

# WOODSMOKE®

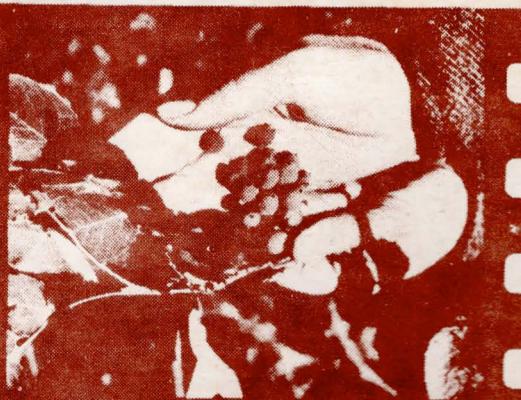
JOURNAL OF OUTDOOR SURVIVAL AND SELF-SUFFICIENT LIVING

Number 7

\$1.50



ALLAN R. PRIDDY  
340 N. LINCOLN  
POCATELLO, IDAHO 83204



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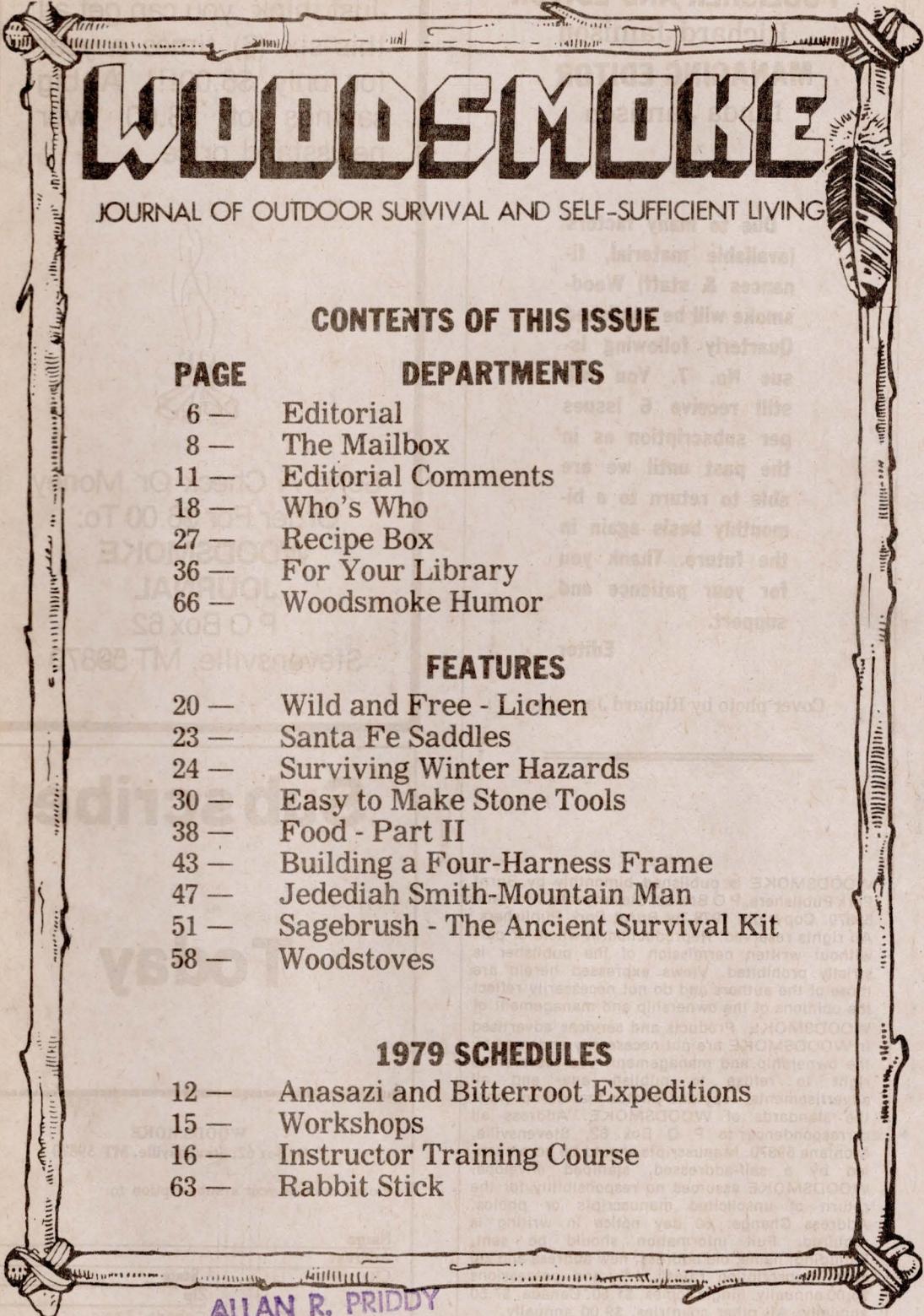
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JOURNAL OF OUTDOOR SURVIVAL AND SELF-SUFFICIENT LIVING

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## **PUBLISHER AND EDITOR**

**Richard Jamison**

## **MANAGING EDITOR**

**Linda Jamison**

**Due to many factors (available material, finances & staff) Woodsmoke will be published Quarterly following Issue No. 7. You will still receive 6 issues per subscription as in the past until we are able to return to a bimonthly basis again in the future. Thank you for your patience and support.**

**Editor**

Cover photo by Richard Jamison

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The Spartan Trail, a report on a ten-day survival expedition; Fire Without Matches; Oregon Grapes; Salmon, Yarrow, Wildberries, Cordage, Pouch Sticks; Early Spring Edibles; Food Production, people and the future...and more.

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Poisonous Wild Plants, Zip Off Combat pants that zip away; Survival I.Q. Test; Nez Perce Indians, an historical trek; Hot Bed Gardening; For Your Library, recommended reading; Worms, for fertilizer; Hats for Fun and Profit; Pine Needle Bed in the Woods; Troubleshooting, bow and drill fires; Wild and Free, yucca...and more.

### Volume #6

The Compleat Huntsman, use of the deer; Berries and Meat; Survival Journal; Food and Its Effects; Locating Water; Making Butter; Field Care of Game; The Donner Party Story; Rabbit Stick Report; 1978 Trip Report; Recipe Box; Survival Family...and more.

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## EDITORIAL...

# SURVIVAL

Someplace the idea got started that a "good" survivalist ought to be able to survive anywhere, under any conditions. This is just one of the misconceptions that has managed to get loose. (Of course if you can't make it where you are, you move to a better location. That's why so many Indian tribes migrated with the seasons, why deer and elk move to better feeding grounds, why birds fly south...) There are other fallacies going around too, nurtured by people who have never experienced survival under adverse conditions (real or contrived), people who have read all the books, enjoy camping, fishing and mountain climbing, but whose notions about survival are just that...notions!

With the exception of those biologists, physiologists and researchers who provide valuable facts and figures based on accumulated data from actual case histories, no one has any business teaching the principles of life and death unless he is experienced.

Some of the best quality survival instruction is conducted by the U.S. Air Force. If the value of experience were not paramount to success, this training could far more easily be held in a classroom. To the contrary, participants in these programs are taken to different climates and geographical locations so that they can experience first hand, the circumstances they will encounter in a real survival situation. Not only does this provide needed conditioning but valuable information is also accumulated from their experiences that can be helpful in preventing serious error in the future...when it really counts!

Remember the old saying "He who can does and he who can't teaches others." Anyone planning to attend a course in survival training should check out the experience level of the instructor before enrolling. This is even more important before going into the field.

A few years ago a young boy died in the heat of the Arco desert while attending a State sponsored survival program, the program was experimental and turned out to be a tragedy. Even the rescue effort was a fiasco with hundreds of searchers haphazardly running about in 4-wheel vehicles, on motorcycles and on foot. The search ultimately concluded in more deaths. An experienced instructor should have been able to track the lost student.

Every instructor has a **responsibility** to his students to acquire the knowledge and experience to handle emergency situations. Probably the most common mishap on the trail is having students wander off and become lost. Knowing this, the instructor must have the expertise to track him down...and you can't get that kind of knowledge in a book! Instructors should be constantly improving their skills by attending classes and **testing** the techniques learned by study and reading. I have found that several techniques presented in books just don't work, you can't take it for fact unless you try it yourself.

About that same time there was an organization in Denver that advertised primitive survival expeditions in the desert. I personally knew that the instructor was not qualified to conduct such expeditions and later found that they had no insurance or land use permits. Fortunately, as far as I know, they never had enough interest to get the program off the ground. But this serves to add further caution, if your instructor is not covered by the necessary permits your trip may come to a sudden halt when BLM or Forest Service patrols learn of your presence. That goes double for insurance, it is expensive and difficult to come by in a high risk field like survival but most instructors wouldn't run a trip without it...some do however, so check it out before you sign up!

I am continually frustrated by the growing number of outdoor educational programs which advertise "survival" classes that ultimately turn out to be instruction in camping skills. Some programs teach only kit survival, going into great detail on how to light a fire with steel wool and flashlight batteries, use a Swiss Army knife and stuff all the comforts of home into a pouch small enough to wear on your belt. (don't get me wrong, a well stocked survival kit can be a great help in an emergency, my objection is that so much else is neglected.)

The real danger is to the individual who thinks he has had survival training. If a situation arises that he must depend on this "instruction", he would be hard pressed for the know-how to make it. I offer no solution to the problem that wouldn't open a Pandora's box of government control, which I violently oppose! And it is upsetting that there are a few "experts" in the field that advocate government guidelines for certification. The only other answer is consumer awareness, in being more conscientious about the expertise of the instructors and the programs they teach. After all, this is a matter that could someday determine the fate of you, your friends and family.

Only last week one of our local television stations broadcast a survival related program. The commentator introduced the featured guest as "one of the nations foremost experts in the field of survival." I had never heard the name before, and from the presentation he gave I could tell that he just didn't have the experience he claimed to have. Even my older children saw through many of the techniques he discussed...but there are some who undoubtedly soaked up every word, supposing themselves to be better prepared to take on the elements.

Another reason for knowing something about your instructor lies in the definition of the word "survival" and how it is interpreted. Unfortunately there are a few individuals who construe the meaning of survival as looking out for number one, at the expense of anyone who might slow them down. These people advocate turning away the sick and weak and anyone else who can't keep up. This element in our society is frightening, especially in light of the possibility of future economic chaos and food shortages. I urge you to consider your feelings, whether in primitive or modern day survival, and prepare yourself with the knowledge necessary to make it out alive so that you will never be faced with the decision of sacrificing another's life because of your own inabilities.

The very ultimate in survival should not only include making it out alive, but bringing your companions out with you, regardless of their physical or emotional state. Survival is love of mankind, willingness to sacrifice for the sake of the group, willingness to teach and share and overcome seemingly unsurmountable hardships...together.

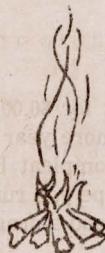
Consider if you will, one of the greatest "Survival" feats of history. The noble trek of the Nez Perce Indians across Wyoming, Idaho and Montana, poorly armed, outnumbered and encumbered with their families. Yet their dauntless leader, Chief Joseph, always considered the welfare of his people before his own.

My intention is not to make you feel that we are the only organization that is qualified to run trips or teach survival. Far from it, there are alot of good programs available throughout the country and a good many excellent, qualified instructors. My concern is that potential participants take the time and precautions necessary to assure themselves the best possible quality of instruction available. Don't be afraid to ask, "Have you tried it?"

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# THE MAILBOX

## LETTERS TO THE EDITOR



We appreciate hearing from our readers, and we would like to know how you feel about the information you get in WOODSMOKE. The Journal is written for you, and we want to keep in touch.

---

Dear Readers,

We hope you won't mind if we "toot our horn" a little by publishing a few of the nice comments we have received this past month. Thank you to all who have "jotted a few lines" on your renewal cards ...your support is greatly appreciated. (as well as your money!)

Dear Editor,

"Work is the price of success,  
Satisfaction is the product of success."

Congratulations on your magazine, you'll find my renewal fee enclosed. You can be satisfied with your success.

Dave Leitheiser  
Great Falls, MT

Sir,

Enclosed is a check for \$6.00, please extend my subscription for one more year.

The article "The Compleat Huntsman" was 1st rate, loved it! Sure hope you run more articles like that one. I liked the food storage article too.

Sincerely, R.E. Boren  
Stanton, CA

Keep up the good work, have enjoyed all issues so far. Lots of good outdoor info for muzzle-loading outdoor buffs like myself.

Warren Hauge  
Missoula, MT

Dear Staff of Woodsmoke,

First I want to thank you very much for your Journal. I have taken a lot of so-called survival and self-sufficient magazines and none comes even close to yours. I have received all 6 of my volumes and am so pleased with their content that I am sending you money for another year's subscription.

Keep those excellent survival articles and wild foods coming, they are the most informative I have ever read.

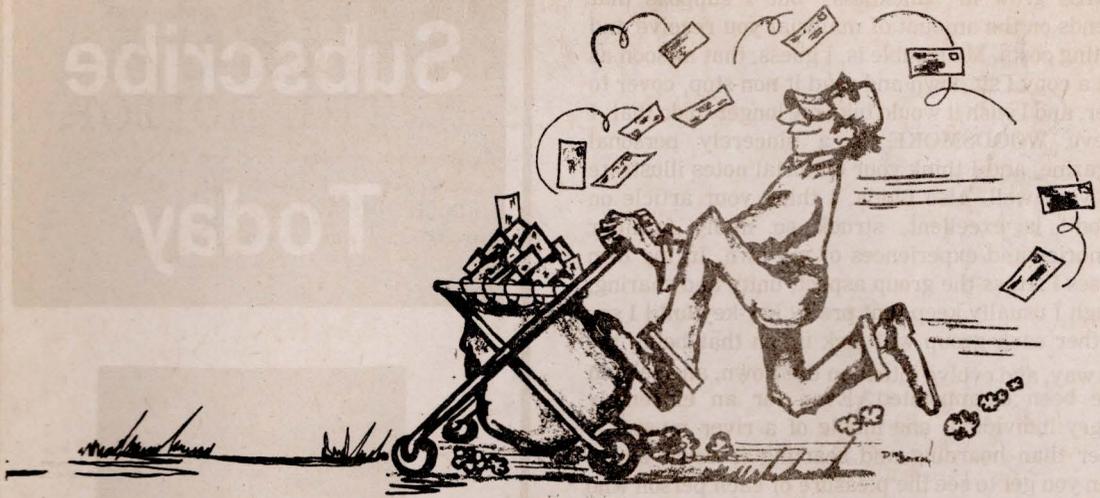
Yours truly, Glenn Thomas  
Vidor, TX

Dear Friends,

I've enjoyed my subscription to WOODSMOKE. The articles on survival and self-sufficient living have been of great interest to me, even though I've packed a good many mile and taught scouting over a period of 15 years.

My only regret is bi-monthly seems like forever between copies, and even longer when the copy expected doesn't arrive. I was just preparing to write and enquire about copy No. 5 and the next day copy No. 6 came...

I'm enclosing \$6.00 for renewal and hoping you'll send copy 5.



Please check there and see if there's any reason for the slip up. One thing I notice on copy 6, the address is real light ink and scarcely readable. The Post Office gave me a multitude of excuses. Could you give me your mailing dates so if a copy doesn't arrive I can contact the Post Office sooner?

Thanks Again, Al Fife  
Rigby, ID

Dear Mr. Fife,

We originally planned to put out the Journal bi-monthly but have lost a couple of issues from the time we started. Until we get properly staffed all we can say is that it will be "approximately" two months between issues. Issue No. 7 is planned for Dec and No. 8 for February etc.

We have gotten quite a few magazines returned with light labels and plan to re-type some of the master list to eliminate this problem in the future. We will be happy to send you issue No. 5.

The Editor

Dear Sirs,

I just received four of the five back issues of WOODSMOKE that I have been waiting for. Only No. 5 is still missing and we will be eagerly waiting for it.

I must say that the wait was worth it. It seems as though you have been able to improve the product with every issue. From reading the back issues I have a better feeling for the magnitude of your endeavor and I applaud your effort.

When I first saw a description of your journal I hoped that it would provide me with information which I was seeking to help me reach my goal — self-

sufficiency. While I feel it is important to "survive" in a primitive setting, this is not what I mean by being self-sufficient. My definition of self-sufficiency is being able to minimize the effect that modern society has on me by providing much of what I need, for myself. While at the same time participating in and enjoying what society has to offer. For my family and I this currently means such things as wiring our own home, making our furniture, clothes, etc. exploring alternative energy systems, growing our own food - all to achieve our goal of self-sufficiency. Later articles in the Journal have moved in this direction and have been very worthwhile for me.

There is a tremendous potential for your journal, as I am sure you realize by now, as being self-sufficient means many things to different people. But in whatever form, self-sufficiency can only lead to a greater understanding of ourselves in relation to our environment and in an increased sense of competence and mastery. I hope to see WOODSMOKE around for a long time.

Sincerely, Tom Fairbank  
Brigham City, UT

Howdy Folks.

Wouldn't you know it, I no sooner write you a note wondering what has become of the latest issue of WOODSMOKE and it arrives the very next day!...

First, I think this is a real good issue as far as content—seems to be just plain lots in it. I really like the combination of long articles and short articles, plus the varied subjects. I'd like to see WOOD-

SMOKE grow in "thickness" but I suppose that depends on the amount of material you receive and printing costs. My trouble is, I guess, that as soon as I get a copy I sit down and read it non-stop, cover to cover, and I wish it would take me longer to do that. I believe WOODSMOKE is a sincerely personal magazine, and I think your editorial notes illustrate that very well. Also Linda, I think your article on "Food" is excellent, struck so many familiar memories and experiences of my own. In my own classes I stress the group aspect, unity and sharing, though I usually keep that pretty low-key until I see whether each group will pick up on that being the best way, and evolve into it on their own, and seldom have been disappointed. Even for an extremely hungry individual, one nibble of a river mussel is better than hoarding and scarfing it down alone, when you get to see the pleasure of each person who gets a taste...not so satisfying to your empty stomach, but great for group cohesiveness and morale. Sharing makes it more like a true aboriginal group.

I was so happy to see an article by Ferris Weddle, a sincere man, long-time friend and person I admire because he makes a living writing about subjects he knows and likes...

I noticed a lot of typographical errors still, but I think most folks can overlook those. It looks like the printer did a sloppy job of centering the illustration to my "deer" article, cut off parts of some of the captions and also cutting off the last couple of letters of each line in the entire last column of print...

I think the focus of WOODSMOKE should remain primitive-aboriginal survival skills and knowledge because that is what makes the Journal unique, sets it apart from any existing publication. But I think small-farm, homestead oriented subjects are useful too, as most folks do not intend to make a complete lifestyle of solely aboriginal living...I surely hope WOODSMOKE can remain viable long enough for readership to spread, ads to come in and self-sufficient growth to occur...

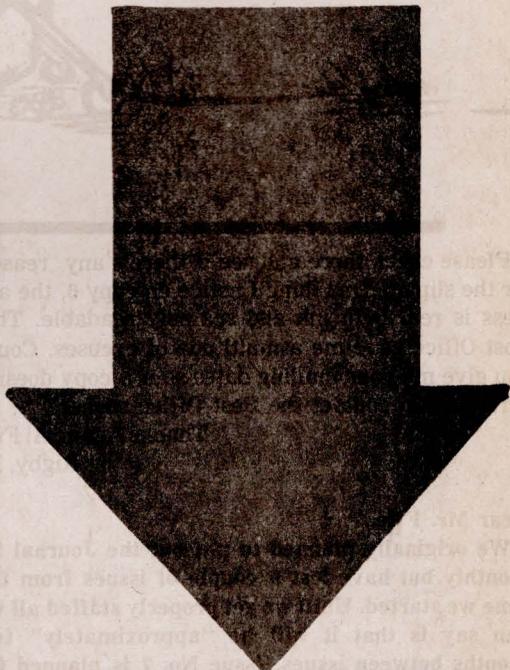
Sincerely, Jim Riggs  
La Grande, OR

Dear Jim,

We apologize for the errors on your article, as you said, a printers error. But they are improving on each issue and we hope to be able to catch all of those typos one of these days...Your comments are especially valuable as a fellow traveler in the field. We plan to be around for some time to come as there is a lot of good survival and self-sufficiency information that needs to be shared.

The Editor

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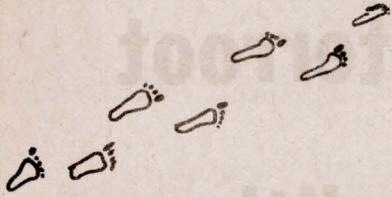
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# Editorial Notes



**No. 1.** We have had approximately 50 copies of issue No. 6 returned to us marked "undeliverable as addressed." This indicates that you have moved and not given us your new address! We have also gotten a few (5 or 6) irate letters from those of you who are on our undeliverable lists. We are sincerely sorry that you have missed past issues of WOODSMOKE but...let's be fair. Don't wait until you have missed four issues to let us know, then wonder why we haven't corrected the problem sooner. If you have not notified us of an address change and would like your back issues you may send 40c per copy to cover postage and we will send them to you. If you have missed issues for some other reason please let us know and we will send them to you with the next mailing. **When you move be sure to send us your new address AND the label from one of your magazines AND notify the Post Office to forward your magazines for a period of time until the address change takes effect.** The Post Office will not automatically forward magazines as they will first class mail.

**No. 2.** Apparently there are a few subscribers who have not received issue No. 5. We don't know why you would get all except No. 5...however, if you are a regular subscriber and have missed issue No. 5 please let us know, we have a very limited number still available. Some of those we have in reserve we saved back because of trimming errors etc. but if you will overlook the appearance the info inside is still valuable.

**No. 3.** We appreciate the input on our content balance. It has been favorable for more survival, less homestead info. with a few wanting both and none wanting more homestead. Guess you figure we know more about survival than homesteading...and you're right!

**No. 4** A special thanks to those of you who have renewed your subscription to WOODSMOKE. Renewals are the best way for us to judge our success as well as to keep those presses running. Many of you have also subscribed for a friend and we offer our thanks for that vote of confidence as well.

**No. 5.** You will notice a few advertisers in this issue (at last)! We have approached these people specifically because we feel that their product fits our format and that our readers will be interested in what they have to offer. There is nothing more ridiculous (and obviously commercial) than opening an outdoor magazine and seeing a full page ad for Congoleum Tile or Cascade dishwashing soap. (But we aren't worried that we will be deluged with prospective advertisers.) It does go without saying that they (our advertisers) are hoping to get additional response for their advertising investment...so we're encouraging you to patronize WOODSMOKE advertisers if you have need of their services or products and tell em you saw it here! Bless You...

**No. 6.** Recent developments have taken place in the ownership of WOODSMOKE Journal of which we feel you should be aware. Henceforth WOODSMOKE is the sole property and under the direction of Richard and Linda Jamison. We are responsible for all obligations debts etc. incurred by WOODSMOKE from this time forward. We also take full responsibility for any and all goof-ups that may take place. Our staff has been minimized to prevent additional expense and now is comprised of two over-worked, overspent and somewhat overwhelmed persons. We do it all from subscription filing to layout and mailing so if you have any questions just send em to us...at least your letters won't get lost in the computer. Also, may we ask that you be a little patient regarding correspondence. We love to get your letters and certainly don't want you to feel that we don't have time to read them, just give us an extra week or so to get em answered. In the future all mail regarding WOODSMOKE or Anasazi and Bitterroot Expeditions should be sent to our regular mailing address, P.O. Box 62, Stevensville, MT. 59870. Mail regarding LDOSA or LDO, INC. should be sent to P.O. Box 1301 Salt Lake City, UT. 84110, this includes Rabbit Stick which is sponsored by LDOSA. Subscriptions offered by LDOSA will be handled through the two organizations. Confused? We hope not. There shouldn't be any obvious changes since we have been operating under these conditions since issue No. 4 anyway, it's just official as of this issue.

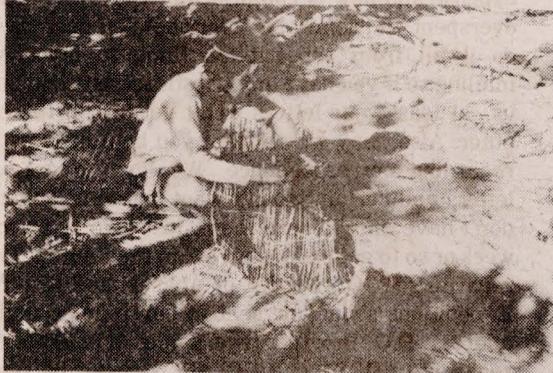


# Anasazi and Bitterroot Expeditions

## ABOUT THE EXPEDITIONS

There is no set rule to say who will or who will not "make it" in a survival situation. In all accounts there is one common denominator...the will to live. We hope to be able to strengthen the student's will to live with self-confidence, a reasonable knowledge of the environment, the ability to make correct decisions and the skills needed to obtain the necessities of life.

Knowledge of what to do must be obtained prior to an incident to enable the mind to recognize and solve problems related to survival. By teaching primitive skills we offer the student the challenge of learning ancient arts, thus creating a feeling for the way of life necessary to survive.



It has been said that with the right training in the right skills a good student could be rescued in the time it takes to make the things we try so hard to teach. That is true; however, it is a very real possibility that a person or group may fall into a situation and not be able to be rescued. Any number of reasons can justify the teaching of primitive skills, but there is one reason that can't be disputed or rationalized away...

If a person has the initiative, will power, ingenuity, intestinal fortitude, endurance, self-respect and love of fellow man; if a person can meet head on a primitive way of life and survive, he can meet almost any other challenge and certainly he could survive in any of today's survival situations.

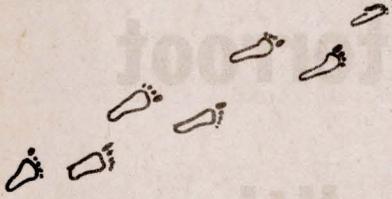
When a student departs on one of our primitive living expeditions he is entering a completely new world and leaving the old one, complete with complexities, behind. Call it escape, change of pace or what you will, the transition is dramatic.



Life on these primitive expeditions is simple, just keeping warm and fed. The complicated world that was left behind a few days earlier will seem remote and as the experience progresses the problems of the outside world gradually take on more manageable proportion. If this sounds like a form of therapy for the stress-burdened victim of modern society...you're right! But it's much more too.

Our courses are rugged, difficult and challenging. They are for the serious individual willing to sacrifice the comforts of modern living in order to develop skills and knowledge leading to greater self-sufficiency, explore the limits of mind and body and find deeper understanding of self and others.

# Editorial Notes



**No. 1.** We have had approximately 50 copies of issue No. 6 returned to us marked "undeliverable as addressed." This indicates that you have moved and not given us your new address! We have also gotten a few (5 or 6) irate letters from those of you who are on our undeliverable lists. We are sincerely sorry that you have missed past issues of WOODSMOKE but...let's be fair. Don't wait until you have missed four issues to let us know, then wonder why we haven't corrected the problem sooner. If you have not notified us of an address change and would like your back issues you may send 40c per copy to cover postage and we will send them to you. If you have missed issues for some other reason please let us know and we will send them to you with the next mailing. **When you move be sure to send us your new address AND the label from one of your magazines AND notify the Post Office to forward your magazines for a period of time until the address change takes effect.** The Post Office will not automatically forward magazines as they will first class mail.

**No. 2.** Apparently there are a few subscribers who have not received issue No. 5. We don't know why you would get all except No. 5...however, if you are a regular subscriber and have missed issue No. 5 please let us know, we have a very limited number still available. Some of those we have in reserve we saved back because of trimming errors etc. but if you will overlook the appearance the info inside is still valuable.

**No. 3.** We appreciate the input on our content balance. It has been favorable for more survival, less homestead info. with a few wanting both and no-one wanting more homestead. Guess you figure we know more about survival than homesteading...and you're right!

**No. 4** A special thanks to those of you who have renewed your subscription to WOODSMOKE. Renewals are the best way for us to judge our success as well as to keep those presses running. Many of you have also subscribed for a friend and we offer our thanks for that vote of confidence as well.

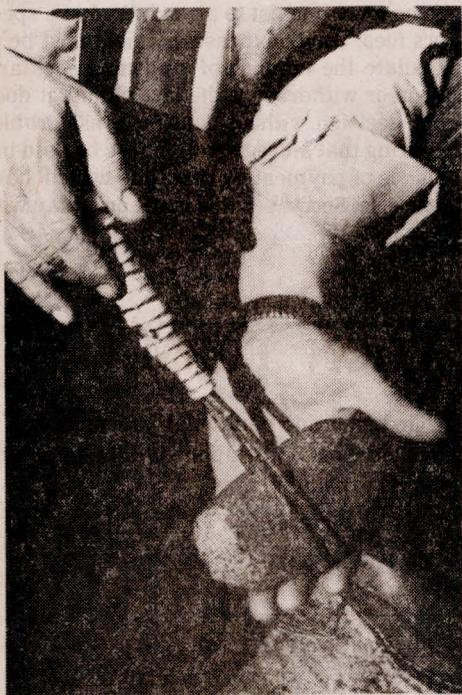
**No. 5.** You will notice a few advertisers in this issue (at last)! We have approached these people specifically because we feel that their product fits our format and that our readers will be interested in what they have to offer. There is nothing more ridiculous (and obviously commercial) than opening an outdoor magazine and seeing a full page ad for Congoleum Tile or Cascade dishwashing soap. (But we aren't worried that we will be deluged with prospective advertisers.) It does go without saying that they (our advertisers) are hoping to get additional response for their advertising investment...so we're encouraging you to patronize WOODSMOKE advertisers if you have need of their services or products and tell em you saw it here! Bless You...

**No. 6.** Recent developments have taken place in the ownership of WOODSMOKE Journal of which we feel you should be aware. Henceforth WOODSMOKE is the sole property and under the direction of Richard and Linda Jamison. We are responsible for all obligations debts etc. incurred by WOODSMOKE from this time forward. We also take full responsibility for any and all goof-ups that may take place. Our staff has been minimized to prevent additional expense and now is comprised of two over-worked, overspent and somewhat overwhelmed persons. We do it all from subscription filing to layout and mailing so if you have any questions just send em to us...at least your letters won't get lost in the computer. Also, may we ask that you be a little patient regarding correspondence. We love to get your letters and certainly don't want you to feel that we don't have time to read them, just give us an extra week or so to get em answered. In the future all mail regarding WOODSMOKE or Anasazi and Bitterroot Expeditions should be sent to our regular mailing address, P.O. Box 62, Stevensville, MT. 59870. Mail regarding LDOSA or LDO, INC. should be sent to P.O. Box 1301 Salt Lake City, UT. 84110, this includes Rabbit Stick which is sponsored by LDOSA. Subscriptions offered by LDOSA will be handled through the two organizations. Confused? We hope not. There shouldn't be any obvious changes since we have been operating under these conditions since issue No. 4 anyway, it's just official as of this issue.

If these are the things you're interested in doing, you'll want to register for one of the **Primitive Living Expeditions**.

The Primitive Living Expedition offers the broadest range of instruction and practice in outdoor survival skills. Equipped with little more than a pocket knife, wool blanket and small pouch of whole wheat flour, you will hike into a primitive area and establish a base camp. Here you will learn to build fires without matches, construct animal traps, recognize and harvest wild plants for food and medicine, fashion primitive tools and weapons from stone and bone, find water in a desert environment and learn to cook and live an aboriginal life style (and much more).

The learning atmosphere about camp is relaxed. Many of the skills will be worked on while sitting around the campfire at night enjoying friendly conversation with fellow participants and instructors.



You will be given a small ration of corn or flour at the beginning of the expedition to supplement your diet of wild foods and to make it easier for you to keep up your strength while learning to live off the land, yet the plain taste of the cooked grain won't hinder your taste for the wild things you harvest.

At the beginning of the expedition you will be given a personal notebook and be required to write in it daily, so that when you return to civilization you will have a lasting record of what will have been one of the most memorable and beneficial experiences of your life.



Because the environment is special it is important that all who come do so with clear and shared expectations about what the standards involve. They are as follows:

1. **Observe a high standard of taste and decency.** This includes refraining from disorderly, indecent or immodest conduct and dress.
2. **Respect property rights.** This includes refraining from damage, theft, trespass or misuse of the property of others.
3. **Respect personal rights.** This includes not obstructing or disrupting the study of others or the performance of teaching by school personnel.
4. **Abstain from harmful influences.** This includes abstinence from the use of alcohol and drugs. Smokers must be considerate of others and refrain from smoking during group sessions.

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1979 Schedule of Expeditions

Please turn the page

# 1979 Expedition Schedule

**JUNE 9-18**

10 day primitive living expedition in Southern Utah. Cost \$289.00

**SEPTEMBER 8-17**

10 day primitive living expedition in Southern Utah. Cost \$289.00

We are conducting fewer expeditions this year, therefore it is imperative that you pre-register as each trip will be filled on a first-come basis. A \$50.00 non-refundable deposit must accompany your application. The balance will be due 30 days prior to the expedition and will not be refunded unless the trip is cancelled or special arrangements have been made in advance with director. Additional information as to meeting place, pick-up points, items to bring and ride pooling will be sent upon receipt of your application.

In the past we have had a few last minute cancellations. Because we limit the number of participants on each expedition this is not fair to us or others who may be on a waiting list to attend. We have specific costs involved in each trip (insurance, materials, instructors fees, travel expenses) which must be paid regardless of the number of participants, therefore we calculate the number of students necessary to make each trip feasible. If two or three students don't show up or withdraw at the last minute it doesn't give us the opportunity to make that "go ahead or cancel" decision without causing considerable inconvenience to the other students. For this reason we are requiring that all registration fees be paid in full 30 days prior to the expeditions. If we do not receive your balance of payment by that time we will have to remove your name from the list and offer the space to someone else. Sorry, but this is the only way we can continue to conduct our expeditions.

## ADVANCED RESERVATION FORM

Please enter my name as a participant of trip # \_\_\_\_\_ and send me additional information. I have enclosed a check or money order for \$50.00 as a non-refundable deposit to be applied to the total amount due. The balance is due 30 days prior to the beginning date of the expedition.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

PHONE \_\_\_\_\_

Send To:

ANASAZI AND BITTERROOT EXPEDITIONS

P.O. Box 62

Stevensville, MT 59870

Make checks payable to Anasazi and Bitterroot Expeditions.

# WORKSHOPS

Anasazi and Bitterroot Expeditions will conduct only two regular expeditions and one instructor training seminar in 1979. Previous response has indicated that it is difficult and often impossible for many individuals to attend 5 and 10 day trips so far from home, no matter how much they would like to! So...instead we plan to offer several 2 and 3 day primitive skills workshops in your neck of the woods...wherever that may be!

The workshops will include instruction in many survival skills, depending on the time of year, of course. All sessions will include the following:

- Fire building without matches
- Finding or building adequate shelter
- Water needs for survival-locating water sources
- Plants for food, medicine and construction
- Animal use-primitive traps
- Primitive Arts-tools and weapons

The next question is where! That will depend on you, if you think you would attend a primitive survival workshop in your area just fill out the pre-registration form below. There is no obligation and

we do not ask that you send us any money...yet! Once we have determined the largest concentration interest we will proceed with details and plans that geographical location.

The cost will depend largely on the number participants and distance of travel involved, but our regular fee is \$45.00 for two days and two evening sessions of instruction. We will also be looking for one or two individuals in each area who can help locate a workshop site and handle publicity. If you are interested in being involved in this aspect please indicate on the form so we may contact you.

For those of you in the northern central United States, we will be conducting a two day winter survival workshop for the University of Northern Montana in Havre, MT on January 27 & 28. Credit will be offered through the Dept. of Continuing Education. The program will include one day lectures, slide presentations and demonstrations and a one day field trip for the purpose of building and utilizing snow caves. Anyone interested in attending may contact **Robbie Kallina** at the University for more information.

Please register me in an Anasazi and Bitterroot Expedition Workshop in my area. I understand that there is no obligation.

I would be interested in helping with details of the workshop Yes  No

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

PHONE \_\_\_\_\_ The largest city accessible to me is \_\_\_\_\_

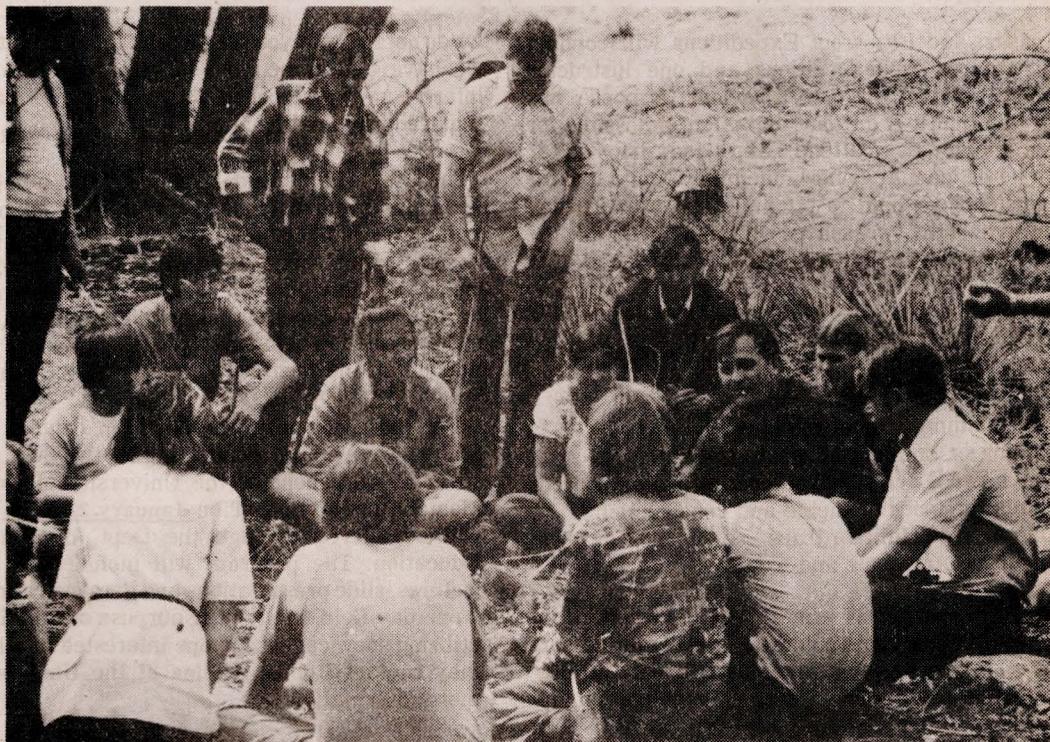
Send To:

ANASAZI AND BITTERROOT EXPEDITIONS

P.O. Box 62

Stevensville, MT 59870

# 1979 Instructor Training Seminar



## Aug 20-24

Anasazi and Bitterroot Expeditions is offering a unique experience for teachers and instructors of outdoor education. The emphasis is on skills that can be taught to your students in a workshop situation.

The combination of primitive skills instruction, lectures and field sessions will make this seminar different from any you may have attended before. The skills are exciting to students of all ages and will give your instruction a realistic tie with the ancient arts of survival.

Each day will consist of 2 hours of lecture and 2 hours of field instruction. The remaining time will be spent in practical application with instructor assistance available at all times.

The skills training offered during the five day period will cover the following subjects:

### SHELTER

- campsite selection
- bedding
- hot beds
- materials
- methods of shelter building

### FIRES

- fire building without matches
- metal match
- bow and drill
- fire lays
- sleeping fires
- cooking fires

## WATER

needs for survival  
locating water sources  
geographical and botanical indicators

## PLANTS

identification of edible and poisonous plants  
medicinal use of wild plants  
preparing plant fiber for use  
making useful items from plant fiber

## ANIMAL USE

primitive traps  
bait  
use of the animal  
observing animal sign

## TRACKING

tracking man and animals

## PRIMITIVE ARTS

selection and preparation of materials  
construction of primitive tools and weapons

The participants will learn the special outdoor cooking techniques by preparing food in an open pot, cooking in the ashes and on rocks, pit cooking, stick cooking and roasting on the spit. All food will be provided by Anasazi and Bitterroot Expeditions.

You will be staying in tipis during the five day period and a special program on tipi living will be presented to make you more comfortable in your "temporary home."

The resident instructor program takes place on 120 acres of beautiful wooded mountain property forty miles south of West Yellowstone National Park and within sight of the Grand Teton mountains. Fish are abundant only a mile away in Henry's fork of the Snake River. Wildlife abounds in the area and wild berries and edible plants are plentiful during the late summer. This would be an excellent opportunity to combine a valuable learning experience with a vacation in magnificent Yellowstone Park.

All participants will be expected to abide by the code of conduct required for all Anasazi and Bitterroot Expeditions. In order to ensure an atmosphere most conducive to learning for everyone and to provide for the greatest degree of health we desire to establish a living environment which harbors less offense and is unhampered with the crutches of self indulgence.

Because the environment is special it is important that all who come do so with clear and shared expectations about what the standards involve. They are as follows:

1. **Observe a high standard of taste and decency.** This includes refraining from disorderly, indecent or immodest conduct and dress.

2. **Respect property rights.** This includes refraining from damage, theft, trespass or misuse of the property of others.

3. **Respect personal rights.** This includes not obstructing or disrupting the study of others or the performance of teaching by school personnel.

4. **Abstain from harmful influences.** This includes abstinence from the use of alcohol and drugs. Smokers must be considerate of others and refrain from smoking during group sessions.

5. **Sexual abstinence.** This means restraint from sexual relations during the five day program. Living quarters will be shared by several individuals of differing ages and backgrounds necessitating this restriction.

6. **Help others fulfill their responsibilities** under this code.

By enrolling in the Resident Instructor Training Seminar a person signifies his willingness to live in accordance with the above principles during the scheduled program.

-----  
Please enter my name as a participant in the 5 day Resident Instructor Training Seminar to be held August 20 - 24 and send me additional information. I have enclosed a check or money order for \$50.00 as a non-refundable deposit to be applied to the total amount. The balance of \$80.00 is due 30 days prior to the program date.

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_  
STATE \_\_\_\_\_ ZIP \_\_\_\_\_  
PHONE \_\_\_\_\_

SEND TO:

ANASAZI AND BITTERROOT EXPEDITIONS  
P.O. Box 62  
Stevensville, MT 59870

(Make checks payable to Anasazi and Bitterroot Expeditions)

# WHO'S WHO

## Introducing

ERNEST AND MARGARET WILKINSON



Ernest attempts to talk "Tabby", one of his tame mountain lions into posing on a rock for a skyline shot.

Ernest Wilkinson and his wife Margaret are two of the friendliest folks you could hope to meet. They live on Highway 160 just outside Monte Vista, Colorado where Ernie operates a taxidermy shop.

A visit to their home can be a startling experience for anyone unprepared to see a live mountain lion in the den. But for the Wilkinsons, having "wild" animals in and about is common place...they raise cougars, wolves, coyotes, badgers, porcupines and other animals for wildlife filming.

Many of their animals have been used in national television productions such as "Wild Kingdom", "American Sportsman", "Walt Disney" and others. Ernie and his filming partner Wilford Miller photographed the majority of the footage for the popular movie "Cougar Country" using a "pet" lion, Tabby. Ernie will portray the part of a Government trapper in a John Denver special to be televised in May of 1979. One of his badgers will also be seen in the production.



**Margaret is Ernie's right-hand gal when it comes to working with their animals. Here she cuddles one of their pet badgers.**

Raising potentially dangerous wild animals has posed some interesting and exciting experiences for the pair over the years. On one occasion an assignment was accepted to film one of their tame badgers fighting a rattlesnake. To do this several badgers had to be captured and kept on hand in case the filming required retakes. With the help of friends and neighbors a number of snakes were collected and put into a large barrel until the day of filming. Over a period of time it became evident that close to half of the snakes were female, and pregnant. Needless to say the number of reptiles increased daily as new babies were born until merely lifting the barrel lid became a spine-chilling event. But having the experience and courage to probe the barrel for a good filming prospect was just "part of the job" for Ernie since both he and Margaret are accustomed to danger in their work.

Another hair-raising experience took place several years ago after they purchased a male cougar from a zoo for the purpose of breeding their own female.

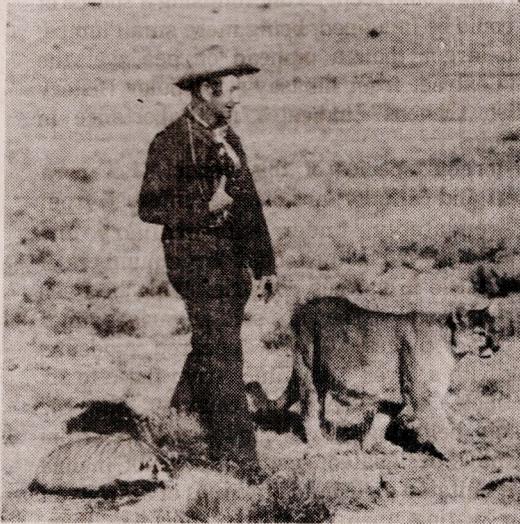
One afternoon while feeding the animals Ernie turned his back on the male for a split second, just long enough for the huge cat to attack and knock him to the ground. Having seen the incident from a few feet away, Margaret ran into the cage and cornered the animal with a shovel long enough for Ernie to get to his feet and both of them to get out of danger. The experience resulted in 86 stitches in Ernie's scalp. They later found out that the cat had been teased and given drugs while in captivity.

The couple's four boys, Jim, Larry, Gerald and Jeff have all learned many outdoor skills from their parents. During summer and winter they are busy helping with the programs conducted for youth and adults. The winter programs include building snow caves and igloos high in the San Juan Mountains and offer participants an opportunity to learn valuable winter skills. Summer schedules include backpacking and fishing trips into the scenic beauty of the area. All of the outings are interspersed with campfire stories and tidbits of information on enjoying the wilderness.

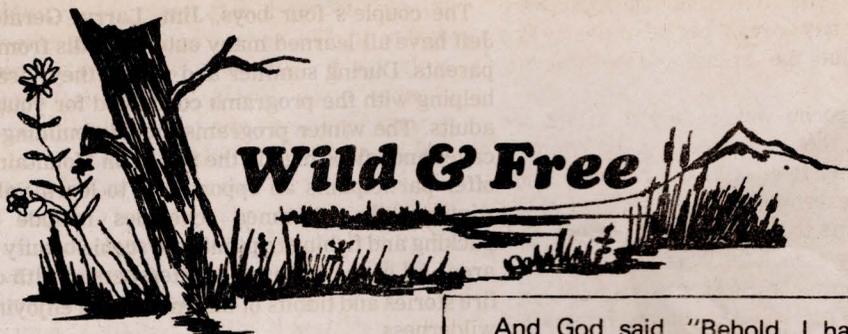
Ernie is the coordinator for the San Juan Search and Rescue Team, teaches classes on trapping and preparedness, and runs a trapline of his own. By the way, Margaret is a skilled trapper in her own right and was trapping even before she "caught" Ernie.

Both Ernie and Margaret are opinionated when it comes to ecological issues dealing with wildlife. Their feelings come from experience, having lived on a ranch most of their lives, trapping season after season, and working with both tame and wild animals makes them thoroughly involved in the issues.

They also share an interest in writing and have had many articles published that deal with their first-hand experiences. In future issues of WOODSMOKE we hope to include more back-woods wisdom from Ernie and Margaret Wilkinson sharing their ideas and feelings about nature and wildlife.



**Ernest and his filming "crew" take a stroll**



# LICHEN

by Linda Jamison

And God said, "Behold, I have given you every herb bearing seed, which is upon the face of all the earth, and every tree, in the which is the fruit of a tree yielding seed, to you it shall be for meat.

"And to every beast of the earth, and to every fowl of the air, and to every thing that creepeth upon the earth, wherein there is life, I have given every green herb for meat: and it was so."

Genesis 1:29, 30

Probably one of the last sources of food we would ordinarily consider would be the dry, drab, grey-brown lichens, often mistakenly called "mosses" which grow on rocks, trees and carpet sterile areas of ground. But several types of lichen have served as valuable food and in a number of cases have actually saved man from starvation.

The famous lichen-manna of North Africa and western Asia would seem as unpromising a source of food as could be imagined, being mere small lumps, often no larger than a pinhead or pea, yet the following extract from Lindsay's "Popular History of British Lichens" indicates its importance in emergencies.

"Two foreign species of this genus, (*Lecanora esculenta*) and (*affinis*), are of great interest, from having repeatedly, under extraordinary circumstances, served as the food of large numbers of men and cattle in various countries lying between Algeria and Tartary. They are said at various times and in divers places to have appeared suddenly, covering with a layer, sometimes from three to six inches thick, large tracts of country; and the inhabitants, believing their origin to have been from heaven, have designated them a species of manna and have imitated their flocks in times of scarcity of food, by eating them...Several 'rains of manna'...have been described by travellers...The manna is usually found in the form of small lumps, from the size of a pin's head to that of a pea or small nut, which are greyish or whitish, hard, irregular in

form, inodorous, and insipid..As an illustration of the circumstances under which manna-rain is said to fall, Ancherclou stated that in 1829, during a war between Russia and Persia, a large tract of country round a town on the southwest shore of the Caspian, whose inhabitants were in a state of famine, was suddenly covered by a Lichen which fell from heaven. The sheep were noticed to eat it with avidity; the idea immediately occurred to the famishing inhabitants that this substance might prove equally agreeable or nutritious to themselves, and accordingly it was converted into bread."

(The explanation given for the "rains of manna" is that the lichen grows attached on the ground elsewhere and the fragments, being light, are transported by the wind.) Probably the most noted instance of the use of Lichen as an emergency food in American journals was the long period when Sir John Franklin, Dr. Richardson, George Back (all famous botanists) and their Canadian team managed to stave off starvation for many weeks by eating "Tripe de Roche" of the Hudson Bay area. These tough, black, dry lichens of the genus *Gyrophora* grow on rocks and are often nicknamed **Rock Tripe**. When boiled they yield a jelly-like substance and are abundant in starch. Unfortunately they are also quite bitter and contain a purgative principle which can be removed by steeping the lichen in a diluted soda water. But Franklin and his party were not familiar with this method of making their food source more palatable and so suffered the

purgative effects. The following records were written on different days over a period of nearly two months and describe the events of the starving scientists.

"Some tripe de roche was collected, which we boiled for supper...they refused to pick tripe de roche, choosing rather to go entirely without eating, than to make any exertion...Having persuaded the people to gather some tripe de roche, I partook of a meal with them...My associates were all in the same debilitated state, and poor Hood was reduced to a perfect shadow, from the severe bowel complaints which the tripe de roche never failed to give him...The want of tripe de roche caused us to go supperless to bed...The tripe de roche disagreed with this man and with Vaillant, in consequence of which, they were the first whose strength totally failed. We had a small quantity of this weed in the evening, and the rest of our supper was made of scraps of leather...the weather not permitting the gathering of tripe de roche we had nothing to cook...Next morning the breeze was light and the weather mild, which enabled us to collect some tripe de roche, and to enjoy the only meal we had for four days. We derived great benefit from it, and walked with considerably more ease...The tripe de roche had hitherto afforded us our chief support, and we naturally felt great uneasiness at the prospect of being deprived of it, by

its being so frozen as to render it impossible for us to gather it...We endeavored to pick some tripe de roche but in vain, as it was entirely frozen."

Other types of lichen have also been used in emergencies and some have achieved recognition as a source of bread. **Reindeer Moss** of the Northern cool regions is eaten both by man and beast and is so prolific that it is collected by herdsmen to feed to cattle and other domestic animals. It is said that the milk from lichen fed cows is mostly cream and the meat of the animals is peculiarly fat and sweet.

**Iceland Moss** is said to contain 80 percent starch, fat and a bitter principle as well as various mineral salts. The bitter purgative can be leached out by boiling in water and soda as with the **Rock Tripe**. The jelly derived from **Iceland Moss** is considered highly nutritious and digestible. It has been stated that one pound of the lichen, boiled in water yields eight pounds of jelly. The Icelanders use the plant for soup making as well as powdered for making bread. Their cows, horses and other animals are fattened on it, in fact the Icelanders affirm that "a bountiful Providence sends them bread out of the very stones."

Moose are reputed to be particularly fond of the lichen called **Tree-Lungwort** which got its name from the resemblance of the pitted, reticulated thallus to the structure of the lungs. Some supposed



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It is possible to find lichen buried beneath the snow during the winter months, making it especially valuable as an emergency source of food.

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that because of this resemblance it was a valuable food for consumptives. This lichen contains comparatively little starch when measured with other varieties, but the jelly is somewhat nutritious and worth remembering in case of emergencies. Tree-Lungwort grows on trees or damp rocks in Newfoundland, Canada, Northern United States and south in the uplands to South Carolina.

The preparation of lichen for human consumption will depend on the circumstances in which it is to be eaten. For instance, if lost in a forest with no method of soaking the purgative properties it will most likely be roasted on hot stones in the fire, or eaten raw if no means of firemaking is available. Regardless of the flavor it will sustain life. On the other hand, if you have the opportunity to forage for prime specimens for home experimenting, wash and soak the plants in a solution of soda and water for several hours before preparing. If the bitterness is still evident try par-boiling, discarding the water. Once leached the lichen can be roasted for an especially earthy flavor, then ground into flour and used in breads mixed with other flour, to thicken soups and stews, or mixed with water and baked into flat cakes. The most common use of lichen is for soup and jelly making. Some varieties, especially when roasted, lend a mushroom or slightly musty flavor to soups, not unpleasant especially when vegetables and onions are added. The lichen can be used in powdered form or left in large pieces and added to the liquid after leaching. The result will be a thick, mucilaginous soup.

To prepare jelly first wash and leach, then stir about 1/2 a cupful of lichen into a pint of boiling water, cover and turn off the heat. Let stand at least three hours. Stir, strain and sweeten with honey. For extra flavor add lemon or orange peel. It may also be boiled in milk a few minutes for a nutritive tonic. Lichen is particularly high in iodine and sulphur, much needed elements in everyday living as well as emergencies.

The abundance of lichen in many parts of the country make it truly "manna from heaven" for survival use, but gravely overlooked as a foragers preference. Until recently my own experience had been limited to nibbling the fresh plant while foraging for more succulent morsels. But lately I have decided that it is too plentiful to pass by and collected a sackful. After leaching and roasting a few cups of the plant I added it to beef soup stock and found it quite tasty. The fact that it is nourishing too, made my experiment even more delightful.

Much like the rose hip, lichen can be gathered during winter months. Merely dig beneath the snow cover, in fact the moisture from rain and snow

makes collecting lichen from rocks and trees much easier.

Rather than considering lichen a "last source" of food, we should with a little experimenting, rank it among nature's most beneficial offerings, whether in an emergency or for everyday fare.

#### Bibliography

Harris, Ben Charles - "Eat the Weeds", Barre Publishers 1969

Fernald, Merritt Lyndon and Kinsey, Alfred Charles - "Edible Wild Plants of Eastern North America" Harper and Row 1958

## Give A Gift Subscription To A Friend

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## SANTA FE SADDLES

by Bob Schmidt

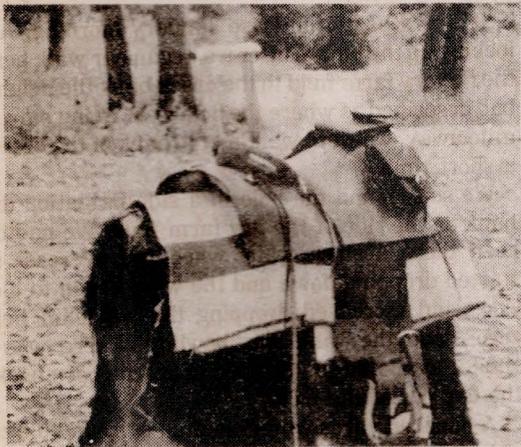
If you are a dyed-in-the-wool buckskinner, muleloader or just like to ride horses, then the Santa Fe saddle is for you. They are light weight and ideal for trail riders.

Jim Bridger and other mountain men used the Santa Fe saddle and there is one displayed in Taos, New Mexico that belonged to Kit Carson. Although there were many other kinds of saddles used by the old timers, the Santa Fe can be seen in many of the Russell and Remington paintings of mountain-men.

As you can guess by the name, the Santa Fe saddle was patterned after the old Mexican saddle with a large horn and hand holds in the cantle. Horses and mules must have been cheaper and easier to come by then because that old saddle would surely put some

bad sores on those pony's backs. With the price of horse flesh these days a person has to be more careful with their trusty steed. Also the saddle that the old buckskinner rode on would not be so inclined to stay put on our fat, round-backed horses of today.

There are two types of Santa Fe saddles. One is the old type that is made just like the old timers used, a single rigging type with wooden stirrups. The other is the new style Santa Fe which is made with double rigging and wide back cinch. The sheep skin lined skirts and fenders are patterned after the stock saddle. Both styles have the small saddle bags that fit around the horn and on the swells in front of the rider. Also, the leather that is used in the new style saddle is a lot better quality due to the tanning process.



**Editors Note:** The saddles shown in the photographs were made by Bob. If you are interested in prices and details just drop him a line. Bob Schmidt, 1224 N.E. Hamilton Heights Rd, Corvallis MT 59828.

# SURVIVING WINTER HAZARDS

by Larry J. Wells



## HUNTER FOUND DEAD OF EXPOSURE! SNOWMOBILERS LOST IN BLIZZARD!

Several times a season we read about the hunter who saw the big buck, blasts away and then runs into the chase after only wounding the animal. In his excitement he leaves his "survival gear" in his vehicle. A storm catches him or he becomes lost. We read of snowmobilers who have mechanical problems or become lost in an unexpected blizzard. Most of these stories do not have happy endings.

The key to winter survival is the old scout motto: "BE PREPARED".

In 1975, through an almost tragic experience, I found just how important preparation can be.

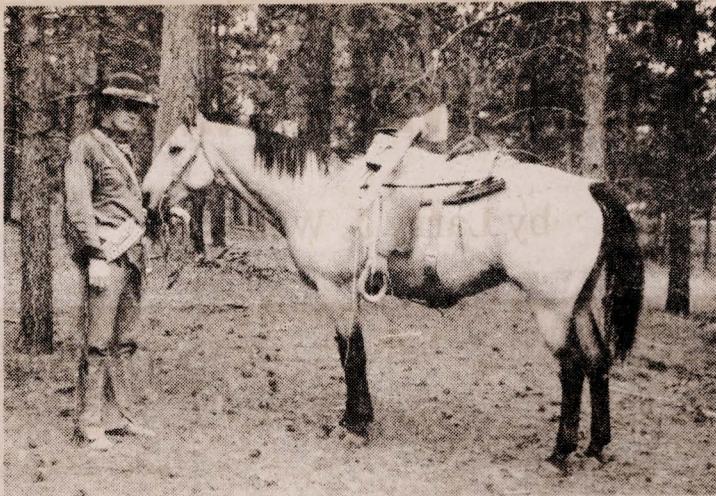
A neighbor asked me if I would get a red fox out of a hole for him. He had shot the fox and it had crawled into its hole and died. My neighbor had been unable to get him out.

I took my two sons, Monte, age 10 and Torren, age

7. It was a beautiful, crisp January morning. After locking up the land cruiser we began our walk across the flat dry farm field to the creek bank the neighbor had described as where the hole was. Being only a  $\frac{1}{4}$  mile away, we were walking the bank of the creek in a short time.

We soon found the hole in a side irrigation ditch bank on the side of the dry farm field. We had only been there a short while when the overcast sky started dropping down and the wind began to blow. The wind increased dropping the windchill below zero. Soon the wind was howling. There was no shelter available so I decided to get the boys back to the car out of the cold.

A hundred yards from the ditch a ground blizzard closed in. Moisture added to the wind chill and our world had neither up or down, only white. Our faces



## SANTA FE SADDLES

by Bob Schmidt

If you are a dyed-in-the-wool buckskinner, muzzleloader or just like to ride horses, then the Santa Fe saddle is for you. They are light weight and ideal for trail riders.

Jim Bridger and other mountain men used the Santa Fe saddle and there is one displayed in Taos, New Mexico that belonged to Kit Carson. Although there were many other kinds of saddles used by the old timers, the Santa Fe can be seen in many of the Russell and Remington paintings of mountain-men.

As you can guess by the name, the Santa Fe saddle was patterned after the old Mexican saddle with a large horn and hand holds in the cantle. Horses and mules must have been cheaper and easier to come by then because that old saddle would surely put some

bad sores on those pony's backs. With the price of horse flesh these days a person has to be more careful with their trusty steed. Also the saddle that the old buckskinner rode on would not be so inclined to stay put on our fat, round-backed horses of today.

There are two types of Santa Fe saddles. One is the old type that is made just like the old timers used, a single rigging type with wooden stirrups. The other is the new style Santa Fe which is made with double rigging and wide back cinch. The sheep skin lined skirts and fenders are patterned after the stock saddle. Both styles have the small saddle bags that fit around the horn and on the swells in front of the rider. Also, the leather that is used in the new style saddle is a lot better quality due to the tanning process.



**Editors Note:** The saddles shown in the photographs were made by Bob. If you are interested in prices and details just drop him a line. Bob Schmidt, 1224 N.E. Hamilton Heights Rd, Corvallis MT 59828.

turned crimson and my beard formed a layer of ice.

Torren began to shiver as the wind cut through his jacket. I asked them if they had their face masks. They didn't. I gave mine to Torren and tied a bandana over Monte's nose and chin, which by now had turned blue.

Looking around I could only see 20 feet at the most. Small crystals of ice scoured our bodies and stung our exposed flesh. There was no protection. The field was covered with a shallow three to four inches of snow crusted around the stubble. There were no drifts, no bushes, no depressions - nothing to get out of the killer wind.

I knew the highway was in a general north direction (I hadn't bothered to take a compass bearing when I left the vehicle as I could see the ¼ mile to the creek - what was the use?).

Putting the boys on the down wind side of me, I began following my compass due north.

By the time we reached the highway about a quarter mile down from our vehicle, Torren was getting slow and stiff. We were frozen cold. Our fingers and toes cried for warmth. The wind side of our bodies were numb.

Our lives had been saved by a 98 cent compass (now \$1.50). We could have died within ¼ mile of a major highway within two miles of our home. Without face coverings we would have had frostbite.

There are some very basic items you should carry with you in the winter any time you leave your home or vehicle, if only to go to water down the hillside:

**MATCHES** in a waterproof container plus some type of windproof fire starter (highway or railroad flares work well). Cold, stiff, numb fingers make it hard to use matches, especially in the wind.

**COMPASS** - It is a necessity in the winter time. Take a bearing when you leave your vehicle. I could have saved a frozen ¼ mile walk if I had, even though it seemed ridiculous at the time. If I hadn't known a general direction, the compass would have been of no value.

**FACE MASK, SKI MASK, OR SNOWMOBILE MASK**, anything to break the wind and keep your face covered. Remember, exposed flesh can freeze in one minute at -25 degrees. This temperature is reached if its 10 degrees above zero with a 20 mile an hour wind and that isn't extreme conditions at all.

**WIND BREAKER**, jacket, rain coat, anything to stop the wind. Wind kills. It brings hypothermia (see Volume III WOODSMOKE) and frostbite to your body with amazing speed.

**HIGH ENERGY FOOD** to give the body something to burn for heat. Something to help in a pinch such as nuts, candy bars, gorp, etc. Keep in mind:

**Carbohydrates** burn quick for quick energy but burn up fast.

**Proteins** take longer to start burning but last longer.

**Oils or Fats** are slow to burn but are long lasting.

A combination of all three is best. That is why pemican is so effective.

**GROUND CLOTH**, something light but waterproof to keep you off the snow if you have to dig in. It can also serve as an emergency wind shelter. A rain poncho works well.

**KNIFE**, the most useful tool you can have in any wilderness situation.

This is a very basic list of items that can save your life. You should, of course, be dressed for the occasion with layers of warm clothing. Wool and the new polarguard, fiber II or holofill materials are the best for winter conditions. You should have warm, waterproof or water resistant foot gear and, of course, mittens and a wool cap that will cover your ears. Eighty per cent of your body heat goes out through your head if it isn't covered. A hood on your jacket is good because it covers your neck, another great heat loss area. A bandana or scarf will take care of the neck also.

A handy item in your pocket is toilet paper. You can get by in the summer, but using a snowball can be a shocking experience!

This information is for basics to be carried hunting or on a short hike. Winter camping and winter expeditions require much more extensive preparations and a thorough understanding of cold weather survival.

Remember - the secret in the winter is the scout motto **BE PREPARED**.

#### *Editors Comment:*

*Since hunting season began several weeks ago the headlines in our local paper have been filled with stories of "lost hunters" and search teams spending many hours of time tracking them down. In every case (without exception) the fault has been lack of preparation on the part of the hunter.*

*Today's front page story is headlined "Search and Rescue Volunteers Find Seriously Frostbitten Hunter" (Ravalli Republic). The report states that the Search and Rescue Teams have had a busy, bad weekend. One hunter, age 26, was found with severely frostbitten knees and feet after the victim and a companion spent the night huddled together in -10° temperatures.*

*The President of the Search and Rescue team commented that in the process of getting the men into some dry clothes they discovered that the victim's felt-lined boots were frozen solid, having*

become wet from snowmelt coming off his pants which were cotton and not long enough to cover the tops of his boots. The man was reportedly going to lose part of his feet from frostbite. Both men were in advanced stages of hypothermia when found.

Search teams looked for another victim for three days during the first snow storm of the season. He was finally located with the use of tracking dogs. Again, he was an avid sportsman.

Last week a personal friend and his son walked out after being lost just a few miles from home. The son had a small compass in his pocket which enabled them to get a bearing in the right direction. They were cold but unharmed by the experience.

Another close friend wound up burning his shirt to start a fire for warmth as he and a companion spent the night lost in the woods while hunting. This fellow is new to the area but is an experienced hunter.

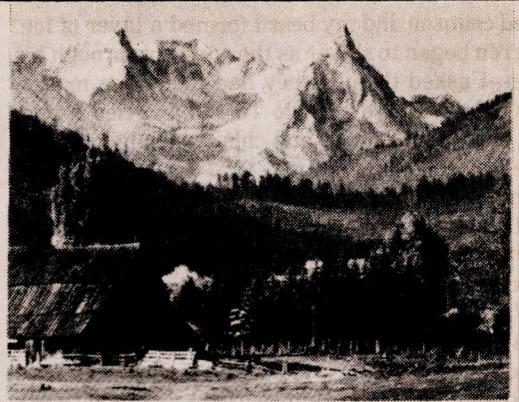
On Oct. 30th of this year a 43 year old hunter from Northern Montana made the paper when he spent two nights out in the woods with "two candy bars, no coat and no idea where he was." He was eventually found after an extensive search that included 35 people, 8 horses, an airplane, 2 dogs and a number of four-wheel drive outfits. According to the organizer of the search the victim and his partner had both hunted in the area before. He was located wandering deep in a deadfall area, cold and lost but in relatively good physical condition.

So you see, it happens to "experienced" people, not the average first-timer. It can happen to anyone and often becomes tragic for the unprepared. It's ironic that hunter safety courses are for boys under the age of 18...refresher courses in survival techniques and orienteering should be offered to all hunters every few years. At the very least, hunters should take the responsibility to inform themselves before going into the field...both as a safety precaution and as a courtesy to the people who face the task of tracking them down.

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# WILD GAME RECIPES



Few people enjoy game until they learn to season and prepare it properly. It is a mistake to expect venison to taste like beef or duck to be indistinguishable from chicken. Start with what you have: elk, deer, duck, dove etc., then work to find a preparation you enjoy. Many hunters (and fishermen) enjoy the sport but waste the meat because the taste is "gamey" or strong. Plenty of spices or tangy sauces will eliminate this problem.

## Venison Meat Balls

- 2 slices rye bread (broken)
- 2 slices wheat bread (broken)
- $\frac{3}{4}$  cup milk
- 2 teaspoons baking powder
- 1  $\frac{1}{2}$  pounds ground venison
- $\frac{1}{2}$  cup chopped onion or 1 pkg onion soup mix
- 1 teaspoon salt
- $\frac{1}{2}$  teaspoon seasoned salt
- oil
- 1 can cream of mushroom soup
- 1 can evaporated milk
- 1 cup buttered bread crumbs

Combine bread, milk and baking powder in mixing bowl. Let stand a few minutes. Add meat, onion, salt and seasoned salt. Mix well and form into balls. Brown in small amount of oil. Place in baking dish. Cover with soup diluted with canned milk. Top with bread crumbs. Bake at 350° for 45 minutes.

## Deep Fried Venison Strips

Slice venison in small pieces about 2  $\frac{1}{2}$  to 3 inches long, and 1  $\frac{1}{2}$  to 2 inches wide and about  $\frac{1}{4}$  inch thick. Roll in a mixture of flour, salt, pepper and onion or garlic powder. Deep fry until golden brown. Serve with catsup or other sauce for dipping. This is great as a snack food hot or cold or as a main dish (make plenty).

## Venison Stroganoff

- 2 lbs venison steak  $\frac{1}{4}$  inch thick
- 1 clove of garlic (peeled and cut)
- 3 tablespoons flour
- $\frac{3}{4}$  teaspoons salt
- $\frac{1}{4}$  teaspoon pepper
- 1 teaspoon paprika
- $\frac{1}{4}$  cup oil
- $\frac{1}{2}$  cup chopped onion
- 1 can consommé (or beef broth)
- $\frac{1}{2}$  cup water
- 1 pound sliced mushrooms
- $\frac{1}{2}$  cup sour cream
- 2 tablespoons finely chopped chives

Rub both sides of the meat with garlic. Cut into 1 inch squares. Mix flour, salt, pepper and paprika in plastic bag. Add meat and toss lightly until coated. Reserve remaining flour mixture. Heat oil in skillet, add meat and brown. Add onion and cook until transparent. Add remaining flour mixture, consommé, water and mushrooms. Cover and simmer for 1  $\frac{1}{2}$  hours or until meat is tender. Remove cover and continue cooking until slightly thickened. Add sour cream and chives and serve over cooked noodles.

## Oven Venison Jerky

- 3 pounds venison, trimmed and sliced thin.
- 1 to 2 teaspoons liquid smoke
- salt and pepper

Sprinkle liquid smoke and salt on each piece of meat. Layer meat in large crock or bowl, lightly pepper each layer. Let stand 6 hours or overnight. Place meat on racks in oven, touching but not overlapping. Allow enough uncovered space on racks for good oven circulation. Place upper rack 4 inches from the top of the oven and bottom rack 4 inches from the bottom. Set oven temperature at 150°. Dry meat for 11 hours. Store in airtight containers. Will keep in refrigerator longer.

## Bar-B-Qued Venison

- 1 pound sliced venison
- 1 small onion, chopped
- 1 large stalk of celery
- 1 cup catsup or tomato soup
- ¼ teaspoon worcestershire sauce
- 2 tablespoons mustard
- salt and pepper
- butter

Saute onion and celery in butter until tender. Add remaining ingredients, simmer until meat is tender.

## Wild Duck

- 1 duck, cut into serving pieces
- 1 tablespoon shortening
- 1 tablespoon butter
- 1 tablespoon chopped onion
- 1 tablespoon chopped celery
- 1 tablespoon chopped parsley
- ½ apple, cubed
- 2 tablespoons flour
- 2 pints water
- 1 teaspoon salt
- dash pepper
- 2 tablespoons current jelly
- juice from ½ lemon
- juice from ½ lime

Cook duck in shortening for 45 minutes, pour off grease. Add butter, onion, celery, parsley and apple. Brown thoroughly. Add flour and brown. Add remaining ingredients. Simmer 3 to 3½ hours until meat is tender.

## Dove Curry

- 10 to 12 doves
- 1 tablespoon vinegar
- 1 teaspoon curry powder
- 3 green onions, finely diced
- flour

Cover doves with water and cook until tender. Reserve 2 cups of broth. Dice doves into bite sized pieces. Add vinegar, curry powder, salt, pepper, onions, dove pieces and enough flour to thicken to broth. Cook uncovered until thick. Serve over fluffy rice.

# GRANOLA RECIPES FROM THE GOLDEN HARVEST

## Granola Pumpkin Pie

### CRUST

- 1 ½ cups Golden Harvest Raisin Bran Granola
- 2 tbsp Golden Harvest Turbinado Sugar
- ¼ tsp Golden Harvest sea salt (optional)
- ¼ cup butter, melted
- ¼ cup Golden Harvest walnuts, chopped

### MIX ingredients

SAVE 1/8 cup to sprinkle on top of pie  
BAKE at 400° for 3 to 5 minutes

### FILLING

- 1 cup pumpkin, mashed and cooked
- ½ cup Golden Harvest honey
- ½ tsp Golden Harvest sea salt (optional)
- ¼ tsp ginger
- 1/8 tsp nutmeg
- 1/8 tsp cinnamon
- 1 cup heavy cream
- ¼ cup Golden Harvest Turbinado sugar

STIR pumpkin, honey, salt, spices together

WHIP cream, gradually beating in sugar

FOLD pumpkin mixture into whipped cream

SPREAD into bottom of crust

FREEZE at least 2 hours

YIELD 1-9" pie





## Natural Granola Pancakes

- 1 egg, beaten
- 1 cup milk
- 1 tsp baking powder
- 1 tbsp Golden Harvest soybean oil
- 1 cup Golden Harvest wheat flour
- ½ cup Golden Harvest 100% Natural Cereal, ground
- ½ tsp Golden Harvest sea salt (optional)

**BLEND** egg, milk and soybean oil  
**ADD** sifted dry ingredients (except cereal)  
 mix well and fold in 100% Natural Cereal  
**ADD** small amount of milk if batter is too stiff  
**POUR** ¼ cup batter onto an ungreased griddle and bake until golden brown  
**YIELD** 8 to 10 pancakes - 210 calories per serving



## Proteinola Muffins

- 1 egg
- ½ tsp baking soda
- 1 tsp baking powder
- ¾ cup buttermilk or plain yogurt
- 2 tbsp Golden Harvest vegetable oil (blend)
- ½ cup Golden Harvest honey
- 1 cup Golden Harvest unbleached wheat flour
- 1 cup Golden Harvest Proteinola Cereal
- 1 tsp Golden Harvest sea salt (optional)

**PREHEAT** oven to 400°  
**GREASE** 12 medium muffin cups  
**BEAT** egg, then stir in buttermilk, oil and honey  
**ADD** remaining ingredients, mixing just until flour is moistened.  
**FILL** muffin cups ¾ full  
**BAKE** at 400° for 15 to 20 minutes or until wooden toothpick comes out clean  
**REMOVE** from pans immediately  
**YIELD** - 12 muffins

## Old Fashioned Rolled Cookies

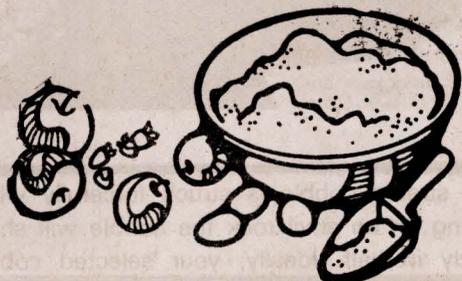
- 1 cup butter
- 1 egg
- 1 tsp pure vanilla
- ⅔ cup Golden Harvest Turbinado Sugar
- 2 cups Golden Harvest unbleached wheat flour
- 1 cup Golden Harvest Old-Fashioned Granola

**PREHEAT** oven to 350°  
**CREAM** butter and sugar  
**BEAT** in egg and vanilla  
**STIR** in flour and granola, mixing well  
**CHILL** dough 4 hours  
**ROLL** dough out to 1/8 inch thickness on floured surface  
**CUT** into desired shapes with cookie cutters  
**PLACE** on lightly greased cookie sheets  
**BAKE** at 350° for 8 to 10 minutes  
**REMOVE** from cookie sheets immediately  
**DECORATE** as desired  
**YIELD** - 6 dozen cookies

## Premier Applesauce Spice Cake

- 1 ½ cups applesauce
- 1 egg
- 1 ½ cups Golden Harvest Premier Raisin Bran Granola
- 2 tbsp Golden Harvest vegetable oil (Safflower)
- ½ cup Golden Harvest honey
- 1 ¼ cups Golden Harvest unbleached wheat flour
- ½ tsp Golden Harvest sea salt
- 1 ½ tsp baking soda
- ¼ tsp ground cloves

**PREHEAT** oven to 350°  
**HEAT** applesauce and granola to just below boiling  
**SET** aside for 20 minutes  
**CREAM** oil and honey together until frothy  
**BEAT** egg  
**SIFT** together dry ingredients  
**ADD** dry ingredients to creamed mixture alternately with applesauce mixture.  
**POUR** into oiled 8x8x2 sq pan  
**BAKE** at 350° for 35 to 40 mins.



# Easy-To-Make Stone Tools

By Paul Hellweg



Photos by Paul Hellweg and Don Fisher

If a stream cobble is struck forcefully while resting on an anvil rock the cobble will shear neatly in half. Ideally, your selected cobble

should be about half the size of the one pictured. (An overly large stone is shown in the photo in order to emphasize the technique.)

## I. OLDOWAN BASHEE TECHNOLOGY

Stone tools are frequently desirable and occasionally essential in survival situations. Their functions are limited only by the scope of the user's imagination — they help scrape hides, dress game, make fire sets, prepare cordage, and so forth. Unfortunately, stone tool-making is usually discussed in terms of technical skills such as pressure or percussion flaking. These are highly desirable skills to acquire, and many students justifiably seek to master them. But these techniques may be of little or no use in an emergency situation. They are skills which require considerable practice to master; they will work only on siliceous minerals which frequently are not available; and they require flaking tools of antler, bone, or hardwood (which also may not be available). I'll grant that a skilled flintknapper can create tools which are not only aesthetically pleasing but also preeminently functional (it is possible, for example, to make obsidian knives with edges sharper than the finest surgical steel). For the average survivalist, however, the odds are against making serviceable pressure or percussion flaked tools in an emergency.

I would thus like to introduce a few techniques of stone tool manufacture that have none of the disadvantages discussed above. The techniques are: the Oldowan bashee; bi-polar percussion; and the discoidal knife. These methods of stone-working require no previous practice, need no tools to aid manufacture, and can be accomplished with a wide variety of stone. And most importantly, they are functional. Using these techniques, a totally unskilled person can make serviceable tools in a matter of minutes.

Two and a half million years ago, man's predecessors were making pebble choppers in the Olduvai region (Oldoway in German) of East Africa. But for countless millennia prior to the development of chopper tools, stone tool technology must have been pathetically crude. It most likely involved picking up any old rock, heaving it mightily against another rock or boulder, and dimly hoping that this bashing would produce useful pieces. Any archaeologist worth his Safari hat would scoff at me, but I cannot resist the urge to name this earliest possible tool-making culture. Thus, we have the Oldowan Bashee Technology.

When applied to the manufacture of stone tools in a survival situation, the Oldowan bashee falls in the same category as covering your head when it's cold — the idea is so obvious that it is frequently overlooked. But now that the bashee has been named and written about, we have no excuse for overlooking this type of tool-making. Bashee tools are not very imposing and they are not likely to be proudly shown to friends. But they are functional, and they can be extremely useful in emergency situations. Most any rock, fist sized or smaller, will suffice. Ideally, it should be hard (quartzite is perfect), and it should have thin crack lines visible. You can easily pick out the harder rocks — their surfaces are smoother and less grainy. Also, they will feel comparatively heavy for their size. If already cracked, they will shatter much more readily. Be sure to duck your head when you throw, lest you be hit in the face or eye by bashee fragments. The resulting pieces, or bashee tools, will have sharp edges if the original rock was hard enough. These pieces will cut leather, dress small game, and so forth.

ALLAN R. PRIDDY  
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MOCATELLO, IDAHO 83204



Oldowan Bashee Tools: The fourteen pieces shown are the result of one "bashing" of an

obsidian nodule. Most of the pieces have at least one sharp cutting edge.



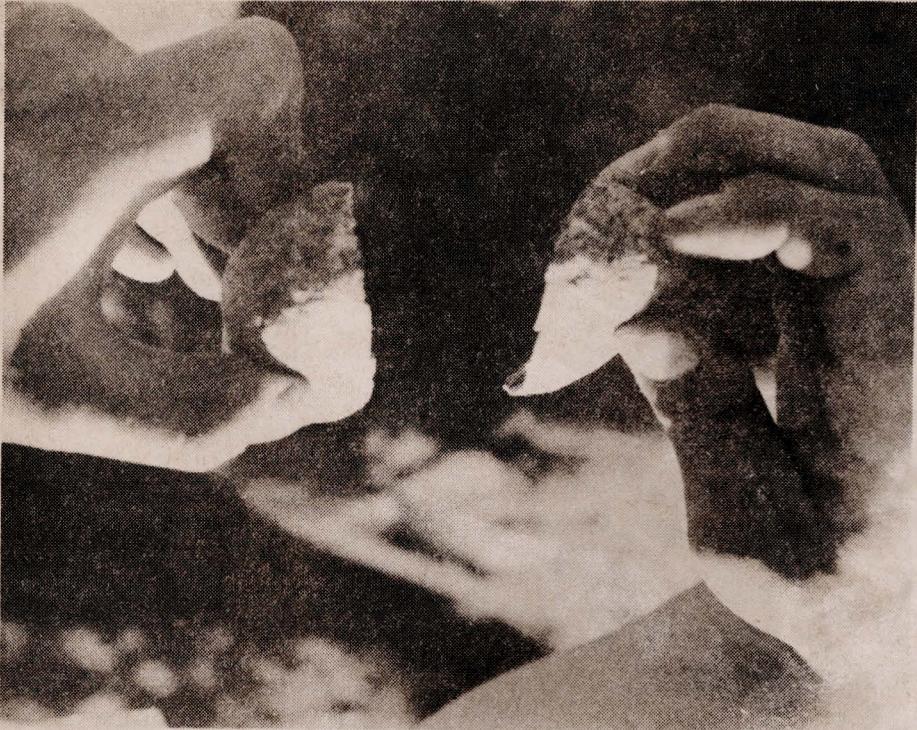
A cobble of proper size has been neatly cut in half using bi-polar percussion.

## II. BI-POLAR PERCUSSION

Bi-polar percussion is a uniquely satisfying technique for working stone. It requires no more skill than did the Oldowan bashee, but it leaves one with the proud feeling that he has actually made a tool. The technique is used to split a cobble. Without any previous practice, the survivalist should be able to shear a cobble cleanly in half. The separate halves then make superb scrapers and frequently provide good cutting edges.

To accomplish the bi-polar technique, select a hard, roundish stream cobble of about fist size or slightly larger. Set the cobble upright on an anvil rock, then strike the cobble sharply on its top. The blow must be forceful, and must be directed straight down upon the cobble. The force generated by the blow travels through the cobble, hits the anvil

rock, and then rebounds upon itself. Since the force thus comes from both ends (or poles) of the cobble, the technique is known as bi-polar percussion. If properly executed, the result is a neatly sheared rock. The only skill involved is not in the execution of the technique, but in the selection of the proper cobble. The most common mistake involves selecting a rock too large to split handily. The cobble must be only of about fist size, and it should be free of cracks. A properly selected cobble will split with surprising ease, and the fracture will be slightly lipped at both ends. The lipped portions will typically be sharp enough to cut leather or dress small game (see pictures). These split cobbles are not only functional, but also aesthetic. Unlike basher tools, cleanly split cobbles are sometimes displayed proudly to friends and fellow survivalists.



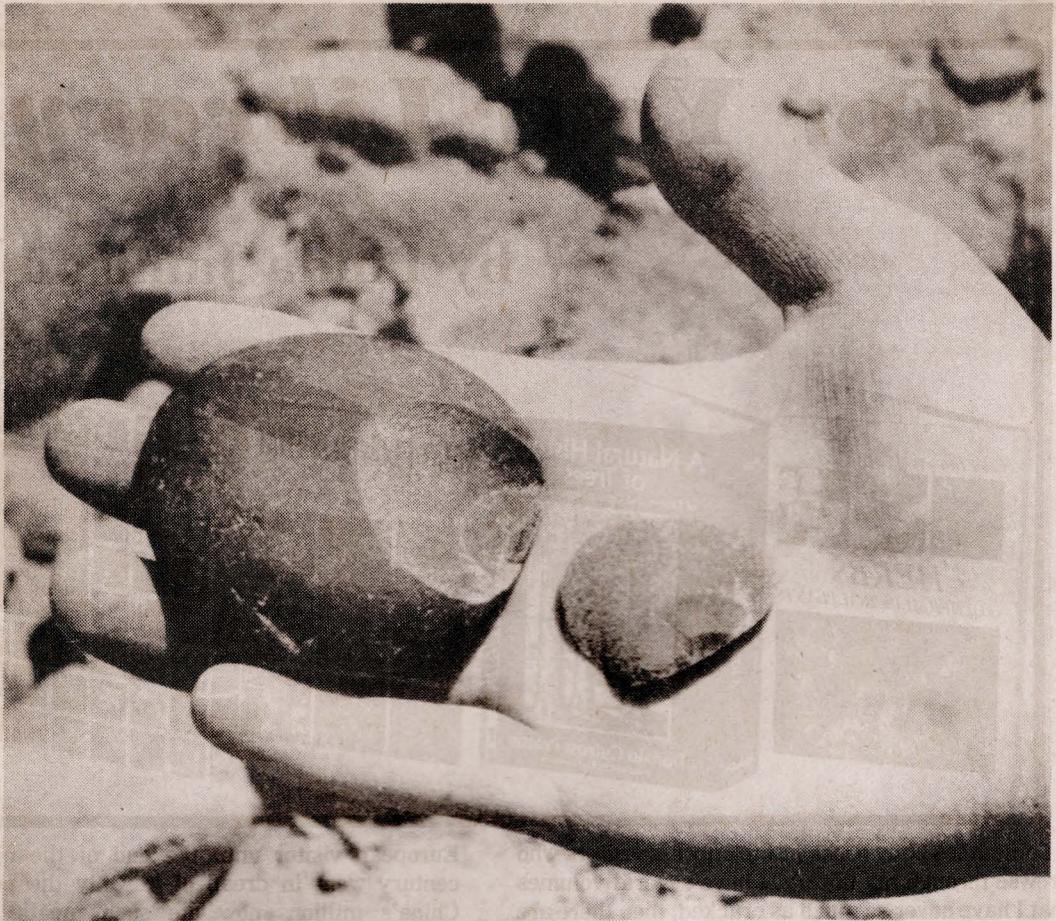
Edge view of a cobble split with bi-polar percussion. Note the lipped edge on the left.



The sharp lipped edge of a cobble split with bi-polar percussion can be used to cut leather or other material.



A small basaltic stream pebble is being struck forcefully against another rock with the intent of striking off a discoidal knife.



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A discoidal knife and the "parent" pebble of basalt from which it was struck.

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### III. DISCOIDAL KNIVES

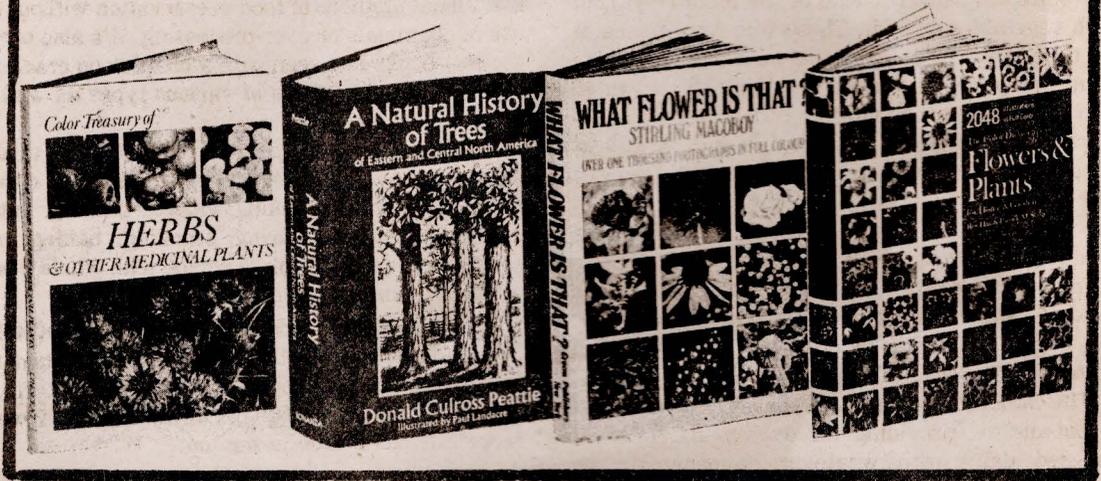
Discoidal refers to an object which is disk-shaped; that is, roundish and flatish. Discoidal knives are difficult to manufacture, sometimes frustratingly so. However, the technique is not complicated and does not really need to be practiced in advance. As in bipolar percussion, the key to making discoidal knives lies in the selection of a suitable pebble. To get started, select several small pebbles about two or three inches across. They should be round, flat, hard, and of smooth texture. Unfortunately, the range of stones which will work is much more restricted than was the case for bashee or bi-polar technology — basalt, chalcedony, chert, and flint would be your best choices, if available. If a pebble appears likely, the only real test is to give it a try. Hold the pebble securely in one hand and strike its edge sharply against another rock. The intent is to strike small flakes off the pebble's edge. But in order to do this, it is imperative that the pebble be struck with as much force as can be mustered (keeping fingers carefully

out of the way, of course). Expect quite a few failures at first, but you should eventually be striking off flakes which are round, flat, and have sharp edges; i.e., discoidal knives. These knives will be small, averaging about an inch in diameter. But their edges are extremely sharp — these little knives will cut meat, leather, or most anything else you would want a knife to cut.

Admittedly, manufacturing discoidal knives will take some practice. But the practice does not have to be in the form of a previously learned skill. It can be accomplished on the spot, in a survival situation. Besides, if your selected pebble refuses to yield up a discoidal knife, you can always resort to the Oldowan bashee technique. This not only sends the offending pebble to its just reward but also assuages one's damaged ego by clearly establishing who's boss. All that, plus you'll have some bashee tools. And tools, if you'll remember, are what we were after in the first place.

# For Your Library

by Linda Jamison



Sometimes I buy books just to impress visitors who browse through my library. I have several volumes that I have never so much as cracked, then there are those that I refer to almost daily. The two books in this issue of "For Your Library" are the "couldn't do without" type of publications I love and protect (and never lend out). You may or may not agree, but then not everyone enjoyed Nancy Drew and the Hardy Boy mysteries either.

"From the earliest cultivation of plants and domestication of animals in prehistory, to the beginnings of mass production and progress in the twentieth century, food has made history, although a visitor from another planet browsing through our libraries might think our history consisted only of battles and politicking." So says Reay Tannahill, author of the book *FOOD IN HISTORY*, a fascinating research work that goes back to the beginning of time and shows step by interesting step how food has shaped history.

A few interesting excerpts from the book should whet your appetite enough to include this volume in your library.

Her delightful mix of humorous pieces and historical bits make reading this book a pleasure. In the chapter dealing with the early explorers' visits to China she observes, "It is unlikely that any guest at a Chinese merchant's table would have been offered red-cooked dog or stir-fried cat, though every

European visitor until the end of the nineteenth century went in dread of it. Only the poorest of China's millions now ate such meats. But the Westerner's fear of being faced with a plateful of man's best friend was gleefully fostered by generations of humorists, such as the anonymous versifier who claimed that, unable to communicate with his hosts because they had no language in common, he was also unable to identify what he was eating. "Now here, now there, he picked a bit, of what he could not name." But then, the covers were changed:

...he brightened up  
And thought himself in luck  
When close before him what he saw  
Looked something like a duck!

Still cautious grown, but, to be sure,  
His brain he set to rack;  
At length he turned to one behind,  
And pointing, cried "Quack, quack?"

The Chinese gravely shook his head,  
Next made a reverend bow;  
And then expressed what dish it was,  
By uttering "Bow-wow!"

Some little known facts about the diet of the early sailors are also included in her book and are a stark contrast to the food prepared for today's seamen. "The deficiencies of the sailor's diet were not only gastronomical. Indeed, almost every ship which set out from western Europe on a long voyage soon numbered among its crew a high proportion of men who were sick or dying.

Voyages frequently began in early spring when most men who had spent the winter on land were in a poor state of health because of the months without fresh vegetables or fruit. Those who went to sea at this time of year had to subsist on a diet consisting mainly of preserved foods very quickly began to show symptoms of the vitamin C deficiency disease of scurvy. During Vasco da Gama's first voyage of exploration to the Indies more than half of his crew died of it."

In my opinion the most interesting chapters of the book dealt with the types of foods eaten by the people during the dark ages. "...What was cooked in the cauldrons which hung almost permanently over the fire, in peasant huts as in lordly manors, remains a matter for conjecture."

"The cauldron probably was the original stockpot, or pot-au-feu, providing an ever-changing broth enriched daily with whatever happened to be available, and very rarely cleared out except in preparation for the meatless weeks of lent."

Regarding cannibalism in the world she says, "What the conquistadors found most reprehensible about the Aztecs was the practice of ceremonial cannibalism. The Spaniards might execute their prisoners and criminals in the most barbarous fashion, but they killed them in the name of Christianity and did not eat them afterward." "The voyage from Peru, with its violent contrasts, to the little-known China of the eighteenth century carried the traveler past the Fiji islands, where leaf-wrapped roast human was a familiar dish, and past Australia, still inhabited only by aborigines who feasted on bogong moths."

From beginning to end **FOOD IN HISTORY** will offer you previously unknown details of the life style of man from early Egyptian times down to twentieth century America. I would particularly recommend this edition to wild plant enthusiasts because of its frequent mention of well known medicinal herbs and common uses of now "wild" edibles. Check your card catalog number 75-160342, or order a copy from the publisher, Stein and Day, 7 East 48th St, New York, N.Y. 10017.

My second discovery of late is a publication by the authors of "Organic Gardening", a super new book called **STOCKING UP**. I borrowed a copy from a friend and am ashamed to tell you that I still had it

after two months...simply because I couldn't do without it during canning season.

**STOCKING UP** is a complete, easy to use reference on preserving foods at home, the natural way. It has an extensive index, timetables, illustrations and architectural plans for making storage areas. In addition there are 300 old time recipes for jellies and jams without sugar, pickles, kraut and other good "homemade" foods.

**STOCKING UP** gives the best of both new and traditional methods of food preservation without the use of chemicals or over-processing. It's also one of the only books I've seen with a chapter on cracking, drying and storing nuts of various types as well as seeds and grains.

You'll also find recipes for old-fashioned vanilla ice cream made with honey, instructions on cheese and cottage cheese making, vinegar making, butter making, sprouting, curing, smoking, baking with sunflower seed flour, a pizza recipe with whole wheat dough and yummy yogurt desserts.

Now that I have lauded the virtues of **STOCKING UP** I will have to tell you that I did return the borrowed copy and bought my own. It cost \$12.95, almost an investment these days, but one I won't regret...It has a nice cover too!

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## FOOD Part II

### Storing for Emergencies

*by Linda Jamison*

In the last issue of WOODSMOKE I wrote about the topic of food in a wilderness survival situation, where the possibility of procuring the necessities of life from the environment is a reality. However there is also a very real possibility that the time will come when "survival" in the city may pose an even greater challenge than wilderness survival.

I don't intend to be a doomsday prophet. Anyone who has studied history knows that since the beginning of civilization man has had to concern himself with the procurement and storage of the basics. Unfortunately the over-abundant life we Americans live has softened us to the reality of food availability.

Today we live in a land of plenty, we wouldn't think of eating the same dish three days in a row. If we don't have our favorite food in the freezer or refrigerator it's no problem...we just drive to the nearest restaurant and take our pick of Chinese, Italian, Mexican or American food and if that isn't fast enough for us we can always get a McDonalds hamburger.

75 percent of the families in America have only enough food on hand to feed their families for a few weeks. We enjoy pre-mixed, par-boiled, instant, frozen wet-packed and condensed foods from the super-market. Have we really come such a long way...baby.

Remember the turmoil and hardship suffered a few years ago during the floods on the East Coast, or the hurricanes in Corpus Cristi, or the earthquakes in Alaska and California. These disasters would have been much less tragic if there had been sufficient food, water and emergency supplies in each home. And what about strikes? We have recently experienced several truckers strikes in our nation during which the shelves of many stores became amazingly low. You have seen the effects of workers strikes on the nation when prices soar and product availability decreases.

What about family illness? Many times unexpected sickness and hospitalization of either the husband or wife can pose extreme hardship on the budget. A home storage plan could give needed stability in such cases.

And how about civil unrest...rioting in many cities

has caused food distribution problems, looting during such unrest can completely eliminate a store's supplies in 72 hours.

Are you prepared if one of your children becomes ill and no Doctor is available? What if there is no heat during winter weather? Do you have extra warm clothes and shoes for your family in the event they have to walk any distance in snow and cold? These are all things to consider if you are planning to be self and shelf sufficient.

In large cities there are many children and adults alike who have never even planted a seed much less milked a cow. Few people have any idea of what is actually involved in the growing, harvesting, processing and transporting of the items they purchase in neat packages from their grocer. This lack of knowledge places them at a disadvantage.

For instance, the likelihood of successfully planting a garden, understanding the basics of irrigating, fertilizing or even proper harvesting of enough food to sustain life for a family is slim for an individual with no prior experience.

The point is that many of us are really strangers in our own environment and may flounder completely out of it, making it necessary to prepare for emergencies in whatever way is available...through knowledge, study, trial and error experimenting and good old "stocking up." There is no substitute for preparation.

What's the best way to prepare for survival in the city? Well, it's a little more difficult in some respects than learning to make it in the woods folks, you certainly won't need to build a shelter but you can't build a sleeping fire in the middle of your living room either (unless you have a fireplace, of course.) Thus there is a necessity for an alternate source of heat or extra blankets and warm clothing. Newspapers make good insulation and can be used both over and under blankets for more warmth. A woodstove, and some types of fireplaces will produce enough heat for comfortable living. Of course it takes fuel to generate heat so don't forget to stock up on a cord or two of wood. If you have never heated with wood except to enjoy the relaxing crackle of the fire on a wintery night, you won't have any idea how much wood to store to keep that stove burning 24 hours a

day. Because the amount varies with each stove, you should experiment. Don't wait until you "need" wood, chances are you won't be able to get to the areas where it is available then, or if you plan to buy cut firewood, prices will be higher in the peak season.

In case you are wondering just what all this has to do with food in emergencies, just hang on...there are a few considerations that are more important and take precedence over a full stomach. Just as in wilderness survival, first shelter from the elements, then water and last but not least...food!

Once you have obtained an alternate heat source and warmth for comfortable sleeping, your next job is to lay in a potable water supply. The National Office of Civil Defense recommends 7 gallons of water per person, that's a two week supply. You should also be aware of alternate sources of water that are available in your home such as water in the tank (not bowl) of the toilet your hot water tank, water pipes, and hoses. If you have your own well and it's equipped with an alternate hand pump you're ahead of the game.

5 gallon plastic containers are great for water storage but lousy if you have to cart them up and down basement stairs for storage and refilling, smaller 1 gal jugs might be easier to handle in that case. Empty clorox bottles are ideal and the small amount of bleach left in the bottle, if not rinsed out after use, will help keep your water pure. Water should be rotated every two or three months to keep it fresh and you should have iodine tablets or halazone on hand to purify stale or bad tasting water (instructions for use are on the bottles). Boiling is always the most fool-proof method of water purification...20 minutes to be sure.

Now we can get down to the nitty-gritty of preparing for a "rainy day" with a basic food supply. But first let me interject a thought...There is always the possibility that once you have gone to all the trouble and expense of providing for your family's needs, during an emergency someone who hasn't, will take it away from you. That is the most common excuse I hear for not being prepared. My personal philosophy is to prepare for the worst and pray for the best. Hope you will never need the items you've so carefully stashed away, but if you do it will be too late to worry about it. It wasn't raining when Noah built the ark!...a much over-used cliché, but one that sums up the situation better than I can.

There are four basic foods that everyone (wouldn't it be nice) should have on hand in a reasonable quantity. Wheat, honey, milk and salt. What is a reasonable quantity? The Civil Defense people say 2 weeks...actually I don't think that would even begin to cover most emergencies. Why not give yourself an edge and plan on 6 months to a year. That way you'll

have plenty for your own family as well as enough to share with neighbors and friends.

Wheat is the staff of life and is the most important of the four basic foods. It's value depends on the quality of the wheat itself, hard red winter wheat is best for storage and it should have at least 12 percent protein content. Nutritionally, wheat is 75 percent carbohydrates, 12 percent to 16 percent protein and 1.6 percent oil.

There are quite a few people who have never used "wheat," just flour. But flour doesn't store well...especially whole wheat flour. Wheat has a natural "shell" or coating that protects it for virtually centuries when stored under proper conditions. By proper conditions I mean a cool (below 70 degrees), dry place with the emphasis on dry. Humidity will cause wheat to mold quickly so if you live in the east or other parts of the United States where humidity is high, it's best to store your wheat in air tight containers. Have it tested for moisture too, if the farmer hasn't done so already, and don't buy wheat with moisture content of over 12 percent.

Most wheat is infested with weevils and other insects or their eggs, so cleaning (not washing) before storage is a good precaution. One way or another you are going to have bugs...it's up to you whether they are dead or alive. In order to kill larvae just heat the cleaned wheat in your oven on trays at 160 degrees for about 30 minutes before sealing it in containers.

A piece of dry ice about the size of a tangerine placed in the bottom of your 5 gallon container will also do the trick. Wheat is poured on top of the dry ice and the cap left off the container for several hours, or until there is no bulging when tightly replaced.

The second item to consider for your basic storage is milk. If you have a cow your worries are over (as long as you feed and freshen her) but since the majority of folks are city dwellers, powdered milk will be the best substitute for the real thing. Actually it is the "real thing," disguised as elmers glue...(my children's opinion). Powdered milk contains all the nutrients of the fresh product except vitamins A and D. Non-instant or "regular" powdered milk is more concentrated than the instant which is the type sold commercially. Powdered is also less expensive than instant, but instant mixes more easily.

Because milk is difficult to store it must be kept absolutely dry and cool. An ideal storage temperature is 30 degrees to 45 degrees. Under proper conditions it will keep for several years. Flavor additives such as vanilla, carob, honey or molasses will make dried milk more palatable.

Next is honey, it contains levulose and glucose, the two sugars found in the blood. It is preferable to sugar and keeps indefinitely. Honey is an excellent quick energy food and if pure and unprocessed is

high in vitamins and minerals. Store your honey in containers with a wide mouth so it can be easily removed when crystalized. To re-liquify honey, simply heat it at a very low temperature for several hours.

Number four on the list of basics is salt. It's not actually a "food" item but it does contain minerals necessary to cell growth. Pure unrefined or sea salt that has not been heated is better for storage as well as for daily use. To gain full value it should be applied to the food after cooking.

Salt can be stored in metal or plastic containers and it's also a good idea to add a few grains of rice to absorb moisture that may collect and cause the salt to harden.

Wheat and honey will fulfill the basic need for iron although special cases of anemia can be treated with molasses if available.

When living on this emergency diet you will notice some physical adjustments caused by the bulk factor. Any time you make a drastic change in diet you will suffer somewhat physically, but it's the psychological change that I would like to warn you about. There is a real let-down when you don't have anything "good" to eat...even if you do have enough to fill you up. Just stop and think about it. Don't we spend a lot of time each day deciding what we would like to eat. We get hungry for "specific" foods, sometimes it's our body telling us what we need...like thirst, but usually its just habit. That's why I think it's a good idea to store some of the things your family really enjoys, even if it's a little more expensive. Low morale in time of stress is your worst enemy. I know that from experience on the trail, and it isn't any different at home. When I cook a meal that isn't the family favorite, like tuna casserole...I had better fix dessert to make up for it.

Babies do great on the basic diet, in fact they thrive on milk and honey when infants, and variety can be gained as they get older by adding wheat-bran broth, puddings and wheat grass juice to their diet.

What quantities of the basic foods should I store? The amount you store will depend largely on the type of work you do and the size of your family. A good average per person for 1 year is 250 pounds of wheat, 100 pounds of powdered milk and 60 pounds of honey and 2 to 4 pounds of salt. Remember this is if you are living exclusively on the basic four with few other foods to supplement. The book PASSPORT TO SURVIVAL by Esther Dickey has recipes and suggestions on how to live on the basics with variety.

Once you have the basic four items you should supplement with a variety of other foods. Keep in mind the high protein and calorie foods such as whole powdered eggs, rice, oats, barley, beans and peas, corn, rye, potatoes and oil. These items can all be purchased at your local grocery store or feed

stores in bulk. You will also want to add, as finances permit, fruits and vegetables, seeds for planting and sprouting, seasonings and cooking supplies.

There are three types of foods that store well and should be considered when you plan for "extras." They are, commercially canned, home canned and dehydrated or freeze-dried foods. Choose the type which best suits your needs and pocketbook.

A few cases of commercially canned or home canned foods should be added to your storage whether you prefer dried or not. The liquid in the cans and jars will be beneficial in times of water shortage. Commercially and home canned foods should be rotated every two years. The main problem will be in determining the shelf life of commercial foods. You can't be sure how long they have been stored before you buy them. Also, if weight and bulk are going to be a factor you will need to keep these foods at a minimum.

Try to can enough food each year to last until following garden season. To figure out how much you will need just figure one day at a time and multiply it by about 10 months to maintain as near normal diet as possible. The following list could be used as a guideline:

Milk.....2 servings per day

Protein.....2 servings per day

Fruit and Vegetables....4 servings per day

Bread and Cereal.....4 servings per day

...Plus miscellaneous items such as oil, calorie items, juice and drink mixes, salt and seasonings, vitamin and mineral supplements and water or other liquid. Other nice additions are home canned pickles, relishes and jams.

The old saying "you'll eat anything if you're hungry enough" is highly over-rated. Think of how great an apple pie or peach cobbler would taste after a meal of meager fare. Especially under stress, good morale means good food and plenty for all. If you plan carefully your "emergency meals" don't have to differ in any great degree from your normal diet.

Consider the size of servings your family will use when canning. If there are several children you will probably use the quart size jars, if there are only two or three family members the pint size would be more practical. Once canned the food should be stored in a cool dark place, preferably cartons to give extra protection against breakage.

As you use the food it's a good practice to wash and sterilize the jars and fill them with water. They can then be processed for 30 minutes and stored away. When you're ready to can again just empty the water from the jars and they won't need to be cleaned before they are used. This is also a good way to store needed water supplies. Extra jars should also be on hand for harvesting wild foods.

Canned meats such as deviled ham, spam, beef

and chicken can be kept about 18 months and tuna keeps 5 to 6 years. The oils from tuna are valuable for the extra calories too. Home canned meats store about 2 years safely.

Because canned or frozen meats can be stored only a year or two, a soy product meat substitute has been developed which will store well and fulfills the need for protein and the flavor and texture of meat. It's excellent for everyday use and good to include in your storage. I might suggest that you experiment with the soy products so you will be aware of the cooking techniques before you need to use them. My first try was a disaster. I made a pot of spaghetti sauce and dumped in about two cups of soy "beef" granules. (it comes in granules and chunks) The soy granules absorbed all the liquid in the pot and I transferred it to two pans...then three. It was awful and a waste of a great batch of sauce. So remember to use soy products sparingly, they will double in size and extra water will have to be added to any recipe you use.

Loma Linda Foods sell excellent "meatless" meats in most grocery and health food stores if you want to get accustomed to the taste. They have a new "swiss steak" that is canned with the gravy, it has the flavor of steak with none of the animal fat, preservatives or cholesterol.

Dehydrated foods are the most convenient and economical for storage purposes. Much research has gone into the development of a commercial product that is good tasting, nutritious and is packaged to last indefinitely under proper conditions. There is also a good variety of unusual and normally hard to store products available from commercial storage companies such as powdered eggs, powdered shortening, and sweet and sour cream.

Just for weight and bulk purposes, lets compare dehydrated applesauce with commercially canned applesauce. (Dehydrated applesauce can be made by mincing apples and cooking before drying). One gallon of dehydrated applesauce weighs only about 4 pounds while it takes 37 cans of the commercial product at a weight of 37 pounds to equal the dehydrated fruit.

Of course if the circumstances permit, its best to grow your own food. Preserving home-grown vegetables is easy once you are aware of the varying degrees of temperature necessary for storing the different foods. Some foods such as potatoes, turnips and apples can be buried in barrels or small storage bins for use during the winter. The trick is proper insulation, ventilation and drainage.

Beets and carrots on the other hand, require some moisture for storage and can be kept successfully in outdoor pits. Pull them when the soil is dry, brush off as much dirt as possible and cut the tops off about 1 inch above the crown before storing.

Beans and peas should be allowed to dry on the vine before picking, then the whole vine can be carefully pulled and hung in a warm dry place.

Squash and pumpkins require a relatively warm dry place with free circulating air and cannot be frozen. A dry furnace room or attic would be excellent.

Some foods such as apples, pears, apricots and many vegetables can be sliced thin and dried in the sun. Oven drying is also easy and effective. The temperature for oven drying should be kept between 135 degrees and 150 degrees until all moisture is removed.

Dehydrators can be purchased or easily built at home. A dehydrator requires only low heat and circulating air. A cabinet with several removeable racks is built, then a small fan and an electric heater are placed at the bottom. The dehydrator will speed up the drying process considerably.

Many farms and ranches still have root cellars where fresh fruits and vegetables are stored throughout the winter. The best location for a root cellar is a side hill, thus avoiding the necessity of carrying the foods up and down stairs and making good use of the earth as an insulator.

In addition to the food items you store you should pack away several non-food necessities. These should be kept together in boxes or trunks at all times for easy access. The following list is only a suggestion, you will want to add or subtract according to your own needs.

- Blankets or sleeping bags
- Wheat grinder (hand model or electric conversion type)
- Rope or nylon cord
- Sewing supplies and some sturdy yardage
- First aid kit (keep it current)
- Survival kit (see WOODSMOKE issue No. 4)
- Sanitary and toilet supplies
- Laundry items
- Cooking utensils
- Extra, warm clothing
- Books
- Shoes and leather repair kit
- Plastic containers
- Tools
- Canning jars and lids
- Candles
- Seeds
- Baby supplies
- Writing materials
- Foil
- Can opener

The best way to find out what your family lacks, or needs, for self-sufficient living, is to try to live on what you have on hand for a couple of weeks. Don't go to the store for anything (except medical

emergencies, of course). Substitute and improvise, then make a list of everything you find yourself in need of or items that would make your storage more feasible...for you. Each family will have different needs.

We tried this experiment back in 1972 when we were getting our emergency cache together. The food we missed the most during those two weeks was fresh greens, the result was laying in a supply of sprouting seeds. We ran out of foil and I used canning jars to store leftovers. A good book on meatless cooking is also invaluable, luckily I had MAKE A TREAT WITH WHEAT and the TEN TALENTS COOKBOOK.

We didn't suffer, we learned a lot and better appreciated the bounty that is available to us everyday through modern conveniences. But again, these were contrived conditions...we knew that the two weeks would end and it was a "fun" family experiment. But there is no need to fear difficult times, regardless of its source if you are prepared in advance. NOW is the time, it's good, economical advice in light of the rising prices and if you rotate your food items you will never have to worry about spoilage.

How about cost? When I decided to start storing a little for a rainy day we just couldn't spare the extra money. So every week I carefully planned my grocery list so I would be able to pick up one or two cans of food, a bag of rice or some other "storeable" item. It adds up pretty fast and the more you get into it the easier it is to find a few extra dollars. I also took any food that was left at the end of the week off the shelves and stored it away. Get the whole family into the act though, or they will kick when you serve macaroni and rice three times a week so you will be able to put aside a little in the basement for emergencies.

All you are really doing is just what great grandmother did...storing a years bounty for winter. Unfortunately we have gotten so far from that kind of frugality that many of us don't know where to begin. I've often heard of this type of "stocking up" referred to as "hoarding" and it really aggravates me. If we are to become self-sufficient we must be able to provide for all of our needs for a reasonable period of time, without the assistance of government welfare. Handouts mean control, no matter how you look at it there will be some strings attached. Isn't it far better to be in the position of being able to "help" someone else rather than having to depend on them?



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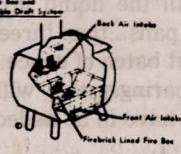
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# BUILDING A FOUR-HARNESS LOOM

by Liz Tate

**Editors Note:** If you're planning to dig in this winter and are looking for a likely project...here it is! Not only is weaving a valuable and interesting hobby, but it is a satisfying art form fast coming back into its own. The author, Liz Tate, is presently serving as a missionary in Lima, Peru where she has the opportunity to see many examples of bright-colored fabrics woven on similar looms by the native Peruvians. Liz has worked in the survival program at BYU for several years as a student and instructor.

## Introduction

Building a four harness frame loom is easier than it seems. The loom combines the simplicity of a frame loom with the complexity of design that is attainable with the four harness.

Before you begin building your loom, I would suggest that you visit a store that carries weaving supplies if possible, and study all the looms and weaving materials available there. Even though they may not carry the four harness loom the knowledge you gain from studying any loom can only be to your advantage.

To make the process go more smoothly, gather the following materials:

2 - 2x4x4's (4½") (If you buy 2 - 4x4x8's cut them so you will have a 4½" and 3½" inch piece from each board.)

2 - 2x4x3's (3½")

2 - 10"x7"x½" flat boards (preferably plywood)

8 - 3"x¾" roundhead bolts

8 - ¾" nuts (if you have to disassemble your frame loom often to transport it, use wing nuts)

16 - ¾" washers (¾" holes)

8 - lockwashers (¾" holes)

6 - 2"x¼" flathead screws

4 - harness sticks (½" dowels 4' long)

1 - warp stick (1½" dowel 4' long)

1 - shed stick

several shuttle sticks (as many as colors you plan to use)

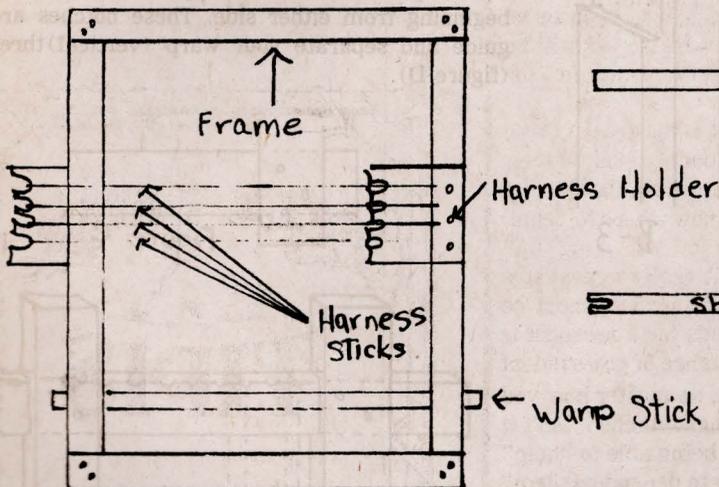
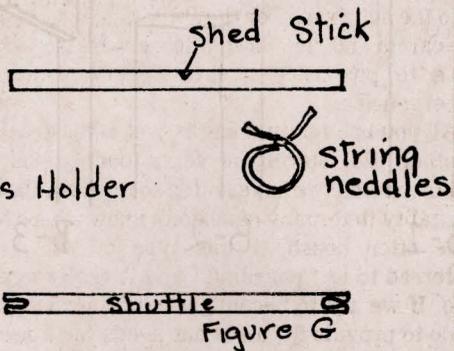


Figure A



## Build the Frame

The first step is to build your frame. It can be as large or small as you prefer. I made my loom 4 feet long by 3 feet wide. This size will yield a piece of cloth that is 3 feet by 8 feet. Two of these sewn together make a nice 6 x 8 blanket. The loom is also not so big that I can't work smaller projects on it with minimal inconvenience. For this writing though, I will refer to the measurements and dimensions for a loom this size. If you want to build a smaller or larger loom you can adjust it proportionately.

Use whatever type of wood is most easily attainable. Hardwood will last longer but is more difficult to obtain and to work with. The 2x4's suggested in the materials list work fine, but if you enjoy the satisfaction of building things with mother earth's natural material then you need to go scavenging. I used lodgepole pine because it was plentiful and the pieces were long, thin and fairly straight. I chose wood that was no larger than 4" in diameter. You need 2-4 foot pieces and 2-3 foot pieces.

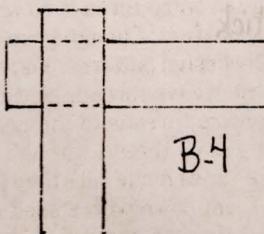
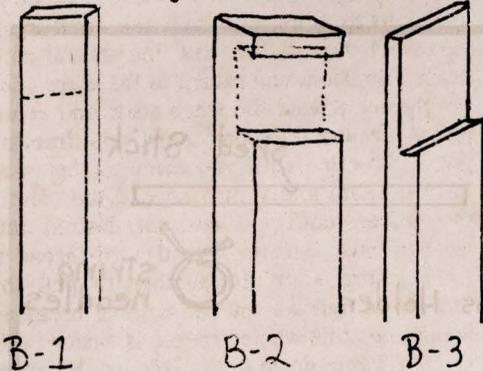
If you are planning to shape your own frame pieces, mount the wood firmly on a reasonably flat surface. I used an old log with a block of wood for a mount, then with a draw knife I scraped off all the

bark and proceeded to shape the wood into a smooth (no sharp edges) rectangle. This process usually takes two people, one to hold the wood steady and one to scrape. Don't cut the pieces too thin or you will weaken your loom.

After you have prepared your frame pieces, notch the ends of all four boards so they will fit together snugly. (See figure B) If you are using finished 2 x 4's cut the notches 3/8" wide and a little more than 3/4" deep, or half the thickness of the boards so you can fit the two boards together and still have a flush joint (figure B-4). Finish all the ends this way, making sure that both notches on each frame unit are on the same side. You may want to offset the joint an inch or two from the ends of the boards (figure B-4) to give you a stronger joint and to make it so you can set your loom on the ground and not get the fabric dirty. That's the way I did mine.

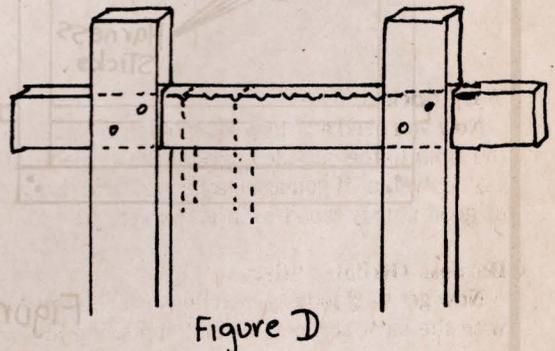
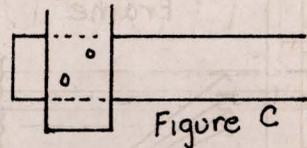
Now sand all the pieces so they won't snag your threads of cloth. Fit all pieces together firmly. Then with a power drill (or if you are really into primitive, use a pump drill) drill 2-3/8" holes (at a 45 degree angle) at each corner. (figure C) Fit each hole with a 3" bolt with appropriate washers and tighten the nuts securely.

Figure B



## Notch The Frame

Place the loom in front of you so it is taller than it is wide. The 3' pieces now form the top and bottom of the frame. With a file or sharp knife make 1/8" wide by 1/8" deep notches in the top front edge of the top 3' board. Space these notches approximately 1/2" apart beginning from either side. These notches are to guide and separate your warp (vertical) threads. (figure D)



### Make and Attach the Harness Braces

With a coping saw ( or a keyhole, sabre, jigsaw or if you are building your loom in the wilds, a rasp) cut 4 - 1"x5" fingers into the 7" side of the 10"x7" piece of plywood beginning 1½" from either end of the 10" side. Space the fingers 1" apart (figure E). Cutting the fingers 5" deep leaves 2" of solid board for anchoring the harness holder to the frame. By cutting four fingers into the board you will leave 5 - 5" ridges. With the coping saw cut a ¾" semi-circle in the top of each of the 5 ridges left between the cut out fingers, thus forming a cradle for the harness sticks (heddle rods). Repeat the process for the second harness brace.

Sand both harness braces until all surfaces are smooth and there are no sharp edges. Place the 2" solid portion of harness flush with the 4' side frame. Position the central ridge 18" to 24" up from the 3' bottom board (depending on how far up the frame you want to reach) and secure each harness brace to the frame with 3 - 2" screws (figure F).

If the frame and harness holder surfaces are flat and fit snugly, use some construction glue between them to strengthen the hold.

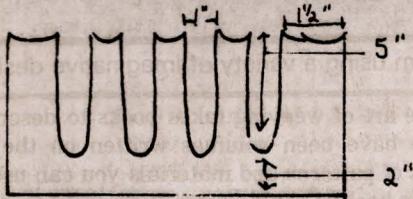
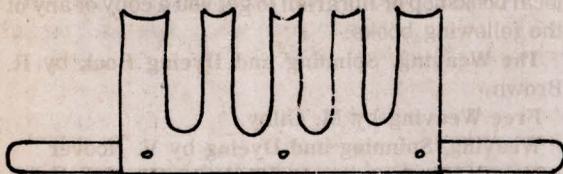


Figure E



outside of a 4' side

Figure F

### Warp Stick

Now you need a 3' long warp stick to reach across the loom to the outside edges of the 4' pieces. Use a 1½" dowel, or if you are staying natural, use a piece of good sturdy wood such as service berry.

### Harness (Heddle) Sticks

Now get 4 - 3' long ½ inch dowels or natural sticks with the bark scraped off and sanded until smooth.

### Shed Stick

For your shed stick, you can use a yard stick or any piece of smooth wood the same shape and size.

### Shuttle Sticks

The shuttle is just a long flat piece of wood that is notched deeply at both ends (figure G). You will need a shuttle for each color you plan to use at one time. There are many designs of shuttles and they can be bought at any weaving shop quite inexpensively.

### String Heddles

For your string heddles you need about 50 pieces of sturdy string cut in 7" pieces. (These will often need to be replaced).

The entire set-up, with the exception of the string heddles, can be stained, painted or varnished as desired.

This gives you all the wood pieces you need for a four-harness frame loom. Go ahead and built it, you'll have great fun.

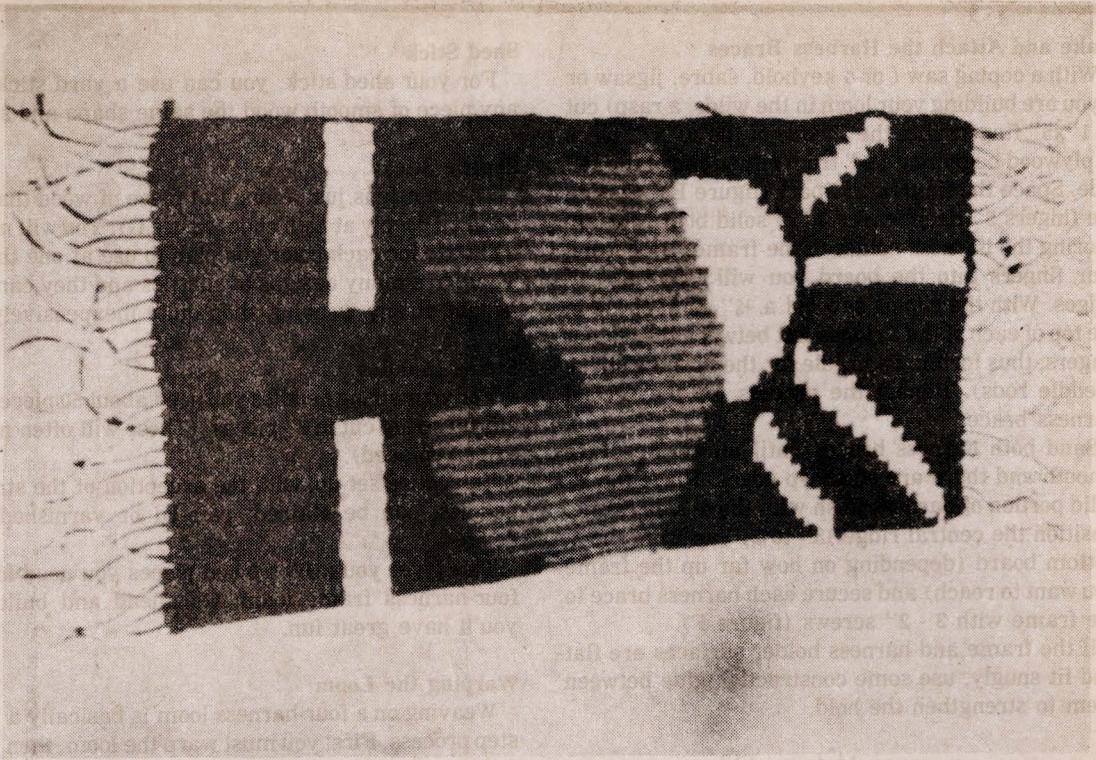
### Warping the Loom

Weaving on a four-harness loom is basically a two step process. First you must warp the loom, then you must weave the thred through the warp strings to make the weave you want.

Warping the loom is simply stretching the vertical threads around the loom so they form parallel lines with the longest (4') boards. Tie the thread securely to the warp stick, and hold the stick against the vertical 4' boards then run the thread completely around the loom and return to the warp stick. Loop the thread around the warp stick and return completely around the loom, going this time in the opposite direction until you come to the warp stick. Loop it again and return around the loom. Follow this process until you have the desired number of warp threads, then tie the end of the thread securely to the warp stick. Remember to pull the warp threads as tight as you can without breaking them. Sometimes this whole process is easier to do if you lay the frame down on its side on the edge of a 4' piece.

### Weaving

The second step is to weave the cross threads through the warp threads so as to make the weave pattern you want. Changing weave thread colors lets you make design patterns. You need to be careful not to pull the weave threads so tight that you pull your outside warp threads to the center. After you have run the weave thread through the warp threads a couple of times make sure they fit snugly together by pulling them down with a shed stick which has been threaded through the warp strings so it can slide down to tamp the weave.



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Bright, colorful rugs can be woven on your loom using a variety of imaginative designs.

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The art of weaving takes books to describe, and there have been volumes written on the various types of patterns and materials you can use. I read all the books I could find to learn what to do, then I began to experiment. I suggest that you do the same. If you don't have a weaving shop nearby ask your local bookshop or librarian to get you a copy of any of the following books:

**The Weaving, Spinning and Dyeing Book** by R. Brown

**Free Weaving** by M. Gilby

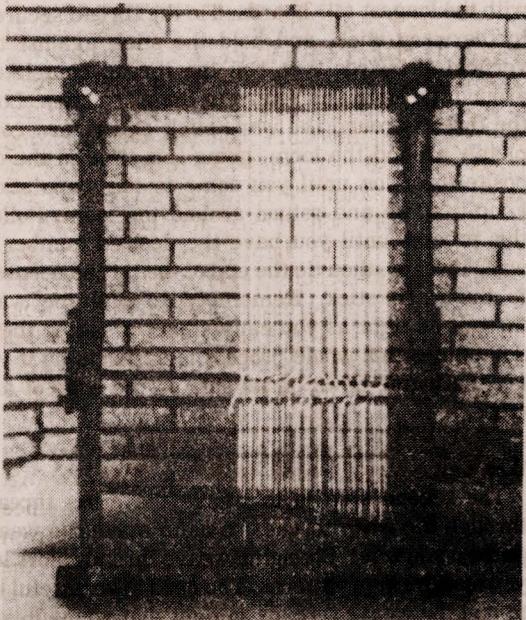
**Weaving, Spinning and Dyeing** by V. Hoover

**Navajo Techniques for Today's Weaver** by J. Mattera

**Navajo and Hopi Weaving Techniques** by M. Pendelton

Good luck and have lots of fun weaving on your four-harness frame loom.

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A four-harness loom can be made from natural materials or from supplies purchased at any lumber yard.

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*Hear the whisper of unknown valleys,  
The cry of the rugged and new,  
The dreams of those called mountain men  
Striking onward, courageous and true.  
Crossing deserts and sheer mountain passes,  
Of comforts and food, so deprived.  
Find a new source of much-wanted beaver,  
A tempting chance that beckons,  
And the riotous Autumn rendezvous  
In their planning always reckons.  
These mountain men carved out history,  
We may say with grateful pride.  
The explorer would have floundered  
Without this priceless guide.*

Jerry Ashton



## JEDEDIAH SMITH

### A Mountain Man

Jed Smith shifted his six foot 180 lb. body in the saddle, moved the little black Bible from his pants pocket, where it rubbed against the saddle, into his shirt pocket and took another look down into the valley shimmering in the purple haze far below the rim of the canyon where his horse stood. His mission was to find beaver.

Should he go down into that chasm? Where would it lead him? He could hear the Mojave Indians whooping it up in the background around the dwindling fire. Smith and one other man, Rodgers, were the only men on horseback, the other thirteen were afoot, having lost their mounts in the rocks and sand of the Colorado River canyon.

This group of explorers had left Cache Valley, Utah in August 1826 and now it was the early spring of 1827. The winter had hardly been noticed in the unchanging seasons of the Southwest sun country.

As Smith's horse jogged along beside the 100-foot wide dry-wash in Cajon Pass, Jedediah wondered just why he found himself in this jackrabbit, coyote country. He had not seen a single spot where beaver could be found since leaving Utah, but he had to make the trip to check the possibilities before his fur-

trading competition would soon do. The beaver-rich streams in the mountain country were getting "trapped out", so new lands had to be found or a change of jobs would be necessary. There surely were beaver here somewhere and he decided to search until he found them. Where was the big Buenaventura River country everyone talked about? This lost river was reported to flow westwards from Great Salt Lake to the Pacific Ocean. Jedediah thought he could find it by making a left-end sweep, going up the Pacific Coast until he ran into it. Then he would follow it eastward back to the Salt Lake Valley. That would surely yield some beaver. The Buena-ventura River myth was a long time dying. The Indians were probably responsible for this since they were sure of this large river running west from Salt Lake. They were no doubt confusing it with the Snake River which runs west to the Pacific after joining the Columbia, or perhaps they were passing on news of the Columbia. Lewis and Clark had settled the Snake-Columbia question in 1805, but the rumor of the Buena-ventura persisted. Jedediah was to do a great deal of personal suffering before he could write off the Buenaventura story as fiction.

However, he was accustomed to hardships, having come west in 1822 as a fur trapper under William Ashley.

Jedediah Smith was a typical "mountain man" but he was different from the coarse, sometimes vulgar and unclean type of mountain man who had no use for religion or moral standards, usually living with several Indian squaws and doing as little work as possible. These mountain men fur trappers were a tough, courageous lot, however, and the West could not have been opened to travel without their help. A good description of the breed was written by Billington in his valuable book, "The Far Western Frontier."

"The Mountain Men slipped far backward from a state of civilization. Certainly in their appearance there was little to distinguish them from the Indians. Gaunt and spare, with skin tanned the color of the red men's by life in the open, they let their unkempt hair hang to shoulder length, while their faces were hidden beneath beards that 'would scarcely disgrace a Bedouin of the desert.' They wore buckskin hunting shirts, ornamented at every seam with colored porcupine quills or leather fringes, and pulled in at the waist by a broad belt. In this was thrust a pistol and tomahawk; from it dangled a scalping knife in a leather sheath and a whetstone in a buckskin case. Their pantaloons were similarly of leather and as carefully ornamented, while their moccasins also showed the skillful beakwork of their squaws. On their heads they wore a cap of skins, decorated with animals' tails or braided horsehair. About their necks hung a 'possibles sack' containing pipe, tobacco, awl, bullet mold, and other necessities; over their shoulders was slung a bullet pouch and powder horn, while a stubby 'Hawkins rifle' dangled from the crook of their arms. Romantic as these clothes were, they could best be appreciated at a distance, for they were never removed from the time they were put on until they were discarded, except perhaps, when their owner laid them across an ant hill for those busy insects to eat some of the lice."

Jedediah Smith was different; educated, religious, always well-groomed and looked somewhat strange with his large six foot frame topped with brown hair. His eyes were light blue. However, his commanding personality and courage in the face of any obstacle made him a natural leader. He could fight as long and as rough as the best of them. No man could have survived in the West as long as he did without physical strength and great courage.

He was now (1827) a full partner in the fur trade business with William Ashley.

The group had traveled down from the dry Mojave Desert into the San Bernardino Valley and were happy to see the green fields and fresh water streams running down from the northern mountains.

What a pleasant contrast from the sand, red rock valleys and deserts they had been through since leaving Utah. They had followed Escalante's trail of 1776 after leaving Utah Lake but, instead of turning east as Escalante did when he reached Cedar City to go back to Santa Fe, Jedediah Smith and his men kept on southwards until they found the Virgin River near present day St. George, Utah. They followed this stream until it reached the Colorado River in lower Nevada.

The river trip had been very rough and difficult. The Virgin River cuts its way through a high range of mountains west of St. George, Utah and Smith had to ride his horse down the bed of the river to where it empties into the Colorado. On reaching the booming, dirty Colorado River, they followed its circuitous valley until its exit on to the lower California plain, crossing the river just north of present day Needles, California. Then on through the Mojave Desert to Barstow and Victorville and down the Cajon Pass to San Bernardino. The Mojave Indians were hostile, mostly because they had been told by the Spaniards, who ruled the country, to stop and kill if necessary any Americans coming from the East. In San Bernardino Valley the men had time to rest and eat well for a change.

Smith knew about the San Gabriel Mission near Los Angeles so he pressed westward through the San Gabriel Valley until he reached this mission. He was welcomed there by the Friars and he sat down to write a letter to the Mexican governor of California. He wanted fresh horses, food and permission to explore up through California, with the express purpose of looking for signs of beaver and the lost Buenaventura River, supposedly running east to Great Salt Lake. On Dec. 8, 1826 word was received from Governor Jose Maria Echiandia at San Diego that he wanted to see Jedediah Smith. Smith left the next morning, arriving in San Diego Dec. 12th. The governor was very suspicious of Smith's story since he was the first white man to come in from the East and the governor suspected him of being a spy. He had a premonition of what was to come if the Americans were to find a way to cross the big desert and come into California.

After many days of talking, the governor refused permission to explore north and told Smith to go back home the same way he had come. Smith obeyed, retracing his steps back to San Bernardino, which was as far east as California extended at that time; then up Cajon Pass. On the Mojave Desert again, Smith turned west through present day Antelope Valley, through the Tahachapi Mountains and finally into the San Juaquin Valley near present day Bakersfield. He and his men then worked their way north along the foothills as far as the American River, trapping as they went. They found beaver, and by the time they reached Sacramento, had 150

pounds of skins. This pleased but also worried Smith since he had to get back to Utah's Bear River Valley for the 1827 Fall rendezvous to sell the pelts for his company. The Sierra Nevada Mountains were formidable so Smith left his men and furs, promising to be back for them. He took two men, Silas Gobel and Robert Evans, with him and started up the western slope of the Sierra Nevada. No man had crossed this mountain range from the west. From the description in Smith's journal, it appears they crossed the Sierra Mountains through Sonora Pass, coming out on the east side near present day Bridgeport, California. They crossed both the west and east forks of the Walker River, went north to present day highway route through Austin and Eureka, Nevada. They crossed the Nevada-Utah state line just south of Wendover, Utah and struck out straight east across the barren and waterless salt desert. They suffered much for lack of water and food. A note from Smith's journal describes the country this way:

"June 22, 1827. My course was nearly parallel with a chain of hills on the west (Deep Creek Mountains) on the top of which was some snow and from which ran a creek to the northeast. On this I encamped. The country in the vicinity so much resembled that on the south side of the Great Salt Lake that for a while I was induced to believe that I was near that place. During the day I saw a good many antelope but could not kill any. I, however, killed two hares which, when cooked at night, we found much better than horse-meat.

"June 23, 1827. Moving on in the morning I kept down the creek on which we had encamped until it was lost in a small lake. We then filled our horns and continued on our course, passing some brackish as well as some very salty springs (Salt Wells), and seeing on the north on the latter part of the days' travel a considerable Salt Plain (Salt Desert, the northern reaches of which he had seen the year before). Just before night I found water that was drinkable but continued on in hopes of finding better and was obliged to encamp without any.

June 24. I started very early in hopes of soon finding water. But ascending a high point of a hill I could discover nothing but sandy plains or dry rocky hills with the exception of a snowy mountain off to the northeast at the distance of 50 or 60 miles (The Stansbury Range). When I came down I must not tell my men of the desolate prospect ahead but framed my story so as to discourage them as little as possible. I told them I saw something black at a distance, near which no doubt we would find water. While I had been upon the hill, one of the horses gave out and had been left a short distance behind. I sent the men back to take the best of his flesh, as our supply was again nearly exhausted, while I would push forward in search of water. I went on a short

distance and waited until they came up. They were much discouraged with the gloomy prospect but I said all I could to enliven their hopes and told them in all probability we would soon find water. But the view ahead was almost hopeless. With our best exertion we pushed forward, walking as we had been for a long time over the soft sand. That kind of traveling is very tiresome to men in good health who can eat when and what they choose and drink as often as they desire, and to us, worn down with hunger and fatigue and burning with thirst increased by blazing sands, it was almost insupportable.

At about 4 o'clock we were obliged to stop on the side of a sand hill under the shade of a small cedar. We dug holes in the sand and laid down in them for the purpose of cooling our heated bodies. After resting about an hour we resumed our wearisome journey, and traveled until 10 o'clock at night, when we laid down to take a little repose. Previous to this and a short time after sun-down, I saw several turtle doves, and as I did not recollect of ever having seen them more than 2 or 3 miles from water, I spent more than an hour in looking for water, but it was in vain. Our sleep was not repose, for tormented nature made us dream of things we had not and for the want of which it then seemed possible and even probable we might perish in the desert unheard of and unpitied. In those moments how trifling were all those things that hold such an absolute sway over the busy and prosperous world. My dreams were not of gold or ambitious honors but of my distant quiet home, of murmuring brooks of cooling cascades.

In the morning we started again over the burning sand but had to leave Evans alone under the shade of a small cedar. After traveling about 3 miles we came to the foot of a mountain and found water. Goble plunged headlong into it clothes and all as I poured water all over me and drank much more than was wise but I was refreshed and good and wet. I then took a small kettle of water and some meat and going back to the cedar tree found Evans safe. Oh says he, why did you bring the meat, and putting the kettle to his mouth he did not take it away until he had drank all the water, of which there was at least 4 or 5 quarts and then asked me why I had not brought more. This however revived him so much that he was able to go on to the spring."

They continued to suffer as they traveled but in a few days Jed saw the Salt Lake shining in the distance. On June 28 they reached the south side of the Great Lake and proceeding east, soon came to where the Jordan River comes in from Utah Lake. There they found so much Spring run-off water they had to swim across and make a raft to carry their possessions. After drying themselves and eating some horse meat, they continued their journey, knowing that the Bear River rendezvous spot was

only four days away. When they arrived at Bear Lake, their companions were overjoyed to see them again after having been out of touch for so many months.

After a brief rest Smith went back to California for his men and furs, traveling down through Utah to Nevada and on to Southern California; then up the Pacific Coast to the Columbia River, returning to Bear Lake for the 1828 rendezvous.

After all this difficult exploring, Jedediah Smith and his men were not to gain profit by their hardships. As he and his party were going east over the Cimarron Desert on the Santa Fe trail, they were ambushed by a group of raiding Comanches and the entire party was massacred. This was in 1831.

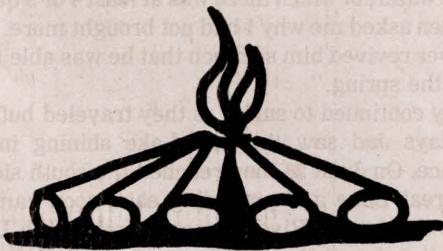
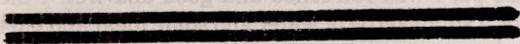
Jedediah Smith and his Bible was indeed a different breed of trapper. Unlike others, he reached out to learn more about the Western country. Here is a brief summary of his accomplishments:

1. With Jim Bridger he discovered famous South Pass; the only way wagons could cross the Rocky Mountains by gradual climb and with adequate water and grass.

2. Was the first American to go by land from the East all the way to the Pacific Coast. By so doing, he broke the first trail into Southern California through Utah and Nevada. (The present highway doesn't follow Smith's trail through parts of Utah and Nevada since he followed the Virgin and Colorado Rivers instead of crossing the open desert.)

3. Learned that wagons could not go to California across the Salt Desert west of Great Salt Lake. Later a safe route farther north was built by mountain man Joe Walker and other explorers.

4. Became thoroughly familiar with more of the West than probably any other man except, perhaps, Joe Walker. Smith's knowledge was later used to guide colonizers.

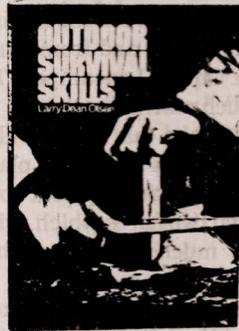


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# SAGEBRUSH:

## THE ANCIENT SURVIVAL KIT

By Jim Riggs

Sagebrush first entered my consciousness when I was 13 years old. I stepped from the bus at Oregon Museum of Science and Industry's Camp Hancock in the Clarno Basin of Central Oregon to find the most extraordinary, thickly sweet aroma thoroughly permeating my senses. I didn't know then how complete and irreversible my addiction would become, but in the years since I have learned a great deal about sagebrush, the rolling hills, basins and plateaus where it grows, the diversity of wildlife it supports, and the native peoples of the sage country who considered it a most wondrous and useful plant.

Sagebrush is the most ubiquitous shrub of the arid West. In many areas it dominates the landscape as far as one can look in all directions. It is beauty to some and a sure sign of an uninviting wasteland to others.

Sage grouse feed on tender young sagebrush foliage, antelope browse on it, jackrabbits and cottontails, lizards and snakes seek shade and protection beneath its leafy gray-green canopy and songbirds nest in it. Farmers, ranchers and the Bureau of Land Management battle it with chemical sprays and massive 100-foot-plus lengths of old ships' anchor chains dragged over the land between two bulldozers so they can plant in its place crested wheatgrass imported from the Himalayas for cattle fodder.

But two facts are apparent from even a cursory look: The delicate ecosystems of the sagebrush country have been drastically altered by the actions of "modern" man, and there is more sagebrush today than 150 years ago. The richer and more palatable native bunchgrasses, which had achieved a natural balance with the sagebrush, were struck a severe blow from heavy cattle and sheep overgrazing by the beginning of this century.

To the aboriginal inhabitants of the sagebrush country, and especially those of the Great Basin region of western Utah, Nevada and Southeastern Oregon, the plant was much more than a scrubby,

noxious shrub that seemed to grow everywhere. Their knowledgeable use of sagebrush afforded them shelter, fuel, fiber, clothing, blankets, tools, medicines and raw material for a host of additional manufactures. During lean times, the tiny bitter seeds even served as a rich food resource.

While approximately 25 species of sage have been identified in the Northwest, big sage *Artemisia tridentata* is the most widespread and useful. The specific name *tridentata* describes the three-toothed leaf tips. Big sage is an extremely tenacious and prolific shrub that can reach gigantic proportions, occasionally reaching 15 feet in height but more commonly two to four feet high. In marginal habitats it may mature and reproduce at less than one foot tall. The amount of available water is the main factor determining sagebrush size, and the largest plants will be found in non-alkaline soils along watercourses or where the water table is deceptively close to the arid land surface.

These larger sages were sought by the native inhabitants because the gnarled trunks and limbs were thickly covered with shreddy bark that could be easily peeled off in long strips. The strongest bark is yellow to reddish brown and lies close to the woody stems. Great quantities of this raw fiber, probably the most important resource offered by the sage, were collected and, without further refinement, used for floor covering, padding and bedding. Sage bark provides good insulation, and an ill-prepared person lost or stranded nowadays during the bitter winter cold in sagebrush country would be wise to make use of the bark as has been done for thousands of years.

More commonly, the long strips of bark fiber were further refined by briskly rubbing them between the hands to remove the brittle, drier outer bark. These cleaned and softened strips were then ready for the manufacture of myriad items.

Sage bark articles such as mats, blankets and robes were manufactured solely by hand by a simple weaving technique called twining, which is much



A cave occupied at least 9,000 years ago in Oregon sagebrush country.

easier to do than to describe. No loom is used. The body of a mat is formed by long bundles of bark laid side by side as wide as the mat is to be. These are called the warps. The thinner bark strips, which are securely twisted around the warp bundles to hold them together, are called the wefts.

While working on an Oregon State University archaeological crew several years ago in a rock shelter in Southeastern Oregon, we discovered a finely twined, perfectly preserved sage bark mat or robe which measured  $3\frac{1}{2}$  x 4 feet unfolded. It had been neatly folded in half twice and cached in a pit under a large flat rock at the rear of the cave. A portion of the mat later yielded a carbon-14 date of no older than 150 years.

The complete story of this mat cannot be fully reconstructed, but probably some Northern Paiute, Bannock or Western Shoshone Indians were temporarily camped in the cave and decided not to take the mat with them when they left. They knew the cached mat would remain safe from animals and deterioration until they returned to once again use it. When we excavated it, it seemed as fresh and pliable as the day it was made! Cached articles from other desert caves have remained in near-perfect condition for thousands of years.

Utility mats are coarsely or open-twined — the weft rows are one to several inches apart. Where

more strength and solidarity are required, as for sandal soles, the rows of twining are so close they nearly conceal the warps. In one of my classes at the Malheur Field Station a student twined a full-length sage bark mat, which he rolled and carried on back-packing trips. He called it his "environmental sleeping pad" and used it like the commercially produced foam pads.

In the Great Basin, animals that could provide furs and skins for clothing were scarce, so sage bark furnished a good part of the normally scant aboriginal costume. Women, and sometimes men, wore light-weight knee-length aprons — one in front and back — of softened twined sage bark, or bark skirts similar to Hawaiian hulu skirts. Skirts were twined for a few rows below a braided waistband, the remaining warp fibers left to hang and swish freely as a long fringe. Twined sage bark shirts, pants and leggings have also been recorded ethnographically, but these may be unique copies of the more recently adopted buckskin clothing and not representative of aboriginal attire.

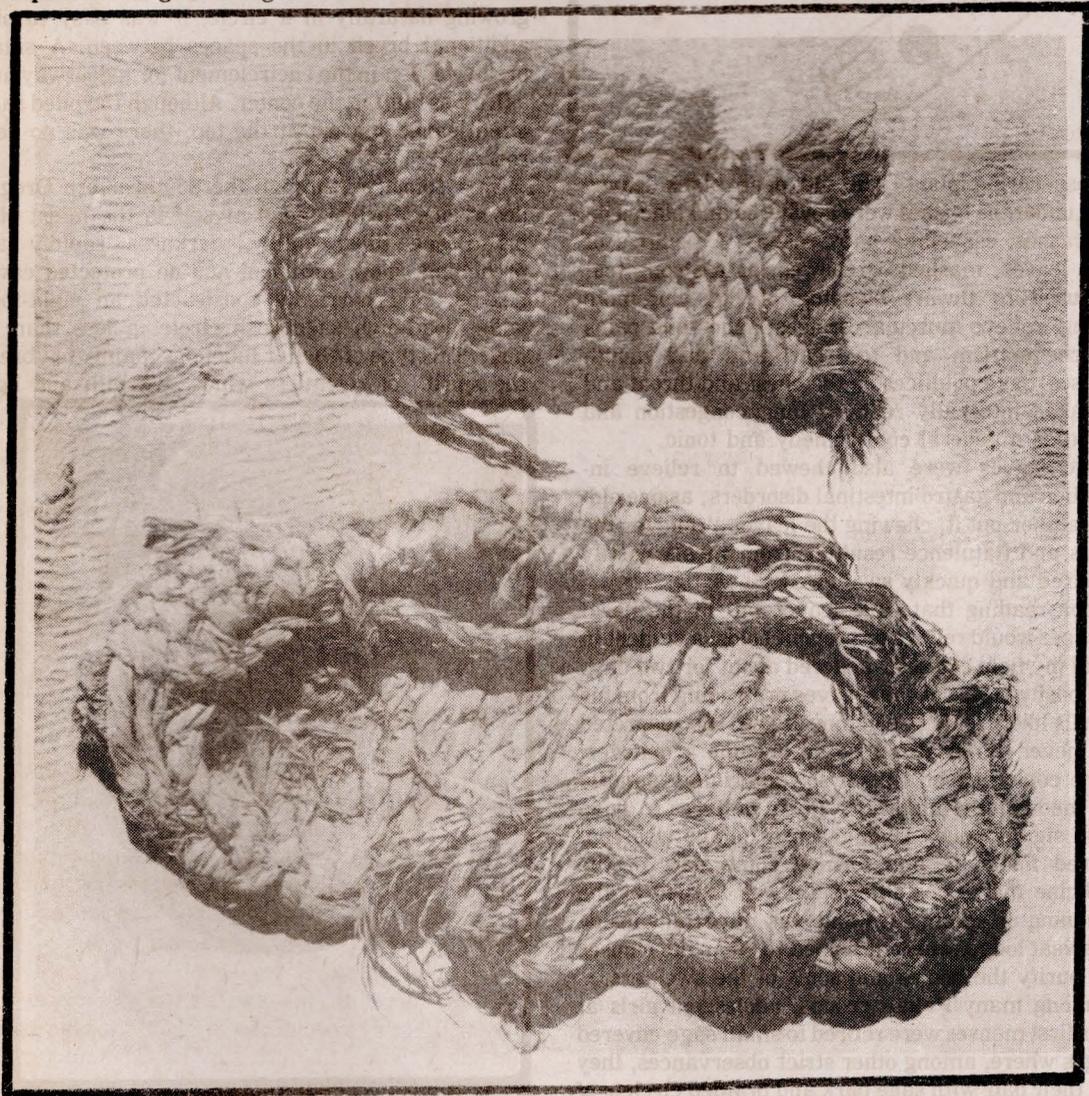
Deep deposits in several Oregon caves have yielded highly specialized artifacts of sage bark — sandals. More than 75 sandals manufactured by Basin dwellers about 9,000 years ago were excavated from Fort Rock cave in South-central Oregon in 1938 by Dr. L.S. Cressman of the University of Oregon.

Several slight variations in style were found, but all were manufactured by close twining.

The durability of aboriginal sage bark sandals is unknown, but modern experimentation has shown that a serviceable, although more crudely made, pair takes about three hours to make and will last through about three days of moderate wear. It is probable that sandals were worn only seasonally by the aboriginals, so they probably lasted longer. Several friends have twined excellently functional pairs of sandals, but perhaps their pride of manufacture has prevented them from deliberately trying to wear out their creations solely for the sake of experimental archaeology! One of these student-made sandals now resides in the visitors center museum on the Hart Mountain antelope refuge as an example of aboriginal footgear.

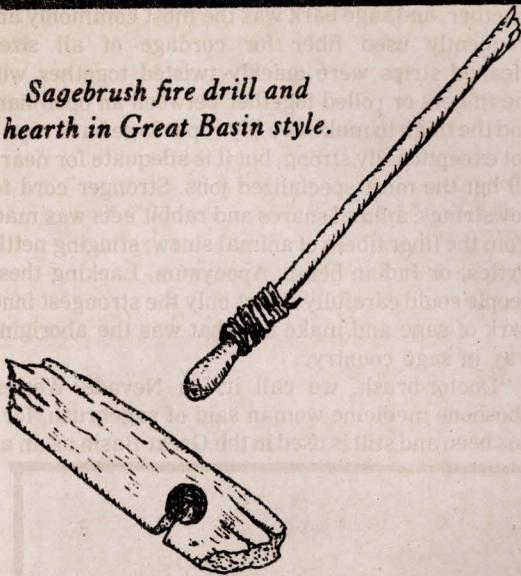
Great Basin natives literally tied their world together, and sage bark was the most commonly and frequently used fiber for cordage of all sizes. Cleaned strips were quickly twisted together with the fingers or rolled together between an open hand and the thigh to make two-ply rope. Sage bark rope is not exceptionally strong, but it is adequate for nearly all but the most specialized jobs. Stronger cord for bowstrings, animal snares and rabbit nets was made from the finer fibers of animal sinew, stinging nettle, Urtica, or Indian hemp, *Apocynum*. Lacking these, people could carefully select only the strongest inner bark of sage and make do; that was the aboriginal way in sage country.

"Doctor-brush, we call it," a Nevada Western Shoshone medicine woman said of sagebrush, for it has been and still is used in the Great Basin as an all-



Two styles of twined sagebark sandals both from the cave (left) in Oregon.

*Sagebrush fire drill and  
hearth in Great Basin style.*



purpose curing plant. The old dead black leaves found under the bushes were powdered and placed on skin rashes, especially baby rashes. A poultice of green leaves, mashed or chewed, or a strong tea, was used to thwart bleeding of cuts, promote healing, relieve muscular bruises, aches and pains and rheumatism and to treat gum and mouth diseases. Sage poultices on the chest and throat and tea taken internally relieved lung congestion and served as a general cold remedy and tonic.

Sage leaves were also chewed to relieve indigestion and gastro-intestinal disorders; as one old-time author put it, chewing the leaves "relieves the gripes and flatulence resulting from meals hastily prepared and quickly swallowed!"

Upon reading that sage leaves put in the nasal passages would relieve or prevent colds, a student in one of my field classes wandered about for two days with bushy sprigs of sage leaves protruding from his nostrils like a leafy green moustache. His suspected cold never materialized, so he became a believer.

One could expect a plant so materially versatile and medicinally integral to Basin cultures to have ritual significance. All sagebrush foliage was considered fortunate and formed some part of the medicine man's costume. Sage was burned at the beginning of ceremonies and was important inside the sweat lodge, where it helped to clear the sinuses and purify the bodies and souls of the sweaters.

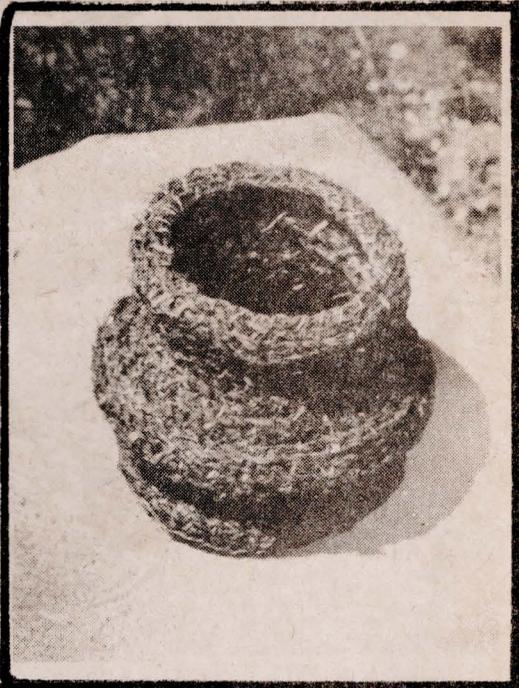
Among many Paiute groups, adolescent girls at their first menses were retired to small sage-covered lodges where, among other strict observances, they tied their hair with sage bark and braided circlets of bark to wear around their extremities as a guard against rheumatism. To show that they would be

industrious all their lives, they also were required to gather great piles of sagebrush for firewood — obviously to the benefit of everyone in camp. If ever a Great Basin aboriginal were allergic to sagebrush, his life would be miserable indeed!

As small family groups systematically harvested the sometimes abundant but widely scattered food resources of the sage country, they had little time to construct elaborate, or even semi-permanent shelters. Camps were established wherever the food was found, but a camp among tall, thick sagebrush was preferred.

The most common temporary shelter of the Northern Paiute was constructed quickly of large sages piled up about chest-high in a circle 10 or 12 feet across. Where several big sages were found growing naturally in a circle, it was easy to pile additional brush in the spaces between. A small break was left in the encirclement for a doorway and a fire was built in the center. Although the piled sage often leaned inward at the top, there was no real roof.

On a solo trek through the Southeastern Oregon desert one April, I found myself in the midst of a broad sage-filled valley, darkness rapidly approaching, snow imminent and no protected caves nearby, so I hurriedly constructed an eight-foot-wide, head-high sagebrush circle in less than an hour. This type of shelter functions mainly to "break the spirit" of relentless winds. Warmth and light



Small basket of coiled 2 ply twisted sagebark cord laced together with sage brush thatching.

from my fire reflecting off the inside walls kept me comfortable in my homemade micro-environment.

One salient point I learned, however, I pass along: Don't build your fire so large that it can leap into your shelter wall, or you may find yourself inside an instantly blazing ring of fire! Fortunately, mine jumped onto a corner of the doorway and I was able to knock away that section of wall, smother the flames with dirt and rebuild with nothing damaged but my initial pride of accomplishment.

Winter dwellings, nowadays commonly called wickiups, were slightly more substantial. They were

dome or tepee-shaped pole frames 10 to 15 feet in diameter sometimes thatched thickly with sagebrush but usually made warmer and more weatherproof with several layers of tule, cattail or rye grass matting.

"Sawabe," the word for sagebrush in Northern Paiute, is a common character in many Paiute folk tales which took place back in the times when magic was commonplace and animals, plants, rocks and people could all talk with one another. Wolf and Coyote, Isha and Itsa respectively, also lived in these times. Wolf is a good hunter, level-headed and



Winter dwellings, nowadays commonly called wickiups, were slightly more substantial.

someone to emulate, while Coyote, a clever but bungling lead character, is scatterbrained, greedy and usually shows us graphically how not to behave. In this excerpt involving sagebrush, we learn a Paiute morality lesson.

### COYOTE AND WOLF

Wolf and Coyote were brothers. Wolf was the older. They lived together in the same house. Wolf was a good hunter. He always brought back lots of game. When Coyote went hunting, he came back with nothing.

The next morning Coyote asked Wolf about rabbits. "How do you hunt them? How do you catch them so easily? You always kill lots," he said to Wolf. Then his brother told him, "I pull up Sagebrush and make little piles. Then I look back and they are all rabbits."

Now this Coyote wanted to hunt the same way as his brother. He wanted to see how well he could do it. He found Sagebrush. He piled it like that as he went along. Then he looked back, and the piles all turned into rabbits. Then he said, "That's an easy way to hunt. I have plenty. I'll have to eat these right now. I can bring the next ones home." Then he ate all those rabbits.

Then he went to another place and piled more Sagebrush and went off a little distance and looked back, and there they were — nothing but piles of Sagebrush. There were no rabbits. He had spoiled it. He brought nothing home that night. That's how Coyote spoiled easy hunting!

In terms of survival ease, the American Great Basin is one of the least lucrative regions for habitation. Yet, as tenacious and adaptable as the sagebrush on which they relied, Basin peoples applied their cumulative cultural knowledge and flourished for more than 10,000 years. These people respected their environment, learned to use without selfish exploitation, manipulate without attempted subjugation, and experienced fulfilling lives.

Peoples from dissimilar cultural backgrounds may view the same scene, yet perceive it entirely differently. Maybe the next time you visit sagebrush country, you will see something you missed before. Maybe you'll tangle with Sagebrush and Coyote out there. I have, and they won.

Peoples in the Klamath area made sandals and moccasin-like boots of tules *Scirpis*, but a Northern Paiute woman from Surprise Valley, in Northeastern California, commented, "Tules are no good for shoes. Sagebrush is nice and warm even if it gets wet."

Roots, seeds, berries and meat were sun-dried for winter use and were stored in large twined sage bark bags buried in dry protected places until needed. This caching of foods and material items was a



Sage bark fire bundle or "slow match."

common trait of Basin peoples who, in their seasonal rounds of food collecting, traveled frequently and could not be encumbered with less-than-vital possessions. They were, however, masters at improvising tools and articles they needed on the spot, using whatever raw materials were at hand. Many items were quickly manufactured for a specific purpose, used, then discarded. New articles were again made when the need arose, and previously cached materials were found and re-used. So instead of carrying the weight of their worldly possessions on their backs, they simply carried the necessary knowledge in their heads and applied it when called for. Handy!

Fire was precious and necessary in the lives of Basin aborigines, and sagebrush was most integral to the making and maintaining of fire. Only the hand-twirled drill was used to create fire. As the drill was twirled rapidly in a socket of the hearth piece, the friction ground off blackened wood powder. Increased speed and pressure created smoke, and eventually (with luck and the blessings of the Great Spirit) a live coal formed in the collected powder. Twirling stopped, the coal was lightly tapped into a waiting wad of tinder and gently blown with short puffs until it burst into flame. Very dry, finely shredded sage bark was preferred then and still

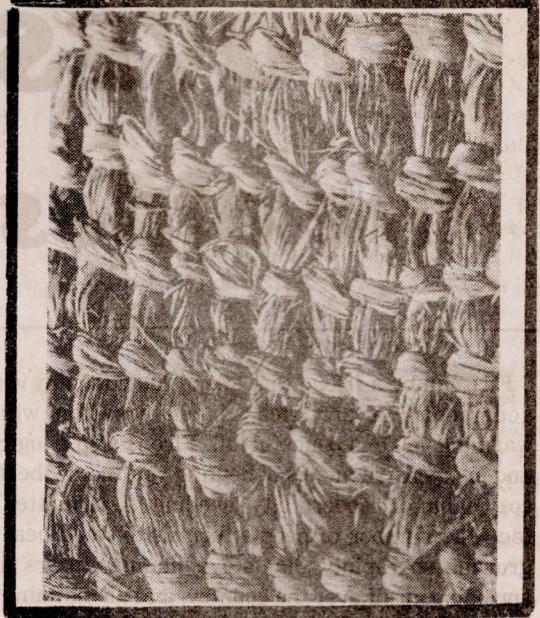
makes the best tinder I have used. The hearth and drill were often fashioned from dead "punky" sage wood. Because long straight sage branches are scarce, frequently a short piece of sage would be used for the drill, carried in a waterproof pouch, and for use it would be tied onto any longer straight stick found at the campsite.

Even for the experienced, making fire this way was not a certainty, especially in damp weather, so fires were maintained as long as possible. Fire was often transported from one camp to another via the fire bundle or "slow match." Naturally, it was also made of sage bark.

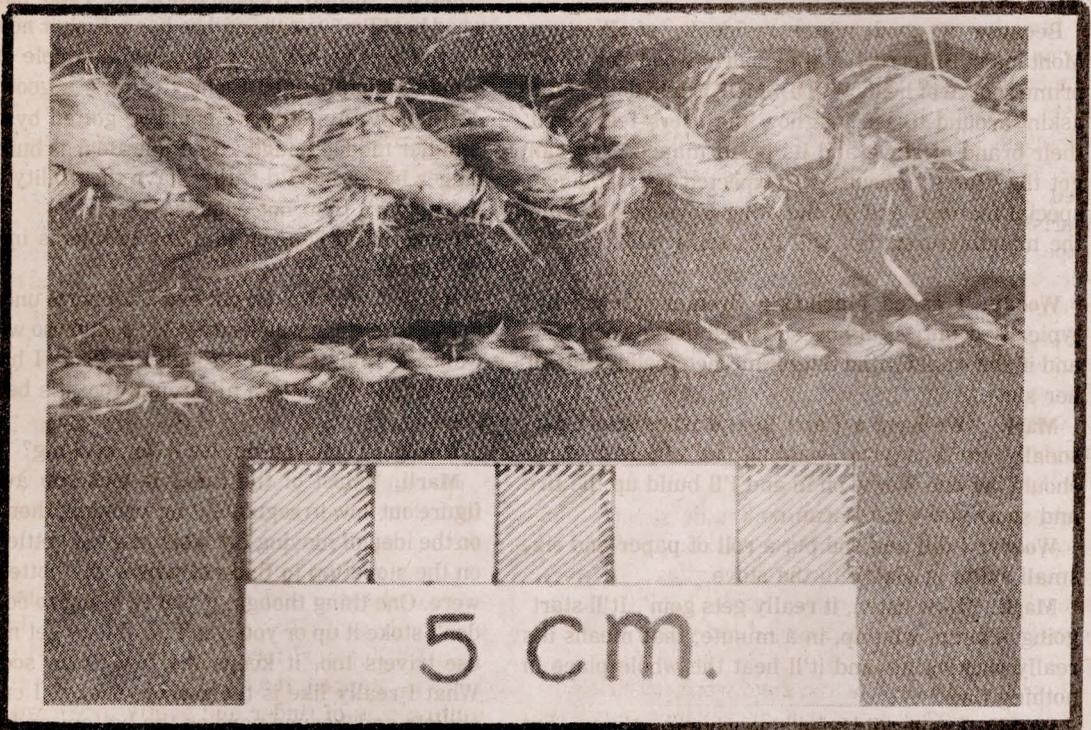
The one-to two-foot-long bundle was constructed in layers and bound together with more bark strips. In cross-section it would have unrefined bark outside, lightly shredded bark inside that, and a center core of very finely shredded "fuzzed-up" bark. Upon breaking camp, the Indians spread open one end of the bundle to expose the fine inner core, shoved in a live, marble-sized coal and blew on it lightly. Once smoldering, the inner core kept the coal alive while the coarser outer layers kept it from burning through the bundle too rapidly. A well-made fire bundle would smolder flamelessly for 10 to 15 hours before it burned too short to carry conveniently. If the travelers had not reached their destination by this time, they would stop, kindle a new fire by blowing the remainder of the bundle into flame, then

manufacture a new bundle and carry on.

Sagebrush makes excellent firewood. Although it burns fast, it gives off terrific light and heat, and wet or green sage ignites almost as readily as dry dead branches. It is a very special feeling to bask in the glow of a sage fire in the vastness of the desert.



Close up of sage bark twining.



Hand twisted sage bark rope and twine.

# WOOD STOVES

## *the oldest new idea*

Fire can be a friend that keeps you company with accomodating crackles of conversation while warming you to a peaceful lull. Fire is also a logical and inexpensive means of heating your home, be it a cozy cabin or modern city dwelling. As a matter of fact, the number of people turning to wood heat is growing so rapidly that stove manufacturers are springing up all over the country, and all claiming to have the "most efficient" product on the market.

Because a good many residents of Western Montana's Bitterroot Valley burn wood for their prime source of heat, WOODSMOKE has done some askin' around to see just how the users feel about their brand of stove and its performance. You can get the "facts" about size, expected performance, special features and all the other good points from the manufacturer, but will they tell it all?

**Woody:** I asked Marlionne Bremer, an earthy, typically country gal how she liked using wood heat and if she would mind telling me her feelings about her stove.

**Marli:** "We have a Papa Bear Fisher and I personally think anyone wanting an efficient stove should get one. Come on in and I'll build up the fire and show you what it can do."

**Woody:** I did and she put a roll of paper and six small splits of slab into the stove.

**Marli:** "Now listen, it really gets goin'. It'll start going whump, whump, in a minute, that means it's really sucking air and it'll heat the whole place in nothing flat."

**Woody:** I never did hear it go whump, whump, but was convinced by her enthusiasm that Marli and Papa Bear had a real thing going.

**Marli:** "It took me two years to learn how to use it...friends used to come over and I would be dressed in a sleeveless shirt and tongs and they'd say, 'are you nuts, it's 10 below out there'. Now that I've learned to use less wood I can get better regulated heat all the time and don't use half as much wood either."

**Woody:** What made you decide on a Fisher Stove in the first place?

**Marli:** "Ralph Woods, down the road has used wood heat for 50 years and he has a Fisher now, says it's the best he has ever had. And a couple of other people recommended Fisher too. It's a good stove, I'm happy. Actually we could've gotten by with a smaller model though...the Papa Bear is built for a bigger house but I'd rather have the ability to heat more space than not enough."

**Woody:** Did you run into any problems installing the stove?

**Marli:** "Well we did put extra supports under the house. The stove weighs over 400 pounds so we didn't want the thing falling through the floor. I had 3 inches added to the legs all around too, it's better for cooking."

**Woody:** Then you do use it for cooking?

**Marli:** "Most of the time. It took me awhile to figure out how to regulate it for cooking, then I came on the idea of moving my whistling tea kettle around on the stove top to find out where the hottest spots were. One thing though, if you're going to cook on it don't stoke it up or you won't be able to get near it. I use trivets too, it keeps the food from scorching. What I really like is the surface space...I can put 2 skillets and 2 sauce pans on the bottom and 5 sauce pans on the top. Last year I did all my canning on it but it got pretty hot in here. I've used a metal

bread box for baking on top of it too. You would need a thermometer though. I mean you can't cook turkey in it or anything but it's great for baking bread or casseroles!

**Woody:** I notice there is no grate, what happens to your ashes?

**Marli:** "I only have to clean it out 2 or three times a year. It burns so hot it doesn't leave anything. It's great for burning trash too because it burns it so fast it doesn't smoke and pollute the air."

**Woody:** What about smoke? I know it can be a real problem.

**Marli:** "This stove just doesn't smoke. When I open the door to load it, it drafts up. That saves the walls and ceiling, paintings and stuff, which can get really expensive, painting all the time."

**Woody:** Is there anything you don't like about your Fisher?

**Marli:** "Just that I wish it was prettier!"

**Woody:** John and Vickie Cornish have a modern home and wanted a wood stove that would double as a fireplace, so they bought a Franklin. I asked them to tell me the pros and cons.

**Vickie:** "Well, it's nice for the pleasure of having a fire, but if you're serious about heat you'd be better off with another model. For one thing, it uses a lot of wood. We have friends that have a Schrader and we use about double the wood they use."

**Woody:** Then you obviously have another source of heat?

**Vickie:** "Yes, we have electric heat too but burning the Franklin does make quite a difference in the heat bill."

**Woody:** I notice that you have a blower in the pipe, how does that affect its efficiency?

**John:** "It circulates the heat so the living room and adjoining kitchen stay warm, but ever since we put it in we've had to keep the doors on the stove closed because of the smoke. It's too bad because we like the fireplace atmosphere too."

**Woody:** Did it smoke before?

**John:** "Yes, it's always smoked a little but now it's worse."

**Woody:** Any other problems?

**Vickie:** "Since we have been using it a lot for heating, the sides have started to warp some. It probably wouldn't do that if it was just being used as a fireplace though."

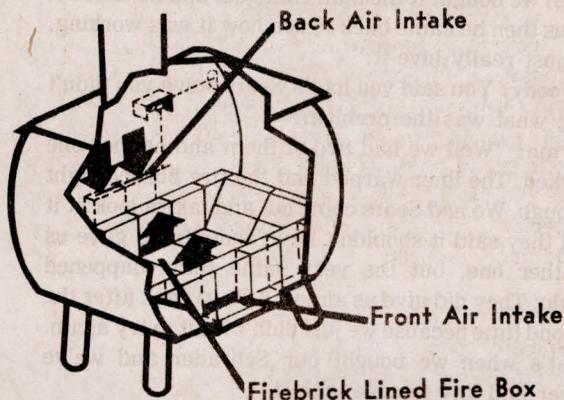
**Woody:** Mr. and Mrs. Fortune sell woodstoves and carry the Earth Stove, a popular wood burner that is highly advertised. Although I didn't want to get "professional" comments I felt it would be worthwhile to mention what Mrs. Fortune had to say about this stove.



**Fisher Stove.**

**Mrs. Fortune:** "Well, we plan to discontinue the Earth Stove because we have been getting some feedback from our customers. They are having trouble with the sides warping. We've sold a lot of Earth Stoves but now we're changing to the Mountain Aire, it's a little more expensive but it's a better stove and it has all the features of the Earth Stove."

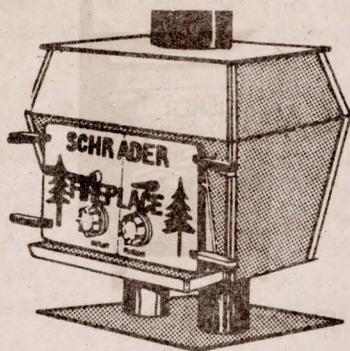
### Mountain-Aire



**Unique Double Draft System**

**Woody:** Next I talked to Irma Mason. The Masons live in a large, two-story house that has been in their family for years. On the back porch is a Schrader Stove. It was hard to believe that this was the only source of heat for the entire house, or that it could be efficient setting on the porch! I asked Irma if it was necessary to keep a really hot fire going all the time to heat the entire house.

**Irma:** "Oh, no, I just fill it up once in awhile and it heats just fine. In fact, let me check...my gosh, it's 82 degrees in here now."



**Woody:** How do you like the Schrader Stove Irma?

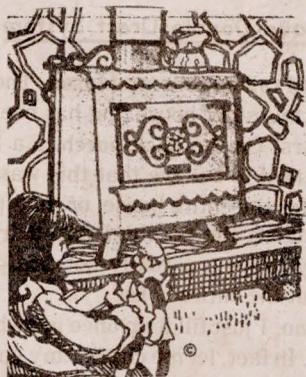
**Irma:** "I love it, we used to have a Sears and I wouldn't recommend that to anyone but now that we have our Schrader we just stay really warm. It heats the whole house. In fact, I have to close the doors upstairs or it just gets too hot up there. You know I should get a commission from the Schrader people, I've sold so many stoves for them!"

**Woody:** Are there any features about the Schrader you don't like?

**Irma:** "No, we just haven't had any problems. When we bought it the man came out and installed it for us then he came back to see how it was working, we just really love it."

**Woody:** You said you had a Sears stove you didn't like, what was the problem?

**Irma:** "Well we had two of them and neither one worked. The liner warped and the fire burned right through. We had Sears come out and take a look at it and they said it shouldn't have done it and gave us another one, but the very same thing happened again. They did give us almost \$190.00 back after the second time because we just didn't want to try again. That's when we bought our Schrader and we've never had any trouble with it."



**The Earth Stove.**

**Woody:** Irma's comments about the Sears stoves were interesting because I know someone else who has been using that make for a couple of years now and hasn't had much trouble. I asked Scott Ross if he had any similar problems with his Sears stove.

**Scott:** "It heats pretty well, in fact we live in a two-story, four bedroom house with no insulation to speak of and we stay toasty as long as we keep the Buck stove going in the kitchen. It isn't as effective as some I've seen but does hold the heat all night when I take the time to bank it right. I like the automatic thermostat, it shuts the damper down to low when it gets too hot and opens it again as things cool off. There are two little holes in the damper so it can never be shut completely down like some stoves, it has quite a few holes where it's bolted together too."

**Woody:** Leona Clatworthy, a long time resident of the Bitterroot and a veteran wood user had a few things to say to anyone contemplating the purchase of a wood stove. Leona and her young daughter were alone in the house when their Ashley stove blew up, severely burning both mother and daughter. Neighbors who saw the explosion said that pieces of the house flew 80 feet in the air. The entire house burned to the ground along with all their possessions. The cause of the fire...gases had built up in the pipes and stove and when the door to the stove was opened the rush of oxygen caused the explosion. I asked Leona if she felt that the accident was the fault of the stove or particular conditions that existed at that time.

**Leona:** "Both. The construction of the Ashley stove, or any controlled heat stove, encourages gas build up. We had experienced two months of really cold weather and were burning alot of wood just to keep warm. But because the stove didn't vent properly the gases didn't burn out."

**Woody:** Do you think yours was an isolated case?

**Leona:** "As a matter of fact I know of three other cases, all involved an Ashley stove. A neighbor who lived just a mile from us had their stove blow up in the night killing two small children."

**Woody:** Do you use a wood stove now?

**Leona:** "Yes, we have a Fisher and are really pleased with it. Mother has an Earth Stove and I've been trying to convince her to get rid of it because of the controlled heat. (thermostatic control) It has started belching smoke and could be dangerous."

**Woody:** Dewey and Eve Baker have three wood burning stoves in their modern home. They also have an auxiliary electric baseboard heating system that they use when they plan to be away from the house or in case the fire goes out. Eve commented on the efficiency of each of the wood burners.

**Eve:** "I've got an old fashioned Majestic wood burning cook stove in my kitchen. It certainly isn't very economical on wood, it's either too hot or not hot enough but I like it to warm things up in the morning. It cooks pretty well.

**Woody:** Do you use it for cooking?

**Eve:** "Yes, I do, alot. You get used to it after awhile, you learn when to add more wood and how to regulate the heat."

**Woody:** Then you have another stove just for heating the upstairs and one for downstairs?

**Eve:** We have a carousel fireplace in the living room. It's very efficient for heating the room because its a free standing unit but you couldn't build it up to last all night or it would get too hot and break the glass. The only thing I don't like about it is that it never looks clean. The glass gets smoked up whenever its being used. It's just like a kerosene lantern. Then downstairs we have a Warm Morning heat stove."

**Woody:** Do you use that to heat the house at night?

**Eve:** "Yes, that's actually what we use to heat the whole house all the time, unless it gets really cold then we build a fire in the fireplace. It has a fan and circulates the heat real well. I have absolutely no complaint about that stove, it's very efficient with wood."

**Woody:** The Cook family also has a Warm Morning stove in their home as an auxiliary source of heat. They have found that with proper insulation, storm windows and weatherstripping on all doors and windows it is possible to heat even a very large home such as theirs very efficiently with wood.

We certainly have covered only a few of the stoves on the market, for better or worse, but we hope we have been able to give you a little insight into what features to look for when you go shopping for a stove. You will know what your needs are...look for a stove that will suit your particular situation. If you want a fireplace, look for one but if you want an efficient heating stove your requirements will be more exact.

The comments by those who were interviewed don't represent the complete picture either, there are sure to be other opinions that may differ with those expressed, ask around yourself before you buy.

There are alot of other wood-burning stoves on the market like the old pot-bellied model that is great for day time heating, 5 gallon drum garage stoves, cook stoves, trash burners, decorative parlor stoves and free-standing fireplaces. There is also a wood burning stove that hooks right up to your electric heating system that could serve as an emergency auxiliary or as a main source of heat. There are wood burning hot water tanks, blowers for maximum efficiency, special venting techniques that will help you overcome specific problem areas and many, many more products that you will find through a reputable dealer.

The following table lists the amount of available BTU's for certain woods.

	Available heat per cord		Percent more heat from
	Green (Million BTU)	Air-Dry	
ASH	16.5	20.0	21
ASPEN	10.3	12.5	21
BEECH, AMERICAN	17.3	21.8	26
BIRCH, YELLOW	17.3	21.3	23
DOUGLAS FIR, HEARTWOOD	13.0	18.0	38
WLM, AMERICAN	14.3	17.2	20
HICKORY, SHAGBARK	20.7	24.6	19
MAPLE, SUGAR	18.4	21.3	16
MAPLE, RED	15.0	18.6	24
OAK, RED	17.9	21.3	19
OAK, WHITE	19.2	22.7	18
PINE, EASTERN WHITE	12.1	13.3	10
PINE, SOUTHERN YELLOW	14.2	20.5	44

According to U. S. Forest Products Laboratory research, 44% more heat can be obtained from a log simply by letting it air dry before you burn it. It is advisable that you split, stack and cover your wood well in advance of your anticipated heating season. The table below lists a variety of American woods in approximate order of fuel value and will be of help to you in your particular area. The prices at the top of each column are those you can expect to pay for the wood in that column and still come out ahead of what you would pay to heat your home on 50 cent-a-gallon fuel oil. At these prices, you'll get heat at roughly half what you would pay to heat with electricity at .05 cents per KWH.

**\$50 - \$60**

**PER CORD  
(HIGH)**

LIVE OAK  
SHAGBARK HICKORY  
BLACK LOCUST  
DOGWOOD  
SLASH PINE  
HOP HORNBEAM  
PERSIMMON  
SHADBUSH  
APPLE  
WHITE OAK  
HONEY LOCUST  
BLACK BIRCH  
YEW  
BLUE BEECH  
RED OAK  
ROCK ELM  
SUGAR MAPLE  
AMERICAN BEECH  
YELLOW BIRCH  
LONGLEAF PINE  
WHITE ASH  
OREGON ASH  
BLACK WALNUT

**\$40 - \$50**

**PER CORD  
(MEDIUM)**

HOLLY  
POND PINE  
NUT PINE  
LOBLOLLY PINE  
TAMARACK  
SHORTLEAF PINE  
WESTERN LARCH  
JUNIPER  
PAPER BIRCH  
RED MAPLE  
CHERRY  
AMERICAN ELM  
BLACK GUM  
SYCAMORE  
GRAY BIRCH  
DOUGLAS FIR  
PITCH PINE  
SASSAFRAS  
MAGNOLIA  
RED CEDAR  
NORWAY PINE  
BALD CYPRESS  
CHESTNUT

**\$30 - \$40**

**PER CORD  
(LOW)**

BLACK SPRUCE  
HEMLOCK  
CATALPA  
RED ALDER  
TULIP POPLAR  
RED FIR  
SITKA SPRUCE  
WHITE SPRUCE  
BLACK WILLOW  
LARGE TOOTH ASPEN  
BUTTERNUT  
PONDEROSA PINE  
NOBLE FIR  
REDWOOD  
QUAKING ASPEN  
SUGAR PINE  
WHITE PINE  
BALSAM FIR  
COTTONWOOD  
BASSWOOD  
WESTERN RED CEDAR  
BALSAM POPLAR

NOTE: Wood at the top of each column is worth the high end of the price range for that column; pay a lower price for those near the bottom of the column.

# AN ADVENTURE IN PRIMITIVE LIVING

**JUNE 20 - 24 1979**

presented by

**THE LARRY DEAN OLSEN  
SURVIVAL ASSOCIATION**

# RABBIT STICK



## INFORMATION

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### WHAT IS RABBIT STICK?

It is not exactly a rendezvous or a conference, it is simply a get-together. . . . . a 4 day memorable experience with the stone age. Within its circle are the foremost names in **Outdoor Survival, Primitive Living** and **Total Self Sufficient Living** off the land. Each person attending will literally be steeped in the aroma of the occasion with a drum beat agenda of seminars, workshops, firesides, Indian dancing, trading, contests and skills awards. It's an unforgettable Indian and Pioneer camp.

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### WHO MAY ATTEND?

Rabbit Stick is for members of the Larry Dean Olsen Survival Association. Anyone may join the Association and include in that membership all members of his immediate family.

### WHEN?

The second annual Rabbit Stick will be held June 20-24.

### WHERE?

Spanish Fork, Utah.

### COST?

Details and cost information may be received by writing Ron Zacharias, P.O. Box 1301, Salt Lake City, UT 84110 or calling 1-801-262-5129.

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*Continued*

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## SEMINAR AGENDA

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### **Making and Using Fire Workshop**

- Bow and drill fire making
- Flint & steel fire making
- How to lay out fires for cooking, keeping warm and for heating materials for tool construction
- Making coal beds and sleeping fires
- Chimney draft beds

### **Indian Brain Tanning**

- Techniques, tips and tricks of tanning.  
(participants will need to bring their own hides or plan to purchase them at Rabbit Stick.)

### **Edible and Constructive Plants Seminar**

- Identify many edible and useful wild plants
- Harvesting and preparing wild plant foods
- Using plants for making tools, dyes, medicines and cordage
- Poisonous plants

### **Indian Bow and Arrow Making**

- Instruction in making bows, arrows and bow string
- ### **Beginning and Advanced Stoneworking Workshop**
- How to make stone tools, arrowheads, knives and axes
  - Core preparation, percussion flaking, pressure flaking, pecking and crumpling
  - Advanced blade making, fluting and parallel flaking methods
  - Polished stone ax making, drilling and grinding methods

### **Hunting, Trapping and Stalking Skills Seminar**

- How to make and hunt with primitive weapons
- How to make traps, deadfalls and snares and set out a trapline
- How to track and stalk animals for food
- How to read signs, construct sets and identify animal habits and habitats



## SPECIAL EVENTS

### Fire Making Contest

There's a big and valuable prize for the fastest bow drill in the west! Prizes also given for flint and steel fire making and a special award will be given to each person who makes a fire with the hand drill method.

### Black Powder Shoot

All day Saturday

### Trading Session

Spread your blanket on the ground and barter your trade goods. There's only one hitch - no talkum - use sign language only. You may not know how, but we're sure you can get your point over eventually!

### Atl-Atl Throwing Contest

This could become a new national sport. Start now to make an atl-atl and spear (directions in the book Outdoor Survival Skills by Larry Olsen). Big prizes will be given for accuracy and distance throwing.

### Throwing the Rabbit Stick

Distance and accuracy are awarded in this event. There will also be a prize for the best looking Rabbit Stick.

### Children's Program

Bring the whole family. Special instructors will

teach the children many fun and useful skills and activities. They will have many opportunities to win prizes of their own, enter contests, and learn how to survive at Rabbit Stick.

### Primitive and Pioneer Cooking

Elegantly tasty and filling meals with fry bread, stews, breads, potatoes and special recipes. Guaranteed to satisfy, and of course, ash cakes. Bring your own dutch oven and recipes to share.

### Indian and Pioneer Games

### Special Lectures and Firesides

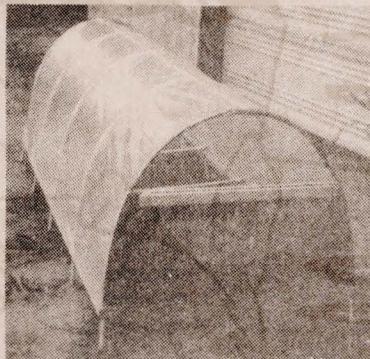
Impressive speakers on subjects dear to all outdoorsmen, pioneers and survivalists. Indian and pioneer stories will be told around the campfire each night.

### Hawk and Knife Throwing Contest

Bring your tipi or trappers lean to. If you have skills you would like to see taught please contact us or if you have special skills you would like to share with others please let us know.

## THE ROWHOUSE

### Kit Mini Greenhouse



- Increases growing time two months.
- Ideal for tomato plants.
- Fits over a row so it adapts easily to garden use.
- Easy to assemble kit. (10 linear feet)

For more information contact

### BoMar Enterprises

514 Owen St.

Stevensville, MT. 59870

or call 1-406-777-5893

WOODSMOKE HUMOR



"Well, there goes the neighborhood!"

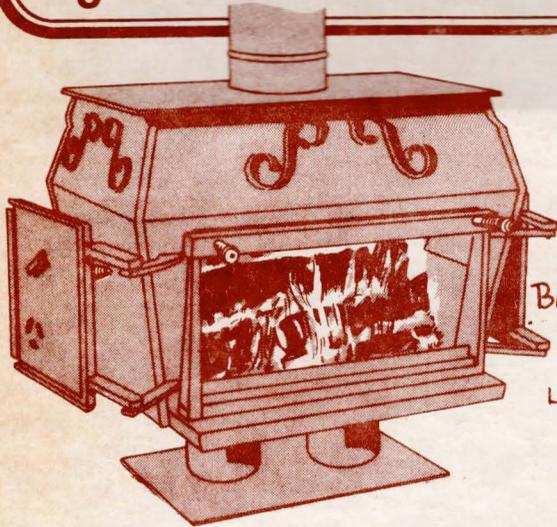
# Schrader WOOD STOVES

## SCHRADER MEANS:

- Low Heating Costs • Low Energy Consumption • Beauty in Design • The Newest Features • Built to last a lifetime. Solid Steel Construction.

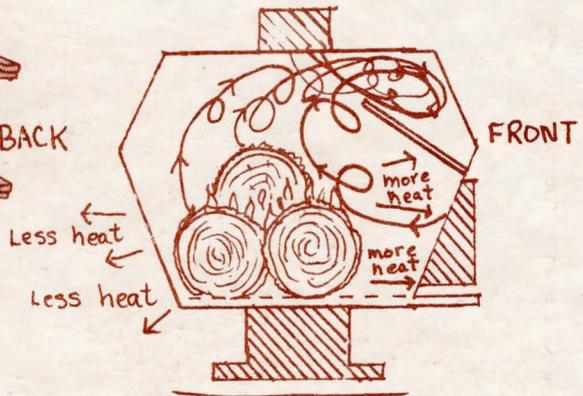
10 Models and sizes to choose from.

You Can Start Saving Big Money  
Right Now With A Schrader Stove.



STOVES OF BEAUTY  
CUSTOM BUILT  
FOR YOUR HOME

Compare  
This Feature??



75° to 200°  
Hotter on Front

No other stove has it!

A unique feature of the Schrader stove is illustrated by the picture above. The secondary combustion chamber is at the front of the stove instead of in the back, an arrangement favoring radiation of more heat into the room and less toward the wall.

Because the heat production is even once the draft is set the fire burns at a controlled rate. Our manual drafts can be set to maintain a constant and steady temperature throughout the day whereas thermostatic controlled drafts work at an on and off system and will not maintain a steady temperature.

The Schrader stove has over 1/3 of the volume of the stove located above the door. This feature allows the flame to reach its hottest temperature creating more complete combustion of volatile gases.

Our unique baffle system allows the wood or coal to burn from top down and leaves a minimal of ash. Most stoves need not be cleaned oftener than every 4-6 months.

# The Schrader WOOD STOVES

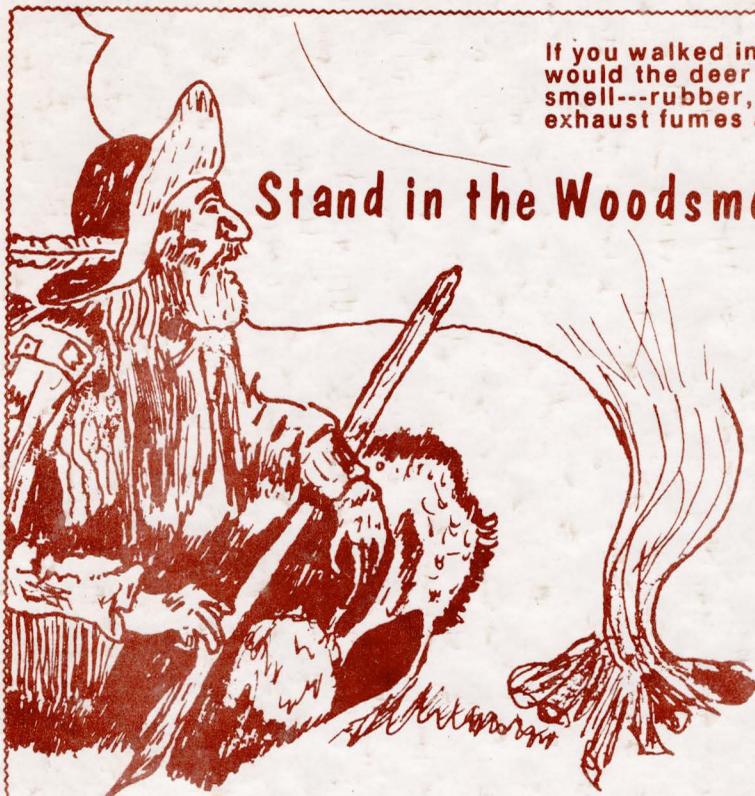
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If you walked into the woods today, what would the deer and the coyote smell---rubber, garbage cans, exhaust fumes and asphalt?---

## Stand in the Woodsmoke for a while

....And invite  
your friends  
to join you

A woodman knows the value of WOODSMOKE puts him in tune with the wilds. It takes away the fumes of civilization.

If you enjoyed WOODSMOKE you should really set your courses for those future columns of WOODSMOKE rising on the horizon. The spark has just been struck and the flames are ready to warm you from now on. You can sit with WOODSMOKE and feel the lore of the trail and the security of the homestead hearth, both together. The skills for living will keep your fingers busy round the evening fire wherever you are. WOODSMOKE will be sizzling with hump roast and ashcakes; stoneage skills and homespun hints for a better and more enduring lifestyle; adventure and history along with a few tall tales now and then. WOODSMOKE aims to help you build confidence and a sense of adventure in yourself by putting you in touch with newer and better ways to become one with nature and with society. Contrary to the pessimistic opinions of some people, WOODSMOKE believes that man is the master of his destiny and that he is truly a part of this wonderful universe. Lie down just outside the fires dim and gaze at the limitless universe above, feel the stillness of the land and let the free breezes bathe you in your very own WOODSMOKE.

And while you're at it, why not give your best friends WOODSMOKE. Let it blow in their direction

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