NEW MEXICO FARM & RANCH HERITAGE MUSEUM

ORAL HISTORY PROGRAM
INTERVIEW ABSTRACT

CONSULTANT:	Dr. Glyn Throneberry	
DATE OF BIRTH:	November 1, 1927	GENDER: Male
DATE(S) OF INTERVIEW:	January 19, 2011	
LOCATION OF INTERVIEW:	Farm and Ranch Heritage Museum	
INTERVIEWER:	Donna M. Wojcik	
SOURCE OF INTERVIEW:	NMF&RHM	
TRANSCRIBED:	December 15, 2011	
NUMBER OF TAPES:	Three	
ABSTRACTOR:	Donna M. Wojcik	
DATE ABSTRACTED:	January 26, 2011	
RECORDING QUALITY (SPECIFY):	Good	
SCOPE AND CONTENT NOTE:	Consultant discusses his years as a researcher and professor of plant physiology at New Mexico State University.	
DATE RANGE:	1927-1986	

ABSTRACT (Important Topics in Order of Appearance):

TAPE ONE, SIDE A:

Throneberry grew up on a farm in Rule, Tex., until the family moved to a small farm near Socorro, N.M., when he was eight years old. In Texas he attended a one-room school house, and in Socorro he attended a two-room school house with one grade in each room. It was not until he was in his later years of college that he decided to pursue a career as a plant physiologist. He holds a bachelor's degree in agricultural biology, a master's and a doctoral degree in plant physiology, and a minor in biochemistry. Higher education was not a part of his family background, and childhood experiences did not influence his choice of career. He had taken some vocational agriculture classes and was awarded a two-year scholarship which covered the $18 per semester tuition. "I was kinda the only one" of the people he knew that ended up in plant physiology. He graduated from Iowa State University in 1953.

His first job in 1954 was as a plant physiologist for the U.S. Department of Agriculture in Kansas, located at Kansas State University. He worked there for a year and a half before leaving because he was being asked to work in areas outside the scope of his degree. The agronomy department wanted him to do radio talks and public relations in the area of agronomy, and this "was not my thing at all." He was ready to move on and returned to New Mexico in 1955 to work at New Mexico A&M. He taught nine different courses, including plant physiology, botany, biology, plant ecology, and plant pathology.

In 1957 a position as a plant pathologist became available at the New Mexico State Experimental Station, so he began working there as a full-time researcher. After his retirement he returned to teaching and found teaching to be rewarding. He liked the students and the fact that you can quickly see the results of what you are doing, unlike research where you "don't know what you're getting out of it." He has no regrets for choosing a career in plant physiology, and has had several articles published.

TAPE ONE, SIDE B:

Throneberry talks about the history, definition, and areas of study included in plant physiology, as well as the essential elements plants need to grow. As basic systems, all green plants do the same thing, but some plants are able to do things that are not done by other plants. Examples of this are the tobacco plant which produces nicotine, the opium poppy which produces opium, and the pine tree that produces turpentine. Each plant has its own set of ideal conditions for survival. Physical dangers to plants include wind, drought, and lack of sunlight. Many plants have defense mechanisms such as thorns, as exhibited in many desert species.

The different parts and functions of the plant cell are described. Water transportation is briefly discussed.

TAPE TWO, SIDE A:

The discussion of water transportation continues. Plants have certain mechanisms that enable them to survive irreversible and temporary wilt. Some plants close their stomates [openings in the epidermis of a plant] to retain water, other plants have waxy leaves, and cacti are able to store water.

Sap, the energy source of minerals and sugars, and seed germination are discussed. The seed has everything in itself needed to start a plant growing. All that is needed is moisture and the right temperature.

Naturally occurring hormones and synthetic hormones are discussed. An example of a synthetic hormone is dichlorophenoxyacetic acid (2, 4-D). All naturally occurring hormones within a plant work together so the plant does what it needs to do. These hormones can slow plant growth, promote shoot growth, or encourage cell division.

TAPE TWO, SIDE B:

Plants have continuous sources of nutrients from the soil unless something is radically wrong with the soil. Minerals are needed for growth, development, and the metabolic life cycle of plants. As a rule, plants generally take up what they are exposed to. During the growth phase, stem and leaf development requires a lot of nitrogen and potassium, while during the reproductive phase the plant needs less nitrogen but more phosphorus. In general, all plants need all minerals at all times, however the amounts of those minerals will vary depending on the phase the plant is in.

When asked if the term "plant food" is the same as fertilizer, Throneberry states that plants manufacture their own food. Fertilizer is something that is added externally. Overdoses of fertilizers interfere with the water uptake of a plant, resulting in what is known as "fertilizer burn."

Soil analysis is a good practice for all farmers. As a rule, desert soils are very nutrient poor. The adobe soils of the Mesilla Valley hold minerals better compared to the sandy desert soil. Leaf analysis is another way to determine what is lacking in the soil. While the results of soil and leaf analysis may not be exactly the same, they will reflect each other.

Plant receptors and photosynthesis are discussed.

TAPE THREE, SIDE A:

Light is not necessary for seed germination, but is needed for flowering. Plants have a built-in cycle system and respond to a combination of light, temperature, and darkness.

Throneberry believes that there is a need for continued research in plant physiology because we never have all the answers. "The more you learn, the more you find you don't know." He feels that it is always a little harder to get funding for research because the work tends to be more basic, insofar as there is no immediate application. More applied types of study are easier to get money for.

Plant physiology on an individual research basis is not the most productive way to go about research. One person is limited in both outlook and outside information. "Two heads are better than one," he says.

Throneberry believes that while it is important to know what plants are doing, the field of plant physiology is not romantic or attention getting. "You don't make the papers"; it is a "back of the room" field, contributing to the broad spectrum of things.

TAPE THREE, SIDE B:

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