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The NMSU Herbarium (NMC)

The NMSU Herbarium (NMC), an Information Resource of Plant Diversity in New Mexico

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The value of herbaria in a technological world is very poorly understood, or understood not at all, by individuals who are not associated with documenting biodiversity, its changes, or the study of relationships among plant taxa. Herbaria now have a 500 year history, plants preserved a half millennium in the past still highly usable to specialists who study them. Most herbaria in the world are far younger than that, few are older than 1.5 centuries and many are only a few decades old. All supply information on request, through visitation, or by loaning specimens to interested workers in diverse regions. They reveal patterns of diversity present and past, provide information on morphological differentiation that leads to evolutionary insight, provide raw data for taxonomic work and conservation efforts, assist in routine identification, document many studies in biodiversity throughout the recent history of a region, and may even be a repository for "preserved" molecules that will be useful in determining relationships through the use of modern molecular methods. Herbaria deserve and require excellent care. Each herbarium that has more than 5000 specimens has an international acronym. The one in the Biology Department at New Mexico State University is NMC, after the older name for the school, New Mexico College of Agricultural and Mechanic Arts.

The NMC herbarium is the oldest in the state, and is historically the richest. It began with the founding of the school and the hiring of Elmer Ottis Wooton as Professor of Chemistry and Botany in 1890. Wooton had a simultaneous appointment with the Agricultural Experiment Station as State Chemist and State Botanist. He immediately began widely collecting in the territory, extending through most portions of the present state of New Mexico, going as far as the Grand Canyon, Arizona, in 1892, and south into Juarez near the end of the century. He continued collecting in the state until he left for the Bureau of Plant Industry in Washington, DC, in 1911. During his 21 year at the school he made well over 5000 collections, and these collections formed much of the basis of the Flora of New Mexico, published in 1915. He associated with Paul Carpenter Standley, who received his master's degree at New Mexico, and whose collections from the

northeastern part of the state are in NMC. The Flora was co-published with Standley, who at that time was stationed at the Smithsonian Institution.

Wooton used his duplicates from his collections to exchange with other institutions, in that manner obtaining specimens from their region or elsewhere. Many famous collectors are represented at NMC. The collection grew steadily from 0 specimens in 1890 to reportedly 18,000 by 1905, and 35,000 by the time Wooton left. For example, by exchange NMC received a set of Lindheimer's collections from 1850 from central Texas, and specimens from the early 1830's from the Pyrenees. The latter are mostly curiosities for us and as they are found are sent to herbaria that specialize in European plants.

From 1911 to 1966 the history of the herbarium is sketchy at best. During this period specimens that were important range plants were used heavily in teaching and were heavily damaged and many perhaps even destroyed through extensive use.

By almost all standards, NMC is a small collection, now with about 62,000 specimens, the actual number quite uncertain for the following reasons. For the first 50 years specimens were accessioned without an accession number, and then in the late 1930's someone went through the herbarium from start to finish and penned on each specimen consecutive numbers. Later, perhaps in the early 50's, someone with an automatic numerator numbered those that had accumulated since the first series of numbers were penned on specimens, and then in the mid-60's a careless worker again stamped many specimens with yet another accession number. Adding to the confusion was the addition of many duplicates of a person's collection. Perhaps an assistant went into the attic of old Foster Hall, retrieved some unmounted specimens (there were about 20,000 stored up there when Spellenberg arrived in 1968), and prepared them for the herbarium. For example, O. B. Metcalfe, who collected extensively in the Black Range before 1910, preparing beautiful material, had the same species collected in the same place at the same date represented up to eight times at NMC. As such collections were found, duplicates were removed from the herbarium and sent as gifts to other institutions interested in specimens from the region. The correction of all these redundancies in numbers and specimens, in addition to the removal of specimens that are not particularly useful (from Laborador, the Pyrenees), and just plain junky specimens, all serve to reduce the number estimated by the automatic numerator (67,500).

In 1953 Wm. Dick-Peddie, a plant community ecologist, arrived at the school. He taught primarily botany and ecology, and he curated the herbarium. Specimens were added to the herbarium that were collected in the early 1950's, many by David Dunn who had left for a position in Missouri. Dr. Dick-Peddie also processed loans of NMC specimens for other institutions; there are no records of loans before that time. In the mid-1960's Don Gordon joined the staff and curated the herbarium, but he added no specimens of his own. He left in 1968 for Minnesota; Richard Spellenberg joined the Biology Department staff at that time and took over herbarium curation.

At that time the herbarium was estimated to have about 38,500 specimens. The backlog of 20,000 specimens, received on exchange by Wooton 50 years earlier and stored in the

attic, were processed over a period of about five years. The majority were sent to institutions elsewhere, especially specimens that were not within the focus of an NMC growth policy that emphasized quality specimens from the Southwest and northern Mexico. Among the specimens in the attic were about 500 that were collected by Cyrus Gurnsey Pringle, a famous collector of Mexican plants from about the turn of the century. These had been stored since Wooton received them from the Smithsonian Institution. Among other jewels found in the NMC collection were specimens collected by Herrick, a president of UNM before 1910, as discussed by Robert Sivinski in the most recent Native Plant Society of New Mexico Newsletter. Herrick apparently sent plants to Wooton for identification, and Wooton incorporated them into the collection.

In 1968 the herbarium occupied a small space on the third floor of Foster Hall, where there are now offices and a plant physiology research lab. With remodeling of Foster Hall in 1971 the herbarium moved to quarters about double in size on the second floor of that building. In 1992 it was determined that the herbarium occupied prime space for a new laboratory of evolutionary and ecological genetics. It was moved to even more spacious and nicely remodeled quarters in the Biology Annex, a building constructed during World War II for air mechanics training. That move provided leverage to request a grant from the National Science Foundation for general improvement and expansion, and NMC received funds for a 20% increase in storage capacity, a state of the art dissection microscope, and some curatorial supplies. At present rates of acquisition that follows a policy of accepting only excellent material from areas of interest to New Mexico State University, NMC has several decades of growth before crowding again makes new space urgent.

NMC supports ecological and systematic research in the region, and makes the specimens available to workers throughout the world through its visitation and loan policies (about 25-30 loans made per year). Areas of interest are all of New Mexico and parts of adjoining states, and northern Mexico, especially the Chihuahuan Desert and the Sierra Madre Occidental. Plant groups of special value because of research interests are accessioned as are specimens from botanists who collect in the state for land management agencies or for special projects estimating environmental impacts of development. Excellent specimens from master's students doing floristic studies are also incorporated. In the mid-1970's a collection of plants by William Chapline from the Lincoln Forest, collected around 1915, were found in a shed in Alamogordo. These were in good shape and were processed. In the early 1990's another US Forest Service collection was discovered in a shed in Gila, and among them Chapline specimens from the Gila Forest. These two collections serve to give an excellent view of Forest Service collecting activity in southern New Mexico at that time and are now available to the scientific public.

Growth of herbaria in general has now slowed as exploration of much of the earth's biota comes to a close and political and social problems make entry into many areas difficult or dangerous. NMC continues to accession between 700-1000 specimens per year. As important is making this information stored in the collection available to anyone needing it. The personal computer and programs for data-basing now make this feasible. Data-basing of information associated with specimens is now underway at NMC (6200 entries

so far), information that will eventually be available on the Web. As data-basing progresses, errors in accession numbering are being corrected, ultimately to provide a good estimate of the size of the collection.

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Craig's Juicy Native Grass Gossip & Research. P.O. Box 609, Redwood City, CA 94064, or on the internet at <http://www.batnet.com/rwc-seed/juicy.gossip.one.html> [Abstracts agricultural research on native grasses.]

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Native Plant Society of New Mexico Newsletter. Tim McKimmie, 1105 Circle Drive, Las Cruces, NM 88005.

New Plant Distribution Records

New records for New Mexico are documented by the county of occurrence and the disposition (herbarium) of a specimen.

— Robert Sivinski (P.O. Box 1948, Santa Fe, NM 87504).

Salvia texana (Scheele) Torrey (Labiatae): Eddy County (UNM).

Plantago wrightiana Dcne. (Plantaginaceae): Sierra County (NMCR).