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the Seedhead News

Native Farmers Meeting An Outstanding Success!

By Karolyn Kendrick

Native American farm families from 17 tribes living on 13 Southwestern reservations met in Gallup, NM, on July 10 and 11 to discuss traditional farming.

Grassroots farmers are a bedrock of many Native American communities. They conserve the historic seeds adapted to local conditions, keep alive traditional agricultural practices, donate corn and other crops for ceremonies, and feed extended families from their fields.

This was the first conference most of the farmers had ever attended, and the first time many had ever spoken publicly outside their communities. But you wouldn't know it from the quality of their speeches and participation. Their ages ranged from 16 years old to elders in their mid-eighties. People shared problems and solutions on everything, from pests and weeds to heartfelt concerns about youth learning traditional knowledge.

The emotions ranged from despair to hope. "Sometimes I sit under my cedar tree and wonder why don't our plants grow well?" said Sylvia Esquibel from San Felipe Pueblo. "Is it the rain, is it the people who pray for us? It makes me feel bad because my grandparents used to grow so much." She thought it was good that farmers can get together to help each other: "You bring all your problems up, you go home laughing."

Humor was a major part of the meeting; many of the farmers who attended are born comedians. Another strong theme was looking for ways to keep children involved in farming. "We want our children to know what they have and have inherited is good," said Patrick Toya, from Jemez Pueblo. Some of the younger people hadn't had the opportunity to learn traditional ways of farming and were hoping to learn more.

NS/S New Mexico Representative Brett Bakker is flanked by San Juan Pueblo farmers John and Ruth Aquino at the meeting.

The meeting's biggest success was the networking that took place. While some of the Pueblo farmers had met each other before, others found "new relatives" as people introduced themselves and the clan to which they belong. Some of the Arizona farmers come from more isolated situations: "I never dreamed I would visit the lands of the Pueblo people," said Margaret Lewis, from the Tohono O'odham reservation. All the farmers were glad to talk to each other, and some made plans to visit each others' farms.

At the end, the farmers asked Native Seeds/SEARCH's help in forming an association and to hold another meeting next year. This meeting, and a follow-up newsletter, was supported by a grant from the Ruth Mott Fund, and we will be seeking funding from additional sources to support this effort.

Questions for the World Bank

The following is a list of questions recently submitted to the World Bank (WB) about their "forestry development" project in the Sierra Madre. The WB has been insisting that they have adequately answered all questions raised. For background, we refer you to articles in the last three newsletters. We hope to publish the bank's response in an upcoming issue.

Section A. True and Highest Value of the Forest. 1. Why did the WB accept the "Mexican Forestry Development" proposal as a project worthy of international financing? 2. What studies or reports are available indicating that this project is the best development project or strategy for the people residing in the proposed project area, or for Mexico as a whole? 3. If such reports exist, do they consider the concept of "sustainability" within development? 4. Over what period of time will the economic benefits of this project be realized? 5. How long will it be before the same type of forestry resources can be harvested again from the land being harvested at this time by the proposed project? 6. Why can't the Tarahumara Ejido of Chinatú's furniture workshop buy top quality lumber for the sawmills that are cutting the Chinatú Ejido's timber?

Section B. Protection of Amerindian Rights. 1. What anthropological field work has thus far been sponsored by the WB's Forest Development Project among the Tarahumara, Mt. Pima, Northern Tepehuan and Warihio Indians? 2. Who conducted these studies? 3. How has the WB attempted to discover the true representatives of these groups and discern their wishes in regard to the WB's proposed forestry project? 4. What have been the responses of the affected Tarahumaras, Mt. Pimas, Northern Tepehuanes and Warihios in regard to this proposal? 5. What areas have the region's Amerindians said are sacred and how does the WB propose to protect these areas from any direct or indirect impacts by the forestry project? 6. Have native speakers been employed in this endeavor? 7. If the project is approved, what specific mechanisms are proposed to protect the region's Amerindians from the longstanding exploitation of the local power structures (caciques) and the local, state and national bureaucratic agencies in regard to individual workers' wage scales as well as the ejido's profit levels? 8. Do these specific protective mechanisms differ for different tribal or cultural groups? 9. When will the WB sponsored Amerindian baseline studies be available for concerned NGOs?

Section C. Receipt of Value of Products by Ejidos. 1. Which ejidos within the proposed WB project area meet the WB's criteria of no boundary or land tenure disputes? 2. Which of these ejidos will be participating with the WB and SARH in the proposed forestry development project? 3. Which of these ejidos have significant Amerindian memberships? 4. What structural or operational mechanism (independent of SARH, other Mexican governmental agencies, or involved business operators, contractors or companies) will be employed to fully guarantee receipt by the involved ejidos of the actual agreed upon value of cut sawwood, pulpwood and local ejido labor? 5. What independent agency will be used to confirm the value of ejido resources prior to the signing of contracts with various forestry product companies? 6. How does the new ejido privitization legislation affect this project?

Section D. Side Effects of Improved Roads. 1. What specific side effects resulting from improving roads in the project area has the WB thus far identified? 2. Is the WB concerned about increased illegal cutting of trees, increased narco-trafficing and increased erosion of soils into adjacent streams? 3. What has the WB proposed to help mitigate these side effects?

Section E. Effects of Increased Logging on Amerindian Agriculture. 1. What mechanisms has the WB considered to prevent adverse agricultural impacts from its project with regard to soil erosion, soil moisture retention, and water quality? 2. How does the WB plan to mitigate stream bank and adjacent Amerindian field erosion downstream from logged areas? 3. How does the WB propose to retain the moisture storing and slow releasing capacities of the soil in the cut over areas? 4. What techniques or methods does the WB plan to use to insure water quality for Amerindian ranches or communities below cut over areas or below sawmill operations? 5. What, if any, input have Amerindian groups or communities had in regard to these specific questions about the effects of the project on Amerindian agriculture and domestic water?

Section F. Monitoring of On-site Project Activity. 1. What Mexican government agencies are responsible for monitoring the specific aspects of the forestry development project in regards to successful completion and the impacts of those completions? 2. Are these monitoring agencies the same agencies administering the various aspects of the project? 3. How many WB employees are assigned to monitor on site project activities? 4. How much time will these employees spend in the field monitoring the project? 5. What processes does the WB use to evaluate in country governmental reports?

Section G. Protection of Endemic Species in Project Area. 1. What species of plants and animals have thus far been identified as endangered or threatened? 2. What techniques or methods is the WB proposing to protect these species? 3. What additional environmental studies has the WB requested since November 1991? 4. What scientists and institutions are conducting these studies? 5. When will these studies be completed? 6. When will the studies already completed on the environmental impact of the project be made

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available and how can they be obtained? 7. When will the on-going studies' final reports be available? 8. What areas of Chihuahua and Durango have thus far been excluded from the project? 9. What were the criteria or reasons cited for their exclusion?

Section H. Forestry Practices. 1. What specific species of trees are to be cut under this WB project for lumber or pulp? 2. How many trees of each of those species are to be left per hectare as seed trees? 3. What will happen to those species of trees or shrubs in the targeted areas that are not being cut for sawwood or pulpwood? 4. How many species of oak trees occur in the project area and which of these species are proposed for pulping? 5. How much time will be required using the WB's proposed seed tree reforestation technique for significant numbers of seedlings to be re-established? 6. How many years will be required for those seedlings to reach their maturity (please specify your definition of "maturity")? 7. What methods or techniques does the project propose to deal with the inevitable monsoonally caused erosion prior to the satisfactory establishment of seedlings in those areas cut or "developed"? 8. What scientific studies does the WB site to support its contention that the seed tree method of reforestation is applicable to the Sierra Madre of Chihuahua and Durango? 9. How many hectares of forest are projected for cutting under this project, and how are these distributed by municipality within the states of Chihuahua and Durango? 10. Is the purpose of this WB funded project to create a uniform forest of 1-4 species of "the most valuable" confiers currently present?

Section I. Erosion and Downstream Flooding. 1. Have the erosional impacts of high grade logging versus seed tree reforestation been compared? 2. What are the results of these two forestry systems in terms of increased runoff and soil erosion per hectare on the cut over or "developed" areas? 3. What impact will the WB project have in terms of increased rapid runoff and flooding on downstream communities and farming areas in Sinaloa, Sonora, Chihuahua, Durango and Texas? 4. Have the potentially impacted communities in these areas been contacted? 5. Have the large commercial farming interests in these states been contacted? 6. What specific input have these Indian and Mexican communities and farming interests had for the WB project? 7. Have the potentially affected irrigation districts in these five states been contacted? 8. What concerns have these SARH irrigation districts expressed and what input have they had on the WB project design and implementation?

Section J. Water pollution and air pollution. 1. Does the WB forestry project expect new or enlarged sawmills to be constructed in the Sierra Madre as a result of the project? 2. Does the WB expect the existing sawmills in the area to increase their capacity and/or output? 3. What improved or new methods for the use or disposal of waste sawdust does the WB foresee or encourage? 4. What effects will increased sawdust waste

have on local water qualities downstream from those locations in regards to plantlife, wildlife and Amerindian populations? 5. Does the WB encourage the burning of waste sawdust? 6. What effects does such burning have on the local air quality? 7. Does the WB project concern itself with pulpmill waste waters or discharges into either streams or lakes? 8. What techniques is the WB encouraging new or old pulp mills in Chihuahua and Durango to use to reduce such polluted waters or discharges?

Section K. Road Rehabilitation Selection. 1. What criteria were used in the selection of the four roads the WB chose to rehabilitate? 2. When were those four roads selected for rehabilitation? 3. When were each originally constructed? 4. Who constructed each of those roads originally? 5. When were these four roads last rehabilitated or improved, and by whom?

Huichols Face Logging, Too

When threatened in 1979 that their forest lands would be taken away if left idle, the Huichol Indians of Mexico's Pacific coast in the state of Nyarit started sustainable carpentry workshops to stake their claim and prevent forestry development on 12,000 hectares that ecologists had wamed would turn barren if faced with commercial lumbering. On other lands, clearcutting combined with heavy rains have already caused fields to wash out and corn crops to fail. The *L.A. Times* quotes activist Homero Aridjis that "entire villages are dying of hunger. Ecocide is ethnocide." New roads have brought illegal cutting and easier access for illegal marijuana cultivation. These are precisely the concerns that NS/S has expressed in regard to the World Bank's "forestry development" project in Chihuahua and Durango. For more information on the Huichol situation, contact the non-profit group ADESMO (Asociacion para el Desarrollo Ecologico de la Sierra Madre Occidental), Apdo. Postal 5-270, Guadalajara, Jalisco, México, C.P. 45000.

Reports From Your Gardens

From Theron Poland, Carson City, NV:

A special success in may garden this last year was the Jemez Blue Corn. We had an unusually long growing season, about 150 days (maybe the greenhouse effect), and the corn took about 130 days to mature — but what corn it was! It grew up to 13 feet high and some stalks had two ears, some of them 13 inches long, with almost black/blue kernels (but also some purple ears, some gray-blue, some dark red).

I sold 20 ears as decorative corn. It was the first time I ever made any money from my garden, enough to pay for the seeds I bought.

The Hopi Yellow Watermelons also produced well and kept well in the refrigerator. The tepary beans (Blue Speckled and Brown Speckled) gave me back my seeds, but that is about all.

All of my garden was Native American items — great fun! I will experiment even more this year!

One suggestion: days to maturity are helpful to me because normally our season is only 90 days between frosts. In a usual year, the Jemez Blue Corn would never have produced anything here. ***[We try to put in days to maturity when we know, but you should be warned that even with the same variety it will vary because of local growing conditions. Gardeners should try to match elevation and climate, or experiment and evaluate.]***

From Catherine Chelette, Joshua Tree, CA:

The O'odham peas were great producers this year. Also the one unicorn plant (devil's claw) that survived my new puppy produced about 25 seed pods. I have saved seeds for next year.

From Anita Longenecker, Beach Lake, PA:

I have grown your Paiute Sweet Corn for the past two years with great success! I live in the Pocono Mountains of northeastern Pennsylvania.

Three years ago, I planted a hybrid sweet corn from the local Agway store. It didn't pollinate. It didn't even grow. The cobs looked like the ones you get in Chinese restaurants (minus the kernels). The wind had blown the stalks down, so I figured that must be the problem.

Each summer we seem to get a corn flattening wind storm. The first year it happened to the Paiute corn, I though all was lost. But, lo and behold, we got a good harvest from horizontally growing stalks!

Last year I thought the wind had passed us by, when the corn was flattened again later in the season than the year before. Not only did we get a great harvest, but the stalks actually straightened up! They looked like giant "J's."

The Paiute corn has a wonderful flavor, equal to or BETTER than the local sweet corn. Plus, it is ready to eat way before the frost arrives. We do have a short growing season here.

From Sondra Shira, Renton, WA:

I've been meaning to write you about my experience growing tepary beans in the Northwest. I bought a package of teparies in February 1991, planted about half of them on June 5, and wasn't sure they were going to make it. June was pretty wet and not very warm, and July didn't get as hot and dry as it can. The plants were real slow getting started and seemed stunted, but by the middle of August they were in bloom, and the weather was in the 80's and 90's without rain. I didn't water them at all. They were planted on the southeast part of the garden, with corn on the west side, which was watered by drip irrigation. I'm not sure when I started harvesting, but it was sometime in September, with the culmination at the end of October. We had an unseasonably dry fall! The yield was about 1½ cups.

As yet, I haven't cooked them, wondering if they should have a special occasion, but I plan to very soon now that winter rains have begun. I'll have to try one of your catalog recipes!

I wanted you to know that desert beans can grow in this maritime condition following certain rules (no watering) and they would be a good recommended crop for xeriscaping.

From Ann & Day Lone-Wolf, Orange, MA:

Hopi Rattle Gourds grew like wildfire here last summer. Chiltepines never sprouted in our soil, but flourished in my mother's poor soil, shady garden. As for the Mennonite sunflowers (Tarahumara White) — our resident groundhog nibbled them back just before flowering (several times), but I hear they grow well in a friend's cottage garden in England. The blue corn did fine until an early frost halted growth.

From Joe B. Mills, Goshen, IN:

Hopi Mottled Orange Limas did well this past year. The Scarlet Runner Beans also did well. They kept blooming, later than almost anything else, and attracted hummingbirds. They are the variety which you indicated as possibly "Canyon de Chelly," and had a good deal of string in the pods. The dry seed was edible, although my family did not care for the taste. In the future, we'll likely grow it for the flowers, which are both decorative and hummingbird attractors.

The Tarahumara Mantequilla Bean did not do as well. It did not flower until late July to early August. The fruit was setting on very late as compared to most others here. Had to protect them from early frosts to extend season. The total crop was only several hundred seeds. It was pole here. I hope that it will become better adapted to this area. If it does become more dependable here, I will share some seeds with you (if you want them), or through the Seed Savers Exchange.

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From Ruth McCloud, Paonia, CO

I read about EC Kinzly's problem getting devil's claw seeds to sprout. I have a technique that works great. I start the seeds in peat pots indoors with a heat lamp over them. When the temperatue is kept at 90 to 100 degrees they will pop up in about 24 hours.

From David J. Harry, Bainbridge Island, WA:

Planted Hopi Red Dye Amaranth on June 15, harvested five foot plants on October 28. Amazing plants, tolerates wet acidic soils well.

From Francis P. Galli, Sarona, WI:

I would like to tell you a story about the Isleta Blue Corn seed that I bought from you last spring. I've farmed organically for the last 20 years in the northwest corner of Wisconsin. Our soil is sandy loam with some clay, and very stoney. I planted the Isleta Blue in a patch that the previous year was planted to buckwheat, for quack grass control and green manure. Normally, we're lucky to get 80 day corn ripe. Isleta Blue did quite well. I didn't realize it grew so tall — 10 ft. tall with long ears.

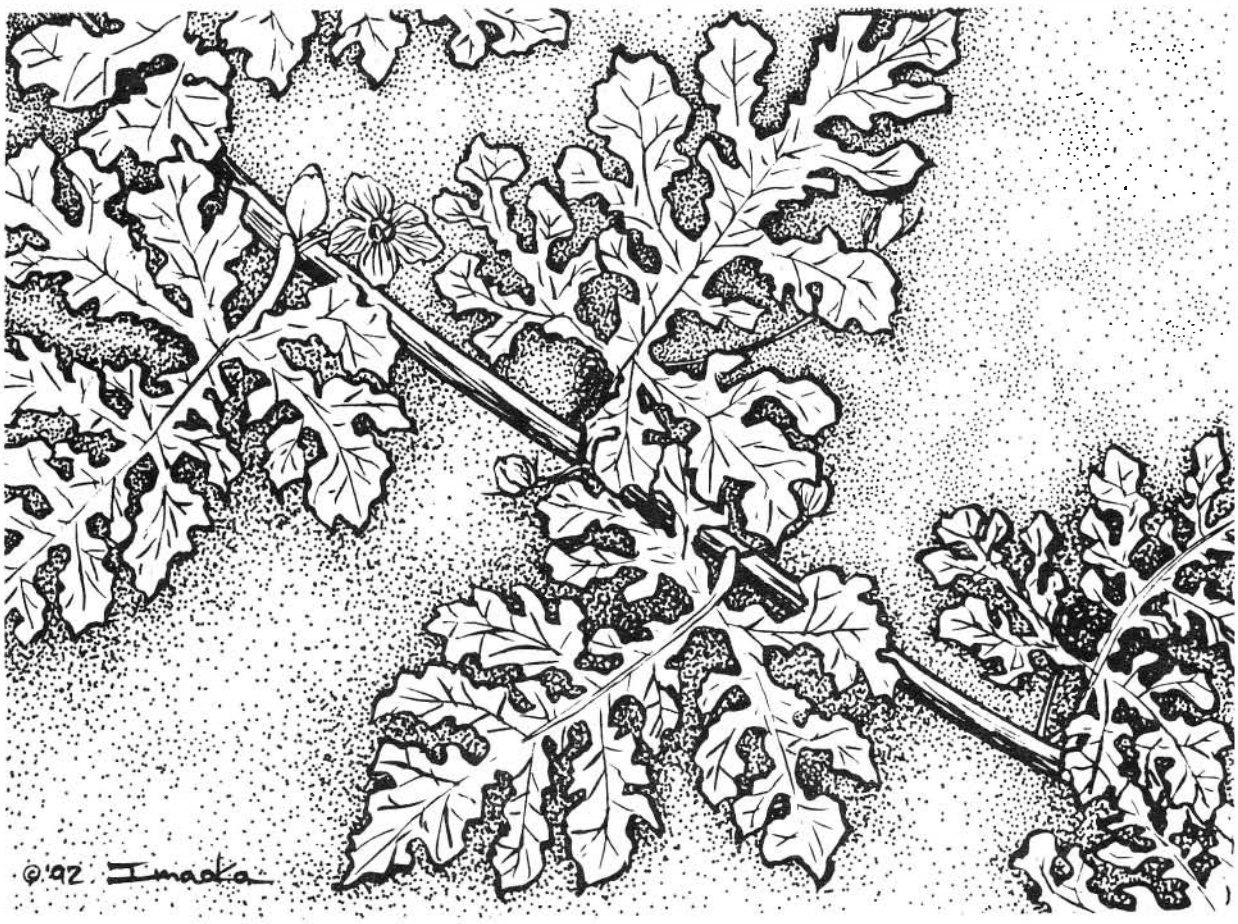
I planted it on May 10. To the patch, I spread about 100 bushels of horse manure that had hay and straw in it. I also planted the small packet of Hopi Blue Corn nearby. We had above normal moisture last summer and very hot, and our first frost was in early October. When I plant, I mark the rows with a corn planter and I use a hand planter so the hills are about 12 inches apart with three seeds in a hill. I plant black turtle beans in between for nitrogen, and butternut squash in the outside rows around the patch. I cultivate with a tractor when the crop is young and pull weeds, hoe and mulch when we don't get rain, to conserve moisture. Timewise, the corn didn't grow full season. It all didn't get ripe. I planted one pound of seed. I picked about 1/3 of the patch in late October and dried it on screens in our kitchen. I shelled it after Thanksgiving and winnowed it in a strong south wind. The result was about 25 pounds of the most beautiful, best tasting, easy grinding corn that my family and neighbors have ever had. ***[Once corn is past the milk stage frost does not harm the kernels. Tarahumaras leave their corn in the fields until late October or early November. They turn the ears down to prevent rain entering.]***

Here is a copy of my recipe for cornbread:

CORNBREAD

2 cups cornmeal	2 eggs
3/4 cup maple syrup	1 cup milk
4 tsp. baking powder	¼ cup oil

Blend flour, maple syrup, baking powder, eggs, milk and oil. Beat till smooth. Pour into greased 9x9x2-inch pan. Bake at 425 degrees for about 25 minutes.



Los Capomas Mayo Watermelon. Illustration by Keiko Imaoka.

GOURDS: Prehistoric Tupperware

By Rosemary Dougherty

This article is reprinted with permission from the newsletter of the American Gourd Society, where Rosemary is the associate editor. Membership in this wonderful group is only $5.00 — an amazing value! American Gourd Society, Box 274, Mount Gilead, OH 43338.

Last year Rosemary 's Apache Dipper Gourds did very well in her garden in Marion, Indiana. She is Cherokee-Ojibway.

Although gourds were used as ritual items, cooking pots, and sometimes as food, most often Native Americans, like modern gourders, used them as containers for ladling liquids, transporting foodstuffs and other small items, and long time storage of a variety of valuables.

Certainly the gourd container with which most people are familiar is the dipper and the most recognized use of that dipper is as a drinking cup. Many of us have used the gourd dipper-cup hanging on the well to get a drink. Certainly we have all seen some cowboy hero in the movies do just that as he arrives in town dusty, unshaven and thirsty from his long, dry trail. Dippers-as-cups are also a part of the Native American's heritage as individuals would often carry a dipper as part of their regalia on their travels.

But for the Native American "dippers-as-ladles" are as important as "dippers-as-cups." Dipper ladles were used to "dip" just about everything. Remove from your kitchen all spoons, cups, and ladles of plastic, wood, and metal and you will quickly realize how important gourd ladles were to the Native American cook.

Actually I myself call these dippers, ladles, if they are used with foodstuffs. When they are used for other purposes I call them "dipper-shovels." I have such a shovel which I use to dump small amounts of peat or fertilizer into garden rows. My ancestors would have used such a shovel for digging sand used to scour dishes, clams, and fish eggs from the water. For after all, the sand around the clam or water around the roe could be taken home and used to help keep the food fresh until dinner.

The most extensive use as a shovel, however, was probably to remove from the fire hot potatoes and squash cooked among the coals in their own skins. Cooking in gourds — or baskets — was done by dropping hot rocks into the containers. Dipper-shovels were used to retrieve these rocks from the coals.

The gourd container used by prehistoric and early contact tribes which has persisted into present day Native American culture is the use of bottles, calabash, or bushels as winter seed storage.

To make a seed storage container using a flint knife, of course, cut a small opening in the top of a large dried gourd. Using a flint scraper clean the inside of the gourd. To smooth the inside walls place a small amount of sand, carried from the river in a dipper-shovel, into the container. Now rub the sand over the sides with a small piece of buckskin. Dump the sand, rinse the gourd in the river, dry it in the sun or near the fire, and attach some vine or buckskin for hanging it for a finished seed storage container.

Today Native Americans still store beans, squash, pumpkin, and yes, gourd seeds in such containers or in pottery containers patterned after these gourds.

There were a few problems with these containers. I have had rodents eat into fresh gourds, but dried ones are generally impervious to these varmints. However, anyone with even one chipmunk around knows that the hole in the top of that gourd would be an engraved invitation to this critter. Insects also considered it quite hospitable of the Native American gardener to provide such a store of winter food. To prevent unwelcome eaters the holes in the gourd were covered tightly with a piece of buckskin and it may have been sealed with bear fat or even pitch. To discourage fungal growth the seeds were carefully washed and dried before storing. The filled gourds were then suspended from the roof of the lodge.

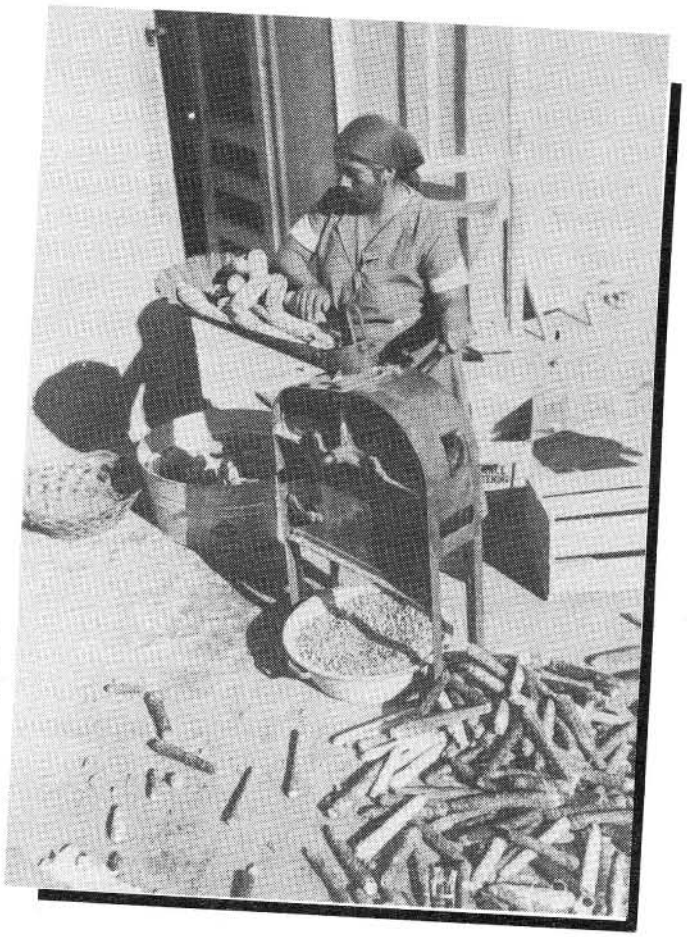
But gourd containers would have been used for storing a myriad of objects besides seeds. Again, imagine your own kitchen with no plastic, glass, cardboard, or metal containers and you will quickly discover dozens of items which you could store quite successfully in a gourd. Native Americans would have used these gourd "boxes" for leather pieces, feathers, shells, flint tools or chips, sinew bits, and personal items.

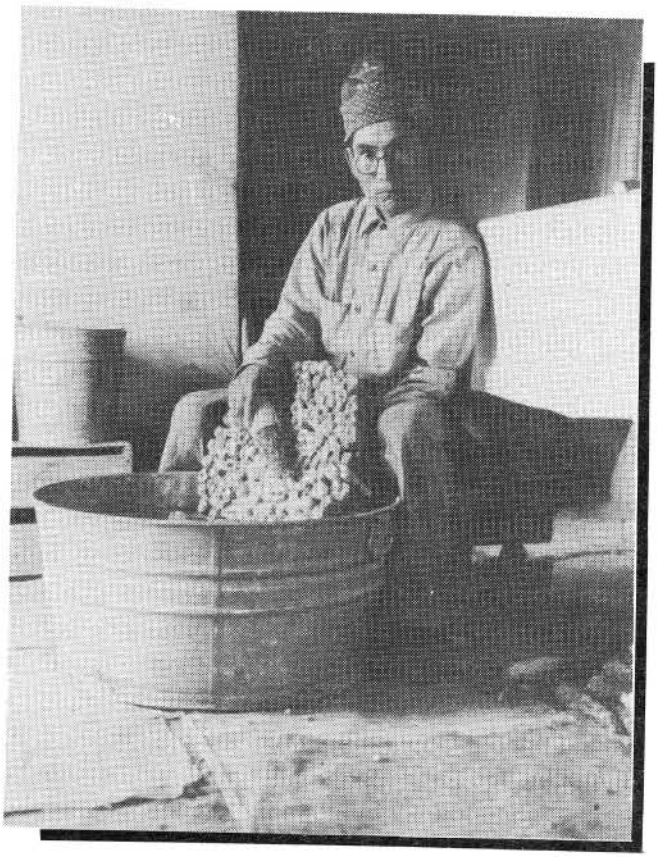
And, of course, these gourds would have been used for food storage. Dried herbs, wild onions, dried berries, nuts, and dried tomatoes were some of the small foodstuffs needing storage. (Before several of you write me to say that tomatoes were considered poisonous until around 100 years ago; Europeans did in fact believe this to be so. Native Americans knew differently and ate tomatoes.)

These common foodstuffs would not have been the only edible items stored in gourds. One would have found such scarce and valued items as salt collected from salt deposits or honey collected from a wild hive. But the most important scarce commodity needing storage was animal fat. This fat was used as skin lotions, as seasoning for food, or to trap small animals. Every gram of fat was valued. Its storage would have been a paramount concern.

In short, no container was as important to the Native American as the gourd.

Shelling Corn in the 1930s





Three different methods of shelling kernels from ears of corn are demonstrated in these photos, taken in the late 1930s in the pueblos of northern New Mexico. T. Williamson for the Soil Conservation took these photographs, which are now part of the Laurens C. Bolles Collection at the Center for Southwest Research, General Library, University of New Mexico.

The gentleman in the lower left uses a traditional method, rubbing an ear of corn against a surface made up of corn cobs bound tightly together (neg. no. 000-493-0118). We've seen this style still in use today, often with a smaller number of cobs. The lady in the upper left photo places corn into a device that pulls the ear through it and rubs off the kernels from all sides as it comes out the bottom (neg. no. 000-493-0088). At upper right, a lady from Cochiti uses a more automated device, but one that is still hand cranked (neg. no. 000-493-0124).

Diabetes Program Update

By Martha Burgess and Gary Nabhan

Our diabetes program has continued with much activity this spring, thanks to the support of the Wallace and Stocker Foundations. We are proud to report that the Education Foundation of America has just awarded NS/S a grant of $70,000 to help fund this project over the next two years. Our goal is to increase acceptance and use of the traditional foods while working to ensure adequate supplies at affordable prices. As we continue the project, we are also assisting community health and education programs to develop their own ability to promote these foods.

Nutritionist and dietician Mary Hoskin has come on board as project director, with the continued strong involvement of NS/S Education Director Martha Burgess and her capable assistant Nancy Wilson. In recent months Mary, Martha and new project intern Maynard Nutumya (Hopi) attended seven health fairs and other programs on the Tohono O'odham reservation. Our video, "Diabetes and Desert Foods: Examples from O'odham Tradition," produced with NARTC, was used at the Phoenix area Indian Health Service Diabetes Conference as a prime example of appropriate and culturally relevant educational material. Martha Burgess presented eight diabetes lectures this spring regarding the diabetes project and worked with teachers at Baboquivari High School and Indian Oasis School District, with the with the help of NS/S volunteer and science curriculum expert Karolyn Kendrick, to refine a diabetes awareness and prevention curriculum for young people. NS/S has cooperated with diabetes education programs this spring in Sacaton, Whiteriver, Zuni and farther afield with multicultural diabetes program coordinators in San Antonio. In June, we were invited to present our traditional foods program at a Family Wellness Conference in Acoma Pueblo, New Mexico.

In early May, Native Seeds/SEARCH sponsored a series of events which allowed the first exchanges between Native Americans and Australians concerned with the diabetes epidemics in American and Australian deserts. A group of Australian visitors led by world famous diabetes nutritionist Dr. Janette Brand — an NS/S research collaborator for five years — also included Dr. Steve Colagiuri of the Prince of Wales Hospital in Sydney and Dr. Amanda Lee of the Menzies School of Health. All three have been advisors to Aboriginal communities in their efforts to control and prevent adult-onset through "bush tucker" revivals of native food uses.

The visitors presented lectures and workshops involving 125 people at the National Institute of Health/ Phoenix Indian Hospital, at the Gila River community, at the Sells Indian Health Service Clinic, at the University of Arizona, and at Tucson Botanical Garden. Most memorable was the Pima and Maricopa elders of the Gila River community explaining to researchers why and how they felt diabetes and diet changed through time among their people.

Dr. Amanda Lee, in working with an entire community of Aboriginal people, has had great success in significantly changing food habits back to modern analogs of traditional foods. As part of her project, the people of the community are making their own decisions about foods they know are healthy and are placing the food orders through the trading company themselves. They participate in testing their own blood sugar monthly and review the results of individual lab tests together as families and as a community. In a year's time, blood sugar levels and weight figures have dropped markedly, with a sense of self empowerment and mutual support. NS/S is seeking native communities here in the desert Southwest with whom to work in a similar way to help encourage a tradition-inspired new diet and lifestyle.

Recent diabetes program publicity has included an appearance on the television program "Native Peoples," the syndicated radio program "Indian Country News," and coverage on the *Denver Post's* Sunday edition front page. We continued to answer non-stop requests for information. If you would like to know more about the health significance of traditional foods, read your 1992 Seedlisting, visit our office on Tuesdays and Thursdays, or call to request an order form for videos and written materials.

Pima Club Wheat. Illustration by Bonnie Roberts.

Ear Today, Gone Tomorrow

By Karen R. Adams
Director, Environmental Archaeology
Crow Canyon Arch. Center, Cortez, Colorado

For the past several years NS/S has shared left-over cobs from shelled corn (*Zea mays*) of different varieties for me to use in archaeobotanical studies. Here's some information about the past and future exciting adventures of these cobs.

A. A group of 19 Hopi cobs have been carefully burned to ash, and the ash undergone elemental analysis via an ICAP/ICP (inductively coupled argon plasma spectrometer — how's that for a mouthful!). There is a project afoot to determine if we can identify ancient hearthfuels via elemental analysis of the ash residue that archaeologists find in roasting pits, firepits or middens. We know prehistoric agriculturalists routinely burned left over corn cobs as tinder or fuel. So far, preliminary results show *Zea* cobs to be high in K (potassium), P (phosphorous) and Zn (zinc), and low in Ca (calcium), relative to some of the wood ash we have examined.

B. Dr. Linda Cordell, a noted southwestern archaeologist, is launching into a project to determine if elemental analysis of corn cobs can shed light on where the corn recovered from a site was originally grown. She is interested in evaluating trade and movement of corn between prehistoric groups, and knows that one of the few archaeobotanical remains that one can almost always find in many sites are corn cupules (those little pockets on the cob that originally held two kernels). She will start by evaluating the roles that both genetics and environment play in influencing the elemental composition of modern cobs grown under subsistence agriculturalist regimes. Some of the dryland farming we are doing at Crow Canyon Archaeological Center (a nonprofit research group in Cortez, CO), with NS/S corn varieties, will help accumulate a cob database that represents a variety of testing conditions (differences in cobs on the same plant; differences between cobs in the same field; differences between cobs of the same variety in different fields, etc.).

C. In an effort to evaluate the relationship between what goes into a hearth, and what comes out after the embers have cooled, we used some of the NS/S cobs in a scientific pottery trench kiln firing at Crow Canyon in the spring of 1991. Mark Hovezak, an environmental archaeologist, carefully described over 100 Chapalote corn cobs (# of rows, length of cob, diameter of cob at midpoint, length and width measurements of 10 cupules/cob) before they went into the firing. Mark then retrieved the trench kiln ash and residue, which will be processed so that we can retrieve the cob parts (and wood) that were preserved. We will be able to see the state of the burned corn remains (are there any whole ones left? how much have the parts shrunk/changed?

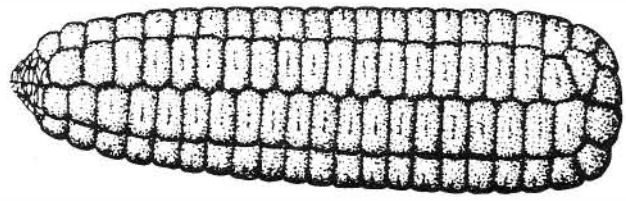


Illustration by Robert McK. Bird. From Pre-Columbian Plant Migration, *Harvard Univ. Press, 1984.*

what are the differences between unburned and burned cob populations?). This is all aimed at giving us some insight into the formation of the archaeobotanical record, so we can more intelligently interpret the significance and nature of corn remains from prehistoric burning events.

D. Scott Kwiatkowski of Soil Systems, Inc., in Phoenix had need of some Chapalote, Isleta Blue, Papago Yellow, Reventador and Tarahumara cobs for an archaeobotanical project he is working on. We were able to share with him enough cobs to make statistically valid populations of 30 cobs each for most of these varieties. His project involves measuring a number of characteristics on modern cobs in order to understand the range of variability among the contemporary races of maize that are believed to be descendants of those used prehistorically in southern Arizona. Once the population parameters of the modern races are understood, we should be better able to classify archaeological specimens as to their probable racial affinity.

E. One of the projects we have planned for our lay participants at Crow Canyon is to let them use burning corn cobs as the heat source for parching seeds in parching baskets or on large, old pieces of ceramic pottery. I believe corn cobs will make hot, rollable, even sources of heat for this purpose, and we would like to test this out.

F. Another project we have planned involves evaluating the role of corn cob ash in fostering wood charcoal degradation. We suspect that corn cob ash, when wet, provides a highly alkaline slurry in which wood charcoal might degrade rapidly. We don't, however, know this for a fact. Our plan is to make some outdoor clay-lined hearths, burn single wood types in separate hearths both with and without corn cobs, let the hearths fill in with soil, get rained on, frozen, etc. We will check on the progress of wood charcoal degradation in each hearth from time to time (maybe at 6-month intervals) just to see if, even over the short run, the presence of corn cob ash appears to make any difference in the ability of some of these wood charcoal types to preserve.

So you see, instead of feeding the compost pile, those left over cobs are getting some mighty rigorous work-outs. Thanks for saving them for us.

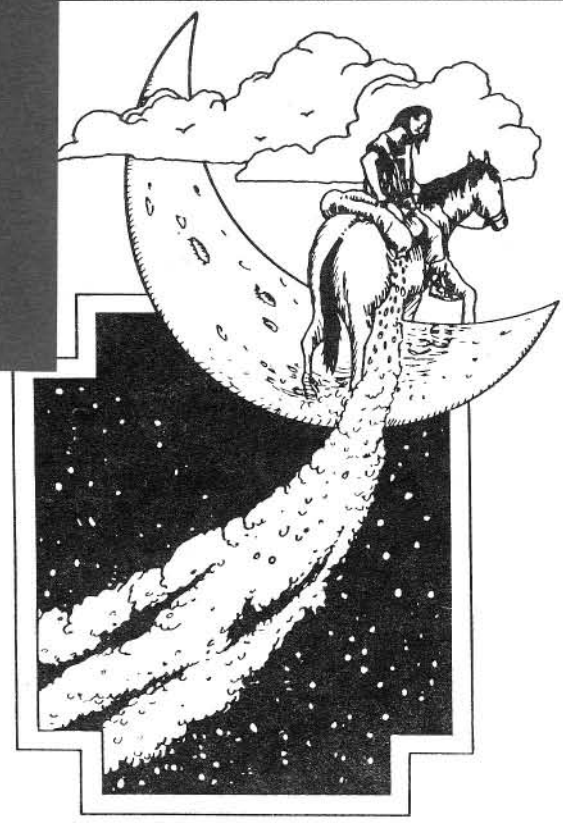


Illustration by Bill Singleton

Holy Pinole!

Dear Editor:

The pinole shortbread recipe in the latest *Seedhead News*, No. 36, (which I appreciate receiving) reminded me of a story about pinole which my mother told me when I was a very little girl:

One day God had a very important errand that needed to be done. Since this errand required a long journey to the far side of heaven, he called on Santiago (St. James) because Santiago had a horse and was an excellent rider.

Santiago was given his orders and began preparing for his journey. He knew that he would get hungry and thirsty on such a long ride, so he filled canteens with water and packed several small leather bags with pinole. Then he went off on his errand to the other side of heaven.

When Santiago got to his destination, he looked back to see how far he had traveled and had a big surprise. The little leather bags must have had holes in them because his whole trip across heaven was marked by a trail of pinole. When he returned, he reported all of this to God who rewarded his good and faithful servant by turning each grain of the spilled pinole into a star.

And that is why, at night, you can look up and still see the path that Santiago took — you can look up and see the Milky Way!

Hope you enjoyed my Mama's story.

—Carmen Villa Prezelski, Tucson, Arizona

Native Seeds/SEARCH Volunteer Program

By Nancy Wilson

If you have the time, we sure need your help!

All able bodies are welcome every Thursday after 10 a.m. On-going jobs might include seed-cleaning (market beans, devil's claws, corn, chiles), bagging (beans, bellotas, herbs, posole), and office tasks (labelling, stamping, sorting).

A few times during the year we depend on volunteer help for special events and mailings. Our major annual event, La Fiesta de los Chiles, takes place October 17 and 18 this year. Last year, more than 50 volunteers helped make this a very successful educational and fund-raising event. I'll begin my quest for workers around the end of September and would appreciate any leads. If you are interested in sharing your talents for this festival, please call Nancy at 327-9123.

Volunteering is a chance to get acquainted with the staff and other volunteers since we don't have regular meetings. There is also the exchange of plant information and informal conversation — so everyone gets something out of it. If any or all of this appeals to you, please let me know your interest and availability, or just drop in any Thursday.

Notes

New intern. Thanks to a generous grant from the Abelard Foundation, we are continuing our highly successful Native American internship program. Odelia Lopez, a Tohono O'odham from the Ak Chin area, has been hired to assist in the seedbank.

Perennial teosinte. We are thinning the teosinte (*Zea diploperennis*) in our demonstration garden and will sell divisions of it to members for $10 each. The plants will only produce seed when grown in a frost-free area or greenhouse, and we hope seed will be returned to us. Contact Linda Parker.

The Seed Map is a 3 by 5 foot color wall map showing the centers of genetic diversity of the world's 20 most important food crops. The cost is $20 postpaid from Rural Advancement Foundation International (RAFI-USA), P.O. Box 655, Pittsboro, NC 27312.

Pow-Wow Info. Throughout the year, pow-wows are held throughout the Southwest, providing gatherings where Native Americans and others can trade, socialize, and dance together. To get a listing of upcoming pow-wows and other Native American events, send a SASE to National Native American Co-op, Box 1000, San Carlos, AZ 85550.

NS/S Sells Pueblo Sculpture To Phoenix's Heard Museum

By Kevin Dahl

Tse-ping, a sculpted scene of a Pueblo Indian family gathered round a bowl full of seeds, was donated by its artist to Native Seeds/SEARCH and Flowering Tree Permaculture Institute last year. Roxanne Swentzell made this generous donation to help the organizations raise funds and with the hope "that it could somehow be publicly exhibited to promote genetic preservation projects." Generous anonymous donors helped the Heard Museum purchase Tse-ping for $10,000.

Roxanne and Tse-ping are pictured on the back cover of this newsletter.

Tse-ping will be displayed in the museum's show, **Eclectica: Recent Acquisitions** on July 18 through October 18, 1992. The Heard Museum is located at 22 East Monte Vista Road in downtown Phoenix; phone (602) 252-8840 for hours. Tse-ping is the second Swentzell sculpture obtained by the museum, which is also proud of **The Emergence of the Clowns**, which has been featured in two exhibitions and has toured as part of **Shared Visions: Native American Painters and Sculptors in the Twentieth Century**.

Living and working at Santa Clara pueblo, Roxanne Swentzell is a third-generation offspring from Santa Clara's Naranjo pottery dynasty.

She recently described herself in an article by Nancy Mitchell in the New Mexico newsmonthly, *Crosswinds*, as a "sculptor of human emotions." She referred to the necessity to "deal with many different levels, or worlds" in Indian arts: "Western culture has this thing: if it gets hard, if life gets to be a struggle, they just pack up and move. They go to the spotlight all the time. They never really have to deal with the problems. With traditional cultures, because they are tied to a spot, a family and everything, somehow that's the whole world. You can't leave it. Everything's there, the spotlight is there. Whenever you hit a problem, you're going to have to go through it because you can't go anywhere. There's nowhere else to go. You are at the center of the world. That enables [traditional cultures] to see different worlds of existence because they have to."

NS/S 1991 Annual Report and Financial Audit Available

Native Seeds/SEARCH's report of activities from last year, our 1991 annual report, is available upon request. It contains a summary of our finacncial statement for that time period, based on our audit. Copies of the full audit, made by the firm of Addison, Roberts & Ludwug, P.C., are also available.

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Roxanne Swentzell and sculpture, Tse-ping. See story, page 11.
Photograph by Tom Hitch. Reprinted with permission from *Crosswinds*, New Mexico's Newsmonthly.

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Address Correction Requested