

Fall 2014, Number 118

A *Seedhead News* Special Tribute to
Native Seeds/SEARCH Co-Founder
Barney Burns, 1945–2014



Barney Burns, Mahina Drees, and Gary Paul Nabhan at NS/S's Sylvester House property in 1995.

A “Chucky-Jam Full” Life

by Kevin Dahl, Former Executive Director

With this special issue of *The Seedhead News* we celebrate the life and mourn the passing of our friend and Native Seeds/SEARCH founder Barney T. Burns, Ph.D.

Our tribute has two parts. The first — a selection of articles he wrote for this publication, and an excerpt from his doctoral dissertation — demonstrates his wide-ranging work and dedication. Reviewing these, I felt renewed pride for what Barney accomplished.

Perhaps his crowning achievement was spearheading an effort to publicize and protest a plan to use World Bank funding to create a large-scale timber operation in Mexico. If built, it would have turned high-quality virgin forest into low-quality toilet paper and newspapers, disrupting the lives and livelihoods of the Tarahumara of the Sierra Madre Mountains. His careful questioning and ability to activate a network of friends in high places (who could have guessed this cause would have been taken up by England's Prince Charles!) saved the day and stopped the project.

The articles, spanning almost three decades, shows a man equal parts scholar and storyteller, scientist and philosopher, and always the practical doer. We must be thankful that Barney was in the right place to help start Native Seeds/SEARCH, and was inclined to continuing supporting it the rest of his life. His work was strategic and essential.

Interspersed with these articles are contributions from Barney's friends. These include a thoughtful obituary written by former *New York Times* reporter and University of Arizona professor emeritus Ford Burkhart, and personal reminiscences of Barney by our three other founders, Gary Paul Nabhan, Karen Reichhardt, and his wife, Mahina Drees, another former Executive Director of NS/S, Michael McDonald, long-time friend and current NS/S board member Martha Ames Burgess, and college pal Wes Wilson.

Together, this collection reviews a well-lived life, or using a phrase that Barney would employ from time to time, a life that was just “chucky-jam full.” From my perspective Barney's life was chucky-jam full of good deeds, hard work, and love.

I use the word “love” intentionally because Barney's life truly embodied love in a wonderful and unique way. His deep love for his wife and work partner Mahina was

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We envision the Greater Southwest as a place where farms and gardens, kitchens and tables, stores and restaurants are brimming with the full diversity of aridlands-adapted heirloom crops; people are keeping the unique seeds and agricultural heritage alive; and the crops, in turn, are nourishing humankind. — VISION STATEMENT

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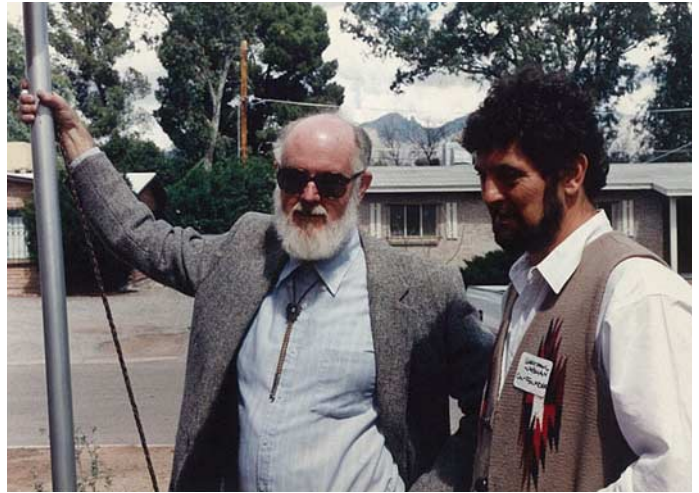
Dr. Barney Burns, Native Seeds/SEARCH Co-Founder, Passes On, Leaving Us a Legacy of Hope and Humor

by Gary Paul Nabhan, Native Seeds/SEARCH Co-Founder

In the second week of August, the Tucson community, the Greater Southwest, indigenous peoples and farmers everywhere lost a good friend, an extraordinary seed saver and a historian of Southwest food and farming folkways. Dr. Barney T. Burns was far more than a co-founder of Native Seeds/SEARCH. He spent over four decades linking native farmers and artisans to the audiences, human rights support networks, and applied scholars who cared about them and their future. Trained as an archaeologist, dendrochronologist, climate scientist and ethnohistorian, Barney knew more about Northwest Mexico than anyone I have ever known, both through his first hand experiences and his readings in one of the most extensive libraries of borderlands archives and rare books I have ever seen.

If these details alone suggest that Barney was a stuffy scholar, nothing could be further than the truth. With a wry sense of humor, fun-loving trickery, and shaggy dog storytelling, Barney amazed nearly every poor soul that ever traveled with him or dined with him. From the days when he was growing up in Carlsbad, New Mexico in the Fifties, to his very last days in the Tucson Mountains, Barney had a museum curator's penchant for collecting and documenting the material cultures of our region, as if on some wild adventure to rediscover the Holy Grail.

His work benefited far more people than most of us will ever know. With his wife, seed collecting, and traveling companion, Mahina Drees, he kept hundreds of Tarahumara families alive during some of the worst droughts their land had ever witnessed, but did so by providing income through crafts sales, through reintroducing lost seeds, through sponsoring ecological restoration and water-harvesting projects, and through building a network of support for livable wages rather than simply offering hand-outs of one-time food relief. They were also key to efforts to stop World Bank-funded intrusions of highways, sawmills, and mines into the Sierra Tarahumara in the Nineties, when no one thought that "Little Davids" could ever scare away such a Goliath. As co-founders of Native Seeds/SEARCH, Barney and Mahina made most of its original seed collections, but then continued with board duties for more than another quarter century after initiating the organization.



Barney Burns and Gary Paul Nabhan at NS/S's Sylvester House property in 1995.

As a compiler and co-author of the book *The Other Southwest*, journal articles and chapters in anthologies, Barney made a unique contribution to ethnohistoric and ethnobotanical scholarship as well.

Much of Barney's work the last half of his life was done in tandem with Mahina Drees, singer-songwriter, non-profit activist, and garden educator. Together they must have traveled more than a hundred thousand miles into remote villages on both sides of the border. No two people have worked harder to ensure an agriculturally diverse future for our region, and no one could have ever done it with as much adventurousness, hilarity and joy as Barney and Mahina have done. Each of them deserve to be regarded as true Keepers of the Multi-cultural Heritage of the Borderlands. Barney will be deeply and immediately missed by hundreds of his Raramuri, Yoreme, Mormon, Guarijio, Nde, O'odham, Mexican, and Yori friends.

Adios amigo, see you under the Sacred Tree on the other side of the Desert River.

A "CHUCKY-JAM FULL" LIFE *continued*

obvious to all who knew them. His respectful love and concern for the native craftspeople and farmers with whom he traded was a constant motivation for all he did to help them. His admiring love for the arts, seeds, and crops he gathered manifested in his decision to become a trader and to help create Native Seeds/SEARCH's important work. His extensive library and circle of friends revealed an inquisitive love for the history of this region and its people. He also loved honest

work, as he was one of the most industrious men I've ever met.

So this one is for you, dear Barney. Someday soon I will lift a glass of Diet Pepsi in your honor (his favorite drink), watch a little bit of the Weather Channel (his favorite TV show), and hold in my lap and caress a beautiful madrone-wood bowl (one that you had purchased from its Tarahumara maker, imported into the United States, and finely sanded before sale). We will miss you.

Barney Tillman Burns III, 1945-2014, a Native Seeds/SEARCH Founder and Noted Seed-Saver

by Ford Burkhart

When seeds were feared lost for a particular lemon basil, a young Barney Burns saved the day. His mother, Janet, an organic gardener in New Mexico, had preserved that heirloom variety since the 1930s, and one day ruefully reported the seeds were lost. By chance, Barney, then a University of Arizona student, had that basil growing in a flower box at his studio apartment, and was able to send some seeds back to her. That plant, now in the Native Seeds/SEARCH collection, is prized by chefs everywhere for its citrusy flavor and is known, of course, as Mrs. Burns' Lemon Basil.

Barney Tillman Burns III, an anthropologist, archaeologist, dendrochronologist, climate scientist, ethnohistorian and advocate for native arts and handicrafts in northern Mexico, died on Aug. 14, 2014. He was 69 years old.

In 1983, Burns was a founder of Native Seeds/SEARCH (NS/S), a nonprofit dedicated to conservation of traditional crop seeds of arid southwestern North America. He was a Board Member from 1983 until his death, and held the positions of Secretary, Vice Chairman, and Chairman during his board tenure.

Burns worked mightily to preserve the crops, farming methods, crafts, and traditions of the Tarahumara people in northwest Mexico, and also worked with Yoeme (Yaqui), Yoreme (Mayo), Raramuri (Tarahumara), Guarijio, Nde (Apache), Tohono O'odham, and Yori (Anglo) communities in Arizona and northwest Mexico. During their travels, Burns and his wife, Mahina Drees, assembled most of the seed collections from Mexico for the NS/S seed bank and many from the New Mexico pueblos as well.

"Barney wandered around the Sierra Madre Mountains with Tom Naylor for years and was a fountain of knowledge about the geography and cartography of the northern parts," Drees said. "He got many calls from people planning trips into the area."



Barney Burns and former board member, Diana Hadley.

For several years, Burns and Drees oversaw the Tarahumara Project called "The Treasure of the Sierra Madre," which involved soil conservation, watershed restoration, pure water access and water harvesting, native plant nurseries to replenish the wood and fiber materials for their crafts, and seed redistribution. They also worked with Mayo farmers in Sonora and Sinaloa.

In the early 1980s, Burns and a few colleagues began a seed bank under the umbrella of the local arm of Meals for Millions, a group that combatted hunger. They planted tepary beans at the Campbell Avenue farm, and worked from quarters near the UA campus where seeds were kept in a refrigerator locked with an infamous chain, "to keep out nosy people," Drees recounts. They moved to space at the St. Andrew's Episcopal Church, in Armory Park, with the seed bank in the attic. The seed collection was then placed for a time in the home of Drees in Esperero Canyon, in the Catalina Mountains foothills. There, they stored seeds creatively. "I got pickle buckets from hamburger joints that had been used to store grease, and cleaned them out," Burns said in an interview, "and that's where the seeds were stored."

By 1983, interest was growing in their work and Burns and his colleagues incorporated NS/S that year. They planted their first real gardens at Tucson Botanical Gardens in 1986, and hired O'odham craftsmen to build a ramada, which still stands there. They defined their geographical scope as "Durango to Durango, Las Vegas to Las Vegas," Burns recalled. That referred to the two cities in Colorado and Mexico, and two in Nevada and New Mexico. The goal was to preserve seeds for arid-adapted field and garden crops, including heirlooms, and their wild relatives.

Burns had a remarkable awareness of traditional agriculture and the farmers themselves who still practiced the old ways. "It was in large part his vision that in order to keep the farming traditions and the seeds alive, you had to help the people continue living on their homeland," said Martha Ames Burgess, a NS/S board member.

"He was a person of incredible intelligence and compassion. He was also an incredible storyteller and repository of knowledge," said Chris Schmidt, interim executive director of NS/S. "His was an irreplaceable mind."

The ethnobotanist and writer Gary Nabhan described Burns as "an extraordinary seed saver and historian of Southwest food and farming folkways."

For more than four decades, Burns and Drees worked with farmers in Northwest Mexico, buying their traditional crafts and finding markets for the products in the United States and around the world. That, Burns said, was a way to keep families and cultures intact by providing a source of cash to supplement their subsistence farming. Together, Burns and Drees owned Unknown Mexico, a wholesale importer of traditional Indian arts and crafts, from 1969 to 2014. Burns' imports "encouraged the best quality of crafts in native

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cultures at a time when some of these crafts were diminishing or being lost,” said Burgess.

Burns was also a professional guide and lecturer, and was the interpretive guide on many expeditions — for Baja Frontier Tours, the Arizona-Sonora Desert Museum, and Vistas de Sonora — into north-west Mexico from 1982 to 2011. He kept participants spellbound as he discussed the lifeways, history and archaeology of peoples including the Tarahumara, Yaqui, Mayo, Mennonites, and Mormons, in Sonora, Sinaloa, and Chihuahua, along with his accounts of Apache history in the region.

Over many years and trips, Burns was the principal guide and translator for *The Apache Diaries: A Father-Son Journey*, by Grenville Goodwin, who died in 1940, and son Neil Goodwin, published in 2000 by University of Nebraska Press. The book recounts a search by father and son for the “lost Apaches” of the 20th century in Mexico. Neil directed the 1988 film *Geronimo and the Apache Resistance*, in the PBS American Experience series.

In 1991, Burns helped to block a large timber project proposed by the World Bank and the Mexican government for the Tarahumara region of Durango and Chihuahua in Mexico, a project that he and others felt was a threat to the area’s considerable agricultural and biological diversity as well as its cultural well-being. “The World Bank didn’t realize there were Indians in this area, and that there were ejidos, community institutions, there,” Burns said. He and Drees drafted 275 questions for the World Bank to answer, and circulated it globally to other supporters, including Prince Charles, who had it sent to the Mexican ambassador in Washington. “We stopped the project cold,” Burns said.

Burns had a wry sense of humor and storytelling.

Kevin Dahl, who is now Senior Program Manager at the National Parks Conservation Association and an NS/S board member and former executive director, recalls the days in 1993 when he and Burns and others were invited to Havasupai Nation, near Grand Canyon, to distribute free seeds in the wake of devastating floods that had washed away the fields. “We set up a table in front of the post office and had a great time passing out corn, squash, beans, sunflowers, and other Native American crop seeds,” Dahl said. “Sharing a distrust of the helicopter that took the rest of our group to the reservation (which is located at the bottom of the Grand Canyon), Barney and I decided to hike the nine miles to Supai village. We accepted an offer of horses to ride back to the rim.

“Barney told me stories the entire time — exploring the missions of remote northern Mexico so he could take tree ring cores of their beams; his youthful adventures in Carlsbad, N.M.; early days of Native Seeds/SEARCH when seeds and catalogs took over his home. We were novices at horseback riding, and shared the same aches and pains when we got back to our cars.”

Burns was born in Pasadena, California, on June 28, 1945.

He attended schools in Carlsbad, New Mexico, and attended the University of Arizona, where he was a member of Phi Kappa Phi and Phi Beta Kappa, and worked as a Graduate Associate and Assistant in the Laboratory of Tree-Ring Research and in the Department of Anthropology between 1967 and 1973.

In the 1960s, Burns was Public Relations Director for the Thunderbird Indian Dancers at Carlsbad, N.M.; and a counselor for the Archaeological Program at Philmont Boy Scout Ranch near Cimarron, N.M. He won a National Science Foundation fellowship in 1963 to attend a Summer Institute in Anthropology at the University of Mississippi, in Oxford, Miss.

Between 1963 and 1966, Burns was an Assistant Archaeologist at Bobcat Cave in southwest New Mexico, in Hidalgo County; working for the School of American Research. He also worked on Mimbres Culture Excavations, and was a Field Foreman for Sopris Salvage Archaeological Excavations along the Upper Purgatoire in Colorado.

In 1967 and 1968, Burns was an Archaeology Dig Foreman, working for the National Geographic Society and The University of Arizona at the Murray Springs Early Man Excavation, in the San Pedro Valley in Arizona.

Burns began his field work with the Mayo and Yaqui in 1973, and received his Ph.D. in anthropology, archaeology and dendrochronology in 1983.

He was married to the singer and songwriter Mahina Drees Burns for 32 years.

Burns was a compiler and co-author of the 1977 book, *The Other Southwest: Indian Arts and Crafts of Northwestern Mexico*, and many journal articles and chapters in anthologies.

“Barney knew more about northwest Mexico than anyone I have ever known, both through his firsthand experiences and his readings,” said Nabhan. “He maintained one of the most extensive libraries of borderlands archives and rare books I have ever seen.”

In addition to his wife, Mahina Drees, survivors include many cousins in Tucson and two brothers.

Speaking about Burns and Drees, Nabhan said: “No two people have worked harder to ensure an agriculturally diverse future for our region, and no one could have ever done it with as much adventurousness, hilarity, and joy as Barney and Mahina have done. Each of them deserves to be regarded as true keepers of the multicultural heritage of the borderlands.”

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Barney Burns and former NS/S Executive Director, Bryn Jones.

Simulated Anasazi Storage Behavior Using Crop Yields Reconstructed from Tree Rings: A.D. 652–1968

Abstract and figure from Barney's PhD dissertation, submitted to the University of Arizona Department of Anthropology in 1983.

A clear understanding of interactions between the arid Southwestern environment and that area's prehistoric inhabitants has been a goal of Southwestern archaeology. This research has reconstructed annual corn and dry bean crop yields for southwestern Colorado from A.D. 650 to 1968, as well as the amounts of those foods available for each of those years.

Colorado's five southwestern county dry farming corn and dry bean crop records were combined to create two regional crop series. Modern technology's increasing influence was recognized as being present in the two series. This influence was felt to parallel Colorado's statewide fertilizer consumption and was removed using a multiple regression procedure. Two modern technology free regional crop series resulted. These two series, along with the original two historic crop series were calibrated against five Four Corners tree-ring chronologies from four localities. Both Douglas-fir and pinyon were employed in the calibration. The calibration process used multiple regression so that each series' current annual crop yield could be predicted using one or more of 25 separate dendrochronological predictors. The regression equation deemed most suitable for predicting each of the four crop series was utilized to reconstruct annual crop yield estimates for the A.D. 652-1968 period.

Normal verification was impossible since additional independent crop data were lacking. The reconstructed crop yield series were evaluated statistically. Portions of them were compared against historically recorded events. These two types of testing suggested that the retrodictions were probably valid.

The crop yield reconstructions provided the basic data for four sets of storage simulations that attempted to determine corn and dry

bean availability for each year from A.D. 652 to 1968, given certain assumptions about the levels of storage technology available to the Anasazi of southwestern Colorado.

A. E. Douglass' A.D. 1276-1299 "Great Drought" appears to be confirmed. A number of additional famines or food crises have also been recognized. In addition, periods where food was super abundant have been identified. It now appears that much of the Four Corners large public construction projects were undertaken during and perhaps because of these periods of excess surplus.

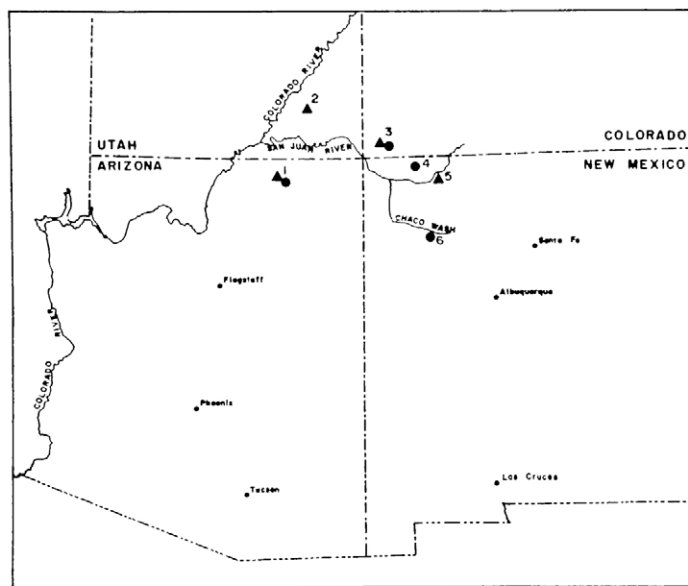


Figure 3. Tree-ring sites (▲) and archaeological districts (●) in the Four Corners Area. 1. Taos Canyon, 2. Natural Bridges, 3. Mesa Verde, 4. Aztec Ruin, 5. Gobernador, 6. Chaco Canyon.

BARNEY TILLMAN BURNS III, 1945-2014, A NATIVE SEEDS/SEARCH FOUNDER AND NOTED SEED-SAVER *continued*

Burgess added, "Burns' vision — and action — in saving hundreds of crop seeds adapted to the desert Southwest is already having influence in arid regions around the globe. The reach of his and others' work at NS/S will extend into a future of changing climates. Seeds that Burns helped to save from little-known cultures may in fact save other populations as desertification spreads."

Publications by Barney Burns

1983-2013. Numerous articles in *The Seedhead News*, Native Seeds/SEARCH.

1984. Palmilla (*Nolina*) Fiber: A Native Plant Industry in Arid and Semi-arid U.S./Mexico Borderlands. *Journal of Arid Environments*, Vol. 9, pp. 97-103. Co-author: Gary Paul Nabhan.

1983. Tree-Ring Reconstructions of Prehistoric Crop Yields from Southwestern Colorado: A.D. 652-1968. 4 pp. Paper presented to the Association for Arid Lands Studies at the 1983 annual meeting in Albuquerque, N.M.

1983. Simulated Anasazi Storage Behavior Using Crop Yields Reconstructed from Tree Rings: A.D. 652-1968. 746 pp. Doctoral Dissertation. Department of Anthropology, University of Arizona.

1979. Mayo Weaving: A Continuing Sonoran Art Form. *American Indian Art Magazine*, Vol. 4, No. 2, pp. 54-64.

1977. *The Other Southwest: Indian Arts and Crafts of Northwestern Mexico*. 143 pp. Co-authors: Bernard L. Fontana and Edmond J.B. Faubert.

1973. Colonia Morelos: A Short History of a Mormon Colony in Sonora, Mexico. *Smoke Signal*, No. 27. Tucson Corral of the West-erners, Co-author Thomas H. Naylor.

1972. Crop Yields, Tree-Rings, and Climate. 1970-71. Annual Report to the National Park Service, Department of the Interior, Washington, D.C. Co-author: William J. Robinson.

1967. The Archaeology of the Carlsbad District, Southeastern New Mexico. B.A. Honors Thesis. University of Arizona. 134 pp.

Life with Barney

by Mahina Drees, Native Seeds/SEARCH Co-Founder

The first time I went into the Tarahumara with Barney, we got stuck in semi truck ruts where the road had not yet been completed. Using the four wheel drive, Barney got us out and off into some pines where we decided to spend the night as it was dark. Somehow he got a fire started in the rain and we cooked the steak I had bought on sale. I think we impressed each other. Getting stuck wasn't a common occurrence, but another one in Mayo country sticks out in my memory. After watching a large truck go through a mammoth mud puddle, Barney tried to get the Suburban through. When we stopped in the middle, I had to crawl under Barney and keep my foot on the gas so we didn't stall out and suck water into the engine, while Barney climbed out over the hot hood and engaged the four wheel hubs. It worked.

After that, life was centered around regular trips into Chihuahua and Sonora to buy crafts and collect seeds. Looking back over field notes we figured out that one year we went into Mexico every month. The trip into the Tarahumara region was 12 hours one way and it was 8 into Navajoa, Sonora, our center for Mayo collection. When we started visiting the Sinaloa Mayos, at least two more hours were added on. I guess we were younger and stronger.

Needing a lot of energy didn't end with our arrival in Creel, Chih., Navajoa, Sonora or El Fuerte, Sinaloa. Although Barney had gone village to village when he first started buying crafts in the Tarahumara and paid cowboys to go out and collect baskets from areas with no roads; by the time I joined him in 1983, we were buying from the Mission store which was a nonprofit Catholic organization which supported its health clinic, schools and food relief, when necessary. We also bought from most of the rest of the stores in and around Creel, some owned by Tarahumara ejidos. Although we hired young people to help us with tagging the crafts with "Made in Mexico" and wadding newspaper to stabilize the boxes, we worked 12 hour days.

Over the next couple of years we developed a group of mostly female suppliers of baskets and male carvers of bowls and utensils who came to our room in Creel, Chihuahua. Barney was the scribe and I counted and appraised the items. This allowed us to help more people as we could buy large quantities of crafts which we shipped out via train, first just by boxes, and then having to rent a whole train car when they stopped the box service. We needed 300 to 400 boxes to cover the bottom of the train car so they wouldn't shift around too much. One time I watched Barney move the train car with the suburban into a better position along the siding so we could reach it to load. Barney means "brave as a bear" and he was.

Barney started Unknown Mexico after a trip into the Tarahumara in the early 70s. He saw all of the beautiful things that the people



Above: Gary Nabhan, Mahina Drees, Barney Burns and staff kids at the NS/S Founders' Retreat in 1986. Inset: Mahina Drees and Barney Burns at NS/S's Maíz Mágico event in 2013.

made and wondered why they were so poor. His initial attempts to sell the items met comments like "oh, that's Mexican." Barney explained that many of the people didn't even know they were in Mexico and didn't speak Spanish. The first time he came through customs, his mother was with him. Customs had never seen these crafts before. They spent four hours processing the load because they couldn't find number 12 of 12 kick balls worth 12 cents each. It had rolled under the truck. At the end, Mrs. Burns asked the agent for his name, badge number and his supervisor's name. She threatened to turn him in for wasting taxpayer dollars, especially as she knew the current senator from New Mexico. Barney explained that if she did that he would never get through El Paso customs again.

Collecting seeds was a high energy determined activity as well. Barney knew the Sierra Madre like the back of his hands from years of kicking around with Tom Naylor, a University of Arizona historian, so he knew how to collect seeds from varying altitudes, climatic conditions, soil types and Tarahumara subgroups. We received a grant for collecting and Barney drove over 1,000 miles with only about 12 of them being on pavement. We were always well-received, although it sometimes took Barney's joking around with the men to achieve a real comfort level. My presence allowed us to deal with women.

Probably the most exciting trip for me was one we made on horseback to see mother teosinte growing along the corn fields. (Barney had previously made a horseback trip into Warihio country with Gary Nabhan and Tom Sheridan to collect panic grass.) We slept in a corn crib, not the first or last time. and ate in shifts as there were only a few chairs, plates, and utensils. The people were very warm and we were able to collect a lot of teosinte.

Our craft business in Mexico allowed us to collect seeds on the side when we didn't have a grant. Collecting seeds was mostly a door to door, rancho operation, but we did obtain some seeds in markets and Barney's good Spanish helped identify where the seeds came from originally. Barney's gift of gab always put people at their ease.



Tarahumara Indian Country Explored for Seeds

by Barney T. Burns, PhD — This article originally appeared in *The Seedhead News*, No. 2, 1983.

Barney Burns was a prodigious collector and conservator of agrobiodiversity from the Greater Southwest. Barney was directly responsible for acquiring 745 (43%) of the 1,744 unique field collections of seeds in the NS/S seed bank for which sufficient data are available. Many of these he collected in tandem with his wife and fellow NS/S co-founder Mahina Drees in the Sierra Madre of northern Mexico. Indeed, about three-quarters of the Mexican landrace varieties in the NS/S collection were obtained by Barney and Mahina through their numerous trips to Tarahumara and other indigenous communities. Their efforts yielded an irreplaceable resource for the benefit of those communities far into the future. —Chris Schmidt, Interim Executive Director

During the last part of April I had another occasion to briefly visit the Sierra Madre Mountains of South western Chihuahua and northeastern Sinaloa, Mexico. Mexico's rugged western Sierra Madres, and especially that portion of the uplift called the Sierra Tarahumara, is a remarkable refuge area. Not only is it the home of the legendary Tarahumara Indians, but it is also the locus of an unusually large number of traditional or native crop species and varieties.

The concentration of so many important seed stocks is due to three factors. First, many of the Tarahumara Indians persist in their traditional dry farming activities. Second, these Indians inhabit an area containing incredible diversity geographically and environmentally which has necessitated local adaptations in each of the types of seedstocks grown. Third, the extremely rugged and isolated Tarahumara region has allowed the survival of these locally adapted



Gileño, a Tarahumara landrace maize variety collected by Barney Burns in Cerocahui, Chihuahua, in 1984. This is one of over two hundred maize accessions collected by Barney during the assembly of the Native Seeds/SEARCH collection.

populations which in so many other areas have long since either disappeared or become extinct.

Readers of this newsletter will be especially interested in knowing that even though extremely brief, this trip resulted in the collection of several additional important seedstocks. I was able to contact a farmer from the town of Cerocahui, Chihuahua, and obtain from him samples of five of the basic Tarahumara corn (*Zea mays*) varieties.

These include a blue Tarahumara corn which is felt to be especially good for tamales and a red Tarahumara corn which is commonly used by the Tarahumara for their fermented “tesquino” or corn beer. In addition, a variety of red striped corn called “Maiz e Pinto” by the Tarahumara was also obtained. This variety is unbelievably similar to Supai “chin mark” corn. This type is apparently especially suitable for tortilla making. Samples of two white Tarahumara corn varieties were also collected. These are the “Maiz e Blanco” which is ideal for pinole making and “Maiz e Chapo” which is used for tortilla making.

All five of these corn variety samples were grown out in 1982 in the volcanic soils immediately adjacent to Cerocahui, Chihuahua. Corn had been grown in this isolated valley well before A.D. 1681 when the Jesuits established the first local mission. This means that the corn obtained should be well adapted to arid, dry farming conditions at elevations around 6,000 feet.

Interestingly, I saw a number of groups of Tarahumaras planting their corn fields in late April right at the end of the spring rains. The Tarahumara corn is thus adapted to sprouting in late April or early May and growing slowly until the summer rains begin in late June or early July.

During my visit to Cerocahui I was also able to obtain samples of a small brown/pink lentil (*Lens esculenta*) which was introduced from Europe years ago. This tasty bean has become adapted to Cerocahui's soils and climate and lends another element of variety to the local diet. I was especially pleased to collect a substantial sample of the local sulphur or “azufrado” bean (*Phaseolus vulgaris*) after having consumed an unusually large portion of refried beans prepared from this delicious bean variety. Again both of these bean samples should be well suited for growing at upper elevation dry farming sites.

Native Seed Searchers living at lower elevations will be glad to know that I was also able to acquire another sample of sulphur beans from the 300-year old town of Urique, Chihuahua.

This historic mining town was only connected to the outside world by truck roads five years ago. The local seed varieties have been grown out for centuries in this spectacular location at the bottom of Mexico's famous Copper Canyon. While surrounded by mountains reaching 8,000 feet, most of the fields around Urique are situated at elevations close to 1,000 feet. These sulphur beans should thus be adapted to much hotter and even drier conditions than those from Cerocahui.

Interesting Characteristics Noted For Mountain Pima Yellow Sweetcorn

by Barney T. Burns, PhD *This article originally appeared in The Seedhead News, No. 11, 1985.*

Barney Burns was an accomplished researcher and he brought this to bear on his work at Native Seeds/SEARCH. He exhibited profound respect for the crops, cultures and peoples of the Greater Southwest, and spoke passionately about the region's rich agricultural heritage. During my time at NS/S I have always appreciated Barney and Mahina's constant commitment to the care of the seed bank collection and their deep appreciation of its significance. — Chris Schmidt, Interim Executive Director

In March of 1985 we planted Mountain Pima Yellow Sweet Corn at SEARCH's New York Drive garden. The intent was not to produce any quantity of seed for eventual distribution, but to determine how medium elevation corn from Western Chihuahua would do in Tucson's desert climate. As expected, this particular variety of corn is not well suited to Tucson's heat and dryness. Corn cobs were obtained with viable seed, but no great increase in SEARCH's supply resulted. Obviously this corn variety is much more productive at elevations in western Chihuahua around 5,000 feet in oak woodlands.

During this growout a number of characteristics were noted which singly may be present in a particular corn variety, but normally do not occur in any one crop. This particular corn appears to have retained many traits of early cultivated corn. Using this unusual sweet corn variety as an example we wish [to] encourage readers to record characteristics for the varieties they grow out in their own gardens.

Many modern and/or hybrid corn varieties have a single stalk or culm that conveys water and nutrients from the plant's roots to its leaves. The Mountain Pima Yellow Sweet Corn produced a number of secondary stalks or "tillers". The number of tillers per plant in our small test plot ranged from zero to six with an average of two tillers. The corn also exhibited an unusually high number of sets of aerial roots. Aerial roots occasionally appear at the lower nodes of some corn plants, but this variety of corn exhibited up to seven sets of aerial roots above the ground level. It was not uncommon for many stalks or tillers to have three to six sets of aerial roots while other plants had none.

Aerial roots are valuable to prevent lodging. Many Indian farmers heap dirt up around the stalks which allows the aerial roots to grow and better anchor the plants. (However, this variety did not exhibit root instability or weak stalks.)

The plants produced a number of poorly filled out ears of corn because of the extreme heat present while the plants were pollinating. The plants often produced from one to as many as three ears per main



Barney Burns and Mahina Drees process beans with a Tarahumara woman in this undated photo from the NS/S archive.

stalk or tiller. This variety obviously has the potential to be very high yielding since the tillers produced cobs. A number of main stalks and tillers occasionally branched into two or three stems at a height of three feet above the ground.

As the cobs matured, from 90–120 days after planting, they were removed from the stalks. As many as three new ears emerged on some stalks at the location where the ear had been removed. Only a few secondary ears developed, but their presence was unusual.

A single tassel was present on as many as a third of the ears. The frequency of this characteristic appears to be greater than in other corn varieties we have grown.

All the tillers produced tassels, but two or three of these tassels produced small corn plants. These miniature plants developed at the base of the tassel. They were not the result of viable seeds maturing at these points and then sprouting. Comprised of sets of one to six small sets of leaves, these plants grew to a length of four to six inches before being dislodged by the wind rustling the tillers. The tiny shoots quickly developed sets of roots when placed in water.

These observations are reported here to encourage other Native Seeds/SEARCH growers and members to take note of the characteristics of plants they grow. Most of the varieties of seeds we offer for sale have never been carefully studied by agricultural scientists. The staff of SEARCH encourages anyone growing our seed to take careful notes on the plants they have planted. For many varieties of seed, it may be the first time ever for them to be grown in such far ranging climates.

Trinchera Tradition in the Sierra Madre

by Barney T. Burns, PhD — This article originally appeared in *The Seedhead News*, No. 78, 2002.

Early this past July, Michael McDonald and I visited Native Seeds/SEARCH's collaborative conservation projects in the Sierra Madre Occidental of Southwestern Chihuahua, Mexico. Since the early 1990s, NS/S has helped the local Tarahumara residents build some 28 fenced gardens, some of which are more than an acre in size. And since 1997, NS/S has also supported an extensive project of building stone retaining walls to reclaim very badly eroded areas in and around Rowerachi, as well as some half-dozen other communities.

On this last visit, Juan Daniel Villalobos, the director of K'etami Wasar'a which means "our sustainable farmland" in Tarahumara, showed us how far the community garden and soil-reclamation projects had progressed in several Tarahumara communities since NS/S's last visit in the late 1990s.

Our first stop was Rowerachi, a volcanic mesa sitting between two 3,000-foot arroyos just north of Mexico's famous Copper Canyon. The local soil is normally thin and not of very good quality. But local Tarahumara Indian families have used this marginal farm land for over a century, often keeping it in place by constructing rock-wall rimmed terraces. Like so many parts of the isolated Sierra Madre, this scattered village is overpopulated, its limited natural resources at-risk of being over-utilized. The village center, consisting of a church, store, and school, is surrounded on three sides by absolutely bald stretches of volcanic ash bedrock. In places, small juniper trees grow on three-foot tall columns of soil anchored in place by their roots. Over-cutting for firewood and over-grazing by sheep and goats have denuded the thin soil over many years, and the ferocious winds out of the west continually rip the exposed soil off its rhyolitic bedrock, threatening

not only the remaining farmland but also the springs that water the community.

Over the course of six years, under the direction of K'etami Wasar'a and with the financial support of Native Seeds/SEARCH's members and donors, hundreds of meters of stone walls or "trincheras" have been built and/or repaired by the people in Rowerachi, as well as in half a dozen other Tarahumara communities. These trincheras are a local tradition that protect current subsistence corn fields, gardens, and heirloom fruit tree orchards — many of the newer ones have been sponsored by NS/S. These rock walls act as dams and stop the long-standing loss of remaining topsoil, sometimes saving six acres of fields at a time and improving soil moisture. Talking with Juan Daniel, it became apparent that the level and quality of the community's remaining spring/well has been greatly enhanced by these soil conservation efforts. In addition to preventing the loss of topsoil in degraded areas, the trincheras also enable the restoration or reclamation of denuded land, with the result that even bald-rock areas can be turned into farm fields or pasture for Rowerachi livestock. Many small, 1-3 stone-high trincheras have been built in bald-rock areas. As the rainfall runoff cuts into the rhyolitic and volcanic ash rock, it creates sediments that are deposited behind each stone terrace. Michael and I observed that grass and weeds are already growing behind dozens of these recently reclaimed areas. We also visited several gardens in Rowerachi and walked along stretches of the old arroyo that are now rapidly filling in because of the hundreds of stone retaining walls built with hundreds of tons of rock boulders. The help NS/S has been able to provide has resulted

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Juan Daniel Villalobos stands beneath an old trinchera supporting lush growth and soil stabilization near Sitagochi, Chihuahua.

Boxes on a Low Budget — *This article originally appeared in The Seedhead News, No. 13, 1986.*

A number of you who have ordered seeds from SEARCH have commented on the unusual boxes we use. Several of you have even tried to wheedle out of us our source. It is time to share one of our best kept secrets — SEARCH's shipping box supplier.

Originally Barney was able to convince Rick Scherb of R & P Auto Service in Tucson to save empty car parts boxes for SEARCH. Barney would drop by weekly (usually while getting more repairs on his aging Blazer) and pick them up. While this supply was adequate for a year or so, our demand quickly outpaced Rick's ability to supply SEARCH.

Barney began a broad inventory of trash dumpsters within several miles of the New York Drive address. His diligence quickly pinpointed Lowry Hardware at 975 W. Prince Rd. as the best source of reusable small boxes. Barney monitored the white trash dumpster behind the hardware store and soon determined the best day for collecting boxes.

One day, Jerry Allen of Lowry Hardware suggested that perhaps Barney was overqualified for crawling around in dumpsters. He approached Mr. Ed Lowry to see if the store could save reusable boxes for SEARCH. Mr. Lowry agreed that our project was worthwhile and graciously instructed employees to save boxes on a regular basis.

We would like to thank the entire Lowry family as well as Jerry and Harold Bender who actually save the boxes. We expect to use about 1,000 of them this year.

Now the only time Barney can be seen crawling through dumpsters is when we need additional styrofoam packing materials. He has located two good sources, but he is not willing to reveal their exact address — at least not yet.



Barney Burns cutting and placing rocks in 1988 for NS/S demonstration gardens at Tucson Botanical Gardens.

TRINCHERA TRADITION IN THE SIERRA MADRE *continued*

in an amazing change in this hard-scrabble Tarahumara community.

Because of our presence in the village, the women prepared buckets of corn pinole. Michael and I drank the offered dippers of pinole that night before retiring to Juan Daniel's house, but we couldn't keep up with the eating pace of our hosts. Early the next morning, we arose to a fabulous view of the 3,000-foot deep San Ignacio Canyon and to an invitation to join a traditional tesguino (corn beer) working party, which was being held that morning to repay neighbors who were helping a family weed their large corn field. After helping ourselves to some tesguino and sharing a number of NS/S bean growouts with Juan Daniel and various Rowerachi farmers (including receiving a new collection of beans from Francisco Adrian Gutierrez), we thanked our hosts and bade farewell to Rowerachi. Juan Daniel then drove us out to a trailhead on the brink of a steep canyon. We hiked our way down and then up and down the rocky steep trail that leads to the hilltop village of Sitagochi and Rancho Newatabo. Juan Daniel wanted to show us more NS/S-sponsored trincheras.

Sitagochi sits on a large sloping hill directly overlooking Copper Canyon. The location is absolutely dramatic, but the village's fields have always been at risk because they are situated on steep slopes. The residents, with NS/S-sponsored wheelbarrows and tools, probably moved 200 tons of rock to create several very large terraces extending hundreds of meters around the hill top.

Juan Daniel introduced us to some families at Rancho Newatabo, beneath the slopes of Sitagochi. Here we found a number of old stone walls built well over a century ago. These trincheras continue to protect a number of apple orchards, nut trees and numerous corn fields. The Vigilio family of Rancho Newatabo generously shared amaranth seed with us for Ketami Wasara's amaranth reintroduction project. All too soon it was time for us to leave this beautiful and remote place and return to Creel, as my wife Mahina was waiting for us to assist with all the work that needed to be done this trip purchasing crafts from local Tarahumara artisans for sale at Native Seeds/SEARCH's store and website.

Leaving the barrancas of the Sierra Tarahumara, I was reminded how the trinchera is such an obvious and appropriate traditional technology to the serious soil erosion of the region. Used by the prehistoric residents of the Rio Gavilan in northern Chihuahua sometime prior to A.D. 1450, hundreds of thousands of stone trincheras were built along every small watercourse. These stone walls run from one rock high to 21 feet, and most of them remain completely intact with no repairs for over 500 years. They have retained millions of cubic feet of soil and act as a huge water conservation project. We hope that the stone trincheras built with the generous support and help from NS/S and others will last at least 500 years and will provide safe places for food production and critical biodiversity.

A Short History of Mrs. Burns' Lemon Basil

by Barney T. Burns, PhD — This article originally appeared in *The Seedhead News*, No. 103, 2009. It is presented here in abbreviated form. Please visit nativeseeds.org to read the entire article.

My Mom, Janet Ann Burns, and I moved into our first real home in 1951. It was located on Tracy Place in Carlsbad, New Mexico and was one of the first houses constructed on an historic cotton field next to an earthen irrigation ditch. During my first summer at Tracy Place, the front yard weeds were so high and lush that I often stalked imaginary lions and tigers through them. The backyard became the site of Mom's new garden. She consulted with a Mrs. Clifton, one of Carlsbad's most successful gardeners. This remarkable woman sold *The Moon Book*, a small book that guided people's gardening practices according to the phases of the moon. In addition to advising Mom on gardening, Mrs. Clifton gave us lemon basil seed she had saved from her last harvest of this tasty herb.

I never discovered how Mrs. Clifton came to be the steward of this truly unique variety of *Ocimum basilicum*. Some years after we started growing it, Mom learned that Mrs. Clifton had been planting this variety since the 1920s. Prior to the introduction of Mrs. Burns' Famous Lemon Basil in NS/S's *Seedlisting*, it was generally believed that lemon basil varieties were first introduced to the U.S. public via collections made in the early 1940s by the U.S. Department of Agriculture from Thailand. This widely held belief was first conveyed to me by Thomas DeBaggio and Susan Belsinger, while researching their book, *Basil, an Herb Lover's Guide*. Pat Kenny, a well-known and highly recognized herbalist from the Washington, D.C. area, reaffirmed this idea during an herb workshop sponsored by NS/S in March 2008. Interestingly, in an herb pamphlet prepared for the U.S. National Herb Garden in 1989, she notes that lemon basil was native to northwestern India as well as Thailand. John Parkinson, in his famous 1621 tome, *A Garden of Pleasant Flowers*, notes that lemon basil was widely grown in England and was, in fact, England's "common basil." John Gerard in his *The Herbal or General History of Plants* also states that lemon basil was present in England prior to 1633. The Laurel Hill Herb Farm, owned by the renowned herbalist Gertrude Foster and her husband Philip, was the first documented U.S. public outlet for lemon basil seed, and/or seedlings, some time after the 1940s.

When Thomas DeBaggio and Susan Belsinger asked me: "Why did this unique and world-class lemon basil end up in Carlsbad, New Mexico, and only in Carlsbad, New Mexico?" I could not answer their question. Possibly Mrs. Clifton got it from Thailand, India, or England while visiting one of these locales or she could have swapped the lemon basil seed with some other ardent gardener or herbalist. Perhaps, but improbable, another more common form of basil originally

grown by Mrs. Clifton was changed over the years by southeastern New Mexico's hot and dry climate into our lemon basil. The answer to DeBaggio and Belsinger's question remains a mystery, while the lemon basil itself is a culinary miracle.

Mom and I continued to plant our basil each spring in our Tracy Place garden during the 1950s and 1960s. Sometime in the late 1950s, Mrs. Clifton called Mom to ask if she had any of the lemon basil seed to share. Somehow, Mrs. Clifton had lost her last viable seed and was devastated. Mom, of course, gladly returned this basil seed to Mrs. Clifton.

Each fall, Mom and I uprooted our patch of lemon basil plants, washed the soil from the roots, and hung bundles of whole plants from the rafters of our front storeroom where they slowly dried. When they were ready, we took down the bundles and removed the dried leaves from the stiff stalks. The dried leaves were stored in cookie tins to retain the essential oils and aroma of the lemon basil. Every Saturday evening we mixed a handful of crushed

up leaves into a bowl of ground beef. Hamburger patties with bits of lemon basil throughout were cooked into "Barney's Basil Burgers." Our Sunday noon meal also included dried lemon basil. Mom used it as a "secret herb," along with salt, pepper, and flour in which to shake our weekly fried chicken. Dried lemon basil was an integral ingredient in our homemade soups and enchilada suppers. Overall, the dried lemon basil became an essential element for the Burns' cuisine. It even was incorporated into the all-too-rare homemade pizzas we shared.

In 1963, I entered the University of Arizona as an anthropology major. Several years later, I had my own apartment on Elm Street. As a personal touch, I constructed two small planters out of mahogany wood scavenged from motorcycle crates. As soon as I completed my two three-foot planters, I sowed lemon basil seeds in them — my first solo gardening effort. Sometime in the late 1960s, I received an urgent phone call from Mom. All the seedlings of her lemon basil had been killed by a late frost and she had no backup seed set aside in her storeroom. Luckily, I had extra seed from my last harvest, so I quickly mailed her some, which she immediately planted in her herb garden next to her grape arbor and long asparagus bed.

The loss of this unique basil variety by both Mrs. Clifton and my Mom demonstrates how a rare plant variety is at great risk. Without a backup source of seed, this unique type of basil would have been

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Mrs. Burns in 1983, and her famous lemon basil.

Barney

by Karen Reichhardt, Native Seeds/SEARCH Co-Founder

When I met Barney Burns in the late 1970s, he was a bachelor graduate student at the University of Arizona known for his comedic stories of expeditions into northern Mexico. He captivated us at parties and dinners and would invite us to his apartment to see the latest treasures he brought. One bedroom was stacked with hand woven rugs and various primitive furniture and antiques for his budding importation business. It was clear from the proportions of his treasures that Barney was not just an explorer, but also a collector.

Nothing was wasted, and anything could be collected in keeping with his proud Scottish heritage. One time when we visited his childhood home in Carlsbad, New Mexico, we saw an extensive rock collection from his childhood and Boy Scout days. As an adult, Barney's seed collections from northern Mexico are contributions that have far-reaching importance worldwide.

Many people ask how we started Native Seeds/SEARCH. It really started over a meal of tamales. Being a wonderful conversationalist, we invited Barney to our house for tamale making. Mahina was a regular at our house, but I don't think she had ever met Barney before that night. Barney kept us in stitches while we each made our favorite tamales. Mahina's were vegetarian, and Barney made his with pork and other carnivorous fillings. After the dinner, Mahina talked about how much fun that Barney guy was. A couple weeks later we noticed Mahina was still mentioning Barney and we figured they had run into each other on campus. But soon they were both at our house for another evening and we realized Mahina had started eating meat. I don't think I ever saw the two of them apart after that.

Previous to Mahina meeting Barney, Mahina, Gary and I developed extensive collections of Native American crops, primarily from the Tohono O'odham area and other tribes in the southwestern United States for various grants and projects. In their travels to "Unknown Mexico", Barney and Mahina found a wealth of crops still



Barney Burns and Karen Reichhardt with Dustin Nabhan and Laura Rose Nabhan Reichhardt at the Chile Fiesta in the late 1980s.

being grown in northern Mexico. Crops like Onaveno, Cristalino de Chihuahua, Flor de Mayo, Tablillo were a huge contribution to the southwestern crop heritage we were striving to save and more importantly another collectable for Barney along with his craft importation.

When we decided to form a non-profit specifically for Native American seeds and their wild relatives, Barney's skills for collecting and his thriftiness were invaluable for keeping the organization alive and growing. It was Barney who was proficient at finding used pickle barrels for airtight seed saving and auto part boxes for mailing seed orders, compost scraps and used pallets for gardening, and any other supply we might need. Through Barney's continual oversight, the organization has grown to proportions I never would have dreamed. Barney's influences on Native Seeds/SEARCH and Native American indigenous culture are legendary.

A SHORT HISTORY OF MRS. BURNS' LEMON BASIL *continued*

lost forever. The sharing of seed with other gardeners or even seed banks helps keep varietal extinction to a minimum.

I helped form NS/S in 1983. One of the first things I did was to get Mom's — by now — "famous" lemon basil into our newly-created seed bank. NS/S soon included it in our small seed listing as "Mrs. Burns' Famous Lemon Basil." It quickly became one of our most popular seed offerings. Over the years, it has remained very popular; its name has changed to Mrs. Burns' Lemon Basil. The responsibility of preserving this rare form of basil now rests with NS/S and its supporters and not just with me.

Mrs. Burns' Lemon Basil has been grown out at the NS/S Conservation Farm in Patagonia at least twice. Both times other crop varieties planted alongside the basil were attacked by pests, but the lemon basil plants remained untouched by bugs, perhaps because of its unique combination of essential oils.

Interestingly, Rob Johnson of Johnny's Selected Seed Company recognized the value of this variety of lemon basil and asked NS/S if he could offer it in his seed catalog. We were happy to share it and hoped that his large seed catalog would further popularize a New Mexico heirloom. Apparently, our hope has been realized because the *New York Times* reported that seedlings of Mrs. Burns' Lemon Basil were available at several farmers' markets in the New York area. As a result, Rob got a rather large order for the lemon basil from a grower in Europe. The order was so large that Rob contracted with an Arizona farmer to grow out two acres of lemon basil plants. Rob was able to ship 500 pounds of this very small black seed to Europe. Thus, a previously rare New Mexican heirloom has become ever more popular and widespread, even influencing European cuisine.

Adventures with the Unique Burns

by Muffin Burgess, NS/S Board Member

Meeting Barney Tillman Burns in the late 1960s, when we were both grad students at the University of Arizona Laboratory of Tree-Ring Research, opened up new worlds for me — an Eastern newcomer to the desert — in ways no average person or scholar could have. This New Mexican character — Barney already at 21 was truly a unique character — was passionate about archaeology, had a Marshalltown trowel in his holster and several major digs under his belt, was conversant on a first-name basis with such archaeological greats as “Doc” Emil Haury, Bunny Fontana, and Julian Hayden. Early on, Barney told me I had to meet this classic archaeologist of the Old School, Julian Hayden, and proceeded to arrange a visit for this wet-behind-the-ears Virginian to the Haydens’ home, where Barney and Julian plied me with adventurous excavation tales AND with snifters of mescal, a drink I’d never heard of, much less imbibed. The two of them enjoyed the process as this neophyte found out what “*con gusano*” really can mean.

Barney, the grad-student-archaeologist, was totally enthralled with the tool of tree-ring dating (dendrochronology) for unlocking secrets of past Southwestern cultures, especially for its potential in answering burning questions such as the abandonment of cliff-dwelling communities during the late 1200s AD in the region we know as the Colorado Plateau. Barney’s approach was outside the box. He found that modern farmers of the 1900s had been growing beans and corn in the same Four Corners region with the method called dry-land agriculture — i.e., with no supplemental irrigation, essentially under similar soil and weather conditions that pre-Hispanic residents there had dealt with. He researched bean- and corn-yield records covering several twentieth-century decades and adjusted the figures to account for technology and fertilizer introduction. Using climatic records and tree-ring chronologies from the same time-period, he developed a multivariate model of how the tree-ring width sequences, bean and corn productivity records, and rainfall records co-varied year to year. With that model in hand, together with the lengthy tree-ring chronologies that went back centuries in the Four Corners region, Barney was able to “predict” into the past — to “retrodict” — what the potential bean and corn crop yields and food storage potential would likely have been all the way back into the AD 600s. His “retro-dictions” identified 15 extended periods of drought, hence likely human famine, between AD 652 and AD 1968. One of the worst “reconstructed” famine periods was AD 1276-1298, the so-called controversial “Great Drought Period”, showing several consecutive years with a modeled probability that there had been *no* bean or corn harvest possible — no matter how hardworking the cliff-dwelling community farmers might have been. He identified sequences of

years in which any stored surplus of these foods would surely have had to have been consumed.

Heavy stuff. This became Barney’s long-awaited dissertation. Barney’s weighty, two-volume tome is several inches thick and weighs several pounds bound, but its true weight is in its significance. Essentially Barney’s bean yields confirmed the hypothesis of Dr. Andrew Ellicott Douglass (UA astronomer and founder of the science of dendrochronology), that indeed the Great Drought had caused the abandonment of major Ancestral Puebloan communities like Mesa Verde. His dissertation was a significant contribution to our understanding of what happened in the Four Corners region during a period of major social and environmental change. It earned Barney the name in some more intimate circles as “Beans Burns.” (In

those days I didn’t know beans but Barney sure did. He was a major influence in engendering my interest in heirloom foods and opening my eyes and heart to Southwestern desert cultures.)

Barney joined me in my special friendship with Tohono O’odham Elder Juanita Ahil, visiting her with me at her ramada out on the res, learning some traditional ways from her, joking with her and getting Native humor thrust back unmercifully, celebrating her birthday at saguaro harvest time as we sang around her Bahidaj camp fire. At the time she figured Barney was interested in me and named him “*Azucar Ohks!*” which loosely translates as “Sugar Daddy,” giving me a hard time too.

Barney Burns came out of that ‘round-the-campfire tradition of Story-Teller, perhaps fanned by his activities as an Eagle Scout at Philmont Scout Ranch, digging into Native traditions and helping teach young scouts the rich old lore, how to dance like a Koshare, and the importance of passing along oral tradition. He could spin a tale as well as Mark Twain or J. Frank Dobie — right off the cuff. You’d be ensnared in his web before you could blink, and he’d have everyone rolling with laughter. When we were digging at Murray Springs Early-Man archaeological site near the San Pedro, in blistering hot trenches, scraping the dirt inch-by-inch hoping to expose bones of extinct mammoth and Clovis points, there would be Dig-Foreman Barney, arms encrusted with salt (from having eaten gobs of salt tablets — what we did to retain moisture in the era before Gatorade), digging along with us, inspiring and regaling us with stories of exploits at Bat Cave, Bobcat Cave, or Carlsbad.

Barney was the inveterate explorer, always searching in unusual places for more information, new knowledge. I had the privilege of accompanying him and Tom Naylor (no discussion of Barney is complete without mention of his compadre and accomplice, the historian Naylor, in adventuresome tree-ring expeditions) on a trip into



Barney Burns and Mahina Drees in traditional Tarahumara dress.

the remote, rough Sierra Madrean terrain of northern Mexico where the states of Sonora and Chihuahua meet. After a full day of bouncing in the back of Barney's humungous 4x4 Blazer on wagon tracks that could not be called roads, we arrived at a cabin Naylor had heard of where the family shared half the house with their animals and they did not know in which state they resided. In the hills above their residence was a cave containing the remains of a still-intact 3-story cliff-dwelling. Giving them much-appreciated sliced bread and canned goods, we obtained permission to core beams in the ruin for a tree-ring study. To my knowledge no scholars even knew about this site at the time. We mapped and sketched the site, took cores from the intact beams, and later Burns and Naylor attempted unsuccessfully to date the dendrochronological samples. Without any regional chronologies with which to cross-date, or because of unusual growth of local tree species, they were never dated. Perhaps now, with far more tree-ring data sites available, those specimens (housed today somewhere in the new UA Bannister Tree-Ring Building) could be tested again.

On that same trip, we explored the town of Colonia Morelos at the north bend of the Rio Bavispe in northeastern Sonora, originally a Mormon colony where religious families had settled in the late 1800s fleeing American persecution for polygamy. They had been violently ousted by anti-American Mexican rebels in 1912. Now by the time we saw it in the early 1970s, Colonia Morelos looked like formal Pennsylvania brick architecture plunked into Thornscrub and occupied by salt-of-the-earth Mexican families. We explored the ruins of a tall red-brick structure which had been the grist mill of hard-working Mormon wheat farmers. Giant belts for turning the mill were slashed but still in place, as if no one had touched them since the rebels' marauding six decades prior. Barney, Naylor, and I photographed and sketch-mapped the town, and in typical Burns-Naylor scholarly fashion, their effort began an in-depth anthropological and historical study of Colonia Morelos, complete with interviews of every remaining Mormon descendent, which was published by the Tucson Corral of the Westerners as a book-sized issue of *The Smoke Signal* in 1973 — a fascinating read.

Later, as founder of the Arizona-Sonora Desert Museum study-tour program, I organized a teaching- expedition into the Sierra Madre, and hired Explorer Barney Burns, who by then had spent some years trading with the Tarahumara people and was active in his newly-founded Native Seeds/SEARCH, as our interpretive anthropologist on the team. In visiting a Native farm family, inveterate crop-explorer Burns climbed into their corn-crib and discovered a cob of a primitive form which he called "Ajo Corn" for its resemblance to garlic cloves. I wish I'd seen his face at that first sighting of this almost mythical link with ancient corn. With some active trading, this specimen eventually became part of the NS/S Collection. My journalist-sister Mary Ames, who was also on the expedition, wrote up the significance of Barney's find in an *Arizona Daily Star* article November 25, 1984.

When Barney and Mahina joined forces, it was "look-out, World" in the realm of Native crafts trading, as they encouraged the best in



Barney Burns in 2014 with a wood carving of San Ysidro that he produced.

weaving and basketry among the craftspeople they knew closely, and brought amazing museum pieces of Yoeme, Yoreme, and Raramuri craft-arts into the public eye. For example, to my knowledge, no one before Barney Burns had ever documented the uses of wild indigo in Yoreme blanket weaving, along with his gift of the indigo seed for the NS/S Collection so that future gardeners might continue artistic experimentation. Dressed in their full Tarahumara red print skirts, shirts, belts and sashes, Mahina and Barney cut a colorful swath for many years at Arizona State Museum Native Craft Expos, Tucson Botanical Gardens, La Fiesta de los Chiles, and other events.

Barney's great horse-laugh, his bad stories, his ability to change the serious tone of a meeting into humor with all opposing parties laughing with the truth of his observations, I will deeply miss. But what a legacy! Mahina's and Barney's children are the living seeds that they saved, sometimes actually rescued, that they tenderly propagated, promoted, and rallied others to understand. I rejoice in the future that Barney's efforts and the seeds will be giving us!

The Battle for the Treasure of the Sierra Madre

by Barney T. Burns, PhD — This article originally appeared in *The Seedhead News*, No. 43, 1993. It is presented here in abbreviated form. Please visit nativeseeds.org to read the entire article.

For the past three years, Native Seeds/SEARCH has voiced concerns about the impacts on the people and ecosystem of a massive “forestry development” project planned by the World Bank and Mexico in the northern Sierra Madre. While the project officially remains “on hold,” reports of its imminent cancellation continue to make the rounds. Mexican colleagues insist that it has absolutely no future, and World Bank personnel say that it may be cancelled in February.

Whatever the fate of the Sierra Madre forestry project, threats to this great center of biodiversity and traditional agriculture are mounting. In response to these threats to indigenous communities and to the rich and unique biodiversity of the Sierra Madre, Native Seeds/SEARCH and the Sonoran Institute have initiated three projects that we hope will offer sustainable and life-affirming alternatives to the current terror.

Survey of Old-Growth Forests

Last year, Native Seeds/SEARCH and the Sonoran Institute, Tucson, began a survey to identify remaining areas of old-growth forest in the Sierra Madre of Chihuahua and Durango. We plan to approach the owners of these old-growth patches and ask them if they are interested in preserving the forest in some manner. Our ultimate goal is to connect concerned owners with groups that are also interested in the sustainable use and preservation of one of the most biologically diverse environments in North America.

This joint project is funded by the Biodiversity Support Program (USAID), administered by the World Wildlife Fund, The Nature Conservancy, and World Resources Institute.

Even under the best of circumstances, the identification of old-growth forests is complicated, but our task is especially difficult in the northern Sierra Madre. The area’s terrain is tortuous, roads are nonexistent, and numerous plantations of marijuana and heroin poppies, together with their protectors, are dispersed throughout the mountains.

Regardless of how much of the old forests remain, all concerned parties must unite to protect them. These fragile, biologically rich pockets of the northern Sierra Madre are unique resources and are worthy of international recognition, preservation, and protection. Truly, they along with their indigenous peoples are the real “Treasure of the Sierra Madre.”

Alternatives to Logging

Native Seeds/SEARCH and the Sonoran Institute are also evaluating economic alternatives to the nonsustainable extractive logging and pulping of Mexico’s northern Sierra Madre. This study is also funded by the Biodiversity Support Program.

We will review non-timber forestry resources in the northern Sierra Madre, existing and potential markets for these resources, and the problems likely to be encountered in developing them in a sustainable fashion and in such a way that the residents benefit. We will also evaluate the feasibility of sustainable and appropriate “ecotourism” in the northern Sierra Madre, focusing on how indigenous residents can be incorporated into tourist activity. Finally, we will try to determine at what point craft production might begin to overexploit the local plant resources.

The results of these related studies should help all concerned groups assist local landowners in discussing viable and sustainable economic alternatives to the all too pervasive logging and pulping. A further goal is to design model projects that we hope to help implement with local communities.

A Model Garden and Orchard Project

Native Seeds/SEARCH and the Sonoran Institute are also supporting Mexican and Tarahumara Indian colleagues in the construction of 20 family garden and orchard areas in two Tarahumara villages — Rowerachi and Raramuchi — on the north side of Mexico’s fabled Copper Canyon. The onsite project manager is Juan Daniel

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Left: Barney Burns (far left), Juan Daniel Villalobos (far right) and collaborators at a native plant nursery workshop in Creel, Chihuahua, in 1994. Right: Barney Burns, Mahina Drees, Juan Daniel Villalobos and local collaborators in Rowerachi in 1996 during the Sierra Madre model forest project.

Poetry and Pragmatism

by Michael McDonald, former NS/S Executive Director

For the few years that I served as one of NS/S's directors, during the perennially contentious internal debates about what aspects of our mission and programs were most important (e.g., *ex situ* regeneration of at-risk seed resources or repatriation of seeds into at-risk *in-situ* agricultural communities), I would turn to our founders, especially Barney and Mahina, for guidance.

Now turning to Barney Burns for guidance was a bit like running the risk of going up to Niagara Falls for just a quick drink of water to quench your thirst before heading back down the trail to catch up with your buddies. As you know, the man could talk torrents. Thirsts for knowledge that you didn't even know existed inside of you would be satisfied and then some, as the eddies of Barney's narrative would swirl together such topics as dendrochronology, cultural anthropology, religious history, botany, musicology, craftsmanship, parts of an old favorite family recipe, today's gossip, etc. A whole complex, evolving, interdependent world of fates and fabulations, in which something would swing into view for the briefest of moments and then be overtaken by the next wave of stories. And all of it spoken in annotated bibliography form, with the past and present names of celebrated experts or everyday local folks peppered throughout.

For instance, during a summer trek to the remote Raramuri village of Rowerachi with our in-country Sierra Madre project coordinator Juan Daniel Villalobos, Barney and I had plenty of opportunity to talk about the tension in NS/S's mission to try to help conserve precious and unique genetic resources, as well as the cultural contexts in which the crops coevolved. However, what I learned on that trip into the Sierra Tarahumara was deeper than our surface stream of conversation. The wisdom of Barney's storytelling approach to life — in which plot twists unfold organically and reveal truths in their own time, much like farming seasons — could be found in such fun simple things as our participation in the morning communal *tesguinada* atop a narrow rhyolite mesa flanked by two half-mile deep gorges, as the



Juan Daniel Villalobos, Barney Burns and Mahina Drees at the rim of the Barranca del Cobre in the Sierra Madre of Chihuahua.

village prepared to fortify one of the *trincheras* that had been leaking topsoil: precarious dilemmas don't seem so daunting after sharing corn-smut beer among friends and new neighbors!

But with or without such fermented lubrication, just when you were about to reach a point of information saturation, Barney would stop in the midst of a powerful confluence of ideas and history rushing towards the present moment and stare intently into your eyes asking, "What do you think?" referring to the very question that you'd tentatively posed to him at the start of the riding-the-rapids adventure that characterized a Barney Burns conversation. With the press of history and tradition upon you now, with a deeper appreciation for ambiguity and the evolving hermeneutics of multiple narrative perspectives, and under the raptor-like intensity of his professional-verging-on-prophetic gaze, one could only answer with truthful humility and offer a small simple thing, recommend-



A moment in the life of Barney Burns.

ing a next-step that would hopefully benefit the mission and stakeholders of NS/S.

It is clear that Barney's poetry always gave voice to NS/S's pragmatism, to doing the next beneficial thing.

THE BATTLE FOR THE TREASURE OF THE SIERRA MADRE *continued*

Villalobos, who has assisted these two villages for more than 11 years and has won the respect and support of their inhabitants.

Thanks to a grant from the General Services Foundation, families will be able to build fences and simple water delivery systems of catchments and pipelines to the gardens and orchards. The water systems will also supply the 20 Tarahumara families with potable water for the first time.

The grant also allows for the collection of wild tree seeds, their germination, propagation and eventual transplanting. The goal is to

improve the local environment by planting adapted varieties of native trees that will reduce sheet wash and soil erosion. The plantings will also provide residents with more plant resources.

Interest in this model project is widespread in Chihuahua. The project's design and goals have impressed a major Mexican governmental agency, which is closely following our progress. The agency hopes to duplicate the project in mestizo communities across Chihuahua. With luck, the gardens and orchards will bloom, spawning many "copy cat" projects to benefit the residents of rural Chihuahua.

When the Rains Don't Come

by Barney T. Burns, PhD — This article originally appeared in *The Seedhead News*, No. 15, 1986.

Drought! Native Seeds/SEARCH is often directly affected by drought. Many Midwestern and Eastern seed companies occasionally feel the effects of drought, but our group seems to be affected almost every year by this phenomenon. This is because Native Seeds/SEARCH draws upon seed production from a very wide area, much of which can only be classed as “marginal” agricultural lands. This past year’s experience illustrates and perhaps explains why we find it so difficult to maintain large quantities of our current 212 seed varieties.

Mahina and I had great hopes of collecting a substantial quantity of *Phaseolus vulgaris mexicanus* during our Fall 1985 collecting trips to the Sierra Madres of northern Mexico. Our best hopes of gathering this wild bean were pinned on a site Gary Nabhan, Jose Muruaga, and I had discovered during a 1984 survey and collecting trip (which incidentally was sponsored by the Food and Agriculture Organization of Rome).

Driving into the San Pablo Balleza River valley from the forest-covered Sierra Tarahumara, Mahina and I quickly noted that the regional drought was especially evident here. The native grasslands were parched. The only green corn and bean fields were those receiving irrigation water out of the broad San Pablo Balleza River.

We drove south to the wild bean site, not knowing what to expect. As we climbed over a field stone fence and began to stumble up the steep, rocky slope we noticed that much of the previous year’s annual vegetation was just not present this year. We reached the base of the sheer volcanic cliff and searched for the bean plants that last year had vined up over so many of the shrubs and bushes. After nearly one hour of intensive search we had located only one plant. The absence of the normal spring and summer rains was especially severe at this location.

Germination of the countless beans that had fallen among the rock scree of the hillside was dramatically reduced. This situation was

compounded by another and related fact: cattle and burros had broken through the nearby fence, and clambered up the slope, eating any and every green plant in their path. Those bean plants that did manage to survive the summer’s drought became feed for the local livestock.

A second example of Native Seeds/SEARCH’s vulnerability to drought can be found in the Rio Fuerte Valley of the state of Sinaloa in northwestern Mexico. In 1984, Mahina and I were able to locate several Mayo Indian dryland farmers still growing a very ancient variety of corn, chapalote. We purchased around 50 ears of this interesting brown corn and promised to buy a much larger quantity in 1985. Unfortunately, the summer rains of 1985 were not very good over much of the Rio Fuerte Valley. The dry farming villagers of Las Capomos, Sinaloa, watched as their corn and bean plants wilted and dried — only the large fields of the valley bottom prospered because they are well irrigated. The fertile bottomlands are devoted to commercial hybrid crop production and haven’t seen varieties of corn like chapalote since the large-scale irrigation projects were completed years ago.

The hard working, but poor, Mayo Indians of Las Capomos gathered in a terribly poor harvest in September and October of 1985. The drought that began that summer continued during the fall and winter, precluding any dry farming planting of any kind. We discussed the prospects of rain with our friends there on our January and March trips. All had hoped for a wet Winter and Spring so that the granitic fields could be planted in April. No such luck! The drought persisted.

We visited Las Capomos on May 28, 1986. Only sporadic and insignificant rains had fallen on the by now dusty thorn forest foothills around Las Capomos. That night as we left, we felt sure rain was only a day away because of huge bolts of lightning just north of the village. We could feel the cool air rushing from the oncoming storm. Everyone was expectant and excited. But, as we learned on our August visit, the rains did not actually reach Las Capomos until July 5 — more than a month after our dramatic exit with all the lightning.

As Santos Ibarra told us, once the heavy rains did come everyone dropped everything and began their long-delayed planting. By July 7, most of the dry farming fields were being planted. Dona Tula’s family planted chapalote once again. And to our delight Santos Ibarra also planted a large plot of chapalote.

All during the drought we were afraid the precious seed stocks would get ground up for tortillas. As we leave Tucson on our October collecting trip we look forward to replenishing our depleted stockpiles of chapalote, Mayo sweet corn, Ocho de Carrera, and fine Blando de Sonora — all corns. This year we will get much more than in 1984. We had saved enough in Tucson to replant our Mayo friends’ plots, but that won’t be necessary next time around. The 1985 drought, however, taught us how tenuous is our hold on some of these ancient seed varieties we share with our Indian friends.



Angelo Joaquin, Jr., Mahina Drees and Barney Burns speak with a Tarahumara farmer near Sitagochi and Wajurana in the Sierra Madre of Chihuahua.

Barney Burns, 1945–2014: A Leader Who Broke Some Rules

by Wes Wilson

“Know the rules well, so you can break them effectively.” — Dalai Lama XIV

Barney guided us to know the rules well before you break them.

I first met Barney when I pledged to join the service fraternity Alpha Phi Omega at the University of Arizona way back in 1966. I was a naive farm boy by way of Pennsylvania and Phoenix; Barney was a wise and amusing upperclass man from rural New Mexico. Actually we were only one year apart, he twenty and I nineteen, yet Barney was a fatherly figure to me — full of joy, always bearded, very calm, who guided us fraternity pledges to be responsible.

When we had an ‘ugly man’ contest on campus to raise funds for our service fraternity, there was a trick. Real fraternities, the kind with handsome wealthy boys, were supposed to post pictures of one of their members seeking cash from students for the least handsome. One picture sent to us showed a plucked turkey with a cigarette in its butt. Most of us thought it crude and shouldn’t be allowed in our contest, but Barney realized it met the rules we set. Barney insisted that complying with our own rules was our duty, even if it embarrassed us. Naturally, the turkey won the day.

One weekend we pledges volunteered to clean-up a small pond on the U of A campus. I think Barney made us volunteer. One pledge found not just the usual thrown-in ‘wishes’ of pennies and nickels, but a real gold coin! Barney proposed we all share it and post it with the other nearly worthless coins in our little office. We did. Barney was always sharing, not taking.

In 1974 we departed our separate ways, me to Denver, and Barney stayed in Tucson to follow his dedication to Mexican natives. It wasn’t surprising to learn Barney had received disdain from his professors for the bold idea to trade with, rather than merely observe, the Tarahumara and Yaqui people he visited. Barney wanted to preserve their handicrafts even though his U of A professors disapproved of Barney’s interactions. Through time, Barney and Mahina kept hundreds of native Mexican families in trade and able to continue their historic craft.

Barney’s Tarahumara stories of long-distance runners still haunt my memories. During one visit, Barney discussed how he witnessed a run for women with the Tarahumara runner’s husband.

A run that lasted from sundown to sunrise with the women runners throwing a double loop of grass ahead all the way. At sunrise the next morning, the husband could see his wife was in second place, so he would lose his bets. Why did she lose? asked Barney. The husband didn’t know why, but he said it could have had something to do with the baby she had last month.

Barney’s passion for the food crops that these native people cared for was seductive. His voice would grow stronger when he described how one Tarahumara farmer planted pinto beans for drought or rain, for his upper and his lower fields, for sandy and poor soils each in kind — a proud culture’s method of crop insurance. On one of our Tucson visits, can you imagine the pride it gave me when Barney asked me: “Do you want to help us thrash out the last of the Father Kino wheat?”

On behalf of Mahina Drees, I want to express what we feel to those with us today. We loved him as a brother and friend. From his mother in rural New Mexico, Barney received an inspiration which he passed on to many. He will always be by our side.

Barney inspired many. He loved life completely and he lived it intensely from his early years in New Mexico to his first family in Alpha Phi Omega at the U of A, his education at the University culminating with his jump into direct engagement with Mahina with the native peoples they admired. Barney also encouraged them to take on responsibility just as he had done for us pledges.

Barney will be remembered as a good and decent man, who saw injustice and labored to correct it. He lamented the violence the drug lords imposed on the Tarahumara but never let that interfere with his joy of being with them.

He and Mahina labored to perfect the Tarahumara crafts and to create a market here for these traded goods. For years whenever we visited Barney and Mahina, we could always count on Barney being on his porch grinding away on native spoons and bowls to keep this trade alive.

Those of us who loved him trust that the resolution he sought for unjust conditions will someday come to be for all the world.



Barney Burns at the Tucson Botanical Garden’s Chile Fiesta in the late 1980s.

We've Come a Long Way!

by Barney T. Burns, PhD —This article originally appeared in *The Seedhead News*, No. 107, 2010.

During the late 1970s, Gary Nabhan and Mahina Drees worked for Meals for Millions in their Tucson office housed in the Campus Christian Center on Park Avenue across from the University of Arizona's main gate. Part of their work involved a gardening project on the Tohono O'odham reservation west of Tucson. The Tohono O'odham gardeners told Gary they were interested in growing out their traditional varieties of corn, beans, and squash. The problem was those traditional varieties were unavailable or lost on much of the reservation. Gary and Mahina began to search for those adapted crop varieties across the reservation and beyond its boundaries. Some of these old seeds were located, but not in sufficient quantities for everyone who wanted them, so Gary and Mahina created a small seed bank at their MFM office housing the rare seeds in a 1940s electric refrigerator and growing them out at the UA Agricultural Farm. In order to safeguard the valuable seeds, they padlocked a chain around the refrigerator to protect the seeds from the crowds of college students that gathered each Saturday evening at the Campus Christian Center's folk music house called The Cup.

In the early 1980s, the MFM office and refrigerator seed bank moved to 17th Street where the organization rented a house from another church. The reservation gardening project continued and expanded. The growing seed bank housed the limited quantities of rare heirloom seeds, now including Pueblo and northwestern Mexican native seeds, in two refrigerators with freezers. The Seed Bank and gardening project received a great deal of publicity, so much so that

MFM encouraged Gary and Mahina to form an organization focusing on the region's heirloom agricultural seeds.

Thus, 1983, joined by Gary's wife Karen Reichhardt and colleague Barney Burns, Native Seeds Southwestern Endangered Aridlands Resource Clearing House was incorporated as a nonprofit organization focusing on preserving the rich diversity of agricultural crops adapted to the Southwestern US and the adjacent areas of northwestern Mexico. The seed bank, now the NS/S Seed Bank, was moved again—this time to Pilar Street near Oracle and Prince and the seeds were housed in Gary and Karen's guesthouse refrigerator. NS/S's first published Seed Listing included a total of 47 varieties of crops drawn from Hopi, Pueblo, Yaqui, O'odham, Mayo, Tarahumara, and Anglo sources. Several wild varieties of relatives of crop seeds were also included in the listing and in the NS/S Seed Bank.

In the mid '80s, the ever-growing Seed Bank moved again, this time to Mahina's rented house overlooking Esperero Canyon in the foothills of the Catalina Mountains. Mahina's stone house was surrounded by the lush Sonoran Desert and included a basement. Barney Burns built cinder block and board shelving along the cool basement walls. The new Seed Bank was reached down a steep wooden staircase and was lit by a bare light bulb hanging from the ceiling. Barney and Mahina collected green plastic pickle buckets

for bulk seed containers from several Tucson hamburger joints. The Seed Bank bulk storage was housed in the basement while the old

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The Founders of Native Seeds/SEARCH: Gary Paul Nabhan, Karen Reichhardt, Barney Burns and Mahina Drees.



Once upon a time... the Native Seeds/SEARCH crew in the late 1980s.



The very first planting at the Conservation Farm in Patagonia, in 1998. Barney Burns is on the left, with the shovel.

WE'VE COME A LONG WAY! *continued*

smaller collections were kept in a freezer. Seed packaging soon took over the entire spare bedroom and another two rooms housed office and catalog/ mailing operations. The Esperero Canyon location saw interest in NS/S grow dramatically, requiring NS/S to collect larger seed accession quantities and grow out larger amounts of seeds for distribution.

In 1986, the ever-expanding space requirements necessitated a further move of the Seed Bank to Tucson Botanical Gardens where we already had a grow out site. Originally, NS/S moved into the three rooms of the Friends House in the back of the gardens. New shelving was added for seed storage, as well as more refrigerator and freezer space for the continually growing number of seed accessions. A store was initiated for the first time where people could purchase seeds and related items. Eventually, two additional rooms were rented for our growing staff and library. The NS/S staff became ingenious in their efforts to house more and more seed accessions and the bulk grow outs.

In July 1993, NS/S moved from Tucson Botanical Gardens one block south to the Sylvester House property, which we had purchased. The Seed Bank and NS/S offices occupied two adobe buildings originally built in the 1920s as a homestead surrounded by creosote bush flats. The Sylvester family grew watermelons and melons for sale in nearby Tucson. The smaller building consisted of four rooms for the seed bank. Shelving was added and freezers and refrigerators installed to hold the collections as well as the bulk grow out used for seed distribution. A large germination chamber was also added. The front room was used for processing seed packages for filling orders from across the US and around the world. The Sylvester House was originally roomy, but became more and more crowded as the number of NS/S accessions approached 1850 and the thousands of pounds of grown out seeds from NS/S' Conservation Farm needed to be processed and stored, which necessitated renting additional cold storage space.

By 2005, the Seed Bank was bursting at the seams and technically was "chucky jam full." The NS/S Board of Directors realized the dire



Barney speaking in 2010 at the dedication of the new Native Seeds/SEARCH Conservation Center in Tucson.

need for a larger and improved seed bank and approved a capital campaign to raise funds for a new Seed Bank. The result is our brand new Agricultural Conservation Center on land leased from Pima County in Brandi Fenton Memorial Park and Binghampton National Historic Landscape. The Center was built with the generous support of many individuals and agencies, all believing in the mission of NS/S. The Agricultural Conservation Center provides the space required for NS/S to process and store our current and future seed collections and grow outs. The new Seed Bank is much more secure than before and greatly reduces the risk of losing these unique, adapted, heirloom crop varieties from across our bi-national region. The shared heritage of these rare and endangered seed stocks, developed by so many different individuals and cultures over so many centuries, is safer now and more available to meet the growing needs of our modern world.



The Conservation Farm, verdant with beans in 2010.



The NS/S Conservation Center.

Memories of the Hunt

by Barney T. Burns, PhD — This article originally appeared in *The Seedhead News*, No. 40, 1993.

Gary Nabhan has already described in *Gathering the Desert* the search for viable panicgrass seed. But Gary did not, by any means, describe the most memorable events of that 1978 odyssey.

Gary, Tom Sheridan, and I drove from Tucson to the far western flanks of the Sierra Madre above San Bernardo, Sonora, in my old yellow Blazer. The autumn's heat was oppressive in the desert and thorn forest, but finally broke in the cool pines surrounding Rancho Quemado and the small town of El Trijo. We found some mules to rent, but after shrewdly negotiating a price for the Mexican owner's prized animals, we had to confess that we also needed a guide familiar with the local trails. The rancher said he was too busy to guide us himself, as were all the other adult men of the small village. But the rancher's 13-year-old son could act as our guide. After all, we were only traveling 65-70 miles across a 3,000-foot-deep canyon. An adult really was not necessary for such a simple trip.

We met our young guide early the next morning and rode rapidly from El Trijo past Rancho Quemado to the southern brink of "Arroyo El Limon" — the 3,000-foot-deep canyon we had to cross on our way to Rancho Pitaybo and the Guarijío village of Guaseremos. Our guide had decided to eschew trails and take the most direct route to the old Russo family hacienda of El Limon — a free-fall descent down a boulder-choked debouchment of a small perennial stream. The ride was so steep that my stirrups remained above my mule's head the entire way.

The three of us lurched back and forth and from side to side as our mules jumped and stretched from boulder to boulder. Every five or ten minutes, our guide stopped us to adjust the mules' tack, checking and tightening the belly cinches. Sheridan's stirrups had to be adjusted often, as he sank farther and farther into his saddle. Once or twice I looked over a topographic map I carried, just to confirm the rapidity of our fall. Tom constantly called out, "Mula! Mula!"—perhaps to reassure Gary and me, since we were both very nervous about the ride.

We finally made it to Rancho El Limon at the bottom of the canyon and just above a lovely, wide, and surprisingly deep stream. A break was called, and we all rested and ate lunch in the shade of a large mesquite tree. Our young guide had been most helpful to each of us during the descent. I sensed he was very curious about us. He had known the American owners of Rancho Quemado, but he had never traveled with anyone remotely like the three young "scientists" he now guided.

After finishing his lunch, he could no longer contain his curiosity. He looked Gary directly in the eye and said, "You don't know much about mules, do you?"

"Well, no," Gary admitted, allowing as how he was sort of new to backcountry mule riding.

After a few minutes, the boy turned to Tom and said, "You don't know much about saddles and tack, do you?" Sheridan turned red and mumbled that some tack was a bit more complicated than other tack.

Before long our guide looked me over and said, "You really don't know where you are going, do you?" I blushed scarlet and let on that I, the expedition's "official" guide and map reader, really did not know exactly where we were headed or how we were supposed to get there.

The honest responses to his questions just seemed to puzzle our young guide more and more. He remained hunkered down, scratched his head, and finally politely but firmly asked us, "Well, just what do you know?"

The three of us were speechless at such a profound but simple question. None of us ever really gave the boy an answer. Over the last 15 years that question has haunted me. I still muse about it, trying to fashion some sort of response, usually when sitting around campfires in the backwoods of Sonora or Chihuahua. I am still not sure what answer any of the three of us might give, even after earning our PhDs at the University of Arizona.



Sonoran panic grass growing in an early NS/S garden at Tucson Botanical Gardens.

News and Notes

Welcomes and Farewells

In addition to bidding farewell to Barney Burns, we also recently said goodbye to two other members of the NS/S Board of Directors. **Sally Harris** recently graduated with an MBA from the University of Arizona Eller College of Management and has moved to Oregon to take a job with Intel Corporation. We are grateful for her service to the organization over the past few years and wish her the best of luck. **Marie Swanson**, founding dean of the Mel and Enid Zuckerman College of Public Health at the University of Arizona, is leaving Tucson on a temporary assignment to create a new school of public health in Qatar. Her presence on the Board has been invaluable and we will miss her deep experience and wisdom. Thank you Marie!

At the same time we are pleased to welcome two new Board members. **Carolyn Niethammer**, a long-time partner and friend of Native Seeds/SEARCH, is an accomplished author whose books include *The Prickly Pear Cookbook* and *The New Southwest Cookbook*, among others. We are thrilled to have her on the board and thank her for stepping up as Vice-Chair! We also welcome **Jill de Zapien** to the Board. Jill is Associate Dean for Community Programs at the Mel and Enid Zuckerman College of Public Health at the University of Arizona and has worked on community-based public health interventions and research throughout the Southwest for over 20 years. We are honored to have her join the board. Welcome Carolyn and Jill!

We also said “so long and thanks for all the memories” to several staff members. **Gerald Dawavendewa** was an important presence at NS/S as his humor, artistry, and knowledge of indigenous arts and crafts added intangible value to the retail store. He and his family are moving to Parker, Arizona. We wish him the best as he and his family embark on an exciting new phase of their lives. **Liz Fairchild** contributed enormously to NS/S first at the seed bank and then more recently at the retail store. Her background and interest in botany was a great asset to the organization and we appreciate all that she brought to our work and to the many individuals in the public with whom she interacted. Good luck with your travels, Liz! We will miss your passion and patience. **Matt Prieto** started as a volunteer with NS/S and later became a wonderful presence at the NS/S retail store as a staff member during the Saturday shifts. He continued to volunteer at the seed bank and farm. We are grateful for his hard work, warm personality and eagerness to learn and to help. Best of luck, Matt, with your studies!

Elizabeth Pantoja has just completed her six-month Conservation internship with NS/S and we wish her the very best success with her future endeavors. Elizabeth has taught us all so much through her emphasis on food justice, sovereignty and collaborative relationships with Native American communities and organizations. Her translations of many NS/S materials into Spanish has been invaluable. Elizabeth is starting a garden and seed bank within her community in Tucson and will use her experience at NS/S to educate others about seed saving and healthy eating.

We are very pleased to welcome **Laura Neff** and **Melissa Barrow** to our retail store staff. Laura has been a devoted and essential volunteer at the NS/S seed bank and we are thrilled to have her join our

Changes to NS/S Membership

Through your membership at Native Seeds/SEARCH you are contributing to our vital work to conserve our region's unique crop diversity. These crops represent an important genetic resource for global food security concerns as well as a priceless collection of cultural heritage. Individual annual memberships provide vital support for Native Seeds/SEARCH's innovative efforts. We have recently made some changes to our membership program. New and renewing Native Seeds/SEARCH members now receive:

- Access to seeds that are in low supply and otherwise unavailable except through our Native American Free Seed Program (you may view these varieties in our online and retail stores)
- *The Seedhead News*, published three times each year
- Our annual *Seedlisting* catalog
- A 10% discount on all product purchases (online, mail order and retail)
- Discounted tuition for workshops and courses
- Special members-only email promotions, including discounts for web orders
- Invitations to special events at our Seed Bank, Conservation Farm and Store
- Early access to NS/S plant sales

We are also now formally offering a Student/Low Income membership for \$20. Basic memberships otherwise start at \$35. Please consider joining or renewing your membership today.

From Squash to Sunflower, every membership counts.

Thank you for your support!

staff. She recently graduated from the University of Arizona with a BS in environmental science, focusing on environmental policy. When she is not learning all that she can about the food justice movement, she can be found playing with her puppy and rewatching bad television. Melissa is a graduate of Dominican University's Sustainable Enterprise program and has 26 years of experience in retail, professional and academic positions working with natural foods, sustainable lifestyles and business practices, social justice and other fields. Welcome, Laura and Melissa, and thank you for joining us!

Community Seed Grants

In September we were pleased to award 42 community projects (a record for one cycle!) a total of nearly 1,000 seed packets through our Community Seed Grant program. Recipients include 17 organizations working on school gardens, 16 working on community gardens, five seed libraries, and several other innovative projects. Congratulations to each of these initiatives and thank you to all of them for the important work that they are doing. We will highlight this year's Seed Grant recipients in the next issue of *Seedhead News*. In the meantime, the next application deadline is January 2, 2015. Check our website for instructions!

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Native Seeds/SEARCH Contacts:

Agricultural Conservation Center 520.622.0830

Interim Executive Director	Chris Schmidt <i>ext 111</i>
Finance & Operations Manager	Sheri Morgan <i>ext 103</i>
Accounting Assistant	Wendi Mogul
Administrative Assistant	Betty Moore <i>ext 100</i>
Conservation Program Manager	Melissa Kruse-Peebles <i>ext 106</i>
Research & Education Program Manager	Joy Hought <i>ext 102</i>
Fulfillment Coordinator	Betsy Armstrong <i>ext 113</i>
Distribution Manager	Laura Jones <i>ext 107</i>
Seed Distribution Coordinator	Sheryl Joy <i>ext 116</i>

Conservation Farm 520.394.0227

Conservation Farm Manager	Lynda Prim
Farm Operations Technician	Morgan Parsons
Farm Assistant	Matt Franz

Retail Store and Mail Order 520.622.5561

Assistant Retail Manager	Chad Borseth
Retail Associates	Nancy Reid, Laura Neff, and Melissa Barrow

Visit our Tucson store for the best and only selection of indigenous, Southwest seeds grown at our farm in Patagonia, Arizona. New hours are Monday through Sunday, 10am–5pm, or you can shop anytime by going online at www.nativeseeds.org

Donate Goods and Services

Native Seeds/SEARCH relies on the generous support of individuals, organizations and companies to make our work a reality. In addition to financial support, in-kind donations of equipment and services are invaluable and much-appreciated. Below is the current list of immediate in-kind needs that NS/S staff have identified. If you are able, please consider making a direct tax-deductible donation of these goods and services by contacting us via email or by phone at 520.622.0830 x100. We happily accept used equipment. Thank you!

Conservation Center/Seed Bank

SUV or truck for travel between Seed Bank and Conservation Farm •
Mac laptop for presentations • LCD projector for educational courses • Digital SLR camera, with or without macro lens • Office chairs and desks • Conference table and chairs • Bookshelves • Folding tables • Utility cart with wheels • Landscaping material for gardens, e.g., rebar, wood planks, chicken wire • Supplies and time to install low voltage outside lighting for pathways

Conservation Farm Office

Window screens • Screen door

Retail Store

Utility carts with wheels • Small boxes without labels or logos, appropriate for jewelry