in view of the infinitude of forms filled out over the years by the working classes.

Precision may be impossible even when records are available. The date of 1933 for the origin of the Department of Plant Pathology in the College of Agriculture is set by the listing of Julian Miller in the Department of Botany in the Franklin College of Arts and Sciences in the 1932-33 catalogue and in the Department of Plant Pathology and Plant Breeding in the College of Agriculture in the 1933-34 catalogue. The grandiose program of instruction in the 1933 catalogue and its subsequent shrinkage can only lead to speculation on the intentions of persons unknown in the establishment of the Department and the time spent in its planning. Somebody dared to dream; somebody was awakened. The recommendation of the Works Committee in 1933 following the organization of the State Board of Regents in 1932 was for consolidation of teaching, research, and extension in the College of Agriculture. This recommendation was adopted by the Board of Regents in 1949 but had to be reaffirmed in 1950. The organization was put into operation in 1951 but was not completed until 1968.

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[1]Everett S. Luttrell is D. W. Brooks Distinguished Professor in the Department of Plant Pathology, University of Georgia College of Agriculture, Athens, GA 80602. This manuscript was compiled as a contribution to a special Bicentennial project for the College of Agriculture.

Current problems may be of some assistance in understanding the past. The allocation of teaching and research time of individuals who now are joint-staffed is generally unrealistic because time required for teaching depends on the nature of the course and the conscientiousness of the instructor in this light, the historical separations of teaching, research, and extension in the College of Agriculture may be interpreted as reasonable responses to demands for accountability, although this may give reason more credit than reason is due. This interpretation is not intended as an apologia. it is simply part of an accounting of and for events. Most of the problems illustrated by Georgia examples have been addressed by the U.S. Congress in bills such as the Adams Act and the Smith-Lever Act. It would be presumptuous to interpret this national legislation as a response to local problems peculiar to Georgia.

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Organization and Origins

The College of Agriculture is administered by a Dean and Coordinator who is responsible directly to the President of the University of Georgia. Assisting the Dean are three Associate Deans and Directors, respectively, of the Cooperative Extension Service, the Agricultural Experiment Stations, and Resident Instruction. Extension, under its director, is separate from research and instruction; there is no joint-staffing of Extension personnel. The Director of Agricultural Experiment Stations is responsible for three major experiment stations. These are, in order of antiquity, the Georgia Station at Griffin (post office Experiment), 90 miles west-southwest of the University at Athens; the Coastal Plain Station at Tifton 200 miles south of Athens; and the College Station at Athens. Associate Directors serve as resident directors of the Stations at Griffin and Tifton.

Five branch experiment stations, each with a resident Superintendent, afford opportunities for field work in all geographical regions of the state to the faculties of the three major stations:

the Mountain Station at Blairsville in the North Georgia Blue Ridge Mountains, the Northwest Branch Station at Calhoun in the Limestone Valley, the Central Georgia Branch Station at Eatonton in the Piedmont, and the Southeast Branch Station at Midville and the Southwest Branch Station at Plains in the Coastal Plain. The Director of Resident Instruction is responsible for teaching programs in the teaching-research departments at Athens. Most of the faculty in these departments have joint appointments in instruction and experiment station research.

Some research is supported through the General Research program administered by the University Vice-President for Research. Members of the graduate faculty are appointed from the general faculty. Faculty from the off-campus experiment stations and personnel from associated U.S. Department of Agriculture units who have adjunct positions on any of the departmental faculties may be appointed to the graduate faculty. The graduate teaching program is administered by the Dean of the Graduate School. There are four departments of plant pathology, each with a department head: one in the Extension Service with specialists located at Athens or Tifton, two research departments in the experiment stations at Griffin and Tifton, and a teaching-research department at Athens. The head of the department at Athens is also chairman of the Division of Plant Pathology. An executive committee made up of the chairman and the heads of the other three departments coordinates the teaching, research, and extension programs of the division.

Plant pathology in Georgia began with the creation of the Department of Botany and Plant Pathology in the Georgia Experiment Station at Griffin in 1906. A State College of Agriculture and Mechanic Arts had been founded in the University of Georgia at Athens in 1872 with an endowment derived from sale of public lands granted to each state for this purpose by the Morrill Act of 1862. These were the "Land-Grant Colleges." The Hatch Act of 1887 provided funds for the establishment of An agricultural experiment station in connection with The College of Agriculture in each state. When the Hatch funds became available in February 1888, the Governor of Georgia transferred the funds to the State College of Agriculture. In December 1888 the Georgia Legislature, dissatisfied with the lack of interest in agriculture at the University, authorized establishment of the Georgia Experiment Station as a separate institution with its own board of directors responsible to the Legislature. The board of directors selected, from the sites offered, one on the northern outskirts of the town of Griffin, and the Georgia Experiment Station began operations on July 1, 1889. By 1890 the experiment station had a staff of four and its own post office. The mailing address is still Experiment, Georgia.

Also in 1906, in a further expression of dissatisfaction with administration at the University, the Georgia Legislature separated the State College of Agriculture and Mechanic Arts from the University of Georgia as a semiautonomous college with a president and a board of trustees responsible directly to the Legislature. In 1918 a second major experiment station was established as an independent unit at Tifton. This Coastal Plain Station was supported by state funds and by cooperative agreements with the U.S. Department of Agriculture. In the early days it was staffed largely by USDA personnel.

In 1932 the University System of Georgia, which brought all public institutions of higher learning under a single board of regents with a chancellor as executive officer, was created. The College was reincorporated into the University of Georgia and made responsible to the president of the University for teaching and such research as the teaching faculty were able to conduct. The experiment stations at Griffin and Tifton remained independent of the University. The Agricultural Extension Service was separated from the College of Agriculture, and there was no further joint-staffing of teaching and extension personnel. A Department of Plant Pathology and

Plant Breeding was created in the College of Agriculture in 1933. The Department of Plant Pathology at the Coastal Plain Station at Tifton was formally established in 1947.

As an incidental phenomenon, in 1932 "Mechanic Arts" was dropped from the title of the College, and it became simply the "College of Agriculture." A technological school had been established in Atlanta in 1885, and this developed into the present Georgia Institute of Technology. The mechanic arts still taught in the College of Agriculture are those related directly to agriculture. Teaching and research in this area is done in the Department of Agricultural Engineering.

In the great reorganization of 1949-50, the Board of Regents provided that the Dean of the College of Agriculture should serve also as Coordinator of the work of Directors of Extension, Experiment Stations, and Resident Instruction. A College Experiment Station was created at Athens with a resident director coordinate in rank with the resident directors of the Griffin and Tifton stations. The position of resident director of the College Station was subsequently abolished since this unit could be directly supervised by the Director of Experiment Stations.

In one important concession to political pressures the Griffin and Tifton stations continued as repositories for state and federal research funds. Federal funds, therefore, remained under the control of the resident director of the Griffin Station who was, however, administratively responsible to the Director of Experiment Stations and the Dean and Coordinator of the College of Agriculture. This anomalous situation continued until 1968 when all financial affairs were brought under central control in the business office of the University in Athens.

The system of divisions along subject-matter lines with division chairmen went into effect in 1951. Three new branch stations were established in 1951-52. The fully-staffed Georgia Mountain Experiment Station, which had been established at Blairsville by the Griffin Station in 1930, was reduced to branch station status and the vast tract of submarginal land which had been managed by the Griffin Station since 1938 as the Eatonton Project became a branch station. This reorganization, which was not completely consolidated until 1968, made possible the advances that came later. Progress was slow, however, until the Sputnik era, with explosive development coming in the latter half of the 1960s.

If the approach Georgia took to the simple proposition of establishing a State College of Agriculture and Mechanic Arts (Morrill Act, 1882) and "in connection with" it an Agricultural Experiment Station (Hatch Act, 1887) seems tortuous, it should be noted that the variations in the development of these institutions among "the several states" of the Union are beyond a run-of-the mill imagination. All states were unique. The story in New York, for example, if it could be disentangled, would be more remarkable than that in Georgia.

The separation of the Georgia Experiment Station in 1888 and the College of Agriculture in 1906 from the University of Georgia was a response to charges of diversion of funds appropriated for agriculture to liberal arts at the University. This criticism ignored the fact that appropriations for the Franklin College of Arts and Sciences, which was the University, were so low that it existed on the brink of extinction. The people involved were more lean than mean. The root of all evil was lack of money. This is the warp running through the history of Georgia institutions.

Some degree of separation resulted from drift and probably exceeded original intent. The Board of Directors of the Experiment Station, for example, as authorized by the legislative bill of

1888 included as ex officio members the State Commissioner of Agriculture, the Chancellor of the University (the title now is President), and a member of the faculty of the College of Agriculture, the last being H. C. White, chemist, who became President (now Dean) of the College in 1891 and was succeeded as President of the College and member of the Experiment Station Board of Directors by Dr. Andrew M. Soule in 1906. President White and later Soule also held the title of Vice-Director of the Experiment Station until this title was abolished in 1913.

The Conner Act of 1906 separating the College from the University provided that three of the eleven members of its board of trustees be appointed from the Board of Directors of the Experiment Station. The College faculty was a part, and at one time a majority, of the University faculty; funds designated for the College came to the University; and the President of the College was generally subject to the Chancellor of the University. This was the first of the “anomalous situations" in which individual responsibilities were divided and ambiguous.

Repeated attempts were made prior to 1906 to unite the College of Agriculture with the Experiment Station by moving the College to Griffin, which offered $50,000 to pay for relocation expenses; and other towns bid for both institutions. In 1917, when the Experiment Station was staggering because it had received no state funds since 1892, the political opposition representing the College and the University, or in the words of B. B. Higgins (1975), "Enemies of the Station," struck by persuading the U.S. Secretary of Agriculture to withhold federal funds on the grounds that the Experiment Station was not operating "in connection with" the College of Agriculture. Senator Hoke Smith and Representative J. Walter Wise, however, obtained passage in the national congress in 1918 of the Wise Resolution directing the U.S. Secretary of Agriculture to pay this appropriation and all future appropriations to the Georgia Experiment Station. And so began a cycle approximating that of the locust.

One of the first Acts of the Board of Regents in 1932 was appointment of the Works Committee. This committee recommended in 1933 that all teaching, research, and extension be united in the College of Agriculture. Seventeen years later this recommendation was put into effect when the Board of Regents in 1950, after a serious challenge, reaffirmed the integrated organization it had adopted in 1949. The basic issue, money, was not resolved until 1968 when all financial matters were brought under the control of the College. The renewed push for integration in 1966-68 which brought the federal funds to Athens also brought to the forefront another anomalous situation, the perhaps undefinable division of responsibility between division chairmen and resident directors. A more distant vantage point will be required to decide whether this question was completely resolved before 1985 or whether it went full cycle. Lag in effecting change is not peculiar to the University or to the State of Georgia but rather is in the nature of things. Even in the fast-paced decade of the 60s when the University of Georgia, building on the base laid by President 0. C. Aderhold in the 50s, made its move from backwash college to major university, the complaint was that a university is harder to move than a graveyard, and Gerald Huff, then Dean of the Graduate School, referred to departments as "medieval bastions.”

The separation of extension and teaching in the reorganization of 1933 was a consequence of strained relationships caused by a perceived diversion of funds from extension to teaching. Personalities and politics undoubtedly were involved, but this, like previous separations, was basically an attempt to increase accountability. The independence of extension and research could be considered in the same light and was in the spirit of the Smith-lever Act providing separate funds for the Cooperative Extension Service. The creation of the Coastal Plain Station at Tifton in 1918, on the other hand, was a response to the need felt in large and geographically

diversified states, including those with completely integrated operations, to maintain closer contacts with major production areas. A curiosity in many states is the location of the College of Agriculture and the Experiment Station at a site far removed from what are now the principal agricultural regions.

Organization may be less important than the resources and the willingness to make the organization work. Many states with a centralized organization have demonstrated that the organization of inadequate resources produces an inadequate organization. California, on the other hand, has spread its resources over three experiment station-university complexes and has produced three first-rank institutions. The Connecticut Agricultural Experiment Station at New Haven, the oldest agricultural experiment station in the United States with roots extending back into the first half of the 19th century, has maintained a high level of independence from the University at Storrs and an exceptional level of accomplishment and prestige.

There are virtues in decentralization and competition that should be recognized and preserved. Insistence on coordination and cooperation often hides a fear of competition and a lust for mediocrity. But, if nothing can be accomplished by organization alone, nothing can be accomplished without it. Georgia's supreme accomplishment in organization, which again invites comparison with New York, is the Board of Regents, which coordinates and insulates, although, as the record shows, does not completely isolate, from politics all public institutions of higher learning in the state. This organization contributed greatly to the ability of the University of Georgia to take advantage of the opportunities of the Sputnik era. It had further to go than most, but it went further than most.

Department of Plant Pathology
Griffin

In 1906 the Department of Botany and Plant Pathology established in the Georgia Experiment Station at Griffin, along with another new department, the Department of Bacteriology, was housed in a new frame building erected at a cost of $2,037.50 on a site diagonally across the street from the northeast corner of the present Horticulture Building. Mr. R. J. H. DeLoach served as botanist and plant pathologist from 1906 to 1908, when he moved to a position in the Department of Cotton Industry in the College of Agriculture. He was replaced by Mr. C. A. McLendon. The first trained plant pathologist in Georgia was Dr. B. B. Higgins who was appointed botanist and plant pathologist in 1913.

Department of Plant Pathology, Griffin, 1906 to 1985

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06 DeLoach – 08 McLendon – 13 Higgins--55 Luttrell–
--66 Kuhn--68 Boyd--69 Walker----------
24 Woodroof--34 Jenkins--41 Garren--48 Boyle--67 Smith--73 Cunfer–
26 Van Haltern--56 Farrar--60 Kuhn--66 Averre–
--69 Boyd--71 Schaad--83 Chang ----------
42 Luttrell--47//49--55 Chandler--82 Rothrock ----------
60 Hanlin--66 Boyd--68 Phillips----------
66 Demski----------
50 Taylor (Blairsville)--68 to Athens//
69 Armstrong & Armstrong ---------- 81

U. S. Department of Agriculture
35 Weimer--52//50 Burns ---------- 68//
41 Bailey ------ 55//
58 Sowell ------ 84//

Prior to the formation of the Department of Botany and Plant Pathology, Mr. A. L. Quaintance, biologist and horticulturist, 1899-1902, made outstanding contributions to Georgia in entomology and plant pathology, examples being his work on black rot of grapes and brown rot of stone fruits. Although he held the position of botanist and plant pathologist for less than two years, Mr. DeLoach published a study on cotton anthracnose. Mr. McLendon (1908-13) devoted himself entirely to cotton breeding: But in this period J. M. Kimbrough, agriculturist and dairyman 1889-1914, demonstrated that "cotton rust" was the result of potash deficiency; and H. P. Stuckey, horticulturist 1908-51 (Director, 1918-49), and J. C. Temple, bacteriologist, 1908-19, showed that blossom end rot of tomato also was a noninfectious disease that had its basis in the water relations of soil and plant. They started work on plum wilt, which along with other diseases had essentially eliminated plum culture in Georgia, but turned this study over to Dr. Higgins when he arrived. Although they will not be generally recorded, horticulturists and agronomists made many additional contributions to plant pathology in the years that followed. This does little for the egos of plant pathologists but is profound testimony to the importance of plant pathology.

Dr. Higgins served as Head of the Department for the next 42 years except for the period 1917-19 which he spent in the army during World War 1. At some point "Plant Pathology" disappeared from the title of the department and did not reappear until the reorganization of 1949-50 in which the Georgia Experiment Station became a part of the College of Agriculture and the "Department of Botany" became the Department of Plant Pathology. Dr. Higgins was proud oi the fact that his degree from Cornell was obtained under George F. Atkinson in the Botany Department rather than in the Plant Pathology Department that had been split off under Whetzel; furthermore, he was opposed to any fragmentation of the science of botany. When all other titles changed in 1950, Dr. Higgins retained the title of botanist. He retired as Botanist Emeritus in 1955, and he died as Botanist Emeritus in 1968.

As the only plant pathologist in Georgia in the early years, Dr. Higgins was perforce concerned with diseases of all crops. Publications from his research on diseases of crops ranging from peaches, plums, and pecans to turnips and peppers appeared in the bulletins of the Georgia Experiment Station, Phytopathology, and the Journal of Agricultural Research. His first assignment ended in defeat. He demonstrated that plum wilt was caused by a fungus entering through wounds of all kinds but was unable to find a remedy. Characteristically, however, his histopathological observations on the relation of gum formation to spread of the fungus led to a study of normal processes of gum formation and wound healing in woody plants in general.

In 1920 the developing pimiento canning industry in the Griffin area directed his attention to diseases of peppers. In retrospect (1950) he rated the early work on seed treatment prompted by his disease studies on peppers as probably the most important contribution from plant pathology in the Georgia Experiment Station. The attacks of southern blight in pepper fields and in bedded sweet potatoes led to his paper on "Physiology and parasitism of *Sclerotium rolfsii*" in *Phytopathology* in 1927. This was a remarkably-complete study on- physiology of disease which is still cited in the textbook (Agrios) used in the introductory course in plant pathology at Georgia. His papers on the relationship of fertilization to cold injury in peach trees and on

inheritance of seed coat color in the peanut are other examples of the breadth of his research.

His secret ambition was a monumental study on developmental morphology of fungi. This mycological study was pushed aside by his work in plant pathology and was abandoned after 1928 when he started a project on peanut diseases which rapidly expanded into breeding and all aspects of peanut production and consumed all of his time. He did, however, publish a series of three papers in 1920, 1929, and 1936 in the *American Journal of Botany* under the title of "Morphology and life history of some Ascomycetes with special reference to the presence and function of spermatia." These papers are still cited in textbooks of mycology.

In 1924 Naomi Chapman Woodroof became the second member of the department. Mrs. Woodroof, working on cotton seedling diseases, carried out some of the earliest studies of fungicide dusts for seed treatment, and recommendations for cotton seed treatment were made in 1927. Dr. Higgins (1950) later felt that Georgia's pioneering work in this area, which at the start required formulation of their own dusts, ,was not fairly recognized; but much of the early work was presented only in the Annual Reports of the Experiment Station, and it is difficult to establish priority on the basis of such reports. Mrs. Woodroof published the first work in Georgia on mycorrhizae (pecan) and joined Dr. Higgins in the work on peanuts. In 1933 she resigned to accompany her husband to Tifton but was immediately rehired by Dr. Higgins to continue the work on peanuts at the Coastal Plain Station as a temporary employee. This employment continued until her final retirement in 1950.

Frank Van Haltern entered the department in 1926 and gave immediate attention to the south Georgia tomato transplant industry which had started in 1914. By 1925 the canning states were threatening an embargo of Georgia plants because of diseases. Van Haltern's work resulted in recommendations for use of disease-free seed, rotation, spraying at least three times, and sanitary measures in pulling plants for shipments north. This work was taken up later by USDA pathologists at Tifton after Van Haltern turned his attention to the pathology and breeding of cantaloupes and watermelons. For many years he spent the growing season at the Tifton Station where his field plantings were made. His most notable accomplishment was the release of the cantaloupe cultivar Georgia 47 in 1952. This was the first line combining resistance to both downy and powdery mildews and to aphids. The emphasis placed on breeding for resistance as the primary disease-control measure in the early history of plant pathology should be noted. Additional examples will appear.

In 1934 Mrs. Woodroof was replaced by W. A. Jenkins who continued work on peanuts and also started projects on diseases of muscadine grapes and breeding snap beans for resistance to root-rot. Jenkins moved to Virginia in 1941 and was replaced by K. H. Garren. When Garren was called up by the U.S. Navy in 1942 for service in the Pacific during World War II, E. S. Luttrell was hired as a temporary replacement. When Garren returned from the war in 1945, Luttrell stayed on since the subject of his temporary appointment was not mentioned. This inadvertence brought the number of positions in the department to four. Garren chose to concentrate on peanuts and left the beans and grapes to Luttrell.

In 1947 Garren and Luttrell resigned at the same time. Garren moved to Auburn University and shortly thereafter to a position with the USDA on peanut pathology at the experiment station in Holland, Virginia, where he continued his work on peanut diseases until his retirement. Luttrell moved to the University of Missouri as assistant professor of botany, and in one year and nine months taught three semesters of plant pathology, two of mycology, one of forest pathology, and five of bacteriology. With access to a better library, he started a review on the

taxonomy of Ascomycetes which was completed after his return to the good life at the Georgia Experiment Station in 1949, but was published in the University of Missouri Studies in 1951. The Griffin Station had become a part of the University of Georgia in the reorganization of 1949, and Luttrell had the title of associate pathologist when he came back to the position he had left as associate botanist. L. W. Boyle had been hired to replace Garren on the peanut project in 1948. Luttrell resumed work on muscadine grapes and later moved to work on diseases of cereals and diseases of forage crops.

In 1935 Dr. James L. Weimer, USDA, was stationed in the department for work on diseases of legumes and breeding Austrian winter peas, which he continued until his retirement in 1952. He was a graduate student at Cornell at the same time as Higgins, but his doctorate was from the Department of Plant Pathology rather than Botany. He was a great asset to the department and an excellent model but one difficult to emulate -- a gentleman, highly professional; thorough, precise, and neat in his work; a bit reserved and very proper. It came as a shock, then, when he confided that he left the commas out of his manuscripts because putting in commas left Dr. Higgins, who was Station editor, in such a euphoria of accomplishment that he didn't mess with the substance of the paper. (Kuhn says this may be part of the problem with *Phytopathology* in 1985: authors are submitting rough drafts, letting the associate editors have their jollies, and then writing the final copy they would normally have submitted to begin with.)

This indicates how closely identified with the departments USDA personnel were--to the extent of subjecting their manuscripts to the routine Station review. This in-house review of papers to be submitted to journal editors is a foolishness which now is gone from plant pathology although it persists in less advanced areas. Robert E. Burns, USDA, was an early replacement for Weimer in 1950, giving Weimer an opportunity to close out his disease and breeding program while Burns altered course to physiology of special legumes. Burns continued in this position until 1964, when he resigned from the USDA to become a member of the Agronomy Department at Griffin.

The third USDA scientist in the Department was Wallace K. Bailey, a horticulturist and prodigious worker who collaborated with Higgins, Carren, Woodroof, and Boyle on peanut research from 1941 to 1955. Bailey developed a greater loyalty to the Station than most of the state employees who drew their pay from it. He returned Garren to the peanut disease program by hiring him for research in the USDA laboratory at Holland, Virginia, and, after he returned to Beltsville, kept the Georgians in close touch with peanut research throughout the Southeast. In 1958 Grover Sowell, USDA, became the first pathologist in the USDA Southern Regional Plant Introduction Station, a position he held until his retirement in 1984.

In 1955, Dr. Higgins retired and Luttrell replaced him as department head. Webster A. Chandler took Luttrell's former position but started a new project on peach diseases and their control, with some work on vegetable diseases (pepper, turnip greens). Van Haltern also retired in 1955 and was replaced in 1956 by Luther L. Farrar who turned to work on small grains and sorghum. Boyle continued the great project on peanut diseases, but change had set in. Further change came in 1959 when Luther Farrar moved to the Extension Service in Athens and then into industry. Cedric W. Kuhn replaced Luther Farrar and became the first virologist in Georgia. He saw the greatest need as research on virus diseases of cowpeas, a crop of importance to the food processing industry under the name of southern peas. He had also to work on pepper and peanut and anything that showed symptoms of virus disease. Also in 1960, Richard T. Hanlin joined the faculty by way of an NSF grant on morphology of Ascomycetes, and his position soon was moved to hard money as the fifth position in the department. In addition to a series of

morphological studies on the Hypocreales, Hanlin became involved in research on the microflora of peanuts and pecans as the aflatoxin problem led to the availability of grant funds from the USDA. The aflatoxin problem also had an impact on research in the departments at Athens and, most of all, at Tifton.

The department suffered in the general turmoil of the mid 60s. In July, 1966 Luttrell moved to Athens as head of the department and chairman of the division to replace John Owen who had become Director of Experiment Stations. Kuhn became head of the department at Griffin. James W. Demski filled a new position in virology authorized in the 1966 budget. In December, Hanlin, who had had his forest pathology with Dow V. Baxter at Michigan, moved to Athens to replace John Boyce, who had resigned in the spring of 1966. Kuhn's former position was taken by Charles W. Averre who worked on vegetable diseases before moving on to N. C. State in 1968. Hanlin's position was taken by Howard W. Boyd who served briefly as department head from 1968, when Kuhn moved into a newly authorized position in the Athens department until 1969, when Jerry T. Walker was hired from the Kitchawan Research Lab of the Brooklyn Botanic Garden to take this position.

Boyd was replaced by Dan Phillips, and the work turned to diseases of soybeans, by that time pushing corn and peanuts for first place among Georgia crops. Lytt Boyle retired in 1967 and was replaced by Donald H. Smith who continued Boyle's work on peanuts until he moved to Texas in 1973. Barry M. Cunfer filled the position vacated by Don Smith and, since the peanut work was being continued at the Tifton Station reactivated the research on diseases of small grains. Howard Boyd resigned to take over a family business in 1969, and in 1971 Norman W. Schaad replaced him as the first bacteriologist in the Griffin department.

In 1973, as the department entered a decade of stability, the faculty was (1) Walker, Head of Department, nematology, air pollution; (2) Chandler, peach diseases, fungicides; (3) Cunfer, small grain diseases; (4) Demski, virology; (5) Phillips, physiology, soybean diseases; and (6) Schaad, bacteriology. Chandler retired in 1982 and was replaced by Craig S. Rothrock for work on the ecology of soil-borne diseases. Schaad moved to the University of Idaho in 1983, and with his replacement, C.-J. Chang, the department took the great leap forward into the era of fastidious procaryotes, the xylem-limited bacteria, mycoplasmas, and spiroplasmas.

In the 1920s the department had expanded beyond the $2,037.50 building erected in 1906, and in 1929 Higgins, Woodroof, and Van Haltern moved into the Flynt Building, which was erected in 1928. When the north wing was added in 1938, botany extended its laboratories to occupy the second floor of the wing. In 1962 a NSF facilities grant to Kuhn with matching funds from the station covered the cost of the present greenhouse and the attached headhouse containing a virology lab and cold room, three offices, and a growth chamber room. Other grants from NSF and NIH equipped the laboratory and supported research in virology. Director W. T. Fullilove returned the overhead to the department and this was used to air condition offices and labs in the Flynt Building. Each attempt at further centralization of research administration in Athens created unrest and brought reassurances in the form of new buildings given as hostages that the Georgia Station would be maintained. In the aftermath of 1968 a new plant science building was funded at Griffin, and agronomy and plant pathology occupied the new quarters in 1976-77.

Everything in the history of the department at Griffin is over-shadowed by the great peanut project, which started with Higgins's study of diseases on this then relatively unimportant crop in 1928, reached its peak in the '40s and '50s, and, after Higgins retirement and as the work was

increasingly transferred to Tifton, faded to an end with Boyle's retirement in 1967 and Don Smith's resignation in 1973. However, the work on peanut viruses started by Cedric Kuhn was continued at Griffin by Jim Demski, and research on virus diseases of peanuts was expanded to an international scale by the collaborative efforts of Demski and Kuhn. Wilbert Jenkins, Ken Garren, Naomi Woodroof, and Wallace Bailey all made major contributions to the peanut project in the peak years. Mrs. Woodroof supervised much of the field work at Tifton from 1933 to 1950 and was primarily responsible for the work on fungicidal control of leaf spots.

Boyle was a prophet, the apostle of peanuts. He went about the state and the country wherever anyone would listen -- in APS meetings, Lion's Clubs, and farmers fields -- preaching the peanut. At an APS symposium in the early 1960s as Boyle, turning red in the face and shouting "thief," robber," warmed to his favorite topic, *Sclerotium rolfsii,* John Owen, then chairman of the division leaned over and whispered, "I thought it was feedback in the mike, but it's Boyle's dentures clicking." Boyle's "package plan" for control of *Sclerotium rolfsii* antedated the fad for integrated pest management. He threw everything in peanut culture at the fungus. He brought back the moldboard plow to bury all plant residues in land preparation, insisting on precision to the extent that 'he claimed to be able at harvest to tell if a tractor driver was changed during the plowing of a field. He required flat cultivation, later termed nondirting cultivation by Garren, to avoid burying and killing even a single leaflet of the peanut plant. He justified dusting for leaf spot control on the basis of preventing accumulation of dead leaves on the soil surface. Everything was aimed at denying the fungus a food base from which to attack.

Wallace Bailey's contribution belongs in a special category. His only assignment in the years he was stationed in the department (1941 to 1955) was to push the peanut project along in every way possible. He was completely selfless and indefatigable, less flamboyant than Boyle, but even more dedicated, if possible, than Higgins and Boyle. Undoubtedly, his influence played a part in extending disease control considerations into every aspect of peanut culture from land preparation to harvesting and curing the crop. This group of people, too individualistic and too loosely associated to be called a team, with only nominal leadership from Dr. Higgins, and without self-conscious profundity, managed to raise plant pathology in this isolated case above the general level it has reached today, integrating disease control not with pest management nor plant protection but with crop production.

In 1969, a decade after George M. Armstrong retired as department head at Clemson University and after Joanne Armstrong retired from the USDA at Clemson, the Armstrongs moved to the Griffin Station as unpaid research associates to continue their work on *Fusarium*. In 1979, because of some arcane question of insurance liability, the Armstrongs enrolled as graduate students, with Dan Phillips as major advisor. Dan claims the record for having the oldest husband-wife graduate students in the history of the University of Georgia. He is too modest. He must hold the record for the universe. In 1981 the Armstrongs returned to Clemson, where they had started work 60 years earlier. While they were at Griffin, George Armstrong received the Fellow Award from the American Phytopathological Society. By coincidence the announcement of the Fellow Award and one of the last papers on races of *Fusarium oxysporum* published by the Armstrongs appeared in the same issue of *Phytopathology* (1974, Vol. 74, p. 4 and pp. 849-57).

Although he is listed for convenience with the faculty of the Griffin Station, Jack Taylor was essentially a one-man department of plant pathology and entomology at the Mountain Experiment Station at Blairsville from 1950 until he transferred to Athens in 1968. He was a phenomenon of the anomalous situation of the 1950s, paid through the director of the Griffin

Station, directly responsible to the superintendent of the Mountain Station, John Bailey, but assigned to his position by the Athens administration.

In this situation Jack was his own man, as he would have been under any circumstances. In his work toward the M.S. degree he obtained from Georgia in 1950, he was a student of Julian Miller's. This must have been a learning experience for Dr. Miller as well as for Jack. Item: After absenting himself briefly from one of Miller's laboratories in plant pathology, Jack addressed the class, "Who's been looking through my microscope with possum eyes?" In the crashing silence that fell over the room, it came to him that Dr. Miller's eyes were a bit close-set.

Jack was concerned with many crops and worked on blueberry diseases for his Ph.D. at North Carolina State. His primary responsibility, however, was the failing apple industry. He is generally credited with saving the north Georgia industry, and this credit was honestly come by; he had the respect and gratitude of the growers themselves. There were no extension pathologists at that time and, perhaps to an even greater extent than Lytt Boyle, Jack was directly involved with assisting growers. After he moved to Athens, he was selected to lead the peach decline research team, the greatest cooperative multidisciplinary effort ever mounted by the Georgia Experiment Stations. He was also a great help to extension pathologists, especially in situations in which straight talk would be more effective than gentle persuasion. In the textbook by S.A J. Tarr, *Principles of Plant Pathology*, used in the graduate course in theory and principles at Georgia during the 1970s only two Georgia plant pathologists were cited. One was Lytt Boyle; the other was Jack Taylor.

Two plant pathologists have served as director of the Georgia Station. Curtis R. Jackson, formerly head of the Plant Pathology Department at Tifton was appointed director in 1968. He was replaced when he retired in 1984 by Charles W. Laughlin (nematology), formerly head of the Department of Plant Pathology at Mississippi State University. One of Curtis Jackson's major contributions was the $9,800,000 grant from the U.S. Agency for International Development for the Collaborative Research Support Program for Peanuts for 1982-87. The prime grant is managed at the Griffin Station with David Cummins (agronomy), who was associated with Curtis in developing the proposal, serving full time as program director. Subgrants are made for collaborative research among four designated United States universities (North Carolina State, Georgia, Alabama A&M, and Texas A&M) and nine countries in Asia, Africa, and Central America. In the Plant Pathology Division Jim Demski (Griffin) and Cedric Kuhn (Athens) have a major project on virus diseases of peanuts with collaborators in Nigeria, India, Germany, and Scotland.

The United States Department of Agriculture and the Cooperative State Research Service

The USDA comprises seven services: (1) International Affairs and Commodity Programs, (2) Small Community and Rural Development, (3) Economics, (4) Food and Consumer Services, (5) Science and Education, (6) Natural Resources and Environment, and (7) Marketing and Inspection Services. Most of the services related to the state experiment stations are grouped under Science and Education: (1) National Agricultural Library; (2) Agricultural Research Service (ARS) for federal, or "in-house research; (3) office of Grants and Program Systems; (4) Extension Service; and (5) Cooperative State Research Service (CSRS). The U.S. Forest Service and the Soil Conservation Service are under Natural Resources and Environment. Of the Marketing and Inspection Services, the Animal and Plant Health Inspection Service is most closely related to plant pathology. The Cooperative State Research Service, which monitors the

research of the state experiment stations, originated as the Office of Experiment Stations in the Bureau of Plant Industry. Although the Hatch Act of 1887 stated in detail the purposes for which the appropriated funds were to be used, there was essentially no accountability for their expenditure. The concern of the Georgia Legislature with misappropriation of agricultural research funds was part of a national concern that led to the passage of the Adams Act in 1906. The Adams Act appropriated for each state experiment station $5,000 plus an additional $2,000 each year for five years and thereafter $30,000/year. These funds were "to be applied only to paying the necessary expenses of conducting original researches or experiments bearing directly on the agricultural industry of the United States. No portion of said moneys exceeding five percentum of each annual appropriation shall be applied directly or indirectly, under any pretense whatever, to [any other purpose]". Any funds "diminished, lost, or misapplied" had to be replaced by the state. The states had to submit an annual report to the director of the Office of Experiment Stations, and the Secretary of Agriculture had to certify to the Secretary of the Treasury that the funds had been properly spent.

The present system of submitting research proposals in the form of project outlines for approval by the director of the Office of Experiment Stations (now CSRS) was adopted in 1907. Experiment station funds were progressively increased by the Purnell Act of 1925, the Bankhead-Jones Act of 1935, the Research and Marketing Act (Amendment of the Bankhead-Jones Act and Marketing Act) of 1946, and the Consolidation Act of 1955 in which all of the preceding laws were consolidated, and all funds were combined as Hatch funds. The Research and Marketing Act required matching state funds. In Georgia state funds have increased until federal (Hatch) funds, which for the first 30 years of the Georgia Station were 100%, are now well below 15% of total research funds. It would be desirable to maintain a significant federal component to give the separate states a common sense of national purpose.

In the early days there were annual inspections of the experiment stations by teams from CSRS who were concerned with auditing expenditures as well as receiving reports on research progress on each project. The pathology staff would find themselves attempting to explain disease research to an inspector from economics or animal science. In the 1960s the research reviews were separated from financial audits, and the annual review was replaced by periodic comprehensive reviews by peer reviewers. These reviews were supposed to be held every three to five years. The Plant Pathology Division has had only two comprehensive reviews, in 1963 and, in 1977, with another one scheduled for 1985. Since the reviewers expenses are borne by CSRS, the faculty have looked on this as an opportunity to suggest as members of the review panels outstanding pathologists who can be brought to the campus as freebies. The panel in 1963 was composed of John F. Fulkerson and C. L. Lefebvre from CSRS, A. E. Dimond from the Connecticut Experiment Station, and Glenn S. Pound, chairman of plant pathology at Wisconsin. Panelists in 1977 were Kenneth D. Fisher (nematologist) representing CSRS, J. Artie Browning from Iowa State, Ray G. Grogan from California-Davis, and George L. McNew, director of the Boyce Thompson Institute.

The Hatch Act stated, "It shall be the object and duty of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with remedies for the same; the chemical composition of useful plants ... rotative cropping ... composition of manures ... scientific and economic questions involved in the production of butter and cheese..." The Georgia Experiment Station had hardly opened, however, before Director Redding came under fire for not conducting such projects as testing and recommending choices of commercially available farming implements. Redding was forced to state and defend a list of the objectives of the Station.

There has been continuing conflict between the broad objectives stated in the various acts of the national congress and narrow local perceptions of needs and entitlements, extending to views of local residents that station lands were public property on which they had a right to pick the fruit from test plots. Misconceptions also arise from within, as witness the current smallish fad among some faculty to speak of their "clientele." The basic justification for service to any segment of society is the general welfare, and the society at large is the "clientele" of the experiment stations. The Adams Act reemphasized the purpose of original research and placed such severe restrictions on expenditure of funds it provided that these funds were treated with respect. Unquestionably "basic research" projects such as Dr. Higgins's "The morphology and life history of some ascomycetes with special reference to the presence and function of spermatia" were the natural choices for Adams funds. The USDA has ignored from its own history the effective model for influencing the direction of research provided by the Adams Act and has established its Competitive Research Grants Office in the image of the National Science Foundation, which itself might better have looked to the Adams Act.

The Purnell Act continued the restrictions of the Adams Act, stating that funds could be "applied only to necessary expenses of conducting investigations or making experiments." The Bankhead-Jones Act allowed use of funds for facilities, equipment, and maintenance, and for "printing and dissemination of results of research." However, the purpose of the experiment stations was reaffirmed--to conduct research into laws and principles underlying basic problems of agriculture in its broadest aspects." The statement of purpose was unchanged in the Research and Marketing Act. This theme is summarized in the aphorism, "The purpose of the experiment stations is not to tell farmers how to grow plants but to find out how plants grow."

Department of Plant Pathology
Athens

The Department of Plant Pathology and Plant Breeding at Athens first appeared in the UGA catalogue for 1933-34. Dr. Julian R. Miller, who had received his degree from Cornell in 1928 was the only member of the department. Previously he had been one of two members of the Botany Department in the Franklin College of Arts and Sciences with Dr. John M. Reade (Ph.D., Cornell, 1908), who was known as "Botany" Reade. In 1932 Miller was listed as teaching two courses in the Botany Department, a course in mycology and one in agricultural botany taught jointly with "Botany" Reade. Courses listed in plant pathology and plant breeding in 1933 were:

Senior Division Courses

53. Elementary Plant Pathology
54. Forest Pathology
55. Plant Pathology (disease control)
56. Plant and Animal Breeding
57. Elementary Plant Physiology (taught by Assoc. Prof. of Horticulture Harrold)

Senior Division or Graduate Courses

151-152 Mycology
158-159 Plant Physiology (Harrold- Horticulture)

Graduate Courses

300. Mycology. Higgins (Griffin)

301. Methods in plant pathology, histology, disease control, breeding for resistance. Higgins and Van Haltern (Griffin)

On the general faculty Miller was listed as associate professor of plant breeding and diseases. Both Miller and B. B. Higgins were listed on the Graduate School Council, Miller as associate professor of Plant pathology, Higgins as botanist, Experiment Station. In the unrest following the reorganization of 1932, H. P. Stuckey, director of the Griffin Station, in 1933 served also as Dean of the College of Agriculture. In 1934, however, Dr. Stuckey returned full time to his position as director of the Griffin Station. There was no further mention of Higgins and Van Haltern or the courses 300 and 301 in subsequent catalogues. Perhaps a great opportunity to unite the College and the Experiment Station was lost; or perhaps it never existed. Dr. Stuckey apparently agreed to serve as Dean of the College only on an interim basis to stabilize the College, and he retreated to Griffin as soon as possible.

In 1935 the present system of course numbering was adopted. The renumbered courses were:

Senior Division Courses

353. Elementary Plant Pathology
354. Forest Pathology
355. Fungicides in Relation to Host and Parasite
356. Diseases of Field Crops
357. Diseases of Horticultural Crops
358. Principles of Plant Breeding

Senior and Graduate Courses

401/601 Plant Genetics
402/602 Animal Genetics
420-21/620-21 Advanced Plant Pathology

The Horticulture Department offered prior to 1933, and continued to offer, a course in sprays and spraying, and Plant Path 355 was subsequently dropped. The Agronomy Department likewise had offered, and continued to offer, courses in breeding crop plants and in advanced plant breeding. Courses in mycology were dropped, but the two-quarter sequence 420-421 called "Advanced Plant Pathology" was described as "a study of fungi that cause plant disease."

In 1937 George E. Thompson became the second member of the Plant Pathology Department, and courses listed in 1940 were:

353. Elementary Plant Pathology. Miller & Thompson 354. Forest Pathology. Thompson
356. Diseases of Field Crops. Miller
357. Diseases of Horticultural Crops. Miller 358. Principles of Breeding. Miller 401/601 Plant Genetics. Miller

420-21/620-21 Advanced Plant Pathology. Miller &-Thompson

In 1941 John R. Shuman joined the faculty as associate professor of plant breeding and took over the teaching of Plant Genetics 401/601, although Plant Breeding 358 was still listed as "Miller or Shuman." In the genetics position Merritt J. Murray replaced Shuman in 1943 and was

himself replaced by E. Broadus Browne in 1947. The courses listed in the 1950-51 catalogue were:

353. Elementary Plant Pathology. Thompson
354. Forest Pathology. Thompson
356. Diseases of Field Crops. Miller
357. Diseases of Horticultural Crops. Miller
358. Principles of Plant Breeding. Miller or Browne
401. Plant Genetics. Browne
402. Advanced Plant Breeding. Browne
420-21 Mycology. Miller & Thompson

The title "Mycology" had been restored to course 420-21, which had gone under the title "Advanced Plant Pathology" from 1935 to 1947. The only courses in plant pathology beyond the introductory course were crops courses in forest trees, field crops, and horticultural crops. The course in forest pathology, however, was in fact a second introductory course taught primarily for students in the School of Forestry.

After the reorganization of 1950, Miller in 1951 became chairman of the Division of Plant Pathology as well as head of the Athens department. The College Experiment Station was created, and Broadus Browne became its first resident director. Browne's position in the department and his research project on corn breeding were taken up by Attie A. Fleming in 1951. Also in 1951 George M. Kozelnicky was added to the staff to collaborate on the corn breeding project and to carry on research on corn diseases. This brought the number of faculty in the department to four. Miller retired in 1958 and was replaced as head of the department and chairman of the division by John H. Owen. With the retirement of Dr. Miller an era ended. Although the primary responsibility of the department had been teaching, and most of the teaching had been in plant pathology, Miller and Thompson both are remembered as mycologists. Even when their research dealt with diseases, it was concerned almost exclusively with descriptions of the fungus associated with the disease. Thompson published a series of such papers dealing with diseases of trees between 1939 and 1960. Although Miller published three studies on developmental morphology of Ascomycetes, his major work was in taxonomy. He became the most widely recognized scientist of his time on the University of Georgia faculty, both within the University and on a national and international scale. In 1930 he studied collections in the herbaria of the Royal Botanic Garden at Kew and of the Imperial Mycological Institute in England, where he was warmly received since he was already well known through his publications on the Sphaeriales from his dissertation. Three papers on British Xylariaceae were published in the *Transactions of the British Mycological Society*.

Miller was designated Regents Professor in 1946, one of only three such distinguished professors in the University of Georgia. In 1948 he was president of the Mycological Society of America, and his presidential address as published in the January 1949 issue of *Mycologia* was the most inclusive expression of his ideas on the broad classification of the Ascomycetes. Incidentally, the portrait of Miller accompanying the publication of his address is the only one that has ever been found and was the model for the plaque at the front entrance of the Miller Plant Sciences Building. His final achievement was his book, "A Monograph of the World Species of Hypoxylon," published by the University of Georgia Press. Andy Campbell helped Miller obtain an NSF grant, and John Owen provided encouragement for Miller to complete this work after his retirement in 1958 and saw it through to publication after Miller's death in 1961.

Department of Plant Pathology, Athens, 1933 to 1985

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33 Miller--59 Owen--66 Luttrell--70 Garrett ----------
37 Thompson--61 Boyce--66 Hanlin----------
41 Shuman--43 Murray--47 Browne--51 Fleming--68 to Agronomy//
51 Kozelnicky ---------- 82//84 Denny ----------
60 Powell ----------
64 Papa ----------
65 Hendrix ----------
66 Roncadori ----------
68 Kuhn ----------
68 McCarter ----------
68 Wynn ----------
68 Bird ---------- 74 Hussey ----------
68 Taylor--77 Starkey--84 Nutter ----------
70 Luttrell ----------
85 Schell (Microbiology-Plant Pathology)

USDA – ARS Richard B. Russell Research Center
79 Bacon (adjunct) ----------

Botany Department Mycologists Joint-Staffed
75 Fuller ----------
75 Porter ----------

Among graduates of the University Dr. Miller is best remembered as a teacher, both of undergraduate and graduate students. For essentially all of the Miller period the master's degree was the only graduate degree offered. An M.S. in agriculture was authorized when graduate studies were incorporated in a separate school in 1910. The M.S. in plant pathology was authorized in 1937. In 1955 a Ph.D. in plant science was authorized for the combined departments of agronomy, horticulture, and plant pathology. The only doctorate from the Department prior to 1960 was the Ph.D. in plant science awarded in 1959 to C. S. Hodges, Miller's only doctoral student.

The Miller era ended on a dismal note. Since its origin in 1933, the department had been housed in the old Veterinary Science Building which had been erected in 1910. This building was located in the space between the present Livestock-Poultry Building and the Food Science Building, facing uphill toward Conner Hall and with its back toward the railroad tracks. It was a two-story, yellow brick building over a basement with a ground-level entrance at the rear. An outside wooden stairway led up from this entrance to the first and second stories. It might have been taken for a fire escape except for the fact that in case of fire it obviously would have been the first thing to go. On the second floor were a teaching laboratory and a seed laboratory for the corn breeding project; on the first floor, offices, the herbarium, and a classroom; in the basement, a research laboratory, a preparations room, a photographic darkroom, and a toilet--a sort of indoor outhouse since it could be reached only by the outside stairway, the only communication between floors.

By 1954 construction was underway on the new science center extending along the cliff on the east side of Conner Hall from the stadium to the present Food Science Building. In 1957, Dr. Miller, who had understood that the plant pathology building would remain, was abruptly given one month to clear the building. The dean of veterinary medicine gave refuge to Miller and Thompson and the herbarium cases in a large room in the vet school. Fleming and Kozelnicky built offices for themselves in a storeroom in the basement of the women's physical education building and Fleming acquired a seed laboratory in the R.O.T.C. building (Hardeman Hall).

When the last building (Food Science) of the science center was completed in 1960, the pathologists were given temporary quarters there. The next two additions to the faculty were housed in the Livestock-Poultry Building, the only other building in the Science Center assigned to the College of Agriculture. As faculty increased in the latter 1960s, the overflow was put in renovated space in the old agricultural engineering building, Barrow Hall. The department was not reunited until the present Plant Sciences Building was completed in 1972.

The pathology diaspora had lasted for 15 years, and it was a new generation that entered the Plant Sciences Building. The building was named for Julian Miller, but Julian Miller himself never entered the Promised land. In fact, it was never promised to him, although he drew up the original proposal for a building to house all of the plant sciences in 1945. The campus headhouse-greenhouse opposite the Miller Plant Sciences Building was constructed in 1962. In 1963, through the cooperation of R. G. McAlpine of the U.S. Forest Service and John Owen, the adjacent headhouse was built, and the U.S. Forest Service added the two ranges of greenhouses. Two sections of the first range are used by the department in addition to a virology growth chamber room, which was the only space available for a virology lab when Kuhn arrived in 1968. The College Station Road greenhouses were built in 1970.

Confronted with an impossible situation, John Owen set about solving the problems with amazing energy and dedication. As chairman of the Division of Plant Pathology from 1959, he vigorously promoted the interests of the individual pathologists in the departments at Griffin and Tifton as well as in his own department at Athens. He was instrumental in establishing a Department of Plant Pathology in the Extension Service in 1959. He was responsible for obtaining the appropriation for the Plant Sciences Building and had the first draft of the architect's plans by 1966. He obtained the first major research grants for the financially-starved department from CSRS (peach decline), the Georgia Cotton Commodity Commission, and the National Cotton Council in 1966 and 1967. These and subsequent grants for cotton research were immediate factors in the expansion of the department in the latter half of the 1960s.

In 1960 courses listed in the catalogue were:

353. Elementary Plant Pathology. Owen
356. Diseases of Field Crops. Owen
357. Diseases of Horticultural Crops. Owen
358. Agricultural Genetics. Fleming
383. (Forestry) Forest Pathology. Thompson
401. Plant Genetics. Fleming
402. Plant Breeding. Fleming
420-21. Mycology. Owen
425. Nematology. Owen

W. M. Powell joined the faculty in 1960 and took over the course in nematology and most of the undergraduate instruction. George Thompson died in 1961 and was replaced by John S. Boyce, Jr. New faculty positions were filled by Kenneth E. Papa in 1964, Floyd F. Hendrix, Jr. in 1965, and Ronald W. Roncadori in 1966. Dick Hanlin commuted from Griffin to teach the mycology course in 1964 and 1965, and Cedric Kuhn commuted from Griffin to offer a new course in virology in 1962, 1964, and 1966.

In 1966 John Owen became Director of Experiment Stations, and E. S. Luttrell moved from the Griffin Station to take his position as head of the Department at Athens and chairman of the division. Jack Boyce had resigned his position, effective June 30, 1966, and Dick Hanlin moved from the Griffin Station into this position in December 1966. In 1968 new positions were filled by Cedric Kuhn (who moved from the Griffin Station) in virology, Willard K. Wynn in physiology, States M. McCarter in bacteriology, and George W. Bird in nematology. In addition, Jack Taylor and his position were transferred from the Mountain Station at Blairsville to Athens. At the insistence of the new chairman of the Agronomy Division, who wanted all plant breeding in the Agronomy Department, Attie Fleming and his position and the corn breeding project were transferred to agronomy.

Luttrell retired from administration at the end of 1969, and his position as department head and division chairman was taken by then head of Extension Plant Pathology, W. N. Garrett, at the beginning of 1970. In the decade of the '60s the faculty increased from four to 13, one position had been lost, 10 had been added. Three faculty members and the two secretaries remained in the Food Science Building, one was left in Livestock-Poultry, and the other nine were in renovated offices and laboratories on the second floor and in the basement of Barrow Hall.

Research expanded beyond mycology into nematology, virology, bacteriology, physiology, quantitative genetics, and disease control with cotton, peaches, apples, corn, vegetables (tomatoes, cowpeas,) peanuts, and turf as major crops under investigation. The Ph.D. in plant pathology was authorized in 1963, and the first doctorates were granted in 1967. In early 1966 Attie Fleming had had the undergraduate courses grouped separately in the catalogue and designated plant genetics (GEN) as opposed to the plant pathology (PAT) designation. There were revisions and re-revisions of the curriculum. Mycology courses were joint-listed with Botany. The following courses appeared in the catalogue for 1970:

Plant Genetics

358. Principles of Genetics. Fleming (Agronomy), Papa, Kozelnicky.
359. Genetics Laboratory (Agronomy). Fleming
401. Plant Genetics. Fleming
402. Plant Breeding. Fleming
404. Physiological genetics. Papa

Plant Pathology

353. Elementary Plant Pathology (3 quarters). Roncadori, McCarter, Bird
356. Crop Diseases. Kozelnicky
383. Forest Pathology (Forestry). Hendrix
420. Mycology. Hanlin
423. Virology. Kuhn
425. Plant Nematology. Bird
426. Nematode Diseases of Plants. Powell

428. Diagnosis and Control. Taylor
429. Bacterial Plant Pathogens. McCarter
805. Research Methods in Plant Pathology. Hendrix
820. Quantitative Genetics. Papa
821. (BOT) Biology of Ascomycetes. Hanlin
822. Phytopathology: Principles and Theory. Luttrell
823. Physiology of Parasitism. Wynn
824. Physiology of Fungi. Wynn
832. (BOT) Biology of Phycomycetes. M.S. Fuller, Botany
833. (BOT) Biology of Basidiomycetes. Eldon Ross, U.S. Forest Service

The 1970s was a decade of consolidation following the revolution of the 1960s. The faculty remained unchanged except for the resignation of G. W. Bird and his replacement by Richard S. Hussey in 1974. The shell of the Plant Sciences Building (dedicated to Julian H. Miller in 1976) was completed in 1972, and the reunification of the plant pathologists began. Nearly all of the fixed equipment (except for sink cabinets and hoods) was omitted and had to be acquired room by room. (This process was not entirely completed in 1985: the fixed equipment planned for the Miller Herbarium was still limited to a single sink cabinet.) Space was inadequate before the building was occupied, and immediate subdivisions and reallocations of space had to be made to accommodate the great increase in faculty in the latter 1960s. The long wait, however, did result in an unaccustomed adequacy of facilities, all new and modern.

The great advance in the '70s was in supporting funds for equipment and, more importantly, for operating funds and technicians. The operating budget in 1966 was incredibly low, even by the standards of the experiment station at Griffin. There were no technicians prior to 1970. The teaching budget still is relatively low, and the standards the faculty attempt to maintain depend to some extent on indirect support from research funds.

Changes in the curriculum were more in the nature of shakedown than expansion. The most important addition was the authorization of a professional master's degree, the Master of Plant Protection and Pest Management (MPPPM – the P-cubed, stutter-P, or Plant Protection Program) offered jointly by plant pathology, agronomy, horticulture, and entomology. A companion plant protection option at the undergraduate level was offered by plant pathology. The MPPPM degree was based on a solid academic program of established courses in plant pathology, entomology, agronomy, and horticulture. It could be, and had been, duplicated in M.S. degree programs of study designed for individual students. The only significant difference was the provision for two quarters of internships in industry, extension, private practice, agriculture, or any prospective area of employment.

A report on the internships, which was treated in the same way as the M.S. thesis, was required. The only new course developed specifically for this program, "Integrated Plant Pest Management," was soon discontinued. Although the MPPPM program was designed to offer increased options for employment at the master's level, students who decided to continue for the Ph.D. were acceptable to graduate schools across the country. On the other hand., the recruiters brought to the campus through this program offered the same opportunities to students with the M.S. degree.

Upon the death of Jack Taylor in 1975, his course in Diagnosis and Control was carried on by Floyd Hendrix, and his position was used to initiate an epidemiology program. Thomas S. Starkey assumed the position in 1977 and was replaced by Forrest W. Nutter, Jr. in 1984. George

Kozelnicky, who had taught the courses in "Crops Diseases" and "Turfgrass Diseases" retired in 1982. His position was reoriented toward the molecular biology of disease and in 1984 was filled by Timothy P. Denny. Research in molecular biology was expanded in 1985 with the joint appointment in the Departments of Microbiology and Plant Pathology of Mark Schell. Mark is currently working on the molecular basis of pathogenesis in *Pseudomonas solanacearum*. Most of the changes in course listings in the catalogue came after 1980. In 1984-85 courses listed were as follows:

Plant Genetics

GEN 358. Principles of Genetics. Fleming (Agronomy), Papa (4 quarters/year)

Plant Pathology

353. Elementary Plant Pathology. McCarter, Roncadori, Wynn (3 quarters/year)
356. Crop Diseases (listed but in limbo)
357. Turfgrass Diseases (listed but in limbo)
383. (Forestry) Forest Pathology. Hendrix
391. Plant Pathology Internship. Powell
406. Etiology of Plant Diseases. Hussey, Kuhn, McCarter
613. Internship in Crop Protection and Pest Management. Garrett
420. (BOT). Introductory Mycology. Fuller (Botany) or Hanlin
425. Plant Nematology. Powell
428. Diagnosis and Control of Diseases. Hendrix & Powell
701. Advanced Forest Pathology. Hendrix
820. Applied Mycology. Hanlin & Roncadori (summer, previously called Field Mycology)
821. (BOT). Biology of Ascomycetes. Hanlin
827. Biology of Plant Parasitic Nematodes. Hussey
829. Bacterial Plant Pathogens. McCarter
831. Epidemiology of Plant Diseases. [Nutter]
832. (BOT). Biology of Phycomycetes. Fuller (Botany)
833. (BOT). Biology of Basidiomycetes. Porter (Botany) & Hanlin
835. Plant Virology. Kuhn
840. Host-Pathogen Interactions. [Denny]

The listing under plant genetics had been reduced to the introductory course, GEN 358, which was taught every quarter by Fleming in agronomy or Papa in plant pathology. The advanced courses had been discontinued or transferred to agronomy. "Plant Genetics" had been dropped from the title, and the designation was shortened to "Department of Plant Pathology."

Along with joint listing of courses in mycology by the departments of botany and plant pathology, Melvin S. Fuller and David Porter of botany have had joint appointments in the Department of Plant Pathology since 1975, and Dick Hanlin and Luttrell have had joint appointments in botany.

No USDA-ARS pathology personnel have been stationed in the department at Athens, and only a few have been employed in the USDA Richard B. Russell Research Center on College Station Road since it opened in 1967. Charles Bacon, a fungus physiologist in the Russell Center, has had adjunct appointments in the department and in the graduate school since 1979. He has carried out collaborative grant research on Clavicipitaceous fungi and pasture toxicities with the department and has served as major advisor for three doctoral students. Pathologist David E. Zimmer has served as director of the Russell Research Center since 1980. Since 1967 plant

pathologist-biochemist Horace G. Cutler has been stationed in Georgia by the USDA as a plant physiologist working on the mode of action and biochemistry of biologically active natural products from microorganisms. He was associated with the Department of Agronomy at the Coastal Plain Station for 13 years before moving to the Russell Center in 1980.

Although the work of Miller and Thompson was essentially mycological, it was sufficiently oriented toward fungi parasitic on trees (Miller 1950) to establish an area of interest in common with forest pathologists of the U.S. Forest Service, who have been stationed at Athens since 1940. This close relationship was advanced also by the friendship of Miller and W. A. Campbell, who was the leader of Forest Service research in pathology at Athens from 1946 until his retirement in 1971. Miller and Campbell were drawn together by a common interest in mycology. This relationship continued with John Owen when he replaced Miller as department head. Andy Campbell was influential in the hiring of Boyce, Hendrix, and Roncadori from the Forest Service, and for many years he continued an extensive collaborative study of taxonomy of the genus *Pythium* with Floyd Hendrix.

When the department moved into temporary quarters in the new Food Science Building in 1960, John Owen found new laboratory space for Craig Bryan and Bratislav Zak who, like the first USFS pathologists in 1940, had been accommodated in the School of Forestry. Fred Matthews and John Ruehle were added to this group in 1961, and on the death of George Thompson in 1961, Jack Boyce, Jr., an experienced forest pathologist from the Southeastern Forest Experiment Station in Asheville, was hired to take Thompson's position in forest pathology. Unfortunately, this initiative was not maintained. Increasing numbers of forest pathologists, along with other Forest Service personnel, were drawn together in a new Forestry Sciences Laboratory in 1963, and the Plant Sciences Building adjacent to it was not completed and occupied by plant pathology until 1972. Jack Boyce resigned from the department in 1966, and no further research in forest pathology was undertaken.

The pathology staff of the Forestry Sciences Lab has nearly equaled that of the Department of Plant Pathology. Some of these USFS pathologists have taught regular courses as special needs arose, and most have had adjunct appointments on the Departmental faculty and on the graduate faculty. The U.S. Forestry Sciences Laboratory has been a great asset to the University of Georgia, but to take full advantage of this asset it would be necessary to maintain a complementary program in forest pathology in the Plant Pathology Department. On the other hand, dependence on USFS forest pathologists, although too great, did permit the department to fill the gaps in basic areas of the teaching program such as virology, bacteriology, physiology, and epidemiology. It is probably more regrettable that the department was not in a position to take full advantage of the opportunities generated by stress on basic research in the '60s. The pressure for movement in this direction continues, perhaps with greater emphasis today.

USDA Forest Service
Southeastern Forest Experiment Station
Athens Research Center, Forestry Sciences Laboratory

U.S. Forest Service research is organized administratively into geographical regions with research in each region carried on at a forest experiment 'station. In the southeastern region, the headquarters of the Southeastern Forest Experiment Station is at Asheville, N.C., although little remains in Asheville except the administrative offices. Most of the research in forest pathology is now done at the Southeastern Forestry Sciences Laboratory adjacent to the Miller Plant Sciences Building on the University of Georgia campus.

The Division of Forest Pathology originated in the Bureau of Plant Industry (now ARS, the Agricultural Research Service) of the U.S. Department of Agriculture. In 1950 Carl Hartley (1950) was able to write that, whereas the original laboratory of plant pathology under Erwin F. Smith and the disease divisions that sprang from it (e.g., the Office of Cotton, Truck, and Forage Crop Diseases) had been incorporated into the various crop divisions, the Division of Forest Pathology had continued as an independent research organization devoted principally to pathology because there was no crop division in which it could be put, silviculture being in another bureau, the Forest Service. He underestimated administrative ingenuity. In 1953 the Division of Forest Pathology was transferred to the Forest Service, first in the Division of Forest Management but in 1956 into the separate Division of Forest Disease Research. Relationships with the Forest Service prior to 1953 had been close. Forest pathologists in the field had been placed in Forest Service facilities, and there had been agreements on division of responsibilities (wood preservation, for example, being in the province of the Forest Service).

The Southeastern Station opened as the Appalachian Forest Experiment Station in Asheville in 1925. The station was closed in 1931 and reopened in 1933. In 1946 it became the Southeastern Forest Experiment Station, covering Virginia, North Carolina, South Carolina, Georgia, and Florida. Georgia and Florida were transferred in from the Southern Station. Tennessee went to the Southern Station and West Virginia to the Northeast Station. In 1940 Donald J. Weddell, Dean of the School of Forestry in the University of Georgia, brought a disease of shortleaf pine that became known as "little-leaf" to the attention of forest pathologists at Asheville (according to Verrall 1982; Hartley 1950, indicated that the disease had been under investigation since 1929). In response, two pathologists were stationed in the Forestry School at Athens, Lyle W. R. Jackson in 1940, and Thomas S. Buckhanan in 1941. For a brief period in 1940-42 they were joined by Bowen S. Crandall. Buckhanan went off to the U.S. Marines in 1944; Jackson joined the faculty of the Forestry School in 1946. W. A. Campbell replaced Jackson on the little-leaf project. He was joined by Bratislav Zak in 1947 and W. Craig Bryan in 1955, both of whom also worked on mycorrhizae. In 1954 the Athens-Macon-Cordele Research Center was established as the first satellite of the Southeastern Station. Andy Campbell became research center leader with offices at Athens and Macon.

Other satellite centers were established at Olustee, Florida (near Lake City, about 30 miles north of University of Florida-Gainesville) in 1960 and at the Research Triangle Station in North Carolina (about 15 miles east of N. C. State-Raleigh) in 1962.

A. Alfred Foster worked on forest nursery diseases in Macon from 1953 to 1961. He was joined by Charles S. Hodges in 1955 and Samuel J. Rowan in 1958. Chuck Hodges got his Ph.D. with Julian Miller in 1959 and moved on with the Forest Service to N.C. State. Jimmy Rowan obtained his M.S. degree under Julian Miller in 1958 and his Ph.D. in 1967 and transferred to Athens in 1968. Ron Roncadori worked at Macon from 1962 to 1964 and at Athens from 1964 to 1966.

At Athens Bryan and Zak moved from the Forestry School to the Department of Plant Pathology when the department occupied space in the Food Science Building in 1960. They were joined in 1961 by Frederick R. Matthews, who had been working on pine cone rusts at the Olustee Center in Florida and John L. Ruehle who initiated work on nematodes of forest trees.

USDA Forest Service Pathologists, Georgia, 1940 to 1985

1940 UGA School of Forestry

40 ---- Jackson--46 Campbell--58 (Macon)----------
40 ---- Crandall--42//
41 ---- Buchanan--44//47 Zak ----------
55 ---- Bryan ----------

1960 Department of Plant Pathology, Food Science Building

----------Zak --------- 62//
----------Bryan ----------
(58 Florida) ----------61---Matthews ----------
61 --- Ruehle ----------

1963 U.S. Forestry Sciences Laboratory

(Macon) ------- (61 Raleigh)--63 --------Campbell ---------- 71//retired
---------- Bryan ---------- 79//retired
58 Macon-62-Athens-64 Macon-68 ----Rowan ----------
---------- Matthews ----------
---------- Ruehle ----------
(62 Macon) ---------- 64 ---------- Roncadori ---------- 66//
63 ---------- Ross ---------- 71//
(62 Raleigh) ---------- 66 ---------- Marx ----------
66 ---------- Dwinell ----------
(59 Asheville) -------- 68 ---------- Powers ----------
(57 Asheville) ---------- 71 ---------- Berry ----------
(64 Macon) ---------- 72 ---------- Miller ---------- 79//
76 -------- Barrows-Broaddus ----------
(61 Asheville--65 Raleigh)------ 83 ---- Kuhlman ----------
53 Foster, (Macon) ---- 61//
55 Hodges, (Macon) ---- 57//

Andy Campbell moved to the Research Triangle in North Carolina in 1961. The Research Triangle Center established there in 1962 was intended as the center for research on soil-borne organisms, but in 1963 Campbell and the Soil-Borne Organisms Project were transferred to Athens, where Bryan, Campbell, Matthews, and Ruehle entered new quarters in the Forestry Sciences Laboratory., Zak had moved to the Pacific Northwest Station in 1962. The Forestry Sciences Laboratory was the first Forest Service research facility located on a university campus, and this favorable location was a factor in the growth of the Athens Center, until in 1985 essentially all research in forest pathology in the southeastern region is carried on here.

In 1985 all work in pathology In the Forestry Sciences Laboratory is divided between two areas, the Institute for Mycorrhizae with Donald H. Marx as director and the Diseases of Plantations and Seed Orchards Project with Harry R. Powers as project leader. The latter project includes all research on diseases. The Mycorrhizae Institute can be traced back to the little-leaf

project, which directed attention to soil-borne organisms, and the early work of Zak and Bryan on mycorrhizae. Eldon W. Ross joined the soil-borne group of Campbell, Bryan, and Ruehle in 1963 and worked on annosus root rot of pines until he moved into administration in 1971. Don Marx transferred from the Research Triangle in 1966 and became project leader when Andy Campbell retired in 1971. He became director of the institute for Mycorrhizae when it was organized in 1976. Charles R. Berry transferred from Asheville in 1971. Craig Bryan retired in 1979, leaving Marx, Ruehle, and Berry assigned to mycorrhizae.

The disease project is a fusion of the pine rust investigations that started with Fred Matthews in 1961 and the nursery disease investigations started in Macon by Al Foster. The nursery disease aspect is still one of Jimmy Rowan's responsibilities along with work on fusiform rust. L. David Dwinnell since 1966, Tom Miller in 1972-79, and Jane Barrows-Broaddus since 1976 have worked on rusts and pitch canker of pines. Harry Powers, although previously in charge of work on fusiform rust of pines, did not move from Asheville to Athens until 1968. E. George Kuhlman, who worked on annosus root rot, pitch canker, and fusiform rust of pines, as well as chestnut blight at Asheville and the Research Triangle, transferred to Athens in 1983. The one loss has been Tom Miller who moved to the Olustee Center and University of Florida at Gainesville in 1979 as project leader of an integrated pest management program.

In 1964, in one of the oddities that result from administrative overindulgence in creative thinking, the Division of Forest Disease Research and the position of chief of the Division which had been held by George Hepting (1953-62) and Harry Powers (1962-64) were abolished. Pathology was merged into a Division of Fire, Insects, and Diseases with T. S. Buckhanan returning to the southeast as assistant director for fire, insects, and diseases. The people in the trenches responded by dubbing themselves the "bug, blight, and blaze boys." This was reflected in the teaching in the Department of Plant Pathology when the Forestry School attempted to merge the courses in forest pathology and forest insects into a single Bug and Blight Course. This was soon abandoned, with the blessing of Floyd Fendrix who has taught the course in forest pathology since 1973. (Floyd Hendrix has not figured in this account of forest service pathologists in Georgia because, like Jack Boyce, he was hired by the University directly from the Southeastern Station in Asheville.)

The Forest Service has had more direct and more beneficial effects on the teaching program. Eldon Ross taught the course in biology of Basidiomycetes, PAT (BOT) 833, when it was first offered in 1970; and for several years after Eldon left, Tom Miller joined with David Porter in teaching the course, taking responsibility for the rusts. Andy Campbell, following his retirement from the Forest Service in 1971, taught the introductory course (383) in forest pathology in 1971-72. Forest pathologists have served on the committees of many graduate students and as major advisors of two master's and one doctoral student.

Department of Plant Pathology
Tifton

Harvey Rankin, who in 1935-37 was the first extension plant pathologist in Georgia, after extension work in Pennsylvania, service in the U.S. Army in World War II, and a period of convalescence, returned to the Coastal Plain Station in 1947 as the first head of the newly created Department of Plant Pathology. At that time, however, the USDA had maintained a pathologist at the Tifton Station for many years. When John Gaines, USDA plant pathologist on tobacco diseases, was stationed at Tifton in 1929, he was the fourth pathologist in the Georgia system

after B. B. Higgins (1913), Naomi C. Woodroof (1924), and Frank Van Haltern (1926) at the Griffin Station; and at the time of his retirement in 1970, Gaines was second only to B. B. Higgins in length of tenure, and only by one year. Gaines worked on all aspects of tobacco disease control, including rotations, chemical applications to soil and foliage in plant beds, and a continuing program of breeding tobacco for resistance to nematodes and Fusarium wilt. A comment in his report at the first meeting of the Association of Georgia Plant Pathologists in 1950 is worth quoting because, although highlighted in tobacco, it applies to all crops: "A control of either diseases or insects can not be considered practical unless it is accomplished without loss in quality of the leaf. Acceptance of control measures for diseases or insects before the matter of quality has been determined may result in serious losses."

The first state-employed plant pathologist at Tifton was Naomi C. Woodroof who, after resigning from the Griffin Station in 1933, was hired on a temporary, part-time basis on peanut project funds administered through Dr. Higgins at the Griffin Station. She worked full time for the next 17 years, for part of this time with supplementary support from the USDA. In 1937 she and Harvey Rankin, then extension pathologist, began work on fungicide dusts for peanut leaf spot control. Mrs. Woodroof was primarily responsible for demonstrating the effectiveness of foliage applications of fungicides in peanut production, and she participated in all aspects of the peanut project at Tifton with Higgins, Garren, Boyle, and Bailey. In her field work at Tifton she was most closely associated with agronomists and most especially with Red Parham, head of the Agronomy Department.

Except for Mrs. Woodroof (1933-50) and Harvey Rankin (1947-61), the entire history of plant pathology at the Tifton Station prior to 1960 belongs to the USDA. At their peak in the latter half of the 1950s USDA pathologists and nematologists occupied six positions to the one state position filled by Harvey Rankin. A. L. Taylor established the USDA Nematology Laboratory at Tifton in 1935. He was joined by C. W. McBeth in 1938. These two nematology positions have been maintained (except for an 11-year break [1945-56] in the second position), until the present, the first line running from Taylor (1935-46) to J. H. Machmer (1947-55) to Joseph M. Good (1955-64) to Norman A. Minton (1964-present); the second line from McBeth (1938-45) to A. E. Steele (1956-64) to Charles M. Heald (1964-67) to A. W. Johnson (1967-present). For a short period (1964-69) a third nematology position was filled by B. B. Brodie. For the past 20 years these positions have been stable and productive with Norman Minton and Bill Johnson responsible for all nematology research at the Coastal Plain Station.

Department of Plant Pathology, Tifton, 1947 to 1985 (USDA, 1929 to 1985)

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33 Woodroof ---------- 50//
47 Rankin ---- 61 Jackson ---- 68 Littrell--82 Stouffer -------
61 Jenkins------ 65 Sobers ---------- 80 Gitaitis --------
62 Dukes -------- 69 Flowers---------- 77 Csinos ----------
65 Bell ----------
66 Littrell ----- 68//69 Summer ----------
66 Doupnik ---------- 73 Wilson ----------
80 Harper---- 84 Beaver -------
82 Littrell ----------

U.S. Department of Agriculture, Pathology

29 Gaines ---------- 70//
47 Borders----- 59/61 Morton ----- 65 McCarter ---------- 68//
50 Gill ---------- 79//
52 Wells ----------
61 Toler --------- 65 Gay --------- 72//

U.S. Department of Agriculture, Nematology

35 Taylor 46/47 Machmer----- 55 Good ------ 64 Minton ----------
38 McBeth — 45/56 Steele ----- 64 Heald ---- 67 Johnson ----------
64 Brodie ---------- 69//

Al Taylor did the early survey work on nematode problems in Georgia and carried out research on crop rotations. He was one of the instructors, and Lytt Boyle from the Griffin Station was one of the students in the two nematology workshops (10-day short courses) organized by the Southern Regional Research Technical Committee and held at N. C. State in 1954 and at Auburn University in 1955. Taylor, like most of the nematologists in the United States at the time, was a disciple of Nathan A. Cobb, who created nematology. The supply of nematologists was significantly expanded by retreads from these two courses.

Machmer established the importance of ring nematodes on peanuts, and Good continued the work on lesion, sting, and ring nematodes and other ectoparasites on many crops. Norman Minton has extended investigations on host-parasite relationships to the present, working especially on forage crops, soybeans, cotton, and peanuts. He has searched for sources of resistance and tolerance to nematodes and has cooperated in breeding programs to incorporate resistance into improved varieties, attempting to control nematode damage through a combination of host-resistance and management of nematode populations.

McBeth, who was associated with Al Taylor at Tifton until the mid-forties, also worked on soil fumigation for nematode control but with special emphasis on perennial cover crops. This work was resumed in 1956 by Steele, who demonstrated the usefulness of DBCP, organophosphate, and carbamate nematicides. In 1964 (the year in which Norman Minton replaced Joe Good), Charles Heald replaced Steele, and Bill Brodie was added. Heald worked on turf and ornamentals. Brodie developed an integrated management program of summer cover, rotations, and nematicides for tomato transplants. Since 1967 Bill Johnson has worked on integrated management systems utilizing nonhost crops, crop rotation, resistant cultivars, soil tillage methods, and nematicides for various crops. He is now a cooperator on the Mellon grant research project on intensive cropping systems.

In 1947, at the same time Harvey Rankin returned as head of the new Department of Plant Pathology, Huey Borders, another early extension pathologist, returned, this time as USDA pathologist for research on vegetable transplants. In addition to John Gaines on tobacco and Huey Borders on vegetables, the USDA added in 1950 Denzell Gill on ornamentals' particularly azaleas, camellias, and lilies; in 1952 Homer D. Wells on forage crops and turf; and in 1961 Robert Toler on virus diseases of cowpeas and beans. This brought the USDA commitment in 1961 to a total high of five positions, in addition to the two in nematology. These USDA positions have been phased out by attrition as the staff of state pathologists has expanded.

After Huey Borders left in 1959 the work on diseases of vegetables and transplants was carried on by Donald Morton (1961-65) and States McCarter (1965-68). When McCarter joined the faculty of the Athens department in 1968, he continued his work on tomato diseases, and his USDA position was closed out. Likewise, the program on virus diseases of cowpeas and beans was continued by Danny Gay after Bob Toler left for Texas A&M in 1965, but this position also was closed when Danny Gay joined the Extension Department in 1972. John Gaines retired in 1970 with 41 years of service at Tifton, and Denzell Gill retired in 1979 with 29 years.

Currently, Homer Wells is the only survivor. With 33 years, he is second among Georgia plant pathologists in length of service. Throughout his tenure Homer has been associated with Glenn Burton, USDA geneticist-agronomist, in the breeding and management of turf and forage Bermudagrasses, Bahia grass, Sudan grass, and pearl millet. He has however, worked on a variety of problems with many USDA and state pathologists at Tifton and Griffin. The lupine breeding project carried out by Homer and USDA cytologist Ian "Scotty" Forbes in the 1950s and '60s in collaboration with the Australia Department of Agriculture is a model for the production and continual upgrading of a cultivar through the step-by-step addition of resistances to diseases and of other desirable characters such as cold resistance.

Outnumbered as he was by specialists from1947 until he retired in 1961, Harvey Rankin felt that he could be most useful as a general pathologist working cooperatively with agronomists and horticulturists wherever he was needed and giving special assistance to breeders of corn, cotton, and sweet potatoes in testing lines for disease resistance. When the cotton breeders wanted to infest an acre with *Fusarium oxysporum*, Harvey filled the bin used for steam-sterilizing soil with oats, mixed starter cultures he had prepared in flasks with the steamed oats, and, when it was time, called the breeders to bring their truck over. Harvey also carried on spraying and dusting trials with new fungicides and insecticides on tomatoes, cantaloupes, watermelons, and roses and conducted seed treatment tests with oats and corn.

His primary personal interest was in internal cork of the sweet potato. He demonstrated that the virus was transmitted by aphids but was unable to obtain satisfactory control by spraying with insecticides. He showed that expression of symptoms was influenced by environment and screened 72 varieties and breeding lines for resistance. Although Puerto Rico, the leading variety grown at the time, was highly susceptible, the majority of the varieties tested showed no symptoms.

Harvey Rankin's major contribution to plant pathology in Georgia was himself. Harvey was a remarkable person both in the depth and breadth of his scholarship and in his understanding of human nature. He was a picture-book Southern Gentleman: a short portly figure, a ruddy face with a neat white moustache and a cropped fringe of white hair, earthy but with a wonderfully courtly manner--the real thing all the way through. He would have been completely at ease in the court of St. James's or in a convention of thugs. In startling contrast, he had, when the occasion required it, a facility with language that would make a dockwalloper blanch. His words usually were softened by good humor, but the point was never in doubt. The tradition Harvey left was of cooperation, courtesy, consideration, and, above all, of integrity and complete openness.

With John Owen providing strong leadership as division chairman, in the period 1961-66, the faculty Increased from one to six. Curtis R. Jackson was brought in from the Gulf Coast Experiment Station at Bradenton, Florida, to replace Harvey Rankin as department Head in 1901. Curtis worked on a broad range of crops, but he wisely concentrated on peanut diseases,

gradually taking over the great peanut project from the Griffin Station. He was able to focus his research effort to a greater extent because two new positions were added in 1961-62. These positions were filled by a pair of N.C. State graduates, Samuel F. Jenkins in 1961 with interests in tobacco and vegetable diseases and Phillip D. Dukes in 1962 with interests in tobacco and soil-borne diseases.

Jenkins and Dukes collaborated on tobacco disease projects, but the Dukes position established the line of research on tobacco diseases and soil-borne diseases that has continued to the present. This research was taken up by Randel A. Flowers in 1969 when Phil Dukes accepted a USDA position and moved to South Carolina and was continued by Alexander S. Csinos when Randel Flowers resigned to enter private practice in 1977. Jenkins returned to North Carolina in 1965, and his position was subsequently used to meet needs for expanding resources in the basic sciences. Edward K. Sobers was appointed to the position in 1965 as a mycologist. His primary interest was in the morphology and taxonomy of *Cylindrocladium* and in the diseases, including a root-rot of peanut, caused by species of this genus. When Sobers resigned, a reassessment of needs led to the appointment in 1980 of a specialist in bacteriology, Ronald D. Gitaitis. Gitaitis has worked primarily on bacterial diseases of vegetables, especially on crucifers, cowpeas, tomatoes, and potatoes.

The second expansion of the department came in 1965-66 when three additional positions were created for a total of six. Durham K. Bell joined the faculty in 1965. With 20 years of continuous service, he is now the senior member of the Tifton department. Durham has devoted his attention to soil ecology and soil-borne diseases, the biology of *Rhizoctonia*, and, with Homer Wells, biological control. His major effort, however, has been on soil-borne diseases of peanuts in which he has complemented the work of Curtis Jackson and later of Bob Littrell on foliage diseases. A bulletin he and Curtis Jackson published in 1969 (Jackson, C. R., and D. K. Bell, 1969. Diseases of peanut [groundnut] caused by fungi. Univ. Georgia Coll. Agr. Exp. Stns. Res. Bull 56: 1-137) is an integration of knowledge of fungus diseases of peanuts based on personal research and the world literature and is worth noting because it is an unusual and excellent example of the use to which the Research Bulletins should be put. Specific research results should first be published in the primary journals.

In 1966 Robert H. Littrell was appointed to a new position for research on diseases of vegetables. He replaced Curtis Jackson as head of the department in 1968 when Jackson became resident director of the Griffin Station. Littrell also took over Jackson's research on peanut diseases with emphasis on leaf spot control. He later took on additional responsibilities for diseases of pecans. Fungicidal control in this period was complicated by the introduction of benomyl and the subsequent development of tolerance to this fungicide by the pathogenic fungi causing leaf spots of peanut, then pecan scab, and finally peach scab. Littrell's position on vegetable diseases was taken by Donald R. Sumner in 1969. Don has become recognized as an authority on plant diseases in multiple cropping systems. He and Bill Johnson (nematology) have been the chief collaborators from the department on a multidisciplinary team of state and USDA scientists that has been supported since 1977 by a Richard King Mellon Foundation grant for study of "irrigated multiple-cropping systems."

Another new position created in 1966 was filled by Ben L. Doupnik. This position was a response to the aflatoxin problems threatening the movement of major Georgia crops, particularly peanuts and corn. Following Doupnik's return to Nebraska in 1973, the mycotoxin work was continued by David M. Wilson, Jr. Wilson was responsible for the establishment of the Mycotoxin Analysis Research Center and for the development of analytical methods. Although

the Mycotoxin Center was located in the Department of Plant Pathology, it was designed as a service laboratory for all scientists involved in mycotoxin research. Wilson, therefore, collaborated on a great variety of projects. In 1980 a chemist, James L. Harper, was appointed Research Coordinator of the Mycotoxin Center, and Dave Wilson was freed to pursue his own research. Rodney Beaver replaced Harper in 1984.

Bob Littrell retired from administration in 1982 to continue his research on peanuts and pecans, and his position as head of the department was taken by Richard F. Stouffer, whose interest was in virus diseases of fruit trees. The faculty in 1985 consists of Stouffer, virology, department head; Gitaitis, bacteriology; Csinos, soil-borne diseases of tobacco and peanuts; Bell, soil-borne diseases, peanuts; Sumner, corn and vegetable diseases; Wilson, physiology and mycotoxins; Littrell, peanut foliage and pecan diseases; Beaver, research coordinator, Mycotoxin Analysis Center; Wells, USDA, forage crops; Minton, USDA, Nematology; and Johnson, USDA, nematology. The faculty has adequate facilities in the Plant Sciences Building. The Department at the time it was created was housed in the Extension Building on the semicircular driveway facing the front entrance and immediately south of Abraham Baldwin Agricultural College. It moved into new quarters in the Horticulture Building when it was completed in 1963 and into the new Plant Sciences Building in 1974.

Since the Coastal Plain Station is the only station located in the major agricultural production region of Georgia, the Tifton Department of Plant Pathology has been a prime asset to the program of graduate instruction in the University. It has been especially useful in providing training for students interested in working in a major production area in the United States and in major crops such as peanuts.

Department of Plant Pathology
Extension

The first extension plant pathologist in Georgia was Harvey W. Rankin who was located at the Coastal Plain Station in Tifton from 1935 to 1937. Harvey carried out a successful cotton seed treatment project based on the research Naomi Woodroof and B. B. Higgins had done at the Griffin Station from 1924 to 1933. In early 1937 a representative of the Freeport Sulfur Co. came to Athens and offered funds for extension and research projects on dusting peanuts for leaf spot control. Harvey set up demonstrations in growers' fields, and the research funds went to Mrs. Woodroof who by this time had moved to Tifton. This extension position at Tifton was filled in succession by S. B. Fenne (1938-39) and Huey Borders (1940-41). After Huey Border's departure for service in World War II, there was no other Extension plant pathologist until 1959.

As division chairman, John Owen promoted the formation of an Extension Department of Plant Pathology, and in 1959 Luther Farrar moved from his research position at the Griffin Station into a new position as head of the Extension Department at Athens, but Luther soon moved on into industry. Wiley N. Garrett became head of the department in 1962 and laid the basis for the continuing development of extension plant pathology. A second member of the department, Samuel S. Thompson, Jr., was added in 1962 and stationed at Tifton, taking up where the short Rankin-Fenne-Borders line had ended 21 years earlier. Garrett's primary interest was in diseases of cereals, cotton, fruits, and nuts, Thompson's was in diseases of tobacco and peanuts; but at this point both had broad responsibilities in addition to those for their areas of specialization.

At Athens Norman E. McGlohon was added to the faculty to cover vegetables in 1965. When Wiley Garrett became head of the teaching-research department at Athens and chairman of the Division of Plant Pathology in 1970, Norm McGlohon moved into his position as head of Extension Plant Pathology with responsibilities for fruits and nuts. Ralph E. Motsinger was brought in to work on vegetables. He subsequently established the nematology laboratory for nematode assays of soils from all parts of Georgia and cooperated on nematode diseases of all crops. In 1973 a third position at Athens for work on ornamentals was filled initially by Timothy H. Bowyer, who was replaced in 1976 by Eugene H. Moody on diseases of ornamentals, forest and shade trees, and turf. A fourth position at Athens in 1979 was filled by Edward A. Brown, who took over the work on turf and forest and shade trees.

Department of Plant Pathology, Extension, 1959 to 1985

Athens Four Towers Building

59 Farrar---62 Garrett----- 70 McGlohon ----------
65 McGlohon --------- 70 Motsinger ----------
73 Bowyer ---------- 76 Moody ----------
79 Brown ----------

Tifton Rural Development Center

35 Rankin ---- 37//38 Fenne ---- 39 Borders ---- 41//62 Thompson ----------
66 Crawford ----------
72 Gay ----------
75 Arnett ----------
78 Bertrand ----------

At Tifton Sam Thompson was joined in 1966 by Johnny L. Crawford who took responsibilities for disease and nematode control on cotton and in 1972 added responsibilities for corn and grain sorghum. In 1972 J. Dan Gay, a virologist with the USDA in Tifton, joined the Extension Department as specialist for vegetable diseases. In 1975 a fourth position at Tifton was filled by James D. Arnett, Jr., who took over responsibility for tobacco diseases from Sam Thompson and added work on fruits and nuts. Sam Thompson had taken over cereal diseases when Wiley Garrett left Extension to become division chairman. He now assumed additional responsibilities for diseases of soybeans. In 1978 Paul F. Bertrand, the fifth extension pathologist stationed at Tifton, began work on diseases of pecans, peaches, and small fruits; while Jim Arnett continued work on diseases of tobacco and soybeans and Sam Thompson continued on peanuts and small grains.

The extension pathologists at Athens were first housed in the Hoke-Smith Extension Annex. In 1974 they moved into renovated quarters in Barrow Hall. Ralph Motsinger at first shared, and later inherited, George Bird's nematology lab in the basement of Barrow Hall. In 1979 all of the Extension plant pathologists at Athens moved into the old dairy barn on College Station Road, renovated imaginatively with a circular conference room and a circular stairway in two of the four silos and renamed "The Four Towers," also occasionally referred to as "The Pits." Here there was adequate space for offices, the plant disease clinic, and the nematology laboratory. At Tifton extension pathologists, along with the research pathologists, at first

occupied the old Extension Building on the semicircular drive facing the road and the railroad. In 1974 they moved into excellent quarters in the new Rural Development Center on the other side of the railroad tracks and nearer Interstate 75.

The Smith-Lever Act of 1914 providing for the Cooperative Extension Service was a response to the need for continuing education in agriculture. The creation of a separate agency for this function also reemphasized the research function of the experiment stations. The USDA Office of Experiment Stations (now CSRS) in 1909 had ruled expressly that the Georgia Experiment Station (Griffin) could not engage in extension work with either federal funds or sales funds. This pretty well took care of the matter since there were no state funds.

There is, however, a tendency for people in research positions to gravitate toward extension work or, where the opportunity is available, toward teaching to get away from research responsibilities and a further tendency to move into administration to escape all of the above. As the first director of Experiment Stations after the 1949-51 reorganization, George B. King, formerly director of the Coastal Plain Station, issued a directive forbidding the writing by research personnel of bulletins that were extension in nature. He suggested that it might be possible to publish a research paper once every five years. This provoked cries of "write or rot." Mr. King was merely trying to find out who was alive.

Encroachment on research areas by extension personnel has never been a problem. In fact, it has been suggested that Extension take over all routine testing such as that of crop cultivars, fungicides, and pesticides. This is not a proposal to stir the blood. If there is time for research by extension pathologists, it would be better utilized in innovative work on disease loss appraisal, epidemiology as practiced in human populations by the U.S. Centers for Disease Control, and analyses of production practices on Georgia farms.

The separation of extension from research and teaching simplifies accounting. It may group extension pathologists with extension specialists in other fields to produce integrated recommendations for production systems. On the other hand, it may isolate research personnel from field problems. Extension pathologists, however, have brought problems to research departments, and have sought help in diagnosis in the field as well as in the laboratory and assistance in putting research results into extension publications. Isolation from field problems is largely self-imposed. Extension pathologists may be more isolated from the basic sciences and have more difficulty in attaining national recognition. The latter is a problem in both teaching and extension. Joint-staffed people with good records in research, which is more easily documented, often have equally good records in teaching or extension or both. Any argument based on national recognition is hard to maintain, however, in view of the fact that Wiley Garrett is the only Georgia plant pathologist ever elected to the presidency of the American Phytopathological Society. For every argument there seems to be a counter. The fact is that although Georgia's organization is unusual (but not unique), it is workable, and Georgia plant pathologists have made it work effectively.

USDA-ARS
Southeastern Fruit and Tree Nut Laboratory
Byron

The Byron Laboratory is in an easily accessible location on Interstate 75 south of Macon. It is concerned with two crops, peaches and pecans, and arose from a fusion of two separate laboratories for these crops. A USDA pecan field station was established at Thomasville in 1918 and moved into a new office and laboratory building at Albany in 1930. A USDA horticulture field station devoted to research on peaches was established near Fort Valley about 10 miles west of Byron in 1920. These two stations were merged in the present facility at Byron in 1969.

The first pathologist on pecan diseases was John R. Cole, who went to the Thomasville Station in 1924. He was transferred to Louisiana in 1929 and returned to the Albany facility in 1935. He retired about six months after he moved to the Byron Laboratory in 1969. The position for pecan disease research was not filled until Richard E. Hunter arrived at Byron in 1975. Hunter was transferred to Texas in 1979, and the position was filled by Timothy R. Gottwald. Gottwald had a vigorous program on the epidemiology of pecan diseases in progress when he was suddenly transferred to Florida in 1985.

The discovery of the phony peach disease in Georgia by D. C. Neal, a member of the staff of the Georgia State Board of Entomology (D. C. Neal, 1920. Phony peaches: a disease occurring in middle Georgia. *Phytopathology* 10:106-109) had led to the establishment of the Fort Valley Field Station in 1920 with Lee M. Hutchins assigned to work on phony. Hutchins proved it to be a “virus" disease, one of the diseases later demonstrated to be caused by xylem-limited bacteria, a finding foreshadowed by Hutchins's final report in 1939 on the "Apparent localization of the phony disease in the woody cylinder" (*Phytopathology* 29:12). Hutchins is memorialized in the American Phytopathological Society's Lee M. Hutchins Award for research in virology. In 1941 Hutchins was drafted from the Division of Fruit and Vegetable Crops and Diseases to head the Division. of Forest Pathology. Work on phony and other peach diseases was taken up again in 1948 by Glenn KenKnight and continued until 1962 when he was transferred to Louisiana.

Southeastern Fruit and Tree Nut Laboratory

USDA Pecan Field Station 1969 Byron Laboratory
1918 Thomasville 1930 Albany
24 Cole --- 29/35 ---------- 69//75 Hunter--79 Gottwald--85 Reilly–

USDA Horticulture Field Station
1920 Fort Valley 1969 Byron Laboratory
20 Hutchins --- 41/48 Kenknight---62//69 Weaver--79/80 Reilly ---------
68 Wehunt--81/82 Nyczepir ----------
70 Kirkpatrick ---- 75//
71 Wells --- 81/82 Pusey ---------

When research on peach diseases was resumed in the late 1960s, the emphasis had shifted from phony to the problem of peach tree short life (the peach replant problem). A nematology position was established in 1968 and filled by E. J. Wehunt. Andrew P. Nyczepir replaced

Wehunt in nematology in 1982. The complementary pathology position was filled by Don J. Weaver in 1969 and he was succeeded by Charles C. Reilly in 1980. In 1970 Hugh C. Kirkpatrick was assigned to Byron to determine the possible role of viruses in peach tree short life. Kirkpatrick also served as director of the Laboratory from 1971 until he left in 1976. In 1971 John M. Wells began work on the postharvest pathology oil peaches and also tried to fill in the gap in pecan disease research. He served as laboratory director from 1976 until he was transferred to New Jersey in 1981. His work on postharvest pathology of peaches was taken over by P. Lawrence Pusey in 1982. In 1985 the current positions on peach diseases are occupied by Reilly, Pusey, and Nyczepir, all three of whom are on the graduate faculty. Reilly has also taken up the work on pecan diseases.

USDA pathologists extended their investigations into Georgia long before any were assigned to the state either in the experiment stations or in any of the existing USDA laboratories. A notable example is the classic study by G. W. Keitt on peach scab (G. W. Keitt 1917. Peach scab and its control. U.S. Dept. Agric. Bull. No. 395. 66 pp.) Although much of the laboratory work was carried out at the University of Wisconsin from 1911 to 1914, most of the field studies were done during the growing seasons of 1910, 1912, and 1913 in a field laboratory at Cornelia, Georgia, and in the orchards of Georgia growers. Some of Keitt's observations were made in Fort Valley orchards.

The Georgia Association of Plant Pathologists

The Association of Georgia Plant Pathologists was organized at a meeting called on June 13, 1950 at the Griffin Station by B. B. Higgins. Those attending were George Thompson, Andy Campbell (U.S. Forest Service), and Bratislav Zak (U.S. Forest Service) from Athens; Harvey Rankin and J. G. Gaines (USDA-ARS) from Tifton; and B. B. Higgins, L. W. Boyle, R. E. Burns (USDA-ARS), E. S. Luttrell, and J. L. Weimer (USDA-ARS) from Griffin. John Cole (USDA Pecan Field Station, Albany) was unable to attend but sent a report on his research. The participants were evenly divided between state and USDA personnel with John Cole's report tipping the balance in favor of the USDA.

The meeting was taken up with reports on research by those present and with the organization of the Association. Harvey Rankin was elected president for the first two years, presiding over the 1950 and the 1951 meetings. Lytt Boyle was the first secretary-treasurer. Most of what is known of the early years of the Association is owed to Homer Wells's long tenure as Secretary-treasurer and as historian. He has preserved a copy of the letter addressed to Julian Miller from Dr. Higgins suggesting the 1950 meeting along with other historic documents. These records are now in the custody of Durham Bell. The Association has been open to anyone engaged in research, educational, commercial, or regulatory activities concerned with plant pathology. It has met regularly since 1950, and the officers have come from all segments of the varied membership. In 1969 the name was changed to the Georgia Association of Plant Pathologists for the frivolous reason of producing the acronym GAPP. In 1982 GAPP became officially affiliated with the American Phytopathological Society.

A List of Georgia Plant Pathologists

Since a large proportion of all plant pathologists who have ever been employed in Georgia are still employed here, this list is as much current directory as historical record. A minimum of biographical data is given to suggest the diversity of talents brought to the University of Georgia faculty by plant pathologists. Locations in the University of Georgia College of Agriculture Agricultural Experiment Stations (UGA) are abbreviated as they usually are in speaking: UGA, Athens (Department of Plant Pathology, College Experiment Station, Athens); UGA, Tifton (Department of Plant Pathology, Coastal Plain Experiment Station., Tifton); UGA, Griffin (Department of Plant Pathology, Georgia Experiment Station, Experiment); UGA Extension, Athens, and UGA, Extension, Tifton (Department of Extension Plant Pathology with personnel on the University of Georgia campus at Athens or the Coastal Plain Experiment Station campus at Tifton). The UGA designation indicates the present organization of the College of Agriculture and is used with the understanding that the Georgia Experiment Station and the Coastal Plain Experiment Station were independent institutions prior to 1949. USDA, Tifton, and USDA, Griffin, indicate USDA personnel who are or have been located in the Departments of Plant Pathology at the Coastal Plain Experiment Station or the Georgia Experiment Station. Other USDA personnel are located in the USFS Forestry Sciences Laboratory on the University campus in Athens, in the Richard B. Russell Agricultural Research Center adjacent to the University campus in Athens, and in the Southeastern Fruit and Tree Nut Laboratory in Byron.

Armstrong, George M.b. 1893 South Carolina. Clemson University B.S. 1914; University of Wisconsin M.A. 1918; Washington University (St. Louis) Ph.D. 1921 Plant Pathology. 1969-81 UGA, Griffin. *Fusarium* classification.

Armstrong, Joanne K. (Mrs. C. M.). University of Washington B.S., M.S.; Washington University (St. Louis) Ph.D. 1920 Plant Pathology. 1969-81 UGA, Griffin. *Fusarium* classification.

Arnett, James D., Jr. b. 1942 Georgia. University of South Carolina B.S., M.S. Biology; Clemson University. Ph.D. 1971 Plant Pathology. 1975-present UGA, Extension, Tifton. Tobacco and soybean diseases.

Averre, Charles W., 111. b. 1932 Honduras. N.C. State University B.S. 1955, M.S. 1960; Purdue University Ph.D. 1963 Plant Pathology 1967-68 UGA, Griffin.

Bacon, Charles W. b. 1946 Florida. Clark College B.S. 1965; University of Michigan Ph.D. 1972 Botany. 1971-present USDA, Richard B Russell Bldg.

Bailey, Wallace K. b. 1908 North Carolina. 1941-55 USDA, Griffin. Horticulture, peanuts.

Barrows-Broaddus, Jane B. b. 1952 Wisconsin. University of Georgia B.S.A. 1974 Botany; M.S.A. 1976 Plant Pathology; N.C. State University Ph.D. 1983 Plant Pathology. 1976-present USFS Forestry Sciences Laboratory, Athens. Pitch canker, fusiform rust of Southern pines.

Beaver, Rodney. b. 1956 North Carolina. N. C. State University B.S. 1978 Chemistry, Ph.D. 1982 Organic Chemistry. 1984-present Research Coordinator, Mycotoxin Analysis Research Center, UGA, Tifton.

Bell, Durham K. b. 1932. University of Georgia B.S. 1960 Agriculture, M.S. 1961 Plant Pathology; N.C. State University Ph.D. 1965 Plant Pathology. 1965-present UGA., Tifton. Soil-borne diseases (especially of peanuts), Biocontrol.

Berry, Charles R. b. 1927 West Virginia. Glenville State College A.B. 1949 Biology; West Virginia University M.S. 1955 Zoology, Ph.D. 1958 Plant Pathology. 1971-present USFS Forestry Sciences Laboratory, Athens. Air pollution, mycorrhizae.

Bertrand, Paul P. b. 1945 California. University of California- Davis B.S. Biological Sciences, M.S. Horticulture. Ph.D. 1974 Plant Pathology. 1978-present UGA, Extension, Tifton. Pecans, peaches, and small fruits.

Bird, George W. b. 1939 Massachusetts. Rutgers University B.S. 1961, M.S. 1963; Cornell University Ph.D. 1967 Plant Pathology-Nematology. 1968-73 UGA, Athens. Nematology.

Borders, Huey 1. b. 1905 Alabama. University of Minnesota Ph.D. 1939 Plant Pathology 1939-41 UGA, Extension, Tifton; 1947-59 USDA, Tifton. Vegetable transplants.

Bowyer, Timothy H. b. 1947 Illinois. Southern Illinois University B.S. 1969 Biology; University of Illinois M.S. 1971 Plant Pathology, Ph.D. 1973 Plant Pathology. 1973-76 UGA, Extension, Athens. Ornamentals.

Boyce, John S., Jr.b. 1921 Oregon. Yale University B.S. 1942, M.F. 1948 Forestry; Duke University Ph.D. 1951 Forest Pathology. 1961-66 UGA, Athens. Forest Pathology.

Boyd, Howard W.b. 1935 Ohio. College of Wooster B.A. 1957; Ohio State University M.S. 1964, Ph.D. 1966 Plant Pathology. 1967-70 UGA, Griffin (1968-69 Department Head).

Boyle, Lytton W.b. 1899 Washington. Washington State College B.S. 1928, M.S. 1924; University of Wisconsin Ph.D. 1932 Plant Pathology. 1948-67 UGA, Griffin. Control of peanut diseases.

Brodie, B. B.b. 1932 Arkansas. N.C. State University Ph.D. 1962 Plant Pathology (Nematology). 1964-69 USDA, Tifton. Nematology.

Brown, Edward A, II. b. 1948 Germany. University of Georgia B.S. Agriculture, M.S. Plant Pathology, Ph.D. 1979 Plant Pathology. 1979-present UGA, Extension, Athens. Turf, forest and shade trees.

Browne, E. Broadus. b. 1917 North Carolina. N. C. State University B.S. 1938, M.S. 1941; Ohio State University Ph.D. 1947 Agronomy. 1947-84 UGA (1947-51 Athens, 1951-73 Director College Station, 1973-81 Director Coastal Plain Station, 1981-84 Director Experiment Stations).

Bryan, W. Craig. b. 1919 Arizona. University of Arizona B.S. 1941, M.S. 1948 Plant Pathology/Botany. 1955-present USFS Forestry Sciences Laboratory, Athens. Soil-borne diseases, Mycorrhizae.

Burns, Robert E. b. 1918 Iowa. State University of Iowa B.A. 1940, M.S. 1947, Ph.D. 1949 Botany-Physiology. 1950-64 USDA, Griffin. Seed physiology of legume forage and cover crops.

Campbell, W. Andrew. b. 1906 New Jersey. Mansfield State College B.S.; University of Colorado M.A.; Penn. State University. Ph.D. Plant Pathology. 1946-71 USFS Forestry Sciences Laboratory, Athens (1961-63 Research Triangle, NC). Little leaf of pines, taxonomy of *Pythium*.

Chandler, Webster A. b. 1914 Massachusetts. University of Massachusetts B.S.; Cornell M.S.; Penn State University Ph.D. 1955 Plant Pathology. 1955-82 UGA, Griffin. Fungicides, peach diseases and control; also pear, pepper, turnip diseases.

Chang, Chung-Jan. b. 1947 Taiwan. National Chung-Using University B.S. 1971, M.S. 1974; University of Missouri M.S. 1977; Rutgers Ph.D. 1981 Microbiology. 1981-present UGA, Griffin. Xylem-limited bacteria, spiroplasmas, mycoplasma-like organisms.

Cole, John R. b. 1900 Mississippi. Mississippi State University B.S. 1922; Michigan State University M.S. 1924 Plant Pathology. 1924-69 USDA, 1924-29 Georgia (Pecan Field Station, Thomasville), 1929-35 Louisiana; 1935-69 Georgia (Pecan Field Station, Albany). Pecan diseases.

Crandall, Bowen S. b. 1909 Washington, D. C. University of Maryland B.Sc. 1932, 32-33. 1933-52 USDA 1935-52 Division of Forest Pathology (Athens, ca. 1940-42). Root diseases of trees, *Phytophthora*, Plant physiology.

Crawford, Johnny L. b. 1940 Georgia. University of Georgia B.S. Agronomy, M.S. Plant Pathology, Ph.D. 1969 Plant Pathology. 1966-present UGA, Extension, Tifton. Disease and nematode control on cotton, corn, and grain sorghum.

Csinos, Alexander S. b. 1948 Canada. University of Guelph B.Sc. 1972 Agriculture; University of Kentucky Ph.D. 1977 Plant Pathology, 1977-present UGA, Tifton. Soil-borne diseases of tobacco and peanuts.

Cunfer, Barry M. b. 1944 Pennsylvania. Pennsylvania State University B.S. 1965, M.S. 1967; Washington State University Ph.D. 1972 Plant Pathology. 1973-present UGA, Griffin. Diseases of small grains.

Cutler, Horace G. b. 1932 London, England. University of Maryland B.S. 1964, M.S. 1966, Ph.D. 1967 Plant Pathology-Nematology. 1967-80 USDA, Department of Agronomy, Tifton. 1980-present Richard B. Russell Agricultural Research Center, Athens. Growth substances from nematodes and microorganisms, mode of action and biochemistry of auxin and other growth regulators, biologically active natural products from microorganisms.

DeLoach, R. J. H. b. 1873 Georgia. University of Georgia B.A., M.A. 1906-08 UGA, Griffin; 1908-1913; Department of Cotton Industry, Athens; 1913-15 Director Georgia Experiment Station.

Demski, James W.b. 1932 Pennsylvania. Clarion State College B.S. 1958; Pennsylvania State University Ph.D. 1966 Plant Pathology. 1966-present UGA, Griffin. Virology; Virus diseases of cowpeas, pepper, melons, soybeans, squash.

Denny, Timothy P. b. 1953 Tennessee. Duke University B.S. 1975 Botany; Cornell University Ph.D. 1983 Plant Pathology-Biochemistry. 1984-present UGA, Athens. Molecular biology of pathogenesis.

Doupnik, Ben L., Jr.b. 1939 Kansas. Kansas Wesleyan University A.B. 1962; University of Nebraska M.S. 1964; Louisiana State University Ph.D. 1967 Plant Pathology. 1967-72 UGA, Tifton. Mycotoxins, field crop diseases.

Dukes, Philip D. b. 1931 South Carolina. Clemson University B.S. 1953; N.C. State University M.S. 1960, Ph.D. 1963 Plant Pathology. 1962-69 UGA, Tifton. Tobacco diseases, soil-borne diseases.

Dwinell, L. David. b. 1938 New Mexico. Colorado State University B.S. Horticulture; University of Denver M.S. 1963 Ecology; Cornell University Ph.D. 1967 Plant Pathology. 1966-present USFS Forestry Sciences Laboratory, Athens. Host-parasite relationships of rusts, cankers, and pinewood nematode.

Farrar, Luther L. b. 1924 Louisiana. Centenary College B.S. 1952; Louisiana State University M.S. 1954, Ph.D. 1956 Plant Pathology 1956-59 UGA, Griffin. 1960-61 UGA, Extension, Athens. Small grains.

Fenne, S. B. 1938-39 UGA, Extension, Tifton.

Flemming, Attie A. b. 1921 Alabama. Auburn University B.S. 1943, M.S. 1949; University of Minnesota Ph.D. 1951 Agronomy-Genetics. 1951-present UGA: 1951-68 Department of Plant Pathology, 1968-present Department of Agronomy. Genetics and corn breeding.

Flowers, Randel A. b. 1939 Kentucky. Western Kentucky University B.S. 1964; University of Kentucky Ph.D. 1969 Plant Pathology. 1971-77 UGA, Tifton. Tobacco diseases.

Foster, A. Alfred. b. 1912 California. Cornell University B.S. 1939, Ph.D. 1945 Plant Pathology. 1953-61 USFS, Macon. Forest nursery diseases.

Fuller, Melvin S. b. 1932 Maine. University of Maine B.S. 1953; University of Nebraska M.S. 1955; University of California-Berkeley - Ph.D. 1959 Botany. 1968-present UGA, Department of Botany (1975-present joint-staffed Department of Plant Pathology). Mycology.

Gaines, John G. b. 1900 South Carolina. Clemson University B.S.A. 1922; Rutgers M.S.A. 1924; Cornell University Fellow 1925-28 Plant Pathology. 1929-70 USDA, Tifton. Tobacco diseases.
Garren, Kenneth H. b. 1912 North Carolina. Duke University A.B. 1934, M.A. 1937, Ph.D. 1938 Botany-Forest Pathology. 1941-47 UGA, Griffin (1942-45 U.S. Navy, World War 11, Pacific). Diseases of peanut.

Garrett, Wiley N.b. 1935 Texas. Texas A & M University B.S. 1957, M.S. 1958; University of Minnesota Ph.D. 1962 Plant Pathology 1962-69 UGA, Extension, Athens, (Department Head); 1970-present UGA, Athens (Head, Department of Plant Pathology, and Chairman, Division of Plant Pathology).

Gay, J. Dan. b. 1940 Georgia. University of Georgia B.S., M.S., Ph.D. 1967 Plant Pathology-Virology. 1967-72 USDA, Tifton; 1972-present UGA, Extension, Tifton. Vegetable diseases.

Gill, Denzell L. b. 1909 Louisiana. Louisiana State University B.S. 1931; Cornell University Ph.D. 1935 Plant Pathology. 1950-79 USDA, Tifton. Diseases of ornamentals, lilies, azaleas, camellias.

Gitaitis, Ronald D. b. 1950 Delaware. University of Delaware B.S. 1974; University of Florida M.S. 1976, Ph.D. 1979 Plant Pathology. 1980-present UGA, Tifton. Bacteriology and bacterial diseases, especially of crucifers, cowpeas, tomatoes and potatoes.

Good, J. M., Jr. b. 1927 Georgia. Emory University B.A. 1950, M.S. 1953; University of Florida Ph.D. 1955 Plant Pathology-Nematology. 1955-64 USDA, Tifton. Nematology.

Gottwald, Timothy R. b. 1953 California. Long Beach State University B.S. 1975 Botany; Oregon State University Ph.D. 1979 Plant Pathology. 1979-84. USDA Southeastern Fruit and Tree Nut Laboratory, Byron. Pecan diseases, mycology, and epidemiology.

Hanlin, Richard T. b. 1931 Michigan. University of Michigan B.S. 1953, M.S. 1955, Ph.D. 1960 Botany. 1960-66 UGA, Griffin; 1966-present UGA, Athens. Mycology, taxonomy and morphology of Ascomyeetes and Deuteromyeetes; seed-borne fungi.

Harper, James L. b. 1930 Georgia. Berry College B.S. 1952; University of Mississippi M.S. 1954; Emory University Ph.D. 1958 chemistry. 1980-84 Research Coordinator, Mycotoxin Analysis Research Center, UGA, Tifton.

Heald, C. M. b. 1933 Texas. Rutgers University Ph.D 1963. Plant Pathology-Nematology. 1964-67 USDA, Tifton. Nematodes of turfgrasses and ornamentals.

Hendrix, Floyd F., Jr. b. 1933 North Carolina. N.C. State University B.S. 1955, M.S. 1957; University of California-Berkeley Ph.D. 1961 Plant Pathology. 1965-present UGA, Athens. Mycology: Taxonomy of *Pythium*; Pathology: peaches, pecans, apples, blueberry.

Higgins, Bascombe Britt. b. 1887 North Carolina. North Carolina State University B.S. 1909, M.S. 1910; Cornell University Ph.D. 1913 Botany. 1913-55 UGA, (Head of Department) Griffin .

Hunter, Richard E. b. 1923 New Jersey. Rutgers University B.S. 1949; Oklahoma State University M.S. 1951, Ph.D. 1968 Botany and Plant Pathology. 1975-79 USDA Southeastern Fruit and Tree Nut Laboratory, Byron. Pecan diseases, control.

Hussey, Richard S. b. 1942 Ohio. Miami University B.A. 1965 Botany; University of Maryland M.S. 1968, Ph.D. 1970 Plant Pathology-Nematology. 1974-present UGA, Athens. Nematology.

Hutchins, Lee M.b. 1888 Michigan. Michigan State University B.S. 1913; Johns Hopkins University Ph.D. 1924 Plant Pathology. 1920-41 USDA Horticulture Field Station, Fort Valley. Phony peach.

Jackson, Curtis R. b. 1927 Missouri. University of Miami (Florida) B.S. 1949; Florida State University M.S. 1951; University of Florida Ph.D. 1958 Plant Pathology. 1961-84 UGA, (Read of Department) Tifton; 1961-68, Resident Director Georgia Experiment Station.

Jackson, Lyle W. R. b. 1900 Wisconsin. University of Minnesota B.S. 1926, M.S. 1927; University of Pennsylvania Ph.D. 1932. 1927-46 USDA Division of Forest Pathology (1940-46

Athens); 1946-67 UGA School of Forestry. Diseases, physiology, anatomy of forest trees, silviculture.

Johnson, A. W. b. 1936 Georgia. University of Georgia B.S.A. 1963, M.S. Plant Pathology Nematology; N.C. State University Ph.D. 1967 Plant Pathology-Nematology. 1967-present USDA, Tifton. Nematology.

Jenkins, Samuel F. b. 1930 North Carolina. N.C. State University B.S. 1958, M.S. 1960, Ph.D. 1962 Plant Pathology. 1961-65 UGA, Tifton. Diseases of tobacco and vegetables.

Jenkins, Wilbert A. b. 1905 North Carolina. Duke University A.B. 1928, M.A. 1929; Cornell 1929-31; Johns Hopkins Ph.D. 1934 Botany. 1934-41 UGA, Griffin. Diseases of bean, grape, and peanuts; Mycology.

KenKnight, Glenn. b. 1910 Oregon. Carleton College B.A. 1934; Michigan State University M.S. 1937, Ph.D. 1939 Botany-Plant Pathology. 1948-62 USDA Horticulture Field Station, Fort Valley. Virus diseases of stone fruits, pecan diseases.

Kirkpatrick, Hugh C. b. 1918 Illinois. Washington State B.S. 1941; University of Idaho M.S. 1942; Cornell Ph.D. 1948 Plant Pathology. 1970-75 USDA Fruit and Tree Nut Laboratory, Byron. Virus diseases.

Kozelnicky, George M. b. 1918 Ohio. University of Georgia B.S. 1950, M.S. 1951; Purdue University Graduate Study 1959-61 Plant Pathology and Plant Breeding. 1951-82 UGA, Athens. Breeding for resistance (corn), corn diseases, turfgrass diseases and management.

Kuhlman, E. George. b. 1934 Wisconsin. University of Wisconsin B.S. 1956; Oregon State University Ph.D. 1961 Plant Pathology/Plant Physiology. 1983-present USFS Forestry Sciences Laboratory, Athens. Annosus root rot, pitch canker, and hyperparasites on fusiform rust of pines; chestnut blight.

Kuhn, Cedric W. b. 1930 Indiana. Purdue University B.S. 1956 Agriculture, M.S. 1958, Ph.D. 1960 Plant Pathology - virology. 1960-68 UGA, Griffin, (1966-68, Head of Department); 1968-present UGA, Athens. Virology; Virus biosynthesis and plant resistance; virus diseases of cowpeas, corn., soybeans, peanuts, pepper.

Laughlin, Charles W. b. 1939 Iowa. Iowa State University B.S. 1963 Horticulture; University of Maryland M.S. 1966 Agronomy; Virginia Polytechnic Institute and State University Ph.D. 1968 Plant Pathology-Nematology. 1984-present UGA Director, Georgia Experiment Station.

Littrell, Robert H. b. 1937 Kentucky. Western Kentucky State College B.S. 1959 Agriculture; Clemson University M.S. 1961, Ph.D. 1964 Plant Pathology. 1966-present UGA, Tifton (Head of Department 1968-82).

Luttrell, Everett Stanley. b. 1916 Virginia. University of Richmond B.S. 1937 Biology; Duke University M.A. 1939, Ph.D. 1940 Botany/Zoology. 1942-47 UGA, Griffin; 1949-66 UGA., Griffin (Head of Department 1955-66), 1966-present UGA, Athens (Head, Department of Plant Pathology and Chairman, Division of Plant Pathology 1966-70) Mycology.

Machmer, J. H. b. 1906 Pennsylvania. Pettston State College B.S. 1925. 1947-55 USDA, Tifton. Nematology.

Matthews, Frederick R. b. 1929 Michigan. University of North Carolina B.A. 1951; N.C. State University M.A. 1958. 1961-present. USFS Forestry Sciences Laboratory, Athens. Rust diseases of pines.

Marx, Donald H. b. 1936 British Columbia, Canada. University of Georgia B.S.A. 1961, M.S. 1962; N. C. State University Ph.D. 1966 Plant Pathology. 1966-present USFS Forestry Sciences Laboratory, Athens. Mycorrhizae.

Maur, K. Meiza. 1968-present Georgia Southern College Department of Biological Sciences, Statesboro. Mycology, fungus diseases, nursery crops, and ornamentals.

McBeth, C. W. b. 1909 Utah. University of Utah B.S. 1932. 1938-45 USDA, Tifton. Nematology.

McCarter, States M. b. 1937 South Carolina. Clemson University B.S. 1959 Vocational Agr. Ed., M.S. 1961, Ph.D. 1965 Plant Pathology. 1966-68 USDA, Tifton; 1968-present UGA, Athens. Bacteriology, bacterial diseases of tomatoes and other vegetables.

McGlohon, Norman E. b. 1932 South Carolina. Clemson University B.S. Vocational Agriculture, M.S. Plant Pathology; N.C. State University Ph.D. 1961 Plant Pathology-Nematology. 1965-present UGA,. Extension, Athens (1970-present Head of Department). Diseases of fruits, nuts, and forage crops.

McLendon, C. A. 1908-13 UGA Griffin, Botanist and Plant Pathologist, Georgia Experiment Station.

Miller, Julian H. b. 1890 Washington D.C. University of Georgia B.S.A. 1911, M.S. 1924; Cornell University Ph.D. 1928 Plant Pathology. 1919-58 UGA, Athens 1919-23 Department of Horticulture, 1923-33 Department of Botany, 1933-58 Department of Plant Pathology; Head of Department of Plant Pathology 1933-58, (Chairman of Division of Plant Pathology 1951-58). Mycology, morphology, and taxonomy of Ascomycetes.

Phillips, Daniel V. b. 1938 Ohio. Ohio State University B.Se. 1961 Botany, M.Sc. 1963, Ph.D. 1965 Plant Pathology. 1968-present UGA, Griffin. Physiology, Diseases of soybeans.

Porter, David b. 1941 New York. Yale University B.S. 1963 Biology; University of Washington Ph.D. 1967 Botany. 1969-present UGA Department of Botany (1975-present joint-staffed Department of Plant Pathology). Mycology.

Powell, William M. b. 1930 Virginia. Virginia Polytechnic Institute B.S. 1953; N. C. State University M.S. 1957, Ph.D. 1960 Plant Pathology-Nematology. 1960-present UGA, Athens. Nematology.

Powers, Harry R., Jr. b. 1923 Virginia. N.C. State University B.S. 1949; Duke University M.F. 1950; N. C. State University Ph.D. 1953 Plant Pathology. 1964-present USFS Forestry Sciences Laboratory, Athens. Rusts of southern pines.

Pusey, Paul L. b. 1952 Illinois. Ball State University B.S. 1974 Biology; Kent State University, M.S. 1976 Botany; Ohio State University Ph.D. 1980 Plant Pathology-Nematology. 1982-present USDA Southeastern Fruit and Tree Laboratory, Byron. Peach diseases.

Rankin, Harvey W. b. 1893 Pennsylvania. University of Georgia B.S.A. 1926, M.S.A. 1927. 1935-37 UGA Extension, Tifton; 1947-61 UGA, (Read of Department) Tifton. General plant pathology.

Reilly, Charles C. b. 1940 New York. Austin Peay State University B.S. 1971. Chemistry-Biology; University of Illinois M.S. 1974, Ph.D. 1977 Plant Pathology. 1980-present USDA Southeastern Fruit and Tree Nut Laboratory, Byron. Peach and pecan diseases.

Roncadori, Ronald W. b. 1935 Pennsylvania. Waynesburg College (Pennsylvania) B.S. 1957 Biology; West Virginia University M.S. 1959, Ph.D. 1962 Plant Pathology. 1962-66, (1962-64 Macon, 1964-66 Athens); 1966-present UGA, Athens. Mycology, ecology of fungi, endomycorrhizae, cotton diseases.

Ross, Eldon W. b. 1934 West Virginia. West Virginia University B.S. 1957, M.S. 1958; Syracuse University Ph.D. 1964 Forest Pathology. 1965-71 USFS Forestry Sciences Laboratory, Athens. Annosus root rot of pines.

Rothrock, Craig S. b. 1954 Iowa. Iowa State University B.S. 1976 Botany; University of Illinois M.S. 1980, Ph.D. 1982 Plant Pathology. 1982-present UGA, Griffin. Ecology of soil-borne pathogens, biocontrol.

Rowan, Samuel J. b. 1932 Georgia. University of Georgia B.S.A. 1953, M.S. 1958, Ph.D. 1967 Plant Pathology. 1958-present USFS. (1958-62 Macon, 1962-64 Athens, 1964-68 Macon, 68-present USFS Forestry Sciences Laboratory, Athens. Fusiform rust, forest nursery diseases.

Ruehle, John L. b. 1931 Florida. University of Florida B.S.A. 1953, M.S. 1957; N.C. State University Ph.D. 1961 Plant Pathology-Nematology. 1961-present USFS Forestry Sciences Laboratory, Athens. Nematology.

Schaad, Norman W. b. 1940 California. University of California Davis B.S. 1964, M.S. 1966, Ph.D. 1969 Plant Pathology. University of California-Davis; 1971-83 UGA, Griffin. Phytobacteriology.

Schell, Mark A. b. 1951 Pennsylvania. Johns Hopkins University B.A. 1973 biology; Cornell University, Ph.D. 1978 biochemistrv- microbiology. 1983-85 UGA, Department of Molecular and Population Genetics; 1985-present UGA, Department of Microbiology and Department of Plant Pathology. Molecular genetics of plant-pathogenic bacteria.

Shuman, John R. B.S., Ph.M, Ph.D. 1941-43 UGA, Athens. Plant breeding.

Smith, Donald H. b. 1937 Pennsylvania. East Stroudsburg State College B.S. 1959; Pennsylvania State University M.S. 1962, Ph.D. 1966 Plant Pathology. 1967-73 UGA, Griffin. Peanut diseases.

Sobers, Edward K. b. 1922 Louisiana. Louisiana Polytechnic Institute B.S. 1948; Louisiana State University M.S. 1953, Ph.D. 1958 Plant Pathology. 1965-78 UGA, Tifton. Mycology.

Sowell, Grover, Jr. b. 1928 Florida. University of Georgia B.S.A. 1948, M.S.A. 1949; Cornell University, Ph.D. 1954 Plant Pathology. 1954-57 University of Florida Gulf Coast Experiment

Station, Bradenton; 1958 Cornell University; 1959-84 USDA Southern Regional Plant Introduction Station, Griffin.

Starkey, Thomas E. b. 1948 New Jersey. N.C. State University B.S. 1970 Forestry, B.S. 1970 Conservation; Pennsylvania State University, M.S. 1973, Ph.D. 1977 Plant Pathology-Epidemiology. 1977-84 UGA, Athens. Epidemiology.

Steele, A. E. b. 1925 Iowa. Iowa State University M.S. 1957. Plant Pathology. 1956-58 USDA, Tifton. Nematicides and rotations for control of nematodes on field and horticultural crops.

Stouffer, Richard F. b. 1932 West Virginia. Vanderbilt University B.A. 1954; Cornell University Ph.D. 1959 Plant Pathology-Virology. 1982-present UGA, (Head of Department) Tifton. Virus diseases of fruit trees.

Sumner, Donald R. b. 1937 Kansas. Kansas State University B.S. 1959 Agricultural Education; University of Nebraska M.S. 1964, Ph.D. 1967 Plant Pathology. 1969-present UGA, Tifton. Diseases of corn, vegetables, soil-borne pathogens, multiple cropping systems.

Taylor, A. L. b. 1901 Colorado. George Washington University B.S. 1935. 1935-46 USDA, Tifton. Nematode control by nematicides, soil fumigation, crop rotation.

Taylor, Jack. b. 1922 Georgia. University of Georgia, B.S.A. 1948, M.S.A. 1951; N.C. State University Ph.D. 1957 Plant Pathology. 1950-68 UGA Mountain Experiment Station, Blairsville; 1968-77 UGA, Athens. Fungicides, diseases of fruits (apples, peaches, grapes) and vegetables (pepper, corn).

Thompson, George E. b. 1903 Ontario, Canada. Cornell University Ph.D. 1937 Forest Pathology. 1937-61 UGA, Athens. Diseases of forest and shade trees, mycology.

Thompson, Samuel S., Jr. b. 1936 Louisiana. Louisiana Polytechnic Institute B.S. Botany; Purdue University, M.S., Ph.D. 1965 Plant Pathology. 1962-present UGA, Extension, Tifton. Diseases of peanuts, small grains, sunflowers.

Toler, Robert W. b. 1928 Arkansas. University of Arkansas B.S. 1950, M.S. 1958; N.C. State University Ph.D. 1962 Plant Pathology- Virology. 1961-65 USDA, Tifton. Pathology, virus diseases of beans and cowpeas.

Van Haltern, Frank. b. 1887 Kansas. Kansas State University B.S. 1918; Iowa State University M.S. 1925 Plant Pathology. 1926-55 UGA, Griffin. Diseases and breeding of cantaloupes and watermelons.

Walker, Jerry T. b. 1930 Ohio. Miami University A.B..1952 Botany; Ohio State University M.Sc. 1957, Ph.D. 1960 Plant Pathology-Nematology. 1969-present UGA, Griffin (Head of Department). Air pollution, nematology, ornamentals.

Weaver, Don J. b. 1941 Connecticut. Gordon College B. S. 1963; University of Arkansas M.S. 1967, Ph.D. 1969 Plant Pathology. 1969-79 USDA Southeastern Fruit and Tree Nut Laboratory, Byron., Peach diseases.

Wehunt, E. J. b. 1928 Arkansas. University of Arkansas B.S. 1954, M.S. 1955; Louisiana State

University, Ph.D. 1958 Plant Pathology-Nematology. 1968-81 USDA Southeastern Fruit and Tree Nut Laboratory, Byron. Nematology.

Weimer, James L. b. 1887 Indiana. Wabash College A.B. 1912; Cornell University Ph.D. 1913 Plant Pathology. 1935-52 USDA, Griffin. Plant Pathology diseases and breeding leguminous cover crops, vetch, Austrian Winter peas.

Wells, Homer D. b. 1923 Kentucky. N.C. State University Ph.D. 1954 Plant Pathology. 1952-present USDA, Tifton. Pathology, Forage crops and turfgrasses.

Wells, John M.b. 1935 Spain. Columbia University B.A. 1957; University of Maryland M.S. 1963, Ph.D. 1966 Plant Pathology-Virology. 1971-81. USDA Southeastern Fruit and Tree Nut I.aboratory, Byron. Postharvest pathology, peaches and pecans.

Whitehead, Marvin D. b. 1917 Oklahoma. Oklahoma State University B.S. 1939, M.S. 1946; University of Wisconsin Ph.D. 1949 Plant Pathology-Mycology. 1963-68 Georgia Southern College; 1968-80 Georgia State University. Fungus taxonomy, diseases of cereal crops.

Wilson, David M., Jr.b. 1941 Colorado. Colorado State University B.S. 1964 Chemistry, M.S. 1966 Chemistry, Ph.D. 1968 Plant Pathology. 1973-present UGA, Tifton. Mycotoxins.

Woodroof, Naomi Chapman. b. 1900 Washington University of Idaho B.S.A. 1923 Animal Husbandry, M.S.A. 1924 Plant Pathology-Plant Physiology. 1924-33 UGA, Griffin; 1933-50 UGA, Tifton. Peanut diseases, seed treatment, mycorrhizae.

Wynn, Willard K. b. 1932 North Carolina. N.C. State University B.S. 1955 Agronomy; University of Florida Ph.D. 1963 Plant Pathology-Physiology. 1968-present UGA, Athens. Physiology of disease, disease resistance, rusts of beans, corn.

Zak, Bratislav. b. 1919 Washington. Pennsylvania State University B.S. 1941; Duke University, M.F. 1949, D.F. 1954 Forest Pathology. 1947-62 USFS, Athens. Mycorrhizae.

Zimmer, David E. b. 1935 Illinois Eastern Illinois University B.S. 1957; Purdue University M.S. 1959, Ph.D. 1961 Plant Pathology. 1977-80 USDA, Coastal Plain Station, Tifton; 1980-present Russell Research Center, Athens). Genetics of parasitism, disease resistance.

Plant Pathology at the Georgia Station
(1985 - 1999)
Provided by Dr. Jerry T. Walker

E. S. Luttrell's account of the origins and development of plant pathology in the University of Georgia and the several experiment stations ended only 14 years ago, but the administration, research thrusts, and day-to-day procedures have changed dramatically in this period.

First, the respective departments at Griffin and Tifton were unified within the department at Athens with the leadership and fiscal responsibilities being handled by the Head of the Department in Athens. The necessary daily management routines at the two stations are being conducted by individuals designated as Research, Extension, and Instruction Coordinators (REI Coordinator). So the oldest department, established in 1906, was joined with the other two departments to form one academic unit for the College.

And not long after the departmental reorganization came a second change: the renaming of the College of Agriculture to the College of Agricultural and Environmental Sciences, perhaps reflecting modern terminology and addressing the emphasis on environmental programs that came to the forefront in the 80's. Now the acronym CAES has replaced the official title in the common vernacular.

Thirdly, the official post office address of the Georgia Station was changed from Experiment, GA 30212 to Griffin, GA 30223 under the pretense of eliminating confusion on the part of our visitors and international correspondents. Now the only agricultural experiment station in the world with a unique post office designated Experiment has become history [The post office continues to serve the unincorporated village of Experiment].

But not only was the postal address changed, but the official name of the Georgia Station was changed in 1998. Although officially designated as the College of Agricultural and Environmental Sciences - Griffin Campus, the stonework at the two major entrances still bears the designation: Georgia Station.

Four of the six faculty present in Plant Pathology at the Georgia Station in 1985 remain active participants in 1999. These include: Barry M. Cunfer (REI), Chung J. Chang, Daniel V. Phillips, and Jerry T. Walker. Craig Rothrock, appointed in 1982 as a replacement for Web Chandler, resigned from the department in 1989 to accept a teaching-research position at the University of Arkansas. His position was filled by Lee Burpee in October 1989, a turfgrass pathologist from the University of Guelph, Ontario, Canada. Burpee's responsibilities include teaching a course on turfgrass diseases (PATH/3500) on the Athens campus, advising graduate students, and research on diseases of southern turfgrasses. James W. Demski retired as full professor from the department in October 1995 after an illustrious 30-year career in virology, with many contributions to the world-wide research on virus diseases of peanut, including the discovery and epidemiology of a new virus (peanut stripe virus) that was found by our USDA, Plant Introduction colleague Grover Sowell. Demski's position remained unfilled since his retirement as the administration juggled budgets to meet increasing research needs with fewer appropriated dollars. Authorization came in 1999 to fill this faculty position with someone to conduct full-time research on ornamental diseases. This will restore the faculty to six positions.

During the sixteen years that Curtis Jackson was Director of the Georgia Station, the department faculty undertook numerous international activities that brought foreign faculty to the

department for short or intermediate-term research investigations. This was particularly felt as a result of Jim Demski's involvement and contributions to the Peanut CRSP program (see Luttrell's account of Peanut CRSP). The creation of a Visitor's Housing Facility on the campus grounds provided reasonable and convenient accommodations for our visitors and graduate students. Almost all faculty advised one or more graduate students during this period, provided stipends for assistantships, or post-doctoral positions, and served on various university committees.

Before Norm Schaad's departure for the University of Idaho in 1983, a seed pathology program had become well established in cooperation with Elmo Winstead's group at the Georgia Department of Agriculture (Atlanta). This program became so successful in the screening of seed for detection of the black rot bacterium that the Department of Agriculture moved it permanently to its laboratory in Tifton. Endorsed by the vegetable growers in the state, the program created greater realization and awareness by the seed companies of the economic advantage to seed testing for specific pathogens. In addition, the funds generated from this activity enabled the department to expand research in other areas of seed pathology, namely diseases of small grains, cowpea, pepper, tomato, and peanut viruses. It also brought the faculty into closer contact with the seed industry personnel and with producers.

Curtis Jackson's influence was felt again after his world travels during the 'Man in the Biosphere' project. He and a colleague from North Carolina, Ellis Cowling, were instrumental in proposing and achieving funding through the Experiment Stations Committee of Nine for the national atmospheric deposition project (acid rain) that began in 1978 as a North Central Regional Project. This project was placed in Plant Pathology and still is operational as NRSP-3, an entity managed by Illinois Water Survey, but composed of technical representatives from various disciplines, governmental agencies, universities, and over 30 experiment stations.

Chuck Laughlin, nematologist and plant pathologist, succeeded Jackson as Resident Director in 1984. Laughlin's interest in establishing a horticultural garden along Experiment Street caused a flurry of discussions by the turf researchers. The garden was later established on land across the Griffin by-pass and the turf plots remained intact along Experiment Street. When Laughlin left in 1986, Gerald Arkin became Resident Director, and later he was given the title Assistant Dean with the challenge to develop an educational arm of the College at the Griffin location.

The technical positions at Griffin have remained quite stable over the years, given the opportunities for trained personnel to earn higher salaries and fringe benefits in nearby Atlanta. The contribution of the classified personnel to the good morale and productivity of the unit can never be overemphasized. Many have now completed or exceeded twenty years of service. We are confident they will continue to provide support to the faculty, and will retrain as necessary to meet the future challenges created by the constant changing technology.

The Redding Plant Science building, named for the first Station director, became home to the plant pathologists in 1976. The Flynt Building, the former home of the departments of Agronomy and Plant Pathology, was unoccupied for a number of years. However, The Board of Regents authorized funding for a complete renovation of the building. In several subsequent budget allocations refurbishing the interior, including installation of an elevator, to accommodate the service and educational groups took place. The restoration is still in progress, but completion is anticipated in 2000.

The relocation of the Agricultural Showcase Pavilion from the Centennial Olympic Park in Atlanta (site of 1996 Summer Games) to the Griffin campus was a "big event" in the history of the Georgia plant pathology. The pavilion was named in honor of Naomi Chapman Woodroof, through the generosity of her husband J. Guy Woodroof and many local citizens. Mrs. Woodroof, who died January 3, 1989, was the second plant pathologist in the state and first woman agricultural scientist when she became a member of this department in 1924. She worked until 1933 when she moved to Tifton with Guy. Guy attended the dedication of the pavilion in 1998 along with College of Agricultural and Environmental Sciences administrators, legislators, and local citizens, staff and faculty. The facility serves as an out-door meeting place in a tree-shaded location on the northeast corner of the campus.

Research Thrusts 1985 – 1999

Cunfer, Barry M. Small grain pathologist. Impact of fungal diseases on yield of wheat, rye, barley and triticale; nature of resistance.

Burpee, Lee. Plant pathologist. Etiology and management of turfgrass diseases. Biological control of plant pathogenic fungi.

Chang, Chung J. Bacteriologist. Growth and metabolism of special bacteria (fastidious) and their detection by electron microscopy in pecan, walnut, peach and grapes.

Phillips, Daniel V. Soybean pathologist. Leaf spot and stem canker diseases of soybean and their control through resistant varieties.

Walker, Jerry T. Plant pathologist. Diseases of ornamental plants caused by fungi or nematodes; air pollutant monitoring.

Visiting Scientists: (4)
Guiru Zhang (China), 1988-1989; Ariano Prestes (Brazil), 1990-1991; Edward Arseniuk (Poland), 1996-1997; Yongcun Zhang (China), 1991-1992

Graduate Students: (11)		
Michael J. Black	Grad Rsch Asst. Masters	07/01/94-09/27/95
Christine M. Carroll	Grad Rsch Asst. Masters	07/01/87-06/30/89
Jianchi Chen	Grad Rsch Asst. Masters	08/01/88-06/30/89
Jianchi Chen	Grad Rsch Asst Doctoral	07/01/89-02/21/92
Melissa J. Gates	Grad Rsch Asst. Doctoral	09/01/97-12/31/97
David E. Green II	Grad Rsch Asst. Doctoral	07/01/93-12/31/97
Alan H. Icard	Grad Rsch Asst. Masters	01/01/92-03/31/94
Scott A. Levy	Grad Rsch Asst. Masters	09/16/87-06/30/88
Phindile Olorunju	Grad Rsch Asst. Doctoral	07/01/87-05/31/90
Araceli Ramos Pua	Grad Rsch Asst. Doctoral	04/01/89-06/30/89
Jennifer Yocum	Grad Rsch Asst. Doctoral	09/15/87-09/30/91
Fei Yu	Grad Rsch Asst. Masters	04/01/95-06/30/97
Post Doctorals: (9)		
Ming Cheng	Post Doctoral Associate	08/05/93-08/16/95
Meghnad Konai	Post Doctoral Associate	07/01/87-06/30/88
Zhijian Li	Post Doctoral Associate	08/01/91-06/30/96
Juju Manandhar	Post Doctoral Associate	07/15/88-06/30/91
R.DV.J. Prasada Rao	Post Doctoral Associate	06/01/92-02/28/93
Carmen Raikes	Post Doctoral Associate	02/15/96-11/10/97
Tatineni Satyanarayana	Post Doctoral Associate	10/24/94-04/14/95
Pothur Sreenivasulu	Post Doctoral Associate	04/06/87-10/31/88
Wakar Uddin	Post Doctoral Associate	10/16/92-12/31/97

Plant Pathology at the Tifton Campus
(1985-1999)
Provided by Dr. Donald R. Sumner

This is a brief summary of changes in personnel and job descriptions since E. S. Luttrell's history published in 1985.

Richard F. Stouffer retired as the Department Head in 1986, and he was replaced by Alex Csinos. Alex served as Head until 1991, when the position was changed to Research Leader. With the reorganization of the experiment station in 1997, he became Research, Extension and Instruction Coordinator. When Alex assumed administrative duties, his responsibilities changed to 50 % administration and 50 % research on tobacco diseases.

Robert H. Littrell took a medical retirement in 1987. His was replaced by Tim Brenneman in 1986 who was hired to do research on pecan diseases and foliar diseases of peanut. After several years his peanut assignment was shifted to soilborne pathogens, but his primary area was research until 1997 when he assumed a 17 % extension appointment because of the vacancy of an extension peanut pathologist. Both peanut and pecans are subject to several damaging diseases, and his program has focused on developing applied management programs to minimize disease losses.

Albert Culbreath was hired in 1989 to do research on leaf spot diseases of peanut and the tomato spotted wilt virus (TSWV) on peanut and tobacco. Much of his research effort is directed toward use of fungicides for control of these diseases. His research includes investigations into spray timings, advisory systems, fungicide mixtures, and fungicide resistance management. He works closely with breeders in Georgia and Florida on leaf spot resistance and incorporating moderate levels of leaf spot resistance with reduced fungicide inputs for leaf spot management. His work on the TSWV and the thrips that vector it concentrates on development and use of resistance to the virus. He collaborates with peanut breeders and other scientists to determine levels of resistance in breeding lines, and he is part of a multi disciplinary interstate team that investigates the combined effects of resistant cultivars and cultural and chemical factors that affect epidemics of TSWV. In 1997 he assumed a 17 % extension appointment because of a vacancy in extension peanut pathology.

Rodney Beaver left in 1994, and that position was not refilled. Durham. K. Bell retired in 1995 and that vacancy was filled by Hanu Pappu. Hanu is a plant virologist, 75 % research and 25 % extension. His research areas are the characterization and control of viruses infecting legumes, vegetables and tobacco with special emphasis on tospoviruses and potyviruses. He develops diagnostic methodologies using serological and nucleic acid-based techniques in virus detection and differentiation., and plant biotechnological approaches for virus disease management. Currently he is working on tomato spotted wilt tospovirus. His extension responsibilities include providing virus diagnostic services to growers and county agents, and developing educational materials on management of virus diseases.

In 1992 the Mycotoxin-Tobacco building burned, and David Wilson lost all of his equipment and office materials. He was provided temporary laboratories in the Department of Biological and Agricultural Engineering Annex, and an office in the Tift Building. The old building was replaced with a new Natural Products Laboratory that was dedicated in 1999, and David Wilson and Ron Gitaitis moved their offices and laboratories into that building.

In extension pathology, James Arnett left in 1987. He was handling diseases of soybean and tobacco. Tobacco diseases were shifted to Paul Bertrand and soybean diseases to Sam Thompson. Sam Thompson retired in 1992, and Boyd Padgett was hired in 1992 to cover diseases of peanut and soybean. In 1992 Paul Bertrand relinquished extension fruit pathology, and his duties changed to diseases of tobacco and pecan. In 1997 he assumed a 75 % extension, 25 % research appointment. In approximately 1989, Johnny Crawford moved to the Department of Crop and Soil Sciences, and James Hadden was hired in 1989 to handle diseases of cotton and pecans. In 1991 James Hadden left, and Johnny Crawford again resumed responsibilities for cotton diseases. Johnny left the Department of Plant Pathology and returned full time to extension in the Department of Crop and Soil Sciences in 1992. Richard Baird was hired in 1994 to cover diseases of cotton, corn, and canola. Boyd Padgett left in 1996, and since then extension pathology of peanut has been handled by Tim Brenneman and Albert Culbreath. In 1998 J. Danny Gay retired. David Langston was hired as an extension vegetable pathologist in late summer 1998. In 1999 Richard Baird accepted a position at Mississippi State University, and his extension-research position remains vacant. Currently, a position is advertised for an extension pathologist to cover diseases of peanut and cotton.

USDA

Homer D. Wells retired from the Forage and Turf Research Unit in 1988, and he was replaced by Jeffrey P. Wilson. His research emphasis is on developing novel strategies for deploying genetic resistance to improve the stability and longevity of resistance and biomass production, determining the role of photosynthesis and biomass partitioning on the expression of partial disease resistance, and managing detrimental effects of diseases on quality (digestibility and mycotoxin contamination) of economically important plant biomass.

Norman Minton retired from the Nematodes, Weeds and Crops Research Unit in 1994. Patricia Timper was hired as a nematologist in 1997. Her research is on management of plant-parasitic nematodes in agronomic and forage crops. Her specific interests are integrating host-parasite resistance and biological control into peanut and cotton cropping systems, and determining how cropping practices influence suppression of nematode populations by their natural enemies.

<u>Current Research and Extension Responsibilities</u>

Alex S. Csinos. Research, Extension, and Instruction Coordinator, and research on tobacco diseases and crown rot of vegetables.

Paul Bertrand. Extension pathology on tobacco, pecan, corn, and canola, and research on tobacco diseases,

Tim Brenneman. Research and extension on soilborne pathogenic fungi on peanut, and research on diseases of pecan.

Albert K. Culbreath. Research and extension on foliar diseases on peanut, and on TSWV.

Ronald D. Gitaitis. Research on epidemiology and management of bacterial diseases of major crops produced in the Coastal Plain.

David Langston. Extension pathology on vegetables.

Hanu R. Pappu. Research on plant virology in legumes, vegetables, and tobacco; and extension responsibilities on providing virus diagnostic services and educational materials to growers and county agents.

Donald R. Sumner. Research on biological, cultural and chemical methods of control of soilborne pathogenic fungi that cause diseases in vegetables and cotton.

David M. Wilson. Research on minimizing aflatoxin contamination of peanut and corn, and on developing or adapting biological and chemical methods to determine how mycotoxin contamination occurs.

USDA

A.W. Johnson. Research Leader in Nematodes, Weeds and Crops Research Unit. Research on nematode management systems on vegetable crops, cotton, small grain, and rotational crops; nemagation; IR-4 Minor Use Pesticide Program; and alternatives for methyl bromide.

Patricia Timper. Research on management of plant-parasitic nematodes in agronomic and forage crops.

Jeffrey P. Wilson. Research on genetic resistance and management of diseases of forage crops and turfgrasses.

Plant Pathology at the Athens Campus
(1985-1999)
Provided by Dr. Richard T. Hanlin

Numerous changes occurred in the Department of Plant Pathology at Athens during the last 15 years of the twentieth century. One major change was the retirement of E. S. Luttrell in 1985, after 43 years of service to the University. In recognition of his influence and many contributions to mycology and to the Department of Plant Pathology, the E. S. Luttrell Lectureship was established in 1990. Each year a prominent mycologist/plant pathologist is brought to campus to present a lecture and interact with faculty and students, a tradition that has enhanced the graduate experience for many students.

The position vacated by Luttrell was filled by Charles W. Mims, an outstanding teacher and electron microscopist who came from Stephen F. Austin University in 1986. Trained as a mycologist, Mims developed a research program emphasizing the mode of spore formation and host-parasite relations in plant pathogenic fungi, thus bridging the area between mycology and plant pathology. He also assumed responsibility for teaching Introductory Mycology, and later developed a popular course entitled “Fungi: Friends and Foes”. In 1989 Mims also assumed the duties of Graduate Coordinator for the Department.

Another major change in the Department was the retirement of Wiley N. Garrett in June, 1996, after 26 years as Department Head. Charles Mims was appointed interim Department Head, a position he held for one year. In June, 1997 he was replaced by John L. Sherwood, a plant virologist who came to Georgia from Oklahoma State University. Among the challenges faced by Sherwood was convincing the CAES administration to fill positions vacated by retiring faculty amidst an atmosphere of downsizing and reallocation within the College, and locating sufficient space for the reorganized plant pathology faculty.

William Powell taught Plant Nematology and, with Floyd Hendrix, Disease Diagnosis and Control. He also developed the first nematology assay service in Georgia as well as a research program on nematode diseases of Georgia crops. In 1987 he transferred from Plant Pathology to Extension Plant Pathology. His position in Plant Pathology was replaced by James Noe, who joined the Department in 1987. Noe took over the Plant Nematology course and began research on nematode diseases. His special interest is in developing models of nematode-host relationships and in developing biological control methods for these serious pests.

Cedric Kuhn developed a course in Plant Virology and a broad program in basic and applied research on virus diseases of Georgia crops. He also served as the first Graduate Coordinator in the Department, and was instrumental in developing the new doctoral program in Plant Pathology. Kuhn retired at the end of 1990 and his position in plant virology was filled by Carl M. Deom, who was hired in 1991. Deom took over the Plant Virology course and continued the research program on virus diseases of Georgia crops, in addition to more basic research on the movement of viruses through plant tissues.

Kenneth Papa taught Principles of Genetics and Quantitative Genetics, in addition to his research on the genetics of aflatoxigenic fungi. He also assumed the duties of Graduate Coordinator after Kuhn asked to be relieved of this duty. Following his death in 1986, David D. Pope was hired for the fungal genetics position in 1987. Pope initiated a research program on the genetics of the corn smut fungus, *Ustilago maydis*, and taught Principles of Genetics. In 1993 he left the Department to become a computer programer in industry. Also in 1986, William E.

Timberlake was employed in the Department of Genetics, with a joint appointment in Plant Pathology. Timberlake continued his research on the molecular genetics of filamentous fungi, with emphasis on *Aspergillus nidulans*. In 1993 he too left the University to enter private industry. The fungal genetics position in Plant Pathology was filled by Scott E. Gold in January, 1995. Gold assumed responsibility for the genetics course and initiated research on the molecular genetics of *Ustilago maydis*.

Floyd Hendrix taught Forest Pathology and Advanced Forest Pathology, in addition to Disease Diagnosis and Control with Powell. He also established a research program on fruit tree diseases. In 1992 Hendrix transferred from Plant Pathology to Extension Plant Pathology.

States McCarter took over the Disease Diagnosis and Control course following Hendrix' move to Extension. He taught this course and Bacterial Plant Pathogens, and continued his research on bacterial diseases until his retirement in 1995.

Following the departure of Hendrix, Ronald Roncadori took over the Forest Pathology and Advanced Forest Pathology courses, in addition to team-teaching Introductory Plant Pathology and conducting research on arbuscular-vesicular mycorrhizae. He also served as Undergraduate Coordinator until he retired in July, 1998.

Willard Wynn conducted research on the physiology of plant pathogenic fungi and taught two courses, Physiology of Parasitism and Physiology of Fungi. He became Graduate Coordinator following the death of Kenneth Papa, continuing these duties until his own death in 1989. His position was never filled and was lost to the Department.

George Bird left the Department in 1974 and was replaced by Richard S. Hussey. Hussey taught Biology of Plant Parasitic Nematodes and participated in the course on Etiology of Plant Diseases, along with Kuhn and McCarter. He initiated a research program on plant parasitic nematodes in Georgia, and in recent years his research has been directed toward the molecular biology of nematode parasitism and plant-nematode interactions.

Forrest Nutter left Georgia in 1992 and was replaced by Katherine Stevenson. Her research interest is in the epidemiology of foliar diseases and in developing disease forecasting systems. She has developed a research program on the epidemiology of peach and pecan diseases, in addition to teaching Epidemiology of Plant Diseases. She became Undergraduate Coordinator after the retirement of Roncadori.

In 1996 Harald Scherm was employed as fruit pathologist, taking over the responsibilities formerly assigned to Hendrix. His research interest is in theoretical and applied epidemiology and management of diseases of fruit crops. He has initiated studies on diseases of peaches and blueberries, in addition to teaching Introductory Plant Pathology.

In September, 1999 Ronald Walcott filled the position vacated earlier by McCarter. The duties of the position were reoriented toward seed pathology, a new area of research for the Department at the Athens location. His research interest is in developing methods for detecting bacterial pathogens in seeds. He also participates in teaching Introductory Plant Pathology.

Also in September, 1999, Elizabeth Little joined the Department as Distance Education Specialist, with the responsibility for developing plant pathology courses to be taught over the Internet.

In 1991, under pressure from the Board of Regents to reduce the number of administrative positions in the University System, the CAES underwent a reorganization, at least on paper. The Division system, under which there were four departments (Athens, Griffin, Tifton and Extension) in the Division of Plant Pathology, was abolished and the four units were combined into a single Department. Each unit retained its budgetary individuality, however, and the former Department Heads were reappointed as Research Leaders, to provide necessary office management and supervision. The reduction in the number of administrative positions was limited to the elimination of titles and the total number of personnel remained the same.

Department of Plant Pathology, Athens, 1933-2000

33 Miller-->59 Owen--> 66 Luttrell-->70 Garrett---------->96 Mims-->97 Sherwood ---------->
41 Shuman---->43 Murray---->47 Browne---->51 Fleming---->68 Position moved to agronomy/
51 Kozelnicky ---------->82 // 84 Denny---------->
60 Powell---------->87 Noe---------->
64 Papa---------->87 Pope---------->95 Gold---------->
65 Hendrix---------->92 // 96 Sherm---------->
66 Roncadori---------->98 // Position vacant
68 Kuhn---------->91 Deom---------->
68 McCarter---------->95 // 99 Walcott-------->
68 Wynn---------->89 // Position lost
68 Bird---------->74 Hussey---------->
68 Taylor---->77 Starkey-->84 Nutter-->92 Stevenson---------->
70 Luttrell---------->86 Mims---------->
85 Schell (joint with Microbiology)---------->
86 Timberlake (joint with Genetics)---------->93 //
99 Little---------->

A major reorganization of the teaching program came as a result of the change from the quarter system to a semester system in fall, 1998. The following courses were listed in the 1999-2000 catalog.

PGEN 3580	Principles of Genetics - Gold
PATH 3010#	Fungi: Friends and Foes - Mims
PATH 3500**	Turfgrass Pest Management - Burpee
PATH 3530	Introductory Plant Pathology - Scherm and Walcott
PATH 3830	Forest Pathology - Brown
PATH 4200/6200*	Introductory Mycology - Mims
PATH 4280/6280	Diagnosis and Management of Plant Diseases -
PATH 6250	Plant Nematology - Noe
PATH 6290	Plant Pathogenic Bacteria - Denny
PATH 6350	Plant Virology - Deom
PATH 8000	Field Plant Pathology - Brannen
PATH 8200	Applied Mycology - Hanlin
PATH 8210*	Biology of Ascomycetes - Hanlin
PATH 8310	Epidemiology of Plant Diseases - Stevenson
PATH 8320*	Zoosporic Fungi and Slime Molds - Porter
PATH 8340*	Experimental Mycology - Porter
PATH 8400	Host-Pathogen Interactions - Denny

PATH 8410 Advanced Plant Disease Management -
PATH 8960*** Fungal Genetics - Momany and Gold

#joint with Botany and Anthropology
*joint with Botany
** joint with Crop & Soil Science and Entomology
*** joint with Genetics, Botany, and Biochemistry & Molecular Biology

Department of Extension Plant Pathology, Athens, 1959-2000

59 Farrar--->62 Garrett------>70 McGlohon----->89 Powell-->91 Crawford-->92 Brown----->
65 McGlohon----->70 Motsinger----->85 Powell---->94 Davis---------->
73 Bowyer---->76 Moody---------->93 // 95 Woodward---------->
79 Brown---------->92 //
92 Hendrix---------> 95 // 00 Brannen---------->
99 Eaker---------->
99 Fowler---------->

Norman McGlohon was the first Extension Nematologist, and he also had responsibility for fruit diseases. In 1970 McGlohon became Head of Extension, following Garrett's move to Plant Pathology as Head. McGlohon retired in 1989 and was replaced as interim Department Head by Powell. In 1991 Johnny Crawford, who moved to Athens from Tifton, was appointed Department Head. Before the end of his first year as Department Head, however, he decided administration was not to his liking, so he resigned and returned to Tifton. He was replaced as Department Head by Brown in 1992, who continued to have responsibility for turf and forest tree diseases.

Ralph Motsinger was hired in 1970 with responsibility for the nematology program. In 1985 Motsinger retired and was replaced by Powell, who moved from Plant Pathology, to run the nematology clinic. He also served as interim Department Head after the retirement of McGlohon. Powell retired from Extension Plant Pathology in 1993, and in 1994 he was replaced by Richard Davis who took over responsibility for the nematology program.

Timothy Bowyer, who was hired in 1973, had responsibility for turf, ornamentals diseases and tree diseases. He left and was replaced by Eugene Moody, who took over his crop responsibilities. Moody retired in 1993 and his position was not filled until 1995, when Jean Woodward was hired to cover ornamentals diseases.

In 1992 Hendrix transferred from Plant Pathology to Extension Plant Pathology and assumed responsibility for fruit diseases. He retired in September, 1995. His position was finally filled in January, 2000, when Philip E. Brannen was hired to fill the tree fruit disease position.

Edward Brown was hired in 1979 to handle turf and forest tree diseases. In the absence of a fruit pathologist, however, he also took on this responsibility after McGlohon retired, and again after Hendrix retired. Brown became Extension Coordinator, the new name for the head of the unit, in 1992.

In 1999 Extension Plant Pathology employed the first Public Service Representatives in the Department. This is a nontenured faculty position with specific work assignments. Taft Eaker was employed to cover disease IPM problems in the urban and homeowner environment in Georgia, and Jan Fowler was hired to operate the Plant Disease Clinic in Athens.

Traditionally the Extension and Research/Teaching personnel in Athens were housed in separate buildings, thus limiting the interactions between the two groups. In 1997, however, the Extension unit was relocated to the Plant Sciences Building in newly renovated space assigned to the Department of Plant Pathology. Although this increased the space problem, this long overdue move brought the two groups together, with benefits for everyone concerned.