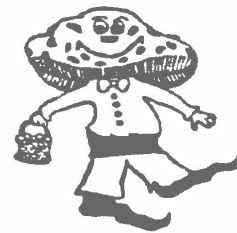




# The Arizona Fun-Gi



## Newsletter of the Arizona Mushroom Club

### December 2007 Annual Meeting

Our **Annual Meeting** this year will be held **Friday, December 14 at 6:30 PM** at the usual location: The U of A Cooperative Extension Bldg located on the south side of Broadway just west of 44<sup>th</sup> Street, at **4341 E. Broadway**. For the **potluck**, if your last name begins with **A-H** bring a *main dish*, **I-O** bring a *salad* and **P-Z** bring a *dessert*. **Reminder:** When you bring a dish to the potluck, bring whatever serving utensil is needed. If it is a soup, bring bowls as well as soup spoons. The only utensils supplied by the club are the plastic knives, forks and spoons, flat disposable plates and Styro-foam cups. If your dish requires something special, please bring it. Keep in mind that if your dish needs to be heated, there is no stove. If you need to plug in your serving item such as a crock pot, bring an extension cord.

**Highlights:** Bring your photo or craft work involving mushrooms to share with the members. Gabe Zorn and Jim Murphy have agreed to reprise their slideshow of photography of fungi with all new pictures. For those who missed last year's meeting, this is your chance to enjoy and learn from Gabe and Jim's extraordinary photographs as well as Gabe's wit.

This is a reminder. A new **Editor** is needed for this **Newsletter**. Please see any officer if you would like to try your hand.

You can see the location for our annual meet-

ing has not changed. However, the venue is now on a Friday night instead of a week night. It is hoped this will accommodate more members for whom a week night was difficult to make. For the out of town members, maybe the boss will let you go a couple of hours early to make it to Phoenix. Please give any feedback to one of the Officers if you like or dislike the change or would prefer a Saturday even if it means renting a facility.

### White Mountain Foray Report - 2007

Respectfully submitted by *S.T. Bates*  
The following mushroom species were collected or reported from the White Mountains Foray 2007 (August 18 & 19). Vouchers for some have been included in the personal herbarium of the author. Please note that there are several new foray records. Some of these are very likely new records for Arizona (a few still await final determinations – one, *Hydnellum peckii*, is a definite)! There are several more unidentified species that require a bit more work before final determinations can be made.

A special thank-you is owed to B.W. Freyburger and Gabrielle Zornes for contributing to this list! Both have submitted potential new records for

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### Officers

Chester R Leathers, PhD.

President

Sandy Melgaard

Membership Secretary/Treasurer

Scott Bates  
Webmaster

Terry Beckman  
Field Trip Chairman

Larry Morehouse  
Newsletter Editor

### REMINDER: ANNUAL DUES

If your address doesn't show this year, 2007, or later, then our records indicate that your dues are **Past DUE**. 2007 was due by Jan 1, 2007. For 2008, pay at the Annual Meeting. **Remit to Sandy Melgaard, Membership/Treasurer**.

### The Arizona Fun-Gi

is the official newsletter of Arizona Mushroom Club (AMC) and is published tri-annually. All articles appearing may be freely reproduced provided the source and author are acknowledged.

## Mushroom Pie ( *Sienipiirakka* ) Finnish

### Filling

2.5 cps chopped onion  
flour

3 T butter

8 cps chopped mushrooms

1 t dried thyme

1/2 t salt

lots of freshly ground black  
pepper

8 oz cream cheese

(t=teaspoon, T=tablespoon, cp=cup)

### Crust

2.5 cps unbleached white

2 t baking powder

1/4 t salt

1 cp butter

1 cp sour cream

flour for coating dough and  
board for rolling

### Glaze

1 egg

1 T milk



Fresh or reconstituted dried mushrooms, or a combination, may be used in this pie. Domestic commercial white mushrooms are fine, but if you can find (and afford) any rich-flavored mushroom, use them for at least a portion of the amount; this will give you a more pungent and woody-tasting dish.

To make the filling, sauté the onions in the butter in a large skillet. When the onions are soft and translucent, add the mushrooms and thyme and sauté for a few more minutes, until the mushrooms release their juices. Add the seasonings. Cut the cream cheese into small pieces and then stir it into the mushrooms until it melts. Remove from the heat and set aside until the crust is ready.

Preheat the oven to 400°.

For the crust, combine the flour, baking powder, and salt in a large mixing bowl. Using an electric mixer or by hand, cut in the butter just enough to achieve an evenly textured crumbly mix. Stir in the sour cream to form a soft dough. Generously dust the dough with flour and form it into a ball.

On a heavily floured board, roll out 2/3 of the dough to fit a 10-inch pie plate. Trim the edges and fill with the mushroom mixture. Roll out the remaining dough about 1/4 inch thick (thicker than a usual pie crust) and cut into strips 1 inch wide. Weave the strips into a lattice over the filling. This is a bit of trouble but well worth the effort, as you'll see. Fold the ends of the lattice strips under the bottom crust, pinch the edges together, and flute.

For the glaze, beat the egg and milk. With a pastry brush, thoroughly coat the pie crust (You'll have more than you need ----- give leftovers to the cat)

Bake the pie for 25 to 35 minutes, until the crust is puffy and golden. (Chanterelles, porcini, and cremini work well.)

### Help the Editor

Please help out with any articles or suggestions for the next newsletter.

Remember this is *your* newsletter.

A BIG THANKS TO TERESA PINTER WHO PROVIDED THE ABOVE RECIPE. TERESA SAID EVERYONE WHO HAS TRIED THIS DISH HAS RAVED OVER IT. CAN'T WAIT TO TRY IT.

*EDITOR*

## A Mushroom Hunting Checklist

From the Oregon Mycological Society Website: [www.wildmushroom.org](http://www.wildmushroom.org) (It appears this website is defunct at this time. *editor*). Reprinted from: MUSHROOMER, April 2006, publication of the Snohomish County Mycological Society.

When you take to the wilds in search of mushrooms, be prepared! Here is a checklist for the well equipped Mushroom Hunter:

### On Your Body

- \_ Polyester or wool clothes
- \_ Rain jacket
- \_ Rain pants
- \_ Gaiters
- \_ Sturdy moisture proof boots
- \_ Wristwatch
- \_ Hand Lens
- \_ Whistle
- \_ FRS walkie-talkie radios\* (optional)
- \_ GPS (optional)

### In Your Flat Bottomed Basket

- \_ Waxed paper bags
- \_ Knife, brightly marked
- \_ Brown paper bags

### In Your Knapsack

- \_ Good map of the area
- \_ Lunch
- \_ Water
- \_ Extra Clothes
- \_ Sunscreen
- \_ Insect repellent
- \_ Trowel and Toilet Paper
- \_ Field guides and key
- \_ Notebook & pencil
- \_ Spore print making equipment (black and white paper)
- \_ Photography equipment
- \_ Matches (waterproof)

\*A happy and useful addition to the above might include two or more FRS walkie-talkies. This new type of radio is small, effective over several miles and often

modestly priced. FRS radios do not require a license. They're a great way to stay in touch with your fellow mushroom hunters in the woods and during any caravan drive to the hunting area. You can find FRS radios at most sporting goods and consumer electronics stores. (FRS radios are different from CB radios, and MUCH better in all respects.)

### A New Web Site

Thanks to web-meister, Tony Ambrosini, we have a new web site. The address is [az-mushroom-club.org](http://az-mushroom-club.org). It is still in its infancy. In the future, the newsletter will be posted on this web site and an email will be sent to members giving a link to it. For those without internet access, a hard copy will be mailed. The saving in printing and mailing will more than pay for the domain name and hosting. We should be able to post special events there as well as forays. Please take a look at the site. Suggestions are welcome. Contact Tony or Larry Morehouse with those suggestions.

### BBQ At The Winery

Rod Snapp and Cynthia Reed, who are owners of the Javelina Leap Vineyard & Winery, had invited the AZ Mushroom Club to have a BBQ at their winery. It was to take place this past October. However, this year had to be cancelled because the wine crop in California came in two weeks early. That meant they both had to shift into high gear for making this year's wine. A new date, some time next year, will be selected and Members will be notified when that new date is available with the details.

### White Mountain Foray

Our annual White Mountain Foray was attended by the most participants we have had in memory. There were about 40 vehicles over the two days. Obviously there were vehicles with more than one rider. This made logistics a little harder.

Even with the large turnout, everyone found collectable mushrooms. A special thanks is due all those who helped the new members to find and identify the mushrooms. The quantities were not as good as last year, but most of the usual varieties were found.

Another special thanks is owed to Joel Thalheimer. He took the time to teach your Editor how to ID the honey mushroom (*Armillaria mellea*). Joel even marked locations where honeys could easily be found by Club Members. His knowledge was passed on to those who did not have the honeys in their knowledge bank.

### THE GREAT FUNGAL VOCABULARY QUIZ

By *S.T. Bates*

#### Fungal substrate preferences or symbioses

- Definitions from the Illustrated Dictionary of Mycology

by M. Ulloa & R.T. Hanlin

*Award yourself 10 points per correct answer.*

90-100% = professor!

80-89% = honors grad!

70-79% = plenty smart!

60-69% = hmmm.

Below 60% = hit the books!!!!!!

- 1) Mycorrhizae
- 2) Keratinophilic
- 3) Lignicolous
- 4) Coprophilous
- 5) Entomogenous
- 6) Fungicolous
- 7) Muscicolous
- 8) Lichenicolous
- 9) Bryophilous
- 10) Lichen

(answers on page 5)

The following is excerpted from *McIlvainea*, Spring 2007, in an article written by Robert M. Hallock.

The article is too long to reprint in its entirety, so the following is significantly abridged and all cites are omitted. It is recommended the full article be read.  
*Editor*

### Taste of Mushrooms

THE TASTE AND smell of mushrooms are important for both the identification of species and for the oro-sensory sensa-

(Continued on page 4)

tions one experiences while eating them. Several issues regarding gustation and olfaction are important to the mycophagist and will be discussed here. First, perceptions of the taste, smell and texture of mushrooms will be differentiated and discussed. This will be followed by a discussion of sensory deficits that can impair the taste or smell systems and lead to particular problems either identifying or eating mushrooms. Special consideration will be given to those who cannot taste bitter compounds and the potential that exists for these people to misidentify particular species of mushrooms.

The flavor experienced from eating mushrooms, or any other food, comes from a combination of taste, texture, temperature, spiciness and aromatic qualities. . . . Taste is one component of flavor and is thought to be limited to the perception of sweet, sour, salty, bitter and savory. . . . Receptors for these five taste qualities are contained in taste buds, which are located on the palate (top of the mouth) and pharynx (back of the throat), as well as the tongue. Despite what is commonly believed, taste receptors on all portions of the oral cavity respond equally well to the different tastants. . . .

Savory or “meaty” is the taste quality represented by amino acids, or protein. Foods rich in amino acids include mushrooms, fish, meats, cheese and some vegetables like kelp and tomatoes. . . . A second component of flavor is smell. Our olfactory systems are capable of detecting around 10,000 different smells. These various smells when combined with taste, often yield a unique oro-sensory experience. The last components of flavor are the spiciness, physical temperature, and general texture of the food, which are all signaled by the trigeminal nerve. . . .

The taste of *Agaricus bisporus* is often described as “mild” or “meaty” and is best typified by the taste quality “savory” because of its high amino acid content. To account for the taste of this mushroom, we will explore its components. . . . (A scientific analysis followed. Editor) This mushroom thus provides a rich source of complete proteins while being a low-fat food source, and is of particular benefit to those individuals on a vegan diet who need alternate sources of essential amino acids.

Other commercially available and commonly consumed mushrooms such a *Flammulina velutipes*, *Lentinula edodes*, *Morchella deliciosa*, *Pleurotus eryngii*, *P. Ostreatus*, and *Ustilago maydis* contain similarly high amounts of amino acids. A commonly available commercially available mushroom, *Catharellus cibarius*, is comprised of 10% protein. One amino acid in particular, glutamic acid, is present in high concentrations in most of these mushrooms. . . . MSG and other amino acids are flavor enhancers and increase the palatability of (pleasantness) of foods. . . . Meat, fish, and canned vegetables or recipes containing these foods were improved by MSG. Interestingly, this indicates that adding MSG to amino acid rich foods further enhances their flavor. This implies that adding mushrooms to other protein rich foods increases overall palatability. Conversely, cereals, milk products, or sweet-flavored recipes were made worse by the addition of MSG. One could posit that adding mushrooms to similar food types would make them unpalatable, but this might best be left to individual experimentation. . . .

### Other Sensory Components

*Trigeminal:* Mushrooms described in the field guides with descriptors such as acrid, peppery, or burning, all excite the trigeminal nerve, which innervates the tongue and carries the sensory signals to the brain. *Russula brevipes* and *R. emetica* are good examples, and anyone who has tasted these mushrooms is aware of the burning sensation that overcomes the oral cavity.

*Smell:* The odors of mushrooms are as numerous as the number of species themselves. Mushrooms vary from the soapy smell of *Tricholoma saponaceum* to the difficult to describe but immediately recognized cinnamon-like odor of *T. magnivelare*.

### Sensory Deficits

Deficits in smell and taste are widespread and can present a handicap in mushroom identification and alter the oro-sensory experience of eating them. Common causes of taste and smell deficits will be briefly considered, followed by specific examples of when these deficits can lead to the misidentification of mushrooms. Most people who experience a subjective loss of “taste” actually have smell dysfunctions

instead. . . . Thus, most people who complain of “taste” deficits could likely have olfactory problems.

Olfactory disorders are common, often have sudden onsets, and have several main causes. . . . These causes of olfactory loss are important to know because sensory loss negatively impacts the overall quality of life, not just the ability to quickly differentiate a *Tricholoma magnivelare* and *T. zelleri*, which can look very similar.

Gustatory loss is less prevalent than olfactory loss, but also has profound effects on the quality of life. . . . (There follows a discussion of common causes for this loss. Editor)

*Non-tasters:* Approximately 25% of the population has a genetic variation in their bitter taste receptors that renders them unable to detect some bitter compounds. These people are therefore at risk for misidentifying bitter mushrooms, especially if they are taught to rely on their sense of taste to distinguish between bitter and non-bitter mushrooms. . . .

### Conclusions

The sense of taste and smell is important to the identification of mushrooms. First, this review explained the common tastes of mushrooms, and the specific components in mushrooms that yield different tastes. Second, this review described common taste and smell deficits that impair the perception of some mushrooms, as well as discussed specific taste-related deficits with aging. Research has demonstrated that bitter and salty taste is compromised with the normal aging process. A decrease of salty taste is likely of little importance in tasting mushrooms because mushrooms are not naturally salty. However, elderly people should be aware that there is a decrease in the perceived intensity of some bitter compounds with age. Interestingly, deficits in the perception of savory taste stimuli with aging have not been studied. Other deficits to taste and smell typically come from physical damage to the sensory systems or from genetic causes, and this short review has described the most prevalent ones. It is the aim of this review that mushroomers are educated about the importance and individual variation of perceptions of taste and smell of mushrooms. For example, a mushroom might be de-

(Continued on page 5)

scribed as tasting very bitter to one person, somewhat bitter to an elderly person, and not bitter at all by a non-taster. Importantly, these individual variations can lead to the misidentification of specific mushrooms. This review has described a few specific examples where specific taste or smell disorders can lead to the misidentification of particular mushrooms, but it is likely that many more exist, underscoring the role of educating mushroomers about these issues.

(Continued from page 1)

Arizona. These records (along with B.W. Freyburger's photos) will eventually be added to the Arizona Mycota Project (<http://www.public.asu.edu/~stbates/amp.html>) and will be published in *Anotia* as new additions to the *Checklist of Arizona Macrofungi* ([http://lifesciences.asu.edu/herbarium/canotia/CANOTIA-9Feb06-vol2\\_2.pdf](http://lifesciences.asu.edu/herbarium/canotia/CANOTIA-9Feb06-vol2_2.pdf)) in the upcoming year. I also thank Dr. Leathers for reporting several species that are included here.  
\* New record for the White Mountains Foray  
\*\* Potential new record for Arizona and the White Mountains Foray

## ASCOMYCOTA

### Helotiales

*Spathularia flavida* Pers.: Fr.

### Hypocreales

*Hypomyces lactifluorum* (Schwein.) Tul.  
*Hypomyces luteovirens* (Fr.) Tul. & C. Tul.  
*Pachycudonia spathulata* (S. Imai) S. Imai

### Pezizales

*Aleuria aurantia* (Pers.) Fuckel  
*Aleuria rhenana* Fuckel  
*Peziza arvernensis* Boud.  
*Peziza repanda* Pers.  
*Sarcosphaera coronaria* (Jacq.) J. Schröt.

## BASIDIOMYCOTA

### Agaricales

*Agaricus albolutescens* Zeller  
*Agaricus silvicola* (Vittad.) Peck  
*Agaricus* sp.  
*Amanita "caesarea"* (Scop.: Fr.) Pers.  
*Amanita fulva* (Schaeff.) Fr.  
*Amanita muscaria* subsp. *flavivolvata* Singer  
*Amanita "pantherina"* (DC.: Fr.) Krombh.  
*Amanita "rubescens"* Pers.: Fr.  
*Amanita vaginata* (Bull.: Fr.) Lam.  
*Armillaria "mellea"* (Vahl: Fr.) P. Kumm.  
*Clavaria purpurea* Fr.  
*Clitocybe gibba* (Pers.: Fr.) P. Kumm.  
*Clitocybe* cf. *odora* (Bull.: Fr.) P. Kumm.  
*Coprinellus micaceus* (Bull.: Fr.) Vilgalys, Hopple & Jacq. Johnson

*Coprinopsis atramentaria* (Bull.) Redhead, Vilgalys & Moncalvo  
*Coprinus comatus* (O.F. Müll.) Gray  
*Cortinarius trivialis* J.E. Lange  
*Crepidotus mollis* (Schaeff.: Fr.) Staude  
*Cystoderma fallax* A.H. Sm. & Singer  
*Flammulina populicola* Redhead & R.H. Petersen  
*Flammulina velutipes* (Curtis: Fr.) Singer  
*Floccularia straminea* var. *americana* (Mitchel & A.H. Sm.) Bon  
*Gymnopus dryophilus* Murrill  
*Hebeloma crustuliniforme* (Bull.: Fr.) Quél.  
*Hygrophorus chrysodon* (Batsch: Fr.) Fr.  
*Hygrophorus speciosus* Peck  
*Inocybe geophylla* var. *lilacina* Gillet  
*Inocybe rimosa* (Bull.: Fr.) P. Kumm.  
*Laccaria amethystina* Cooke  
*Laccaria laccata* (Scop.: Fr.) Fr.  
*Lepiota* cf. *boudieri* Guég.  
*Lepiota clypeolaria* (Bull.: Fr.) Quél.  
*Leucopaxillus gentianeus* (Quél.) Kotl.  
*Lycoperdon perlatum* Pers.: Pers.  
*Lycoperdon pyriforme* Schaeff.: Pers.  
*Marasmius androsaceus* (L.) Fr.\*\*  
*Megacollybia platyphylla* (Pers.: Fr.) Kotl. & Pouzar  
*Panaeolus semiovatus* (Sowerby: Fr.) S. Lundell & Nannf.  
*Pholiota aurivella* (Batsch: Fr.) Fr.  
*Pholiota squarrosoides* (Peck) Sacc.  
*Phyllotopsis nidulans* (Pers.: Fr.) Singer  
*Pleurotus "ostreatus"* (Jacq.: Fr.) P. Kumm.  
*Pleurotus populinus* O. Hilber & O.K. Mill.\*  
*Pluteus cervinus* P. Kumm.: Fr.\*  
*Stropharia* cf. *ambigua* (Peck) Zeller\*\*  
*Stropharia* sp.  
*Tricholoma flavovirens* (Pers.: Fr.) S. Lundell  
*Tricholomopsis rutilans* (Schaeff.: Fr.) Singer  
*Xeromphalina campanella* (Batsch: Fr.) Maire

**Auriculariales**  
*Auricularia auricula-judae* (Fr.) Quél.

**Boletales**  
*Boletus barrowsii* Thiers & A.H. Sm.  
*Boletus "edulis"* Bull.: Fr.  
*Boletus subtomentosus* L.: Fr.  
*Gomphidius subroseus* Kauffman  
*Leccinum insigne* A.H. Sm., Thiers & Watling  
*Phylloporus* sp.  
*Suillus kaibabensis* Thiers  
*Suillus lakei* (Murrill) A.H. Sm. & Thiers  
*Suillus sibiricus* (Singer) Singer

**Cantharellales**  
*Cantharellus "cibarius"* Fr.: Fr.  
*Hydnum repandum* L.: Fr.

**Dacrymycetales**  
*Calocera viscosa* (Pers.) Fr.  
*Dacrymyces palmatus* (Schwein.) Burt.

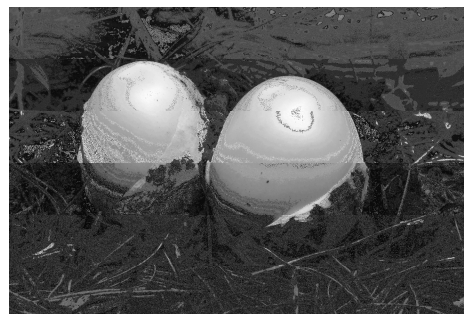
**Phallales**  
*Clavariadelphus ligula* (Schaeff.: Fr.) Donk  
*Clavariadelphus truncatus* (Quél.) Donk

*Gomphus floccosus* (Schwein.) Singer  
*Ramaria aurea* (Schaeff.: Fr.) Quél.  
*Ramaria stricta* (Pers.: Fr.) Quél.

**Polyporales**  
*Albatrellus confluens* (Alb. & Schwein.) Kotl. & Pouzar  
*Albatrellus ovinus* (Schaeff.: Fr.) Kotl. & Pouzar  
*Fomitopsis pinicola* (Sw.: Fr.) P. Karst.  
*Polyporus* cf. *elegans* Bull.: Fr.\*\*  
*Polyporus varius* (Pers.) Fr.  
*Sparassis crispa* (Wulfen: Fr.) Fr.

**Russulales**  
*Lactarius barrowsii* Hesler & A.H. Sm.  
*Lactarius deliciosus* (L.: Fr.) Gray  
*Lactarius rubrilacteus* Hesler & A.H. Sm.  
*Lactarius uvidus* (Fr.) Fr.  
*Russula brevipes* Peck  
*Russula xerampelina* (Schaeff.) Fr.

**Telephorales**  
*Hydnellum peckii* Banker\*\*  
*Sarcodon imbricatus* (L.: Fr.) P. Karst.



## Answers for The Great Fungal Vocabulary Quiz:

- 1) The symbiotic association between the hyphae of certain fungi and the roots of vascular plants.
- 2) Exhibiting affinity for keratin.\*
- 3) Living on wood, but not necessarily deriving nourishment from it.
- 4) A fungus that develops preferentially on dung or manured soils.
- 5) Growing on or obtaining nourishment, especially as pathogens, from insects.
- 6) That which lives or develops on fungi.
- 7) Living upon, or among, mosses.
- 8) That which lives on lichens, as a parasite, parasymbiont, or saprobe.
- 9) Develops in or on mosses.
- 10) ...The symbiotic association of fungi and algae (or cyanobacteria\*\*)

\* <http://medical.merriam-webster.com/medical/keratinophilic>

\*\* inserted by author

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**Newsletter of the Arizona  
Mushroom Club**

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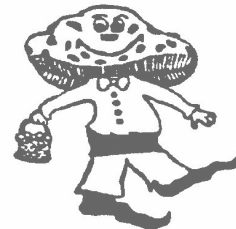
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# The Arizona Fun-Gi



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## Newsletter of the Arizona Mushroom Club

**Would you like a polo shirt, hat, or patch** displaying club logo? If so use the form to the right to order from Rose Mary or Chester Leathers. They need minimum orders before they can send in an order, so you may have to wait until enough requests have been given.

ARIZONA MUSHROOM CLUB (AMC)					
Order Form~~~Please Print					
Name _____					
Address _____					
Telephone # (_____) _____					
POLO SHIRT with AMC Logo \$24.00 ea. QTY _____					
Size (circle)	S	M	L	XL	1X
	2X	3X	4X		
HAT with AMC Logo \$12.00 ea.					
Qty _____					
PATCHES with AMC Logo \$ 6.50 ea.					
Qty _____					
Paid by: Cash _____					
Check _____					
Contact: <b>Rose Mary Leathers or</b>					
<b>Chester Leathers: Tel. 480-832-6709</b>					