Dr. Glenn W. Burton: Pioneer in Plant Breeding

By Dr. Wayne Hanna, USDA – ARS, Coastal Plain Experiment Station, Tifton, GA

Editor's Choice will profile individuals whose accomplishments in the 20th century greatly influenced the direction of the turfgrass industry at the beginning of the 21st century. I met Dr. Burton while attending a turfgrass conference in Tifton, Georgia. Dr. Wayne Hanna and Dr. Burton worked together at the Coastal Plain Experiment Station, Tifton, GA..

Glenn Willard Burton was born May 5, 1910 in Clatonia, Nebraska. From 1915 until 1928, he lived and worked on a farm near Bartley, NE. His first eight years of formal education took place in a one-room country school. He attended a four-teacher high school.

Many of the principles contributing to his success were learned "on the farm". Two of the important ones were hard work and responsibility. As the only child in the family, he had to help with his share of the farm work and complete his chores before and after school. This meant getting the job done right the first time and as quickly as possible so there would be time for the basketball team.

He was determined to be a farmer after completing high school in 1927. However, after one year of following four-horse teams on the NE farm with his dad and the encouragement of his high school superintendent, he enrolled at the University of Nebraska. While at the university he met Helen Jeffryes from northwest Iowa, at a Methodist youth party. On December 16, 1934, Helen became his wife in addition to being his best friend and one of the four women to significantly influence his life (the other three being his mother and two grandmothers).

Glenn Burton, known as 'Dr. Burton' or 'Doc' to most out of respect for his accomplishments and stature as a scientist, earned the M.Sc. degree in 1933 and a Ph.D. degree in 1936 at Rutgers University. He had a choice to begin work for the USDA at a new pasture lab at State College, Pennsylvania or at the University of Florida at Gainsville after graduation. A pioneering urge and recognition that a greater need existed for improved grasses in the South motivated him to accept the FL position. However, while in Nebraska for a short visit before moving to FL, his USDA bosses changed their plans and asked him to report to the Coastal Plain Experiment Station (CPES). No one at that time in USDA in Washington fully recognized the impact that assignment would have on agriculture around the world.

Dr. Glenn W. Burton, at age 89, still comes to work on most days even though he is retired and works in a collaborator status. He is an author of 756 papers describing the results of his research.

Dr. Burton was a Research Geneticist and Research Leader in the Agricultural Research Service at the CPES from 1936 to 1997. He is also an Alumni Foundation Distinguished Professor in the University of Georgia. He served as Chairman of the Agronomy Division of the University of Georgia from 1950 to 1964 and has directed the research of 17 graduate students.

Agriculture is more productive, profitable and efficient in the U.S. as well as around the world due to the research of Glenn Burton. No single individual has had a greater impact on forage and turf development, production and utilization. He released "Coastal" bermudagrass, a forage hybrid, in 1943 and seven other hybrid bermudagrasses since. In addition he has released two sudangrass cultivars, one napiergrass hybrid, three bahiagrass cultivars, five perl millet cultivars and hybrids, seven bermudagrass turf hybrids, and 14 pearl millet inbreds. The hybrids have made a major contribution to improving quality of life and the profitability of agriculture in many parts of the world. The A_1 cytoplasm released in Tift $23A_1$, is used to produce all pearl millet hybrids. The 'Tif' series of turf bermudagrasses were the major high quality cultivars used around the world. His research is described in over 700 publications and is recognized by 68 awards. He has traveled and consulted in 55 foreign countries.

Plant breeding and the Methodist church receive most of his attention. Glenn and Helen (now deceased) are very proud of their five children and eight grandchildren. The Burton family was active in the church and was named Methodist Family of the Year in the U.S. in 1951. He loved to sing in the church choir and was part of a quartet in his earlier years. He served as

In recognition of Dr. Glenn W. Burton's many contributions to the improvement of warm season grasses, Super Sod/Patten Seek Company of Lakeland, GA recently contributed 27,000 square feet of centipede sod to the Georgia State Botanical Garden's new International Garden. In addition to the sod, Super Sod also endowed the lawn's maintenance and upkeep.

GLENN BURTON'S AWARDS

American Society of Agronomy Stevenson Award 1949
Fellow, American Society of Agronomy 1949
Southern Seedsmen Association First Annual Agricultural Award 1950
Sears Roebuck Best Agricultural Research in Georgia Award 1953, 1960, 1969
Progressive Farmer Man of the Year in Service to Southern Agriculture Award 1954
U.S.D.A. Superior Service Award 1955
Honorary D.Sc. Degree from Rutgers University 1955
John Scott Award 1957
Golf Course Superintendents Association of America Distinguished Service Award 1958
Ford Almanac First Crops and Soils Research Award 1962
Honorary D.Sc. Degree from University of Nebraska 1962
American Grassland Council Merit Certificate Award 1962
U.S.D.A., A.R.S. Certificate of Merit 1963
University of Nebraska Avery Lecturer 1964
Lifetime Member of Georgia Plant Food Educational Society, Inc. 1965
U.S. Golf Association Green Section Distinguished Service to Golf Award 1965
Men's Garden Clubs of America Gold Medal Award 1965
American Grassland Council Golden Medallion Award 1965
American Agricultural Editors' Assoc. Distinguished Service to Agriculture Award 1966
Ga. Science & Tech. Commission 1st Citation for Dist. Service in the Advancement of Science 1966
Nebraska Centennial Notable Nebraskan Award 1967
Agricultural Institute of Canada Recognition Award 1968
American Farm Bureau Federation Award for Distinguished and Meritorious Service to Organized Agriculture 1968
National Council of Commercial Plant Breeders Award 1969
Gamma Sigma Delta International Award for Distinguished Service to Agriculture 1972
DuPont Foundation Medal for Distinguished Service to Man 1973
Elected to the National Academy of Sciences 1975
Edward W. Browning Award 1975
Special Citation from General Assembly State Legislature of Georgia 1976
Toastmasters International Communication and Leadership Award 1976
Annual Blue Key Award in Appreciation for Outstanding Service to the Univ. of Ga. 1978
The Garden Club of Georgia, Inc. Certificate of Merit Award 1979
National Council of State Garden Clubs, Inc. Gold Seal Award 1979
DeKalb Crop Science Distinguished Career Award 1979
USDA Distinguished Service Award 1980
Southeast Area Eagle Award for Distinguished Leadership and Scientific Achievements to the Agricultural Sciences 1980
Southern Turfgrass Association Honorary Member Award 1980
Texas Forage Award 1980
Kiwanis Club Appreciation Award 1980
President's Award for Distinguished Federal and Civilian Service 1981
The University of Georgia Agricultural Alumni Association Research Award 1981
E. T. York Distinguished Lecturer Award at Auburn University 1982
University of Nebraska Alumni Achievement Award 1982
Storer Life Science Lecturer at University of California-Davis 1982
University of Nebraska Master Alumni Award 1982
Rotary International Humanitarian Award 1982
Five States Award for Outstanding Contributions to Grassland Agriculture 1983
Special Alumni/Faculty Service Award, University of Georgia 1983
National Medal of Science Award 1983
USDA Certificate of Appreciation 1984
Honorary Member, FarmHouse International Fraternity 1984
University of Georgia Bicentennial Silver Medallion Award 1984
Elected into University of Georgia Agricultural Alumni Hall of Fame 1984
Presidential Award, Turfgrass Council of North Carolina 1985
J.W. Fanning Leadership Award - Leadership Georgia 1985
Fellow, Crop Science Society of America 1985
USDA Forage and Turfgrass Research Team Award 1986
Grounds Maintenance Magazine Turf Master Award 1987
American Forage and Grassland Council Distinguished Grasslander Award 1987
Honored in Washington, D.C. for more than 50 years of service at the celebration of the 125th anniversary of the founding of the U.S. Department of Agriculture 1987
Inducted into the Agricultural Research Service Science Hall of Fame 1987
Univ. of Georgia's Coastal Plain Exp. Stat. Distinguished Research Career Award 1988
The Alexander von Humboldt Foundation Award 1988
Honorary Membership in the Grassland Society of Southern Africa 1988
Senior Executive Association's Executive Excellence Award for Dist. Executive Ser. 1988
Inducted into the International Stockmen's Educational Foundation Hall of Fame, Houston, Texas 1989
Award for Outstanding Performance as Geneticist and Leader, Forage and Turf Research 1990
Georgia Farm Bureau Commodity Award 1991
1991 Fred V. Grau Turfgrass Science Award 1991
'This is Your Life', Tift County Chap., American Heart Assn., Tifton, GA. 1992
GGCSA Award of Appreciation, Georgia Golf Course Superintendents Association 1993
Inducted into Georgia Turfgrass Hall of Fame 1994
Inducted into Georgia Golf Hall of Fame 1995
Congratulations on achieving the 60th anniversary of a distinguished and renowned career with the Agricultural Research Service, USDA - F.P. Horn, Administrator 1996
Service to American and World Agriculture Award - National Assn. County Agricultural Agents 1996
Inducted into Georgia Cattlemen's Hall of Fame 1997
Rotary Paul Harris Fellow Award 1997
Crop Science Society of America Presidential Award 1997

Sunday School teacher and was District Lay Leader and held many other leadership positions in the church.

"We haven't learned the best way to do anything yet" was one of Dr. Burton's favorite sayings. He believed that so much that he was frequently drawing plans for a thresher, plow, planter, etc. to help get the job done faster and more efficiently. Every idea was tried the day he thought about it (or soon after) and most of them worked. He could always be found in the tall millet fields by looking for an aluminum painted pith helmet moving through the plots.

At age 89, he still comes to work on most days even though he is retired and works in a collaborator status.

Dr. Burton is an author of 756 papers describing the results of his research. New grass varieties developed and released by Dr. Burton include:

For turf: Tiflawn (57), Tiffine (127), Tifgreen (328), Tifway (419), Tifdwarf, Tifway II, Tifgreen II, and Tifton 10 bermudagrasses for turf.

For hay and pasture: Coastal, Suwannee, Midland, Coastcross-1, Tifton 44, Tifton 68, Tifton 78, Tifton 85, Tifhi 1, Tifhi 2, Tifton 9 Pensacola bahiagrasses.

For forage: Tift, Georgia 337 sudangrass, Merkeron napiergrass, Starr, Gahi 1, Tiflate, Gahi 3, and Tifleaf 1 pearl millets.

For forage and grain hybrids: Tift 23A, Tift 23B, Tift 23DA, Tift 23DB, Tift 18A, Tift 239DA2, Tift 239DB2,Tift 13, Tift 26, Tift 186, Tift 383, Tift 23DAE, Tift 23DBE, and Tift 756 pearl millet inbred lines for forage and grain hybrids.

Dr. Burton has served on a number of committees of the American Society of Agronomy and was Chairman of the Crops Division in 1952. He served as Vice President of the Society in 1961 and President in 1962. He has lectured and consulted with staff and students on the campuses of many universities at home and abroad. He has traveled in 55 foreign countries including the USSR (now the Russian Federation) and the Peoples Republic of China.

Dr. Burton's current research includes the genetic improvement of Cynodon spp., Paspalum notatum, and Pennisetum glaucum; the inheritance of significant characters including apomixis; the propagation and management of superior varieties; and the development of improved plant breeding methods. ●