



Backwoods



Home magazine

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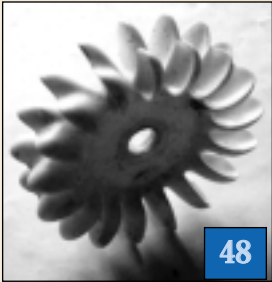
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ABOUT THE COVER

James O. Yeager shot this photo of his wife, Alice, as she harvested bush beans in their Arkansas garden. Her article, *Love those green beans*, starts on page 8 and is the lead article for this issue. James and Alice have made quite a team for years with her expansive gardening knowledge and his photographic skills. Alice always has words of wisdom for those of us who appreciate learning about the various types of healthy produce to be cultivated in our gardens. This is the first time *Backwoods Home* has used one of James' photographs for the cover. This picture sure has a way of making a person dream of spring-time planting, working in the garden, and best of all, harvesting the much deserved product of our efforts.



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Energy Works

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Michael Hackleman details alternator rebuilding and simple, practical control circuits for these systems, including homebuilt ones.

Farm and Garden

8 Love those green beans By Alice Yeager

Alice Yeager tells us how to grow great green beans that will put the beans you buy at the store to shame. She discusses how to overcome the common diseases and bugs you may encounter. Along with this she gives us five delightful recipes that will tease your palate and delight your family.



36 Why garden organically? By Jackie Clay

Jackie Clay sheds some light on organic gardening and tells us why it's not only a better way to grow healthful food, but in the long run it is easier, cheaper, and fun.

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In the nation's biggest state, land to garden on is ironically in short supply. David Sneed, who teaches gardening in coastal Alaska, explains how many "landless" folks are now growing crops "out of sight."



Self-sufficiency

23 Steal your neighbor's trash for fun and profit By Tim Pickles

In a short time Tim Pickles has acquired more than \$5,000 worth of mowers, snowblowers, garden tractors, and other useful items simply by picking through his neighbors' trash, and he tells how you can do it, too.

34 New invention — the Fencerunner By Dietmar Berg

While in the middle of the tiring job of stringing barbed wire, Dietmar Berg hit upon a device that would make the job both quicker and easier.



Guns

58 Of kids and guns By Massad Ayoob

Kids with guns have a bad name in this country. Massad Ayoob asks whether this is deserved and cites cases where kids with guns have saved themselves and their families, while kids without guns could not. This is a thought provoking article for those of you who have kids and guns in your homes.

Recipes

14 In search of the perfect cup of coffee By Richard Blunt

Most Americans have never had a really good cup of coffee, but our food editor, Richard Blunt, has. If you're a coffee lover, he'll teach you how you too can make "the perfect cup."

Americana/Homeschooling

66 The coming American Dictatorship, Part III By John Silveira

In this, the third installment of his dictatorship series, Silveira discusses how bureaucracies play a part in the destruction of the Constitution and the erosion of our rights.



Publisher's Note

The New England Office

Our New England office is about to open in a secret location. My three Boston cousins, Danny, David, and Chick Duffy, are helping me smuggle computers and revolutionary ideas into the New England area.

Actually, we'll launch the office in March by making a presentation to 10 Arlington Catholic High School students who are writing stuff for us on how they view the *U.S. Constitution*. Oliver Del Signore, our webmaster who lives in Medford, MA, previously donated pocket-sized copies of the *U.S. Constitution* to the students so they could bone up on it.

For those of you who don't know, Arlington Catholic High School, located in Arlington, MA, is run by the Sisters of Saint Joseph, the same Catholic nuns who taught me at Cathedral High School in the South End of Boston. I know Arlington Catholic very well because I played football for Cathedral High, and Arlington Catholic used to kick our butts every year.

I also have fond memories of the Sisters of Saint Joseph. I was a product of the Boston Public Schools in the early grades, then my parents bused me across town to get a good education from the nuns. What a difference! I knew nothing when I encountered the nuns and was scared to death of them. They took me under their caring wings and taught me how to study and learn. It was a Renaissance in my young life; I left the high school with four years of Latin, one of French, one of Spanish, and lots of science under my belt. And because I was scared stiff of them, I knew the stuff too.

Oliver's heart bypass surgery

Oliver Del Signore, our webmaster for www.backwoodshome.com, underwent quadruple bypass heart surgery between issues. He's recovering now and things look good. I didn't realize how much I relied on him for the website until the heart surgery suddenly came up. I couldn't even post a new daily column I started on the internet called *Dave Duffy Daily*. One good thing about starting the New England Office is that I can learn from Ollie.

SelfReliance Network and this issue's cover

Some keen observers may have noticed that the cover of this issue is the same cover as a new magazine named *SelfReliance Network* that was advertised in this magazine last issue. That's because *Backwoods Home Magazine* is



Dave Duffy of Oregon and Dave Duffy of Boston meet to plan the opening of the New England office.

the owner of *SelfReliance Network*, whose publication has now been cancelled. So we decided to use the cover, and its associated article on green beans, in this issue of *BHM*.

We devised *SelfReliance Network* in the first place as a nonpolitical version of *BHM* that would attract all the crybabies who didn't like *BHM*'s politics, gun articles, and other "hot button" topics. But then, just before we were to launch the first issue, I decided that it wasn't worth the effort, that I liked politics and guns too much to spend a lot of time avoiding them, and that I'd rather devote myself full time to *BHM*. So now we're refunding money to all the people who subscribed to *SelfReliance Network*. I bet a few magazine publishers we had planned to compete against are breathing a sigh of relief.

New Net column — *Dave Duffy Daily*

I began a daily Internet column a month or so ago at the *BHM* website, www.backwoodshome.com, called *Dave Duffy Daily*. It can also be reached at www.self-reliance.com, which is a bit easier to remember. If you have an Internet connection, I think you'll like reading it.

In this magazine I have a chance to say what's really on my mind only once every two months—on page 7. In *Dave Duffy Daily*, I have a chance to mouth off daily. Sometimes I just talk about what's going on at the magazine, such as Silveira falling asleep at his desk, but I also get a chance to address issues that are crucial to freedom. It's like a talk radio show done with writing instead of the spoken word. I could never do the latter because I get stage fright. But I am at home on the Internet. It's another example of why I think the Internet will save America's freedom.

Two new meatballs

Two new meatballs this issue: Cookie Dough (Nathele Graham) and Chef Blunt (Richard Blunt). See page 99. Δ

My view

Sensible health is based on science

It's been about a year and a half since we exhibited this magazine at a trade show, but we'll do two of them soon: March 16-17 at the Upper Midwest Organic Farming Conference on the campus of the University of Wisconsin in La Crosse, WI, and April 20-22 at Vitality Expo 2001 (ad on page 64) at the San Mateo Expo Center near San Francisco.

I consider both of them health shows, even though neither are billed as such, because one is about raising the best possible food for your body and the other is about exercising and living life to the fullest. In the past I've also exhibited at the shows actually billed as *health shows*, you know, those gigantic trade shows in southern California and other New Age kingdoms where kooks, crackpots, and charlatans gather to sell you miracle cures for cancer and bottles of green slime for nutrients. Attendees at those shows tend to be the sick and the desperate who have neglected their bodies so are in the market for a miracle.

These organic gardening and vitality shows, on the other hand, are based on science, a science that says eating properly all your life, exercising moderately on a regular basis, and enjoying your life to the fullest are the best ways to remain healthy and live as long as you can.

Good news: *we live longer than ever*

The average age in the year 1 A.D. was 25. During the middle ages it briefly rose to about 35, then fell to 17 at the height of the convergence of the bubonic plagues, hundred years war, and repeated famines. By the time America really got into high gear, say 1900, life expectancy rose to 47 and it has been rising ever since—54 by 1920, 63 by 1940, 69 by 1960, 73 by 1980. Today it is on the verge of 80.

Much of the increase has been the result of declining infant mortality, but many chronic diseases of the past have also been eliminated, many cancers can now be cured if caught early, and the chances of getting heart disease, stroke, and various cancers and diseases can be drastically reduced by applying some science-based rules to your life.

Better news: *it's easy to stay healthy*

- Eat a wide variety of foods from all 5 food groups: meat and fish, grains, fruits, vegetables, dairy. The French, who have a much more varied diet than Americans, have much lower rates of heart disease and cancers. Several small meals a day are better than one big one.

- Eat about 40% less food than you would normally eat if left to your own desires. Tests with lab animals indicate a 50% increase in life expectancy. The body may wear itself out processing excess food. There is evidence that protein restriction is a key to health and longevity.

- Eat 5 servings of fruits and veggies a day. Easy to do if you have a Vita-Mix or other smoothie-maker. Lots of antioxidants in this. Fresh garden veggies taste better too.

- Eat fish, nuts, and fiber. A fish a week may cut your risk of sudden death by 50%. Nuts 4 times a week may cut the risk of heart attack in half. Fiber is essential to clear the colon, and fiber-filled foods help you lose weight.

- Alcohol, *in moderation*, is good for you, but red wine is best. Red wine reduces the risk of heart disease by about 50%, and may help reduce the risk of breast, prostate, liver, colon, rectal, and oral cancers. It also cuts the risk of osteoporosis. Notice the words "*in moderation*."

- Don't smoke. It's as bad as they say.

- Stay relatively germ-free by washing your hands frequently, drying with paper towels that you immediately discard. The mouth is the dirtiest part of your body, so brush and floss regularly.

- Exercise. It doesn't take much. Walking is fine. It's relaxing and restores brain cells. Don't think about work while you exercise. Listen to music or a book on tape.

- Sex is good for you, qualifying as both fun and exercise. Practice safe sex; avoid the colon, a repository for germs and disease. That's as delicately as I can say it.

- Relax and sleep well. It may drastically cut your risk of illness. A brief nap, or other relaxation technique, during the day helps. Listen to music or read for 20 minutes before going to bed, then sleep until rested—about 8 hours.

- Enjoy life, like your job, and take time for yourself and your family. Constructive stress is fine, but don't fret over every little thing. The happy person lives longer, healthier.

- Take vitamins if you want, especially antioxidants, but don't rely on them. Various foods have lots of micronutrients that science is just learning about, and they are not in vitamin pills.

- Don't rely on alternative medicine. Although it has some value, and is currently in vogue, it is riddled with quacks and fake cures, some of which have been dredged up from the discredited "cures" of ancient times. Modern medicine based on science is why we live healthier and longer today. Trust science.

Best news: *Living in the country helps*

Move to the country, relax, and enjoy life because it's good for your health. You'll exercise more by walking your property and preparing wood for the fire. You'll relax and enjoy cultivating your garden, then eat healthy veggies with fewer germs and pesticides. And you won't get mugged nearly as often as you will in the city.

This is not all you can do. I suggest you buy a copy of Dr. Dean Edell's book, *Eat, Drink & Be Merry* (Harper Collins, 1999). He's the radio doctor with 20 million listeners. Very smart guy.

— Dave Duffy

Love those green beans

By Alice B. Yeager

Anyone with some gardening space, a sunny location, and good loamy soil with pH 6.0-7.5 can grow snap beans. With some good recipes, you'll have people begging for your secret ingredient.

Photos, James O. Yeager



Pole beans such as Romano are prolific, giving the gardener plenty of green beans to enjoy fresh, canned, and frozen.

The secret, of course, is simple—they are fresh. You won't find them in the produce aisle at the local supermarket nor at the diner across town. You'll only find them in your garden.

There are more and more snap bean choices showing up in seed catalogs. I pay particular attention to the ones said to produce well in hot, humid areas. We gardeners living in Zone 8 appreciate vegetables that can stand some hardship. Experience is the best teacher as to which plants will do well in any area. I have found that a number of bush bean varieties perform best here in southwestern Arkansas if you can harvest before July. In other places, where temperatures don't reach 100° F and stay there for days, these same varieties will bear over a longer period. I can recall a summer a few years ago when our Blue Lake pole beans loaded with hundreds of 2 inch long young beans were a total loss due to a prolonged onslaught of heat and high humidity.

We are partial to pole varieties for several reasons. Not only do they have great flavor, but they're easier to harvest as you can pick them from a standing position with little stooping required. Since they're well above the ground, there is hardly any likelihood of dirt being splashed on the beans when heavy showers occur. Unless a disaster happens, as with the Blue Lakes above, the vines will usually bear until fall if beans are not allowed to mature on the vines. The pole beans best suited for our area seem to be Romano and Kentucky Wonder. They have out-produced all other pole beans we have tried. The old reliable Kentucky Wonder has been around since the 1800s.



Bush beans usually give a good account of themselves, but picking them is not as easy on the back as harvesting pole beans.

It is possible to have both spring and fall crops of beans, but the fall crop is a gamble. That crop has to be planted during hot weather to be able to produce a decent harvest before

frost, but hot weather is not the best time for planting beans. Normally, beans should be planted during spring after all danger of frost is past but cool weather still exists. An exception

to this is the Fava Bean (Windsor variety) which is mainly recommended for the northern United States and is extensively cultivated in northern Europe. Fava beans may be planted as soon as soil can be worked in the spring. Fava produces stalks two to three feet tall and an abundance of large bean pods containing three to five beans about one inch in diameter. I have only tried growing these once. Fortunately, the plants did produce a very good crop before hot weather set in, but we did not like the strong flavor of the beans which takes some "getting used to."

When planting beans, keep these things in mind. All bean plants need to have an open sunny spot in the garden. Bush beans don't do well if overshadowed by tall plants such as pole beans or caged tomatoes. Pole beans need stout support. Use wire stretched between tall, well-anchored posts, or tepee-type trellises made of 10 or 12 foot long saplings or bamboo driven into the ground. The expected wind velocity in your area should be a determining factor as to how many poles you need to build wind resistant bean tepees. If you live in a strong wind area such as the Great Plains or a coastal area, you will need to use 10 or 12, where in less windy areas you only need 4 or 6 poles. Diameter at the bottom of the tepee should be six to eight feet and the top should be tied together with stout string or wire.

For climbing support between poles, tie a biodegradable type string around the bottom of the tepee about three inches above the soil looping it around each pole and keeping the string taut. Do the same thing about halfway to the top of the tepee and tie another near the top. Then tie strings from top to bottom looping them around the horizontal strings ending above where seedlings will emerge from the soil. Be sure to leave a gap so you can slip through to harvest

beans on the inside. Put up the support before you plant the beans.

At the end of the season you can cut the strings and the poles should come loose easily. Then you can compost the heap of vines and strings and store the poles to use again.

Generally speaking, bean seeds should be planted 1 to 1½ inches deep. Follow directions on the packet regarding spacing between plants, as pole plants require a bit more room than bush varieties. I plant seeds somewhat sparingly, as I dislike thinning out perfectly good plants when seedlings come up crowded. Bean plants do not transplant well, if at all, so there is no point in trying to salvage seedlings once they are disturbed. Usually germination is high among fresh packets of seeds so close seed sowing isn't really necessary.

If your soil is on the heavy side, it can be made more pliable by adding humus in the form of organic matter



Green beans and potatoes—one of the Great Depression's main courses—is still delicious and often stirs memories.

such as compost, leaves, straw, etc. However this should be done as far ahead of spring planting as possible. Fall is a good time to make good use of yard rakings digging them into the soil and letting nature take its course over the winter months. Also, if you are not familiar with your soil's pH, it might be well to have the soil tested. Your county extension agent should be able to guide you.

Like most other garden crops, beans need some TLC. The plants are not going to do their best if left alone to fend for themselves. Weeding and watering are essential if a good crop is to be expected. Bean plants are shallow rooted and sometimes it is well to give them some light cultivation to break up crusted soil and assure root aeration. Weeds and grass will fight to crowd out any vegetable crop and once they are under control, a good mulch can save the gardener hours of weeding. When bean plants are large enough to have several leaves and they're easy to work around, put down a light mulch to deter the unwanted. Adding to the mulch from time to time will eliminate the necessity of any further tedious weeding and will help main-

tain moisture in the soil when dry spells come along. Mulch also attracts those diligent workers known as earthworms. They'll take over the tilling in exchange for good living quarters.

Snap beans should be picked every second or third day while at their peak of perfection. If pods are allowed to stay on the vines until the beans enlarge and you can easily see how many beans are inside a pod, the quality will diminish. Plants will not achieve maximum production if beans are not picked regularly as it is the harvesting of the snap beans that stimulates the plants to keep producing.

Each section of the country seems to have its own particular problem as far as bean diseases and pests are concerned. Some of the most prevalent and found all over the United States are the form of bacterial blight. One, called "halo blight" causes leaves to have many dead spots with yellow halos around them. Another known as "common blight" appears as large, water-soaked, light green spots on leaves that later turn brown.

Many kinds of viruses are widespread and symptom vary with the

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type of virus—curling, mottling, streaking of leaves, stunted plants, etc.

Nematodes are microscopic worms that feed on the roots of a number of plants including beans. If plants turn yellow and wilt, pull some up and look at the roots. If they are misshapen with a number of small round nodules on them, you can bet nematodes are present. A soil test should determine whether or not nematodes are the culprits and, again, your county agent should be able to give current advice. One remedy is to plant a “trap” crop of special marigolds. Golden Guardian is a recommended variety and is advertised to kill 99 percent of nematodes over a three month period.

More visible bean pests include Japanese beetles, Mexican bean beetles, leafhoppers, sow bugs and slugs. The latter two are the ones we battle in our garden. We use 10% Sevin dust sparingly sprinkled on small boards to combat the sow bugs but do not put on the soil where earthworms might come in contact with it as it will kill them. Slugs are controlled by using diatomaceous earth (won't work if soil is wet) at the base of plants or tiny amounts of table salt where slugs are numerous.

Whatever the problem, a few rules are helpful where beans, as well as other plants, are concerned. Do not

compost any diseased vines, but dispose of them away from the garden. Burn them if possible. Don't work around plants after a shower or when they are wet with dew. Brushing against them can help spread disease. Rotate your crops—i.e., don't plant the same vegetables in the same spot year after year. Keep your soil in good condition by continuing to add compost and organic mulch which breaks down and helps with soil composition. This promotes healthy plants and they are less likely to be attacked by disease. Avoid the use of chemical fertilizers as these have a tendency to kill off many useful organisms in the soil and they are death to earthworms.

At the end of the season, if plants show no signs of disease, they may be dug into the soil as the plants are

Sweet and Sour Green Beans

$\frac{3}{4}$ pound fresh green beans, washed and cut in 1-2 inch lengths

4 slices cured bacon, sauteed and drained

1 Tbsp. bacon drippings

3 Tbsp. vinegar

3 Tbsp. sugar

salt to taste

Steam or cook beans in a small amount of water until tender-crisp. Drain. Break bacon into small pieces and mix beans, bacon and rest of ingredients. Simmer in skillet until liquid has evaporated and beans are lightly sauteed.

German Green Beans

1 lb. green beans, washed and snapped

4 slices cured bacon

$\frac{1}{2}$ cup vinegar

$\frac{1}{4}$ cup sugar

1 small onion, chopped

3 cups cabbage, shredded

salt and pepper to taste

Steam or cook beans until tender-crisp in small amount of water. Saute bacon until crisp and set aside. Add vinegar, sugar, onion and

cabbage to drippings in skillet. Cover and simmer for five minutes. Stir in drained green beans. Season with salt and pepper to taste. Cook an additional five minutes and serve topped with crumbled bacon.

Green Beans with Mushrooms

1 lb. fresh green beans, washed and snapped in 2-3 inch lengths

1 small garlic clove, minced

4 oz. small fresh mushrooms, washed and sliced

1 small onion, chopped

1 Tbsp. butter or oleo

$\frac{1}{4}$ tsp. white pepper or freshly ground black pepper

1 tsp. dried dill weed

2 Tbsp. toasted almonds or pecans, coarsely chopped (optional)

Steam or cook beans in small amount of water until tender-crisp. Drain. While beans are cooking, saute garlic, mushrooms and onion in butter about four minutes. Combine mushroom mixture with beans, add pepper and dill weed, and put in warm serving bowl. Garnish with nuts.

Hard Times Green Beans

This dish was regarded as a main course during the Great Depression and World War II eras when meats such as steak, chops, and roasts were hard to come by if you didn't raise your own. Grace was often said over this simple dish backed up by a hot pan of corn bread or tasty **cracklin' corn bread**. If you were lucky, you had a choice of coffee, buttermilk, or sweet milk to go with the meal.

1 lb. green beans, washed and snapped

¼ lb. cured or salt bacon cut in small chunks

4 medium potatoes, peeled (scrape new potatoes) and quartered

1 small onion, chopped

water to cover

salt and pepper to taste

This mixture was allowed to cook in a good side pot for at least an hour—much longer than we cook snap

beans nowadays. (Always check to see if more water should be added to keep food from sticking and to be sure that there is ample bean broth.) Beans were not tender-crisp, but the flavor was great and anyone who didn't want a second helping was said to have a puny appetite.

Corn Bread

As for the corn bread, if any was left, someone always finished it off as a snack soaked in a cup of buttermilk. There are many variations to corn bread recipes, but here is the one I remember best.

1 cup yellow corn meal

½ cup flour

1 Tbsp. baking powder

½ tsp. salt

1 egg, beaten

¾ cup milk

4 Tbsp. melted shortening or bacon drippings

Sift the dry ingredients together in a mixing bowl. Blend in the wet ingredients until mixture is smooth. Turn mixture into a greased 8 inch hot iron skillet and bake in a 425°F oven for about 20 minutes or until light brown and done in the middle.

If using buttermilk, reduce baking powder to 1½ teaspoons and add ½ teaspoon soda. Corn bread made with buttermilk has its own great flavor. **Cracklin' corn bread** is made by adding about ¾ cup pork cracklings to the corn bread mixture before baking. Cracklings are made from pieces of fresh, fat pork (no lean). Cook in a small amount of water in an iron skillet over low heat and stir occasionally to prevent sticking. When water has boiled away, continue to cook meat in order to render all grease from it. When meat reaches a crisp, light brown stage, remove it from skillet and drain on absorbent paper. You now have cracklings.

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great soil builders. Much of the nitrogen they use is taken from the air without depleting the soil. Turning them back to the soil recycles plant-food elements.

Nutritionally speaking, snap beans are one of the most beneficial vegetables we can eat. Low in calories, they're packed with vitamins A and C, calcium and iron, and contain good amounts of potassium, phosphorus and protein. Pretty good pickings, I'd say.

When we're blessed with far more green beans than we can use, we put some away for the future. Our favorite way is to freeze them. Simply wash beans and snap into suitable lengths. Put the beans in boiling water for about three minutes and immediately plunge them into ice

water to cool quickly. (A french fry basket is good for this.) Pack the beans into freezer bags, pour some of the first water (cooled) over them and seal bags. Be sure there are no leaks and place bags flat on cookie sheets and freeze. When frozen, bags may be stacked in freezer.

Count yourself among the fortunate when you have a big bowl of green beans to enjoy. Those of us who remember the Great Depression days say, "Amen!"

Seed sources:

Pole beans Blue Lake, Romano, and Kentucky Wonder are sold by most seed companies.

Fava Beans

Johnny's
1 Foss Hill Road
RR 1, Box 2580
Albion, ME 04910-9731

Golden Guardian Marigold

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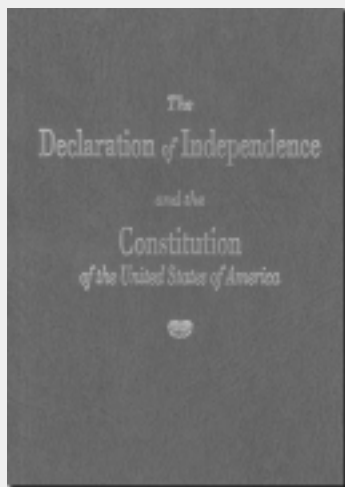
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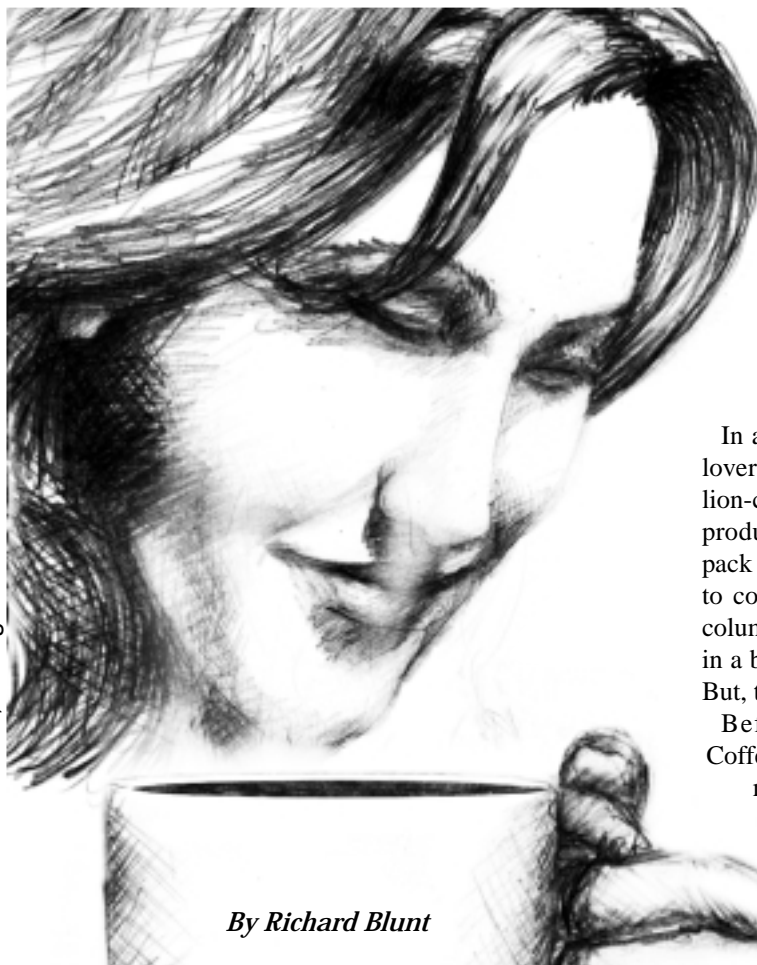
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in search of the perfect cup of coffee

Art, Rodrigo Graham



By Richard Blunt

As an active member of the worldwide fraternity of “Java Junkies,” I feel it is time that I stand up and be recognized for my contribution to the second most valuable item of international trade, the first being petroleum. With my three-cup-a-day habit, I consume about 50 gallons of coffee a year. Eighteen coffee trees, located in several different coffee producing countries, are carefully nurtured to produce the 27 pounds of coffee beans required to satisfy my needs.

In an effort to keep this venerable organization of coffee lovers supplied with enough beans to meet our 2.25 billion-cup-a-day habit, each year the world’s coffee growers produce about 6 million tons of green coffee beans and pack them into 100 million 132-pound bags and ship them to coffee roasters around the globe. So, as you read this column, be aware that you are in the presence of one who, in a big way, is an influential figure in the world economy. But, then, of course, if you’re a coffee lover, so are you.

Before we discuss the important details of “King Coffee,” let me share with you some coffee legends. My mom, who was also a respected member of this world fraternity, would, in a talkative moment, share these stories with me at the breakfast table. She always referred to her coffee as “my cup of java.” So my daughter Sarah, who loved listening to these coffee anecdotes, nicknamed them “Nanna V’s Java Jive.” The following are a couple of my mom’s favorites.

Coffee legends

She loved to reminisce about one Islamic legend that tells of the day, on the hillsides near South Yemen in Arabia, when a young Ethiopian goatherd named Kaldi watched in wonder as his goats began acting in a very strange and lively manner. Even the old billy goats began kicking up their heels with an exuberance that the young nannies found quite appealing. Upon a closer observation Kaldi noticed some shrubs with firm glossy leaves and red cherry-like berries which the goats were nibbling on. After eating a few of the berries himself, Kaldi suddenly felt alert and full of energy. He also began kicking up his heels and cavorting across the hillside. At the end of the day he reported this experience to a Muslim monk at the nearby monastery. The monk went back to the hillside the following day and cut a branch from one of the bushes that still

contained some berries and brought it back to the monastery. The monk tasted the berries but found them to have a very unpleasant taste. So, he roasted them in the fire, hoping to improve their flavor. After roasting, he crushed them with a stone and boiled them in water to make a thick puree-like drink. Almost immediately after tasting the drink his brain became as active as he remembered it to be in his youth. It seemed, to him, that his already considerable intellectual powers increased even further. He was able to stay awake all night without feeling tired the next morning. As the other monks wearily dragged themselves, mumbling and tired as usual, into the morning prayer session, he shared some of the potion with each of them. Much to his delight the same miracle happened to them all. News of this wondrous berry drink quickly spread throughout all the monasteries.

Another Islamic legend relates how the Angel Gabriel appeared to Mohammed in a dream. Showing the prophet a coffee berry, the angel told him how it could both heal and stimulate the prayers of his followers.

An Ethiopian beginning

The first practical use of coffee was discovered prior to 1000 A.D. by nomadic mountain warriors of the Galla tribe in Ethiopia. They mixed the berries with animal fat and rolled them into little balls to be consumed during their long journeys. As unpalatable as this sounds, it was a good move from a nutritional viewpoint. The whole berries of the coffee plant are a source of protein, a benefit that is not found in the beverage obtained from the dried roasted bean. The Galla, by the way, were noted for being among the most ferocious warriors in Ethiopia.

Some modern Ethiopian cookbooks have a recipe for Bunna Quela, a mixture of crushed, fire-roasted coffee beans, salt, and butter spiced with onion, fenugreek, white cumin, basil, cardamom, oregano, and turmeric. The result is sort of like a spread for crackers.

It wasn't until about the 12th century that coffee was routinely consumed as a beverage. Its restorative powers were so well documented through the Islamic world that by the 15th century coffeehouses replaced neighborhood mosques as favored meeting places.

Coffee goes to Europe

By the 16th century, European travelers were enthusiastically describing the drink in their travel journals, but the Arabs, being astute businessmen, maintained a tight control over their profitable trade monopoly. The secrets behind its cultivation were closely guarded. Foreigners were not allowed near coffee farms, and only beans that were subjected to heat to destroy their germinating potential could be exported. These protective barriers began to erode as the number of European travelers to Arab lands

increased along with the steady integration and expansion of the Ottoman Empire. By the early 17th century germinable seeds were smuggled to India and live coffee plants were plundered by Dutch spies and shipped to their colonies in Java for cultivation.

The secret was out. Coffee was now in enough different hands to ensure its cultivation by dozens of countries in just a few years. Venetian traders introduced coffee to Europe early in the 17th century. In England, coffeehouses rapidly began replacing taverns as social, political, and commercial hangouts. As early as 1715 there were over 2000 coffeehouses in London alone.

Throughout Europe coffeehouses evolved as prototypes for many new social clubs and other institutions. England's Royal Society, one of Europe's first scientific societies, whose membership would soon include luminaries like Isaac Newton and Edmond Halley (for whom Halley's comet is named) is believed to have started in the island's first coffeehouse, located in the university town of Oxford.

A coffeehouse also was the stage for the evolution of Lloyd's of London. The insurance company's founder, Edward Lloyd, posted in his coffeehouse a list giving accurate information about what ships were carrying, their schedules, and their insurance needs. This information attracted many underwriters to the coffeehouse to sell shipping insurance. A giant was being conceived while its principals were savoring good coffee.

Throughout Europe and the rest of the world, coffee entered into use in many ways: as a medicine, a fashion, a stimulating drug, a temperance beverage, and an exotic drink. Its pharmacological qualities were perceived to have the power to cure everything from drunkenness and opium addiction to plague.

Unlike many other beverages, coffee, wherever it was introduced, persisted regardless of cultural norms and attitudes that challenged its presence. Even in Prussia, where coffee initially met resistance in the form of manifestoes and laws banning its consumption, the government found it easier to monopolize its distribution while making a substantial profit than to ban it. During this divided period, when Germany struggled with love and antipathy for coffee, Johann Sebastian Bach, being an ardent coffee lover, wrote his famous secular, *Coffee Cantata*, in 1732. Coffee survived an initial wrestling match with Germany's king of beverages, beer, and over the following decades survived heavy taxation, periodic prohibition, and general suppression from high levels to eventually win the battle. Today, Germany is the largest coffee consumer in Europe.

History's major producers

The history of coffee monopolies is long and varied with first one nation and then another controlling world coffee markets.

The Dutch introduced coffee to the America's in 1718. Through a chain of thefts and subterfuges, with the French as victims, the Dutch successfully planted coffee on territory in South America that they had acquired from the British in trade for their North American possessions including present day New York. The French, however, were the world's largest exporter of coffee until the late 18th century. This was made possible by the importation of thousands of African slaves to maintain coffee plantations on French Haiti. The Haitian slave revolt in 1793 brought this dominance to an end and paved the way for the modest entrance of Brazil into the world coffee market.

Ceylon, today called Sri Lanka, which was under British influence at the time, briefly became the world's top coffee producer and by 1869 had converted 176,000 acres of rain forest into coffee producing land. Then, in that year, like a slow moving avalanche, a lethal fungal disease named coffee rust got a firm foothold in the island's coffee crops. As the 1890's progressed coffee rust decimated all of Ceylon's coffee estates. The disease also spread to the estates in India, Java, Sumatra, and Malaysia with the same effect. In the years that followed this disaster the English decided to replant their coffee plantations with tea. Supported by the "cup of cheers" marketing campaign instituted by the British East India Company, tea finally supplanted coffee as the national drink of England. However, to this day, coffee continues to be a popular drink with the British.

But, in the wake of Ceylon's coffee rust problem, Brazil, once a minor player in the world's coffee markets, emerged to become the world's preeminent coffee power, and continues to be so to this day. Following Brazil in importance are Colombia, Indonesia, Mexico, Ethiopia, and Guatemala, in that order.

Coffee economics 101

Coffee, on the surface, would appear to be a simple commodity. It starts as a handsome, shade-loving, tropical bush that produces juicy red cranberry-like cherries. In a perfect environment these berries are selectively picked, dried, roasted, ground, and infused into that wonderful smelling cup of "joe" that helps many of us start the day with an energetic smile. But the trip that coffee takes to your cup is very turbulent and unpredictable and fraught with economic infighting, political intrigue, and power plays.

The economics of the international coffee trade is a complex issue that involves the world's richest countries as consumers and poorest countries as producers. Every year cooperating and often competing interests engage in a push-and-pull struggle for power and billions of dollars in revenue. Today, major consuming European and Asian countries along with the United States have allied with the transnational food conglomerates and the largest producing

countries like Brazil and Colombia to create and maintain a desired value for green (i.e., dried and unroasted) coffee beans by manipulating the world supply. Over the years some of these countries have formed coffee lobbying organizations with the support of corporate giants like General Foods in the United States and Nestlé Corporation in Europe. These organizations have worked overtime, with mixed results, to cartelize the world's coffee supply.

Brazilian coffee producers have been represented by a government controlled organization called the Instituto do Café (IBC). This organization was the first to successfully control world coffee prices by withholding millions of pounds of coffee from the market. This manipulation of supply, to increase value, was dubbed the "valorization of coffee." Under the direction of the IBC, Brazil began withholding coffee from the market, destroying millions of pounds by fire, or even dumping it into the ocean when necessary. Between 1930 and 1944 the IBC orchestrated the destruction of 78 million bags of coffee.

Colombia has the Colombian Coffee Federation (FNC), an aggressive organization representing the country's coffee growers by promoting unrestrained expansionist trade in Colombian coffee. It is this organization that launched the successful marketing campaign using Juan Valdez and his mule to promote Colombian coffee. Rustic Juan ranks along with the Marlboro man in consumer awareness. In the United States, the National Coffee Association has represented this country's roasters and importers on the global coffee market since 1911.

Brazil, Colombia, and the United States have, through their coffee organizations, negotiated several trade agreements that were intended to stabilize the world coffee market. The Inter-American Coffee Agreement (IACA) negotiated during World War II and the International Coffee Agreement (ICA) born during the Cold War are classic examples of the geopolitical dance that has used coffee as a central theme. When both of these trade agreements were conceived, the United States was the world's largest coffee consumer and Brazil and Colombia were, and still are, the largest producers. The United States government, with both agreements, looked to stabilize governments in Latin American countries, to keep them as friends during World War II, and to prevent Communism from gaining a foothold during the Cold War.

Of course, other coffee producers around the world have not been passive observers to these attempts at market domination. Over the years African and Central American producers have taken advantage of reduced coffee production from South America by increasing their own production to take advantage of high market prices. Also, during the 1950s, European countries with colonies in areas that produced a cheaper, low-grade coffee bean started introducing their coffee to the European and U.S. markets.

Since growers in these areas had no obligation to these various agreements between the United States, Brazil, and Colombia, they became free riders and were able to bring large amounts of beans to the market. This threatened to reverse the coffee market and send prices plummeting.

In 1989 the ICA collapsed and wholesale coffee prices fell to historic lows for five years. For the first time in many years the free market took over world coffee trading. Unfortunately, at the retail level, prices for roasted coffee, remained high until the early 1990s, even as green coffee prices fell because the transnational corporations, in an effort to circumvent free market prices, exercised their monopolistic powers and kept retail prices artificially high. But these high prices and increased competition from caffeinated soft drinks has caused coffee sales in this country to stagnate since 1962.

During the late 1980s and into the 1990s, specialty coffees gained a foothold in the European and American markets. In 1994, as a result of multiple frosts in Brazil, the slump in wholesale coffee prices began to moderate as production fell. The resulting rise in prices brought newcomers into the arena. The booming Asian economy convinced countries like Vietnam and Laos that growing coffee was the way to go. Continued stagnation of U.S. coffee consumption, increased competition from the specialty coffee market, and a new wave of coffee producing countries has forced the largest coffee producers, Brazil and Colombia, to focus more attention on the growing demand for their product in Europe, Japan, and China.

Big business

The most consistent winners in the coffee commodity game are the big food conglomerates. The three largest are Nestlé, Proctor and Gamble, and Philip Morris. Nestlé is the world's largest food conglomerate. It sells Nescafé, the largest coffee brand in the world and the first commercially available instant coffee, Hills Brothers, MJB, and Tasters Choice. Proctor and Gamble, the world's largest household products company, owns Folgers, Millstone, and High Point coffee brands. Philip Morris owns Maxim, Maxwell House, Brim, Gavalia (the largest mail order coffee company), Sanka, General Foods International Coffees, and Chase & Sanborn.

If you ever wondered why the canned and instant coffee that you buy in the supermarket is often overpriced and bad tasting, consider this: The most popular coffee brand in this country, Folgers, is owned by a soap manufacturer, (Proctor and Gamble) while its closest competitor, Maxwell House, is a cereal manufacturer that is owned by a cigarette company (Philip Morris).

Fortunately for American coffee drinkers, the art of fine coffee making has been kept alive by a few small roasters,

like Peet's in Berkeley, California, Coffee Connection in Cambridge, Massachusetts, and Starbucks in Seattle, Washington. Starbucks, by the way, has about 2000 stores around the world, with more units opening on almost a daily basis. These companies, and others like them, have opened our eyes, noses, and taste buds to the reality that coffee can taste good to the last drop.

I started buying fresh roasted coffee and green coffee beans to roast at home from Coffee Connection about 20 years ago. Recently, I have been sampling Starbucks' wide variety of coffee beans. You won't find any "buy one, get one free" sales at these specialty roasters stores, but bargains on 40-year-old single malt scotch and fine wines are also rare.

We have discussed a very brief history of coffee and reviewed an even shorter anatomy of the coffee industry. I would explore both of these in more detail, but I must save space to talk a little about the star of this ongoing drama, the coffee bean itself. After all, what really matters to most of us java junkies is the quality of the brew. Like all edibles, knowing what it is, how to buy it, store it, and finally, how to prepare it, are the keys to enjoyment.

Coffee cultivation and processing

Coffee is grown in about 80 tropical countries. By the mid-1990s 26 million acres were being cultivated worldwide to grow coffee. The coffee plant is a woody shrub that can grow to a height of 30 feet. Like an apple tree, each cultivated coffee plant is pruned to about eight feet to make harvesting easy.

Coffee grows best in areas that have a lot of sunshine, moderate rainfall, altitudes from sea level to 6000 feet, no frost, and a temperature that ranges between 60 and 70 degrees Fahrenheit. After pollination, the tree produces a fruit that resembles a cranberry in color, size, and shape. This "cherry" contains a sweet pulp inside of which are two flat-sided seeds covered by an opaque covering called a silverskin. Each tree produces about 2000 coffee cherries a year. This is somewhat over a pound of roasted coffee beans. There are at least 20 species within the genus *caffe*, but only two of them account for most of the coffee produced worldwide. *Coffea arabica* is the coffee discovered by the goatherd Kaldi. It is native to the highlands of Ethiopia. *Coffea canephora var robusta*, or robusta for short, is native to the hot, wet lowlands of West Africa. Robusta is a newcomer to the cultivated coffee industry. It was unknown until its discovery near the end of the 19th century.

Robustas produce a smaller bean than the arabicas, have a harsher flavor, are accented by a noticeable bitterness, and have twice the caffeine of *caffe* arabica. It is used primarily in the production of instant coffee, but it is also

blended into mass produced canned coffees found in supermarkets and other retail food stores. Arabicas produce better tasting coffee but are more susceptible to poor soil, disease, and frost—characteristics that make them more difficult to grow and consequently more expensive.

How coffee beans are picked, processed, roasted, packaged, distributed, ground, and brewed also contribute to the quality and purchase price of the coffee in your cup. By processing, I am referring to how the beans are separated from the pulp and the silverskin in preparation for drying. There are two methods of processing.

Dry and wet methods

The **dry method** is the oldest, most natural, and the cheapest. The fruit can be allowed to dry on the tree and the ripe dried berries are hand picked. On the other hand, some producing countries practice an inferior harvesting method which involves stripping of all the berries, ripe and unripe, from the tree. The fresh berries are then spread out to dry in the sun. After drying, the beans are sorted and graded. Most inferior coffees are processed using one of these dry methods.

The **wet method** is more exact and is used to process most high quality beans. Fully ripe beans are selectively picked and soaked until they start to ferment. Water is then sprayed on the fermented beans to remove any debris. The beans are sun dried and finally placed in a hulling machine to remove the protective silverskin.

After this initial processing the green, unroasted beans are packed and sent to roasting houses, large and small, around the world. The roasting is done in machines that resemble giant clothes dryers. Under the watchful eye of an experienced roastmaster, the rotating drums of these machines heat the raw beans to temperatures between 380 and 480 degrees F. As moisture is removed from the beans, the volatile, aromatic oils that give coffee its flavor emerge. The roastmaster knows how long to roast each variety of bean at a specific temperature in order to maximize its flavor potential. In the recipe section of this letter we will consider how you can roast your own green coffee beans at home.

By now you are probably asking yourself: “What do I have to do to get a good cup of coffee, short of moving to Colombia or Brazil?” You may even be asking yourself, “Which country produces the best coffee and where can I buy it.” But even more important would be, “How will I know that the coffee I purchase is really the coffee it says it is and processed properly?”

Buying high quality coffee has become nearly effortless for consumers like you and me, especially during the past 10 years. The number of regional whole bean coffee roasters, like Starbucks, Peets, and Coffee Connection, have

dramatically increased. Anyone who loves good coffee can buy coffee from nearly 80 different countries by simply locating a specialty coffee roaster in his or her area. You can do this by simply looking under “coffee” in the Yellow Pages or using one of the search engines on the Internet and plugging in the word coffee. Many donut houses and food stores contract with regional roasters to sell their whole beans. Supermarkets have self-serve stations that offer a variety of specialty whole bean coffees. Of course, all vendors of whole bean specialty coffees will custom grind your beans to complement your brewing method.

Judging quality

When drinking any coffee, I determine quality by judging the combined relationship of **acidity**, **aroma**, and **body**. These are the three most important elements of a coffee’s flavor. Flavor is especially important to me because I drink my coffee black, without sugar. Here are my definitions of acidity, aroma, and body as they relate to a cup of freshly brewed coffee. Of course, mass produced, vacuum packed, canned coffees like Maxwell House, Folgers, and others are, in my opinion, not worthy of flavor evaluation. Most of the coffee producing countries have signature beans. For example this country offers Kona, from Hawaii. It is an aromatic coffee with a medium body.

Acidity is the bright, snappy feeling that you experience when you take your first sip of good coffee. Acidity is not to be confused with bitterness, which is the sign of a stale, poorly made brew or low grade coffee bean.

Aroma is that mellow essence that emerges when you first open a package of fresh ground coffee and it intensifies as the coffee is brewing. Even non-coffee drinkers can appreciate the aroma of good coffee.

Body is the sensation of fullness as the coffee first touches your tongue. *Jamaican Blue Mountain* is a light body, aromatic coffee. *Mexican Coatepec* or *Oaxaca* are highly fragrant, acidic coffees with a full body. *Guatemalan Antigua* is an aromatic, slightly acidic coffee, with a medium body. Many coffee aficionados consider this the perfect cup of coffee. *Ethiopian Harrar* is my favorite; it has a rich aroma, a thick body, balanced by a slight acidity. It reminds me of The Macallan 25-year-old, single malt scotch.

If you are new to specialty coffees, beware of blends. You will often find, in supermarkets, whole bean blends such as *Kona* blend or *Jamaican Blue Mountain* blend. The demand for these premium coffees far exceeds availability. In the past few years consumption of Kona has exceeded production by a factor of ten, and most *Jamaican Blue Mountain* is sold to Japan where folks are willing to sell their Lexus to buy an extra pound while the supply lasts. So, there isn’t much left to go into the

Jamaican Blue Mountain blends. What I'm saying is, when buying a blend you may be getting a few of the pricy beans and a whole bunch of inferior beans added to make up the difference, or you may be getting none of the pricy beans at all. Read the label. If it doesn't specifically say what percentage of the pricy beans it contains, you may be putting your money on the table for a reasonable facsimile thereof.

High quality, specialty, whole bean coffees are a bit pricey when compared to their conglomerate mass produced counterparts. This is, in part, due to labor intensity required to bring these coffees to the consumer, and the continued volatility of the coffee market. Also, many of the supermarket coffees are blends that contain a mixture of quality arabica coffee cut with a high percentage of inferior tasting robusta coffee. It is also possible for coffees that are labeled 100 percent Colombian to be one of these nasty tasting blends.

Battling cost and convenience marketing

I love the taste of a good cup of coffee but like most folks there is a limit to how much I am willing to pay for this habitual pleasure. About a year ago I purchased a half pound of Sumatran coffee from a local Starbucks outlet. It cost me nearly six bucks. The coffee was great, but the price was a bit much for my pocketbook. I gave up cigarettes when the price went to 75 cents a pack, and I was on the verge of giving up coffee, because of price, when I read a piece on roasting whole coffee beans at home from one of my grandmother's old cookbooks. Since I am willing to prepare anything that sounds interesting, I decided to give it a try.

I found a small roasting house in Massachusetts and bought one pound of green beans from Colombia. After destroying the first three batches that I attempted to make, I finally hit the jackpot. The fragrance of this fresh roasted coffee, just minutes out of my converted corn popper roaster, was a pleasure that is going to take a long time to forget.

Ever since John Arbuckle began marketing the first commercially available packages of roasted and ground coffee in 1865, it has been a monumental success for the brand name convenience food industry. But for most Americans coffee has now lost its true identity and become that granulated brown stuff that comes in a can or the instant stuff in a jar. However, since the mid-60s, a countermovement to the convenience food concept has been making its presence felt. Over the past 30 years many consumers have become their own wine makers, home brewers, and bakers. Others have revived the 19th century practice of buying fresh roasted coffee beans in bulk. When handled well,

whole bean coffees are a giant step above typical supermarket preground blends. If you really enjoy your coffee and haven't yet made this step, I suggest you get a grinder and start buying whole bean coffee at your local specialty store. Operators of the stores will help with any questions about storing, grinding, and proper brewing of your beans. For those of you who have "been there and done that," it will be an immeasurable uplift to your coffee loving venture to follow me, and many others, to the next level.

Roasting your own beans

Why roast beans at home when there are professionals out there doing such a great job? Let me explain it this way. The deterioration in quality of bread that has become stale is very noticeable. Many other foods, like peanuts, leftover cooked hamburger, and leftover potatoes also show their age quickly. On the other hand, coffee, as successfully demonstrated by the manufacturers of Maxwell House, Folgers, and other similar brands, is still drinkable after it becomes old and stale. Consumer innocence is the greatest marketing tool these companies have. I have been looking for the Grinch that is spreading the false rumor about freezing coffee to preserve its freshness. It's not so, gang. Freezing does irreparable damage to the flavor oils in the coffee. Coffee is at its best the day after it is roasted. After that it starts to deteriorate rapidly. Even when coffee beans are purchased at specialty coffee stores, this level of freshness is rare. Even popular chain stores like Starbucks don't put a roast date on their coffee beans. At least none of their stores that I have visited have been able to supply this critical information. But I, by roasting my own beans, am consistently brewing the *freshest coffee available*.

Roasting coffee

Much of what happens to a green coffee bean when it is roasted is educated theory, not irrefutable fact. Over 700 flavor contributing substances have been identified in coffee beans, along with an additional 2000 non-flavor substances. These staggering numbers make coffee one of the most complicated natural flavors. Science has not yet been able to produce an artificial coffee flavoring. The coffee flavor in candies and other foods is accomplished by adding roasted coffee to the production formula.

Roasting develops this complex flavor in several ways. It forces water out of the bean, which makes the bean lighter and more porous. It sets off a continuous transformation of certain sugars into carbon dioxide. This gas protects the bean from oxygen, and once its supply is exhausted the coffee is stale and tastes like Nescafé when brewed. Roasting also drives off some volatile substances, including some of the caffeine. Lastly, it caramelizes other sugars and converts them into the aldehydes, ketones, esters, and

various acids that make up the bean's flavor-producing oils. After roasting, each bean becomes a protective package for the bean's caramelized sugars and flavor oils. An important point to remember is that grinding destroys this natural protective package, exposing more of the bean's fragile chemistry to its worst enemy—oxygen. Packaging ground coffee in vacuum cans and nitrogen-flushed bags are not effective methods for preserving freshness. Once the can or bag is opened, an accelerated process of staling begins and is completed in a very short time.

What equipment do you need?

The book that I inherited from my grandmother describes, in detail, how to roast beans in a heavy bot-tomed skillet on top of the stove. This is the simplest method of all, but producing consistent and satisfactory results is extremely difficult. Coffee beans can also be roasted in gas and convection ovens. Since I own an elec-tric non-convected air oven, I have not tried this method. Some, but not all, electric hot corn poppers will do a great job of roasting coffee beans. I learned how to roast coffee using my five-year-old Hamilton Beach hot air corn pop-per. I was having a great time until my wife, Tricia, pointed out the mess that I made in the kitchen. You see, while cof-fee beans are roasting, pieces of the sliverskin and other debris still clinging to the bean burn off. The hot air popper blows this “chaff” out of the popping chamber. Once out-side this stuff remains suspended in the air and floats. Eventually it settles in every inaccessible place in the kitchen and elsewhere. Wives notice stuff like this.

After cleaning this mess up once, I decided to try another roasting method until someone invents a workable filtering system for my popper. I adopted an improved stove top roasting method that I still use today. This is the method I will discuss in more detail.

Remember, unless you are one who does everything to perfection on the first try, your first couple of batches will be less than perfect. Take heart in the fact that roasting cof-fee is not rocket science and you will quickly learn from your mistakes.

By now you are probably wondering where all of this green coffee you're going to roast will come from. If you have a computer, get on line and go to <http://www.home-roast.com>. You can find green coffee beans there. Also, you can find some roasting equipment you may want to get someday, though I suggest you start out with simple equip-ment, as I did, to see if home roasting is for you before you spend the big bucks. And once out there on the site, the answers to all your questions about home roasting can be found. For even more information, you can call *The Home Roasters Quarterly* in Flushing, New York, at (718) 357-6315 and subscribe.

Roasting in your stove top corn popper

Special Equipment:

- 1 Felknor II International Theater corn popper
- 1 small sample of roasted whole bean of your choice
- 1 pound green coffee beans (this is enough for two roasting sessions)
- 1 candy thermometer with a dial and a metal shaft (Cooper Springfield makes an ideal thermometer that has a shaft with a perfect length)
- 1 oven mitt for handling hot utensils
- 1 large metal colander for cooling the roasted beans

Modifying the popper for roasting coffee:

This is where you void your warranty. Drill a ¼-inch hole in the middle of the lid on the side where the name Felknor is stamped. The stem of the candy thermometer will fit through this hole. If the stem touches the bottom of the pan jack it up about ½ inch by placing washers between the dial and the lid of the popper.

Method:

1. Preheat the popper over medium-low heat. Never use high heat settings unless you like charred coffee and kitchen fires.

2. When the thermometer dial passes 400 degrees, place about 6 ounces of green beans in the popper. Close the lid and start turning the crank at a steady moderate rate. It is not necessary to turn the crank fast. The temperature inside the popper will start to drop. If the temperature goes below 325 degrees, turn the heat up a little. The temperature should stabilize between 350 and 375 degrees.

3. After about 5 minutes you will start getting a roasting coffee smell from the popper. You will also hear a crack-ling sound and start seeing smoke rising from the inside of the popper. Now is the time to turn on the exhaust fan over the stove.

4. About one minute after the crackling and smoke begin the coffee beans will start turning dark and looking like roasted coffee. From this point on, visually check the beans for the desired color. When they match the color of your sample beans, remove them from the heat immedi-ately and dump them into the colander.

5. As soon as you dump the beans in the colander walk (don't run) outside. Once outside stir or shake the beans until they are cool to the touch. Cooling the beans in this way also removes most of the chaff that was not removed in the initial processing of the beans.

This is a basic formula for successfully roasting coffee beans. There are other methods of roasting and there is also some fairly sophisticated equipment available for home roasting. But before you get involved with any of this stuff, I suggest you roast a few batches using this method. Δ



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Steal your neighbor's trash for fun and profit

By Tim Pickles

We slowly cruised up and down a number of streets checking out the things people had left in front of their houses. I was nervous, with the feeling that I had a rock in my gut. I'd never done anything like this before in my life. What would people think? What would they say if they saw me? Finally, I saw what I wanted. Mustering up the courage, I pulled over, looked around furtively, and jumped out of my truck.

Still nervous, I walked over to the lawn mower and looked it over quickly, all the while looking around to see if anyone was watching me. Not seeing anyone, and liking what I saw of the mower—a 3.5 horsepower Craftsman—I pulled it to the back of

my truck, opened the tailgate and lifted it in. Looking around one more time, I quietly closed the gate and then quickly walked to the cab, hopped in and got out of there, almost squealing the tires in my haste.

What, you may ask, was I doing?

Was I stealing someone's lawn mower? No, I was making my first pick-up as a salvage man. Let me give you a brief history of how I got into this "business."

My wife and I have had the desire, for some time, to be able to live in the country and be debt free. We are not rich by any

means so, to this end, we have been trying to save as much money as possible, to live more frugally than we did before, and to acquire the things we will need once we move there—at as low a price as possible.

We have made some rather large steps toward our goal. I now work from home for a company that does



Top: This tractor, with an 8-HP engine salvaged from another mower, and the three mowers I towed together to cut a 60-inch swarth on my land in New York, were all salvaged—free.

Above: Two salvaged tillers, with minimal repairs, are now ready to go.

Right: A 3-HP 2-cycle snow thrower and a 4-HP snowblower. (The 3 HP needed a spark plug.)



not care too much where in the U.S. I work, we have no debt save our current home loan, and we own a piece of land in upstate New York.

Since we currently live in Colorado, our trips to our property are crammed with as much activity as we can manage. We haven't had anyone taking care of the place, so it does get overgrown quite badly each spring. Not wanting to spend the money for a lawn mower that I would use only a few hours a year, salvaging one from someone else's trash was a way to get one for free. It was one of many free acquisitions from other people's trash that will help us in the transition to our country life.

Starting out

I got started in the salvage business mostly because of my parents. At the time they lived about 30 miles from us in a town that has city trash service. Twice a year that service conducts what they refer to as "bulk item pick-up." During this time, people can throw out just about anything they like and the city will pick it up. This saves many people a trip to the dump to dispose of leaves, old fence materials, and all sorts of other things that I would not have believed if I hadn't seen it with my own eyes.

I have to admit that at first I was a bit squeamish about doing this. I had "junk picker," "trash man" and other nicknames running through my head. However, once I saw what other people considered trash, I became an enthusiastic "salvage specialist."

I had always heard that we, in America, had a throwaway society, but I never realized the extent until I started in with this hobby. I had mostly assumed that people were talking about the excess amount of packaging that we use and how we throw away food at restaurants and supermarkets, etc. However, that doesn't begin to cover what people in this country throw away.

When my father and I went out looking for the lawn mower, we saw so many that at first we were unsure how to pick one. I didn't really care what the mower looked like as long as it could be made to work fairly easily. Then we hit upon the technique we needed. We looked only for mowers that had the starter rope broken. We figured that with so many mechanically challenged people in the world, the chances of their being anything else wrong with the mower were low. So, when we found one, I jumped out of my truck and looked it over. It looked fine, just a bit used. It didn't have a bag attached, but that didn't matter to me. I only wanted it to cut down the weeds and grass that build up each year on my New York property.

A few days later I got the chance to work on it. I rewound the starter mechanism according to the book on small engines that I had purchased for about \$10 at a local bookstore. After completing the job, I put fresh gas into the tank and, holding my breath, gave the cord a couple of quick pulls. The mower started up and ran well. It smoked quite a bit at first, but that was mostly because I had turned it on its side during my tinkering and oil had drained into the muffler. Once that burned off it didn't smoke.

I was quite proud of myself at this point. Then I realized that I would need a way to bring the mower back with us. When visiting our property, we usually camp in our van in order to save money, both during the 30-hour drive and while staying on our property. So we really had no place to put the mower or the other tools I was bringing. I had, however, seen a number of car top carriers in with all of the other things that people were disposing of. So I made another trip to my parent's neighborhood and found a car top carrier. In another trash pile, my father found a router. We also found some serviceable garden tools and a wheelbarrow.

Thus it began, my obsession with salvage work. The amazing thing to me is how easy it is and how simple the problems are with most of the stuff we find. I am no expert mechanic, although I have learned a lot. In fact, I'd never done more than change the oil or a spark plug on a lawn mower before this. Most times the equipment needs basic work that just about anyone can do, if it needs any work at all.

For example, one snow blower I found (I have found three) had no spark plug but ran fine when one was installed. Another needed the carburetor cleaned. One self-propelled mower needed a safety wire replaced. Another needed the magneto gap spaced properly since it was dragging on the flywheel.

If you find the machine needs more work than you are capable of, either give it to a friend who knows more about this stuff, give it to a charity, or throw it out again—you got it from the trash in the first place. Remember this though: don't be afraid to experiment or try things you've never tried before in order to expand your knowledge. If you destroy the thing in your learning process, recall that it was only trash to begin with.

Small gasoline powered engines are surprisingly simple. I have now taken engines completely apart and put them back together again. The key is to keep the parts in order as you take them off and label connections as required, especially for the carburetor attachments. Then clean the parts and put the thing back together. Usually that's about all that is required. Many times you don't even have to replace the gaskets. If they aren't warped, split, torn, or shrunk they will work just fine.

Also, from what I've seen, many people leave gas in their power equipment for several seasons with no stabilizer. When the gas turns into a varnish-like substance and freezes up the carburetor, they throw the thing away

rather than spend one or two hours getting their hands dirty while cleaning the carburetor.

Another thing to remember is that, from everything I've read, most gasoline engines are built to last at least 1000 hours. Many are built to last 2000 hours. Someone using a lawn mower 1 hour a week for 10 years only uses the mower for 520 hours. That's just half the life of a standard engine and we who live in the North know people only use their mowers for about half the year anyway. People who throw away snow blowers and tillers that are 10 to 15 years old amaze me. Most of those power tools are only used for a few hours a year. They should last a lifetime with proper care. As I mentioned before, many of the things that are wrong with these power tools are minor maintenance issues. A broken starter cord takes less than an hour to fix (much less after you've done it a few times). A spark plug takes more time to go and purchase than it does to install.

I think many people just want something new. They grow tired of the "old" piece of equipment and want a new one to keep up with the Jones's. Don't worry. Their vanity is your gain.

In general, I try not to spend more than \$5 to \$10 making anything I find useful. I must admit, however, that I have made a few exceptions for expensive items like tillers, snow blowers, and garden tractors. Even on these items I have generally spent only about \$40.

Here is a short list of items that we have salvaged:

Two 3-HP snow throwers and a 7-HP snowblower, a 2-HP cultivator, one 4-HP and two 5-HP rototillers, a large number of lawn mowers, several self-propelled lawn mowers (we have given most of the mowers to friends and family), a 5-HP riding mower, an electric start 8-HP engine from a ruined garden tractor (which I used in

the garden tractor that I found later), a 5-HP outboard motor, an 8-foot step ladder, several wheelbarrows, children's bicycles, mountain bicycles, a swing set, a car top carrier, children's toys—the list is very long. In total, we have spent less than \$400 making all the items serviceable again. If we had purchased them, rather than salvaging them, the cost would have been about \$5,000, and that's just for the items with gas engines.

Doing this is now, to me, like a treasure hunt. You never know what you'll find. I have seen so many things that still have a lot of life left in them but I haven't picked up for a number of reasons—either we don't need the item, or we just weren't able to get it at that moment—and when we went back, it was already gone. We have also seen motorcycles, gas and charcoal barbeques, table saws, refrigerators, microwaves, stoves, VCRs, televisions, computers, washers, dryers, perfectly good lumber, children's toys, lamps, sofas, computer chairs, desks, dressers, bed frames, futons—the list is virtually endless. It's all there for the taking.

If you want to find a lot of free stuff for yourself, just call the city or town that you live in to find out if they have a similar program. If not, my guess is that a city or town near you does. It helps if you have a truck or a trailer since some of this stuff is definitely not clean.

Also, remember that these things seem to go in cycles. We saw several motorcycles during the spring pickup, but none during the fall. We saw rototillers in the fall, but not in the spring. Lawn mowers seem to be a constant, as do barbeques and furniture of all types. You'll figure it out and you'll save yourself a lot of money in the process. Δ

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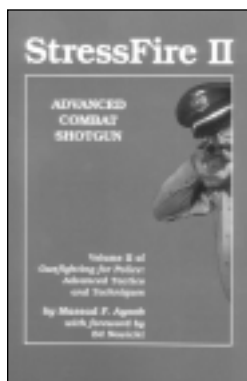
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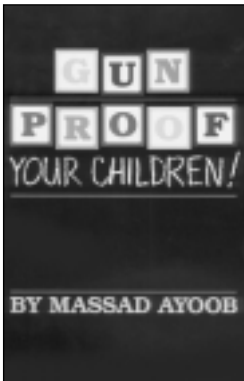
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Ask Jackie

Dehydrating lemons, chicken feed, finding a co-op, storing supplies, pomegranate jelly, kerosene lamps, making money, and more.

(Jackie Clay invites *BHM* readers to submit questions on any facet of low-tech, self-reliant living. Send questions to *BHM*, P.O. Box 712, Gold Beach, OR 97444. E-mail: jackie@backwoodshome.com)

I wish to leave supplies in an out-of-town cabin. How long will they be useable in moderate temperature? Unopened bouillon cubes? Baking powder/soda? Rennet tablets for making cheese? Powdered milk? Corn meal and flour? A lot has been printed about canned goods, frozen foods, MRE's etc. but I cannot find any timetables about the above meal building blocks. Also, old meat smoking and cheese making calls for "saltpeter" but I cannot find it at the stores. Is it still in use.

Jreadgold@aol.com

All of the above, plus most of your other dry staples, such as beans, lentils, sugar, etc. will stay good nearly indefinitely unless bothered by dampness, insects, or rodents. This also includes canned shortening. If sugar gets hard, try heating it in the oven or placing a piece of dampened washcloth with a "chunk" in a closed jar for awhile. This usually makes it easier to use again.

Saltpeter is the common name for potassium nitrate. It can be found at most drug stores or you can obtain it by visiting your local meat processing place. Not the high-tech factories, but the ones who advertise "game meat processed." You can also check out the free Sausage Making, Smoking and Meat Curing Supply

and Equipment catalog from The Sausage Maker, Inc., 1500 Clinton Street, Bldg. 123, Buffalo, New York 14206 or call 888-490-8525.

I read your article on canning. I have never canned but I want to. My chili has meat products in it. How do I can that? And congrats on your new place; looks like a lot of hard work and great fun. Wish I was there!

***Dallas
lozzlano@gte.net***

First, pick up a recent canning manual or book from your county agent, library, or book seller. Basically, you'll make a big batch of your favorite chili, then ladle it hot into clean quart jars, allowing an inch of head space, seal and process for 90 minutes in a pressure canner at 10 pounds of pressure (adjusting the pressure upward to suit higher altitudes above 1,000 ft.). Follow the directions for a "meat product" and you'll do great. One warning, though, once you start canning it's addictive. You'll love it.

I am canning beets and I want to know whether it's ok for me to pick and cook the beets one day, then refrigerate them overnight and peel, cut up, and can the beets the next day. I still added the boiling water to cover the beets and pressure canned according to the guidelines, but the directions say to "hot pack" the beets and to go only 2 hours between garden and canner. Does it matter?



Jackie Clay

Hope not, because that is too much work all for one day and besides, those things are too hot to peel right away!!

***Kristin Holmes
kholmes@ior.com***

Yes, you can hold the beets overnight in the fridge. But I would recommend heating them up with a bit of water, covered, until thoroughly heated, then pack into hot jars and fill with boiling water, etc.

Another suggestion is to simply do a small batch of beets every day until done. I've had to scale down this way, with my canning, so it's not such a marathon as it often was when I had eight kids at home. When you "plunge beets into cold water," hold them there until they cool down to merely hot but not scalding-your-fingers. They'll still be hot enough to process and your hands will thank you.

I am raising my first flock of chickens (White Rocks). When I went to my feed store I tried to find a commercial feed that wasn't medicated (antibiotics, etc.). I can't find any place in my area that sells unmedicated feed. What are my other options for non-

commercial/ unmedicated commercial feed?

**Ryan Olsen
McCammon, ID**

You can use unmedicated duckling starter for starting chicks. This is usually available, although you may have to preorder before your chicks arrive. For older chicks and adults, why not just feed scratch feed. This is unmedicated, and is what we use. Antibiotics have their place, but I really believe that good husbandry practices far outshines stuffing antibiotics into poultry and animals, as a substitute.

I just recently took an interest in making jellies, jams and chutneys. I primarily do this around the holiday season for gifts, however after reading your article on canning, I am concerned that I am not doing this right. I was told by my Mother that all I would need to do is to sterilize the jars and then put my hot mixture into the jars and let them seal, so this is what I have been doing, and they have been sealing. She never indicated to me that I should then put the filled jars back in for more processing time.

Can you tell me how long the jams etc. will be good for by the process I have been doing? I have made many jars already and hope that I can still use these for the holidays at least. My Mom swears that they will keep for years with this process, also. I would appreciate it if you could please shed some light on this.

JOLEE1074@aol.com

Bottom line: always listen to your mother. Seriously, she is right. However, as some people in the past have put up big batches of jams, jellies, preserves, etc., and the batch has cooled down some while the entire batch was put into jars, the result was that some jars did not seal properly. Some jars molded and fermented so

canning companies and the home economists now often recommend processing smaller batches and processing many recipes with a water bath canner for a short time to ensure the jars seal well and that the food remains hot enough to kill any molds and bacteria that could damage the food in storage.

Follow your recipe and if you are happy with it, keep up the good work. Some of my recipes require only filling hot, sterilized jars with a high-acid food (jam, pickle, jelly, etc.) and sealing with a hot lid and ring. Others advise a hot water bath processing time (often only five or ten minutes) to ensure sealing. I follow the recipe. It's usually when you improvise by doubling a recipe or otherwise altering it that you find yourself in trouble.

I have unprocessed jars of relish, jelly, etc. that are 10 or more years old, and still of excellent quality.

I have a question on the canning process. My sister-in-law and I are questioning when it's necessary to "can" (i.e.: hot water bath or pressure can) all foods? We have seen some books say that jars can be placed upside down for a time or just skip the hot water bath process altogether, the jars will still seal. If the food is already cooked, is the hot water bath or pressure canning necessary?

**Carol Maciej Weber
dsmokey609@aol.com**

While there are a few high-acid foods that will be okay and seal when the foods (jams, pickles, jellies, etc.) are put hot into hot sterilized jars in small batches (see answer to previous letter), most foods **require** some type of processing to be safe. Just because the food has been cooked, it is not heated hot enough to have killed bacteria and molds which can make food spoil.

Generally speaking, for your foods to be safe and to seal dependably, follow the directions of a good, fairly recent canning book and don't wing it too much. All low acid foods, such as meats, vegetables, and mixes thereof, *must* be pressure canned to be safe to store and then later eat.

I'm a 50 plus city gal wanting to move to acres on the land and live simply, naturally, electricity-free, including solar panels-free. My challenge—the money to get there & where to go. Also, I want to contact people like myself, who are in process or are already there. I would love to know your story, how you live.

**Polly Tango
Metairie, LA**

I'll tell you a bit about us and how we live, to let you know what is possible, if you want it bad enough. First off, when you decide to live a self-reliant lifestyle on the land, you must have a long hard talk with yourself about your own needs, expectations, and abilities. It's easy to fall into dreaming about wants that are far above our needs and abilities, especially financial abilities. For us, finances are the hardest, as we can find many, many gorgeous remote pieces of the wilderness we long for, at prices we cannot be tempted into, no matter how we can justify paying more than we can afford in the long run.

The only way most folks can afford to get that backwoods home of their dreams is to creep into it, a few dollars at a time. The best way by far is to *get out of debt*, any way you can. An excellent article by Darlene Campbell was in the last issue of *BHM* (January/February 2001). We can all cut back on our expenses, get out of debt, *if we want to bad enough*. Yeah, I know, poor people can't save money; poor people can't have dreams. Oh yes we can.

We've been hungry in our lives, and there were times we've had creditors hounding us day and night. But we always had "The Dream." Read everything you can on getting out of debt and try some of the hints yourself. The more you work at it, the better you'll become. And the easier it will be on you, as you see yourself getting closer to the dream.

As for how we live, we are very comfortable without electricity. We have a buried water tank above our house, where right now we haul water from town, 200 gallons at a time, and dump it in. We plan on drilling a well in the near future, having a submersible pump with a water line running to the buried tank. With this setup, water is gravity fed to our home plumbing, including toilet and hot water tank, giving us acceptable water pressure for free. It is nice to have a flush toilet and easy hot water for baths and dish washing. Our hot water tank, as well as two household lights, are propane, as is our refrigerator. The fridge is a bit small, but does its job very well at low cost.

Basically, we heat our home with a wood stove in the living room and a wood-burning kitchen range (which really heats the house entirely most days). But we also have much solar gain in the winter due to huge south-facing windows. There is also a backup propane wall furnace, which requires no electricity.

But the key to our home's easy heating is the fact that it is well insulated. It seems basic, but folks seem to cut costs on insulation when building, then pay for it for the rest of their lives.

As we are eight miles from a road, electricity or phone lines, we have a cell phone for my work and general communication. A bag phone is a bit clumsy, but allows us access.

We have a huge garden, and I can grow much of our family's food. We also buy bulk staples directly from growers when possible (wheat, rye,

rolled oats, etc.). We also have a family cow and a small flock of chickens for our dairy products and eggs. One cow, two dairy goats and a small flock of chickens allow more self-reliance than a herd of cattle, 50 goats and two hundred chickens. A person can more readily feed one cow, two goats and a dozen chickens than larger numbers, even growing most of the feed at home.

We try to keep our bills down by not going to town much. We've found out that most trips to WalMart end up in a \$50 plus check having been written. Ouch! And we consider ourselves careful spenders. So, staying out of town is our best protection.

We have a gas generator, but that is only run about twice a week so that I can work on my word processor and do the laundry (very old wringer washer). While it is on, our son David gets to watch a video or two. Otherwise, our entertainment consists of reading, doing puzzles, crafts and building small projects by lantern light. We also have learned to work for entertainment. When one learns to get much enjoyment and fulfillment out of work well done, you'd be surprised at how much less need there is for fun. We play around a whole lot while doing something so mundane as weeding the garden.

We've found that it's best to buy a cheaper place that you can pay for or at least pay for in a few years, rather than one you can barely afford, then strain to pay for, for the rest of your life. We paid cash for our mountain home. It's a small cabin with few amenities. But we live relatively comfortably on a very small income, as we have *few or no bills*.

We've found that keeping those bills very low is the key to comfortable living—not a big, fancy home. But you'll always need some source of cash to pay for those things you can't make, grow or trade for: doctor bills, vehicle repairs, parts, etc. Unless you're very experienced and

used to living off the land in a primitive lifestyle, you'll always need some source of cash.

Being able to pay cash for your place is the best way to keep your ability to turn part-time work, crafts, small animal raising, etc. into needed cash to support your lifestyle. You *must* keep your income high enough to provide for both lifestyle and emergencies or your dream can become a nightmare. I'm not being a doomsayer, here, just speaking from experience.

How can a poor person afford to get on the land with a limited savings? Lower your sights. Buy less land, but be picky about what you *need*. Twenty good acres is better than a hundred poor acres. Buy a fixer-upper, or even a decent mobile home until you can build better. (I've seen several livable mobiles sold for less than \$1000. Much less in a few cases. True, they weren't pretty, but with work and imagination they were fixed up very nice.) I've lived in homes that were about to be condemned, but were on 40 acres of good land. I fixed homes that were scary: rats in the walls and basements full of floating dead things. We had to paint, hang wall paper, set rat traps, have junk hauled off (including 14 junk vehicles), burn rotted shacks, build fences, and hack gardens out of jungles of weeds. But it was cheap and everyone has to live somewhere. Such places can be bought not only cheaply, but with very good terms in many cases. But you have to look for them.

Start where you can afford. Maybe you'll love what you create and stay there the rest of your life. Or maybe you'll gain experience, as well as equity, then move on to something better in a few years. But the point is that you'll be doing and not just dreaming. Good luck.

I have two questions for you. I have never tried canning before and this year for Christmas I'm thinking of

making up baskets with a variety of stuff in them. One of the items will be my home made pesto which I would like to can, but I am worried that the heat used in canning will discolor and ruin the flavor of the delicate sauce. So is there any way to can pesto without this happening, or any other way to can that does not involve heat?

The other question is about the pressure cooker, is that needed or can you just put a rack in a big stock pot and follow the instructions? Like I said I've never done this before and apologize if my questions sound rather idiotic.

Stephanie Payne
spayne@shadowspawn.net

Pesto is best fresh but I'm sure you could can it, though you'd have to experiment as to retain the flavor and appearance. And to can it you will have to use a pressure canner, i.e., use high heat.

As to your second question, you can use a stock pot or any other large container as a hot water bath canner. My grandmother used to use her copper boiler to can peaches and other fruits in. You do need to keep the jars off the bottom of the container or they will break. A wire rack works great. You have to have a big enough container or pot to allow the water to maintain a rolling boil an inch or more over the jars and a top is necessary to quickly bring the water to a rolling boil, and keep it there for processing.

All low-acid foods, such as vegetables, meat and poultry, and any mixes (soups, stews, etc.) must be pressure canned using a pressure canner, *not* a pressure cooker, which is not large enough, nor intended for canning.

I live with my husband and our four children on 2.5 acres here in St. Augustine, Florida. I have learned to garden, grow herbs, make wonderful salves and now I am learning to make

soap. We had wonderful land around us, but now the owners have sold and we have neighbors. I don't like it. Don't get me wrong. I am a friendly person, but I wanted to live in the country. Now the land around us is building up. Not only in our backyard but all around.

My husband and I want so much to leave and begin a homesteading life. We want out of the rat race. We both work to make ends just barely meet and we are tired of it.

We raised wonderful Rhode Island Red chickens for our own eggs until recently when someone came and stole all 50 of them including our rooster. Can you even imagine that. Now we have to wait until the spring to get more biddies.

Anyway, my husband is 52 and I am 47. We want to move but are so afraid. How do we make a living? Where do we even begin. We are not professional people. My husband builds, he is a fantastic carpenter. I simply clean an office building at night so I can homeschool my children in the day. We have thought of selling our property, paying off our debts and taking what is left and finding some mountains to live in.

Can you possibly give us a clue as to where to start. How do we find where there is land to buy. We have no idea as to where to begin. Fed up with city life!

Kathryn
Glowbeam@aol.com

You are far from alone. There are thousands of folks in the same boat as you.

While it's only sane to wonder where the money'll come from when you move from the city, don't get stalled forever worrying about it. You might not want to move to the wilderness, but there are a lot of small-town rural areas where a nice place can still be bought cheaply. A good carpenter always has a job, no matter where he goes. As he fixes up his new

home, folks seem to always come up and ask if he could build a deck, fix a bedroom, roof a shed or whatever. You might have to make mention to your new neighbors that he is a great carpenter and is interested in finding odd jobs locally. But once he's done some work for locals, you'll find he is as busy as he wants to be.

As for yourself, there are lots of jobs in rural areas for Moms who want to raise their kids at home. One decent job is cleaning homes of elderly and shut-in neighbors. Not only is it a good way to get to know your new neighbors, but you instantly become a friend. Included in this job can also be mowing lawns, taking care of gardens, shopping, taking folks to the doctor, etc. You'll find you also do a lot of freebies, but you will always feel good about what you do.

Market gardening is a good way to make extra spending money for your new homestead. I've done it and it's always kept us going through tough times. A small farm stand or selling produce at a Farmers' Market gives you an instant market for any crafts or homecrafted goodies you produce.

If you are creative, you can always find ways to make steady money. But you *do* have to work at it constantly. Money will not fall into your lap.

As for finding a place; sit down and write down a list of four states you'd consider moving to. Perhaps you have relatives in one, have lived in another and liked it. Perhaps you've read about folks living there and it sounded interesting. Get a map out and write to Chambers of Commerce in small towns in the least populated areas of that state. Then write or call realtors in those areas.

A few suggestions are states that are *not* popular: Minnesota, Nebraska, North Dakota, Missouri, Alaska. If a state has terrific weather, wonderful growing seasons and soil, great job opportunities, it will *not* have cheap rural land.

Write down a list of your requirements; drinking water, the minimum number of acres, the most you can pay, terms you must have, etc. Will you accept bare land or must you have a home? (Be *very* accepting of extreme but solid fixer-uppers to keep your cost way down. It's always best to pay cash or at least a good down payment on any homestead.)

When you finally find a likely place, check it out in person, paying extra attention to your new neighbors, if any. That junkyard front yard down the road probably won't change; those rude children living next door will probably only get more obnoxious when they know you better.

Don't buy land near a building-up-quick subdivision. Those have a way of spreading to include the land in front of your home.

Any new move is scary. A major move is even more so, but don't let that keep you in the rat race. Folks get out every day. You *can* do it. But the decision is often the hardest part. Take the leap of faith and live the life you really want.

How can I find a co-op in my area? How can I find where to get bulk grain at a reasonable price? Also where can I get recipes for cooking grain?

Freida Huse
Aurora, MO

You can usually find a co-op in your area by looking in the yellow pages under grocery or health food stores. If this doesn't work, go to a couple of health food stores and simply ask around. If there isn't a co-op, you might consider joining with a few friends to start your own small-scale co-op.

As for buying bulk grain at a reasonable price, you might ask around at feed mills for farmers in the area who would sell small amounts of grain, such as wheat or rye. In this way you not only get local, fresh

grain, but support farmers who are your neighbors. I often buy rolled oats and molasses by the gallon at a local feed mill. This is much cheaper than buying from other places.

There are many books on cooking with grains and other bulk foods, and as you buy your first hand grain mill, you'll find the incentive to produce and use your own flours. Two good books are *Cooking with Home Storage* by Peggy Layton and *Making the Best of Basics* by James Stevens.

I have a big yard for southern California, ¾ acre, and the property has lots of stuff I did not plant, but now that I have settled in and have a semblance of control, I love it here. I have two lemon trees and want to preserve the lemons for when they are not producing. I can squeeze the juice and preserve it by freezing, but how can I make lemon zest from the skins? So many recipes call for lemon zest and it kills me to buy it when I do not have fresh lemon to grate. Do I need to preserve it in any way? I can grate and freeze spoonfuls, but I would prefer to dry it so my freezer is not full of little baggies. My kids think I am weird enough, without bags of lemon rind falling out on the floor. Also, is there a way to preserve grapefruit juice? I have a lot of grapefruit on the tree and can only eat and drink so much. I have found that they can stay on the tree for a long time, but when the flowers are blooming no one will go near the tree because of the bees. Could the juice be frozen? Thanks!

Jane Soloway
jsoloway@pachell.net

My favorite way of preserving lemon is to dehydrate whole lemons, seeds removed, and the lemon cut into slices. Use any home dehydrator or even cookie sheets in an oven with only the pilot light. I have even used cookie sheets in my good old wood kitchen range with only a mild fire and the oven door left open.

After the slices seem to be drying well, turn them over once. Then put them through a blender, a few at a time, or grate them finely. Return this lemon "flour" to the dehydrator or a cookie sheet and continue drying, "fluffing," and separating the flour even more as it dries. Then store in glass jars with a screw-down lid. Use this as lemon zest in most recipes. I add a teaspoonful to stir-fries and many other recipes.

For recipes that are uncooked and require lemon zest, freeze fresh lemon zest first in ice cube trays, then dump zest cubes into a zip-lock baggie and keep frozen until needed. This lessens the baggie mess in the freezer and gives single serving (okay, a few more than single serving, maybe) cubes and allows the rest to remain frozen for freshness. I think if you will combine the dehydration with the freezing methods, you'll be able to preserve enough lemon zest for all your needs.

As for the grapefruit juice, you can easily can it. Squeeze the juice, then pour into sterilized canning jars to within ½ inch of the top. To prevent discoloration during storage, you can add ½ tsp crystalline ascorbic acid (vitamin C) for each quart of juice. Put on caps that have been boiled and screw ring down firmly tight. Process in a boiling water bath for 20 minutes. This will also work for lemon juice should you want to can some for off season use. I would can lemon juice in half pints for more economical usage.

Can you please tell me how to make pomegranate jelly?

Jacki Clayton
dagnom@uia.net

I have never made pomegranate jelly, but I wouldn't be afraid to give it a try. If you want to give it a shot, I'd suggest using 5 pints of pomegranate seeds, raw. Add to ½ cup water and bring to simmer. Mash

seeds gently and simmer for 10 minutes. Line bowl with 3 layers of damp cheesecloth and pour mashed pomegranate seeds and juice. Gather the cheesecloth, making a bag and hang over bowl by stout string over night. In the morning, gently squeeze the bag to get more juice. In large saucepan, add 4 cups juice and 1 envelope of SureJell. Measure 6 cups of sugar into another bowl and set aside till later. Have ready several ½ pint jars, as well as lids and rings, that have been sterilized by boiling in water. Bring the juice and pectin to a boil, stirring constantly. Stir in the sugar after juice comes to a rolling boil that can not be stirred down. Return to full rolling boil and boil exactly one minute, stirring constantly. Ladle quickly into hot waiting jars to within 1/8 inch of top. Wipe jar rims with damp cloth and place lids on jars. Quickly tighten rings firmly tight. Invert jars for five minutes, then turn upright and place in water bath canner for 10 minutes of processing time (time starts when water bath canner reaches rolling boil). Be sure to have very hot water in water bath canner *before* the jelly is ladled into jars. Remove from canner and allow jars to stand at room temperature until cooled. Check seals, then wash jars before storing.

I can't guarantee this recipe, but I sure wouldn't be afraid to try it. The worst thing that would happen would be that it wouldn't jell, and you'd end up with pomegranate syrup, which sounds great over homemade vanilla ice cream. And the best that could happen is that it would turn out great the first time and you have a new family heirloom recipe.

However, I do guarantee that the food product would keep and be very edible. I've had to invent recipes for many jams and jellies made from wild fruits, especially since there are few "real" recipes available for them. It's really a lot of fun to experiment a bit with jams and jellies.

I have an inquiring mind, and it wants to know "How the hell do you use a kerosene or oil lamp without it smoking up the whole house?" What shape (if any) does the wick need to be trimmed in and how much wick sticking up out of the lamp is too much?

**Jewellann Friend
Palmer, TX**

We use four kerosene lamps every day, and I sure wouldn't put up with smoking lamps. Pewwie! The first in line is to make sure the lamps are not smoking when they are lit. This usually results in a smoky house and lamp chimneys that blacken up in a day or two. To make sure they are not smoking, light the wick at a rather low level—only a little of the wick sticking up out of the burner. As it lights, slowly turn the wick *up* until it gives a good light, but doesn't smoke. This is fine tuning, so go slowly.

If the lamp smokes no matter what you do, you've either got poor kerosene or lamp oil. (Lamp oil is expensive, but not really better than kerosene, in our opinion.) Or you've got bad wicks. We buy our wicks from a local hardware store catering to Hutterites and folks living off grid. They are good wicks, as opposed to cheap WalMart wicks. We tried the cheap wicks and guess what? Smoking lamps big time. Lehman's Catalog, advertised here in *BHM*, is an excellent source for off grid folks. Their merchandise is reliable.

Be sure the lamp is full when you light it. Some folks have trouble when the wick is not *in* the kerosene. This results in smoking and poor light, as it's actually the wick that is burning, not the kerosene. In a pinch, we've even folded a paper towel, cut it in thirds, stapling it to keep the shape and used that as a wick. It's cheap and burns better than a cheap store wick.

When it's time for lights out, blow the lamp out. It smokes less than

turning the wick down to extinguish the flame.

Another hint is to buy an Aladdin or Petromax lamp. The Aladdin smokes less and provides more light per quart of kerosene than does a regular wick lamp. The Petromax is a Coleman-type, multi-fuel burning lamp which uses mantles like a regular Coleman. It also burns much brighter than a regular kerosene lamp when using kerosene as a fuel. Unfortunately, both are a little pricey.

As for the shape of the wick, I usually cut mine straight across, then cut the "ears" off either side, making the wick shaped like a hump. Straight across works too. I've tried other cuts, but found they were more work for less light produced. If the wick burns well, then seems to lose its brightness, it's time to trim it, removing the charcoal that has formed on the wick edge. This generally must only be done every few weeks to keep a bright flame. Δ

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New invention – the *Fencerunner*

By Dietmar Berg

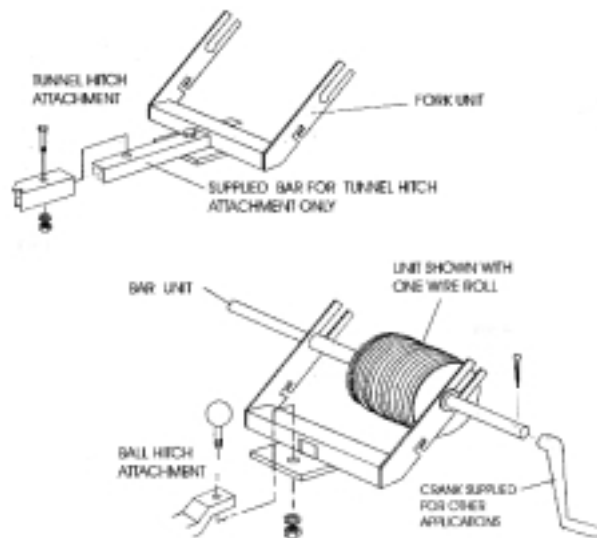
Here's a gadget I developed to run barb or barbed wire. You mount it on the back of a pickup truck using the ball hitch (see drawing) so the wire can spin off the roll. I call the device the Fencerunner and am currently trying to market it. It works like a charm and saved me hours of work, enabling my sons and I to do a

quarter mile fence in 45 minutes.

The unit uses the ball hitch or tunnel hitch attachment found on some cars and most trucks. It can be adjusted to use one or two rolls of wire. It consists of two units, the fork unit and the bar unit. The fork is installed as shown in the figure. The ball itself is used to secure the fork unit to the hitch. The bar unit consists of a shaft assembly to hold the wire rolls. The shaft of the bar unit is inserted through the wire rolls. The disc is next and then the spacer. The bar unit has three spacers for different width wire rolls. The next step is to lift the bar unit and insert the two slots on the fork unit.

With my first prototype, I had to lift an 80-pound roll and drop it over a vertical shaft. I found this difficult, so with my second prototype I made the fork unit with more of a horizontal angle.

You need to park the vehicle as close to the fence posts as possible, securing the end of the wire from the



Two views of the Fencerunner, one showing a tunnel hitch installation and the other a ball hitch installation.

roll to the first post to start the run. The vehicle is then driven slowly along the fence line as the wire spools off the roll. When the vehicle reaches the end of the run or when the wire roll has about three turns of wire left, insert the wire into one of the slots in the fork unit. This will kink the wire and keep the bar unit from turning. Then drive the vehicle forward just enough to stretch the wire. Another person can signal the driver when the wire is taut. At this point the wire is simply lifted up to each post and secured. I didn't need a wire stretcher when I did my fence.

The crank handle on the unit allows you to reel in the old barbed wire instead of just leaving it on the ground.

If you'd like more information, contact Mike Haverland at 3105 Cortina Dr., Colorado Springs, CO 80918. Phone 719-260-7848. Δ

(BHM invites readers to write about promising inventions they have created that will help others with their self-reliant lifestyle. Keep your text and illustrations to one page. If accepted, there is no payment.)

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Why garden organically?

Healthy asparagus plants grow up through ten inches of mulch with ease.

By Jackie Clay

Organic gardening seems to be regarded as a type of religion. Either you believe in it or you find dozens of excuses *not* to garden using natural methods. Let's remove the shroud of mists we have between some folks and practicing organic gardeners.

In reality, organic gardening is simply gardening naturally with no toxic chemicals to kill weeds, make plants grow, or to kill insects. It makes sense. After all, who wants to consume toxic chemicals via those fresh garden vegetables?

Benefits of organic

With organic gardening, there are no toxic insecticides applied, and beneficial insects are actually encouraged, as they help pollinate the blossoms and attack harmful insects. Chemical fertilizers are replaced with composted manure and other natural organic materials.

When the organic gardener wants to eat a nice red tomato right in the garden, or their children pull a perfect orange carrot, there is no waiting to wash off the chemicals. You simply eat and enjoy without the slightest worry at all.

And, likewise, when the children want to help in the garden, you all dig and enjoy each other, safe in the knowledge that there's not the slightest health risk at all, only wholesome togetherness, enjoying one of God's greatest gifts.

The soil becomes better

When a gardener chooses to garden organically, the actual soil in his garden benefits. When chemicals are used as fertilizer, they do nothing for the soil. But when organic material is used, a miracle occurs. I have turned hard clay soil that would support only weeds into black, fluffy soil that grew anything that was planted. I could dig

Photos, Jackie Clay

my entire forearm into that wonderful soil with ease.

With the improved soil, earthworms and other natural soil critters moved in and helped me till the soil, 24 hours a day, making it hold moisture better, warming it quicker in the spring, and delaying freezing until later in the fall.

When the soil is better, the plants growing in it naturally grow stronger, repelling insect attacks with little damage to their leaves and stems. Healthy plants are not appealing to insect predation.

Weed less, water less

Weeding and watering, the two most tiresome gardening chores, are cut in half with one simple organic method: mulching. Mulching is simply covering the garden paths between rows and the spaces between plants with a material that will not let weed seeds germinate and also has the benefit of holding critical moisture around the plant roots. Mulching also helps keep root systems warmer in cool weather, cooler in hot weather, making all plants (and the gardener) happy.

A happy ecosystem

Never thought of your backyard as an ecosystem? Guess what? That's not just some fancy name. Spend an hour in your backyard and really *look* at who lives and crosses it in that short time. Here's a list of the inhabitants and visitors in my garden in that one hour: 2 baby rabbits, 1 red-tailed hawk, 89 chickadees, 4 nuthatches, 1 downy woodpecker, 1 hairy woodpecker, 15 assorted butterflies, 9 moths, 3 chipmunks, 1 red squirrel, 8 toads, 10 tree frogs, 3 praying mantis, hundreds of green lacewings (both mantis and lacewings are beneficial insects), 12 yellow jackets, 34 honey bees, 4 deer, thousands of earthworms (uncounted), and billions of beneficial soil nematodes and bacte-



David Clay rinses off only dirt before he enjoys this perfect organically grown carrot.

ria. And our 10-year-old son, David, of course.

We have others living and visiting our garden including mother birds with young, hummingbirds which live here and pass through, and many others. And so do you, whether you realize it or not. From large animals like deer down to the smallest spiders and bees, they all depend on the health of your little corner of the world—the backyard ecosystem.

Poison it with chemicals and you hurt them all. Nurture it with organic gardening practices and all of us benefit. To me it's an easy choice. Poisons are not selective. When you spray chemicals on cabbages to rid them of those little green worms, you also kill the butterflies who light on the leaves, the honey bees, the pray-

ing mantis and green lacewings who are eating "bad bugs," the tree frogs, toads, and song birds who naturally eat insects. Even the earthworms eventually die. And the funny thing is that in a few weeks, you still have green worms on the cabbage.

Organic tastes better

This sounds like a phony claim, but it is true. Organic food does taste better. Maybe it's because we have never used chemicals on our gardens, but I can smell and taste chemicals in vegetables and fruit. Just like you can taste "plastic jug" when you drink out of a plastic bottle or chemicals in bottled "mountain spring" water. Arggggg!

In the summer, we graze our way through the garden, often carrying a



Photo, Bob Clay

The author tills in two truckloads of compost in a new garden plot.

small bowl of fresh dip or a salt shaker and snack on sun-warmed tomatoes, peas, asparagus, melons, carrots, and more. All taste so good fresh from the garden that we must plan for larger crops to allow in-season “grazing.”

You don’t get that inducement with chemical-coated vegetables. Even when they are peeled and scrubbed, I can still get nuances of the chemicals.

But, you say, there must be some negative aspects or *everyone* would be gardening organically.

Well, there are a few minor negative aspects, but certainly not nearly enough to make us reconsider our decision to garden organically. Here is some of the downside of organic gardening:

You must be more observant. When you garden organically, you must be more observant and you must know your garden’s cycles. Much of organic gardening revolves around preventing weed and insect problems by maintaining soil and plant health, as well as planting methods. You must take care of the plants and the

garden in an ongoing manner so as to avoid problems. Don’t ignore the garden, then try to kill severe insect or weed infestations organically. Organic gardening is a process, not just something magical you do instead of using chemicals, and it is certainly not something you do at the last minute.

For instance, for pest control we use *Bacillus thuringiensis* (BT), a species of bacteria that specializes on the infection of the digestive tract of caterpillars. It is cultured commercially and sold as a spray or a wettable powder and it causes insects who eat our vegetables to become ill and die. It does not affect butterflies, bees, or any of our other beneficial or neutral garden visitors. The cabbage family, which includes broccoli, cauliflower, cabbages, and brussels sprouts, is one that sometimes needs BT. But one cannot wait until the plant’s leaves are completely consumed to begin spraying. I watch very closely for the first signs of predation, the first tiny holes and small green worms. Then I begin spraying

lightly every week until there is no sign of the pests.

But I also take time to keep watch after these pests are gone because they can return.

Organic aids cost more. Another complaint is that organic garden products and biological defenses cost more—and they do. But the point I want to stress is that when you continue to garden organically, your soil and ecosystem become healthier and healthier, and before long your garden’s plants are so healthy that they can repel insect and fungal problems by themselves. You’ll find that you only need to use organic pest products occasionally, making them very inexpensive. With toxic garden chemicals, you have to use more and more; the problem never goes away.

Organic is harder to find. Another complaint is that it’s harder to find organic garden products in local stores. And it is, although more and more local stores are carrying organic gardening products. I make it a policy to *ask* for organic gardening products by name in local farm and ranch stores, greenhouse supply houses, and even chain stores. When enough demand is seen for a product, you’ll find that stores *will* carry it.

Until it is easy to find these products locally, we just have to plan ahead a bit and order them through mail-order catalogs. It isn’t really that difficult and service is generally very good. I would rather wait a week and use organic garden products than to resort to chemicals. Our garden is so healthy that a week really doesn’t matter in most cases. And there are homemade products that do a pretty good job. Certainly good enough to keep some unforeseen insect problem in check for a week. Preparations such as dish soap, garlic, and hot pepper sprayed on plants do a lot to discourage aphids and other munching insects. To make such a concoction, mix about $\frac{1}{3}$ cup of dish soap into 1 gallon of water. Crush a whole head

of garlic and throw that in. In a half cup of water, simmer two medium-sized, crushed, and *really hot* chile peppers and also add that to the gallon of water. Then strain the resultant mixture as you're going to spray it through a sprayer.

Organic is more work. Another complaint is that organic gardening is more work than gardening with chemicals. And at first, it may seem that way as you till, work in rotted compost, plant, and mulch those beds. And you must watch those plants with a hawk's eyes. But soon you'll find that organic gardening becomes relaxation, not work, and you actually *enjoy* strolling through the garden, checking plants, tugging a few stray weeds up, and picking an occasional potato bug off the vines.

After the first couple of organic gardens, you'll find that the soil has improved so much that there is actually *less* work each year and even that becomes more enjoyable. With chemical gardening, the same work is done every single year, with weeds and insect problems doing nothing but increasing as the soil becomes less healthy.

Organic faddists are kooks. Another complaint is that organic gardeners are a bunch of faddists and kooks. I hear that one a bunch. And I chuckle. They don't know I'm one of those kooks. And my mother is. And my grandparents were. But none of us ever followed fads. (I don't consult crystals, never owned a tie-dyed shirt, and we were *Indian* before *Dances With Wolves*.)

The plain truth is that we garden organically because it is the only way of gardening that makes sense. I've seen the soil improve dramatically on several of my own gardens. I've seen the weeds and insect problems reduce over the years, and the garden plants become strong and huge. I've tasted the fresh, pristine flavors that only organic foods can provide. I see the countless little living creatures who

share our garden, hear the song birds trilling above my head as I pull weeds, and watch butterflies light on my hoe handle. Why would we garden otherwise?

Beginning your garden

The most successful organic gardens require a little more preparation than gardens that rely on chemicals. Organic gardening's foundation is exceptionally healthy soil which requires several years' work and the adding of rotted compost and mulch.

Any garden will do best on a sunny, gentle south-facing slope, out of fierce winds, without standing water. Shade is not beneficial to growing, and the roots of nearby trees will not only rob vegetable plants of water and nutrients, but they will be a real pain in the neck when it comes to tilling.

It's a great idea to choose the garden plot the summer before you actually begin. Mow the area well and remove any visible rocks and sticks. Then cover the entire plot, plus two feet on all sides, with either 6-mil black plastic or even an old carpet saved from the dumpster. This will

deprive the grass and weeds of light and any seeds that germinate will quickly die. Dead grass and perennial weed roots will not trouble you as they will if you simply till the plot and begin gardening.

Collecting compost

The base of all good organic gardens is rotted compost and lots of it. Even the best soil in the world benefits from a very liberal application of rotted compost. The best part of it is that most compost materials can be had for *free*, and had very easily.

Nearly any farm, stable, or even fairgrounds will be happy to give you a pickup load of manure, usually containing liberal amounts of bedding material such as sawdust or straw. Depending on the size of your garden and condition of your soil, you will probably want more than one pickup load for your beginning compost pile.

While those nice plastic drum compost-makers are neat, I use a lot more compost every year than one could possibly turn out. I'm talking hundreds of pounds of compost. But then, I'm not content with your usual garden soil.



*Garden toads help keep destructive insects in check...
if you don't poison them with chemicals.*

Other additions to a compost pile can be lawn clippings (chemical free), bags and bags of leaves in the fall, pine needles raked from under stands of trees in the woods, wheat or rye straw, seed-free marsh hay, any vegetable refuse you don't feed chickens or other homestead livestock, seed-free weeds, spent vines and vegetable plants, grain chaff and screenings (excellent additions), corn stalks, and any other chemical-free vegetable matter. Do not add grease or meat to a compost pile.

To be compost, all this manure and vegetation needs moisture and air in order to "cook" or rot down efficiently. I generally layer my compost pile: manure, pine needles, leaves, manure, weeds, grain chaff, vegetable matter, manure, straw, etc., built in a rectangular pile with relatively straight sides. If it rains regularly, it will receive enough moisture. If not, I spray the pile well each time I water the garden.

After about 14 days, the pile will begin heating up. This heating will effectively cook all weed seeds, non-friendly bacteria, insect eggs, and other noxious additions to the pile. The cooking in the pile is the reason that organic gardening, which relies heavily on manure, is not an unhealthy practice as some recent news media scares have indicated. *E. coli* bacteria, present in manure, is killed during the composting process, and it does *not* survive to cling to the food you later eat.

It is a good idea to turn the compost pile in order to bring oxygen into the compost, which hurries the decomposition process. All I do is fork the pile over to a spot immediately next door to the first pile. I can turn a pickup load of compost in about an hour, so we are not talking about Herculean work here. After all, I am a grandma.

The time it takes a compost pile to turn from manure and straw, vegetable peels, and pine needles varies, depending on moisture and the con-

tents of the pile. But usually, within about two months, you have ready a good pile of magically transformed, odor-free black soil. Black gold.

So while your garden spot is being readied for tilling, your compost is being made.

Planting

Before tilling the garden plot the first time, I add about four inches of well rotted compost, right on top of the ground. I'll till the whole plot once or twice, working in the compost. Then I add another four inches and work that in very well. Unless you have really awful soil, the garden is then ready to plant.

If you don't have enough compost, divide the garden in half and compost one half very well. It's better than a skimpy coating over the whole garden. If you can spare that half of the garden for one year, you would do well to plant it into a green manure crop, such as rye. This adds more fertility to soil in a shorter time than almost any other method. In one summer, you can plant, cut, till in, and replant at least three crops of green manure. This greatly adds both nutrients and rotted matter, i.e., it adds tilth to the soil.

Mulch

After you plant a bed or row of started plants, tuck about four inches of mulch around and between the new plants, as well as in the paths between rows. This will prevent most weeds from germinating, make those that do easy to pull, keep plants warm in cool weather and cool in hot weather, hold moisture around plant roots, and the mulch will eventually rot adding more compost to the already building soil.

Mulch can be any material that will allow water to penetrate, prevent weeds from germinating, and regulate the temperature of plant roots. While some folks use newspaper and plastic mulches, I prefer a more natural



A tomato hornworm is 4" long, easy enough to spot and pick off.

mulch such as leaves, straw, or pine needles. These break down into perfect compost as they experience a full summer's moisture, and they add greatly to the soil when tilled in later. I don't like plastic *anything*. It's a personal quirk, I guess. And newspaper always blows around, no matter how many stones you use to hold it down.

Never use seedy hay for mulch or you'll end up with a really thick hay field. I know, because I did just that one year.

And as the plants grow, add deeper mulch. The original mulch will compact naturally, and you need to keep the mulch deep enough to accomplish its jobs. One of the most common mistakes I've seen with beginning organic gardeners is using only a scattering of mulch. It needs to be at least eight inches deep around mature plants to be effective.

Bug control

I think the first question I get from new organic gardeners is "What do I do to kill bugs, if I shouldn't use chemicals?" I usually find myself smiling and thinking, so, what's a few

bugs? A garden is a living organism. A system. It is not sterile or bug free, nor should it be. When the soil has been built up and improved, and the plants have been well tended, they can resist the occasional insect that stops by for a snack.

A few grasshoppers will not harm a healthy garden. An occasional tomato hornworm can be picked off by hand. A few aphids will only provide snacks for green lacewings and encourage them to stay, further keeping predatory insects at bay.

Okay, some years, in some climates, there are "problem" insects: corn earworm, flea beetles, grasshopper plagues, excessive cabbage looper reproduction. The key here is to be very watchful. Learn what the problem insects are, how to identify the mamas and papas of the little bugs, and watch for them in your garden.

If all of a sudden, there are several white cabbage moths hovering around your broccoli, hundreds of tiny, tiny grasshoppers hopping in your lawn, dusky brown/black corn earworm moths hovering around at dark, realize you're about to have a problem.

There are several ways to organically combat insect problems in your garden. The first is to use bugs to combat bugs. You know, good bug/bad bug strategy. Everybody knows about ladybugs, but there are also praying mantis, green lacewings, beneficial soil nematodes, and, perhaps the most effective of all, trichogramma wasps. These tiny wasps do not sting or bite people. In fact you probably won't see a one after you release them in your garden. But they reproduce by laying eggs in "bad bug" eggs: corn earworm, cabbage looper, potato bug eggs, etc.

But you cannot wait until your crops are half eaten before you release beneficial insects into your garden. Natural controls do take time, so you must be watchful and act

when you think a problem is in the making.

You can also use the **soap-garlic-pepper mixture** I described earlier, but another method of organic insect control is to use some of the biological controls you can buy that kill only insects that eat garden produce. Two of the most common are **Semaspore**, which causes a disease in grasshoppers only, and varying strains of **BT** also described earlier. The Semaspore is in a bait base and is sprinkled around and in the garden, to be eaten by tiny grasshoppers *before* they mature and begin to breed. The BT is sprayed or dusted directly on vegetable plants which will be eaten by insects, as it is by eating the BT that the insects are killed. BT is commonly used on sweet corn to protect against corn earworm, and on the cabbage family to protect against cabbage loopers and many other caterpillar-type insect larva pests.

Hand picking is not to be laughed at. An occasional tomato hornworm is *not* cause to haul out the chemical sprays. You'll notice damage to the tomato plants, often appearing quickly, as the four-inch long green tomato hornworm eats a lot in a day, denuding the tops of the plant he is residing in shockingly fast. You'll probably notice dark greenish ball-shaped worm poop under the plant. He is well camouflaged, but you can bet he is in there. Get down and hunt. When you find him, simply pick him off and step on him.

But you know, I usually plant a couple of extra plants for those ugly beasties. You see, I found out that those awful tomato hornworms become charming hummingbird moths that hover around my flower beds in the evening. Boy was that ever a shock to me. Shows you that even after half a century, we can still learn.

Homemade remedies also work well on many insect problems. Dropping **mineral oil** into new silk-

ing corn ears will usually keep earworms out. Spraying plants with the dish soap-garlic-hot pepper mixture will repel almost any insect who is bent on using your garden for his restaurant. Spraying **garden sulfur** on tomatoes will treat and prevent most fungal infections. Setting out a saucer of **beer** (really) under garden plants will attract and drown large numbers of nasty slugs every day.

This list goes on and on, but you get the idea. There are lots of simple organic remedies to insect problems. Get a subscription to *Organic Gardening*, read a few good books, and try a few easy remedies.

As a last resort, when all of a sudden you have a real insect problem, and you don't have time for the above controls, you can spray or dust the problem areas *only* with a **pyrethrins** or **rotenone** mix. These are organic insecticides, made from a daisy, of all things. But these should be used as a last resort, only, as they will kill any insect they get into contact with, including all beneficial insects, butterflies, and moths. They are not selective. But pyrethrins and rotenone are much less toxic than insecticides you'll find choking shoppers in supermarket gardening aisles.

Everyone talks about bug problems, but in fact, very few gardens are really bothered by insects, especially when they are built on improved, well composted soil.

As with anything, organic gardening can not be learned in a week or month, but you'll find that after a couple of seasons you'll begin to relax and enjoy the experience. The more you practice organic methods, the more natural they will feel. And one day you'll be watching butterflies and listening to song birds overhead while your child hands you a juicy ripe tomato to taste. Then you'll know that organic gardening is for you. It'll become part of your life. Δ

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Stealth gardening

By David Sneed

As I teach gardening in coastal Alaska, I meet lots of folks who have problems raising enough food to support their families. Cold soil temperature and the low angle of the sun means that even with our long daylight hours we have to work hard at growing garden plants. Slugs and root maggots compete for the harvest, and there's other problems whose solutions require the innovation of Archimedes and the patience of Job. None of those trials, however, compare to the most common problem of all. Here in the largest state in the Union, it can be difficult just to find enough land on which to raise the food we need for winter.

I'm not complaining about our steep terrain or the muskeg soil, because those things can be overcome, and good spots are tucked away amidst the forest and along streams. The real problem lies in the ownership and political control of the land.

In Alaska's Southeast Panhandle where I live, privately-owned parcels constitute roughly one per cent of the total land mass. The rest is held primarily by the federal government in the form of national forest. What remains after that is mostly in the hands of "native corporations" who won't allow use of the land by anyone other than the few Alaskan Indians who were lucky enough to get in on the gravy when offered legalized bribes of cash and land that were meant to forestall the aboriginal claims that were impeding oil drilling in the state. Finally, a miniscule portion of the land in Southeast is owed by the state itself, and brings top dol-

lar in land auctions that are marketed to tourists in tiny parcels suitable only for summer cabins.

This makes it rather difficult to find affordable parcels big enough to use as self-sufficient homesteads. It can even be difficult to find a plot just for a garden, although a few gardeners get permission for the temporary use of small areas, due to the generosity of older residents who bought land before Alaska was drafted into the Union. These tiny gardens are primarily used for greens and salads, and rarely provide enough food to store away for winter.

Some landless folks in larger towns rent tiny plots in community gardens. While rates are affordable, there are some major problems in doing this. A community gardener has no control over what chemicals may have been applied by former users of their plot, or are currently being used by people whose plots lie just a few feet away. Vandalism by idiots in four-wheelers has destroyed the harvests for community gardeners in several towns here, and outright theft occurs with regularity. What's the use of laboring long and hard just to have your dreams of nutritious food evaporate due to the selfishness of a few morons?

An increasing number of Alaskan gardeners have decided to try another approach, called "guerrilla" or "stealth" gardening by some. It's a method based upon the sad premise that in some cases a person's gardening activities require concealment from those who would interrupt them. Oddly enough, in our region, this interference may come as much from the so-called authorities as it does from thieves and vandals. It may

come as a surprise that federal and state officials don't want people growing food outside the manageable confines of urban areas, but their efforts to prevent independent use of land in Alaska are similar to policies followed throughout recorded history.

Whether we speak of Elizabethan England or ancient Mesopotamia, common people have faced severe penalties for any agricultural activity conducted outside the realm of official regulation and sanction. Except for a few relatively short periods, such as our last two centuries, farmable land has been owned or controlled by a few rich or otherwise powerful individuals or organizations. Anyone wishing to grow food has had to get permission from the local lord or monastery. Even today, many folks can only keep livestock if their local council or ordinances permit it. Are chickens that dangerous?

The ability to grow our own food is key to controlling our own lives, and it seems we are returning to a condition in which we have less access to land suitable for this task. In the case of Alaska, federal, state, and corporate owners of the land can, and often do, levy heavy civil and criminal penalties against anyone caught using the land without permission. That might be understandable except for the fact that it's becoming impossible to secure that permission.

It is now the official policy of the U.S. Forest Service to deny any new agricultural leases on national forest land in Alaska, and the head rangers of two different districts in my region have told me their agency is actively trying to end the few "ag" leases that still exist. Instead, the land is to be

reserved for recreation, logging, and mining.

The State of Alaska still offers the rare agricultural lease, but on land that is so far inland that it is only suitable for barley and grazing. The common perception is that since the mega-leases of the past were failures, there is no future for agriculture here. Requests for smaller-sized leases and coastal parcels have fallen on deaf ears, and even the larger ones are only offered intermittently. The native corporations rarely consider agricultural projects as revenue producers for their stockholders, who hold the land in common. Except for Annette Island, all native land in Alaska is held by corporations instead of Indian reservations, and monetary shareholder dividends have become more important than providing one's own food. A single grass seed experiment is the only agricultural effort being pursued on Indian lands in southeast Alaska. Oddly enough, that's on the Tsimshian Reservation on Annette Island. With land being largely unavailable for common people's real needs, I'm not surprised at the number of folks who've told me of the great lengths to which they've gone to in order to find land for gardening. Although each one mentions their efforts to me individually, usually waiting until after my garden classes, or until they see me in town the next day, I find several principles common to their activities. These seem to consist of: concealment, remoteness, low-technology, appropriate varieties, and nomadic or seasonal usage and harvest patterns that fit well with their other subsistence activities, such as fishing, gathering, hunting, and wild-crafting. The concealment seems to be an approach that is meant to eliminate interference from several sources. It doesn't matter if your harvest is ruined by a hungry moose, a moron on four wheels, a thief, or a public servant with a fascist bent for representing the secular

powers-that-be. A ruined harvest is a ruined harvest, and that can mean starvation for some folks. A lot of the techniques for concealment originally came from agricultural entrepreneurs in Oregon and Washington who grew products outdoors that weren't legally sanctioned. While the libertarian in me would not deny anyone the right to responsibly grow whatever they see fit, I see those techniques being more usefully applied to raising badly needed food. If current trends continue, we may all have to conceal our gardens someday. Remoteness serves several purposes. First, it aids concealment. Secondly, remote soil is less likely to be worn out by overuse or destroyed by industry. (Even old logging sites can provide garden opportunities). Third, it isolates a gardener's crops from the highly-infectious plant diseases and disreputable pests that thrive in areas where agriculture has been practiced in close proximity to other farmers. Lastly, it's just a plain relief to be quietly gardening, away from road, industrial and airport noises. Among other benefits, low-technology preserves that quiet, by not using gasoline motors. Silent, simple hand tools draw less attention to a remote, concealed garden site, and they are easier to pack in. Besides, imitating (and slightly improving) methods our ancestors used for millennia can often bring us better harvests than we get using complex, expensive machinery. Also, low-technology tools are easier to repair in primitive surroundings. When gardening for one's survival, it is essential to use the varieties that grow best in the area, and best suit the needs of someone living simply. Good nutrition is vital, and tastier foods go a long way to keep one's spirits up during tough times. A few newer varieties contain rather substantial amounts of particular vitamins, such as carrots and squash bred for vitamin A content, or certain spuds with lots of vitamin C. The

stealth gardeners I've talked to seem to prefer faster-growing vegetables, as well as smaller, bush varieties. One of them said they primarily choose disease and pest-resistant varieties for woodland growing.

Some of those who explained stealth gardening to me said they live as nomads, traveling by boat or motorhome. One man traveled on foot, and had several tenting areas set up for sleeping and for waiting out bad weather. These nomads have added a new twist, by planting hazelnuts and fruit trees along the route they travel, or by adjusting their route and timing to put them near established patches of wild berries, crab apples, and abandoned homestead orchards. The man on foot says that while he loves his hiking, he found it important to economize his time, so he coordinates his plantings with other sites he uses for gathering food. He chooses locations to match the ripening times of his guerrilla gardens and fruit plantings with the weeks in which nearby streams will be full of returning salmon, since that is the most significant source of protein in his diet. By having his gardens near his fish camp, he can divide his labor efficiently between his various tasks, tending his garden while his salmon is smoking.

This particular individual says he's very concerned with avoiding scrutiny, since his activities occur on public land, where the authorities have been known to burn squatters' cabins while filing charges against their builders or users. He notes that while being on foot allows for less visible evidence of activity than does working out of a motorhome, he is still careful to approach his sites slowly and quietly, using a different trail each time so as not to telegraph his presence. He claims that aerial and satellite surveillance have been used by the U.S. Forest Service to pinpoint squatters, so he tries to use trails that are primarily located under the canopy of the

temperate rain forest extant in this area.

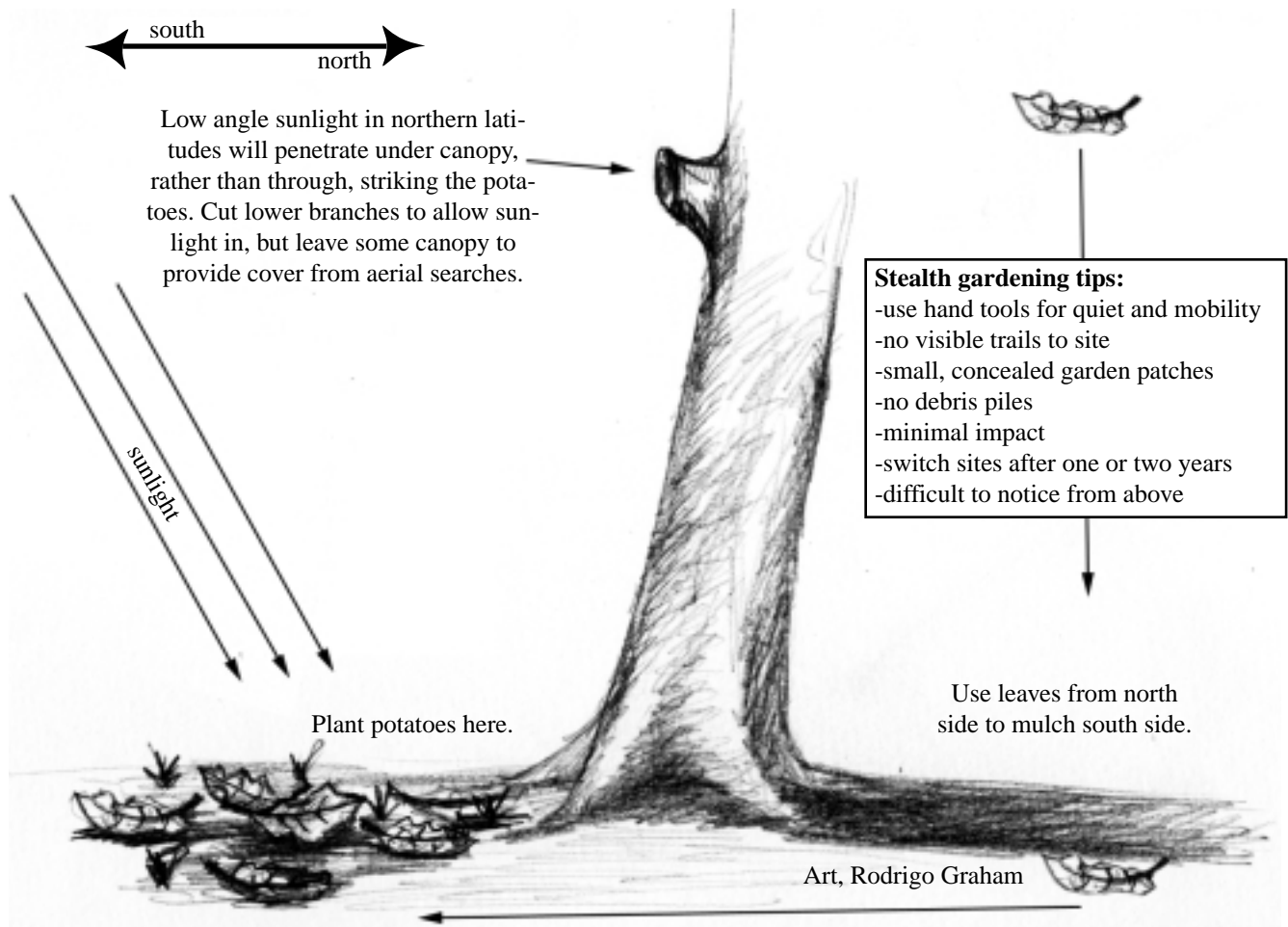
Concealment seems to be a big concern for all of these stealth gardening folks, whether they operate nomadically or out of an established home in the area. One woman who lives in a cabin on the periphery of a small town says the National Guard searches her area each summer, ostensibly for outdoor cannabis growers. She claims that they destroyed a patch of her legal vegetables that were being grown on federal land without permission. Although the loss of that food upset her, she says that is part of life, and hedges her bets by planting several patches at some distance from each other. She also advises against using any sort of plastic as a temperature enhancer, since that is a dead giveaway to aerial searchers.

The principle of concealment and a couple of environmental factors combine to foster a technique described by several of the stealth gardeners I encountered. While the average Alaskan gardener views the low angle of the sun to be a detriment (since less solar energy is converted to infrared when it strikes the soil at a flatter angle), the guerrilla grower uses it to their advantage. The stage for this is set by the two species of alder that are so common here, especially along streams and in areas disturbed by logging.

Where the taller, more upright Western Red alder is present, the stealth gardener simply lops all the branches off the south side of the tree on the south edge of the patch, up to a height of about seven or eight feet. He then plants his crops in the rich natural compost that alders make

between their roots. If the alders present are the more sprawling Sitka variety, the gardener removes a few of these somewhat thinner trunks, all the way to ground level, once again on the south side of the patch. This allows for adequate penetration of low-angle sunlight to the plants at the base of the tree, but maintains a sufficient canopy of branches for protection from aerial scrutiny.

Whichever alder one has, it's recommended that the loppings be disposed of at some distance from the garden plot, and not all in one big visible pile. Larger chunks can be toted to fish camp for smoking wood, and the rest can be snipped into small pieces and distributed far and wide for natural decomposition. I suppose, just as in a normal garden, the smaller branches could be stripped of leaves



and stuck in the ground to support pea vines.

Alders also "fix" nitrogen from the air in a manner similar to that used by legumes, so vegetables planted at their feet will benefit. It's not necessary to remove the alder roots. Just plant in between them. The naturally composted soil is usually loose and easy to work. I once planted spuds this way on land that I leased from an understanding retiree, and I've never seen such healthy tubers. Due to the acidic nature and other factors present in the natural alder compost, there was no disease, not even scab on the spuds!

That lack of weeds and disease in such a growing environment (and the natural water management by humus) means that a stealth gardener need make fewer trips to their patch, leaving less of a trail. Spuds are also ideal for this, since they require the least management of any of our vegetables. They can be planted, hilled once, and returned for in the fall. On the other hand, a vegetable patch that needs continuous watering or attendance for pest and disease control will soon have extremely evident pathways leading to it, bringing both four-footed and two-footed beasts to the feast.

Needless to say, I took every opportunity to ask questions about this evolving trend. I found that more than one person grows enough food this way to feed a small family, although they had yet to grow everything they needed for the entire year. With the exception of the nomad on foot, these folks do buy some rice and other grains each year. One woman even grazes her goat in the woods as she walks to and from her patches. She says the animal has the same impact on the woods and soil as does a deer.

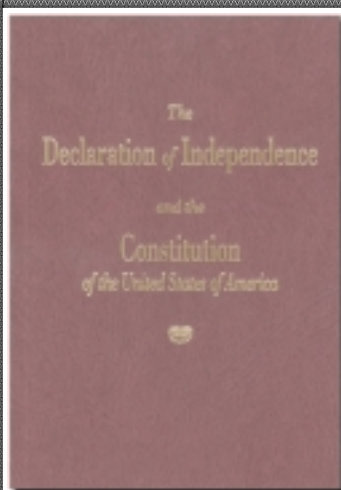
To a person, these folks have a wonderful answer for my worries about this method causing nutrient loss or other damage to the woodland soil. Each one I asked said they rarely use the same patch two years in a

row, since that would increase the likelihood of detection. The process of preparing a new site is not so hard that they aren't willing to do it each year. One person said they grew a crop of dried soup peas the year following potatoes, because they provide more nitrogen than they use, and the rotting vines return humus to the soil.

Another aspect of stealth gardening makes it easier for soil renewal. It would seem that by leaving the alder groves basically in place, the ecosystem would rapidly replace any nutrients taken in one or two season's use, and with a minimum of work, the site could be employed again in a few years.

This amazing method, evolving from people's needs to provide their own food despite political and economic domination by a powerful few,

might be a way of returning somewhat to an earlier form of agriculture, one that had a much less negative effect upon the ecosystem. It was not the domestication of grain and vegetables per se that began this long, losing battle with destruction of the soil and water that is the basis for our existence. Instead it was by turning our efforts to mass agriculture for political or economic gain that we opened Pandora's box. If humans could relearn to use simple gardening in combination with gathering and fishing or hunting to provide the food needed to be healthy, instead of growing primarily for profit, then mankind might be able to live for a long time in harmony with the world that sustains them instead of damaging it beyond repair. Perhaps this is what we will learn from these guerrilla gardeners. Δ



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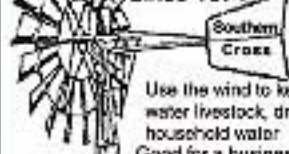
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Restoring a hydro unit

The alternator is the mainstay of wind and water power systems and homebuilt standby generators

[This is the second in a series of articles on hydropower. Last issue, in *Do-it-Yourself Hydro Survey* (Jan/Feb 2001), I detailed how to evaluate the potential to generate power from the runoff or the seasonal or annual flow of water across one's land. This article details alternator rebuilding and simple, practical control circuits for these systems, including homebuilt ones. The hydro unit restored in this article is part of an installation in progress and will be the subject of an article in a future issue.]

By Michael Hackleman

The alternator has replaced the generator as the preferred way to produce low-voltage dc for recharging the battery and powering lights, wipers, and other big loads in today's automobiles. The alternator has found further application in producing electricity in wind and water energy systems and standby generators, and is a favorite with manufacturers and hobbyists alike. I was recently asked to check out a used hydro-electric unit as part of a planned water power installation. As most of the effort focused on restoring the alternator in this unit, I felt it was a good opportunity to share the process with those interested in adapting or using such a universal

electricity-producing device in their own projects.

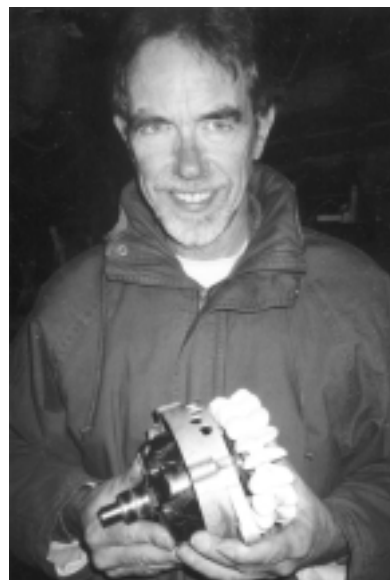
Donna D'Terra wanted to supplement the energy produced by her solar-electric modules at Motherland, her homesite and retreat center located in the mountains outside Willits, California. More specifically, she wanted to cut back on the cost and noise of a standby generator in the winter when the waning sunlight reduced panel output.

A site survey established that she could take advantage of the energy of several streams that flow seasonally. As well, I was able to confirm that a used, Pelton-type hydro unit she had traded for work several years previously would operate in this application.

Using the hose-and-pressure gauge method of establishing head (see *Do-it-Yourself Hydro Survey*, Jan/Feb 2001) and the pipe-and-bucket method of finding seasonal flow, I designed the system around a static head of 100 feet and a flow of 24 gpm. I identified the hydro unit as a Burkhardt turbine which was produced locally here in Mendocino County. This unit was reported to be operational when removed from service. I was asked to check it out. A control box (missing) would need to be purchased or fabricated.

The hydro unit

The Burkhardt turbine consists of a Delco alternator, a Pelton-type impeller, an input nozzle assembly, two aluminum spray shields, and a support framework for bolting the unit down.



Michael Hackleman holds refurbished alternator parts.

The hydro unit appeared to be in good shape. I reached in with my hand to discover that the Pelton impeller was both intact and virtually unworn. The impeller has twin rows of tiny, spoon-shaped buckets distributed equally around the rim of a center-punched disk. The all-plastic part has 17 buckets to a row, or 34 buckets total. The resulting impeller is 5 inches in diameter and 1¾ inches thick at its widest part.

There was some resistance when I attempted to spin the impeller, so I knew that I would need to check the alternator's bearings. Further inspection revealed that the impeller would have to be removed for the alternator to pull through the back of the salad-bowl housing. A complete disassembly of the unit was called for. This was okay. While I had no idea as to how long the unit had been in service, I *did* know that it would be used in its new application for six months at a time, 24 hours a day. Every component needed to be in top condition for this extreme duty cycle.

The spray shield housing functions as spray guard and drain guide. The spray from a jet of water hitting an



impeller at high rpm is intense, so the spray guard helps keep the surroundings dry. The two halves of this housing are aluminum salad bowls that were adapted to this application. As such, the outermost bowl is cut away about 1½ inches wide along its rim for about a third of its circumference to help route waste water out of the bottom of the unit.

I removed the bolts that held the two bowls together around the rim and separated the two halves. I took a

moment to examine the nozzle assembly. This consists of a casting that bolts to the inner spray shield and has a threaded jet in one end (inside) and a threaded receptacle for the 2-inch pipe at the other end (outside). The size of the jet is critical in matching the head and rate of water flow with the turbine for best efficiency. Selecting the correct size of jet (orifice) is part of the "tuning" process once the hydro unit is in place and has water flowing to it. (This will be

covered in greater detail in the installation article next issue.)

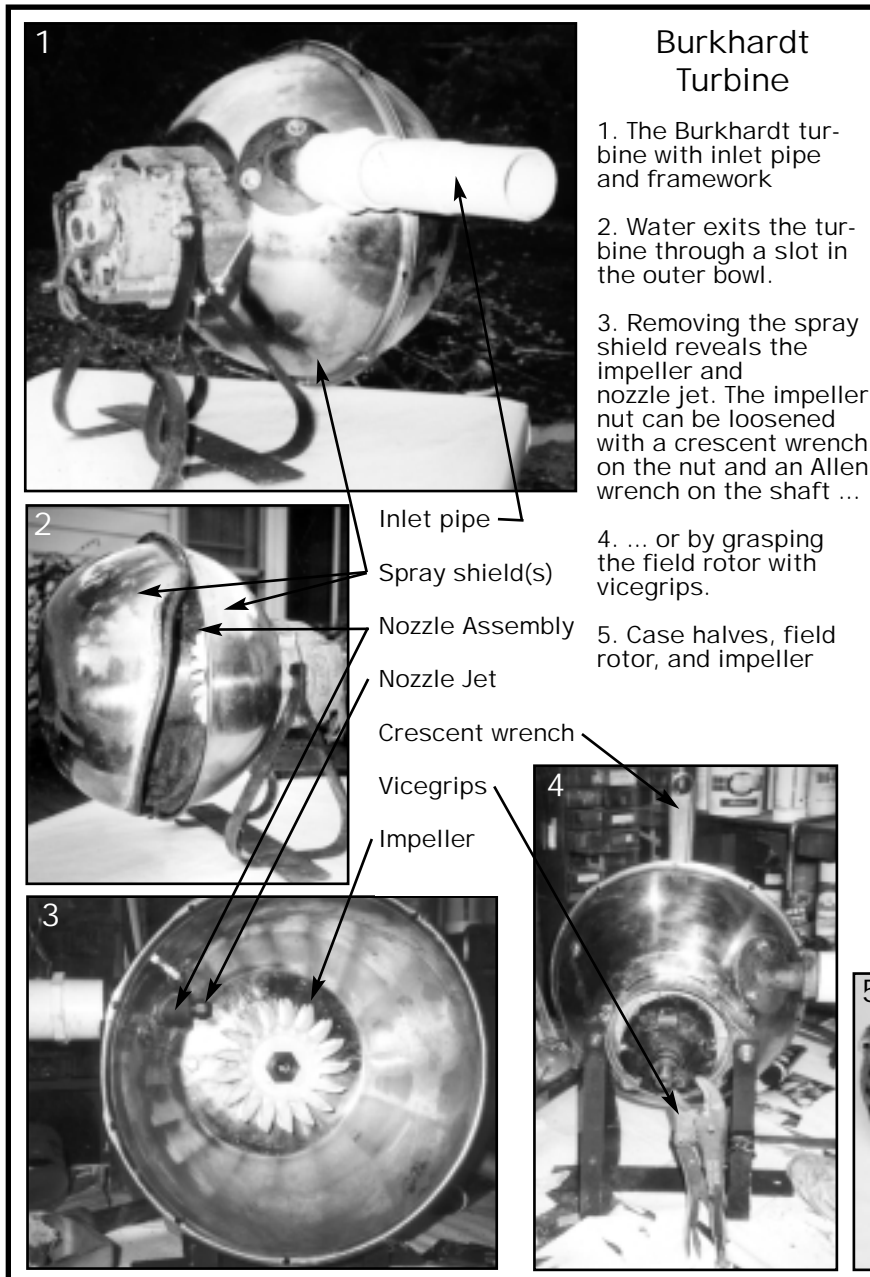
With the spray shield halves separated, the nut that holds the impeller onto the alternator shaft is exposed. The shaft has a hex-shaped hole machined into its end so that a large Allen wrench can grip the shaft for removing the nut. I didn't have this size of wrench handy so I contemplated my options.

Rather than risk breaking the impeller (a \$100 item) by trying to hang onto it to remove the nut, I elected to open the alternator casing to get at the shaft. After scratching a line across the casing halves (for correct alignment during reassembly), I removed the four small bolts that held the alternator case together and pulled off the rear alternator casing. This exposed the alternator shaft with its field coils. I was able to lock some vise-grips onto one of the solid iron jaws surrounding the field coils and, with a medium-sized crescent wrench, was able to twist free the impeller nut at the other end of the shaft.

To complete the disassembly, I removed the four bolts holding the framework and the rear bowl housing to the alternator's front casing and this separated all the parts of the unit. Incidentally, the hydro unit weighs 17 pounds, with the bulk taken by the alternator (10 lbs).

The alternator

Opening up an alternator may seem daunting the first time you do it, but it's really no big thing. In pulling the alternator's rear casing off the rotor,



two brushes leap from their sockets. At this point, you may wonder how will you hold them in their guides until you push the rotor back and the brushes are once again held against the rotor's sliprings? If you look carefully, you'll see that the manufacturer solved this by providing a hole in the rear housing. Professionals insert a paper clip through it to temporarily hold the spring-tensioned brushes in their guides. Alternately, a thin wire may be routed over the brushes and out another opening and twisted together. Once the rotor is back in place, the clip or wire is pulled out and the brushes will seat against the sliprings.

Whenever opening something for the first time, it's important to position the parts on the bench and simply look at them. Troubleshooting starts with careful observation. What was I looking for? Signs of arcing or burning or open-ended (disconnected) wires are not good. If the unit shows evidence of this kind of damage, deal with it first. Alternators are not that expensive, new or re-manufactured, so anything beyond your ability to rectify easily or inexpensively is not worth it. As well, alternator shops can do everything I did to this unit and have the tools, parts, and experience to handle all alternator brands.

This unit passed the initial visual inspection. The brushes (rear casing) and sliprings (rotor shaft) drew my attention next. The brushes transfer power to the field coils in the rotor through the sliprings. Since the field coil in a standard alternator only draws about 3 amps at 12 volts, these

are small brushes and they don't work very hard. The sliprings had a nice chocolate brown look to them, which is good. The brushes still had plenty of length (which decreases with wear), a smooth curvature to fit the sliprings themselves, and were not gouged, burned, or pitted. The brush leads were neither frayed nor corroded. Brushes are not expensive but *new* brushes must be "arced" to the slipring curvature. This work is unwarranted unless the brushes *must* be replaced for one of the aforementioned reasons.

I used a multimeter to test the field winding's resistance. With a test lead held against each of the copper sliprings on the rotor, I observed a 4.2 ohm reading. I did the math. Volts equals amps times ohms. Therefore, amps equals volts divided by ohms. 12V divided by 4.2 ohms equals 2.85 amps. That's close to the approximately 3 amps I knew the field would draw.

The front and rear bearings were my next focus. The front one was a standard ball bearing. The rear one was a much smaller, needle-roller type. Both turned smoothly but slowly. I peeled the plastic side off the front "sealed" bearing. The lubricant inside was dried and crusty. I felt tempted to soak out the old lubricant and repack the bearings with good grease. However, with no knowledge of the history of this unit, I opted for new bearings. Toward this end, I removed both bearings, using a socket and shaft extension like a punch to drive them out. The local bearing distributor was able to upgrade these Chinese

and Hungarian bearings to higher quality ones for a cost of \$17.

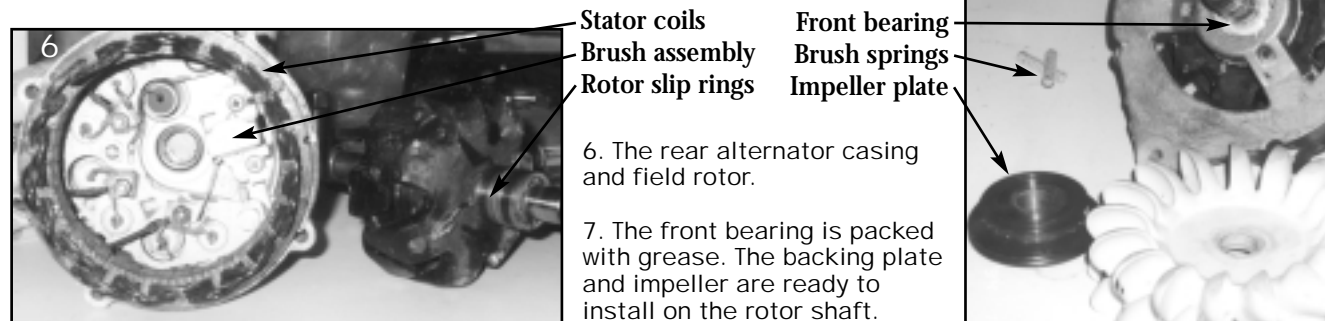
Checking the diodes

It was time to check the diodes. The diodes in an alternator can be checked with a standard multimeter but the process is somewhat involved for the novice (Sidebar A).

My measurements resulted in some distinctly different readings between some diodes, so I opted to take the casing to a local alternator shop. Their test equipment, designed specifically for testing diodes, confirmed the same borderline readings. Since these values can be influenced by a high-resistance path across the diode surfaces (usually a result of corrosion), a shop worker bead-blasted the entire rear casing and retested. Everything checked good. In a split second, the technician even popped in a rear bearing. (Darn if it wasn't the same one I'd just bought.). Since I had brought the alternator in disassembled, I was only charged \$5 for the 5 minutes of time this entire process took.

Assembling the unit

I was now ready to reassemble the hydro unit. I relied on photographs I had taken of the unit *before* disassembly to help orient everything correctly.



Since I would need the grip on the rotor to re-install the impeller nut, I began by installing the new sealed ball bearing and its retaining plate in the front alternator casing. Since this bearing is within an inch of the water-driven impeller, I packed plenty of Lubriplate on either side of the

bearing to help keep out water. Next, I slid the bushing onto the shaft of the alternator rotor and inserted the shaft through the front bearing in the alternator casing. I squeezed out a thin coating of Form-a-Gasket (non-hardening type) onto the front of the alternator casing and mated it against

the inner spray shield to further waterproof the unit.

Alternators have two mounting holes, one larger than the other. The hole for the smaller bolt is threaded, so its bolt is inserted from the inside of the bowl and is simply tightened down. The larger bolt slips through

Sidebar A: Alternator diodes

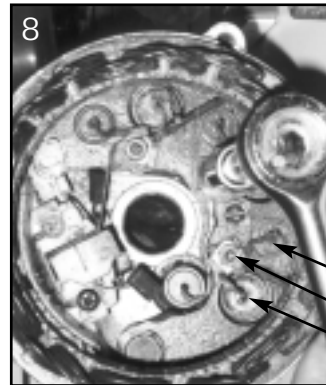
Alternators have rotating fields and stationary stator windings. As the name implies, the field coils on the rotating core generate an electromagnetic field. The stator (power) windings are stationary and produce electricity up to 35-45 amps at 12V as a result of rotation through the field. The field coils receive power from B+, or the alternator's output through graphite brushes in contact with sliprings on the rotor. The stators are wound to produce 3-phase ac electricity which is converted into DC with diodes. Each phase needs two diodes, each one of which are ganged together at B+ or ground.

So, there are six diodes mounted in the alternator—three in the rear casing and three in a metal plate that is electrically-isolated from the casing. Unless there is reported trouble with the alternator's output, the diodes are generally assumed to be good and are left alone. A diode in your hand is easy to test with an ohmmeter or a continuity tester (both functions are found on inexpensive multimeters) to find out if it's shorted or open. However, alternator diodes are

pressed into tight holes and are difficult to remove. To test them in place, a diode lead must be disconnected so that each diode is essentially "out of the circuit" and not influenced by other wiring or diodes.

The process of checking the diodes begins by locating the stator windings. These are wound in a frame that fits the inside curvature of the casing and they handle all the power generated in the alternator. Three wires from this array terminate on three separate posts on the rear plate, each wire representing 1 phase of the generated 3-phase output. The leads from two diodes also attach at each post. So, three windings (phases) = three posts = six diode leads.

A few words of caution before you tackle this. First, it's a small space and the stator wires are stiff. Be gentle and don't move anything more than you have to. Second, make a drawing. At least, it's a good place to write down the readings. It's also a great guide during assembly when you can no longer, perhaps a few days later, remember which of several possible ways something might go back together.



8. The nut is removed from a stator terminal to free two diode leads.

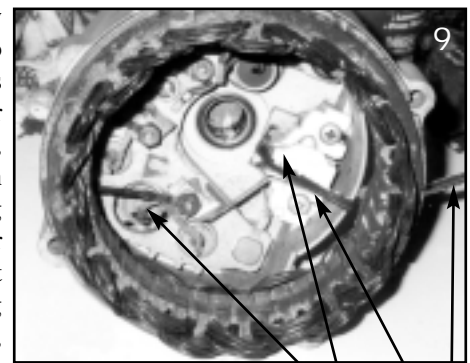
9. A grocery tie holds the brushes in place before the rotor is re-inserted in the casing.

Diode in standoff plate (3)
Stator terminal (3)
Diode in rear casing (3)

Third, pay attention to detail. This ensures proper reassembly, particularly in that nothing shorts out or drags against the rotating parts. Finally, alternators are not all the same. Adapt my procedure to fit your alternator.

I used a small nut driver to remove the nut from one of the posts where the stator windings meet the diode leads. I used needlenose pliers to gently lift the diode connectors off the post, removing other leads only if necessary to get at the diode leads. I figured that working with one terminal post at a time would prevent any crossed wires.

I touched one lead of the multimeter to the diode lead I had just freed and the other to the metal case (or



Stator lead
Brush holder
Grocery tie for brushes

standoff plate) in which the diode is embedded. A continuity tester will show current flow in one direction only, so reverse the multimeter leads, finding first continuity, then no continuity. This tells you if the diode is good or bad. I also tested these diodes with the ohm function of the multimeter, providing me with actual values of ohms (a measure of resistance) in each direction for each diode.

the bowl and the alternator flange. At this point, I slipped the support frame for the hydro unit over the exposed threads and added nuts to each.

The impeller is held to the alternator shaft by a big brass nut and a large, thick brass backing plate. I slid the plate onto the alternator shaft, pushed the impeller into place—ensuring that its buckets are correctly oriented to the nozzle—and added the nut. As with disassembly, the vice grips held the alternator rotor while I tightened the nut against the impeller, being careful not to over-tighten it.

I was ready to install the field brushes. This job requires some dexterity. I set the rear alternator casing onto a towel on my workbench so that I had both hands free. I inserted a spring into the rear brush holder and held it in place with a screwdriver. With my free hand, I grabbed the brush with needlenose pliers and oriented it over the spring, slipping out the screwdriver as I pressed the brush into place. I inserted a grocery tie (used for holding market vegetables together) through the hole in the rear casing and across this brush to hold it in place. I repeated this process for the front brush, then routed the grocery tie out another hole so that I could twist the two ends together outside the casing. This process is tedious because the brush leads are short and already anchored to their terminals. Be patient or you'll be starting over a lot.

Since the rear needle-type bearing was already installed in the rear alternator casing, I was ready to join the alternator halves. I slipped the rear casing over the rear of the rotor and aligned the scratch marks I'd made (before disassembly) with those of the front casing. I inserted and tightened the four case bolts.

Once the alternator was assembled, I untwisted the grocery tie holding the brushes in place and pulled it out. I again checked the field coil resistance with my multimeter, placing one test

lead on the F+ (Field positive) post and the other at the B- (Battery minus, which is also F-) post. The reading was the same as before: 4.2 ohms. This one test confirmed a good electrical contact through the terminals, brushes, sliprings, and field coils.

The control box

The control box for the Burkhardt turbine was missing in this application. The circuitry requirements for an alternator in a hydro unit are nearly identical to those used in a windplant or a standby generator—an ammeter, a diode, a rheostat, a fuse, a terminal junction, and an enclosure (Fig. 10). The ammeter displays alternator output (current) in amps. The diode blocks battery voltage from powering the field coils, which rely instead on the residual magnetism in the rotor's iron for excitation. The rheostat (another name for a potentiometer or variable resistor) manually adjusts field current, replacing the function of the voltage regulator used in automobiles. The fuse protects the field from too much electric current. The terminal strip helps with electrical connections between the unit and the alternator and battery pack. Finally, the enclosure protects these components from the environment.

Since I had the tools and experience to assemble such a simple circuit, I

opted to fabricate a control box from scratch, mostly copying the original design.

I strayed from the original design of the control box in two ways: how the field coils are energized and where the external shunt is located (Sidebar B and Fig. 11). The first one simplifies the circuitry and reduces the amount of the output power that is taxed to energize the field coils. The second increases the accuracy of monitoring power output from the system and avoids running large wires through the control box.

I obtained a rheostat—rated at 28 ohms (resistance) and 50 watts (heat dissipation ability)—directly from John Takes, who owned and operated Burkhardt Turbines for many years. For a 12-volt system, a 12-ohm rheostat is generally more appropriate, but I will try the 28-ohm one first. (This will be tested when the hydro unit is installed and water is available to it.) I purchased the fuse holder and fuse, a pushbutton switch, terminal strip, and enclosure from a local Radio Shack for this circuit. I used terminals for multimeter test leads from my own parts' stock.

Construction tips

After a careful inspection of the system schematic, I recognized that the control unit was basically handling field current circuitry and a small bit

of metering. Its container would mount the rheostat, pushbutton switch, two meter terminals, a fuse, a terminal strip, and interconnecting wires.

Accordingly, I selected a 5-inch long, 3-inch wide, and 2-inch deep plastic box for the control unit. (It was a tight fit; a novice might want to pick something larger.) Since the control unit is attached to (or near) the hydro unit itself, it is

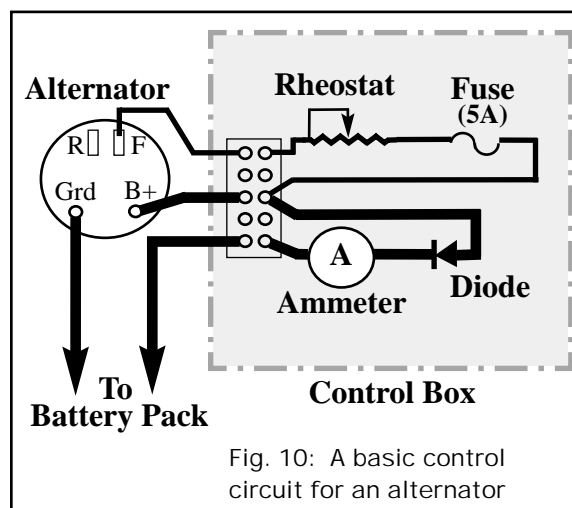


Fig. 10: A basic control circuit for an alternator

exposed to a water environment and must be fairly waterproof. I initially considered using a Tupperware container for this application because it provides great access and seals so well. I rejected this idea only because I thought the sunlight might eventual-

ly embrittle it. I also rejected the use of a steel box, since it would require a grounding rod at the hydro site.

The rheostat is large and takes up most of the room, so I positioned this at one end of the box. The only other holes in this face of the box are the

pushbutton switch and the two meter terminals. Other considerations in layout? Components should not interfere with each other. Wires take up space, so allow for them. Finally, position the exit hole in the end face of the box to permit easy hookup of

Sidebar B: Control box

The control box I built uses a field circuit modified from the standard field circuit and measures output current differently.

1. Field connection.

While the diode (as shown in Fig. 10) provides a way to supply field current to the alternator, it also assesses its own tax for this effort. Common diodes dissipate (as heat) as much as one watt per amp—a whopping 35 watts for a 35-amp output—due to their own internal resistance. If you choose to use this circuit, use a Schottky diode. While more expensive, it will reduce this loss by half.

However, there is a way to avoid the use of a diode altogether which works especially well with hydro-electric units and standby generators. (Sorry, it won't work well with homebuilt windplants.) This method relies on the use of the **R** (rotor) terminal on Delco alternators (or the similar spade terminal of other alternator brands) to supply field current. The **R** terminal actually taps *one* rotor phase in the alternator while the output leg (**B+**) represents *three* phases. The difference? The **R** terminal is connected to one stator and produces ac (not dc) with about half the volt-

age (and, therefore half the current) normally available at the **B+** terminal.

The control circuit that takes advantage of the **R** terminal (Fig. 11) is radically different than the one using a diode (Fig. 10). A critical component in this setup is the momentary-contact, pushbutton switch. Without it, the field coils might not self-energize because of the lower voltage available from the **R** terminal. Fortunately, hydro-electric units that employ the Pelton-wheel are "tuned" for a specific head and flow of water. As such, the reduced current to the field coils is part of this tuning process. Once adjusted, the hydro unit may be energized by the owner via the pushbutton switch and, thereafter, left unattended.

Two cautions. First, momentary means *momentary*, i.e. *less* than a second. Any longer and there is risk of blowing a diode or the fuse. Second, don't miswire the circuit, or you can add heat and fire to the symptoms listed above. If you can't get it to work, go back to the circuit shown in Fig. 10.

2. Meter shunt. The original design of control box used a stock ammeter with

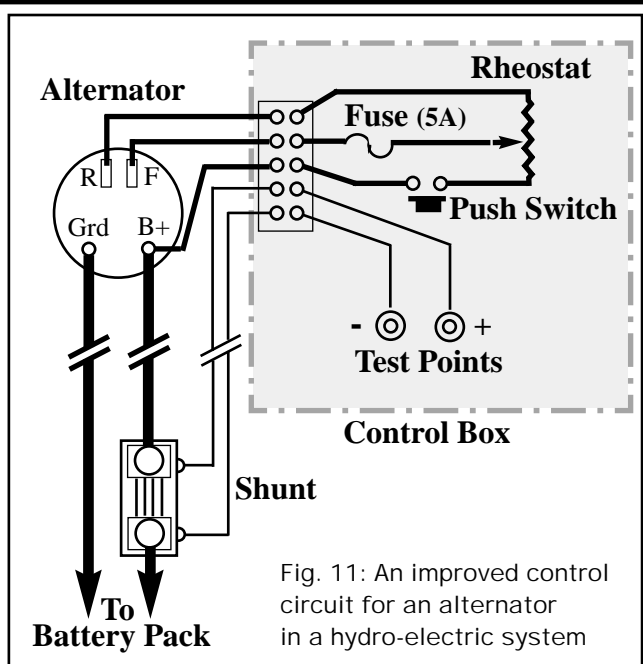


Fig. 11: An improved control circuit for an alternator in a hydro-electric system

a built-in shunt. While this is nicely packaged, this type of meter offers poor resolution for anything except mid-scale readings, must be waterproofed, and limits output readings to the immediate vicinity of the hydro unit.

I elected instead to use a standard meter shunt. This calibrated gizmo offers accurate readings to within 1/10th of an amp of current across the range of amperage measured when used in conjunction with even a cheap (\$20) digital multimeter. The advantage of the shunt is that it may be mounted anywhere in the line between the control box and its connection with the battery pack. Small-

gage wires may then be run to meters or terminals that accept the test leads from a multimeter. In this application, I wanted to mount the shunt near the battery pack where it would pull double duty, monitoring the output of the existing solar modules. From there, I could run small wires to test points in the control box at the hydro site.

A side benefit of this arrangement was that I did not need to mount the shunt inside the control unit, thereby avoiding having to route large-gage (power) wires *through* the control box itself.



Fig. 12: Components for the control box are based on the circuit illustrated in Fig. 11.

Fig. 13: Draw a wiring diagram and check it against the schematic before you start construction.



The layout will help you decide their length. While the shortest distance between two points is a straight line, it's not always practical. My work with communications and radar equipment when I served in the U.S. Navy taught me the virtue of routing wires in a neat and orderly fashion. Basically, you want them out of the way. More importantly, you want to be able to remove components later without having to undo wires just to get at or extract them.

What about wire size and color? It's a good rule of thumb not to use wires any smaller *or* larger than they need to be. Too small, they may

heat up, catch fire, and melt. Too large and they are harder to work with. From the schematic, I readily knew that the control unit is only handling field current (3 amps) and a metering circuit (0.1 amps). Stranded #12 wire is more than adequate for the field current and stranded #18 (or smaller gage) wire works for the meter circuit. (Stranded wires conduct dc current better than a similar gage of solid wire, like that used in Romex for ac wiring in homes.)

Wires of different color help you keep things straight as you hook things up. More significantly, they will aid the eye in tracing *one* wire through the maze of other wires. While this is very helpful in troubleshooting, it has a more immediate benefit: checking your work *before* you hook it up and apply power to it for the first time.

In ac circuits, black is power, white is common, and green is ground. In dc circuits, red is positive (power) and black is negative (common). Since I was limited in the color wire available to me in this construction *and* the circuits weren't really power circuits, I followed *neither* of these conventions. However, I did maintain the same color on each side of the

terminal strip, so that the colors of the external wires had a corresponding

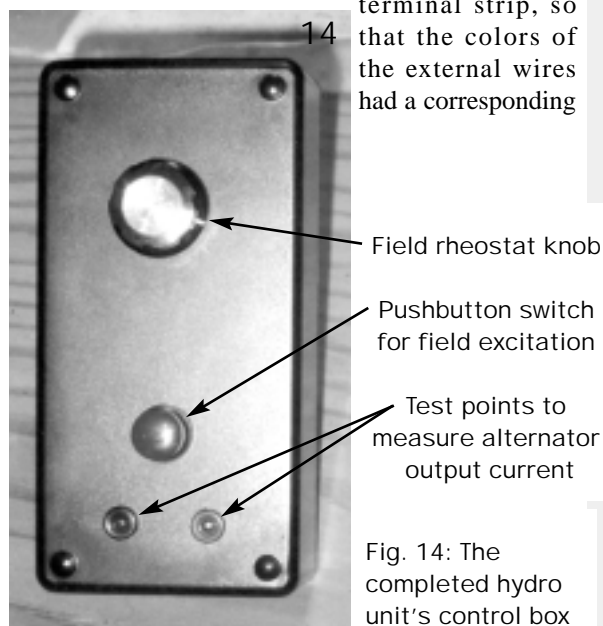


Fig. 14: The completed hydro unit's control box

the external wires to the terminal strip.

If you're fabricating something yourself, a wiring diagram is important, so make one. At least, it minimizes confusion, which usually leads to mistakes. Better yet, it helps you figure out the best way to hook something up. The easiest way is not always the best way. For example, it would have been easier to avoid using a terminal strip. I could much more easily route all of the wires straight out of the box directly from their connections with the components.

I used the terminal strip for three reasons. First, it makes it easy to disconnect and remove the control unit from the hydro system and, then, re-install it *without* disturbing the bulk of the internal wiring. Second, the wires can't be easily ripped from the unit since the terminal strip won't fit through the exit hole for the wires. Finally, a terminal strip makes for easier troubleshooting by minimizing the possibility of inadvertent shorts when probing through wiring to reach test points. I believe that anything I can do to help anyone who might later work on the unit is worth the extra effort it takes.

The components inside this control box are interconnected with wires.

color match in wires from the internal components.

One tricky job is wiring up the rheostat correctly. Most military, industrial, and commercial electric and electronics devices are built with a common understanding that clockwise rotation increases something, i.e., more volume on a stereo, brighter light with a dimmer, etc. Since the rheostat's job is to limit current to the field, it was wired so that turning the knob clockwise (cw) increases the field current by decreasing the in-line resistance. Thus, counterclockwise (ccw) limits the field current by increasing resistance. Since the rheostat is wired from the back side, it's easy to get confused and wire it backward. Doublecheck it. Did you do it backward? Simply swap the wire from the outside terminal on one side of the rheostat to the other side to reverse it.

There's a protocol to getting good electrical connections. The first rule of a good connection is to make it physically strong, such as a wire under a bolt, a wire lug under a bolt, etc. The second rule is maximum surface area of contact, best accomplished by soldering. Over time, the *weak* link in wiring between components is usually a connector, i.e., a plug, a receptacle, or a joint. I resist using spade (slide-on) connectors for this reason. Consequently, I soldered wires to a number of components in this box. If your skills are less developed, purchase these spade connectors from a local hardware or Radio Shack. Also purchase the special crimping tool for these connectors and learn to use it correctly. (Crimping is the process of squeezing the soft metal of the connector around an exposed end of a copper or aluminum wire.) Using crimpers avoids the bad crimps that result from *mis*applying needlenose or regular pliers or diagonal cutters for the job.

There is wisdom in the notion of minimizing the number of exposed connections in electrical circuits, so I purchased a bag of heat-shrink tubing of mixed sizes. When exposed to the heat from the tip of the soldering gun, a match, or a butane lighter, this stuff will shrink to about 60% of its original size, forming a snug fit over the joint. As needed, I selected the correct size (50% bigger than the wire itself) of tubing, cut it to a length that would overlap the joint, and slipped it over the wire before I physically secured the wire to the terminal with needlenose pliers. Adding a little flux, I was ready to solder the connection. If you're holding any part of the joint (i.e., the wire itself), hold it still for a full three seconds after removing the heat of the soldering iron or gun. Otherwise, the molten joint may not set, resulting in a cold-solder joint and a weak electrical connection. After waiting 15 seconds for the soldered joint to cool, I slipped the shrink-tubing over the joint. Just the radiant heat from a soldering gun will shrink the tubing. With practice, the result has a professional look to it.

Once the control box was wired internally, I performed a visual check, tracing the wires to their respective terminals and components. I followed this up with an electrical check, using my multimeter. Most of this is a simple continuity check—does this connect with that?—but I used the ohms scale on the multimeter to confirm the full resistance of the rheostat (28 ohms) and to confirm that this value decreased as I turned it clockwise.

The next job was to drill the exit hole for the wires that run to the alternator terminals and meter shunt. I figured to size this hole just large enough for the wires—two #12 wires (rotor and field), a #14 wire (B+), and two #22 wires (+ and -, meter

shunt)—and use silicone sealant to weatherproof the exit. Accordingly, I drilled a ¼-inch hole and fed through the first three wires. Their ends were stripped, shaped, and tightened under screws on the terminal strip. I cut these wires to equal lengths, about 18 inches long, which should easily reach the end of the alternator from the mounting position on the frame-work. I soldered a ring-connector to the wire that goes to B+, and added push-on connectors to the ends of the other two, for connection to the F+ and R terminals on the alternator. Once the control box is installed on the hydro unit, the two wires from the remote meter shunt will be fed into it, and also connected to the terminal strip. Afterwards, I will use silicon sealant on the inside and outside of the exit hole to effectively seal this opening against the elements and insect life.

I like to add schematics and/or wiring diagrams to black boxes, so I embarked on this final task. The resulting diagram is a mix of a schematic and wiring diagram, with particular emphasis on the terminal strip and the colors of the different wires. I reduced this image to a size smaller than the back plastic cover. Once positioned, I used fiberglass tape in overlapping strips to secure and seal this artwork against the cover inside this cover, and used the four screws to secure the cover to the control box. Once the hydro system is installed, I will add a tiny bead of Lubriplate or similar compound around the perimeter of the cover plate (before screwing it on) to further seal it against weather.

(Michael Hackleman, P.O. Box 327, Willits, CA 95490. E-mail: mhackleman@saber.net) Δ

To read more of Michael Hackleman's energy articles, visit BHM's website at www.backwoodshome.com.

THE IRREVERENT JOKE PAGE

(Believing it is important for people to be able to laugh at themselves, this is a continuing feature in *Backwoods Home Magazine*. We invite readers to submit any jokes you'd like to share to *BHM*, P.O. Box 712, Gold Beach, OR 97444. There is no payment for jokes used.)

The boss went up to the bartender and asked, "Have you been fooling around with the new waitress?"
"No, sir, I haven't," replied the bartender.
The boss replied, "Good, then *you* fire her!"

Two opposing county chairmen were sharing a rare moment together. The Democratic chairman said, "I never pass up a chance to promote the party. For example, whenever I take a cab, I give the driver a sizable tip and say, 'Vote Democratic.'"

His opponent said, "I have a better scheme, and it doesn't cost me a nickel. I don't give any tip at all. And when I leave, I also say, 'Vote Democratic.'"

The artist asked the gallery owner if there had been any interest in his paintings on display at that time.
"I've got good news and bad news," the owner replied.
"What's the good news?"
"The good news is that a gentleman inquired about your work and wondered if it would appreciate in value after your death. When I told him it would, he bought all 35 of your paintings."
"That's wonderful!" the artist exclaimed. "What's the bad news?"
"The guy was your doctor."

A man was sued by a woman for defamation of character. She charged that he had called her a pig. The man was found guilty and fined.

After the trial he asked the judge, "This means that I cannot call Mrs. Johnson a pig?"

The judge said that was true.

"Does this mean I cannot call a pig Mrs. Johnson?" the man asked.

The judge replied that he could indeed call a pig Mrs. Johnson with no fear of legal action.

The man looked directly at Mrs. Johnson and said, "Good afternoon, Mrs. Johnson."

There's an Englishman, an Irishman and a beautiful girl sitting next to each other, girl in the middle, in a train. The train goes through a tunnel and it gets completely dark. Suddenly there is a kissing sound and then a slap!

The train comes out of the tunnel. The woman and the Irishman are sitting there looking perplexed. The Englishman is bent over holding his face which is red from an apparent slap.

The Englishman is thinking "Damn it, that Irishman must have tried to kiss the girl, she thought it was me and slapped me."

The girl is thinking, "That Englishman must have moved to kiss me, and kissed the Irishman instead and got slapped."

The Irishman is thinking, "If this train goes through another tunnel, I can make another kissing sound and slap that Englishman again."

A woman's car was stalled in the middle of a busy street, and the man behind her honked continuously as she tried to restart it. Finally, she got out and walked to the man's car. "I can't seem to get my car started," she said, smiling. "If you'll go and start it for me, I'll stay here and lean on your horn for you."

Two confirmed bachelors were sitting and talking. Their conversation drifted from one subject to another and finally to cooking.

"I got a cookbook once," said the first, "but I could never do anything with it."

"Too much fancy cooking in it, eh?" asked the second.

"You said it. Every one of the recipes began the same way—'Take a clean dish and...'"

After a particularly difficult day in basic training, the drill sergeant got in the face of the new recruit and screamed, "I'll bet when you're discharged from the Army, you'll wait for me to die just so you can spit on my grave."
"Not me," the recruit said. "When I get out of the Army, I never want to stand in line again."

After a quarrel, a wife said to her husband, "You know, I was a fool when I married you."

The husband replied, "Yes, dear, but I was in love and didn't notice it."

Two casino dealers are waiting idly at the craps table when a beautiful blonde comes in and asks if she could bet \$10,000 on a single roll of the dice.

"And," she adds, "I hope you don't mind, but I feel much luckier when I'm naked."

With that she takes off everything but her necklace, rolls the dice, then starts yelling, "Mama needs new clothes."

When the dice stop she screams, "Yes, yes, yes! I won, I won, I won!" and she jumps up and down and, while still nude, she hugs and kisses both of the dealers passionately. Then she picks up the money, gathers all of her clothes and leaves.

The dealers can only stare at her very nude and well rounded shapely behind as it vanishes into the casino crowd, then one of the dealers ask, "What did she roll, anyway?"

The other answers, "I don't know. I thought *you* were watching."

"What are you watching, Dad?"

"Basketball game."

"What's the score?"

"117 to 114."

"Who's winning?"

"The team with 117."

An Irish girl left Dublin to find a job as a secretary in Los Angeles and began sending home money and gifts to her parents. After a few years, they asked her to come home for a visit as her father was getting frail and elderly.

She pulled up to the family home in a Rolls Royce and stepped out wearing furs and diamonds. As she walked into the house her father said, "Hmmm, they seem to be paying secretaries awfully well in the States."

The girl took his hands and said, "Dad, I've been meaning to tell you something for years but I didn't want to put it in a letter. I can't hide it from you any longer. I've become a prostitute."

Her father gasped, put his hand on his heart and keeled over.

The doctor was called but the old man had clearly lost the will to live. He was put to bed and the priest was called.

As the priest began to administer Extreme Unction, with the mother and daughter weeping and wailing, the old man muttered weakly, "I'm a goner, killed by my own daughter! Killed by the shame of what you've become!"

"Please forgive me," his daughter sobbed, "I only wanted to have nice things. I wanted to be able to send you money and the only way I could do it was by becoming a prostitute."

With that the old man brushed the priest aside and sat bolt upright in bed, smiling. "Did you say prostitute? That was a close one. I thought you said Protestant."

A nice young worker from the post office was sorting through her regular envelopes when she discovered a letter addressed as follows: GOD c/o Heaven.

Upon opening the envelope, the letter enclosed told about a little old lady who had never asked for anything in her life. She was desperately in need of \$100 and was wondering if God could send her the money.

The young lady was deeply touched, and she passed the hat among her workmates. She managed to collect \$90, and she sent it off to the old lady.

A few weeks later another letter arrived addressed in the same way to God, so the young lady opened it. The letter read, "Thank you for the money, God, I deeply appreciate it. However, I received only \$90. It must have been those bastards at the post office."

A woman accompanied her husband to the doctor's office. After his checkup, the doctor called the wife into his office alone. He said, "Your husband is suffering from a very severe disease, combined with horrible stress. If you don't do the following, your husband will surely die:

"Each morning, fix him a healthy breakfast. Be pleasant and make sure he's in a good mood. For lunch make him a nutritious meal he can take to work. And for dinner prepare an especially nice meal for him. Don't burden him with chores, as this could further his stress. Don't discuss your problems with him it will only make his stress worse. Try to relax your husband in the evening by wearing lingerie and giving him plenty of back rubs. Encourage him to watch some type of team sporting event on TV. And, most importantly, make love with your husband several times a week and satisfy his every whim.

"If you can do this for the next 10 months to a year, I think your husband will regain his health completely."

On the way home, the husband asked his wife, "What did the doctor say?"

"You're gonna die," she replied.

Q.:What is the difference between a lawyer and a leech?
A.: A leech will drop off a dead body.

A businessman boarded a plane to find, sitting next to him, an elegant woman wearing the largest, most stunning diamond ring he had ever seen. He asked her about it.

"This is the Klopman diamond," she said. "It is beautiful, but there is a terrible curse that goes with it."

"What's the curse?" the man asked.

"Mr. Klopman."

Ayoob on Firearms:

Of kids and guns

By Massad Ayoob

In the almost two years since the Columbine tragedy, American police have coined the term “active shooter.” It means, in essence, a crazed gunman who is at the scene now, murdering people or trying to. As a cop for 27 years by the time you will read this, I find that terminology poignantly sad. For most of my life, “active shooter” meant a decent person who actively pursued a certain healthy hobby.

Like many of you reading this, I grew up with guns. Also like many of you, I had kids and guns in the same house when it was my turn to be the parent. This is true of almost every cop I ever worked with. The officer who leaves his only gun, the issued service weapon, at his locker when he leaves work and doesn't have a firearm at home is a *rara avis* indeed, and probably a young and unseasoned one, or one who has spent his career safely behind a desk. The cops in the street learn quickly the reality of violence, and after they've seen enough victims they say to themselves, “Not me and not mine.”

This is also why most cops leave a gun at home for their significant other when they are at work. They know best of all that police work is necessarily reactive rather than proactive. Anyone who says “the police will protect you” hasn't been a cop. Those of us who have been, know that we can only respond to calls for our service. This means, basically, that you have to survive long enough to call us, and then you have to wait for us to get there.

There is now great emphasis on passing legislation that will criminal-

ize parents who make loaded guns accessible to their children. Hey, send me up. One day, off duty with my kid in a jurisdiction other than my own, we passed a cop who was struggling on the ground with a violent suspect at the side of the road. As I pulled over, I handed my loaded 2” .38 Special backup gun to my 11 year old daughter before I got out of the car and ran back to assist the officer. All ended well, with no bloodshed. I would do it again tomorrow. The kid was already trained to an adult standard. It was an emergency. In what the law calls “the balance of competing harms,” it was simply the right thing to do. If that suspect had overpowered and killed the officer and then killed me, he wasn't going to leave my kid alive as a witness. She stayed locked in the car, her finger clear of the trigger of the loaded gun, similar to one with which she had recently qualified to a police standard. She did the right thing, too.

Each family has to make their own decision, and it has to be made specifically for each child, with a ruthlessly honest appraisal of the child's emotional stability, maturity, and ability. My father, and his father before him, were gunfight survivors before I was born. I grew up with firearms. By the age of nine, I had a .22 rifle, a shotgun, and a Winchester 94 deer rifle hanging on a rack in my bedroom. At the age of 12, I had a loaded Colt .45 automatic in the desk drawer in that same bedroom.

My own children are now 16, and almost 24. Both learned guns early, helping me clean them at age 5 and shooting at age 6. The elder has been licensed to carry loaded and con-



Massad Ayoob

cealed since age 18, and it has already saved her in one incident, with no shots fired. Her attackers fled when they saw her S&W 9mm.

Elder Brat chose not to have a loaded gun in her own room until she was 18. She has had one there ever since, except when she was living on a “gun-free” university campus. Younger Brat at 16 also prefers not to keep a loaded weapon of her own in her room, but if home alone, knows where the immediately accessible loaded defense guns are.

I respect their choices. These young women often entertained their female friends in their rooms, and didn't want loaded guns accessible to the untrained. When I was a teenage boy, if my buddies came over we stayed in the living room or the yard, and if the guys wanted to see my guns, we had my dad clear it with their dad and all could go to an appropriate range together. My daughters did the same: many of their friends found guns fascinating, and Dad always cleared it with the parents before the trip to the gun club. It all worked out.

Access to loaded weapons requires training, skill, and already-demonstrated adult levels of responsibility.

My kids fit the latter. What struck me most was that each of them became the ones their peers came to for advice when they were in trouble. Skills? My first-born, Cat, won her first pistol match against adult men at age 11, and at 19 earned High Woman honors at the National Tactical Invitational. My second daughter, Justine, was 13 when she won the National Junior Handgun Championship Parent/Child Team with only a little help from her dad.

Kids and defense guns? In 2000, a maniac with a pitchfork broke into a home occupied by a bunch of kids guarded by a young teenage girl. She tried to reach her parents' gun for defense, but it was locked and inaccessible. She jumped out a window and ran to a neighbor's house, telling him what happened and begging him for a gun. Aghast, he kept her there as he called the police. When the cops came—and finally killed the homicidal maniac—it was too late to save the little ones.

I remember the little boy who killed the man who otherwise would have beaten his mother to death, using the mom's little pistol that he snatched from her desk drawer. I remember the youth who used a .22 rifle to kill the pit bull that was trying to bite his little sister to death. And I remember the 12-year-old whose father trusted him to have his own .22 revolver in his bedroom. It saved the boy's life when the estranged lover of the

father's new girlfriend broke into the house and killed the older son and the girlfriend and shot the father and left him for dead. When the mass murderer came to the 12-year-old's room, the boy's gunfire killed the murderous home invader, saving the kid's life.

We who own firearms have to live up to the responsibility of keeping them out of the hands of the irresponsible. That is patently obvious ... but, once it is said, there are times when responsible young people will face life-threatening crisis and have to act like adults to save innocent lives. That can only happen if the child who has lived up to adult standards of responsibility and prudence has access to an adult level of power to stop the harm.

It is not an easy question, and it never will be. I will never suggest that all children have access to deadly weapons. That would be madness. But, once they had been specifically trained in the responsibility attendant to them—not just gun safety per se, but the ability to make what cops call “the deadly force decision”—I did entrust my own responsible children with that power.

And those responsible children never gave me cause to regret it. Fate, however, gave me reason to be glad I had done so.

I will stand by the decision I made ... as you will have to stand by yours.
Δ

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Product Review: Vita-Mix

(Backwoods Home Magazine does not do “puff” pieces for its advertiser, nor do we do pieces hoping to induce new advertisers to display their wares in our pages. Vita-Mix has advertised with us for eight years without us ever doing a review of their product. This, despite the fact that several of the staff are Vita-Mix owners and users. So we asked Nathele Graham, an Administrative Assistant at BHM, to review the Vita-Mix. — The Editors)

My Vita-Mix is a useful tool which I have used daily for the last year. It has become an important part of my kitchen. The instructional video that came with it is clear and helpful. At first I was skeptical of the claims that it could make ice cream as well as cook soup. After watching the video it was clear to me that both can easily be done using the Vita-Mix. It's also easy to clean. There are no parts that need to be taken off and washed separately. Just put a little soap and some water into the container, turn it on, and Vita-Mix cleans itself.

Mornings around my house are a little hectic, what with getting myself ready for work and my daughter ready for school. My daughter usually eats cold cereal, but I don't care for it. With the Vita-Mix, it is quick and simple to mix up a healthy breakfast smoothie of yogurt, a banana, an apple, some raspberries, an orange, and a little ice. I pour it into a glass and drink it on the run. It is filling and keeps me satisfied until the afternoon.

Using fresh fruit in your Vita-Mix to make healthful drinks like this for your family can provide almost a third of the dietary fiber recommended by doctors, as well as adding more vitamins in their natural state. A minimum of five servings of fruits and vegetables are the one thing all the health experts agree is a way to improve your health and extend your longevity, not just because of the vitamin content, but because of the fiber content. Adding a few tablespoons of oat bran or wheat bran not only gives the drink a more interesting texture, but provides half the recommended daily fiber.

After dinner my husband likes a big dish of ice cream. Since I started making smoothies in my Vita-Mix we have a much healthier and satisfying dessert. My little girl likes it when I mix up a thick chocolate drink for her.

We have just purchased some land and have moved into a single-wide trailer while we are getting ready to build a house. Since the kitchen is very small I had to decide what I needed to keep handy and what could be stored for a year or two and not be missed too much. I packed the toaster away, I sold the microwave, many pots and pans are stored, but I have my Vita-Mix.

I am also pleased with the customer support. During the move my Vita-Mix recipe book and video were both packed away. I wanted to make some ice cream but could not remember quite how to do it. So, I looked up the Vita-Mix Web site (www.vita-mix.com) and sent an email to the customer service department with my question. A couple of hours later I was sent a nice response with two or three recipes.

Dave Duffy, the publisher of *Backwoods Home Magazine*, recently brought a Vita-Mix

into the office for use by the staff, and both he and John Silveira, the senior editor, have Vita-Mixes for their personal uses and can be heard in the office exchanging recipes. Both said they got them for the health aspects of the foods they could prepare, but they love the ease with which they can prepare treats like smoothies. John also plans to use his to grind whole wheat.

Vita-Mix is built to last. It has a two-horsepower motor versus the 1/3 to 1 3/4-horsepower motors found in most kitchen appliances, and a solid base that won't break after a couple of years. I am now looking forward to getting the second container with blades for grinding grain. I know that this, too, will be an important part of my kitchen.

— Nathele Graham



Nathele Graham uses the office Vita-Mix to prepare fruit smoothies for the staff of BHM.

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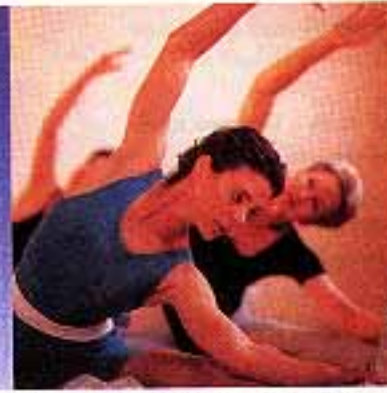
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THE COMING AMERICAN DICTATORSHIP

PART III

The role bureaucracy plays in the destruction of the Constitution and the erosion of our rights

By John Silveira

The three of us left the restaurant that morning. There was Dave, Mac, and me. Dave, of course, is Dave Duffy, the guy who publishes this magazine, while Mac is O.E. MacDougal, our poker playing friend from southern California.

Earlier that morning, while we were still at the office, Mac had talked about the steady erosion of our rights. Then we went to breakfast and, as we sat in the restaurant eating our omelettes and pancakes, he talked about how Congress' invention of new legal rights were, in reality, destroying our real rights.

I was thinking about this after breakfast as we got in Mac's car and drove south, back into Gold Beach on Highway 101, heading toward the office.

But, just as we came into town, Dave said, "Take a right, here."

Mac took a right and we were going down into the harbor.

"Where are we going?" I asked.

"I want to check out the crabbing," Dave said.

"Crabbing?" Mac asked.

"Yeah," Dave replied.

Mac seemed suddenly more animated and, after he parked, he sprung from the car. Dave got out on his side and they walked toward one of the buildings.

I stayed in the back seat of the car and waited. I was still thinking about our conversation over breakfast. I started thinking that there must be an easy way to have our natural rights restored and these new "legal rights," which are dispensed by the govern-

ment, relegated to wherever it is they belong.

Soon, I watched as they came back to the car and, as they got in, Mac was speaking excitedly about the prospect of crabbing. "I've got recipes that'll curl your toes," he said. "Crab bisque, crab cakes, crabmeat salad, a crab pie..."

"Didn't I see this scene played out between Forest and Bubba in the movie *Forest Gump*?" Dave asked. "But they did it with shrimp," he added.

Mac ignored him. "I don't know why I haven't thought about crabbing up here before this," Mac said.

"We can go tomorrow," Dave said.

"But your friend said we should go to Port Orford."

"Then to Port Orford we'll go," Dave said.

"Tomorrow morning," Mac said. "Let's do it."

"Mac," I interrupted, "I have just one question."

"Bureaucrats," he said.

"Huh?" I asked.

"You were going to ask me why we can't just assert our natural rights and who has an interest in keeping the legal rights in place."

I was a little disconcerted by this statement. "Says who?" I asked.

"You've been quiet," he said. "I just figured you were thinking about what we've been talking about this morning and that that was what you were going to ask."

I didn't say anything for a few seconds. Then I asked, "Well, okay. So, how are bureaucrats involved?"



John Silveira

Dave looked back at me in the backseat and laughed. "Is that really what you were going to ask him?" He asked me.

I didn't answer.

Dave looked at Mac.

"It was just a guess," Mac said. "These things look spectacular when I guess right and no one remembers them when I'm wrong."

"Well? What's the answer?" I asked.

"I'd say that bureaucracies are part of the problem in the erosion of our rights," he began. "They're funny things. They've been with us, one way or another, since the dawn of civilization. But when this country was founded there were none of the extensive and pervasive bureaucracies we have today. In fact, there couldn't have been."

"Why not?" I asked.

"Bureaucracies are nonproductive. They can't support themselves. They need taxes, tariffs, and licensing fees to survive. Their size is limited by the strength and wealth of the economic base around them. Back then, when the nation was largely agrarian, there wasn't enough wealth to support a large bureaucracy."

He still hadn't started the car and he stared out the window at the seagulls that were circling over the parking lot. Suddenly, he turned the ignition and the car started.

"You know," he said, "there are enough protections against the abuses of bureaucracy in the *Constitution*, but we don't apply them. I sometimes wonder, if the Founding Fathers had had firsthand experience with the abuses of giant bureaucracies, if they would have cited them specifically in the *Constitution*. Maybe they would have used words like, 'Neither Congress nor the damned bureaucracies they create are allowed to...blah, blah, blah.'"

"I think we've talked about bureaucracies before," Dave said.

"We have," Mac said. "John even wrote about it," he added as he pulled back onto the road and we continued on to the office. (See Issue No. 50, March/April 1998, *Why bureaucracy will likely destroy America, available in the anthology, Backwoods Home Magazine, the Ninth Year.*)

"Why do we have them?" I asked. "Do they have any upside?"

"Sure they do. Historians believe that some of civilization's most fundamental and greatest inventions and discoveries came about as the result of bureaucracies."

"Like what?" Dave asked.

"Writing, math, geometry, and accounting among others. Bureaucracies had to have ways to keep records, record taxes, measure out land, and such. As conceived, bureaucracies were intended to make things run smoother. But, being made up of people, they have their problems, the biggest being that they look out for themselves, first. And, like any other human organization, they want to grow and acquire more power. They also seek to squash threats to themselves, and those threats are sometimes just people who want to limit their power."

"But who wanted bureaucracies in the first place? I asked.

"For those who rule—kings, emperors, presidents, or whoever—they serve a useful function. One of the things rulers throughout history always discovered or rediscovered is that establishing a bureaucracy will enhance their power over both the populace and their political enemies. But, as I said, the downside is that the first thing bureaucracies look out for is themselves. Even at the expense of the country's welfare. Even at the expense of the rulers."

The China example

We pulled up in front of the office and got out of Mac's car.

"Do you have any examples of bureaucracies that sacrificed the well-being of their country for themselves?" Dave asked as we walked into the office.

"Sure. Probably every bureaucracy has at some time or another. But the most famous is probably what happened in China in the 15th century.

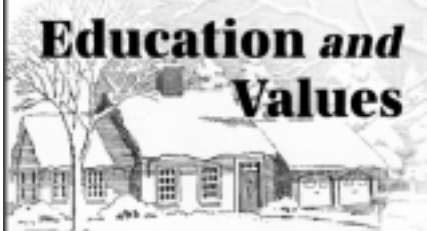
"For centuries, China was the most powerful country on earth. They had the people, the intellectuals, the wealth, and most of all they had the merchant fleet and navy to have ruled the world. They also could have, and should have, been the traders to discover the sea routes around the world."

Dave sat down at his desk and I sat at mine. Mac sat in the stuffed chair near the filing cabinet. He looked as if he could fall asleep. He didn't say anything for a minute.

"Well, what about the Chinese?" Dave asked.

"Oh, yeah. Well, while the Renaissance was blossoming in Europe, and just before the Age of Discovery, which was a European phenomenon, China had the world's largest sailing ships and largest fleet. They traded with India and the Arabs and sailed as far west as the east coast

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of Africa. There's even evidence that some Chinese ships reached the New World before Columbus did. China was poised to literally overrun the planet, and Europe and its people would have remained residents of a backwater outcropping that sticks off the butt-end of the Asian continent."

"Just look at a map of the world some time. Europe isn't really a continent at all. It's just the rugged back door of Asia. The perception that Europe is a separate continent goes back to the ancient Greeks. It's the way they saw the world, and we've retained their convention.

"But, anyway, had it not been for its bureaucrats, China would have become the predominant world power in the 15th century and there's no reason to believe it wouldn't have continued to be so to this day."

"That would have changed history a little," Dave said and Mac laughed.

“So, what did the bureaucrats do?” I asked.

“As the Chinese navy was on the brink of overrunning the world, in Chinese cities a new wealthy class was arising. It was a class made up of merchants and traders that created wealth, great wealth, and they were already getting the ear of the emperor. But, within China was a powerful force jealous of these rising powers.

“This was the Chinese bureaucracy and they saw this new rising middle class as a threat to their power and influence. Their solution for dealing with these upstarts was to use the still considerable influence they held over the emperor. They got him to forbid further exploration, to decree limits on how far traders—in fact, any Chinese ships—were allowed to go and what ports they were allowed to visit. Overnight, China turned in on itself. The world’s greatest seagoing fleet suddenly became a coastal fleet. They erased what seemed to be China’s destiny.

“What the Chinese navy had accomplished was astounding. But the bureaucrats had almost all of the records of their feats of navigation and exploration destroyed so it would not happen again. They were bent on destroying any and all threats to their place in Chinese society.

“The result, as history shows, is that the Europeans—in particular, the Spanish, Portuguese, British, and Dutch—became the world’s great explorers and traders and, when you consider how small their countries were and how remote their corner of the world was, it’s incredible how their power and influence expanded far beyond what one would have thought possible.

“And China, on the other hand, never recovered from that setback.

Bureaucrats rule

“But it isn’t only in China that bureaucracies have wielded incredi-

ble power. Throughout history, the big names in history have very rarely been the true rulers of any country. I don’t care if we’re talking about pharaohs, kings, presidents, emperors, or what. And it hasn’t been ‘the people’ who rule, either. More often than not, it’s been the bureaucrats.

“Long before Alexander the Great conquered so much of the so-called known world, the various civilizations were ruled by almost invisible elites that were the bureaucracies. It’s been that way since the first cities arose. And great generals, like Alexander the Great, understood this. Wherever he went, whatever people he conquered, he realized that the way to consolidate his holdings was to dispose of the rulers—the kings, the princes, the tribal chiefs, or whatever—but to keep the bureaucrats in place. They’d run things as they always did. He could then go on to conquer the next city.

Government is not reason, it is not eloquence—it is force.

George Washington (1732-1799)

“Great conquerors have understood this throughout history. Those who didn’t had the shortest-lived empires. Those who did left their mark.

“Eighteen hundred years after Alexander, the Florentine, Niccolò Machiavelli, created a place in history for himself by writing a short tract titled, *Il principi*, or what we in the English speaking world call *The Prince*. What he expounded upon in the book was how a ruler is to maintain power, and among other things he discusses the importance of bureaucracies. He recommends that conquering princes keep the old bureaucracies intact and not try to replace them with another. He understood that the bureaucrats already in place already knew how to keep the society functioning and that they would also give their allegiance to whomever took power, as long as that

ruler both recognized and protected them because, as I said, historically, bureaucracies first allegiance has been to themselves and they will give support to anyone who will keep them in their jobs.

“It sounds as if, no matter what their drawbacks, bureaucracies are important to a country’s power,” Dave said.

Mac thought a second. “They’re incredibly important to the ruling elite. If a ruler wants to ensure he remains in power, the best way is to install a bureaucracy, if there isn’t one there already. And if there is one, it’s best for him to make friends with it.

“What kept the pharaohs in power for 3000 years was not the power of the pharaohs themselves, but the hold of the bureaucracy on the Egyptians.

“What lent stability to China was its bureaucracy. Dynasties came and dynasties went but the bureaucracy never faltered. Even after Ghengis Kahn conquered China, the bureaucracy stayed in its place. And when the Mongol hoards disappeared, the bureaucracy remained.”

“So, are you saying we need bureaucracies?” Dave asked.

Mac thought about this. “They have their uses. They do get work done that we need to have done to function as a society. And they’re probably inevitable. What we want to do is control them.”

“Wait a minute,” Dave said. “What do you mean they’re inevitable?”

Mac sort of smiled. “Bureaucracies are incredible,” he said. “If you study them, you begin to realize they come into being naturally. I don’t think the first bureaucracies were ever planned.”

“What do you mean they happen naturally?” I asked.

Bureaucracy evolution

“Bureaucracies are evolution in action. Whether you believe in bio-

logical evolution or not, what the theory says is that if an empty niche exists, something will evolve to take advantage of it. In biology, plants evolved to take advantage of the energy in the sunlight that falls onto the earth. Herbivores evolved to take advantage of the energy now locked up in the plants. Carnivores evolved to take advantage of the energy now locked up in the herbivores, etc. The theory's not quite that straightforward and simple, but you get the drift."

"Okay," Dave said.

"So," Mac continued, "in an extremely simplified example, according to the evolutionists, say a dog comes into being. Once it does, parasites will evolve to feed on it. Worms will infest its guts; fleas, flies, and mosquitoes will evolve to suck its blood; leaches will attack it when it's in water. Almost never will these things contribute anything to the welfare of the dog. They'll just live off of it because it's there, because it's a source of energy—a source of sustenance.

"Hundreds of species and virtually thousands, if not millions and billions of organisms if we include bacteria and viruses, will live off of this one dog. There may be a microbe or two in the dog's gut that creates a vitamin the dog can't fashion for itself, but by and large none of these parasites will contribute anything to the dog's welfare. They exist only because the dog exists. As long as the dog doesn't die, more and more parasites will evolve to live off of it until all the niches that can exist, because the dog exists, are filled.

"Now, imagine society in place of the dog. In this case, we have a productive society. Government will evolve and bureaucracies will evolve. More and more bureaucracies will evolve to suck off its lifeblood, and as long as the society doesn't die, the bureaucracies will abound. Some will be useful, but most exist *just because*

society can support them," he said with emphasis.

"So you're saying most bureaucracies exist because they can, not because they're needed."

"That's more or less it in a nutshell. There's a small core of bureaucracy that society really needs. The rest is just there because society can support it."

"What part of the bureaucracy is absolutely needed?" Dave asked.

"Read the *Constitution* as it was originally written, along with the *Bill of Rights* and you can figure out what bureaucracies the Founding Fathers thought were necessary, and I think they were right. We need a legal system, a governing body, a police force, a treasury system, a core of military personnel, and maybe a little more. But not much more. The rest is extraneous and is not there *for* us though we pay their salaries."

There was a long pause and Mac looked like he was sinking into the chair. His eyes were closing and I thought he was about to fall asleep.

"But the rest won't go away," Dave said.

Mac opened his eyes and threw his hands up. "That's the problem. And, as Alexander, Machiavelli, and numerous others have understood," he added, "if the society changes, the bureaucracy survives. The durability of a bureaucracy is truly astounding."



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"You mean, they just stay in place," Dave said.

"That's right. For example, when communism and the old Soviet Union folded, you're not under the impression that the bureaucrats went home, are you? They showed up for work the next day and didn't even bother to change their name plates.

"They may have been communists and Soviets one day, and their politics may have changed and they may have been Russians the next day, but they were always bureaucrats. And whoever is in power still needs someone to collect taxes and enforce regulations. And the bureaucrats will do this for anyone because once they stop collecting taxes and spending money, they're out of work."

"What about us? How did we get these huge bureaucracies in this country?" Dave asked.

"This country started out with very little in the way of bureaucracy. In

1800, when the capital was moved from Philadelphia to Washington, D.C., all that had to be moved were 12 boxes of paperwork.”

“And you’re saying there wasn’t much bureaucracy in 1800 because there wasn’t enough wealth to support it,” Dave said. “But as our economy grew richer, bureaucracies expanded.”

“That’s right.”

“But, if they don’t produce anything themselves, then all they can do is...”

“Regulate us,” Mac said.

“Control us,” Dave said.

“That’s right,” Mac responded.

“How can we change it?” I asked.

“We won’t,” he said.

“We won’t?”

“No.”

“Why not? Who wants them?” I asked.

“First, the bureaucrats want bureaucracies to go on. It’s the way they make their livings. Second, the citizens want bureaucracies to go on even though they have a love-hate relationship with them because they’ve become dependent on them. And third, they are such a large part of our economy now that most people haven’t got any idea how to get rid of them, or even just cut them back in size.”

“Can you give us examples of each of these three cases?” Dave asked.

“In the first case, bureaucracies are run so they won’t go out of business. In fact, the way some stay in business may be insidious. Consider the case of poverty in this country. I don’t believe that any federal bureaucracy, from Department of Health and Welfare to the Department of Agriculture, really has an incentive to end poverty.”

“Why do you say that?” I asked.

“Because too many bureaucrats now depend on the existence of a permanent underclass.”

“What do you mean?” I asked.

“Most of the money spent on curing poverty is not spent on poverty itself,

it’s spent on the bureaucratic structure. In over 30 years, with over five trillion dollars spent on ‘The War on Poverty,’ the end to the problem of poverty is not in sight. I believe it’s because nobody really wants it solved. If it were solved, all those bureaucrats would have to be laid off. They actually need the poor more than the poor need them.”

“That’s a pretty serious charge,” Dave said.

It is in this raising of revenue and needing to find ways to regulate us, so they can justify their jobs, that bureaucracies come into conflict with the Constitution and our rights.

“There’s an antismoking ad in which supposed tobacco executives are talking about the number of people dying from tobacco related deaths,” Mac said. “In the ad these executives talk about how they have to recruit more smokers from the ranks of the young to stay in business.”

“I’ve seen the ad,” Dave and I said almost simultaneously.

“With just minor changes,” Mac said, “that ad could have been made about welfare. They need a steady stream of new welfare recipients to replace those who die or, worse yet, get jobs. I truly believe that the problem of poverty in this country cannot be solved as long as we have a huge bureaucracy that depends on the poor.”

There was another long silence.

“But aren’t there things we get from bureaucracies that we need,” I said.

“I’m glad you said that,” Mac said, “because that leads to the second reason we are becoming a bureaucratic state. Namely, we’ve become dependent on bureaucracies for things we should be providing for ourselves.

Much of it are things we would spend our money on, anyway.”

“Like what?” Dave asked.

“Retirement, for one. Health care is another. But let’s consider retirement. The question is whether the best way to fund it is to run the money through bureaucrats, first. There is a question of choice and there’s the question of whether it’s cost effective.”

“You’re talking about Social Security,” Dave said.

“Yes. But so many people are dependent on it today that no one dares touch it. Yet, Social Security is not only not an efficient way to provide for retirement, it is *grossly inefficient*. Not only do we only get about one eighth the return on the money withheld from us that we would get if the money were invested, but the money isn’t even really ours.”

“What do you mean it’s not ours?” I asked.

“If you invest in a retirement plan and you die the day before you retire, your heirs get what you’ve invested along with interest it’s accrued. But the money you’ve contributed all your life to your Social Security fund goes to the state the day you die. Your spouse may get some benefits from it while he or she is alive, but it’s not something you can leave to your kids, your friends, or even your church. It’s not yours.”

“I see what you mean,” I said.

“If we privatized it, the investment capital would enrich the economy and the largess from a life of working and saving would be passed on to our heirs. But the American people are so dependent on it, and so scared of change, that we are almost incapable of changing the system.”

“So the whole Social Security system exists because *we* want it,” Dave said. “In fact, because we feel dependent on it...even though there may be better alternatives.”

“Yes. Social Security is actually a dismal failure. Countries like Chile and Great Britain, which have priva-

tized their retirement programs, have not only seen booms in their economies once the money was invested instead of just being run through bureaucrats, but their retirement programs are on viable economic footings. You don't hear them talking about when their retirement programs go broke the way we talk about Social Security going broke."

I said, "Mac, you also said..." and I looked at a piece of paper I had made some notes on, "that some parts of the bureaucracy are 'such a large part of our economy now that most people haven't got any idea how to get rid of them or, or even just cut them back in size.'"

"Bureaucracies are a huge part of our economy. They not only spend tax money on themselves, but funnel a huge part of what they get through the private sector which supports them. Good examples are the defense contractors and the military. The military is essentially a bureaucracy, so the civil servants who support them, and the defense contractors who support the civil servants, as well as all of the builders of ships, planes, and bombs, are in favor of a huge military bureaucracy.

"When we talk about cutting that bureaucracy, i.e., defense, we're talking about a bureaucracy that reaches right into our own corporations and jobs."

"Can't we just cut taxes?" I asked. "That would cut their lifeblood."

"Presidents campaign on tax reform," Mac said. "They swear they'll cut taxes and make government smaller. But they can't. And the sad truth is, they know they can't."

"Why do you say that?" I asked.

"First, they can't cut taxes because so much of the money is now 'promised.' Americans have come to depend on big government, and when Americans say they want taxes cut, what they mean is they want *their own* taxes cut. But they still want government to cater to them. They

just want someone else to pick up the tab."

"What part of the budget is promised?" I asked.

"The federal budget, right now, is about \$1.8 trillion. Most of it is already spoken for. There are just seven items that make up about 75 percent of the federal budget, and it's the 75 percent that Americans feel can't be cut. Social Security is \$403 billion, Medicare is \$199 billion, Medicaid is \$117 billion, military and civil service pensions together are \$79 billion, defense is \$294 billion, and interest on the National Debt is \$220 billion. And with baby boomers heading for retirement and age related medical problems, some of these figures are going to explode. Throw in a few more of the so-called entitlement programs and less than one sixth of the federal budget is something that can be cut. This would be money for school loans, science (including the space program), and stuff like that. But, as I said, with Baby Boomers heading toward retirement, that 'promised' money is going to get bigger. More and more of the money going into the federal coffers will be obligated until one day there will be no money to cut.

"In all likelihood, taxes will be increased rather than cut."

"How much can we increase them?" Dave asked.

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"I don't know," Mac replied. "Already, some 43% of your paycheck goes to government at the local, state, or federal level either directly or in indirect taxes you must pay on goods passed on to you by businesses in the form of increased prices. Worse yet, companies must pass on the cost of complying with government regulations, bringing to over 50% the portion of the average person's income that disappears because of government.

"There are enormous amounts of money tied up in what constitutes 'government,' and it's run through or spent by bureaucrats. There is simply no way we are ever going to shrink bureaucracy in America. Americans will just be too afraid to.

"And, as their roles grow in our society and our economy, their powers will become greater. Government is now a growth industry."

"So, how does this lead to an erosion of our rights?" I asked.

The erosion of our rights

"Because our government spends prodigious amounts of money it has to raise prodigious amounts of money. It depends on the bureaucracies to raise this money. The bureaucracies not raising money also need to have something to do; otherwise they'd all be sent home. I'm talking about the *EPA*—that's the *Environmental Protection Agency*, the *ATF*—which is the *Bureau of Alcohol, Tobacco, and Firearms*, *HEW*—which is the *Department of Health, Education and Welfare*, and others. It is in this raising of revenue and needing to find ways to regulate us so they can justify their jobs that bureaucracies come into conflict with the *Constitution* and our rights.

"I suppose there was a time when you could have said the United States was the freest country in the world. But anyone who makes that claim now would have to explain why the world's freest country now allows government agencies—the bureaucracies—to seize your money, and often your house, vehicles, and property, without having to show any cause, without the intervention of a judge, and without a trial before a jury of your peers, simply because you are thought to be dealing in drugs, which, by the way, are a medical problem and should not be a legal issue.

"Or they get you for having too much cash at an airport. Or for depositing or withdrawing too much cash to or from your bank account. Or even for playing poker for real money.

"They can seize your property without accusing you of anything, without putting you on trial, and without waiting for a court order or a conviction. Even hearsay from witnesses who either want to negotiate a lower sentence because they've been

accused of a crime, or who want to pick up a bounty, is enough for the United States government, any of the state police forces, or even the local town or county sheriff to seize any of your property or take any or all of your wealth.

A government is like fire: a handy servant, but a dangerous master.
George Washington (1732-1799)

"The *Bill of Rights* is supposed to protect us from this kind of abuse but many bureaucracies are trying to free themselves from the bonds that the *Constitution* of the United States is supposed to shackle them with. They seek exemptions from Congress and the courts, and they often get them. There is not a bureaucracy created or bureaucratic power granted that I can think of which, though at its inception was conceived of to solve a specific problem, hasn't been expanded far beyond its original scope so it is now trampling on some part of the *Constitution*.

"Come on, let's hear more examples," Dave said. He was clearly enjoying this.

"When investigated by the *IRS*, you are now treated as if you have no constitutional rights. They seize bank accounts without substantiating their claims and they act as if you have no right to a jury trial before your peers. This is all in violation of the *4th* and *5th Amendments* to the *Constitution*.

"And, speaking of that, though there are no exceptions in the *Constitution* to the *4th* and *5th Amendments*, in most states, if you go to a juvenile court, the following constitutional rights are prohibited: They are the right to remain silent, the right to confront witnesses, the right to a jury, the right to a public trial, and the right to be presumed innocent until proven guilty.

"There was a time in this country when the people understood that every power conceded to the govern-

ment, no matter how narrow and special that power was supposed to be, would expand. Today, bureaucrats and politicians say they want something just for one reason and once granted that power, it quickly expands.

"Taxes were supposed to be applied to only the rich, now they are levied on everyone. The *Racketeer Influenced and Corrupt Organizations Act* or *RICO* was supposed to be applied to only drug king pins, yet it is almost never applied there, but instead is directed against the general population. Drug laws started as just taxes to control a few 'problem drugs,' but today it has become a federal offense for you to have in your possession a drug without a prescription.

"We give bureaucracies what we think are limited powers, but Thomas Jefferson warned that one precedent in favor of power is stronger than 100 precedents against it. By this he meant that you can say no again and again and again to the spread of government power and it just holds its ground, it doesn't retreat. But say yes on just one thing, and it becomes a new foothold from which the government will never retreat."

"Which goes back to your comment that they start out, ostensibly with the intention of solving some specific problem but their powers mushroom way beyond their original scope," Dave said.

"Yes, and the power they acquire and exercise often isn't direct and, because of this, they seem to get around the *Bill of Rights* because they get someone else to do their dirty work for them."

"What do you mean?" Dave asked.

"One of the ways bureaucrats try to work around the *Constitution* is to force corporations to do it for them. They have banks inform on 'suspicious' transactions, they have airline employees report people with 'too much cash'—in fact, they offer boun-

ties to airline and airport employees and then seize your money without regard to either the *4th* or *5th Amendments* to the *Constitution*.

"You can't even buy a large amount of paper with cash without Secret Service agents showing up at your door."

"Why?" I asked.

"Because, when you do, you automatically become a counterfeiting suspect."

"You're kidding," I said.

"No, I'm not. Jean L'Heureux, the guy who works on the other side of that bookcase had it happen to him back in New Jersey."

I heard Jean laugh. "They were at my door all right."

"When did it become the obligation for private businesses to spy on us for bureaucrats?" Mac asked.

"You know," I said, "to get back to something you said earlier, they tell you right up front that if you want to be at the airport, you're subject to their searches."

"And that is supposed to suspend your rights?" he asked. "So, if they tell you you lose your rights on federally or state funded highways, or you have no freedom of speech in federal buildings, or you lose whatever rights they want to take away from you in so-called federal forests or state forests, you're okay with that."

"No," I said.

"What if the federal government wants to sponsor a religion at airports, or ban 'unfriendly' newspapers at airports. You'd be okay with that."

"No," I replied.

"Then how do your *4th* and *5th Amendment* rights disappear at airports?"

I didn't answer.

"Look, what we have to do is bring bureaucracies under control. Every new law that threatens to fine, imprison, or seize property is a law that must be administered by a bureaucrat. It is conferring upon a bureaucrat the power to terrorize us

and, let's face it, just as cops will get lousy reviews if they aren't turning in enough traffic tickets, bureaucrats get ahead by *doing* their job. They will exercise their power to get promotions.

Society in every state is a blessing, but Government, even in its best state, is but a necessary evil; in its worst state, an intolerable one.

Thomas Paine (1737-1809)
Common Sense 1776

"That's how air and water quality standards get tighter and tighter to the point where, today, they make no medical sense. That's how, under *RICO* laws, more and more property and cash must be seized. It's why zoning inspectors will not give an inch and they deprive you of what you thought were your property rights because, otherwise, *they wouldn't be doing their jobs*."

"Historic preservation boards must appropriate the property rights to more and more buildings including private homes, or they don't seem to be doing their jobs."

"It's usually Congress that passes the laws bureaucracies enforce," Dave said.

"But it is bureaucrats on zoning boards and at the *EPA* who violate your property rights, bureaucrats at the *FDA* who violate your right to do with your body whatever you wish, the bureaucrats from the *ATF* who violate your *2nd Amendment* rights, bureaucrats at the state *DMV* who restrict your right to travel, and bureaucrats at the *IRS* who violate your *4th* and *5th Amendment* rights. The list goes on and on.

"Some of the regulations for which you or a corporation can be fined, or which can land you in jail, or for which violating them will cause men with guns to appear at your house, are not even 'published.' That is, they appear nowhere in the Federal

Register or in any other public document where it would be possible for you to look them up. They are nothing more than interoffice memos among the bureaucrats themselves, but they have determined that you are responsible for them even though it may be impossible for you to have been aware of them. The *EPA* is famous for this.

"Perhaps in some other country these agencies would be in compliance with the law. But in the United States of America, because they routinely trample our rights, almost all bureaucracies are in violation of the *Constitution*."

"But organizations like the *IRS* need to be run the way they are, or otherwise they'd never be able to do their job," I said.

"I'm not saying that that's untrue. What I'm saying is that to run efficiently, they and other bureaucracies must use police state tactics."

"There was a time when, if a choice had to be made between personal freedom and the efficiency of some bureaucracy, the individual could be counted on winning. But nowadays the smart money goes on the bureaucrat."

"We were once the freest country in the world, but we are fast becoming a Third World country with a first class economy."

"The *Constitution* is not there to place limits on us. It's there to place limits on the government, but every compromise is toward more government power. It *never* goes the other way. And every new law that threatens to fine, imprison, or seize property is a law conferring power on some bureaucrat, somewhere."

"What's the solution?" Dave asked.

"First, let's state the problem," Mac said.

The solution

"If a business is run poorly, if it makes mistakes, if it treats its cus-

tomer poorly or won't sell them what they want with the quality it expects, at a price that's reasonable, it fails—unless, of course, it is a protected business. If a bureaucracy, however, treats you poorly or won't sell you what you want with the quality you expect, at a price that's reasonable, they don't go out of business. In fact, they can make it illegal for anyone who does give you the options you want to operate, as the post office did, or they can make you pay for the service whether you want it or not, such as has been done with public schools, Social Security, etc.”

“Why don't we just get rid of the bureaucracies?” I asked.

“We can't because we won't.”

“What's that mean?”

“Consider this: One in every six workers in the United States today is either working in government or working in an industry that closely supports government.

“Tens of millions of this country's population collect something from the Social Security Administration and that number is going to get bigger.

“Anyone who thinks bureaucracy is going to go away is dreaming or mad.”

“Then there's no solution,” I said.

“Of course there's a solution. But first you have to identify the problem.

“The courts have taken the stand that they are not going to position themselves to do the jobs of the bureaucrats, that the bureaucrats should know their jobs best. But the courts are shirking their real duty, and that is to see whether or not the bureaucrats, in making their rules, regulations, and laws are treading on our rights.

“They have no problem interceding when it's school prayer, sexual harassment, affirmative actions, etc., but they turn a blind eye to the almost unimaginable costs and restrictions placed upon citizens and businesses by bureaucrats.

“The problem, of course, is that the courts are, in the end, just another arm of the state staffed by political appointees and, worse yet, elected officials who read the same polls the politicians do when taking a position on something. In fact, now that I think about it, elected judges *are* politicians.

“I've said before that there is no clear connection between the people, those who are governed, and the bureaucracies. It was the intent of our Founding Fathers that in this country the individual is supposed to reign supreme and the government is supposed to exist for his benefit. The American people seem to be unaware of that.

“But there are ways to control bureaucracies and make them less of a threat to our rights.

“The first way is to stress accountability. Bureaucrats have to be in danger of losing their jobs—or even going to jail—if they violate our constitutional rights. The same way you can sue a corporation for violating your rights, you should be able to sue individual bureaucrats or groups of bureaucrats.

“Second, decrees and regulations emanating from bureaucracies should require legislative review before they can have the effect of law. Let bureaucracies submit the rules, laws, and regulations they want to foist on us to Congress before they can be enacted. Only about one percent of the bills proposed in Congress are enacted, yet about 99 percent of all regulations proposed by bureaucracies become the law of the land.

“There's definitely something wrong with that picture.

“Third, bureaucracies should not be able to exist in perpetuity. In fact, before a bureaucracy is created, it should have stated goals and, if those goals are met, it should disappear.

“In fact, it should also be possible to make a bureaucracy disappear by

referendum so that bureaucracies are directly responsible to the public.”

“Fourth, and perhaps the most important step we can take to controlling bureaucracies, would be to insist on jury trials by informed juries when people are indicted for violations against bureaucratic rulings.”

“Isn't an informed juror a juror who realizes that when a citizen is on trial, the law is on trial, too?” I asked.

“Yes. Judges routinely tell jurors that they cannot judge the law, despite the fact that they are legally entitled to. No judge can order you to find a defendant guilty when you feel the law is wrong, even when you realize the defendant actually broke the law.

“Fifth, when a bureaucracy accuses you of violating the law, the burden should be on them to prove you are guilty. The burden should not be on you to prove you are innocent.”

“All you're saying is: the solution to bureaucratic abuse is to enforce the *Constitution* and the *Bill of Rights*,” Dave said.

Mac leaped out of his seat. “Hallelujah,” he screamed and people from the other offices came running into the room to see what he was yelling about. Δ

In the May/June 2001 issue Mac, John, and Dave discuss how presidents unconstitutionally bypass the legislative process with Executive Orders, which include among them provisions to suspend the *Constitution* for indefinite periods.

In future issues they will discuss how the government will eventually control the Internet, how the conversion of the military from a “citizen army” to a professional army is a danger to us all, and, though we don't like to admit it, why the United States is, in reality, now a fascist country.

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Letters

(Dear Readers - Thank you for writing to Backwoods Home Magazine. The opinions and suggestions we receive from our readers are very important to us. We regret that we are no longer able to print or individually respond to every letter received due to the volume. We do read every letter received, and pass them along to the editor or writer concerned. We print a selection from our mail that best represents the views and concerns of our readers. — The Editors)

Goodbye TV

Your mention of going without TV was timely. We too recently made the decision to do without the thing. Our choice was in raising our new daughter, we didn't want the influence of "that foolishness" entering her young mind.

In nearly 25 years of marriage, we have had TV about 12 years. Though it is an adjustment for news addicts, especially with the election circus going on, we are spared the propaganda of TV reporters.

We enjoy and learn a lot from BHM, especially the articles on the "Dictatorship," looks like it may already be here.

Ernie Fouts, Menahga, MN

I have subscribed to BHM for about a year, and want to let you know that your magazine is great! I used to subscribe to Mother Earth News back in the 70s (before it turned into a product endorsement rag), and BHM is far superior. I really like your practical/libertarian attitude. Your Jan/Feb 2001 issue inspired me to write, to let you know how much I agree with "My view—Goodbye TV, hello constructive time." In 1988, I moved far enough out in the woods that I would have needed to put the TV antenna in a 60' tree, or buy a satellite dish. Since I didn't want to spend big bucks for the satellite dish, I figured I would try to climb the tree "when I had the time." After a month or so, I realized

that I did not miss having TV. In fact, I found I had more time to read, fish, hunt, enjoy the woods, and work around my place. I also found my blood pressure was a lot lower, since I no longer was exposed to Dan Rather et al.'s daily socialist propaganda shows. After 12 years without TV, I have read several thousand new books, and have learned blacksmithing, knife making and scrimshaw. The only time I see TV any more is the two or three times a year when I stay in a motel or visit my family.

If you want a real culture shock, turn the thing off for a few months, then watch it again for a few hours. You will be appalled that you used to watch that trash. And you should feel ashamed that you exposed your children to it. Television now consists of totally moronic dosages of trivial trash, interspersed with socialist state propaganda. Clair Wolfe provides an excellent analysis of television in her book, 101 Things to Do 'Til the Revolution, in Part 8, "Kill your TV":

"When we're watching TV, our brain waves are nearly identical to what they are when we're hypnotized. ...That means information, impressions and assumptions are fed directly into your unconscious without your conscious mind being able to fully edit and sort them. ...No matter how aware you are in general, no matter how critical you are of the material you're watching, at some level, someone else is controlling your mind. Is that how you want to live? ...While TV contains many poisonous messages, those specific messages aren't the worst problem. ...With TV, the medium is the message...and its message is that you are nothing but a passive blob, fit

only for sucking up what someone else wants you to see, hear, believe and know.

An independent mind is critical to living free. So drop that electronic seducer off a cliff. Try that new box of cartridges out on it. Run over it with your lawn tractor. Bury it in your backyard. Free yourself from mind control and time control."

I cannot improve on Clair Wolfe's message. Kill the damn thing. Free yourself and your family.

On a similar subject, John Silveira's series on "The Coming American Dictatorship" is chillingly accurate. I would add that the statist American media, particularly the TV industry, provides a major boost to government's plans to control our lives. It will be a lot easier to get Americans to accept a dictatorship after television and the government schools finish turning the majority's brains to Jell-O. For anyone who wants another frightening description of where our society is going, I strongly recommend Hayek's book, The Road to Serfdom.

Keep up the good work. Those of us held prisoner in the People's Republic of California need to hear the voices of liberty.

Pete Humm, Alturas, CA

Dictatorship article

As a young boy who grew up in Montgomery, Alabama during the 50s and 60s, I must point out that Rosa Parks & the bus boycott were in Montgomery not Birmingham. That said, I also must say how much I enjoy and appreciate all of the "Mac" articles. The magazine editorials, President's Wives, the Mac articles, all of those kind of things give Backwoods Home a flavor unlike any other magazine I read. Of course I love the self-sufficiency stuff too. I was another reader glad to see the article on water power.

You have a fine magazine, keep up the good work.

Allyn Uptain
connieu@digitalex.com

Mr. Silveira was right on the money explaining our real rights vs. our legal rights. (Jan/Feb 2001 issue). BHM readers are priveleged to excellent commentary & interpretation of the Constitution. Something that we don't get from the major media & academic culture. However Mr. Silveria refuses to acknowledge that the founding fathers of our country believed that our rights directly come from our creator. Mr. Silveria blandly states "Individuals are presumed to have these rights and they exist apart from the state itself." Actually the founding fathers vociferously gave their "lives, fortunes, & sacred honor" that our rights come from the Almighty God, & this "truth is self evident."

Bob Hagarty, Viola, WI

CD-rom price

I've been a subscriber to Backwoods Home for a number of years now. When I finish with my copy I pass it on to my gentleman friend. He saves everything. When you advertised a CD-ROM set of anthologies, I jumped at the chance to provide him with a Christmas gift that he would really want. I purchased the CD-ROM back in September. I thought it was a bit over-priced, but it was for a present so I got it anyway. Imagine how I felt when I read the latest BHM magazine and saw the CD on sale for \$19.95!

I can understand after season sales, but did you have to cut the price THAT much? I'm still a subscriber, but from now on I'll wait you out until the price on anything comes down a lot!

Jeannette Blumenthal, Fort Lee, VA

Jeannette, I don't blame you for being a bit miffed at the sale. I buy educational tapes from *The Teaching Company*, and it miffs me a bit when a tape set I've bought for \$129 goes on sale for \$69. We are always putting things on sale at *BHM*, so as to attract a wider audience. Our prices tend to go up and down, though I admit cutting the CD-ROM price from \$39.95 to \$19.95 is a big cut that may make people who paid the higher price feel like they've paid too much. Please call our staff and I'll bet they can work out a compromise.

Change the name of BHM

I come from the south, I know...homefront, backwoods, down the street...up there...whatever. I wrote in for a suggestion that you change the name. Backwoods? The term is so hicky. Besides, things are changing. Geography wise that is. Your theme is working with nature. So be it...backwoods? Then the teachings are from this proud mountain living or some meaning to it. I mean you could call it Modern Living? What about Home Settler? Anything...but please...spare me the hicky sound of backwoods.

simbo1@email.msn.com

How about *Good Housekeeping*?

—Dave

...from Africa

I have been blessed by your magazine. Not bad for a Boston boy! I grew up just outside of Boston, Providence R.I. Yes another city boy who wanted a different way of living and is now trying to put what I have learned into practice. . .

I moved to Kenya in January 1994 to help a mission teaching African pastors Theology. When I left the USA, I didn't ask for help from anyone personally. I thought, if the Lord needs me, he will make a way. If not

I will come home very soon. Well after working 4 years with the college, we left to work and live in the African countryside. This is where we have seen a miracle.

We knew if we are to stay and help these people, we would have to stop paying rent, and have our own water and another source of power, other than the electric company. We would also need security for our lives and home. If we could do all these things, we might be able to stay in Kenya and serve these beautiful people. Also, our family needed to work freely without church politics.

First Miracle, we got permission from the Kenyan government for our own mission called Love The Children. Which is very hard for one to get. Then we found a two acre plot of land in the beautiful countryside owned by an African white lady. Let's just say she helped us greatly to get the place for the mission. We started to build a little place, but the money wasn't there. I tried to think of a way to build a cheap house. I really tried my best. But it wasn't until I came to the USA in June of 1999 that I found your magazine. And then I think I bought every back issue and many of the books you sell and took them back to Africa. Well the rest is history! We have been building and inventing ever since. We have built a twenty-two (room) house. For we are taking in short term Missionaries who would not be able to come and help if they had to pay rent. We are also beginning to take in children who have lost their parents to Aids.

We also have started nursery schools and churches. And now are building a small three room medical clinic. We and our African brothers have made everything except the stones and nails ourselves. We even made a sawdust block! This block I have found is as strong as concrete, by weights about 20 pounds lighter.

We also made a wood hot water system. We used stack wall construction in our kitchen, used metal roofing on all our buildings and made mud bricks. Our whole house is using solar. Now I know that you never had y2k in the states. But we have it now! No rain over here means no electricity. But we have light in our place. Nairobi is out of water and has lights about half the day only. We found a spring on our place and there's a river that runs by our place. Water no problem! All our windows have bars on them and we have 4 German shepherd dogs as a first defense. Most of these things I saw from your magazine.

Some of our friends here "missionaries" thought we were crazy to have such an idea. And at first seeing our place said it was a bad place to buy. They just saw hardship and not the vision of independent living. It has been short term pain and we hope it will now be long term pleasure. Now we are finding that our friends are amazed at what the Lord has done with our land on a hill.

We are not in debt, we don't pay rent. We have electric from solar and our own water supply. We can help many more people in Kenya now with our savings. Take in children with no home and missionaries who want to work, but have little money. My wife Eunice loves to pray and walk in the tea fields. And my daughter Candice speaks English, Korean and two other African tongues and she is only 5. She has a playground and knows how to plant and keep animals. It is the kind of life I wish I could have in USA when I go back. We have found that you can do it, if you do it for the right reasons.

Dave without BHM's help and the Lord, we might of not tried such a move. I can only say thank you and to all the writers who share their knowledge of how to make it happen. I wish you could give my thanks to

your staff and the following: Robert L. Williams for his books, Dorothy Ainsworth unbelievable lady builder and to John Silveira. I feel that we have been doing this project together. Keep up the good work. You have made a difference in Africa.

Rev. Bill Newcomb
children@wananchi.com

...from Australia

Hi Yanks, I thought you all would like to see the real figures from Down Under. It has now been 12 months since gun owners in Australia were forced by new law to surrender 640,381 personal firearms to be destroyed by our own government, a program costing Australia taxpayers more than \$500 million dollars. The first year results are now in:

Australia-wide, homicides are up 3.2 percent;

Australia-wide, assaults are up 8.6 percent;

Australia-wide, armed robberies are up 44 percent (yes, 44 percent!).

In the state of Victoria alone, homicides with firearms are now up 300 percent. (Note that while the law-abiding citizens turned them in, the criminals did not and criminals still possess their guns!)

While figures over the previous 25 years showed a steady decrease in armed robbery with firearms, this has changed drastically upward in the past 12 months, since the criminals now are guaranteed that their prey is unarmed.

There has also been a dramatic increase in break-ins and assaults of the elderly. Australian politicians are at a loss to explain how public safety has decreased, after such monumental effort and expense was expended in "successfully ridding Australian society of guns."

You won't see this data on the American evening news or hear your governor or members of the state

Assembly disseminating this information. The Australian experience proved it. Guns in the hands of honest citizens save lives and property and, yes, gun-control laws affect only the law-abiding citizens.

Take note Americans, before it's too late!

John R. Lott Jr. is a senior research scholar at the Yale University Law School. The second edition of his book, "More Guns, Less Crime," was published by University of Chicago Press in July. These figures are supported in that book.

Richard Fowler
rfowler@us.ibm.com

GOA/JPFO

Do you have the phone number and address of Gun Owners of America and/or Jews For Preservation of Firearms?

Anthony Briggs, New Albany, IN

These are both excellent organizations that are doing a lot to fight for our Second Amendment rights. I strongly support their efforts.

—JPFO, PO Box 270143, Hartford, WI 53027 website: www.JPFO.org.

—Gun Owners of America, 8001 Forbes Place, Suite 102, Springfield, VA 22151 website: www.gunowners.org. — Dave

New England Office

What a very good job you're doing with BHM. It is so nice to see the principles of self-reliance carried consistently from the homestead to the political realm. How pleasant to see Ayn Rand mentioned without a snigger. I'd call it you're producing the best history and political commentary in print. Thank you.

I'm intrigued by your idea of opening a new England branch of your magazine, though I don't think things are quite as bad as you imagine here on the other coast. I'll admit

there's not a whole lot of either homesteading or clear thinking going on in Boston, or in most of Connecticut. But you might find yourself more at home up here in Vermont's Northeast Kingdom. I, for instance, have been off grid for over 20 years; we heat with wood, have a composting toilet, photovoltaic panels, solar hot water and a big organic garden; and we homeschool. I've been voting libertarian for a long time, and I think the 2nd Amendment is a very good idea.

No, not everybody up here thinks the way I do, but you might be surprised how many do. Anyway, the next time you come east, come for a visit.

And while you're waiting for a visit, please peruse my book, The Vegetable Gardener's Bible, (Storey Books, 2000). I think you ought to be carrying it in your bookstore. It's a good book, has been very well reviewed (see enclosed) and has been selling well (25,000 in the first 6 months). You'll make money and happy customers with this one. Storey should have sent you a copy a while back. If you don't have one, let me know, and I'll get you one.

Finally, one little thing I'm not happy about. I hope Anita Sands Hernandez doesn't try following Jackie Clay's advice. If she does go to a bookstore for "a couple of Elliot [sic] Coleman's books," she'll find that one of them is about organic vegetable farming (The New Organic Grower) and has very little that would be helpful to a novice backyard gardener. Eliot's (That's how he spells it) other book, The New Organic Grower's Four-Season Harvest, would be helpful; it's a well-written, friendly introduction to gardening, with an emphasis on season-extension. But it doesn't have anything to say about "square foot gardening." That's a gardening method developed by Mel Bartholomew and described in his

Square Foot Gardening (Rodale Press, 1981). Mel's book would be a very good choice for a novice gardener with a small backyard...and has sold over a million copies.

Edward C. Smith, Marshfield, VT

We're carrying your book starting this issue. — Dave

Taking you up on your offer for a subscription to this great magazine...though not even a homeowner (apt. in town, retired), I enjoyed much of what you espouse on country living (from another life) and loved it. You have much to offer if only people would avail themselves of it. Hope others find you as I did, on my local library shelf.

Love all the columns, i.e., Ayoob, Silveira, Duffy, etc. Great stuff, especially with what Duffy has planned to educate the clueless in history.

Audrey J. Boerum, Bellows Falls, VT

Starting over

Well, why not one more go around and call it a decade of Backwoods Home—my first issue being the Desert Storm (free) edition. I'll be ordering all the anthologies come spring (Lord willin' that I make it through the winter) to replace everything that went in the fire...maybe a back issue that my son, Aaron, published with you on raising a holstein steer (Max, I think).

Seems I should share what I learned, although I'm still sorting things out. I thought that after having started from scratch, thirteen years ago, that the homestead came together in the last few years. Homeschool for the three boys, gardening & canning, building, (barn, shop/garage, 30x30 stackwood house) beef & hay & chickens as well as experiments with sheep, hogs, geese, turkey & sled dogs. Of course I'd go on, at length, on any topic...which is why I've hesitated to

put pen to paper 'til now...the lake effect snow must be inspiring me—but I'll try to show some restraint and not overwhelm you all. I will tell you what a comfort your publication (it's writers/staff and our extended fraternity) has been to me in the last couple of years of adversity...and knowing that, I have tried to share it with kindred spirits.

I'm contemplating a cabin on the back-forty but have to consider relocating to a warmer climate (plus starting over by myself isn't the dream I started with—I guess I'm waiting for my next dream to start...a pleasant prospective even though the last one ended on a bad note. I guess that's why we have winter, so we can sit in front of the fire and figure out what we want to do when we start all-over-again in the spring!

Daniel J. Siler, Poplar, WI

We'll help you with a new start by sending our complete anthology set—free. —Dave

Searching for freedom

BHM is exactly what I've been looking for!! For the first time in my life, I am actually feeling the squeeze of the federal government on the rights of the citizens. I used to hear all of these "right-wing" nuts spouting off about how bad our government is and I remember thinking they don't deserve to live here. How wrong I was and how right they are.

I live in the great socialist state of Hawaii and have made the decision to abandon this sinking ship for freedom. I do believe with all my heart that we are heading for really bad times both economically and culturally. What's left of the Constitution will be dissolved and the freedom loving patriots of this country will be searched out and taken down or die resisting (as a veteran, I intend to go the latter).

I have been researching for a place to relocate to but can't seem to find patriot friendly states on the net. The results I find for "best city" or "best state" are in regards to the propaganda of the socialist i.e. safer streets because of Draconian gun laws... Could you tell me of some freedom friendly states? I was thinking of Oregon until the state went to Gore during the election. This tells me the majority of the population is falling for the socialism the democrats are pushing. My goal is to buy a few acres, build my own modest home and live as independently as I can.

Jeff Mahon, Hawaii

Socialism is on the march in nearly every state, so you're not going to run from it. I prefer to become a personal island of freedom, trying to convert others as best I can. — Dave

Prison population

This order is a Christmas present for a very good friend of mine who is incarcerated. There are a lot of good people in prison who have made mistakes and are paying for them.

Please don't discount offenders who ask for damaged magazines or books as your publications and magazines are really enjoyed by those who are incarcerated.

I know because I was once incarcerated and your magazine was a breath of fresh air in an otherwise stinky environment.

Take care and keep up the good work. P.S. Thank you for letting me speak out for prisoners everywhere.

James Ames, Michigan City, IN

I'm delighted to help prisoners. Most are in the slammer for nonviolent offenses, and they'll lead productive lives when released. — Dave

Constitution book

I have been a subscriber almost since you started it and love every

issue, and have every article you have written via the anthologies of the first few years and the mag. itself. Just ordered the constitution handbook, can't wait for it to arrive so I can let my 11 year old boy read it so he can know how the founding fathers really wrote it. I am amazed at how the publishers of school history books twist the constitution around to warp young minds into their (socialized) big brother agenda. Upon looking up the constitution in his "history" book I found the 2nd. amendment worded as such fact, "The right of the people to keep and bear arms shall not be infringed upon as long as such person is not a convicted felon and can pass local and or federal forms and background checks and there are no local laws prohibiting private gun ownership." What country do I live in again? Oh yea, "U"nequivocably "S"crewed "A"merica.

BLMILLA@aol.com

Physics article

You said in your latest issue that the previous issue's article on home-school physics seemed to go over like a lead balloon—or words to that effect. Well, I want to be a voice to fill the balloon with helium. I liked the article, used it in our homeschool for a 13 year old, and look forward to more in the future.

Julie Watner

I just picked up the new issue of the magazine at the grocery store and I was so disappointed that there was not another article on the theories of the universe! I had read it to my 12 year old son and we had enjoyed it so much. In fact we are going to hear a physicist speak on the subject of the super string theory on Thursday at Lawrence University.

I don't usually write like this, but you must realize that the article you wrote was most excellent! (As my son

would say.) You have a gift for making theories easy to understand! Please don't discontinue writing for those of us who homeschool.

Dg, DgSeeTruth@aol.com

I'll resume the series on our website, soon. — Dave

Satellite internet access

I want to build a house where I will have to generate my own power. My question is, if you would be so kind to reply, how do you get internet access for a home computer without a landline telephone? And what do you do for a telephone, use a cell phone or are there other options? With your knowledge and expertise I thought you might be aware of the best technologies available. Love your mag!

Eddie

EJMENDUS@aol.com

You can get satellite Internet access for about \$70/month. Go to www.starband.com on the Internet and check them out. I just learned of this service, and we are thinking of going that way. You don't need a telephone or local service provider; just download it like your TV. In fact, you can use the same dish to download DISH Network TV channels. — Dave

Patriotic American

I am subscribing simply because you have a great magazine! I have several back issues and one Best of Backwoods Home.

I would like to address some statements made by the Patriotic American?? Nov/Dec issue.

I also am an American (Patriotic to the ideals set forth in the Constitution). I fear no Gods, am an honest, law abiding Pro Constitution, (which is not Christian based, read it!) Pro choice (since as a man I do not bear that burden) Ex

Marine, tree hugging, earth loving pagan unbound by Dogma or Racism. Note pagan not pacifist—so chill man.

David Paul, North Lawrence, OH

E-sub refund

I was reluctant to do anything at first with my e-subscription refund because I knew it wasn't enough to buy anything except the pocket Constitution, and I didn't want to appear stingy. I thought I'd wait til I could afford the rest of the price of an anthology, but finally decided to just order the constitution and let Backwoods Home keep the extra 34 cents. After all, I was getting the same e-subscription as before, only unexpectedly free. You could have kept the whole amount. So I was actually ahead three dollars worth by not using the 34 cents. But I neglected to tell you what to do with the change, so imagine my surprise when I received the Constitution (only three business days after I ordered it!) with a quarter, a nickel, and four pennies, face up and standing at attention, neatly taped to a card! My first thought was that it was nice of you and that I should have thought to tell you what to do with it. But then my wife said, "Oh 34 cents—that'll buy a loaf of bread. Four more pennies would buy a pound of margarine." Well, now I see real meaning in that money, and thanks very much for sending it after all. I guess I can't afford to worry what anyone might have thought, and I guess I won't stop reading Backwoods Home anytime soon either.

While I'm here I might as well weigh in on other subjects: I think your historical/scientific/home-schooling articles are fine, but I hope you don't make the same mistake most public schools do, of trying to teach the failing theory of evolution as fact, to the exclusion of all

other possibilities. So far you haven't, having numerous mentions of God in other articles, and if your 'scientific' articles are read with the mind that the proposed theories they present are only proposed theories, the reader doesn't need to worry about being misled. . .

David Field
dgfield@webbworks.com

Salsa

Read your recipe for salsa in the current issue of BHM, and like you said no two are alike.

After searching for salsa recipes, think there are as many as there are people.

We took the path of least resistance. We tried a salsa mix put out by, "Mrs. Wages," and like it. It comes in I believe 2 or 3 heat levels.

We use the mild, and it takes care of our taste buds. What is nice about this is that it is pretty consistent from batch to batch. And we make it chunky rather than a sauce.

We had a problem depending on the tomatoes used, that sometimes it was too watery, so we add 8 or 16 oz of tomato paste, and that takes care of that problem.

To minimize canning problems, we freeze a lot of the salsa, doesn't hurt as far as we can tell. We also run out of storage space for canned stuff living in an apartment.

We dry a lot of fruit and veggies, so the next batch of salsa we make we are going to dry some salsa strips and see how they re-hydrate.

Thanks for your articles and insight.

Ron & Vi Boschelli
rockypc1@midwest.net

Dorking chicks

Please help!? For ages now I've been looking for a chicken breed/old time type) that is hardy, meaty and will actually sit on their own eggs/reproduce without the aid of an

incubator. Well, I actually found a type called Dorkings that were supposedly available through a home business called the Sandhill Preservation Center in Iowa...let me tell you that they are very unbusinesslike/unprofessional. I won't even go into details...

Do you know of anyone or some other place who will actually come through and can fill an order for Dorking chicks? My older chickens (of another modern breed) are getting old & slowing down in egg production & I need to replace them soon with something! I'd be most grateful if you could help with the "Dorking situation" as I no longer have access to a computer...If you could post this in your magazine, maybe some of your readers could help as well? Also, if anyone could recommend another old-time poultry breed that is of a good size (no small ones) and are hardy like Bantams, will sit on their eggs...I'd be beyond happy!

The Frame Family, Hartville, MO

Murray McMurray Hatchery has Silver Gray Dorkings, as well as many other rare and hardy varieties. They'll send you a free catalog. Contact them at P.O. Box 458, Webster City, IA 50595. Their number is 800-456-3280, or on the Web at www.mcmurrayhatchery.com. Also, check out the other advertisers in the poultry section of the classifieds. — Annie

Canning/splitting wood

Here's some info on canning for Jackie Clay. There is another choice on jar lids. A company called "Bernardin." Their instructions say tighten lids only finger tight, don't touch them after processing. I find some of the Ball lids leave the sealing gasket sticking to the jar rim. Whatever material they are using is no good. Also any food put up in

vinegar will rust holes in the lid material if kept over a year. I have lost jars of hot peppers due to rust holes. Poor enamel coating on the inside of the lids is the cause. I now try to use the old glass lids on pickles. The glass lid and rubber gasket still works well despite the companies saying you shouldn't use glass lids anymore. It was hard to find the rubber gaskets for a while but they are available now. Also tell Duffy to buy a splitting maul to split his wood. Axes don't have the proper taper to do a good job splitting wood. They are also too light to do the job properly. I have 4 axes and try to keep all handles the same length. Different length handles are bad news, long ones will over strike and break handles, short handles will miss the target wood and chop your toes. Steel toed shoes are best around axes & mauls, sneakers are not good around cutting tools. Duffy is setting a bad example for readers. Give him hell. Been using an axe for over 50 years now. Still have all fingers & toes!

Dan Hill, Dixmont, ME

Applause

I've been buying BHM off the newsstand from the very first issue, only missing a couple along the way. I figure it's about time to order a subscription.

A few years ago, my wife and I secured 20 acres of rough woods just two hours from the city in the middle of dairy farm country. Diverting 401K contributions to a more immediate-use investment, we built the beginnings of a retirement home on the property. Right now it's our weekend retreat. In a few years we hope to sell the house in the city, finish our little place in the woods and live happily ever after.

BHM has always been informative, enlightening and very encouraging. Dave and John are just what the

doctor ordered for dealing with the craziness of contemporary American life. It helps to know that others think and feel the same way I do. May you live long and continue to publish.

Tom Becker, Hannah's Ridge, WI

You don't know me by name but I feel I know you by your openness & frankness thru your writing & pictures. I recently purchased the six "Best of BHM." What a bargain!

I'm sending along a copy out of my 1914 "Boy Scouts of America" handbook showing how to build a log cabin. I think you will appreciate it and may be able to use the information in some future issue.

Like you Dave, I went thru a southern Calif. divorce. I lost my 12 acres and house. I've been put on hold thru 13 years of child support. Thanks very much for the inspiration to start over again. It's been a life long dream & hope to get to the land with a good Christian wife & live a simple, serene & happy lifestyle. I could go on but I'm sure you get the gist. Here's a poem I'm carrying around you might like—

Insult not nature with vain pretense
Nor spoil her simple charms
with absurd expense.
Weigh the subject well,
Be with caution bold
Profuse of genius
Not profuse of gold.

Author unknown to me. Found it in a 1847 landscaping book. Can't tell you how much I appreciate what you've done for me. Many thanks—

Ed Hester, San Diego, CA

I've been a reader for about a year. I shall remain one for as long as you good folk print the word. I want to say 'Thank You' for your wit, dedication, intelligence, balls, clear vision & drive. It makes me feel good that there are more people out from the mindless flock of sheep.

Keep pushing!

Jeffrey S. Myers, Oxford, MI

Enjoy your magazine a lot. Although I don't agree with all your views, I particularly do agree with your stance on weapons, and would fight for your right to have your views. Please begin my subscription in Jan.

Gary L. Thorton, Holly Springs, MS

The joke pages were a great addition to a very good magazine. There is usually at least one I haven't heard. Washington D.C. canceled their live Christmas pageant, they couldn't find 3 wise men.

Dave Ripp, Waunakee, WI

We are subscribers and think you are the greatest thing since home baked bread!

Arthur R. Chevette
arthurrchevette@aol.com

Love your magazine. Love your style and frank viewpoint! Happy Holidays.

Don Douglas, Sandpoint, ID

Just wanted to let you know how much I enjoy your magazine. The first thing I read is your commentary. Then on to John's articles. Your magazine gives me something to do when the temps outside are -20 below in this frozen land of Minnesota.

Greg Douvier

A very good magazine with articles written by intelligent, conservative, patriotic people who make me feel as though I have found an island of friends in a sea of morons.

Thomas Schultz, Vandalia, MO

I found BHM while surfing the net looking for homesteading articles. BHM contains more how-to articles than any other publication that I

know. I think the PDF issues are great, and they have tempted me into buying the CD-rom. Keep up the good work!

Mark Grant
mark_grant1998@yahoo.com

In the early days of Dec. 2K I called you with a sobbing complaint that I had missed an issue of BHM, I think Sept-Oct 2000. In any case, rather than endure my slobbering & nose wiping and obsessive whining, you sent me a replacement copy, for which I truly thank you! May your ink never run uncontrollably!

Now I'm sending you a \$21.95 check for renewal of 1 year subscription and adding \$4.95 for the one you replaced. You see, I FOUND the issue I "thought", I had lost, missed, let out to stray, or had a dishonest person visit me, NONE of which happened! I carelessly laid it in a vulnerable spot and it slipped behind a pile of my own making. I won't admit to being a sloppy housekeeper, but that's why I lose good magazines.

Please forgive my tardiness in sending this renewal and may your 2001 start and end with prosperity! All mighty loser of good unread magazines and other important papers! Happy New Year, y'all!

E. G. Ragsdale, Florence, OR

Yahooooooooooooooooo!!!!!! I was searching for a past article, on solar energy, but that doesn't matter, the fact is I actually found what I was looking for. You know how many times that ever happens on the NET!!!!!! You've got a good archiving system, by displaying all the past magazines and being able to link to them and then accessing articles in them, what ever you do, DON'T CHANGE IT, easy easy and straight forward, rare on NET sites.

Peter Orlick
hporlick@mb.sympatico.ca

Thanks for a great magazine. I am a city person who lives like I'm in the backwoods. Can food, grind wheat, grow a garden. Thanks for all the info.

Diane McCarty, Fullerton, CA

As I renew my subscription for another year, I wanted to take time to thank you for such a wonderful magazine. We have been faithful subscribers for years simply because you produce the most relevant information that has practical applications for our lives.

Our entire family reads your articles. There literally isn't one page of the magazine that doesn't get read including your advertisers. We go over many of the articles repeatedly since there is so much to learn from them.

This year, because of the articles on home power, we have been able to implement water and solar for our electricity needs. We honestly would not have done that if it had not been for the straightforward information. We have much more that we want to do so I really wish Michael [Hackleman] could continue to cover solar and water power in as much depth as possible for 2001. It would be great to spotlight those who have installation already so we could learn from them too.

We also have enjoyed the articles on home schooling. We share that information with other home schoolers in our area which is very large and growing. We also appreciate Jackie's gardening and canning information. It was very enlightening to read her daily account of the move to her new homestead. Thank you for your commitment and wonderful contributions to the backwoods community. May the Lord bless and protect you all in 2001!

Gary McSwain, Ellijay, GA

Thank you for putting together such a great magazine. I love your libertarian articles. They are so easy to understand and so true. I have read Walter Williams, Thomas Sowell, and many other libertarians and conservatives and think Dave Duffy and John Silveira are right up there with them.

My kids were both homeschooled. Jacob will have his PhD in physics before he is 25 years old. Sarah is 18 now and hasn't decided on a direction yet but she will do well in whatever she chooses. Their mom quit her job to homeschool and it was one of the best things we've done. I know it was easy financially for us since I am a captain for a major airline. I respect the folks who have one income of around \$30,000 and put the kids first. It can be done and the family often is happier for it. Homeschooling isn't for everyone. It's just one option that should be explored.

I loved the homeschooling physics article. Sorry to hear there wasn't more interest. I for one will be happy to see another put in print.

Thank John for "The Last Word" in the Jan/Feb issue. It was great.

We have 150 acres here in North Texas we are trying to fix up. It isn't as beautiful as Oregon but it is close to work and one day this little piece of Texas will be almost as beautiful as Oregon.

Charles Schwartz, Bryson, TX

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The last word

Chuck meets Bubba

What follows happened a decade and a half ago. I worked in a large corporation where I shared a large cubicle with two other guys. I'll call them Al and Bob. Al was a lot younger than I while Bob was a lot older. Young girls worked there, too. Several of them used to come into our cubicle to shoot the bull and on this particular day four of them came in. I'll call them Amy, Betty, Carla, and Dawn. Each was pretty but Dawn was striking, with blond hair and a thin athletic body. She had already been married and divorced and had two daughters.

After her divorce, she dated several guys. Then she met Chuck. She dated him for quite a while. I usually can't tell if a guy's good looking but I knew Chuck was. He had Tom Cruise-boyish good looks and, from what I could tell from the only time I ever met him, he had considerable charm. But, unbeknownst to the rest of us, he also had a drug problem, and to support it he committed burglaries.

We found this out because he got caught and convicted, and the judge sent him to prison for a couple of years. He was there just a few months when Dawn announced to everyone that she was going to marry him. And she did.

Dawn became a dutiful wife. She went to see her new husband as often as the state of California allowed her to. She made the long trip north through the state, in good weather and bad, to visit the man she loved. She often came back with stories about the doings at the prison. Some of the stories were funny, some were sad, but most made us feel fortunate not to be in Chuck's predicament.

On this particular day that the girls were in my cubicle, Dawn was telling the other three about the busy weekend she had ahead of her. She was putting together a care package for Chuck and she was bringing him cash, too, because he could have a certain amount of money in prison for the vending machines. Vending machines in prison; who would have guessed. She did this because Chuck didn't like to mix with the general population. He spent a lot of time in his cell and avoided the dining area by eating the cookies and the sandwich fixings she brought for him along with the candy bars and sodas the vending machines dispensed.

After she told her story, she left. The other girls talked about how difficult all of this was for Dawn and Chuck and how they felt sorry for her because of the sacrifices she made, and for him because of the horrible circumstances he had to live under in California's penal system.

Al and Bob kept working. Neither joined their conversation, and neither looked up from his work.

But, finally, I turned around.

"I don't feel sorry for him at all," I said.

"Why not?" Amy asked.

"Have you ever come home and found your house broken into?" I asked. "Have you ever walked in and found furniture turned over, cupboards with their contents swept out onto the floor? Bedroom drawers turned out onto the bed and thrown into corners? Ever come home to find your cameras, guns, jewelry, money, and TVs stolen? I have.

"Have you ever felt unsafe in your own house? Have you ever laid in bed night after night wondering if whoever broke in will come back while you're sleeping? Ever laid in bed and listened to your wife crying at night. Have you ever had your kids unable to sleep while they wondered if you really can take care of them? Ever been afraid to leave your family alone because you don't know what these guys will do if they come back and you're not there? That's happened to me, too. How do you think your husbands, or boyfriends, or fathers would feel if a guy broke into your house and made you all feel unsafe?"

None of them said a word.

"Let me ask you something else: While Chuck is up there in prison worrying about what the other prisoners are going to do to a good looking guy like him, do you think he ever cares about the innocent people who aren't going to sleep tonight because of what he did to them?"

They were still silent.

"Let me tell you what I hope happens to Chuck. I hope tonight that some sumo-sized psycho named Bubba takes a liking to him and says, 'Hey, pal, tonight you're my girlfriend.'" I also hope he lies in bed night after night scared for his life. And I hope he worries that someone, just like him, is breaking into his house while his wife and her kids are alone and he's locked up so he can't do anything about it.

"You know, for all I know, he's the guy who broke into my house. So let me tell you something else: I can't sleep now unless I have a gun next to the bed. It's a .357 and I know how to use it. And, when he gets out, if I ever wake up and find him prowling through my house, I'm going to put a bullet through him and kill him. And the next morning, I'm going to be able to come in here and look Dawn right in the eye." I turned around and went back to work.

"I never thought about it that way," Amy said.

"I know," I said without looking up.

After several minutes the girls left. The cubicle was silent until, behind me, I heard Bob turning around. He was laughing. "You know, John, that's exactly the way I feel. All the time I was listening to them I was getting madder and madder. But I didn't know what to say."

Al started laughing and looked up from what he was working on. "Right on," he said.

"You said it just right," Bob added.

"Thanks," I said and the three of us went back to work.

The girls still came around after that. We were still a fun cubicle. But they never talked about Chuck again.

But to this day I wonder what he's doing. I wonder where he and Dawn are. I wonder if he's straightened his life out.

I still sleep with my .357 next to the bed. Δ

— John Silveira

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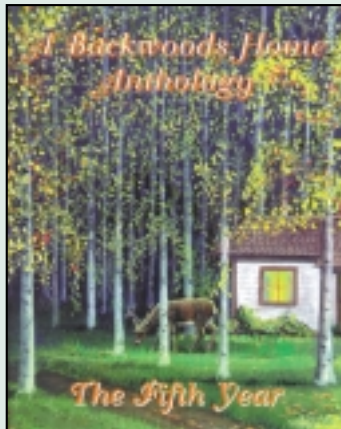
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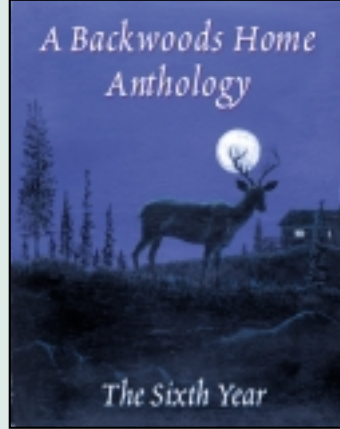
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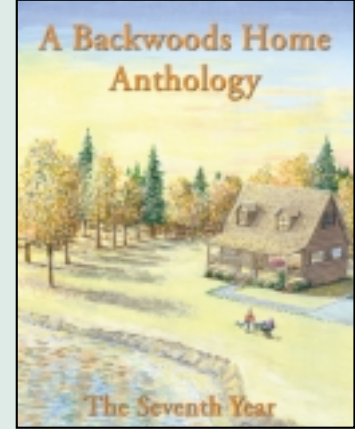
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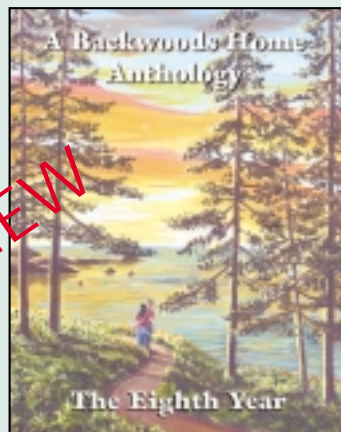
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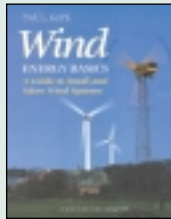


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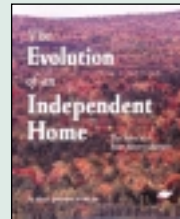


EN10

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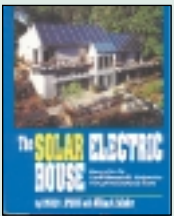


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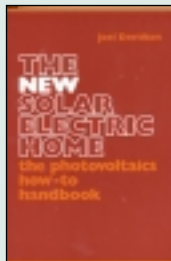


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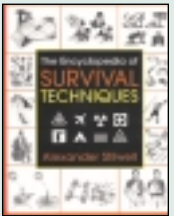


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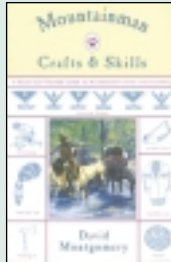


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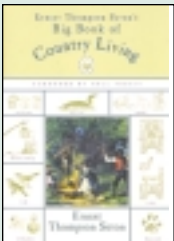


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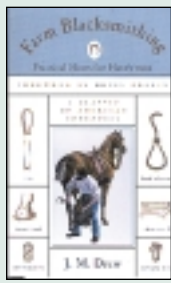


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Originally published in 1922, this work represents years of observation and experience in the wilderness. Learn to distinguish edible plants from poisonous ones, start a fire using a jackknife, build a four-story birdhouse out of a wooden box, tie a variety of essential knots, identify trees, wildflowers, animals, birds, and constellations, and much more.

590 pages; 7 x 10" ppbk. \$22.95

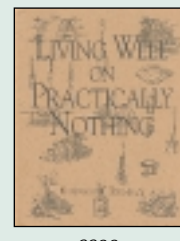


SS32

FARM BLACKSMITHING

This complete, no-nonsense guide, published originally at the turn of the century, dispenses invaluable tutelage on both the history and craft of this grand tradition. J. M. Drew begins with the basics, including how to set up a blacksmith shop, identify and use various essential tools, and select materials with which to work.

100 pages; 4½ x 7¼" ppbk. \$15.95

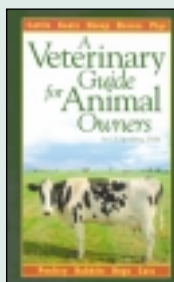


SS33

LIVING WELL ON PRACTICALLY NOTHING

This book is for people who need to live on a lot less money. If you have been fired, demoted, retired, divorced, widowed, bankrupted, or swindled—or you just want to quit your job and remain financially self-reliant—this book is for you. In it are hundreds of tips, secrets, and necessary skills for living well on little money.

153 pages; 8½ x 11" ppbk. \$24.95



SS34

A VETERINARY GUIDE FOR ANIMAL OWNERS

Backwoods Home Magazine's very own Jackie Clay revised and updated this classic on veterinary care. Included are methods to diagnose and treat diseases and injuries in livestock and pets. This is the book to have when you have to treat your own animals or to check before you call the vet. Illustrated.

432 pages; 8¾ x 57/8" hdbk. \$25.95



FP32

SMALL SCALE CRAYFISH FARMING

Includes a short explanation of crayfish habits, their reproduction, and their life cycle. Explains constructing and maintaining a crayfish pond, building traps to harvest your "crop," processing and selling it, and even some recipes for preparing them.

50 pages; 5½ x 8½" ppbk. \$9.95



SS36

SQUIRREL PROOFING YOUR HOME & GARDEN

The bestselling author of *Deer Proofing Your Yard & Garden* helps homeowners battle one of nature's most wily and persistent creatures—squirrels—with a storehouse of environmentally responsible techniques that really work.

153 pages; 6 x 9" ppbk. \$15.95

Backwoods Home BOOKSTORE



SS37

NATURAL LIQUID SOAPS

Finally, a book on making liquid soaps at home. Using a simple double-boiler technique, you can create inexpensive moisturizing hand soaps, revitalizing shampoos, invigorating shower gels, soothing bubble baths, and much more. And all tailored to your skin type, to your hair's needs, or even to your mood.

134 pages; 7 x 10" ppbk. \$21.95

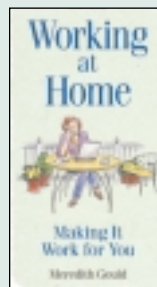


SS38

THE PAPERMAKER'S COMPANION

With clear instructions and step-by-step illustrations, expert Helen Hiebert covers every aspect of creating one-of-a-kind papers and using those papers in fun, creative, and beautiful ways. This essential handbook is sure to be one that paper crafters return to again and again.

219 pages; 8 x 8" ppbk. \$21.95

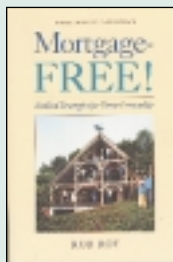


SS39

WORKING AT HOME

Free yourself from the world of rush-hour traffic and office politics with these easy-to-digest ideas and techniques for establishing and running your own home office. With authority and wit, Gould covers it all—from setting up your workspace to setting up record-keeping systems. Nearly 50 million Americans work from their homes. Why not you?

171 pages; 4½ x 8" ppbk. \$12.95

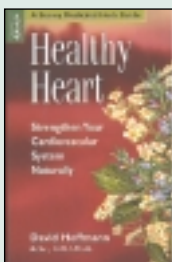


SS40

MORTGAGE-FREE

Here is a banker's worst nightmare, a book that tells you how to live without being enslaved to financial institutions. Rob Roy offers a series of escape routes from indentured servitude, underscored by true stories of intrepid homeowners who have put their principles into action.

353 pages; 6 x 9" ppbk. \$27.95



HE17

HEALTHY HEART

The whole-body approach of noted herbal clinician David Hoffmann offers a practical, natural way to prevent heart disease and ease the symptoms of hypertension, congestive heart failure, angina, varicose veins, arteriosclerosis, and other cardiovascular conditions. Discover how herbs can help you live a longer, healthier, more vital life.

122 pages; 5½ x 8½" ppbk. \$15.95

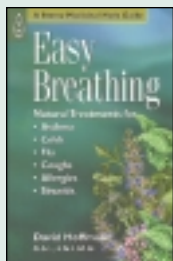


HE18

HEALTHY BONES & JOINTS

This book includes clear explanations of how herbs can be used in daily regimens to help prevent bone and joint diseases, a thorough overview of common musculoskeletal conditions, with a wide variety of preventive strategies, and a directory of herbs that are most helpful for the musculoskeletal system—along with preparation instructions and dosage guidelines.

122 pages; 5½ x 8½" ppbk. \$15.95

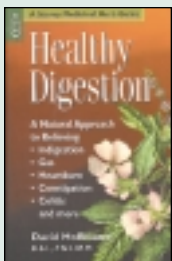


HE19

EASY BREATHING

This easy-reference guide offers an overview of common respiratory ailments, with preventive strategies and healing herbal formulas suggested for each condition. The author uses a holistic approach to respiratory care, with a combination of herbal medicines and lifestyle changes.

122 pages; 5½ x 8½" ppbk. \$15.95

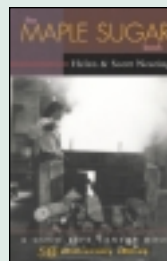


HE20

HEALTHY DIGESTION

Healthy Digestion is your complete guide to tapping into the power of herbs to maintain a healthy digestive system—with a full directory of useful herbs, preparation instructions and dosage information, and a chapter on simple ways to make your own teas, tinctures, powders, and capsules.

122 pages; 5½ x 8½" ppbk. \$15.95

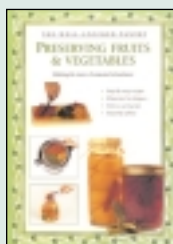


FP42

THE MAPLE SUGAR BOOK

This book is filled with a history of sugaring from Native American to modern times, with practical tips on how to tap trees, process sap, and market syrup. Fifty years after its original publication in 1950, *The Maple Sugar Book* is as relevant as ever to the homestead or small-scale commercial practitioner.

306 pages; 5¼ x 8" ppbk. \$19.95



FP36

PRESERVING FRUITS AND VEGETABLES

This book provides a creative answer to preserving fruits and vegetables in times of abundance, making them available on your pantry shelf in times of need. The new, exciting, fully-tested recipes are all described in easy-to-follow steps. From freezing to drying to canning (bottling), together with seasonal tips and gift-giving ideas, this book is the perfect guide for the adventurous cook.

96 pages; 6 x 8½" hdbk. \$19.95



GL8

PRUNING MADE EASY

Pruning is one of the best things you can do for your plants, if it's done the right way. Learn when, how, and why plants should be pruned, artistic pruning techniques used to make topiary, espalier, and cordons, and methods of using and caring for pruning tools and equipment. More than 300 step-by-step illustrations demonstrate the proper techniques for pruning varieties of trees, shrubs, bushes, hedges, vines, and flowers.

218 pages; 8½ x 11" ppbk. \$22.95

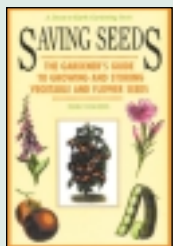


GL61

THE PRUNING BOOK

Whether you're new to gardening or an experienced pro, you'll find Lee Reich's advice and practical techniques to be invaluable. Packed with informative tips and illustrated with clear line drawings and color photographs, *The Pruning Book* shows every gardener how to prune with great results.

234 pages; 8 x 10" ppbk. \$22.95

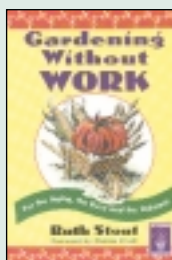


GL62

SAVING SEEDS

Saving seeds is a time-honored tradition—one that more and more gardeners are rediscovering. This book will tell you all you need to know about how to raise, harvest, and store seeds for the easiest-to-grow and most popular vegetables and ornamental plants. Each vegetable and flower is discussed in detail.

186 pages; 6 x 9" ppbk. \$15.95

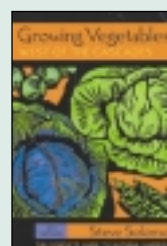


GL63

GARDENING WITHOUT WORK

With this delightful book, you can garden with hardly any labor except planting and picking. The Stout System of mulch gardening will allow you to throw away your weeding tools, pesticides, and fertilizers, and will conserve and replenish the soil to make plants thrive.

214 pages; 6 x 9" ppbk. \$17.95



GL64

GROWING VEGETABLES WEST OF THE CASCADES

Grace your table year-round with an array of fresh, nutritious vegetables—straight from your garden. This fully revised edition includes advice on how to select, cultivate, and harvest the vegetables best suited to this region. Whether you want to grow a few tomato plants or aspire to self-sufficiency, you'll find this bible of Northwest vegetable gardening indispensable.

356 pages; 7 x 10" ppbk. \$21.95

Backwoods Home BOOKSTORE



GL65

THE LAWN & GARDEN OWNER'S MANUAL

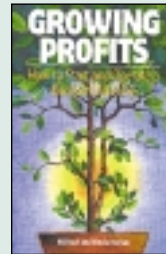
You know when it's time to mow the lawn, but do you know when and how to prune the tree that is starting to block the view? Move shrubs that are overcrowded? Liven up an overgrown perennial bed? Fertilize and aerate your lawn? Let Lewis and Nancy Hill show you how easy lawn and garden care can be.
188 pages; 8½ x 11" ppbk. \$24.95



FP43

FOREST GARDENING

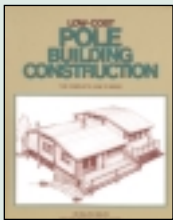
Based on the model of a healthy natural woodland, a forest garden incorporates a wide variety of useful plants, including fruit and nut trees, perennial herbs, and vegetables. The principles of "backyard permaculture" can be applied in every temperate zone of North America, helping to transform even a small cottage garden into a diverse and hospitable habitat.
234 pages; 6 x 9" ppbk. \$20.95



GL66

GROWING PROFITS

Turn your love of plants into an enjoyable and profitable business. Learn how to start a nursery in your backyard with virtually no capital investment. In an area of only 1,000 sq. ft. it is possible to generate over \$5,000 worth of plants in a single growing season. A backyard nursery is a wonderful business for the person who wants to make a living from self-employment at home.
216 pages; 5½ x 8½" ppbk. \$20.95



BU18

LOW-COST POLE BUILDING CONSTRUCTION

This one-of-a-kind book will save you money, labor, time, and materials in building a small home, barn, or other structure. It is illustrated with plans, drawings, and photographs, and carefully explains construction techniques.
182 pages; 8½ x 11" ppbk. \$17.95



BU19

BUILDING WITH STONE

Nothing can rival stone for its beauty and durability. This book educates the novice and inspires the seasoned artisan. A stonebuilder at any level will learn how to evaluate each stone and undertake each step in the procedure with an eye toward aesthetics and useful permanence.
192 pages; 8½ x 11" ppbk. \$20.95



BU20

THE ALTERNATIVE BUILDING SOURCEBOOK

In this book, there are over 900 individual listings from more than 400 companies. Most of the products, and or, services, focus on natural, traditional and sustainable building techniques and systems.
141 pages; 8½ x 11" ppbk. \$22.95



BU21

HANDY FARM DEVICES

First published more than 75 years ago, this book is filled with a wealth of labor- and money-saving projects, including a portable chicken coop, a small truss bridge, an easy fence-post and stump-puller; gates that don't sag, and much more. It is a combination of nostalgic Americana and helpful instruction.
288 pages; 4½ x 7¼" ppbk. \$15.95



BU22

THE HOMESTEAD BUILDER

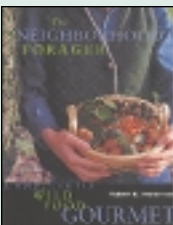
This practical classic, first published in 1872, is filled with handy advice on the best ways to plan and construct dwellings in any location, using wood, earth, and gravel. Includes nonsense instructions on erecting log cabins, slab houses, farm houses, and many others, as well as outdoor ovens, cellars, gates, furniture, and more.
145 pages; 4½ x 7¼" ppbk. \$15.95



BU23

STRAW BALE BUILDING

Straw Bale Building guides the reader through every stage of the design and building process and is heavily illustrated with both architectural quality drawings and photographs of on-the-job action. With its extensive listing of further resources, it provides all you need to plan and then create the building of your dreams.
238 pages; 8 x 9" ppbk. \$27.95



CR31

THE NEIGHBORHOOD FORAGER

Mention "foraging" and many people think of tramping through soggy swamps of trackless wilderness, battling mosquitoes and briars to reap a tiny harvest of nuts or berries. Yet, foraging for wild edibles doesn't have to be difficult, or require expeditionary gear to have surprising and tasty results.
280 pages; 8 x 10" ppbk. \$27.95



CR20

THE BOOK OF GREEN TEA

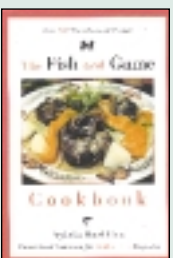
Enhance your life with the great versatility and healthful benefits of this tea of the ancients. From bath salts to ice cream, this traditional Asian beverage can be used in dozens of ways to relax the mind, strengthen the body, and soothe the soul.
156 pages; 7½ x 7½" ppbk. \$19.95



FP23

HOME SAUSAGE MAKING

This book is a combination how-to manual and cookbook. This edition includes new poultry and fish chapters. All recipes have been re-written to reflect lower fat and salt content. Learn dozens of ways of combining fresh, healthy homemade sausage with other ingredients to prepare many dinner treats.
168 pages; 8½ x 11" ppbk. \$17.95



CR33

THE FISH & GAME COOKBOOK

A unique cookbook by the former food columnist for *Outdoor Life Magazine*. Included here are dozens of outstanding recipes, many of which have been neglected by standard cookbooks—venison moussaka, shark tetrazzini, trout with cucumber sauce, broiled goose in mustard sauce, and curried fried squirrel, to name just a few.
272 pages; 6 x 9" ppbk. \$17.95



CR34

WILD RICE COOKING

Wild Rice Cooking is a total guide to wild rice: an introduction to harvesting and cooking, as well as a fascinating history of the plant and the cultures that have thrived on it for centuries. This book will appeal to all those interested in getting back to the land, as well as anyone who likes to cook.
160 pages; 4½ x 7¼" ppbk. \$19.95

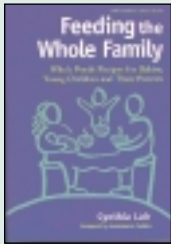


CR35

THE ART OF AMERICAN INDIAN COOKING

Over 150 delicious, authentic, and traditional dishes from five North American regions. From delicacies such as Zuni green chili stew and roast pheasant stuffed with grapes and nuts to simple favorites including baked acorn squash with honey and Chippewa wild rice, *The Art of American Indian Cooking* is a sensual journey of color, scent, and flavor across the regions of North America.
215 pages; 6 x 9" ppbk. \$17.95

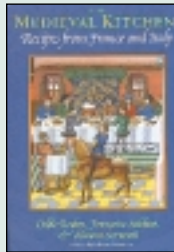
Backwoods Home BOOKSTORE



CR36

FEEDING THE WHOLE FAMILY

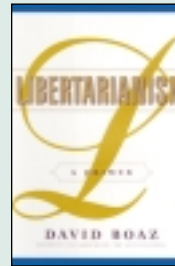
Cynthia Lair is a certified health and nutrition counselor and member of the nutrition faculty at Bastyr University. This is an excellent guide book for families interested in whole, organic, natural foods. Chapters run the gamut from starting your baby on whole foods to including vital vegetables in your diet to making wholesome desserts and natural drinks. 282 pages; 7 x 10" ppbk. \$21.00



CR37

MEDIEVAL KITCHEN

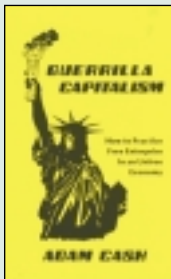
This book is a delightful work in which historians Redon, Sabban, and Serventi rescue from dark obscurity the glorious cuisine of the Middle Ages. Medieval gastronomy turns out to have been superb—a wonderful mélange of flavor, aroma, and color. The recipes are expertly reconstructed from fourteenth- and fifteenth-century sources and carefully adapted to suit the modern kitchen. 285 pages; 6½ x 9½" ppbk. \$21.00



TH5

LIBERTARIANISM: A PRIMER

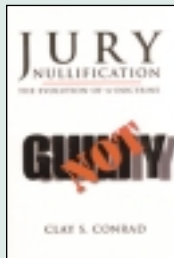
This book traces the history of libertarian thought and provides a concise yet thorough treatment of the subject. The writer discusses why libertarianism is morally just, efficient, and practical, and how it would affect public policy in America by leaving decisions in the hands of the individual, creating a freer and more efficient society. 314 pages; 6 x 8½" hdbk. \$26.00



TH1

GUERRILLA CAPITALISM

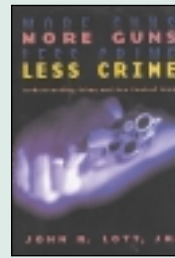
Don't fork over all your hard-earned cash to the IRS! Beat the system and do business tax-free. This book shows you how to join the growing underground economy, how the barter economy works, how to run a business off the books, how to stay clear of the IRS, and how to practice free enterprise in an unfree economy. 172 pages; 5½ x 8½" ppbk. \$17.95



TH2

JURY NULLIFICATION

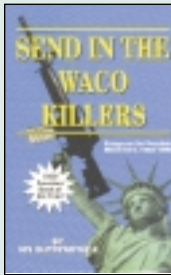
Our Founding Fathers ordained that jurors had the right to vote "not-guilty" if a law is unjust or unjustly applied. This allows us to hold the government to the principles of the Constitution and prevent oppression. But American courts now systematically deny us this right. Read this book and realize your real power as a juror. 311 pages; 6 x 9" ppbk. \$25.50



TH26

MORE GUNS, LESS CRIME

Directly challenging common perceptions about gun control, legal scholar John Lott presents the most rigorously comprehensive data analysis ever done on crime statistics and right-to-carry laws. In this edition, Lott has expanded the research through 1996, incorporating new data available from states that passed right-to carry and other gun laws since the book's first publication. 280 pages; 6 x 9" ppbk. \$15.00



TH10

SEND IN THE WACO KILLERS

Your right to trial by a randomly selected jury—not one stacked with jurors who swear to convict in advance—is gone. The IRS can now seize your bank account, paycheck, and house—without so much as a judge's order. Is there any peaceful way back from the toboggan ride to tyranny? The answers are here, by America's syndicated Libertarian columnist, Vin Suprynowicz. 516 pages; 5½ x 8½" ppbk. \$24.95



TH11

101 THINGS TO DO 'TIL THE REVOLUTION

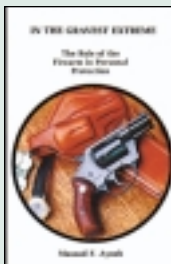
For the concerned citizen who wishes to keep a low profile, protect his or her rights, and survive in the "interesting times" which are sure to come, this book is essential reading. Wolfe lists the supplies you should be laying in and activities you should be engaging in before stuff starts spraying off the fan. She also lists some interesting web sites you should look into. 200 pages; 5½ x 8½" ppbk. \$18.95



TH15

DON'T SHOOT THE BASTARDS (YET)

The clodhoppers of Tyranny stomp on the toes of innocent people every day, from flat-out prohibitions of peaceful activities, to flagrant invasions of privacy, to the not-so-subtle erosion of Constitutional freedoms. Author Claire Wolfe has come up with another batch of ideas to follow up the wildly popular 101 Things to Do 'Til the Revolution. 238 pages; 5½ x 8½" ppbk. \$18.95



FH1

IN THE GRAVEST EXTREME

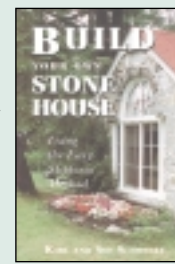
This is everything you should know before you consider acquiring a gun for self defense. Covers technical, tactical, and legal issues. Author Massad Ayoub, a police officer of many years' experience, is a nationally respected authority on firearms. 132 pages; 5½ x 8¼" ppbk. \$12.95



GL6

THE HOMEBREWER'S GARDEN

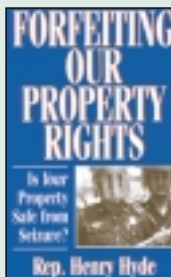
If you have a backyard, or even a sun-facing porch, you can greatly enhance the flavor, aroma, and uniqueness of your homebrew by growing your own hops, brewing herbs, and malt grains. Easy instructions will help you put the "home" into your homebrew. When you grow your own organic ingredients, you can be sure they are the freshest and purest available. 187 pages; 6 x 9" ppbk. \$17.95



BU13

BUILD YOUR OWN STONE HOUSE

The simple and functional beauty of a well-built stone house never seems to go out of style. Nearly twenty years after Karl and Sue Schwenke first constructed their Vermont home, their classic book has been revised, updated, and reissued for a new generation of readers. 164 pages; 6 x 9" ppbk. \$15.95



TH7

FORFEITING OUR PROPERTY RIGHTS

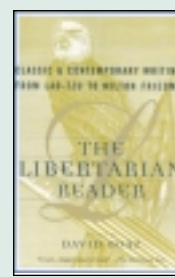
The government can take your home, your car, and your money without warning and never charge you with a crime—and the burden of recovery is on you! This book examines the abuse inherent in civil forfeiture, the law that lets government take property that is merely suspected of having "facilitated" crime. 100 pages; 6 x 9" ppbk. \$11.95



TH27

MORE LIBERTY MEANS LESS GOVERNMENT

In this new collection of thoughtful, hard-hitting essays, Walter E. Williams once again takes on the left wing's most sacred cows with provocative insights, brutal candor, and an uncompromising reverence for personal liberty and the principles laid out in our Declaration of Independence and Constitution. 264 pages; ppbk. \$21.95

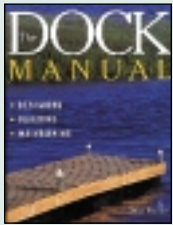


TH3

THE LIBERTARIAN READER

A comprehensive anthology of libertarian thought with readings from the Bible, our Founding Fathers, philosophers, economists, and others explaining why the individual and personal freedom are more important than collectivism and the state. Here is the sensible alternative to the Democrat/Republican monopoly. 458 pages; 6 x 9" ppbk. \$20.95

Backwoods Home BOOKSTORE



BU10

THE DOCK MANUAL

If you're fortunate enough to own waterfront property, you know that a dock is essential for realizing maximum value and enjoyment of that land. Now you can build your own dock, with this comprehensive, easy-to-use guide—the only book devoted exclusively to residential docks.

201 pages; 8½ x 11" ppbk. \$27.95



BU11

PLAY EQUIPMENT FOR KIDS

From swings, see-saws, and climbing frames to playhouses, sandpits, and a complete adventure playground, this book is an essential guide to building safe, practical, and imaginative play equipment for children of all ages. More than 30 projects, using a variety of techniques and different materials, are included.

95 pages; 8½ x 11" ppbk. \$21.95

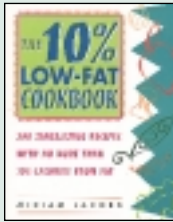


GL70

SQUARE FOOT GARDENING

This new gardening method has received world-wide recognition for its simplicity and uniqueness and has been written up in every major newspaper and gardening magazine. A new way to garden with 80 percent less space and work.

347 pages; 6 x 9" ppbk. \$19.95



CR19

THE 10% LOW-FAT COOKBOOK

Many medical and nutritional experts claim that no more than 10% of our calories should come from fat, but how do we pare down the fat and still please discriminating palates? This book provides more than 200 recipes for taste-tantalizing dishes that make it simple to prepare all kinds of meals for even the most fat-gram-conscious guests at your table.

172 pages; 7½ x 9" ppbk. \$15.95

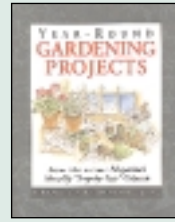


GL4

ROSES LOVE GARLIC: COMPANION PLANTING AND OTHER SECRETS OF FLOWERS

Companion planting is simply planning your garden to take advantage of the natural friendships between plants. You'll discover how flowers help or hinder nearby vegetables and other flowers.

249 pages; 6 x 9" ppbk. \$17.95

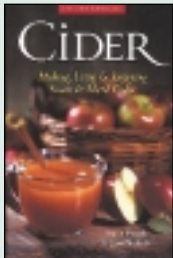


GL17

YEAR-ROUND GARDENING PROJECTS

Learn the techniques used by North America's best gardeners with 86 projects from *Horticulture* magazine's "Step-by-Step" series. Arranged by season, each workbook-style, two-page spread is dedicated to a particular gardening activity. Clear, concise instructions make each technique easy to understand and satisfying to implement in your yard, garden, or home.

212 pages; 8½ x 10¼" ppbk. \$17.95

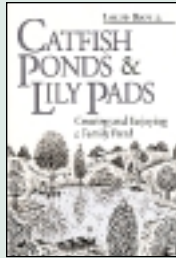


CR21

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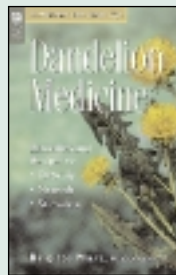


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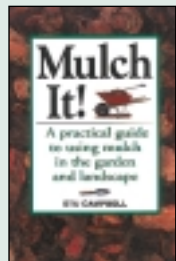


GL67

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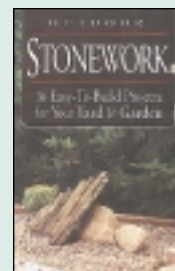


GL68

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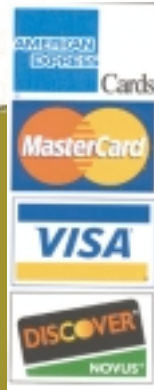
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