

# Maria Wilman—An Outstanding Contributor to Rangeland Improvement

Jerry R. Cox



Photo by McGregor Museum, Kimberley, South Africa.

In 1957, Maria Wilman died at age 90 near the most southern point in Africa. Her death was unnoticed in the United States but her contributions to the people of this country can be seen in rangeland improvement projects in Arizona, Oklahoma, Texas, and Mexico.

Born in Cape Province, Republic of South Africa, in 1867, Miss Wilman was the fifth of nine daughters. She was the second South African female to attend Cambridge University in England, where she was awarded a

The author is range scientist, USDA-Agricultural Research Service, Forage and Range Research Laboratory, Utah State University, Logan, Utah.

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Science Degree in geology, mineralogy, and chemistry in 1888. She returned to Cambridge in 1893 and completed a Master of Arts in botany during 1895. At that time, only certificates were given to women and it was not until 1933 that the degree was formally conferred on her by Cambridge University.

Her father did not approve of a female working for a salary, and between 1895 and 1907 she volunteered at the South African Museum in Capetown. In 1908, she became the first director of the Alexander McGregor Memorial Museum in Kimberley. She travelled by ox-wagon to Basutoland (currently Lesotho) and Bechuanaland (currently Botswana) studying and recording Bushman art

and culture. In southern Africa Miss Wilman is a well known prehistorian, and her Bushman skeleton and implement collections are among the most important of their kind. Her book, "Rock-engravings of Griqualand West", is a classic and remained the standard text on this art form for almost 50 years.

In addition to the Bushman collection, Miss Wilman maintained a rock garden. Within the garden were succulents, native trees and shrubs, and approximately 200 grass species collected from all parts of Africa. From grasses in the rock garden she collected seed, and seed exchanges were made with botanists in America, Australia and England.

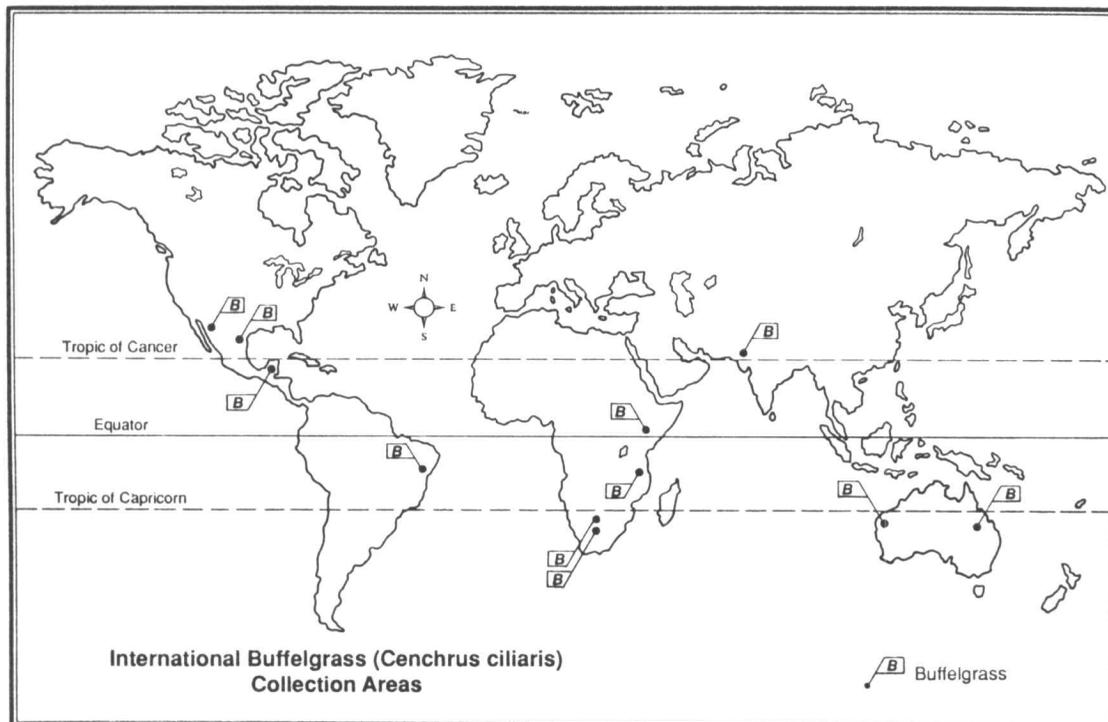


Fig. 1. Buffelgrass seed collection areas

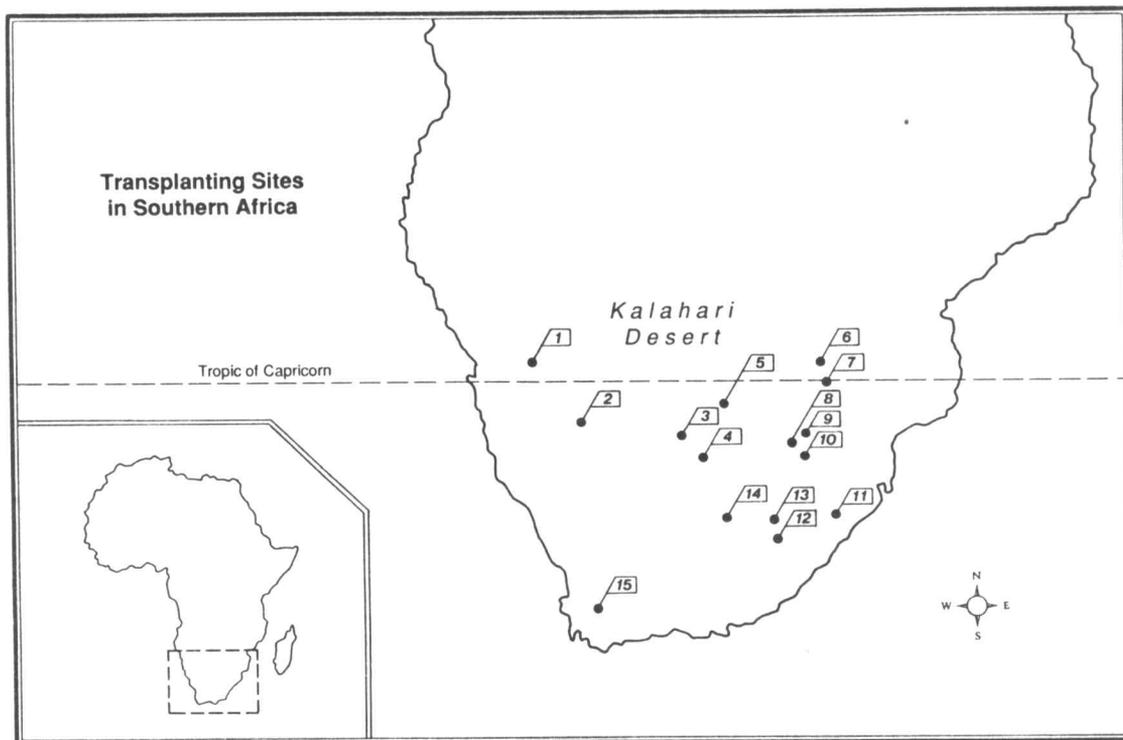


Fig. 2. Transplanting sites in southern Africa

### Lehmann Lovegrass

In 1932, Miss Wilman sent Lehmann lovegrass (*Eragrostis lehmanniana*) seed collected in Griqualand West to F.J. Crider at the Boice Thompson Arboretum in Superior, Arizona. In 1935, Crider joined the USDA-Soil Conservation Service (SCS), and in mid-year he organized a series of irrigated screening trials at the Tucson Plant Materials Center. Seed from Lehmann lovegrass plants that matured quickly and produced seed in the first growing season was increased and the selection numbered 'A-68'.

Between 1937 and 1950, approximately 150 pounds of 'A-68' seed was produced at Tucson. Seed was distributed to SCS field offices and planted in small plots from west Texas to Arizona. Many seedlings were successful and 85,000 pounds of 'A-68' seed was commercially produced between 1951 and 1985. Two-thirds of the seed was planted in Arizona, New Mexico, and Texas. The remaining seed was planted in northern Mexico. Between 1940 and 1980, ranchers and government agencies successfully established 'A-68' on

approximately 170,000 acres. The species spread by seed to an additional 170,000 acres in south eastern Arizona.

### Weeping Lovegrass

SCS records indicate that seed of 'A-67' weeping lovegrass (*Eragrostis curvula*) arrived in Arizona at the same time as seed of 'A-68' Lehmann lovegrass. Crider (1945) indicates that 'A-67' weeping lovegrass seed was collected on an escarpment between Mbula and Ngorongoro Craters in northcentral Tanzania. It is possible that 'A-67' was not collected in Tanzania because: (1) plant collectors have been unable to identify non-seeded stands of weeping lovegrass in northern Tanzania, and (2) Miss Wilman travelled widely in, and collected grasses in Basutoland, only one of a few areas where weeping lovegrass occurs naturally.

Between 1935 and 1980, 'A-67' weeping lovegrass was established on approximately 2 million acres in western Oklahoma and north western Texas. In 1947 and 1953, seed from Oklahoma plantings were transported to Argentina, and in the following 30 years 'A-67' was estab-

lished on 2 million acres. 'A-67' seed was also established in south eastern Australia, Zimbabwe, Japan and Spain.

### Kleingrass

Before retiring in 1948, Miss Wilman sent kleingrass (*Panicum coloratum*) seed collected in the Orange Free State to the Rietvlei Plant Experiment Station near Pretoria. Seed were shipped to the United States and planted throughout Texas. Plants were successfully established in west central Texas, and in 1968 the SCS and the Texas Agricultural Experiment Station jointly released 'Selection 75' kleingrass.

Between 1975 and 1985, seed producers in Texas sold over 2 million pounds of 'Selection 75' seed, and seed were planted on several million acres of degraded Texas rangeland. 'Selection 75' seed were transported and established on small areas in eastern Australia, Brazil, Cuba, Japan, Venezuela, and Zimbabwe.

### Buffelgrass

C.J.J. van Rensburg, Department of Agriculture, Republic of South

Africa, obtained buffelgrass (*Cenchrus ciliaris*) seed from Mrs. Wilman's southern and north eastern African collections. Seed were sown and evaluated for establishment, persistence and forage production. During a drought in 1942, most mature buffelgrass plants died. Remaining plants were thought to have originated from a collection made in the Turkana Desert of north central Kenya and southern Ethiopia.

Seed from the Turkana collection was shipped to the United States in 1946. Plants were successfully established and persisted in southern Texas, and the SCS informally released T-4464 buffelgrass in 1949. After 1949, Texas seed producers sold over 7 million pounds of T-4464 seed, and ranchers in southern Texas established the grass on 4 million acres. Seed were transported south into Mexico and successfully established on millions of acres along the east and west coasts.

In 1989, I collected 30 buffelgrass ecotypes in Africa, Asia, Australia, North America, and South America (Fig. 1). In 1990, I planted the ecotypes at 15 locations in southern Africa (Fig. 2). Preliminary results indicate that T-4464 has more in common with southern Africa ecotypes than those collected in the Turkana Desert in 1989; hence, the possibility that Maria Wilman contributed to the selection of T-4464. Genetic evaluations currently under way at the University of Pretoria will test this hypothesis.

#### Other Contributions

Maria Wilman is also recognized for collections of Wilman lovegrass (*E. superba*) and botanical discoveries that bear her name: (*Watsonia wilmaniae*, *Stapelia wilmaniae*, *Ruschia wilmaniae*, *Hereroa wilmaniae* and *Nananthus wilmaniae*). In recognition of her outstanding scientific contributions she was awarded an Honorary Degree of Doctor of Laws from the University of Witwaterstrand

in Johannesburg in 1939. A testimony from the Royal Society of South Africa states that Maria Wilman was "one of South Africa's leading women pioneers in science." However, she was much more than that; Maria Wilman was an active force who conceived new ideas and shared ideas with farmers, ranchers, miners and scientists. For these accomplishments Miss Wilman should be considered one of the world's leading women pioneers in science.

#### Selected References

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- Crider, F.J. 1945.** Three introduced lovegrasses for soil conservation. USDA Circ. 730. U.S. Govt. Print. Off., Washington, DC.
- Holt, E.C. 1985.** Buffelgrass-A brief history. p. 1-5. *In:* E.C.A. Runge and J.L. Schuster (eds.) *Buffelgrass: Adaptation, Management and Forage Symposium.* Texas Agr. Exp. Sta. MP-1575. College Station.

### President's Notes (continued from page 259)

(4) **Undergraduate Paper Sessions.** A special session is provided at each Annual Meeting for undergraduate student papers. Thirteen were presented at Spokane. Kelly Allred, New Mexico State U., chairs the sub-committee.

(6) **Student Display Contest.** Nine student clubs competed at Spokane. Jim O'Rourke, Chadron State College, chairs the sub-committee.

This is not a complete picture of SRM youth activities

but it is certainly enough to demonstrate the strong and growing commitment by SRM to youth activities and the equally strong and growing commitment by young people to SRM and to range management. I salute all members, young and old, who have made our youth programs the envy of other professional organizations. I am proud to be associated with you.—**Jack Artz**, President, Society for Range Management