The magazine of modern homesteading

COUNTRYSIDE

& Small Stock Journal

Volume 98 • Number 1
January/February 2014

Caring for
Livestock
in Cold Weather

Brood Some
Chicks
This Spring

Ice Fishing 101
Enjoy the Fruits of
Your Homestead Pond

Plus:

- Grow bok choy for a change
- Training oxen, part II
- What's up with Watusi?
- Become a composting fool

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COUNTRYSIDE

In this issue
Vol. 98 No. 1 • January/February 2014

What's happening this month on your Countryside homestead…

Our Philosophy

It's not a single idea, but many ideas and attitudes, including a reverence for nature and a preference for country life; a desire for maximum personal self-reliance and creative leisure; a concern for family nurture and community cohesion; a belief that the primary reward of work should be well-being rather than money; a certain nostalgia for the supposed simplicities of the past and an anxiety about the technological and bureaucratic complexities of the present and the future; and a taste for the plain and functional.

Countryside reflects and supports the simple life, and calls its practitioners homesteaders.

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On the cover:

The first two months of the year can be mighty cold for many of us. As you hurry through chores, don't forget your livestock deserve some extra care this time of year, too. See how you can help on page 34.

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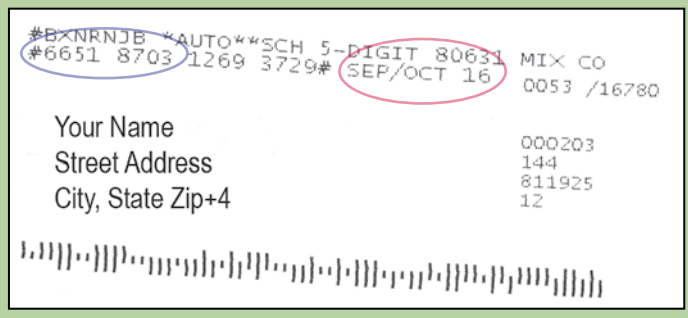

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Country conversation & feedback

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More Tips On Growing Shiitake Mushrooms

COUNTRYSIDE: I enjoyed Anita B. Stone's article on shiitakes in your November/December issue. I have grown them for several years and would like to offer a few comments.

Growing for market requires bringing crops off on schedule. To do this with shiitakes you will need humidity and temperature control, plus a lot of logs. For personal use, stacking logs in a shady spot with regular wetting works well.

The first year I timed my hourly inoculated-log production. Working by myself, I could handle, hand-drill, inoculate and wax an average of about three 42-inch logs per hour. In my third year I realized there is nothing sacred about a 42– to 48-inch log, so I now use 24-inch logs and drill them on my shop drill press. A friend flops them on the drill table and pushes them back and forth, rotating them while I drill. When several are done, we take a break to inoculate and wax them.

The early literature advised not to use beeswax. The thought was beeswax might contain fungi, spores, and bacteria that would contaminate the inoculated spawn. This was a disappointment to me as I am a beekeeper and had plenty of wax. The recommendation was for cheese wax, which is approved for use on food items.

One innovation I tried this season is to use "thimbles." About a thimble full of sawdust spawn is attached to a styrofoam disc. These discs come in sheets of 600. The foam disc is punched out of the sheet and manually pushed into a drilled hole. The styrofoam disc protects the spawn from contamination, so waxing is not needed.

In central Arkansas, logs inoculated in late March and stacked outside usually produce mushrooms in early October. I have had the best luck with a variety called West Wind. Cut into chunks, they freeze well on trays for packaging in bulk for soups, etc. They are easy to dry and reconstitute well in warm water. Be warned, however, that the reconstituting process generates an unappetizing odor. It is best to finish this process before your guests arrive!

My favorite way to eat shiitakes is mixed with scrambled eggs. They are also good in soups and make an excellent meat substitute for spaghetti sauce.

Shiitakes are a wonderful addition to the homestead table fare. With some investment and intensive management they would make a good market item. – *Don Greenland, Vilonia, Arkansas*

Wood Stove Thermometers Can Save Your Chimney

COUNTRYSIDE: I have heated my home by burning eight to nine cords of wood a year for over 30 years and have never had a chimney fire. I am neither a genius or particularly lucky, as my wife will verify. The way I have done this is by burning dry wood at the proper temperature.

The way to know you are running your stove at the correct temperature is to buy a Chimguard or other such thermometer that magnetically attaches to your stovepipe. This will show you the correct temperature range to run your stove. You can adjust with your dampers—wide open at first and then closing the dampers so you stay in the correct temperature range.

Wood that has been air dried to

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20% moisture has a net heating value of 10,560,000 BTU/ton, whereas green wood at 50% moisture has a net heating value of 5,740,000 BTU/ton. This creates close to two times as much heat value and can be easily achieved just by stacking up the wood and keeping it covered to protect it from rain, but where the wind can get to it for another year.

The other values to dry wood are that it is lighter, easier to get ignited, and won't cause chimney fires (if burned at the right temperature). Chimney fires, of course, will eventually weaken your chimney structure and burn your house down if a chimney fire hasn't set fire to your roof or yard before then. – *Gerald Melis*

Years of Prepping Paid Off

Employment downsizing barely fazed them

COUNTRYSIDE: It's a rare quiet Sunday fall morning. I am the only one up and about, even the dogs are still asleep. The dense fog is sitting low on the property and it seems a perfect time to reflect on the past 15 years and the changes that reading COUNTRYSIDE have brought to my life.

I first picked up a copy of the magazine in the mid 1990s and started subscribing a year or so before Y2K. Your Y2K issues were a wake up call! I didn't even own a clothesline in 1998. I did have a garden and lived on five acres, but it was five acres of solid rock. The garden consisted of raised beds with two feet of dirt in them that I had trucked in, our water supply was very poor—3/4 gallon per minute from a well with poor quality water which often ran dry by the end of the summer. We did build holding ponds for roof run-off, but it was a constant struggle to keep everything alive. We heated with wood in a very poorly insulated 1,700 sq. ft. house and went through eight cords of wood a year to keep warm.

We lived in an area that was subject to rapid development and was becoming increasingly anti-agricultural. Electricity and other utilities were beginning to become more expensive. Using references found in COUNTRYSIDE, I was reading more about the end of peak oil, food storage and societal change. An additional issue is that we live on a 400-mile long island off the Pacific northwest mainland and all imported food comes on trucks via a ferry system. If the ferries ceased running (bad storm, grid meltdown, earthquake, etc.), grocery stores in all the cities on the island have about three days worth of food in them. The phrase "nine meals from anarchy" has real meaning here. I was becoming increasingly concerned that if things went really wrong, we were definitely living in the wrong place.

Fast forward 15 years to the present. We moved seven years ago to 20 acres located in a thriving agricultural valley near a small coastal community about three hours north of our original location. The term "eating local" has true meaning here, as you can get everything you need within a 50-mile radius. Our house is a passive solar home built partially into a hillside with a root cellar and walk out basement. We have direct-tie solar hot water and heat with wood. The house is extremely well insulated and on days other than very cold, dark winter days, the wood stove is only needed in the evenings and first thing in the morning. We use about two cords of wood per winter. Electricity is still going up and a 20% increase is forecast over the next few years. Our next project will be a direct-tie solar power to reduce our grid consumption in the house. Neither my husband nor I are good tinkerers, so we opted for that type of system rather than something that requires batteries and the accompanying bits and pieces. We also have a very good well, a vegetable garden that feeds us year round, raise meat birds, and have laying hens. Fish is available directly from the fish boats at the docks. We buy a pig from a neighbor who raises a few every year. We also

hunt. I can and freeze fruit, sauces, juice, meat, and fish. Bread, yogurt and mayonnaise are made from scratch. Ninety-percent of cooking is from scratch.

So where is all this going? Well, after years of earning a good consulting income my husband lost his job earlier this year as the industry he is involved with underwent a serious downsizing. Time for another accounting and some lifestyle choices.

1. Got rid of the rest of the toys. The aluminum boat and some other "toys" went. Anything mechanical that we had which wasn't paying for itself or used on the farm was sold.

2. Do you really need all those channels on the tv? If it was just me I wouldn't have tv at all, as I do not watch it. We did manage to cut cable down to basic service, plus I changed my cell phone service to basic emergency use. Savings are almost $200/month between the two.

3. Cut down electricity usage. I looked at all our appliances and the energy they consume per month. Washing is now done on the light cycle in cold water and clothes are not washed until they are really dirty. The clothes dryer is no longer used, laundry is hung on racks by the wood stove in the winter and line dried outside in the summer. Lights are turned off when not is use—one light bulb left on 24/7 can burn up to $100/year of electricity. A couple of old freezers have been turned into airtight storage for flour, sugar and grain. Works great! Our oven is old and not very efficient, so I have pretty much stopped using it except for baking bread once a week. The wood stove is used to slow cook beans and pot roasts —I have a crockpot that is used for other dishes. Anyone have a recipe for crockpot bread? Our power bill has dropped by 40%. Hopefully the direct-tie solar will decrease that even more.

4. Assessed our livestock. I crunched the numbers to see what was costing us money and what was economically feasible for us. My two horses were sold. I no longer ride and it was not cost effective to maintain two "lawn ornaments." Our surplus layers were butchered, bringing our flock down to 20—I may reduce that by 1/2. We like the flavor of the five-month-old free range layers, so much that we probably will not be buying meat bird chicks next year, but will hatch our own meat birds. I have Buff Brahmas—they are a very nice, hardy, dual purpose bird that will set and hatch out chicks. Not paying money for chicks or all that grower mash will help with the bills.

5. We put in a six-month supply of food. This was already well underway before the crunch came. Some extra bags of flour, plus sugar completed our storeroom. This has made such a huge difference. If you only do one thing, then do this. It is like an insurance policy. If you can do this plus have a garden, then you are well on the way to being well insulated from economic catastrophe.

6. Learn to find free stuff. A friend is putting in a workshop on her property where some blueberry bushes are—I asked for the bushes and she said sure. The bushes produce 100 pounds of blueberries each season.

7. Find different ways to use what you have to save money. Examples here are using leaves on the lawn for garden mulch, making jam out of blackberries on the property, etc.

8. We took in a boarder. I believe that the days of the single family dwelling are at an end. As I have no family, we offered extra space in the house to a young friend who was in need of a place to live. It has worked out very well. Having an extra pair of hands around the place is wonderful and the contribution to household expenses is very welcome.

What's next? Some future projects include:

• Get rid of all remaining debt. A work in progress.

• Get rid of as much lawn as possible and replace it with productive plants. Not dahlias or shrubs, but food producing plants. Replace grass around garden beds with mulch. The goal here is to get rid of the ride-on lawn mower, which came with the property.

• Try growing grains. Oats and barley grow well in this part of the world.

• Increase food in storage to a one-year from a six months' supply.

• Add a dairy animal for cheese and yogurt making.

I can't thank you enough for being there through all these changes. I read each issue from cover to cover when it arrives and always find something useful to add to my homestead toolbox. Three books that I recommend whole heartedly to all your readers are *Nourishing Traditions* by Sally Fallon, *Making Home* by Sharon Astyk, and *The Encyclopedia of Country Living* by Carla Emery. They are must-haves for any Countrysider's library. I re-read parts of all three frequently. Other must-haves are anything written by JD Belanger. I particularly enjoyed *Enough!* Keep writing JD!

And yes, I now have a clothesline. – *Canadian reader*

Old Preserving Methods Aren't Necessarily Safe

COUNTRYSIDE: Shirley Benson of Wisconsin, offered some terrific advice to amateur homesteaders: Learn to grow your own food, preserve and process it, and most especially – *listen to your elders!*

However, I feel that some of her advice was irresponsible. Ms. Benson describes methods of food preservation that have been proven unreliable, and potentially dangerous. While I don't believe the author intended to submit a full-length missal on every step of canning – only an overview – there were important points overlooked:

1. Some pressure canner gauges require calibrating every year by your local extension office. Others do not. This information is vital to some readers who are in remote areas, far from the county seat. Additionally, used pressure canners generally require a replacement gasket – something that may be difficult to find. I encourage savvy readers to do their homework prior to purchasing, whether new or used.

2. Oven canning is not recommended, although the author describes it as a secondary means to preserve food. (Sealing previously dehydrated celery, for instance.) Ovens are not reliable as a preservation method. Hot spots could cause jars to break, cold spots could potentially allow bad bacteria to thrive. There is no sure-fire way to know that the center of the jar's contents has gotten to a safe temperature, and that is where the threat lies.

3. Using the methodology that a home canner "hasn't killed anyone yet!" is the reason that compelled me to write. In my opinion, one is entitled to use methods that *may* endanger yourself, your family, perhaps your guests. But once potentially unsafe methods are published in a forum, a line has been crossed. An experienced electrician may choose to work "hot," but the average novice would do no such thing!

Safety is critical to every home, regardless of production or size.

It makes no sense to grow a seed, harden off, put it in the garden, weed and water, and then take short cuts as it relates to preserving the harvest. There are reliable sources that utilize proven home canning recipes, the NCHFP website (nchfp.uga.edu/) is one of my favorites. They have the funding, resources, and ability to actually test their recipes, and there is no disclaimer on the site that they "haven't killed anyone yet!"

I strongly encourage my fellow homesteaders to research any recipe or method that is found outside trusted, reliable (*and yes, government*) sources. This includes social media websites, such as *Pinterest,* and any canning recipes published prior to 1990.

So many readers look to COUNTRYSIDE as a reliable source of information. Potentially unsafe methods of preserving are not up to the standard of your fine publication.

I am a self-taught gardener and canner, and I have made more than my fair share of mistakes along the way. I don't believe the author's intentions were nefarious, perhaps only misguided by enthusiasm to share

her knowledge. – *Maureen Widmer, Minnesota, reeney26@yahoo.com*

Excellent advice Maureen. Canning methods have changed from the way "Grandma did it," along with the tools involved. Ball® also has a website with videos, a helpful glossary and recipes at www.freshpreserving.com/getting-started.aspx.

No Outhouse? Thank Goodness!

And other thoughts on modern luxuries

COUNTRYSIDE: I read recently a couple of letters which decry the modernization of life in our country. One lady wished she could get rid of her washing machine. Another was concerned that we had modernized to the point of indoor plumbing (they use potty buckets without toilet paper and compose the refuse).

The washing machine idea reminded me of the day my mother finally got a washing machine with a hand crank wringer—a life saver. The potty bucket reminds one of cold midnight trips to the outhouse, less pleasant than sitting on a bucket.

I suppose, we can be grateful these ladies donate to the cause by paying for a subscription to the electronic publication of COUNTRYSIDE. Oh, let's not forget the postal service that does home delivery instead of the pony express that delivered hand written messages to the local general store.

I, for one, am glad my father's desire that we have a better life has materialized. I live in the country six miles from the nearest gas station and two miles from my neighbors. We have high speed Internet and HD TV via satellite, a large central computer with three wireless laptops, two smart phones plus cordless phones on a land line, two electronically controlled cars and tractors, and electronic collars to keep the dogs on the property (dogs have embedded pet finders also).

Thanks for your magazine, it helps. – *Roberto Gutierrez, Texas*

Just a clarification—there is no electronic version of COUNTRYSIDE, however we do have a website: www.countrysidemag.com.

There Are Two Sides to Every Debate…

COUNTRYSIDE: I would like to respond to Mr. Melvin Griffith's response to my "CAFO Threat Close to Home" article. First, Mr. Griffith would like me to be aware of modern farming practices, I would like him to be aware of modern Women's Equality because I take exception to the tone with which he addressed me. I may take care of nine children, do the laundry, and cook the meals, but I am a woman who deserves respect even if you disagree with what I say. Unfortunately, the belittling tone that Mr. Griffith treated me with is the same that I met with from our Planning Commission and Township Supervisors Board. Mr. Griffith is very telling of Industrial Farming by his being on the Planning Commission—I would call it biased at the least and possible nepotism at the worst—which is what we've dealt with here in Huntington Township, Adams County, Pennsylvania.

Having said that, let me refute his arguments one by one.

First, sure there is no pollution (dubious at best) as long as the chickens are inside, but what happens when the barns are opened and cleaned out? The ventilation systems on these types of barns are taking ammonia away from the birds and sending it to the outside environment. Our local citizens' stream monitoring group has documented at least two discharge levels of ammonia from this particular facility in Huntington Township finding its way into our local tributaries.

Truck traffic has grown exponentially once this facility went in, and though they are not my exclusive roads, nor are they yours or our neighbor's. Besides, who is going to take care of the maintenance to roads from the increased traffic—you exclusively? Not likely. It will be all the

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taxpayers of our township, without any noticeable benefit to us.

As far as well water contamination goes, I have submitted a dossier of well data from wells surrounding the site to Region III Environmental Protection Agency. If Mr. Griffith likes, I will send him a copy.

Some wells had already significantly dropped in their levels, especially when we had a mini drought of three weeks this past September. I will defer to our local Planning Commission and Supervisor's meetings minutes when this issue was raised by affected well owners.

As I said before, the ventilation system on these houses sends all of the noxious poisonous air from the rotting manure beneath the floor the chickens are on into the environment, so it stands to reason that the workers are not affected just as the chickens aren't affected. It's the rest of us fools outside the houses who get the pollution. Another point, what about my "Right to Farm"?

I wouldn't want the manure from those chickens if it was the last available source of nitrogen on the planet. I'm not interested in putting manure laden with antibiotics and warfarin on my land. Another point to consider is the amount of land that is available for manure application. When manure is mishandled and not spread properly, it is an environmental nightmare—that is a fact no matter how you try to sugar coat not having to use chemicals. When our local citizens group met with the Region III Environmental Protection Agency in Philadelphia in April, our neighbors had no definite plan for how they were going to handle their manure. Keep in mind we are talking about 81,000 birds contained in two buildings that are an acre apiece in size, nestled between two tributaries. That is an incredible amount of manure.

Finally, I take real exception to the ending of Mr. Griffith's letter. Don't you dare welcome me to the country when I've lived here my whole life. It's not your privilege. What I would like to welcome you to though, is a place in the country where we can

agree to disagree on sensitive issues but look for real solutions to the challenges that face the country way of life. As a Planning Commission member you should already be there—it is your obligation to make the country safe for all of the residents of your township—not just the one's with big farms and big tracts of land. Thank God that President Washington and President Jefferson did not have your mindset or we wouldn't have a country to enjoy, period. – *Anna Jones, Pennsylvania*

This is a debate that obviously won't be won in these pages, but it is a reminder to everyone going through similar situations to make your thoughts known to your local politicians and the "powers that be."

Some Things are Simple Annoyances

COUNTRYSIDE: Today's farmer has a few things that need to be addressed. Here is a small list of what bugs me.

1. Land drainage—we do not need that dirt, old fertilizer, and everything else dumped into our rivers and streams just so a farmer can grow more corn. It destroys places for the frogs, good bugs, ducks and geese, plus others too numerous to name.

2. Quit feeding all the antibiotics just so a farmer can grow his livestock in crowded filth.

3. Water does not belong *just* to the farmer. I am tired of rivers and streams without water, and states such as Kansas and soon Nebraska, going completely dry because of the irrigation.

4. Corn is not a natural food for dogs.

5. Chickens: People are raising their own because they do not want their meat raised on a diet of diseased animal parts, poisons, and anything else they can stick into feed products.

If you'd like to reach out to a reader, send a SASE to COUNTRYSIDE Editorial, 145 Industrial Dr., Medford, WI 54451 and we'll do our best to forward it.

Cage-raising chickens is cruelty.

6. Traffic: I am tired of farmers breaking the rules with unmarked slow vehicles, farm machinery being driven down roads where it is required to be hauled, and for not pulling over and letting the long line of vehicles pass. The rest of us have lives and jobs to get to also.

7. The pesticides are killing the bees. We are not living in a world where we eat only corn and soybeans. The corn and all the products made from it are now inedible. Soybeans are not a natural food for anyone's diet. GMO foods are unsafe.

8. I am also sick and tired of the Farm Bill. There are people out there who will never make a living farming because they cannot manage a business. I am tired of my tax money supporting them, as it has since the 1940s. No one replaces our jobs if the plant closes or the boss goes bankrupt. Farmers need to pay a much bigger share of their insurance on crops and quit sticking the rest of us. You are not making friends. – *M. Ferlita, Wisconsin*

Hug a Rabbit Today

COUNTRYSIDE: I just read "Rabbits Make Great Pets" by Blair Bryant in the November/December 2013 issue, and I agree wholeheartedly!

Our family is a city-dwelling one, and we have been proud and happy rabbit owners for six years now.

I just wanted to point out, that although the article specifies that rabbits are rodents, they are not. Rabbits belong to the order *Lagomorpha,* not *Rodentia.* Lagomorphs include rabbits, hares and pikas. Both orders, however, posses the characteristic of continuously growing incisor teeth.

According to *Adaptations in the Animal Kingdom* by Verne A. Simon, "Rabbits were classified in the order *Rodentia* (rodents) until the 1920's when they were reclassified in the order *Lagomorpha*."

Regardless of their classification, they do make great pets! – *Jennifer Finnelli, Brooklyn, New York*

COUNTRYSIDE is proud to present an on-going photo contest. Send us photos from your homestead—livestock, grandchildren, garden, barn, etc.—and we may share it with COUNTRYSIDE readers! Each issue's "Featured Photo" will receive a FREE COUNTRYSIDE t-shirt!

E-mail your photo(s) as jpeg attachment(s) to friend@countrysidemag.com with "Capture Your Countryside" in the subject line, be sure to include your name, mailing address, phone number and a brief description. Or mail photo(s), including your name, mailing address, phone number and a brief description, to "Capture Your Countryside," 145 Industrial Drive, Medford, WI 54451. **See page 94.**

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A Few Solar Generators With Slight Scratches At Astonishing Discounts!

There has never been a better time to have a "Solar Backup" solution for sustainable backup power. Here's the thing: I could go on and on about life without electricity and what a nightmare gas generators can be. But here are just a few of the many benefits of owning a "Solar Backup" solution...

- **Generate Free Electricity From The Sun**
- Gas Stations Can't Pump Gas Without Electricity
- **No Dangerous Fumes**
- Back Up Power When You Need It Most
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- Runs Quietly In Your Home
- **Multiple Uses**
- Plug And Play Means Instant Power

I'm so convinced every American household needs a Solar Generator, that I've aranged for a truly incredible offer that won't last long and I want to take a few minutes to extend this offer to you as a reader of Countryside.

Once A Year We Let A Handful Of People Get The Deal Of A Lifetime On Solar Backup Power

Here's the exciting story:

In the rush and excitement of selling several thousand Solar Generators in the last year, there was no time to pay attention to the units that were slightly scratched or had dented boxes except to put them aside in our warehouse.

Some of the units have only slight scratches on the outside shell - so slight that you would have to make a real close inspection to discern the damage, but still... you know how it is... they cannot be sold as perfect Solar Generators.

So rather than send them back to our manufacturing plant in Canada and give Canadian workers the job of putting new outside shells on the units, we have decided to pass a huge discount on to a few people who really don't care about a minor scratch, but are just interested in having reliable backup power... and to offer these units at below wholesale pricing.

Only 17 Units In The Warehouse!!!

We have currently 17 of these PowerSource1800 Solar Generators to sell at this once-in-a-lifetime price. When they are gone, it'll be pretty hard to get this kind of backup power at such a steeply discounted price. But while the inventory of these slightly scratched units lasts, you can pick one up for very little money.

All Scratch And Dents Have Full "New Unit" Warranties!

We also guarantee every PowerSource1800 Solar Generator to be in like-new condition. As we mentioned earlier, in some cases, only the box was "dinged up" a little, so the units inside the box are absolutely perfect. In fact, in most cases not even one of our techs could find anything wrong, except that the box doesn't look new. (But if you think about it, you will probably throw the box out anyway.)

We know how important solar backup power is to our Countryside readers, so we wanted to offer this to you right away. Now, I have to be honest, these special "scratch and dent" units aren't going to last very long.

The price is just $995.00 plus $149.00 shipping and handling. (Total $1,146.00) But I've decided to sweeten the deal even more. I'm also going to give you $1,000.00 in Heirloom Seeds, and $150.00 in LED bulbs... absolutely free. All of this is true. You can see a video we made about this once in a lifetime offer at: **ScratchAndDentSolar.com**

The Heirloom Seeds are yours free when you order a "Scratch and Dent" unit, but quantities are definitely limited, so we must receive your order as soon as possible in order to help guarantee a unit.

Here's what you should do right now if you are even thinking about this. For the absolute fastest way to get your hands on

this amazing deal...go to this website right now...

ScratchAndDentSolar.com

If you would like to order by phone, you can call toll-free by dialing **800-218-4615.** Tell whoever answers that you want one of the Scratch and Dent models, $1,000.00 in free seeds, and the LED bulbs.

Please call even if you plan to pay by check or money order so we can put your name on a unit. But act quickly. My guess is they will be gone in a flash.

If you want to order by check or money order, after you call, have your check or money order made out to "Solutions From Science" and mail it to...

Solutions From Science
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Thomson, IL 61285

Warm Regards,

Bill Heid
President, Solutions From Science

P.S. If you have any questions at all, don't hesitate to call the office at **800-218-4615**. You should definitely watch the video before you call. Watch it by going to:

ScratchAndDentSolar.com

Wind turbines and PVC panels help cover you in varying weather conditions.

Alternative energy:

Lifestyles and Habits Determine System Design

BY DAN FINK, COLORADO

The Colorado floods of September 2013 hit our small off-grid community hard, though other nearby communities fared far worse. We were fortunate there was no loss of life locally and only minor damage to homes, but our access roads in all directions were completely wiped out, leaving dozens of families isolated for almost a month. National Guard helicopters clattered overhead for days, dropping off Search and Rescue teams to locate and contact every resident, asking if they wanted to be rescued by helicopter.

The answer from the folks in our community was, in every case, "Rescued from what?"

That response tells a lot about what it means to live off the grid. All our local solar and wind power systems performed as designed, keeping freezers, fridges, lights, water systems, Internet and other amenities operational. But how were these systems designed in the first place, and how much did they cost? Fortunately those questions boil down into three simple considerations: What are your renewable resources, how much energy do you use each day, and how many days of "autonomy" do you want before having to run a backup generator?

Energy awareness

And here was the point where I was going to launch into the math of off-grid power system design, how to use online system sizing spreadsheets and analyze a couple case studies… and then an important idea occurred to me. Why does one of my off-grid clients have a solar power system four times larger and more expensive than that of the neighbor just down the road? Both are families of three, have efficient houses of similar square footage and similar solar exposure, both loaded with efficient appliances and lighting. And both families are extremely happy with how their power systems have performed over the years, through good weather and bad. What gives?

I think it's all because of energy awareness, lifestyle, habits and the willingness to change them. And of course, budget. But math didn't much enter into the design of either of these very successful, owner-installed systems. So I'll be getting into small doses of all those numbers in future columns for COUNTRYSIDE, but for now the epic floods here last month have focused my attention more on what it really means to be energy self-sufficient.

Energy awareness happens on many levels. For example, ask my client with the big power system what the weather will be doing tomorrow or the next day, and his answer will

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Knowing what the week's weather may bring is extremely helpful for managing an off grid system.

likely be "I have no idea." But ask his neighbor with the small system down the road, and he'll already know exactly what's headed his way every day for the next week. If there's a daytime rainstorm rolling in, he'll start conserving energy well in advance to keep from having to run that generator. If winds are forecast with the storm, his wind turbine might be able to pick up the slack, but it's still better to conserve. The folks with the big system don't really need to bother knowing as they spent the money up front to not have to worry. At my house (with a small-sized solar and wind system), such conservation measures often include using the laptop computer instead of the big one, doing the dishes by hand instead of running the dishwasher, and playing Scrabble® or picking music with friends instead of turning on the television or stereo.

It's also critical to install a relatively inexpensive meter to track energy coming in and going out, and always showing the battery bank state of charge as an easy-to-read percentage of full. Expensive battery banks are easily damaged permanently if discharged too low for too long, too many times. My boy learned at age six to read that meter, turn off the cartoons and let an adult know if the batteries dropped below 60 percent full, and by age eight he could start the generator himself. We tried to train the dog to do this too, but she was hampered by lack of thumbs.

Very simple habits like turning off the lights and TV when you leave a room can make a big difference off the grid. Friends still laugh at how I sometimes follow them around in their own homes in town flipping off lights and grumbling at the energy waste. You'll also find that off-gridders employ a lot of switched power strips. All those square "wall-wart" transformers that power and charge your stuff, and any appliance that can be turned on with a remote control or with a button instead of a physical switch, are using energy even when they are turned off. Not much energy, but when you add up dozens of such gadgets, it can become a significant load. A Watt here, five Watts there, and pretty soon you might as well just be leaving the living room light on 24/7. Switched power strips help solve that problem.

They say pain is the most effective teacher in the world, and financial pain works well too. On the grid, the cost of energy-wasting habits is pretty minor—pennies per day—but when an expensive and fragile battery bank is involved, those costs go

much higher quickly. I've replaced many, many battery banks for clients who couldn't be bothered to become energy-aware and murdered their batteries in only a year or two. On top of a cost of $2,000 to $4,000 to replace the average home battery bank, the old ones have to be removed and taken to the recycle center and new ones brought in. That pain will be very physical, too, with the average set made up of eight or 16 batteries weighing in at 120 pounds apiece. Needless to say, my hourly rates go up proportionally with how my back will feel when it's over.

Next, some math, as promised. But only a small dose…

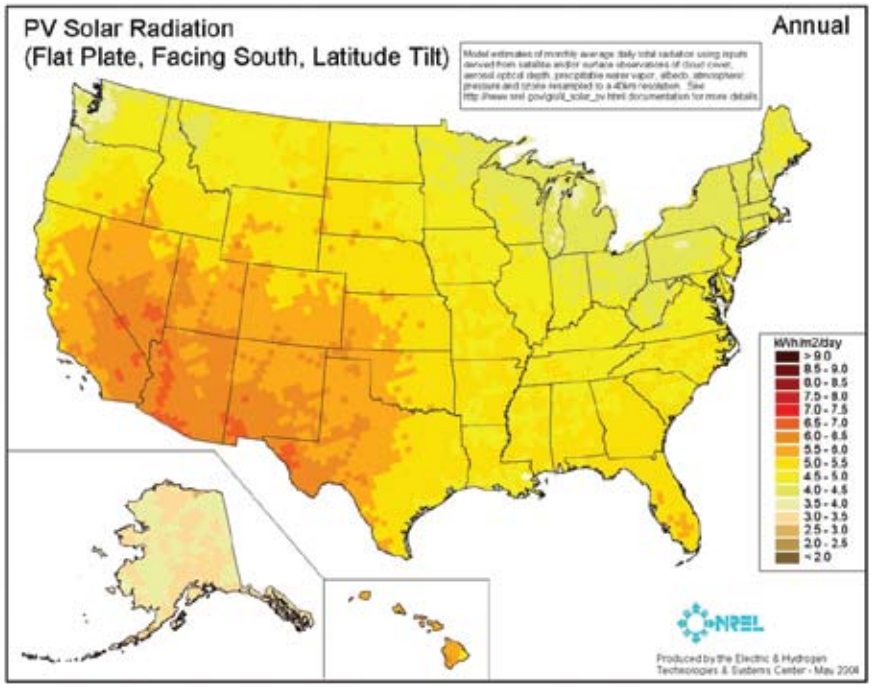
Power versus energy

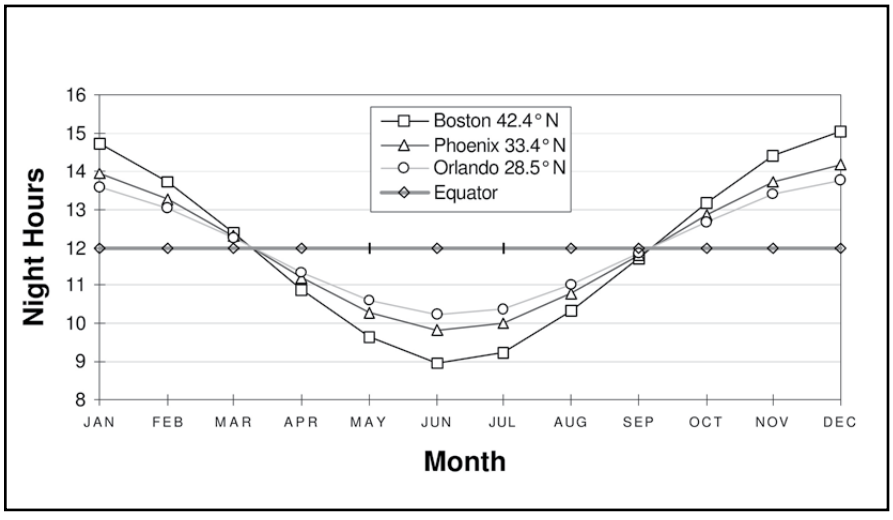
First let's get on the same page with units of measure, to make the math easy. Power is measured in Watts, and defines how much electricity you are using or generating at any given instant. Energy is measured in Watt-hours, which show power over a period of time. The electric utility bills you for energy and a battery bank stores energy; it's far more important to any renewable energy installation than power. Or in other words, it doesn't matter so much that your television burns 100 Watts, the critical information is how many hours each day you leave it on. Run it for 10 hours, and you've used 1,000 Watt-hours (10 hours @ 100 Watts), or one kilowatt-hour (kWh).

Predicting available sunlight

In the last issue of **Countryside**, I touched upon selecting a good site for both building a home and then installing renewables. For 99 percent of people, that energy solution will be solar electric (called photovoltaic, or "PV"), and I tried to explain how to find out what percentage of "insolation" you have available each month of the year, based on shading from terrain and other obstructions such as trees and buildings. But how do those numbers break down into your real world?

Fortunately, insolation is easy to measure and predict. Stations across America (your tax dollars at work)





monitor and average actual solar data each day, taking into account latitude, clouds and weather, the angle and intensity of sunlight, and other local factors. Then they turn this into simple "equivalent full sun hours" averaged over decades of data by month and year. Take a look at this sample insolation map (above) and compare foggy Seattle's 3.5 full sun hours to sunny Southern California's 7. That doesn't mean solar won't work in Seattle, but it does mean you'll need twice as large a solar array to produce the same amount of energy each year there.

Seasonal variations

When solar is connected to the grid, seasonal variations don't matter much as the utility usually credits any extra energy you generate in the summer towards winter's bills, when you're likely using more than you produce. Off the grid, it's a completely different story! Your daily concern is if you have enough for your needs right now, tonight and tomorrow, or else you'll be reading by kerosene lamp or running an expensive backup generator. Diagram 2 shows the seasonal difference in sunlight for various latitudes. Wintertime also brings a "double whammy" off the grid, and it gets worse the farther from the equator you live—fewer sunlight hours on the solar array also means

more hours of indoor lighting needs at night.

That presents a problem in system design—if you size it to provide 100 percent of your needs in the darkest months of winter (only one full hour in Seattle) you'll need a huge solar array and massive battery bank. So, it's common practice to include a reliable generator and fuel source in the system design, and just plan on running it a few hours a week in winter. That might not seem very "green," but it certainly saves green in the form of cash!

Solar array prices are extremely low right now, thanks to a variety of factors. When I started into solar in the mid 1990s, costs of over $10 per Watt were common. By the mid 2000s, they had dropped to only $6 per Watt, and now prices of only $1 per Watt are common online! Besides helping the homeowner buy more and better equipment up front, these prices also allow battery banks to last longer. How? A larger solar array makes it possible to design the system so almost every day of the year, the battery bank recharges to full or close to it. Batteries like this treatment, and they last far longer. Battery bank lifespans of eight to 10 years are now far more common

remain with me.

During the floods, my lifestyle didn't have to change significantly. The situation only became alarming when I realized my toilet paper supply was running short, as Sears & Roebuck catalogs are so much slimmer and glossier these days. But I knew I could always switch back to the old way in the outhouse, with corncobs. Use the red cob first, then the white one (to be sure you don't need another red one).

During the floods, my lifestyle didn't have to change significantly. The situation only became alarming when I realized my toilet paper supply was running short…

Off-grid and loving it!

My first few years living off the grid certainly presented a steep learning curve. But adding a small solar array and battery bank made a huge difference, as my first two winters were spent with kerosene lighting, water carried from my spring in buckets, and an outhouse. I've since expanded it gradually to a much larger system, but those frugal lifestyle and conservation habits

Dan Fink is the Executive Director; Otherpower, Buckville Energy Consulting, Buckville Publications LLC. NABCEP/IREC accredited Continuing Education Providers

Alternative energy:

Adventures in Solar Water Heating

By Joan Lardin

Five or six years ago I was surfing the Web and came across an article mentioning that vast numbers of folks in China, who never before had indoor plumbing or easily accessible hot water, were buying up millions of solar hot water heaters — for around $200-300 each.

This was intriguing, because each time I had contemplated shopping for a solar water heater, a bit of Internet research revealed systems that seemed so unfathomably complex, involving pumps, motors, controllers, check valves, manifolds, heat exchangers, thermostats, air expansion tanks, sun trackers and other techie stuff, that only an engineer or master plumber could understand them, much less install them; and they were expensive. To me they looked like Rube Goldberg contraptions. I called a few places that looked promising, only to find out that almost nobody knew or cared much about the operating principles and design of Chinese solar water heaters. Most of the available designs appeared to date from the 1970s, and it seemed that there had not been great strides in solar water heating since the Carter administration.

The obvious questions were: how could the Chinese build solar water heaters so simple and cheap that tens of millions of people have them in China? How did they work? Where could I buy one in the U.S.?

Back to the Web and more research. The secret of the Chinese water heaters is something called evacuated tubes. In one of the simplest and most elegant available configurations using evacuated tubes, water is pumped into a horizontal, heavily insulated, pressurized outdoor tank placed atop a metal supporting stand, that has an array of hardened, weather-proof, borosilicate glass tubes attached to it from below. These tubes are the solar collectors. Each evacuated tube consists of a clear glass outer tube and a glass inner tube, which is coated with a dark UV absorbing film. There is a vacuum between the outer and inner glass tubes, sort of like a thermos bottle. Solar UV rays go through the clear outer tube and are absorbed by the innermost tubes' dark film layer, producing heat; but the heat cannot escape back out into the atmosphere because of the vacuum between the two layers of glass. The captured heat (lots of it!) is then transferred to a heat conducting copper rod inside each glass tube in the array, and then up through the copper rod into the tank, where the heat is released into the water. In our climate, on a cloudless mid-summer day, with correct sun orientation, 60 gallons of room temperature water will heat to 140°F-plus in one day, with the temperature being maintained by the insulated tank. Evacuated tubes can work well on cloudy and overcast days also, as long as there is enough UV available. In deepest, darkest winter the solar heater can function as a pre-heater for an electric or gas water heater. The rest of the year, in Georgia, with full southern sun exposure, it is quite possible that no supplemental gas or electric water heating is necessary.

The solar water heater (SWH) can be mounted on a sturdy roof or on the ground. It can be patched into the household plumbing with CPVC or PEX, and will operate using house-

hold water pressure, either from city water or from a well; no other pumps or motors needed. Since the water inside the tank can reach 212°F with maximum daily sunlight, it is always necessary to install a tempering or mixing valve, or some other type of heat dump, such as running the lines a distance underground, to cool down the water before it reaches household plumbing. Solar water tanks come with temperature/pressure release valves, just like the familiar domestic hot water heater tanks, which should be safely piped to the ground.

By early 2009 I decided to take the plunge. I still couldn't find a reasonably priced U.S. product or a responsive dealer. But I did find the original Internet article again and was happy to see that it mentioned the brand name of a pioneer Chinese evacuated tube solar water heater manufacturer. After a productive email correspondence with the company's savvy and helpful English speaking saleslady, I began a sometimes frustrating, but ultimately rewarding adventure in global commerce.

To make a long story short, I learned more than I ever wanted to know about the process of importing goods from China. Although the water heater, comprised of 18 2,100mm by 58mm glass tubes, a supporting frame, and a 60 gallon tank, sold for a little over $800, by the time I paid for packaging, insurance, customs brokers, forwarders, international money transfer, sea transport, receiving, warehousing, and assorted other charges, the price has escalated to around $1,600.

Before retiring, I had bought a small patch of land with a mobile home camp house on it way out in the country in Middle Georgia, so that when my mental health required it, I could escape the city. This is where the water heater would be installed. From there I drove down to the Port of Savannah to pick up the much-prized SWH. After my brother and I unpacked the sturdy wooden shipping crates and spent a couple of afternoons assembling the water heater, months went by before I could get the local plumber interested in finishing the job and connecting it to the mobile home's plumbing. Without going into unpleasant detail, this particular country plumber was not the best choice for the task, so more months went by until my brother and I finally undertook to plumb it ourselves using new-fangled, simple-to-use PEX pipe. My brother, who is a whiz at most everything, constructed a manifold at the existing electric water heater which allows the choice of either total solar, solar preheated, or total electric hot water (in case a meteor strikes the SWH). It was truly a masterpiece of amateur plumbing, and has worked fabulously well. There is nothing quite as satisfying as a successful do-it-yourself project that yields a lifelong reward of free and plentiful hot water.

Years have gone by since I first stumbled on evacuated tube solar water heaters on the Web. As far as I can tell, most if not all are still manufactured in China, although now they seem to be beginning to license the technology to India and elsewhere. It continues to be difficult to find helpful, accessible dealers in the U.S., although there are a few sellers of evacuated tube solar heaters on eBay, and a scattering here and there around the country. Pricing and unnecessary complexity are still issues.

Hopefully the Chinese company I bought from will eventually open a dealership in the U.S. and eliminate 90% of the hassle I went through obtaining my SWH directly from China. Or, even better, perhaps they will license the technology to a U.S. manufacturer, creating both jobs and a marvelously efficient, world-changing product.

But even ordering from China and jumping through all the hoops of global commerce were well worth the effort. Every time I turn on the tap, I think about how small, incremental efforts by each of us can ultimately change things in a big way. Solar water heating reduces dependence on fossil fuels, reduces greenhouse gases, saves 20 percent to 40 percent on utility bills, and is a great first step towards creating a cleaner, more energy-efficient world—which we owe to our children and all the generations to come.

Homestead leisure:

Nothing Fishy About It

Go Ice Fishing on Your Homestead Pond

By Walt Matan
Indiana

Some of the most fun you can have this winter is right in your own backyard! That frozen pond that is lying dormant in the winter is not dormant at all…in fact it's teaming with life! Fishing can sometimes be so good in the winter that you can clean a pond out, so keep a few fish for the table and practice CPR (catch, photo and release).

Ice fishing is a very simple and low-cost endeavor. The items you need to get started are a bucket for your gear and fish, an auger to drill holes, a scoop to clean the slush out of the holes, a rod and reel, a few jigs and some bait. It pays off to get the better equipment right off the bat, you will catch more fish and have an easier time doing it!

Fish location on a farm pond is quite straightforward. They are either going to be in shallow water, deep water, or somewhere in between! At early ice most bluegill, crappie and bass will be shallow relating to the green weeds. As the season progresses, they will move to deeper areas when those weeds die off. Right before ice out (thaw) they will move back to shallow. If the pond has brush piles or sunken trees, those same fish will relate to the trees. Channel cats can also be easily taken through the ice, they will relate to deeper water, often suspending off of the bottom. If your pond is stocked with trout, they scurry all about and can be anywhere!

Pick your weapon

So let's take a look at some basic equipment to get started. Augers come in two styles; gas and hand operated. If you plan on getting really serious or have a lot of folks fishing, then get the gas auger, otherwise go with hand operated. The Frabill Corp. makes a fine flat blade hand auger in both 6" and 8" hole sizes. The 6" is nearly twice as easy to drill as the 8" and is the size I'd recommend for a hand auger.

Bluegill are the most sought after fish through the ice.

Left: **Channel catfish; black crappie, and bluegill (bottom).**

Drill as many holes as you can, since you will increase your odds with more holes. After you drill, clean the slush out of the hole with the scooper. You can start shallow and make a string of holes running deeper or you can drill some holes shallow, fish them and move onto another area if you fail to catch some fish.

A good rod and reel combo like Frabill's 26" Ice Hunter combo (about $40) will work well for farm pond fishing. I like to spool the reel up with three-pound test ice monofilament line. While some anglers prefer a teeny bobber floating in the hole, I like a spring bobber attached to the rod tip. Frabill's Titanium spring bobber is the best and has adjustable tension. The spring lets you detect the slightest nibble of the fish as you jiggle the rod. This is a more aggressive style of fishing than the bobber in the hole, and it will pay off with more fish in the bucket.

Unlike open water fishing where you can cast and retrieve, when ice fishing you drop and attract. By working the entire water column under your hole, you will catch more fish. Let's take a look at some different species of fish in your pond and how you can catch them using this thought process.

Name that fish

Bluegill are the easiest to catch since they are the most prolific. They are also the most sought after fish under the ice. Custom Jigs & Spins makes several jigs that are great for bluegill. My favorite is a Gill Pill size 10. Put a waxworm or a few maggots (spikes) on the hook and you are ready to fish. Drop the Gill Pill all the way down to bottom and then reel in a little to take out the slack. Bluegill are usually near the bottom but will sometimes suspend. I like to jiggle the rod tip for about five seconds and then pause. You can also jiggle and raise. An aggressive bluegill will smack the jig on the lift and then the fight is on!

Crappie tend to suspend off bottom. Because of the way their eyes are positioned on their heads they look up and feed up. With that in mind, you'll want to start fishing at least a foot off bottom and work your way up from there. I've caught crappie as high up as an inch or two below the ice. It's pretty wild when you stare at your jig in the hole and a crappie comes out of nowhere and swoops it up!

A Shrimpo size 8 is a crappie killer. It is a ball-headed jig that has a piece of Finesse Plastic slid up the hook. I like to fish this jig without bait. It's the plastic that attracts the big crappie in. Some anglers will add a waxworm or a few spikes.

Crappie will be more aggressive early in the morning and later in the day. They will also feed actively at night. If you want to stay out after hours, put out a lantern. The light will attract the crappie under the ice. Glow jigs like a Glow Brite Shrimpo or another favorite, the Demon will really catch the crappie in low light conditions.

Bass are supreme fighters under the ice, especially on the light action Frabill rod. Because of their larger size, they prefer larger jigs. I like to use a 1/8th ounce Slender Spoon for

bass. A Slender Spoon is a shoehorn-shaped spoon with a lot of action. Big one foot sweeps of your rod and then a slow fall will attract the bass in and get them to strike. You can also jiggle the spoon for 10 seconds and pause.

Channel catfish can also be caught through the ice, contrary to popular belief. They will feed on bottom or suspend off a little. I've taken them on a dead stick rod set in a rod holder attached to the bucket, and I've caught them on that same Slender Spoon I use for bass. Catfish prefer redworms hooked on the treble of the spoon or you can load the treble up with waxworms or spikes.

From left to right: **Custom Jigs & Spins Gill Pill, Shrimpo, Demon, Slender Spoon and RatFinkee are great for ice fishing on ponds**

A lot of landowners will stock their ponds with rainbow trout in the spring for catch and release fishing. A lot of trout will make it to winter and can be easily caught through the ice. I like a size 8 RatFinkee tipped with a few waxworms. Trout are more difficult to pinpoint. If you have a pier, trout will be attracted to it, but they could be anywhere. So drill a lot of holes and move around until you find some.

Ice fishing is great fun all winter long. But the number one reason that people don't try ice fishing is fear. They are scared that they might fall through. I've been ice fishing for 30 years, I've fished on ice that was two inches thick, driven my truck on lakes in Wisconsin, Minnesota and Michigan, and have even stood on solid ice on a frozen river with open water just a few feet away and have never fallen in. The key to safe fishing is to follow a few basic rules and have some safety items along.

The must-have number one item you need is a spud bar. A spud is a long bar with a chisel end. Before you take the first step on the ice slam the bar down…if it doesn't break through it's safe to take a step. At early ice I'll spud and take a step right where I've spudded. Later on or once I know it's safe, I'll spud then take three steps. Using this technique you can spud right up to open water and fish the edge. Frabill's standard ice chisel (spud bar) for about $20 will save your life!

The other safety items you need are ice spikes that you wear around your neck. Should you fall through, you can grab them and pull yourself out. Creepers are nice to have to put on your boots so you don't slip. (Frabill makes an ice safety combo pack with creepers, spikes and a whistle for $15.) Finally, you might want to carry along a boat throw cushion with a 25-foot length of rope in case disaster strikes.

Ice safety varies by thickness and here are some general guidelines:

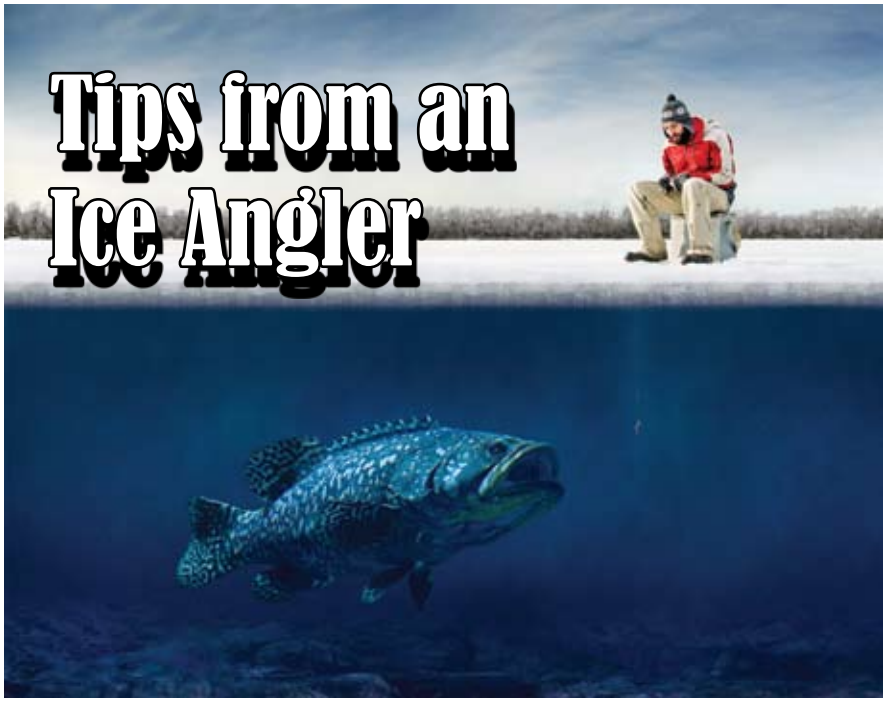
- 4" is safe to walk on
- 5" is safe for an ATV
- 8-12" safe for a car or small truck
- 12-16" is safe for a medium-sized truck.

Stocked trout are an added bonus on many farm ponds.

Fish will taste better through the ice because the pond settles down and the water cleans up. Moreover, the water is ice cold (obviously) and the fish are firmer and easier to clean than in the summer. If you catch a bunch, put them in a bucket with some shaved ice from the hole you dug with the auger. Don't leave fish out on top of the ice as they will often dry out and freeze solid.

Ice fishing is great fun! Give it a try this winter and check out some of the jigs and products I've suggested and you'll be rewarded with a great new hobby as well as some fine eatin'.

Walt Matan has been an outdoor writer for more than 25 years. His articles have appeared in MidWest Outdoors, Fishing Facts *and various outdoor magazines. He has appeared on dozens of episodes of MidWest Outdoors Television. Log onto www.midwestoutdoors.com to view past television episodes and for a complete tv schedule in your area. Walt is also the chief lure designer for Custom Jigs & Spins brand ice jigs. To get a free copy of their Tips & Tricks catalog, call 1-800-830-5535 or log onto www.customjigs.com. Finally, log onto www.frabill.com for more info on Walt's favorite ice augers and an ice rod that he has designed as well as ice fishing accessories and a lot of useful ice fishing information!*



By Trevor H.
New Richmond, Wisconsin

Outside temperatures will easily dip into the 20s and possibly the 30s *below* zero in the next few weeks. It sounds like a good time to hide indoors, warming near the fire for the next few months, but that is a virus that will lead to a quick case of cabin fever. I can tell you from experience that the only way to beat winter is to live with it and embrace it. What activity, you ask, allows you to enjoy the outdoors when it is entombed in a sheet of ice? Why, ice fishing, of course!

Ice fishing is rapidly becoming a popular sport for people of all ages and experience levels. The days of shivering over a single hole in the ice and hoping some stray fish will swim past have been replaced by those of strategic success through advancements in both technology and education. Lightweight, highly insulated outerwear, portable shelters and heat sources, detailed lake maps showing water depths and lake structure, hand-held GPS units, lightning fast augers and fish locating electronics are all invaluable tools to the hard water angler and can be purchased at most any local sporting goods store. As an angler, I employ each of these tools and admittedly they have made me more successful. But let us not forget the most important tool available…knowledge.

Failing, and understanding why we failed so we can adjust and try again, is how we gain personal knowledge. If we try something and we are successful, we think about why it worked and then do our best at repeating the process to repeat the success. What about borrowing the knowledge of others? Maybe you're lucky enough to have an uncle who is willing to share with you his 60 years of closely guarded secrets and coveted "Honey Holes" as I have been. Where are they biting? What color and size are they biting on? For me, the answers have always been a phone call away. If you're not that fortunate (most people aren't), there are many others willing to give advice and share helpful information.

Anglers will typically buy their bait near the piece of ice they plan to fish. Bait stays livelier with less die-off and you don't risk spilling an entire pail of live minnows on the floor of your truck during a long drive to the lake. Your local bait shop is a great place to learn about angling action on local waters. Bait shop owners want fisherman to return to them in the future to buy more bait so they want for us to be successful. Asking the right questions will generally get you pointed to the right lakes and out the door with the right bait without the owner actually betraying the secrets of his other customers.

Larger bodies of water often host several competing fishing resorts and outfitters. The larger resorts will usually have daily or weekly fishing reports on their websites. Depending on the diligence of the one behind the computer, these reports can give very specific information. Reading these reports on a regular basis can alert you to a hot bite, the times of day the fish are biting, bait size and color, presentation techniques that are triggering fish bites and even the specific holes from which fish are being caught.

If you're making a vacation out of an ice fishing trip, don't be above hiring a local guide. Take Mille Lacs Lake in northern Minnesota, for example. It is one of the top-rated walleye and perch fisheries in the country, but it is also an extremely large body of water. With over 130,000 acres of ice to cover and a short time to cover it, on my first trip there I turned to a professional. Through a referral, I was fortunate enough to find easy going guide Mike Verdeja out of McQuoid's Inn. With his direction and knowledge of the lake, I was able to put together a limit of truly impressive "jumbo" perch when most anglers were frying their leftover bait for supper. With limited time, it may be worth the investment to pay for an education for a day.

A more difficult task is trying to sift through the infinite number of "professional" fisherman from whom to get your information. It seems today that anyone who has a video camera and looks good in a sponsor's jacket has a fishing show. What happened to the good old days when all we needed were our good friends Babe Winkelman and Al Lindner? If you honestly want to learn everything about ice fishing from a true professional, the only name you need to know is Dave Genz. If he's written it, read it. If he's on video doing it, watch it. He has been a true pioneer

in the sport of hard water angling. From portable shelters, electronics and high visibility lures to advanced presentation techniques and mobility, anyone enjoying the sport today owes Dave Genz a thank you.

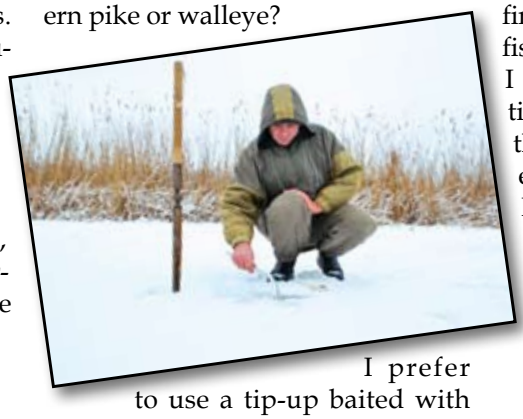
When it comes time to get ready to go fishing I like to ask the Who, What, Where, When and How questions. The answer to one question may actually depend on your answer to one of the others. Where you are going may dictate what you'll be fishing for and what you want to catch will dictate how you try to catch them. After answering these few questions, your course of action should be narrowed considerably and a true game plan can be made.

Who is going fishing?

If you're going alone it's simple. You know what you like and when you like it, so you get to have it your way. Are you bringing your significant other? Are you bringing the kids? You need to accommodate whoever else is coming so it's a fun experience for everyone. Personally, I love to bring my children with. They start coming along when they reach the ripe age of two years old. When they come ice fishing with me, I accept that we may only be gone from home for half an hour or we may be gone for the entire day. We leave when they say it's time. I always have plenty of snacks they normally wouldn't get at home and I take them mid to late winter when there is plenty of ice. We drive the truck to where we plan to fish and they can watch tip-ups from inside the warm truck with a DVD movie playing and they can be out with me when they choose. The key to taking a kid is to keep it fun.

What do you plan to catch?

The answer to this question leads you to the answer to the question of "How" you're going to catch them. Do you want a mess of bluegills or crappies? Plan on using a lightweight jig stick with two-to-four-pound test line. I like the newer fluorocarbon lines which are less rigid in extreme cold temperatures and don't have a lot of "memory," making your line coil as it comes off the spool. Fish with a tear-drop or a small jig tipped with a wax worm, a few spikes or a crappie minnow. Try one of my bread and butter lures, the Marmooska or the Genz Fat Boy, or go with the classic Rocker lure. You want bass, northern pike or walleye?



I prefer to use a tip-up baited with a four-to-five-inch shiner minnow, hooked just below the back of the dorsal fin so it can swim naturally. Set tip-ups on the edges of weed lines, off submerged points, in the mouths of shallow bays or along the edges of drop-offs. As a general rule, your minnow placed about a foot off the bottom should catch the eye of any predator fish swimming by. For walleye you can fish closer to the bottom and for northern you can be suspended a little further off the bottom. I have the most fun when I jig for panfish with one rod and set up a couple of tip-ups for larger fish as bonus lines. This provides more fishing action and more diversity in the frying pan.

Where are you going to fish?

If there is a specific lake or a specific place on a particular body of water on which you're planning to fish, educate yourself first. The DNR can provide you with information about which fish can be found in specific lakes, and sizes and concentration levels of those fish. This is also a good time to check with the local bait shop. Hang out for a little while and ask your questions. Get a lake map so you know where the deep holes and breaks are. Study the map and mark several different likely spots. Decide where you'll start fishing and be prepared to move. The beauty of the new technology in ice fishing gear is that it affords you the ability to move with ease. With my eight-inch Strikemaster auger I can drill a dozen holes in a very short time. I drill them in an arc pattern 20 to 30 feet apart across an area I select to fish. As I fish, I use a Vexilar fl-18 flasher (fish finder) to monitor my lure and any fish that may become interested as I present my lure. If there is no action after a few minutes, I move to the next hole. I continue this until I either find a hole with active fish or I have fished all my holes and find no fish, in which case I refer to my map and move to the next area I have pre-marked.

When do you plan to go?

The most common feeding times of most fish are sunrise and the two hours after sunrise and the two hours before sunset, although crappies and walleyes may bite well into the night. I was fortunate enough to hear Dave Genz give a lecture on ice fishing last year and he said that anyone can catch fish when the sun is coming through the trees. Meaning that if the sun is just rising or just setting, the bite is on. I feel the need to apologize to a close friend when I say this means no stopping at the casino for breakfast on the way to the lake. Be on the ice with holes drilled and ready to fish before the sun comes up. You want to be at the fish's breakfast table ready for him when he comes to eat, not spooking him by drilling holes while he's trying to eat.

I cannot emphasize enough to you that every article one reads, every video watched is only a theory until you apply it yourself while on the ice and prove it through your own experience. The lessons you learn for yourself through your own failures and successes are the best education you will get. One sad fact that you will learn as experience molds you into a cold-loving, seasoned ice angler is that no matter how well fish bite for you on a given day, it will never compare to how well they were biting yesterday when you weren't there. And that, my friends, is ice fishing.

Dressing for Success (and Survival) on the Ice

By Jason Hamilton

It's that time of year, Internet forums are rife with speculation and reports on forming ice. Scouting trips full of hope, rigging short rods and tuning up the auger are all perennial tasks performed with diligence. One area however, seems to constantly slip under the radar of ice anglers and others embracing winter's landscape; this is clothing—proper clothing. Staying warm (but not too warm) and dry is essential to enjoying your time on the hard water. Getting set up with an appropriate clothing system will allow you to stay out fishing longer and possibly make the difference in making it back home safely.

Research has vastly furthered the materials available to ice anglers to regulate their temperatures in a variety of weather conditions. The key is to be comfortably warm without sweating, actually keeping cool is as important as staying warm in winter. Spending time traveling with Inuit in extreme weather conditions, one thing becomes quite apparent, they work slow and steady; sweat can kill and the body will stop being effective at maintaining its temperature if you are exhausted. Icefishing is marked by varied levels of activity—setting up, moving gear, augering holes—all can work up a sweat that will make you uncomfortable later if not properly managed. Wearing layers allows you to tailor your clothing to your activity level, and if you sweat, proper material will manage this moisture. What follows are a few suggestions on layering that have worked for me from Lake Winnipeg to Resolute. Outfitting yourself with proper clothing doesn't have to break the bank, with many options available, these clothes will work in varying combinations year round, for many outdoor pursuits making it a worthwhile investment.

Base layer

Closest to the skin the primary role of the base layer is to wick moisture away from the skin and to be quick drying, while being snug fitting. They will not perform if not in contact with the skin. These can often have different thicknesses of material in specific areas to ensure proper ventilation. There are a variety of synthetic options available that work well, however I find the synthetics hold odors despite claims of antimicrobial treatments. Merino wool is my preferred option; it is super lightweight and still retains insulative properties when wet. Also it doesn't seem to get as funky after a weekend on the ice, which is appreciated by fishing partners and the opposite sex.

Mid layer(s)

The insulating layer or layers should be loose fitting to allow for airspaces underneath, this trapped air will be warmed and provide further insulation. Think of pink fiberglass insulation, it shouldn't be compressed as it losses substantial R-value. Depending on the temperature, one or two layers may be necessary, make sure you use slimmer fitting garments underneath. It may be necessary to purchase a size up to make sure of comfortable fit. Everyone loves to wear their lucky fishing hoody or Carhartts Afield, but the truth of the matter is cotton kills. It will absorb sweat and water, cooling your body quickly and in survival situations can freeze and cause serious issues. In the event of an unexpected dunking, jeans and a cotton hoody will become anchors, holding huge amounts of water. Look instead to fleece and wool or other synthetic fabrics. These will hold less moisture and dry orders of magnitude quicker. Think about zippered options, which allow for more options in keeping cool, a hood also keeps a way to cover your head at hand, most everyone has heard the adage 50% of the body's heat is lost here; though not implicitly true, as this is only the case when the body's heart rate is elevated.

Outer layer

The first line of defense between you and weather, this is where it is advisable to shop around and look at spending a few more ducats on a quality set of bibs and a parka. Waterproof and breatheable are the key words here; insulation is a matter of preference, as proper layering will keep you plenty warm. This gear will pull double duty for fall and spring fishing as well. Icefishing-specific garments like Ice Armor offer a multitude of features geared to making your time on the ice more enjoyable. Padded knees and seat, full leg zips and tons of storage can keep you comfortable in the coldest weather and keep all your gear handy to help you be a more effective angler.

I often hear folks indicate there is no need to wear anything special for ice fishing, since they are getting out of the truck and into a shack. This is optimistic…the more you are in the outdoors the more chance of having to spend a night in the Clam Hilton. Dead batteries, weather, or any other of the million unexpected issues can arise and turn a leisurely afternoon

on the ice into a serious survival situation. Discussing survival and emergency preparedness would (and has) fill volumes; it all comes down to thinking about the worst and preparing for it. Expect that at some point you may fall through the ice or not be getting back home on schedule. Preparing a couple of items to keep on your person (lighter, matches, emergency blanket) and others for the vehicle can make all the difference. The number of people that go out onto Lake Winnipeg each year without a GPS or compass is scary; consider the risks involved and prepare gear accordingly, and tell someone your plans!

Being able to stay out and be comfortable allows you to fish longer, more effectively, and without a doubt result in you catching more fish. This all comes down to the gear you choose. This is an extremely important consideration when taking kids and new ice anglers out. Icefishing can quickly become a test of will when cold, wet, miserable, and usually fishless since no one is in the mood to move. Securing appropriate clothing will help make it an enjoyable outing and provide some security should an emergency occur.

Flex-Trax — An Option to Chains

In the winter of 1994, Tony Bright was visiting an automotive dealership with a display featuring tire chains. Twenty-six years of engineering experience led him to ponder the following question: Why do people buy these? They are difficult to install and they do not stay on. Once they fly off your tire they get tangled in your brake lines, causing major damage to your vehicle and likely the highway system. With that Flex Trax™ was conceived.

GoClaws™, an advanced engineered tire traction system for use in mud, sand, snow and ice, was the ultimate solution. This technology, a unique injection-molded, high-strength and high-durability polyurethane assembly, represents a significant improvement over historical traction devices such as tire chains, snow tires and studded tires as well as autosocks. Once installed, it is impossible for the GoClaws™ bolts and screws to ever come loose. Dual locking pins cannot disengage once pulled into the opposing keyhole slots. The ratchet fastening system is the only difference between GoClaws™ and SnoClaws™.

As with any other traction device, drivers should always exercise caution and be observant of adverse driving conditions. The use of these products is not a substitute for safe driving or proper judgment by the vehicle driver. Use common sense!

Visit www.flextrax.com to see performance and installation videos as well as a sampling of testimonials from satisfied customers and professional reviewers.

Just Travelin' Along

Essential Supplies for Winter Motoring

BY LISA JANSEN
3PIGGAL@GMAIL.COM

Not long after I moved to my remote farm, I had a driving lesson. The shortest road to town is partly paved, narrow, winding and steep. It has dense tree cover in many stretches. I figured if it wasn't snowing, that was the way to go to town for supplies. Wrong! I had never before encountered ice. If it has rained or snowed in the past couple days, if it is under 35°F, if there hasn't been much sun…you are in for a ride. No roller coaster matches Bloomfield Road in the dead of winter. I was just driving along that day, grateful for no snow. As I puttered up the far side of the river canyon, the car lost traction and I began to slide. On my right was a vertical wall, on my left an equally vertical cliff. The car veered sideways first, then began to drift to the vertical drop. I quickly got out of the car and dropped like a rock to my hands and knees. My shoes could not find traction either! I crawled to the edge and grabbed as big a rock as I could move and placed it behind the nearest tire. Continuing on my now wet knees, I returned to the edge for a second rock and placed it behind the other tire. My car lodged. Then I crawled until I was off the ice and hiked to a home a couple miles away. Of course, my cell phone could not find a signal in the river canyon. Welcome to Remote Winter Driving 101. No grades will be given, it's just pass or fail!

I worked as a phlebotomist in town at a local hospital. I had to be able to get to town. As a volunteer for a nearby rural fire department, I had to be able to reach my destinations. Over the years, I learned the tools and preparedness I needed. My trunk had little extra space, but I always arrived at my destination safely. I carried the usual jumper cables, jack, and spare tire, but not much more.

Many books and articles suggest carrying water, food, and possibly a first aid kit. These are definite necessities. Depending upon the distance and remoteness of your travels, carry enough food and water to hold you until you can be found in case you become stranded. Crackers, dried fruit and dried meat last a long time.

I carry enough to share, because I live in a very remote area where tourists visit. Tourists are sometimes unaware of the seasonal conditions. I have training as an EMT, so I prefer an advanced first aid kit. I love catalogs like Sportsman's Guide because it can be one-stop shopping for emergency supplies (www.sportsmansguide.com or 1-800-882-2962). Their prices are great, too.

It is not uncommon to find a downed tree in the road in a Sierra winter. A small chain saw helped me through a few blocked roads. But, carry only what you can operate safely. An ax and gloves helped, too. There were times I had to turn around or wait because the tree was too large for me and my little saw. Like any snowy region, carry chains* or (in my case) Spike's-Spiders. (www.spikes-spiders.com or 1-800-227-5260). Spiders require an addition to the hub and snap in place. They are more expensive than chains but well worth it. You don't need the strength of a brut to put them on your tires. I could not get dirty crawling around on the ground before arriving at the hospital anyway. Now I have an all-wheel drive Subaru and no longer need my Spiders. I also advise carrying a couple bricks or rocks that can be put behind your tire in case your car, like mine, starts to slide on ice.

Winter days are great for curling up with a book. I don't get road rage when I'm stuck—I get caught up on my reading. Since I do research as a part of my living I usually have a book in the car. My laptop and camera are often along for the ride. You never know when a good photo option will appear. I can entertain myself for quite some time. Also, don't forget a blanket. A pillow is nice if you have the room. Sometimes you just can't wait and all-weather boots will be a welcome sight if you have to hike. Most of my nine-mile road is a cellular dead zone, so I have to hike just to call AAA.

You don't know what dark is until you've been out on a mountain during a winter night. Sometimes you really *can't* see your hand in front of your face. Carry a flashlight. Check the batteries regularly. Some people like a head lamp to keep their hands free. If you have to hike at night, stay in as safe an area as you can. Watch for wildlife, landslides, ice and oncoming traffic. You want to be seen, not squished or eaten! A jacket with reflector tape is an option. You see them on joggers and cyclists. Or you can buy reflective tape in the automotive department of most big box stores and apply it to any jacket. I like to apply it to full rain gear in case it is raining or snowing.

As long as I'm dry, warm, fed, hydrated, safe and entertained, what more can I ask for? Better to be over prepared than under prepared. Travel safe and have fun, no matter where you go.

**To check the tire chain laws in your state, visit: http://drivinglaws.aaa.com/laws/tire-chains/.*

Livestock health:

Managing Livestock in Winter Conditions

By Robyn Scherer, M. Agr.

Soon after the leaves have changed and fallen off the trees, winter approaches with a feverish intensity. Cold, wet days and freezing nights can make life challenging for livestock. However, if cared for correctly, livestock can maintain their health and happiness during the winter months.

Preparation

Before winter ever hits, it's important to prep pens and pastures. Barns and shelters need to be checked for leaks, poor gutters and siding repair. Any repairs that need to be made should be done so in the summer or fall, before the shelters are needed. Barns should be well ventilated, because even in winter months, ammonia can build up, especially if livestock are spending time indoors.

Manure should be removed from the pens before the winter months, because it can freeze to the ground and create slick areas. It will also make it harder for the ground to dry when snow does melt, and can result in grimy, muddy pens. Manure should also be removed on a regular basis during the winter for the same reasons.

Pasture fences should be checked to make sure they are in working order, and any holes or problems should be fixed. Livestock that get out in the summer months are more likely to survive than ones that get out during a cold, wet winter.

Shelter and wind protection

Providing shelter or some type of wind protection is one of the most important things in managing livestock in the winter. Wind chill can make a huge difference in body temperature of a cold, wet animal.

Three-sided shelters that open away from the wind are best, as it gives the animal an area to get out of the weather and the wind. Animals that tolerate cold winter better, such as horses and cattle, can also utilize trees and fences as a wind break.

Smaller livestock, such as sheep and goats, hogs and poultry, should be given shelter with shorter roofs and an enclosed area where they can lay, as they generally do not prefer to sit outside. Plenty of area should be provided, and animals should not be overcrowded.

Livestock that are pastured during the winter months should have access to feed at all times. If heavy snow falls, it may be necessary to feed roughage until the snow melts.

All pens should be cleared of as much snow as possible, to help pens dry out and allow animals room to bed. Ice can accumulate around troughs, and may need to be removed to keep the area from becoming slick.

Bedding

Clean, dry bedding is important for all classes of livestock, but especially for ruminants and smaller livestock, as it gives them an area to chew their cud and sleep in a dry area. Since horses often sleep standing, it's not as important, but if possible, horses also prefer a dry area to rest.

Hogs should be given plenty of straw, because it insulates them from the cold ground and from the cold air. Since they have little hair to keep them warm, this is vital to their survival. If possible, hogs should be kept in groups of at least two, as they will help heat each other when buried in the straw.

Bedding must be changed on a regular basis because soiled bedding will retain ammonia close to the ground where livestock sleep, and lead to respiratory diseases such as pneumonia.

Shavings usually offer little protection or warmth, and soil much faster than straw. Some ruminants will eat straw, but in general they will leave it alone if they are offered plenty of other roughage.

Water

Water is critically important in the winter, as it can quickly freeze and livestock cannot eat enough snow to meet their needs in a day. If possible, water should be provided free choice at all times, and a trough heater should be used to keep the water open and available.

Water that is broken each day can quickly refreeze before an animal even has a chance to drink. Also, very cold water discourages water consumption, and animals may be reluctant to drink the amount of water they need each day.

If water heaters are not an option, water should be offered several times each day to livestock, preferably before eating. In horses, decreased water intake can lead to impaction and colic, so animals should be watched for signs of these issues when they don't have access to water at all times.

Overall health and condition

Winter can be hard on both young and old animals, as well as those that are underweight or have compromised immune systems. Old or underweight animals may need extra feed, shelter or blanketing to help them cope with the cold weather.

The body condition of all animals should be observed long before winter starts, so that they may be brought up to the proper condition before they have to worry about staying warm. Extra feed may be needed for this.

In cattle, body condition scoring is done on a 1-10 scale, with one being extremely thin and 10 being extremely obese. Ideally, cattle should have a BCS of around 6 during the winter months and entering into calving. Cows that are too thin will have problems milking and dealing with the cold, and cows that are too fat can also have problems milking and with calving.

Most other livestock are scored on a scale of 1 to 5, with 1 being thin and 5 being fat. Ideally, livestock on this scale should fall between 3 and 4 for the winter months, for the same reasons as cattle.

The health of animals should also be monitored, with special attention paid to lice, which tend to flourish during the winter months. Pour-ons and dusts can be used to rid animals of some parasites. An animal that is fighting a heavy lice infection will have a hard time maintaining weight, and may also become anemic.

Energy requirements

Energy requirements for livestock are generally higher in the winter months, because livestock are trying to generate heat to stay warm, maintain their body condition, and may be gestating and/or lactating. In general, livestock can deal with temperatures of 20-32°F without additional energy needed, if they are dry. If animals are wet, that threshold is much higher, and if there is wind, it's even greater.

This extra energy can be provided through roughage or grain. In general, roughage is better for three reasons. First, roughage is safer to feed in greater quantities, as animals usually do not get sick on higher quantities of hay. Second, roughage releases more heat during digestion. Lastly, roughage is generally cheaper than grain.

However, grain and supplements do have their place, and animals that need extra fat or protein may need something other than roughage to meet those needs. Older animals and those that are underweight may need more supplementation than a healthy animal.

If grain is used, it should be fed in several small feedings, as opposed to one large feeding, to prevent an upset gut.

Feeding

Time of feeding can help animals stay warmer. Even though it is more convenient to feed night feedings earlier in the day, it has been shown

that feeding animals later, such as between 5:00 and 10:00 p.m., will help animals to produce body heat through the process of digestion throughout the night.

Labor is a huge factor in feeding, and sometimes it may be easier to feed animals larger quantities of feed once per day, instead of twice. If possible, animals should be sorted and grouped according to nutritional needs, so that bossy animals will not consume more than needed, and weaker animals will not get shut out of the trough.

Salt and minerals are also important to provide during the winter. Trace mineralized salt blocks should be provided for horses and cattle, and loose salt is better for sheep and goats. Free choice minerals should also be provided, but care should be taken with sheep and goats as goats require much higher amounts of copper than sheep, and feeding the wrong feed can result in copper deficiency or toxicity.

Hoof care

Hoof care is extremely important in the winter months, as wet ground can cause thrush and foot rot. It's easy to overlook hoof care, but regular trimmings should be performed to keep feet in tip top condition. Horses should have their feet picked on a regular basis to prevent ice balls from forming, as this can cause stress on tendons and ligaments.

Exercise

Many times exercise is overlooked in the winter months, but it's an important aspect in keeping animals in shape and healthy. Livestock should be given areas to move around and stretch on a regular basis.

Winter care for livestock can be time consuming, but is vitally important to keeping animals healthy. With proper husbandry, livestock can thrive.

Schuyler and Colby Gail with their son Huck (now 6), daughter Tillie (2), and pooch Heidi, on their Lebanon, New York homestead.

Schuyler Gail: Making a Small Farm Work

By Heather Smith Thomas

Schuyler Gail and her husband Colby started farming several years ago, and she has been going through a Holistic Management Beginning Women Farmer Training Program. "We got our first sheep eight years ago when we were caretakers for the farm where my grandmother grew up. We needed to find a way to get rid of the tall grass around the barns, and someone gave us eight sheep. We fenced off the barnyard and let the sheep have that part of the farm. They hadn't been sheared for three years and they were so shaggy we couldn't even tell which ones were male or female. We'd never had sheep before," says Schuyler.

"We had them sheared soon after they arrived and discovered we had three rams. We kept one ram and processed the other two," she says. The sheep started having lambs, and Schuyler and her husband started selling the meat to friends and acquaintances.

"After we had sheep and had to take care of them—and couldn't leave home as easily—we got chickens. The first year we had 25 chickens, the next year we had 100, and the year after that we had 1,300. Until I took the beginning farmer class, we did everything by trial and error," she says.

"That's how we started farming. We realized very quickly that parking sheep in a barnyard is not a good long-term plan. We branched out to pasturing other parts of my grandmother's farm, and the sheep kept having more lambs. We learned about moving them to different pastures to make this more sustainable, and then we learned to divide the pastures with electric net fencing," she explains.

Their friend Morgan Hartman (of Black Queen Angus) is a grass farmer, and he helped them learn more about creating a grazing program. "We started going to conferences and discovered HMI (Holistic Management

The majority of the Gail's pigs are heritage breeds which are happy to forage in the woods.

International)," says Schuyler.

"Our animals were turning the pastures into a golf course and we realized they soon would not have enough food. They accomplished the goal of mowing, but we wanted to be able to feed them year-round. At that time our goal was just mowing, and now it's managing for meat," she says.

The majority of their farm livestock now is pigs, several different heritage breeds including Mulefoot, Red Wattle, Large Black and Old Spot. "We are starting to farrow our own pigs. We feed them dairy, gleaned fruits and vegetables from produce farms, and whey from local cheesemakers. We are experimenting with planting forage like mangles for winter feed. The pigs probably get 10% of their food from purchased local grain, so we are trying to eliminate purchased grain."

Most of the pigs range in the woods. "We had them on pasture last year but they didn't seem as happy as they do in the woods—where they are harvesting more of their own food and have more room to explore," she says.

"We just started a CSA and are in a cooperative venture with our neighbors and a friend, Cynthia Creech, who has been raising grass-fed beef for 30-some years, and with the Abode Farm—a horse-powered vegetable farm. Cynthia raises Randall cattle (a rare breed that originated in New England). When she started there with her cattle, there were only nine of these cows left. She has a genetic program that helped build several herds," says Schuyler.

"Through the CSA we sell chickens, turkeys, eggs and pork. We also raise grass-fed lambs. Most of our business is done through restaurants and stores," she explains.

"When we moved to our new farm two years ago, we had our laying hens fertilize the area where we wanted to put a garden. Then we put pigs there, then a cover crop, and then had our neighbor till it last spring. Now we are starting to grow forage there—mostly mangles and turnip—for the pigs and sheep."

The land

Two years ago she and her husband were able to purchase 20 acres through the Land Conservancy—a piece of land that had not been farmed for more than 50 years. "We bought it from a family who had owned it as a second home. They had waited 12 years on a land match program for a farmer who would want to lease it. Once they found us they were so excited about it that they sold it to us," she says.

"When we moved here it had been brush-hogged a few times over the past 50 years or so but was mostly goldenrod (taller than me!) and brambles. Everyone who came to visit asked if we were going to have it mowed, but we didn't. We rotationally grazed the pigs, sheep and poultry for a year, and now the fields look like fairly decent pasture again. There is some bramble and goldenrod left, but there is also a lot of clover and other desirable plants returning—without having to seed them. In the woods our pigs are clearing out the underbrush and brambles, and we have pasture grasses and clover moving in where the pigs have been," says Schuyler.

Colby moves the free range shelters to fresh pasture.

"So now we own 20 acres and are also leasing from a neighbor who asked us to farm her land in hopes of getting an agricultural exemption for tax purposes. We have a one-year trial lease with the neighbor, trying to see how much of her acreage we can get this ag exception on. It's 370 acres and only half a mile from our house, so this was wonderful luck," she says.

"In our area, leasing is very helpful for farmers and land owners both. The land that we are leasing was seized by the state in the 1990s. It was going to be put up for auction and developed, and the current owner bought it so that it would not be developed, to keep it in agriculture. Property taxes are very high in New York State. It's nice that the land owner can get a break on taxes because it is once again being used for farming."

Before the Gails moved here, the land they are leasing had an unfinished foundation for a giant house with a helicopter pad—a flat area created by blowing the top off a mountain. That area is just shale, with no topsoil. "One of the reasons the current landowner is leasing to us is that she wants us to rehabilitate that land, and get some soil and plants growing again. We will put animals there in the winter. It will have a lot of manure to start building some soil. This is a huge long-term project," she explains.

Lessons learned, and class benefits

There are several beneficial lessons from the class she's been taking. "We didn't consider ourselves in our planning, before. Now, as things progress, we realize we need to plan for ourselves and our family as well as our animals and our land. We want to be able to have more time to play with our kids," she says. It's hard to juggle everything.

"In the beginning we didn't have a financial plan, and we are still working on that. We had never examined our various enterprises to see what was making money and what wasn't. Now, based on our plan, we raised the prices on our eggs and chicken, and I explained to our customers the reason for this. I don't think any of them would like the fact that we were losing money to produce food for them. People who are buying the kind of food we produce are doing it at least partly for a social reason and if we are not making any money doing this then they won't want it," she says. Farmers have to be able to make a living producing food.

Schuyler enjoys the people in her class. "We have continued to use one another for second opinions on various things. This has been helpful. When you have friends that aren't farming, your life is so different from theirs that they just don't understand." The group of women farmers in her class has been friends, mentors and support group when needed. This is a rewarding experience for all of them.

Challenges of small-farming

"A lot of people think our life is very quaint and simple. Some of the people I know from high school tell me that I'm living their dream—having kids and farming. The dream and the reality are probably very different," she says.

"In this part of the country there is an unrealistic image of farming. I saw an article stating that the popular thing to do when you get out of college is to spend time on an organic farm for a couple of years. But how can farming be sustainable if we are expecting new people to do it, and only briefly, and we're not taking care of the people who hold the knowledge, who are in it for the long term," she says.

"Farming is a really great thing for young college graduates who want to try it, but I wonder how farming can continue to exist for families with young children. We need to be able to provide for our kids, and this system makes it hard to do that," she says. Most people in agriculture are underpaid because Americans spend less than any other nation for their food—and tend to take their food for granted.

"The fact that organic farming is touted as the new, cool thing for young people is also hurting it, and it is using these young people as free or cheap temporary labor," says Schulyer. Some people stick with it and do it because they love this way of life, but it can be very difficult to make a living at it.

Another problem with today's small farms is that most people who try this are new at it. In earlier times almost everyone had ties with the land. Then there was an exodus to the cities and fewer farmers had to raise more and more food. The farms got bigger and more mechanized. Now there is a move back to the land, but the people coming back grew up in cities and don't know about farming, and it's like starting all over. We've lost a lot of people who know how to farm.

"Most of the things we are learning today was known for centuries, and then got lost. One thing we've tried to do is become friends with older farmers who are the age of our parents and grandparents. If we work together with them, we can learn from each other. For instance there is a dairy farmer here that we know and love, whose family has been farming the same land for many generations. He is doing it largely the way his ancestors did it, but is selling all his milk to the dairy co-op. If he were to milk his 80 cows differently and market the milk a different way, he could be making money instead of losing money every year. Old farmers and new farmers could share knowledge and improve their farms and businesses together."

Visit the Gails at climbingtreefarm.blogspot.com.

A Good Place to Raise Kids

Children who grow up on a farm have advantages over city kids. They are more grounded in the realities of life and where their food comes from. "A while back, a chef made us head cheese, and offered some to our six-year-old son. Our son asked what it was and the chef told him it was pig head. Our son said it was really good. Most kids would not have even tried it," says Schulyer.

"One of the sweetest things our kids said was just after we had a runty pig that was here longer than her littermates. We don't usually name the animals, but our son called her Funny Eyes because she had blue eyes. When it was time for her to go he was so upset that he wouldn't even say good-by to her. When we got home from the slaughterhouse he asked if we saved her heart and we told him we did, and asked him why. He said, 'Now we can eat it and save all of her love.' I thought that was a very meaningful thing for a little boy to say."

The pig pen:

Misery Loves Company

By Kevin G. Summers
Virginia

I was attempting to be clever and literary when I named our new sow Misery. I had no idea that her name would be a portent for things to come.

There are plenty of pigs in literature: Wilbur in *Charlotte's Web*; Snowball and Napoleon in *Animal Farm; Babe*. There's even Pretty Pig in the *Game of Thrones* books, but I just had to go with the Stephen King reference. What was I thinking?

Our adventures with Misery began in the spring of 2012. We had purchased Sebastian, an Ossabaw Island boar, and were on the lookout for a sow to be his companion. We were looking for a larger heritage breed that would compliment the deliciousness of the Ossabaw with a larger carcass and faster rate of growth. We learned that a nearby hog farm had a proven sow that was half-Tamworth and half-Berkshire. Perfect.

I drove over to get our new sow, whose old name was No. 9. Her owner told me that she was originally destined to be meat, but she escaped her pasture and got in with the boars. Now she was bred and waiting on a trailer to come home with me. I climbed up on the trailer to take my first look at Misery. She was huge.

Unloading our boar was easy when I brought Sebastian home a few weeks before. He walked beside me like a dog and I led him right into his yard. Not so with Misery. I opened up the trailer and shook a scoop of feed at her. She showed no interest whatsoever. It took a few minutes, but she finally worked up the courage to come off the trailer.

I shook the scoop at her again. Misery looked at me with her red eyes and then took off into our back field.

After about an hour of chasing a 400-pound pregnant sow all over our property, we finally chased her into some electrified poultry netting that we had set up around the opening of the hog yard. I thought our trouble was done.

When I came out the next morning, Misery was in our front yard. This time, after she had calmed down a bit, she was willing to follow a scoop and it was fairly easy to get her back in the pen. But I couldn't figure out for the life of me how she got out.

Our hogs are set up with a large pasture enclosed by electric strands. This pasture is attached to a small yard constructed with hog panels. The idea behind this set-up was that we could close the pigs in the yard if we needed to separate somebody. The hog panels are held up by t-posts driven several feet into the ground. I thought the yard was impenetrable.

Misery escaped the pen several more times before I realized that she was going over the hog panels. Yes, you read that right. Now I know what it means when Tamworth hogs are described as athletic. Maybe I should have named her Houdini.

I resolved our problem by setting electrified wires along the inside perimeter of the hog panels. I thought our hog problems were at an end, but they were only just beginning.

Misery, a Tamworth hog, farrowed in one of the most remote areas on the Summers' Virginia farm.

July finally rolled around and I walked out one morning to discover that Misery had not come up from the back pasture to be fed. I climbed into the pasture and went looking for her. She had farrowed in the most inaccessible part of our entire property, as far away from water as she could get. The piglets, all nine of them, were healthy and nursing vigorously, but I knew that Misery wouldn't last the day if I didn't get some water down to her. I went back to the house and grabbed every hose on the property in order to reach her. She stayed in that spot for more than a week, and the wallow she made there still fills up every time it rains. We call it Lake Misery.

A few weeks went by and it was time to castrate the piglets. I lured Misery into the hog yard and quickly closed the gate, separating her from her babies. She stopped eating before I even had the gate tied shut and began testing the yard for weaknesses. Remember how she was able to jump over the hog panels? I realized with horror that the only thing separating me from almost certain death was a tiny wire flowing with electricity.

My wife, Rachel, and I scurried into the back field and rounded the baby pigs into an enclosure. They squealed like little demons as we carried them one by one to the back of my pickup truck, and as I drove past the hog yard, Misery barked and growled like a monster in a Stephen King novel.

We castrated the piglets with the help of our neighbor, stuck them in the back of the truck, and drove them back to the pasture. I had stupidly let Misery out of the hog yard by this point, figuring that reuniting with her girl babies would help calm her down. She ran up to the fence line as I dropped the first squealing piglet over the fence, barking and glaring at me all the time with her red eyes. I turned around and saw that both Rachel and my neighbor had jumped into the bed of the truck, leaving me to my fate should Misery decide to brave a little jolt of electricity. Thankfully, I managed to get all of the babies back on the right side of the fence before their mother turned me into her dinner.

I should say here that swine are generally not overly aggressive animals. Most of the year, Misery is as docile as can be. She lets me pet her and loves a good scratch between the eyes. In addition to being athletic, Tamworths are also known for their excellent mothering abilities. Many sows will crush their babies when they flop down, but Tamworths generally lay down on their front knees and ease their backsides carefully to the ground. Misery certainly fits this bill, but when she is nursing, when her hormones are raging, she's a different animal entirely.

At eight weeks, Misery weaned her babies and was apparently in the mood. I had Sebastian locked in the hog yard, and Misery dug under a hog panel with her snout and lifted it, and the t-posts that were holding it down, right out of the ground. There was really no question after that if she

Trying to round up nine squealing piglets was endangering life and limb—of the humans.

had been bred or not.

Fast forward to January 2013. I went out to feed the hogs one cold morning and once again found that Misery had not come up to the hog yard to be fed. I went searching around and found her in the midst of her labor. I actually got to see several of her babies being born, and I can tell you that it was a beautiful sight. This time she had 13!

It was bitterly cold that day, so we moved a calf hutch down to Misery as a wind break. We didn't figure that they could use the hutch for cover, as there was a lip on the opening that the babies couldn't go over. But Misery had other plans. Within a few minutes, she crawled into the calf hutch and moved it over top of her babies. They were under cover, and Rachel and I were amazed.

While normally a docile animal, sows can be very protective of their offspring.

A friend and his kids came over the next day. His son leaned into the calf hutch to get a better look at the babies, and Misery bounded suddenly to her feet. She charged right at Rachel, knocking her to the ground and standing right over her with her huge snout in Rachel's face. It was terrifying, but she didn't bite anyone and after all, she was just protecting her babies.

We heard that a big snow storm was coming the next day, so we decided to move Misery and the babies into our barn stall. This was not wise, but the only option available to us at the time. We couldn't let those babies stay in the open during a snow—they would freeze to death. We backed my truck up to Misery's nest and Rachel climbed into the bed with a pig catcher. This is a tool that should clearly be 12-feet long, but is actually only about three-feet long. Someone should look into that.

I paced around, distracting Misery while Rachel snatched each of the babies and put them in the back of the truck. Once again, they shrieked and squealed, urging their mother to come up into the back of the truck with Rachel, but we managed to secure all of the piglets before Misery turned us into chop suey.

We drove back toward the barn with the babies on board. As we got to the top of our pasture, our stupid dog started barking and circling around the truck like he does whenever a vehicle crosses the perimeter of his territory. Misery, figuring that the dog was in on the plot to abduct her piglets, charged after him and ran down the dog. This pooch isn't a little dachshund or something, he's a black lab and Misery overtook him and pinned him to the ground. Rachel thought the poor dog was dead, but I foolishly stopped the truck and ran over to him. I don't know what I thought I could do against a 400-pound velociraptor, but there I was. Rachel screamed as Misery diverted her attention from the dog to me.

What did I do? I grabbed a baby pig and used it to lure Misery into the barn stall. She followed in after the pig, and I closed the door behind her. We were safe. As for the dog, he was fine. Misery didn't hurt him. She was just protecting her babies.

Mark plants a kiss on the snout of a piglet.

It turns out that a barn stall is not the ideal place to contain an athletic mama sow. We milk our cow right outside the stall, and it really spooked her when Misery would stand up against the stall wall, peering into the cow's big brown eyes. This wall is four-feet tall, mind you. I began to fear that Misery was going to come over the wall, so I decided after six weeks that it was time to move her back onto pasture. She was already weaning the babies and the weather in Virginia had turned downright pleasant. It was time.

I opened the stall door and Misery shot out into the center aisle of our barn. I began shaking my scoop, and Misery started to follow me to the back pasture. We were about fifty yards from the barn when she suddenly stopped and turned back. She realized that her babies weren't with her and she was going back for them.

I scurried after her, realizing that Rachel might be out in front of the barn and about to come face-to-face with a T-Rex. I rounded the corner.

Misery, in hog heaven.

There was Misery, but Rachel was nowhere to be found. Had she been…eaten?

My worst fears were alleviated a moment later when I saw Rachel standing on top of a huge stack of straw bales in the garden. She was safe, for now.

I tried for about an hour to get Misery to follow a scoop, but she was having none of it. She was more interested in rooting up some new apple trees that I had planted a few weeks previous. I realized that there was nothing I could do, and so it was with great sorrow that I went into the house to get my gun. I was going to put Misery out of my misery.

I called my neighbor, Bob, as I was loading the shotgun. He has a pretty nice tractor with a bucket, and I was hoping that he could lift up Misery's body so that I could butcher her. Bob managed to talk me out of shooting her, and even offered to help get her to the back field. I noticed, however, that he was wearing a pistol on his hip when he came over.

"Just in case," he explained.

After deliberating for several minutes, we decided that the best option was to lure Misery to the back field with a baby pig. Bob graciously volunteered to ride in the back of my truck as I drove through the tall grass to Misery's yard. The piglet was screaming its little lungs out, and Misery came charging after us like something out of Jurassic Park. I stopped as we crossed the threshold into the yard, and then I heard the back window of my truck shatter as Bob, who is in his seventies, crashed through the glass. I thought Misery had come over the sidewalls and gotten him, but it was just me coming to a sudden stop that had caused the accident. Thankfully, Bob was fine. He would go on to risk his life on our farm on another occasion, but that is a story for another day.

We tossed the piglet on the ground and Misery swirled around her protectively. I backed up in a hurry, jumped out of the truck and quickly closed the fence. Misery was contained at last.

It's been quite a learning experience living with such a protective sow. I've since built a farrowing house with a creep feeder for Misery's next batch of piglets. She's due any day now. Maybe someone should check on me if I take too long with my morning chores.

The cow barn:

What's Up With Watusi?

By Klaire Bruce
Missouri

They are known as the Cattle of Kings. Their unmistakably large horns can spear a lion. The tribes of Africa that rely on them for survival call them sacred. They are built to survive in harsh conditions with sparse forage. What are these wonder cattle? None other than the Ankole-Watusi.

What they are

Watusi are an exotic breed that stands out from all the rest. A medium-sized bovine (cows range from 950 to 1,200 pounds and bulls from 1,200 to 1,500 pounds), Watusi come in solid or spotted colors, with dark red being the most prominent. Their long legs, made for outrunning and out-jumping predators on the African savannah, give them outstanding athletic ability. The cows sport a small, tight udder that produces a high-quality, butterfat-rich milk for their calves. And let's not forget those famous horns. These giant spears can span up to eight feet from tip to tip. African tribes select cows for the quality of their horns and ability to fend off predators. The horns on a Watusi also act as a cooling system for the cattle; the blood circulates up through the horns and the heat leaves the blood through the tips of the horns. The cooled blood then circulates back through the animal's body. This unique cooling system makes the Watusi extremely resilient to harsh weather conditions. They can take the heat as well as the cold, and be quite comfortable. Watusi are also known for their ability to utilize poor quality forage and limited food and water sources. These hardy cattle are quite social, and prefer to forage and rest in groups for comfort and protection.

Where they came from

The history of the Watusi breed spans thousands of years. Humans first domesticated cattle more than 8,000 years ago. Roughly 2,000 years after that, various strains of African cattle began to mix through the generations as the people of Africa began to move across the continent. The result of this mixing was the emergence of a distinct type of cattle called the Sanga. Watusi are one of the oldest breeds branching from the Sanga type. The Watusi themselves originated in East Africa; they are named after the Tutsi tribe that raised them. These cattle are viewed as sacred by the African people and are rarely used for meat production among the tribes. Instead, the cows are milked and bled (usually from a small cut made in the cow's neck), and both liquids are combined to make a clabbered, yogurt-like mixture with a high protein content that is a staple to tribal diets. Watusi are considered a status symbol among the tribes; the more cattle a man has, the wealthier he is. The cattle also play a role as a gift to a bride's family during a tribal wedding.

How they got here

Watusi cattle first arrived in North America in the 1960s. A gentleman by the name of Walter Schultz imported two Watusi bulls from Scandinavia, and followed up shortly after with a female to keep the large-horned fellows company. Slowly, the Watusi found their way into the hands of zoos and private breeders. With the perseverance of the people dedicated to the breed, the Watusi numbers in the United States have grown along with their popularity.

How they fit in

While Watusi cattle are considered exotic in the U.S. (many are owned by zoos, game farms and exotic animal reserves), they have many practical applications and uses that

The horns on Watusi can span up to eight feet from tip to tip. African tribes select cows for the quality of their horns and ability to fend off predators.

can greatly benefit North American cattle farms. There is a good market for Watusi beef—these efficient cattle produce a good quality, lean, low cholesterol meat. Low fat and low cholesterol beef is very appealing to health conscious consumers. Many breeders favor crossing Watusi with Texas Longhorns; Watusi are already built for horns and the product is a well-built calf with good hybrid vigor. Watusi can also, surprisingly enough, bring some good traits to the table with the dairy market as well; breeding Watusi into a dairy herd will boost the butterfat levels of the milk. On the recreational side of things, Watusi and Watusi crosses make superior roping cattle. Ropers love tossing a loop at these big horned beauties!

What they need

Watusi cattle are fairly easy keepers due to their hardiness. They can survive on little water and low quality feed. Watusi possess a digestive system that utilizes every bit of moisture within their bodies. That being said, Watusi, just like any cattle, do far better on a good quality feeding program. Being the efficient cattle that they are, they don't need large amounts of feed. A little of a high protein ration will go a long way. Wautsi have minimal needs as far as shelter—a run-in shed or barn to escape the rain is nice, but bear in mind that it needs to be large enough for the cattle to fit comfortably without horning their neighbors, and any protruding hazards that might catch a horn should be removed. Breeding of the Watusi can be tailored to fit the needs of the farm and the herd. Artificial Insemination (AI) can be used in a breeding program with as much success as natural breeding. These cattle are often bred for the quality of horn. Not all Watusi or Watusi crosses bear good horn and these cattle are often culled, somewhat similar to the natural selection process in the wild: the weaker cattle with low quality horn get taken down by predators, leaving the stronger cows with better headgear to carry on the

bloodline. Many half breed Watusi cows are successfully bred back each generation until the calves eventually return to full blooded Watusi cattle. This process is called "upbreeding." Upbreeding and adding new blood to the Watusi bloodlines was extremely beneficial in the 1980s when problems from inbreeding arose.

How they sell

Watusi can normally be marketed through the same venues as other cattle. But the unique thing about Watusi, and also one of the best selling points, is that they are not like other cattle—they are giant-horned wonders! Use the not-so-average traits of this great breed to your marketing advantage. If you live in a rodeo prominent area, market them as roping cattle. If you have a farmers market that attracts crowds, emphasize the lean, healthy beef. If you know a neighbor who wants a unique pasture ornament, sell them a Watusi! To reach a greater number of buyers, Watusi are often marketed through exotic animal auctions—these circus-like events attract buyers in droves. Most auctions have a specific section for exotic livestock separate from the other animals. Another way to present Watusi cattle to potential customers on the wild side is to advertise in exotic animal publications. Online marketing, and selling and swapping among other Watusi owners are also good ways to move your stock—and never underestimate the power of good ol' fashioned word of mouth!

Watusi and you

Now that you've been introduced to the ancient long horned Watusi, you might be interested in adding some to your herd. Whether it's for beef, dairy, rodeo practice or simply having some pretty unique cows in your fields, these Cattle of Kings are sure to fit into your backyard.

Essential rules to proper training of oxen: maintain control, be firm, patient, consistent, and work regularly.

The cow barn:

Training Oxen Part II:

Making a Team

By Heather Smith Thomas

If you intend to train a team of oxen, have a plan and take it step by step. Cattle are smart, but easily confused if you try to teach them too much at once. Decide which commands to teach first. Only after the team masters those commands should you move on to the next ones. Know what kind of restraint methods you will use, and how to use them—and how to reinforce them with cues. Plan a schedule for training sessions each day. You'll have better success if the cattle are handled regularly; you and the cattle will progress together, as you learn more about how to handle them to get proper responses.

There are several rules essential to proper training of oxen: maintain control, be firm, patient, consistent, and work regularly. Not adhering to these rules may result in a team that may be untrustworthy or even dangerous. Always be thinking about how you will maintain control, keeping a psychological advantage. You must have full control at all times, and during the training sessions you will probably need a lead rope.

Never lose your temper or you are likely to give inconsistent commands or abuse and confuse the animals; when things go wrong, blame yourself. Most problems are due to lack of communication or a lapse of some kind on your part that allowed the animals to get out of control.

Make your team depend on your cues for everything they do; don't let them follow their own inclinations or they'll think they are in control—not you. Don't become haphazard or complacent; the only way you keep control is to take charge and direct their every move. Even when they are working properly, your control is always there, though very subtle.

Be firm but patient. Every command you give or action you take should be done with confident authority, to gain or maintain dominance over the animals. Don't become impatient if they seem slow to learn; they must become familiar and comfortable with what you want them to do; they need to learn the first cues before you move on to the next. Don't try to teach them too much at once. They learn quickly

if they can master one step at a time—each new step building on what they already know. This way they know what you expect of them, and are not confused.

Be consistent in everything you do; try to give each cue the same way every time. Even when you are not consciously giving cues you are still sending signals to the animals through all your actions and body language; the cattle are always watching and listening to you. If you are not consistent in what you do, this will confuse them. Lastly, give your team regular work or training so they will not get out of the habit of working and responding to you. A team that has too much time off will soon prefer not to work, and may start questioning your authority.

Use a step-by-step training plan. Start by handling the calves often, tying and grooming them, and teaching them to lead individually with a halter. After they are at ease with this, they are ready to be put into a yoke. At first, keep one or both of them haltered, with a lead rope, as you walk beside the left (near) steer. Teach them to respond to your cues for starting and halting on command, using the lead rope(s) only if necessary. You want to get away from using the halter as a cue; reserve its use just for safety—to make sure they don't try to run away.

Once they start and stop on command, teach them to turn, and then to pull a load. As their training progresses, you should be able to depend less and less on use of the halter(s). Keep the halters on until you have confidence you don't need them, tying the lead rope to the top of the bow shaft sticking up through the yoke. Thus it's out of the way (and you are not holding it and tempted to overuse it to control or turn the animals), but still handy if you need it. Once they become trustworthier, do some training sessions without halters and leads, first in a pen or small pasture where they cannot get away if something happens. Until you trust them completely, however, have them wear halters with lead attached, but avoid using it.

Learning verbal commands and visual cues

The most important thing in training cattle is to be consistent with your cues (verbal and physical) and always match verbal cues with consistent physical motions--so you won't confuse the animals. They are good at reading body language and often react more to your physical signals than your words. A well-trained team can be handled with a minimum of cues because they observe your visible movements (even subtle ones) without the need for a lot of verbal cues or physical contact. Once they understand your signals (and respect you), the touch of a whip or goad (a long stick) is only needed on rare occasion as a reminder if they are slow to obey.

Regarding verbal cues, cattle understand the sound and tone of your voice rather than the actual words. If you always give the same cue in the same way and same tone of voice, they soon understand what you want. Try to say each cue in a distinct way so there is no confusion. The most impor-

tant cues to learn: Get up—move forward; Whoa—stop; Stand (or "stand still")—stay stopped and do not move; easy—slow down; gee—turn right; haw—turn left; step in—step toward the pole or chain between the animals; step out—step away from the pole or chain; back—back up; head up—lift the head; come boss (or some similar call)—come in from pasture.

Decide what command you'll use to signal your team to move forward, and be consistent in how you say it each time. It may be words (like "get up" or "step up") or you may prefer a clucking or whistling signal. At first you'll probably have to reinforce the signal with your body position (behind the shoulder) and possibly a touch of the whip or goad (to the rump) until the animals understand that you want them to move.

"Whoa" is the most important command for them to learn, and they must learn to stop on voice cue alone--no matter where you are (in front, behind, off to the side, or even a small distance away from them). They must halt immediately, and stand still for however long you desire, not moving again until you tell them to move. They must always stop when you say "whoa", whether they are working in the yoke or being haltered in the pasture. Start teaching this command when you are teaching a calf to lead. He must obey unfailingly before you ever hitch him to anything. At first he'll learn it by pressure from the halter (and possibly a touch on the head or brisket with your stick) to slow and stop him.

Each time you give the command to stop, make the animals stand still for a moment. If they start to move again before you give them a command to move, tell them to "stand", and reinforce the cue with a physical reminder if needed. Gradually extend the length of time they stand. Take a few short breaks during every training session, making the animals halt and stand at attention, waiting until you give them the signal to move. After they learn to stop and stand on cue, practice getting a little farther away from them during these breaks, so they learn they must continue to stand even if you are not right next to them.

The command "gee" (pronounced like the letter G) is the cue for turning to the right. Start teaching this during early leading lessons (if you'll ever drive the animal as a single) as you walk along his left shoulder. You can reinforce the cue by moving a little more in front of the animal's shoulder (or clear in front of him if necessary) to encourage him to turn to the right. The command "haw" is used to signal a left turn. For the single animal, this is fairly easy to accomplish during early leading lessons by stepping back behind the shoulder a little, pulling the head toward the left with the halter rope, and tapping him on the rump.

When yoked together (early lessons before the calves are ever hitched to anything), they must learn to make the turns on command. To turn as a team, the animal on the inside of the turn must slow or stop while the animal on the outside keeps going or speeds up. If you halt or slow the inside animal, they can make a smooth turn.

For a turn to the right, if they don't quite understand when you say "gee," use your whip or goad to reach over and tap the off steer on the nose, head, horn or brisket to slow him or halt him, and tap the near steer on the rump to make him keep moving (or move faster), so he goes around the off steer that's serving as a pivot for the turn. You can also walk ahead of the team, slowing the off steer with the stick and encouraging the near steer to follow you around the turn. Once they get the idea, practice enough that you don't need to walk in front of them—so they will make the turn on voice cue alone. For a really sharp right turn you might teach them the command "back gee", since the off steer must not only stop, but begin to back up, while the near steer walks around him.

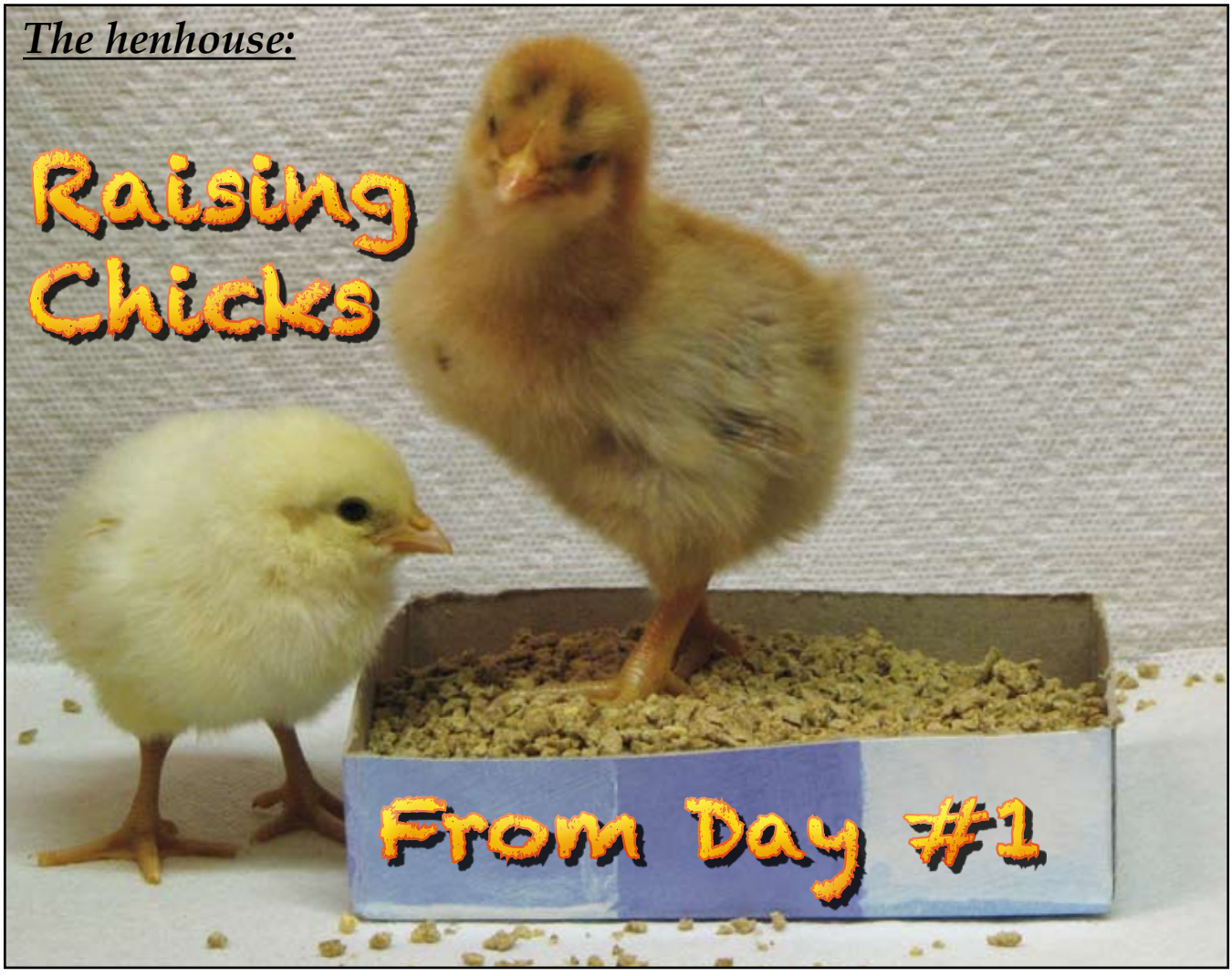
For a left turn, the near steer slows or stops and the far one speeds up. When you give the command "haw," the team must swing toward you. Until they fully understand, you may need to encourage the turn by tapping the near steer on the nose to slow him and the off steer on the rump to bring him around faster. "Back haw" is the command for a tight left turn in which the near steer must halt and back up while the off steer comes around him. Move away from the near steer or back toward his rump as you give the signal to turn left, to give the team room to turn. Thus your body position becomes as much a cue as your voice, in giving these commands.

The command to back is a good one for your team to learn, making them easier to hitch to a wagon, sled, etc. Combine the verbal cue with a physical incentive such as tapping them on the knees, brisket or head. If necessary, step in front of them to reinforce the command. Young animals will generally back away from you when you step in front of them. Once they understand what you want, give the command when you are in normal position beside the near steer. If you practice often, they will learn to back up willingly.

Next time: Training Oxen, conclusion

The henhouse:

Raising Chicks From Day #1



By Gail Damerow

It's been decades since I brought home my first box of chicks from the farm store, but I still feel the same thrill each spring when I put the season's first chicks into the brooder. Watching those adorable fluff balls rapidly feather into miniature chickens, and then grow into full-size roosters and laying hens, never ceases to fascinate.

Choosing a breed

People keep chickens for many reasons: for eggs, for meat, for show, or just for fun. All hens, unless they are old or ill, lay eggs. But some breeds lay more eggs on less feed than others, making them more economical as layers. Among the most popular layers are Leghorns, which lay white-shell eggs, Rhode Island Reds, which lay brown-shell eggs, and Araucana with their blue-shell eggs. The shell color makes no difference in taste or nutritional value; feel free to mix and match.

Any chicken may be raised for meat, but for rapid growth and heavy muscling a hybrid broiler is the most economical choice. White broilers are a cross between white Cornish and white Plymouth Rock. Colored broilers are Cornish crossed with a non-white breed. The most common color is red, but they come in just about any color except white. Colored broilers are popular for free ranging. They grow more slowly than white Cornish, but are more active foragers, and their non-white plumage makes them less attractive to predators.

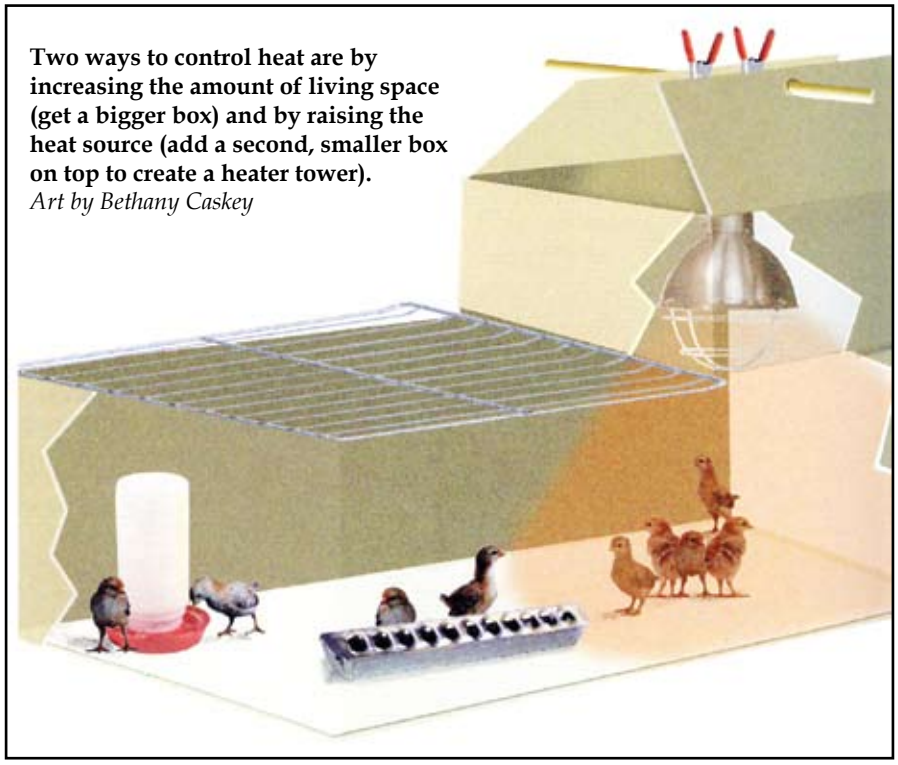
Dual-purpose breeds are the old-time farmstead chickens. They are raised for both eggs and meat, although they don't lay as well as laying breeds or grow as fast as broiler crosses. Popular options include Marans, Orpington, Plymouth Rock, and Wyandotte. Most of the heritage breeds are dual-purpose.

Ornamental breeds are prized for their interesting appearance, including such unusual features as curly or fur-like feathers, top-knots, and feathers down their feet and legs. Popular ornamental breeds include ball-shaped Cochins, top-knotted Polish, and bearded Faverolles.

Most breeds come in a smaller bantam version, although some bantam breeds have no larger counterpart. Bantams tend to be easier to handle than larger breeds and are popular with kids and with folks who enjoy competing at poultry shows. By far the most popular bantam breed is the Silkie, with its fur-like feathers, top-knot, feathered legs, and winsome personality.

Once you decide which breed

you want, it's time to find a source for chicks. Some breeds are available in spring at the local farm store, but many breeds may be obtained only from a mail-order hatchery or a private breeder. The worst place to buy chicks is from a livestock auction or swap meet. You might not be correctly told what breed they are, but worse — chickens (and their diseases) from multiple sources have been commingled. As a result, your new chicks may look perfectly healthy on site, but by the time you get them home they may not do too well.



Two ways to control heat are by increasing the amount of living space (get a bigger box) and by raising the heat source (add a second, smaller box on top to create a heater tower).
Art by Bethany Caskey

Setting up your brooder

Before your chicks arrive, get your brooder ready. A brooder is simply a small enclosure where chicks are kept warm and safe. It may be as simple as a sturdy cardboard box, which has the advantage of being disposable. A good brooder has the following features:

- Adequate space for the number of chicks.
- Escape-proof.
- Protection from children, pets, and predators.
- Freedom from drafts.
- Good ventilation.
- Protection from moisture.

An extra-large plastic storage tote, in the 100-gallon range, makes an easy-to-clean brooder, and the snap-on lid secures it from predators. A plastic tote can easily get too hot, though, so keep a close eye on the chicks' comfort level. For fresh air, and to prevent overheating, cut a ventilation hole into the lid and secure it with hardware cloth to keep out cats and other predators.

A livestock watering tank is a good option for more chicks than will fit in a tote. A piece of hardware cloth or chicken wire secured on top provides ventilation, keeps out cats and other chick eaters, and prevents growing chicks from flying out.

As chicks grow they need increasingly more space. The minimum space to begin with is about six square inches per chick. Bantams and light breeds can get by with as little as four, while broilers and the really big breeds need more like eight. Naturally, if you start with the minimum brooder size, you'll have to increase the brooding area sooner than if you use a larger brooder to begin with. You can tell your chicks are overdue for expanded living quarters if:

- They have little room to move and exercise or to spread out for sleep
- They dirty the floor faster than you can keep it reasonably clean — droppings pack on the floor, manure balls stick to feet, or you can smell ammonia
- They run out of feed or water early, indicating the need for more space to accommodate more or larger feeders and drinkers

Floor and bedding options

Some brooders have a solid floor; others have a floor made of hardware cloth. Small-mesh hardware cloth is easier to clean, since droppings and other debris fall through the mesh to be collected on a tray or a layer of newspaper below for easy disposal. But hardware cloth is hard on a baby

Chick-buying options

Unsexed chicks—also called *as-hatched* or *straight run* — have not been sorted by gender and therefore are mixed exactly as they hatch. Theoretically, a hatch should be 50/50. Some hatches have more pullets (females) than cockerels (males), but more often the ratio is 60/40 or even 70/30 in favor of cockerels.

Sexed chicks have been sorted according to whether they are cockerels or pullets, with as much accuracy as current technology allows. You can get as many of each as you want.

Vaccinated — Some hatcheries offer vaccinations against Marek's disease and coccidiosis. Marek's is a common viral disease. The vaccine helps reduce losses but does not confer complete immunity. Coccidiosis is a common protozoal disease. Vaccination stimulates natural immunity resulting in lifetime protection. But you must never feed vaccinated chicks medicated starter, because it contains a drug that neutralizes the vaccine and inhibits the development of immunity.

A cardboard box makes a serviceable brooder that may be disposed of when no longer needed.

bird's feet, does not give chicks an opportunity to develop immunities, and increases the risk of cannibalism (bored chicks will pick at each other to the point of drawing blood).

A solid floor gives chicks an opportunity to develop natural immunities through gradual exposure to common microbes in their environment. It also provides a surface to hold a layer of bedding, which helps keep chicks dry and improves warmth. Chicks accumulate a lot of poop. The more they grow, the more they poop. While bedding makes clean-up more manageable, options that are suitable for growing birds are not the best for baby chicks.

Newly hatched chicks need a surface that's rough enough to prevent their little legs from slipping out from under them. Newspaper or other smooth paper is therefore unsuitable. My choice is plain white paper toweling, unrolled in strips and overlapped to line the floor. As the paper toweling becomes soiled, I add another layer on top.

Chicken keepers who prefer to spend money on soap and hot water instead of paper towels use old cloth towels or baby diapers. When a fresh towel is needed, the soiled one is shaken out and laundered like a baby's diaper.

Another option is puppy pee pads (also called puppy training pads) or human incontinence pads (also called bed underpads) to soak up moisture and odor. These pads are either washable and reusable or single use and disposable.

Non-adhesive, nonslip shelf liner is another option that's washable and therefore reusable. It is durable, yet soft and cushiony for chicks to rest and walk on. The rubbery nonslip surface is especially beneficial for chicks that have trouble with slipping.

Once the birds start growing, loose bedding will absorb their droppings to help keep them clean and dry, as well as insulate the brooder floor to retain warmth. Loose bedding also allows baby poultry to engage in natural activities such as dust bathing and scratching and pecking the ground. A typical brooder bedding depth is one to two inches.

Ideal bedding is loose and fluffy but not dusty, absorbs moisture and droppings, has no objectionable odor, doesn't cake or mat, is nontoxic, and is easy for growing birds to walk on. Unfortunately, no one type of bedding is 100 percent perfect.

Shredded newspaper makes good bedding, but must be freshened fairly often. Chicks are less likely to get tangled in the smaller bits shredded by a crosscut or micro cut paper shredder compared to longer strip-cut paper.

Well-dried grass clippings, from a lawn that hasn't been sprayed, make good bedding for chicks that don't have feathered feet. Grass tends to mat, and sticks to the feet of feather-footed breeds.

Dry leaves, run over several times with a lawnmower to chop them up, make acceptable brooder bedding, provided they are *fully dry* and not the least bit moldy. Like dried grass, dried leaves tend to mat and must be refreshed often.

Dust-free aspen, poplar, and other hardwood shavings make good bedding. Avoid pine with a strong pine odor, indicating the presence of hazardous phenols and other volatile compounds. Cedar shavings contain even more phenols than pine, so should never be used.

Clean construction grade sand, or washed river sand, makes excellent bedding. Sandbox sand is another

When chicks start scratching feed out of the shallow tray, switch to a regular chick feeder.

option, but avoid brands made from crushed quartz, which contains crystalline silica dust that is hazardous to a chick's respiratory system. Although not as absorbent as other bedding, sand retains heat more readily and evaporates moisture more rapidly, and therefore stays drier.

Heating the brooder

Your brooder must have a reliable and adjustable heat source. A common source for small batches of chicks is an incandescent or halogen light bulb in a fixture with a reflector. Brooding fixtures are available from farm stores and pet supply outlets. The same sources offer infrared heat lamps, sometimes called brooding lamps, which are basically incandescent light bulbs that emit less light and more heat than a standard incandescent bulb. *Warning: Do not use Teflon/PTFE-coated shatter-proof "Rough Service" bulbs; they emit toxic fumes that will kill your chicks!*

How much heat chicks need, and for how long, depends on many variables: the breed, their numbers, their rate of growth, the size of the brooder, the room temperature in which the brooder is located, and the method of providing heat. In warm weather they may need heat for three weeks or less. In cold weather they may need to be heated for as long as six weeks, until they grow enough feathers to keep themselves fully warm.

As a rule of thumb, start the brooding temperature at 90 to 95°F (as measured by a thermometer two inches above the brooder floor) and reduce it approximately 5°F each week until the brooder temperature is the same as the ambient temperature, or about 70°F, whichever comes first.

In real life, during hot weather or in a well-heated room, a brooder may require little or no additional heat. Watch your chicks' body language and adjust the heat as needed by raising or lowering the light fixture; by increasing or decreasing the bulb wattage; or by increasing the amount of available living space so the chicks can move farther from the heat source. Look for these clues:

- Chicks crowded close to the heater are not warm enough.
- Chicks crowded away from the heater are too hot.

Photos by Gail Damerow

Paper towels (top left) may be used as first bedding. After the birds are walking and eating well, switch to loose and more absorbent bedding, such as shredded paper (bottom left) or pine pellets (right).

• Chicks crowded to one side, all facing the same direction, are feeling a draft.

• Sleeping chicks that are evenly distributed under the heater are warm and cozy.

• Active chicks that are evenly distributed throughout brooder are perfectly comfortable.

Watch the water

Chicks can go without water for their first 48 hours of life, but the sooner they drink, the better they will grow. A chick's first drink should be at brooder temperature. Prior to the arrival of your chicks, place the drinker in the brooder at the same time you turn on the heat. If you forget to fill the drinker before the chicks arrive, use warm (not hot) water from the tap.

Mail-order chicks may arrive dehydrated and disoriented. Dipping their beaks into warm water ensures timely rehydration. After their beaks have been dipped, some of the birds may start drinking right away, others may not. That's okay. As long as one chick drinks, the others soon follow the leader.

A one-pint drinker furnishes enough water for about a dozen chicks. Within a short time, they will outgrow their first drinker and need a larger one. Drinkers of all sizes and styles are available from most feed stores and poultry-supply catalogs.

Clean and refill drinkers twice a day, morning and evening, to ensure the chicks have plenty of water and to remove any accumulated sludge caused by feed or bedding falling into the drinker.

Providing feed

Newly hatched chicks come equipped with yolk reserves that provide nutrients for many hours. It's nature's way of allowing early hatchers under a hen to remain safely in the nest until all the stragglers have hatched. These yolk reserves allow chicks to be shipped by mail, but they are pretty well depleted by the time the chicks arrive. Feed them within two to three hours after they have their first drink.

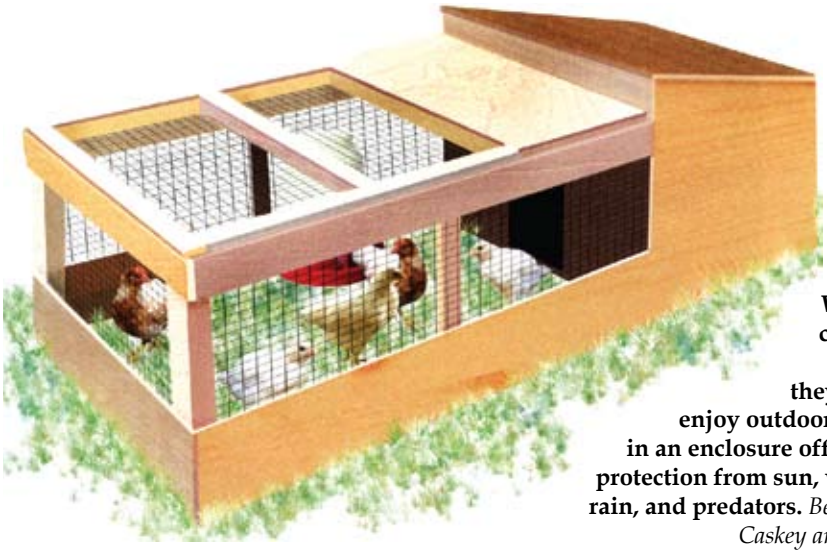
Baby chicks instinctively look for things to peck. Give them something suitable to peck by spreading chick starter on a shallow tray, such as a paper plate or shoebox lid. When they start scratching the feed all over the brooder floor, switch to a regular chick feeder, available from farm stores and poultry-supply catalogs.

As the chicks grow and eat more, they will need a larger feeder. Whenever you change to a different feeder, leave the old one in place for a few days until all the chicks are eating from the new one.

Fill the feeder in the morning with enough starter that the chicks will empty it just in time for the evening feeding. Leaving feeders empty for long invites picking (there's that nasty cannibalism again), but letting stale or dirty feed accumulate is unhealthful, so strike a happy balance. Clean and scrub feeders at least once a week.

The easiest way to ensure chicks get all the proper nutrients is to feed them a commercial starter ration, which contains a mixture of grains, protein, vitamins, and minerals. Chicken starter ration (aka chick starter) is higher in protein and lower in calories than rations designed for older poultry. *Warning: Never feed layer ration to chicks; the higher calcium in layer ration can seriously damage young kidneys.*

Some brands of chick starter are medicated with a coccidiostat to prevent coccidiosis. If you are raising your first-ever chicks, and they have not been vaccinated against coccidiosis, using medicated starter gives you one less thing to worry about while you work through your learn-



While chicks grow they will enjoy outdoor time in an enclosure offering protection from sun, wind, rain, and predators. *Bethany Caskey artwork*

ing curve. Do not feed medicated starter to chicks that were vaccinated against coccidiosis.

If you run out of starter, or you forget to pick some up before your chicks arrive, you can make an emergency starter by running a little uncooked oatmeal through the blender and mixing it 50/50 with cornmeal. Grains are high in calories and low in the protein, vitamins, and minerals needed for good growth and health, so don't use this mixture any longer than a day or two.

If you have extra eggs on hand, mashed hard-boiled or scrambled eggs make an excellent starter. In the old days before commercial rations were available, many farmers started chicks on mashed boiled eggs.

Until they are big enough to forage outdoors, your chicks will enjoy bits of dark green lettuce, pieces of grape or apple, and bean sprouts or alfalfa sprouts, all chopped into tiny baby-bird-size pieces. Offer treats only in small amounts, no more than they will eat within about 15 minutes.

Growing up

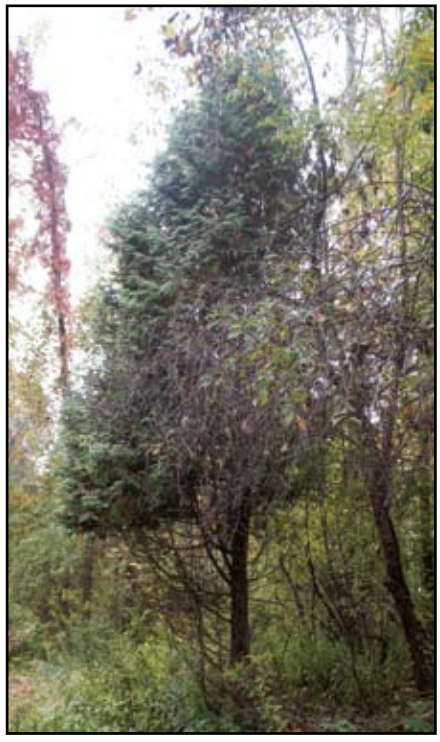
As your little birds feather out, they will enjoy being outdoors during warm weather. Unless you are prepared to supervise them the entire time they are outside, they will need protection from passing dogs, cats, hawks, and other critters looking for a quick snack. For complete protection put them in a secure enclosure, such as a wire-bottom cage or a doghouse-like structure with an attached wire-enclosed run.

Provide water during their outing, and if they will be out most of the day, bring along their feeder. To protect them from the hot sun, provide some form of shade, which could be a towel draped along part of the cage or run. They will also need protection from breezes; on downright gusty days keep them indoors. If the birds huddle or act uncomfortable in any way—appearing to be too hot or too cold—bring them back to their brooder and try again another day.

When daytime temperatures remain above 65°F and nights are not chilly, growing chicks may be permanently moved to grown-up quarters when they are about six weeks old. At this age they are too small to be turned loose, by they will enjoy spending outdoor time in an enclosed run offering protection from sun, wind, rain, and predators.

For the first week or so, check on your chicks at night to make sure they are okay. If the nighttime temperatures turn chilly, or stormy weather approaches, gather them up and bring them back into protective custody. Once they are fully feathered, they can remain in unheated, outdoor housing. Pull up a deck chair and watch them grow.

Gail Damerow is the author of Hatching & Brooding Your Own Chicks, *available from the Countryside Bookstore.*



Left: **Bucks have rubbed the bark off of this sapling. Sometimes trees can be infected by fungus and die.** *Right:* **Typical deer browse on white cedar.**

The woodlot:

Oh, Deer!

By Susan Gateley

White tail deer are charismatic, beautiful animals as they leap in graceful 20-foot bounds through your neighbor's bean field. I like to watch them. Lately I like to watch them run away. I'm at war with them—their grace and beauty is fueled by an insatiable appetite for my flowers, my garden, and the trees in my small woodlot.

Lots of other country dwellers share my feelings. Deer browse is a growing problem throughout the eastern U.S. and the upper Midwest. If you reside in this region and hope to have a future firewood or timber harvest from your wood lot, or if you want to can and freeze excess garden produce, you too, may be wondering how to get a wolf pack started on your land.

White tail deer populations have exploded in the last 30 years thanks to changing land use, an aging and dwindling population of human hunters, and a lack of natural predation. This over abundance is re-engineering tens of thousands of acres of forest food webs through over browsing. Deer are hollowing out forests by killing new young trees vital to forest regeneration. They also destroy, by one estimate, over 640 million dollars of nursery and farm crops each year in the Northeast alone. They spread Lyme disease as they chomp on suburban flowers and rural crops, and the problem appears to be getting worse.

Both deer populations and the numbers of people diagnosed with Lyme disease are on the increase. Last year perhaps 300,000 people were infected by the tick-borne bacterial illness. One of them was a young formerly healthy neighbor who told me she had to drop out of her graduate college program in soil science because of the many long-lasting effects she had suffered from an undiagnosed infection she almost certainly picked up while doing her field work.

Before European settlement in North America, there were perhaps three to seven deer per square mile of forestland on average. Today, many areas host up to 10 times that number. As the deer chow down on the young trees and understory shrubs of the woodlands, crucial bird and wildlife habitat and reserves of seedling trees disappear. In many areas the deer reinforce the spread of invasive

shrubs like Japanese honeysuckle and the multiflora rose by selectively avoiding these alien plants as they feed. Invasives choke off and shade out more native tree and plant seedling growth further degrading forest habitat and wood lot production. On my small homestead in upstate New York the deer problem become noticeably worse about 10 years ago. While anti-predator sentiment in my neighborhood pretty much precluded smuggling in a pair of cougars, I had to do something. I tried every repellent known to the Internet. I tied dryer sheets and bars of the smelliest, most fragrant soap I could find on my little trees, and distributed hot pepper, various egg-based concoctions, hair from the barbershop floor, and human pee-soaked wood chips around the garden. Nothing worked for more than a few days or weeks. Most commercial and homemade repellents wash off or break down fairly quickly and have to be re-applied. This can be tedious, time-consuming and expensive. Deer also learn to tolerate many repellents. One thing I didn't try was scarecrow-type tactics such as the realistic fake coyote figures my neighbor put out in his orchard. Apparently deer quickly get used to them. In one suburb a trail cam caught a deer in the act of pushing over the plywood cutout of a coyote. Evidently they didn't want to look at it anymore.

Some Internet gardening websites suggested planting deer "resistant" flowers and trees. I tried. The deer snacked happily on all of them. They ate my spruce trees and my daylilies (both of which are said to be deer resistant) along with the hostas and raspberry bushes. Deer are very adaptable, which is why they are so widespread and increasing in numbers. Once they sample something, they seem to develop a tolerance, if not a taste for it. One person may be able to plant a certain flower or shrub successfully in the flower patch while in a nearby yard the deer will eat it. The only plant they seem to consistently ignore here in my yard is goldenrod.

Another suggestion for protecting

Tree tubes will help prevent deer from nipping off the tops of plants. Fencing helps, but sometimes those tongues can still reach the tender plants inside.

plantings that I didn't do, was feed the deer in the hopes of diverting them from my flowers and trees. The theory is that baiting with cracked corn or a summer clover planting will keep hungry deer away from the garden. In my yard, drops from old wild apple trees attract them. They then head to my garden for dessert. I do not think putting feed out for the deer works as a diversion. It simply attracts more deer.

The reluctant conclusion I came to in my area of heavy browse pressure was to follow the expensive example of several near by orchard owners and put up fences. Since fencing a wood lot is not too practical, I started using plastic deer netting around the two to three foot trees I set out. Deer netting is tough and long lasting. But it takes two or three stakes per tree and allows the sapling to grow side branches. Soon the little branches stick thru the netting and get eaten. Still, at least a few of my trees are now surviving.

Tree tubes are a much better solution. Tubes come in three-to-six-foot lengths and are made of various materials. Some are solid; some are made of mesh. Tubes cost $2 to $5, depending on length, material and quantity ordered. You can stake them up with just one stake per tube instead of two or three. Many are reusable once the tree has grown enough for its top to be out of reach of the deer.

Get at least five-foot tall tubes, to protect the top of the tree. Leave them on as long as possible. Even after the tree is too tall for the deer to nip off the top, the bucks will come around in the fall to scrape their antler velvet off by rubbing on and frequently killing the sapling tree. The tubes reduce the buck rub problem. One vendor suggests using PVC pipe like electrical conduit for tube stakes, as it won't rot like wooden stakes do.

To protect the vegetable garden I opted for pounded-in steel posts and strung four-foot woven wire. This worked for a few months. Then the deer started hopping *over* the fence. I then belatedly researched the Internet for tips on deer fencing. After learning that deer could jump seven-foot fences, I purchased two rolls of deer netting and wired wooden furring strips as fence post extensions to each metal stake post. I then stapled the netting on to the strips to create an approximately eight-foot high fence. The new netting was joined to the woven wire fence by tying the two together with light twine. I thought I had Bambi beaten, but one enterprising little guy found an incredibly small gap between the top and bottom portions of the fence and squirmed his way in. Once that was closed up they have stayed *out!*

It was not a cheap job. The posts and woven wire ran close to $400. Then the two 330-foot rolls of deer netting ran about another $100 each, plus shipping. In hindsight, I should have simply ordered two eight-foot rolls of plastic netting rather than setting the steel posts and installing the wire fence first. But some of us learn the hard way.

There are other less costly ways to keep deer out of gardens. One or several parallel strands of strategically placed monofilament line may do the job if your browse pressure is light. The deer don't see it, and when they walk into it, it freaks them out. I've used this successfully to change their travel paths out in the woodlot as I attempt to divert them away from tree plantings. Another idea is to create an obstacle course on the inside of a low fence. The deer don't like to jump into the uncertain footing of close spaced tomato stakes and cages, according to a gardener acquaintance of mine. Double fences are a variant of this idea Another scheme that, according to the Internet, is quite effective is to slant the fence outward, making the jump wider. You may get away with stringing monofilament strands using this scheme. But be aware that deer can squirm through amazingly small spaces if they are motivated.

I did not try electric fencing on my garden. My next-door neighbor had problems with her fence getting shorted out. Before long it was breached. However, if you are diligent about keeping the weeds down around the garden perimeter, this might be a cheaper solution than the deer netting I used. Non-electric fences need maintenance too. In just three years I've already had a couple tree branches fall on the fence. But it was easily repaired. And as a bonus, I planted the red runner beans next to it inside so they could climb up the mesh.

For the time being I have at least succeeded in keeping the deer out of the garden. Some of my small trees are surviving, though constant vigilance is required out in the wood lot. I'm thinking about taking up bow hunting, but in the mean time, we have reached an uneasy and temporary truce in what I suspect is a long-term siege.

Try searching YouTube for "Innovative Deer Fence" for one grower's inexpensive solution to the problem. The Internet has many sources for deer netting and for tree tubes.

Here is a link to one landowner's article on tree tubes. I will be installing more of these in the near future! www.qdma.com/articles/tips-for-using-tree-shelter-tubes.

By Lisa Jansen
3piggal@gmail.com

The first time I tried composting I was skeptical. I read a book, took a class, and drove around town stealing lawn clippings. I kept plastic bags and a flat nosed shovel in the trunk. My pet pig and I rode around mornings looking for freshly mowed lawns. If you do this, be prepared for dog poop. Folks hide it in the pile.

Mixing green and brown materials as recommended, I filled the black recycled compost rings given out at the composting class. I turned and lightly moistened. Then I stuck in the meat thermometer. The center, to my surprise, stayed around 120°F!

That was ages ago, when I lived in town. I've become a composting fool since them. After moving to Far Out Farms, an all-solar, remote, micro farm in the Sierra Nevada foothills, I added a large worm composter. The container was an old water softener container. It stood about 3-1/2 feet tall and about a foot wide. It had a good fitting lid. With an awl I poked a few holes in the bottom and tossed some wood chips in. The red worms came from a fishing bait store. Then, all small kitchen waste was added daily. No meat or grease, of course. That set-up produced lots of rich compost with worm castings.

Far Out Farms has been home to a horse, pigs, chickens, ducks and goats over the years, so I have a close relationship with manure. My favorite is pig manure. I rescued pot-bellied pigs for a number of years. Their manure does not have to be composted. It will not burn plants. It has a higher phosphate content than other manures. My soil is low in phosphates so it works great here. All the other manures need composting. Take the litter from the chicken coop or goat stall and just pile it up. Tarp it and moisten occasionally, you'll

Above left: **Keep your greenhouse green all winter by using the heat generated by a couple of compost piles placed evenly around. Lisa's 17-foot diameter greenhouse is kept at 70°F at night by three compost piles: two made of stacked tires and one is an old Rubbermaid garbage can.** *Above:* **An old bathtub holds the compost overflow.**

Left: **This is the compost ring made of recycled materials given out by the City of Woodland after composting classes. This simple compost ring started her addiction to composting!**

never need to buy fertilizer again. If you want a liquid fertilizer just put poop in a bottle and add water, let it sit a couple days and you have liquid fertilizer.

For a while I did windrows of compost. They are just elongated piles on the ground. Some local stores give away unwanted produce. I picked up boxes of produce daily. From the cargo area of my Subaru they went to the processing station outside my greenhouse. The processing station consists of a bench, old bathtub, buckets, gloves and a sharp knife. Every box had to be sorted. The twist ties, rubber bands and paper were removed before being assigned to a windrow or pile. All produce was cut into small pieces; that makes it easier for the microbes and macrobes to devour. My property was mined by hydraulics in the 1850s. The mining companies took the topsoil. All these years later there is still little topsoil, so I can use all the compost I can produce.

I have a geodesic dome greenhouse on an all-solar farm. My home is heated by propane. It's expensive to heat a greenhouse with propane, so I tried heating it with chickens. I built a small coop in the greenhouse that six chickens called home for months, until a bear called them "dinner." This year the greenhouse has been heated by compost. I have three compost bins in a 17-foot wide greenhouse. Two are made of stacked tires. Tires work very well as compost containers. The black rubber absorbs heat that is radiated during the colder night. They also hold moisture well and can often be obtained for free. And you can un-stack them to turn the compost. The third compost container is an old Rubbermaid garbage can with a few holes poked in the bottom. Many styles of compost bins will work. My greenhouse was designed by Growing Spaces (www.geodesic-greenhouse-kits.com or 800-753-9333). It came with a thermal mass tank. It is a black water tank, currently holding about 40 gallons of water and a few gold fish. The tank also absorbs heat during the day and releases it at night. The greenhouse runs about 100°F during the day and 74°F at night while the outside temperatures are about 85°F during the day and 40s at night.

I think I have a winning heating method. So far, no wildlife has been interested in these composts. I always cover the compost with chicken manure-soiled straw after I add produce, and they all have a lid or cover of some sort. The bathtub outside the greenhouse usually has compost in it too. It's my over-flow bin.

I still pick up unwanted produce and, of course, my garden and yard clippings go in the compost. Kitchen waste is composted. Anything that will compost is added. Too bad no one has a lawn in this area. Maybe my pig and I need to take a drive. That rich, dark, earthy smelling stuff is what Far Out Farms runs on!

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If Tomatoes Could Talk…

By Anita B. Stone
North Carolina

A good example of blossom end rot.

G.J. emailed: "I'm attaching a photo of my tomatoes. I was wondering if someone might be able to tell me what I'm doing wrong…all the rot is on the blossom end. These are grown in a greenhouse. I started them from seed. I live in zone 3, in the Pacific Northwest of British Columbia."

Everyone loves tomatoes, especially those of us who grow them. The taste of each tomato leaves our palettes yearning for more. This favorite fruit can appear as large, medium or tiny, and show its colors as purple, red, orange, even black or yellow. And festivals abound honoring the fruit that shines on every dinner table, stacked in between sandwiches and left to ripen on windowsills. We love tomatoes, but sometimes the luscious fruit reacts to a variety of nutritional deficiencies in different ways and displays hunger signs. That's the time for us to step up to the plant and proactively identify and encourage its health.

Just as humans require supplements for good health, fruits need proper care. When the soil lacks specific nutrition, then we see diseases, including viruses that appear as nutritional disorders. It is preferable to grow disease-resistant varieties of plants, nestled in rich compost, but if the soil is deficient in boron, for instance, kitchen "garbage" will provide enough missing nutrients to correct the problem. The lack of boron will be seen on the leaves as splotches of purple, brown and yellow. Young leaves have dead tissue, and stems become stiff and straight. A normal tomato leaf has good green color and a slightly curved stem. Here are some tips to recognize when tomatoes require human assistance in the way of enhancing the soil.

On many crops, we recognize that something is wrong when the leaves appear yellow. This is known as chlorosis (loss of chlorophyll), where overall growth is impaired and older leaves begin to drop off. The stems become yellow and rigid. This is a silent cry for **nitrogen.** If the tomato needs **molybdenum**, the older leaves show chlorosis, while the veins remain pale green. The leaf margins die and may roll up. This yellowing *between* the leaves is not to be confused with chlorosis. Rather, supplement with **magnesium** for this. And when yellowing appears on young leaves, especially at the base of each leaflet, try **iron** to correct the problem.

Leaf curl

A common sight is when leaves become mottled and they curl down, showing a slightly convex upper leaf surface. **Potassium** applied correctly will take care of the problem.

Sometimes leaves and veins darken and exhibit a dull purple tint; apply **phosphorus** to cure the deficiency.

When leaves turn brown at the edges and die back, there is a lack of **calcium.** If you are uncertain as to the deficiency, notice whether the young leaves show a purplish brown tint, which requires calcium in the soil.

Zinc helps prevent abnormally small leaves and nodes. The lack of zinc results in rough, cracked and split stems and the stem hairs disappear.

When the plant exhibits mottled leaves, showing up first on the young leaves, apply **manganese.** Without application yellowing will occur in the tissue, the leaves will curl, turn and die. Soil borne fungi that causes vascular diseases that thrive in the water tissues of the tomato shows up as Fusarium wilt or Verticillium wilt, and should be cared for immediately.

When **sulfur** is lacking, leaves will turn light green and the stems become spindly. If the plant needs more **copper,** the leaves and stems are also spindly and grow poorly, becoming chloritic. The leaves eventually curl upwards.

For healthy tomatoes and fewer problems, consider these 10 tips:

1. Select the proper site for planting. A well-drained soil location is preferred. You may want to have your soil tested by a local ag department or university extension. There is usually a nominal fee, and you will be able to begin tomato production with soil integrity to avoid future problems.

2. Beef up the soil. It's best to plant tomatoes in a weed-free soil that is enriched with top quality compost and mulch. Alternate planting sites from previous years because many diseases live in the soil. Consider alternative plantings in large containers for a change of place.

3. Irrigate responsibly. Slow, deep watering builds healthy root formation. Early morning watering will eliminate airborne diseases and problems like leaf curl and chlorosis.

4. Leave ample air space around

Blossom-end rot is caused by calcium deficiency when fruit are forming. The deficiency results from excessive nitrogen fertilization, rapid plant growth, fluctuations in moisture or root damage during cultivation.

Leaf curl and chlorosis—add copper

This plant has come in contact with soil borne fungi, causing Fusarium wilt or Verticillium wilt.

each stem. Mulching also reduces blight, and keeps pathogens and pests away.

5. Choose tomatoes that grow best in your area. Remove litter and sterilize garden tools in bleach and water to prevent spreading diseases.

6. Check tomato health every couple of days. When purchasing tomatoes, make sure roots do not appear to grow out of any container's drain hole. This creates root rot, root strangulation, and attracts diseases or pests to the plant.

7. Mulch is a key factor, helping to prevent soil splash onto the plant, which in turn can reduce leaf disease and the spread of many pathogens. Use clean compost or red plastic sheeting. Check the compost bin before applying further mulch as it may create disease if not properly cared for.

8. Crop rotation is an effective way to control disease. Once organisms attack a crop they reappear in the same place year after year, building their populations.

This plant could use some calcium and iron.

Late leaf blight

9. Select resistant species or cultivars to fight off attacks from soil pathogens and airborne pathogens. This will improve the crop and reduce the need for pest control.

10. Choose organic pest control when required. Keep away from herbicides, fungicides and pesticides, which will create a negative soil cycle under the tomato root. Extreme heat and drought can be dealt with if irrigation is done responsibly. Soaker hoses or drip irrigation systems are recommended for water conservation.

When you purchase controls for crops, make sure you read the labels for contents and follow the instructions before applying. Look for organic solutions. Half the battle is recognition. Plus, with a little care and perseverance, your plants will have a head start to beautiful disease-free crops.

The garden:

Leaves of bok choy are good in a salad, sandwhich, or stir-fry. *Photos by Don Farris*

What's in Your Cabbage Patch?

By Nancy Pierson Farris
South Carolina

If your cabbage patch has only one or two varieties of green heads, perhaps a red and a Savoy, you are still missing something. Oriental cabbage adds a whole new dimension to your garden and your dining experience.

The term "Oriental cabbage" includes a dozen or more different varieties. Some are loose leaf, some make compact heads. All are slightly more delicate—requiring care in handling, but producing a vegetable that is easy to digest.

The three most commonly known in this country are Chinese cabbage, which forms a tight head similar to Savoy cabbage; Michihili, which is torpedo shaped, like romaine lettuce; and bok choy, which is sometimes referred to as celery cabbage.

Bok choy can add a great deal to your cuisine. The spoon-shaped leaves are great in a salad bowl, on a sandwich, or in a stir-fry. The wide, tender ribs can substitute for celery in any recipe, and they are essential for genuine won ton soup.

Since the best temperature for all kinds of Oriental cabbage is in the 60s, plants need an early start. For best results, these cabbages need to grow rapidly. Bok choy bolt readily, so it is often recommended that seed be sown directly into the garden and plants thinnned to ten to eighteen inch spacing.

I get the earliest start by sowing seeds in January, about eight to 10 weeks before my last expected spring frost, which comes in late March. When seedlings have second leaves, I put them into plastic pots. The plants will grow in my cool greenhouse, under fluorescent lights, through the dreary days of February. I feed once a week with fish emulsion mixed in a watering can. The seedlings grow rapidly and maintain a good color.

In mid-March, I choose a garden site which will later be shaded by a deciduous tree. This allows the young plants to get plenty of sunlight initially; but as weather becomes warmer, the tree puts on leaves and provides protection from the hot sun of early summer.

I prepare a 25-foot row by digging a trench about eight inches deep. Into that, I spread about 15 pounds of partially rotted bedding from my goat barn. I cover that with four inches of soil. The compost will continue to "cook," providing bottom heat; as the plant roots grow downward, the compost provides balanced nutrition for my young plants, encouraging continued growth.

I set sturdy seedlings about 10 inches apart in the furrow, snugging soil around them. To guard against cutworms, I slide a toothpick or twig alongside the stem. (Cutworms must wrap all the way around a stem to do their damage.) I cut leafy twigs from an evergreen shrub, and stick them into the ground at a slight angle to shelter the plants for a few days. By the time the twigs

The wide stems can substitute for celery in any recipe.

wither, the plants have recovered from transplant shock. I water the seedlings daily, just enough to keep the ground moist, but not soggy. I continue this treatment for about a week or 10 days.

To accomplish the irrigation, I lay a soaker hose along the row and turn it on for a few minutes each day. A garden sprinkler would deliver water to the top of the plant, which can promote diseases such as downy mildew and bacterial rot. When the plants look perky and show signs of growth, I taper off the irrigation to once a week soaking.

A few garden pests will attack bok choy. Flea beetles find the tender leaves quite tasty, and cabbage butterflies lay their eggs on the underside of leaves. A dusting of wood ash or diatomaceous earth (DE) will discourage flea beetles, slugs, and snails. Bacillus thurengiensis (Bt), dusted or sprayed once a week, will sicken cabbage worms without leaving any toxic residue.

Aphids may invade the garden, but I seldom worry over them. As weather warms and aphid populations increase, ladybugs arrive. I don't know where they come from, or how they know it's time, but they always get there and quickly gobble up the aphids. If the little pests become a bother, I simply wipe them off the leaves (a squeamish person should wear gloves for this task, since soft-bodied aphids squish under slight pressure). Another alternative would be insecticidal soap, or just a hard stream of water across the leaves.

We sometimes get a last cold snap up to two weeks after Easter. After that comes through, I can start setting out the tender plants that wouldn't survive the cool nights that cole crops tolerate. I find interplanting tomatoes among bok choy is a win-win. The coles are nearing the end of their lifespan; some have already been removed from the row. Young tomato plants can get settled in under the shelter of a bok choy leaf. The strong aroma of tomato may repel cabbage butterflies which are still seeking their host plants.

The bok choy begins to lose quality as weather warms; this coincides with the first pickings of snow peas. The two make a great combination for stir-fry.

To clear the space for later crops, I harvest bok choy to begin making stir-fry mix for the freezer. In the shed, I pull apart the bok choy head and thoroughly wash the leaves and stems. In the kitchen, I stack several leaves, with stems, and cut them crossways. I place a layer of bok coy into the bottom of several freezer containers. The containers go into the freezer in a place I can access easily. As snow peas increase production, I add a layer of those to each container. Through the spring, I add zucchini, cut into strips, cut onions, and sliced radishes. By midsummer, the containers are full and can go into a long term storage area of the freezer.

If you have never tried Oriental cabbage, you may want to plant a few this year. Get them started early, feed them well, and enjoy your harvest. I already have mine in pots and this year, I'm trying a new variety of purple-leaf bok choy.

Tamarind

A Natural Laxative & Food Enhancer *Par Excellence*

By Habeeb Salloum
Ontario, Canada

During my initial journeys through the Arabian Gulf countries and the Caribbean lands, I often wondered what gave many of these countries' dishes a pleasant and smooth-sourly taste. In the ensuing years, I discovered that tamarind, a healthy condiment of Asiatic origin, was responsible for the mouth-watering flavor of many Asiatic, Latin American and Caribbean foods. Like a good number of other edibles, many consider this delectable natural laxative and souring agent as a food enhancer par excellence.

It is believed that tamarind, a legume related to beans and peas, was first grown in the Indian subcontinent and was brought by the Arabs in the 8th century to the Iberian Peninsula. This is attested to by its name that is derived from the Arabic *Tamar al-Hindi* (date of India). From medieval Spain its utilization in cooking spread to the remainder of Europe and later to the Western Hemisphere. In most of Latin America and the Caribbean Islands, it became so ingrained in the culinary art of these lands that many came to believe that it was indigenous to the Americas.

Today, one of the most commonly cultivated plants in Latin America, the tamarind tree produces an exotic fruit-spice containing a reddish pulp and small shiny seeds, resembling peas in the pod. Its major edible part, the pulp, inside the four-to-five inch long brown pods, is very fruity, strongly acidly, slightly sugary and heavily scented. This sticky pulp is employed extensively in the preparation of food and, in addition, the tree's attractive fernlike foliage and fresh yellow flowers are, at times, utilized in cooking.

Besides its use in the Caribbean and Latin America, tamarind is utilized in great quantities in the Indian sub-continent, south East Asia and, in smaller amounts, in the Middle Eastern countries. In most of these lands, it is an important ingredient in candies, chutneys, curries, desserts, preserves, relishes, sauces, soups, stews, and for making syrup—often diluted to act as a flavoring agent in soft drinks. In the Caribbean, it is favored condiment in curries, fish soups and stews. Also, tamarind seeds can be roasted and eaten and the pods are delightful when cooked or pickled.

In addition to its culinary uses, tamarind is considered to be a powerful laxative and vermifuge. Containing carbohydrates, calcium, fat, iron, phosphorus, protein and vitamins A, B and C, it has been on herbalist's cure list for centuries. The pharmaceutical industry uses hundreds of tons annually in the manufacturing of medicines. The bark of the tamarind tree is used in lotions to treat rashes, sores and ulcers of the skin, and products of its fruit are beneficial in the treatment of the common cold, burns, joint pains and a number of other ailments.

A cool delicious beverage made from this sweet-acerb fruit has been prescribed as a diuretic and for cleansing the body, bringing down fevers, bilious disorders, jaundice and catarrh for hundreds of years. In parts of Mexico, a natural remedy is made from a mixture of tamarind, chili, lemon, salt and sugar to relieve digestive problems.

In North America, tamarind is usually sold dried, pressed into one-pound bricks, or as a concentrate. It is retailed in specialized food shops and in Middle Eastern, Caribbean, Latin American and Oriental markets. In the Latin American stores it is often found under the appellation *tamarindo*, and in Indian shops under the name *imli*.

When purchased in the dry form, the bricks must be cut into small pieces and soaked overnight in twice the amount of cold water. The soaked tamarind with the juice is then to be repeatedly rubbed through a fine strainer until only seeds and fibrous material remain. These thick leftovers can be discarded or utilized to polish brass—the fleshy liquid is what is used in cooking.

Four parts of this pulpy juice are equal to one of the concentrate—much more easier to use. Refrigerated, both the squeezed meaty juice and concentrate keep for a long period of time without spoiling.

Tamarind combines well with coconut flesh and milk, ginger, limes and red peppers. In the Caribbean and many Latin American kitchens, combinations of these are much favored in numerous dishes.

For simplifying the following recipes, only tamarind concentrate is utilized.

Ponche de Tamarindo
(Tamarind Drink)

Serves 6

The following two beverages are natural laxatives and on hot days make tasty and refreshing drinks.

4 tablespoons tamarind concentrate

Pods on a tamarind tree

1/2 cup sugar
6 cups water
1/4 teaspoon nutmeg

Combine all ingredients in a saucepan then bring to boil. Turn heat to low and simmer for 5 minutes. Remove from heat and allow to cool. Refrigerate or serve with ice cubes.

Agua de Tamarindo (Tamarind Water)

Serves 10 to 12

This drink is to be found in many parts of Mexico.

4 tablespoons tamarind concentrate, dissolved in 1/2 cup hot water
1 1/2 cups orange or pineapple juice
1/2 teaspoon ground cinnamon
1/2 teaspoon nutmeg
1 cup sugar
8 cups water

Thoroughly combine all ingredients and refrigerate, then stir and serve with ice cubes.

Tamarind Butter-Sauce

6 tablespoons butter
1 1/2 tablespoons tamarind concentrate, dissolved in a little hot water
1/8 teaspoon salt
1/8 teaspoon cayenne

Place all ingredients in a small saucepan, then heat and stir. Serve with cooked vegetables and meats—goes especially well with grilled fish.

Tamarind Rice

Serves 4 to 6

4 tablespoons cooking oil
1 medium onion, finely chopped
2 cloves garlic, crushed
1 cup rice, rinsed
2 cups water
1/2 teaspoon salt
1/4 teaspoon pepper
2 tablespoons tamarind butter-sauce

Heat oil in a frying pan, then sauté onion and garlic over medium-low heat for 10 minutes. Add rice, then stir-fry for a further 2 minutes. Stir in remaining ingredients, except tamarind butter-sauce, and bring to boil. Cover and cook over medium/low heat for 15 minutes, stirring a few times to ensure that rice does not stick to the bottom of pan and re-covering. Turn off heat then allow to cook in own steam for a further 30 minutes. Stir in tamarind butter-sauce, then serve hot.

Tamarind-Lentil Soup

Serves from 10 to 12

3 tablespoons cooking oil
2 medium onions, chopped
4 cloves garlic, crushed
1 small hot pepper, finely chopped
1 tablespoon grated fresh ginger
1 cup stewed tomatoes
2 tablespoons tamarind concentrate, dissolved in 8 1/2 cups water
2 teaspoons salt
1 cup lentils
1 teaspoon cumin
1 teaspoon pepper
4 tablespoons finely chopped fresh mint

Heat oil in a saucepan then sauté over medium/low heat onions, garlic, hot pepper and fresh ginger for 10 minutes. Stir in remaining ingredients, except mint, and bring to boil. Cover and cook over medium heat for 1 hour or until the lentils are well cooked. Stir in mint and serve.

Ginger and Tamarind Chicken

Serves 6

4 tablespoons cooking oil
1 chicken, about 4 pounds, cut into medium pieces
1 large onion, finely chopped
4 cloves garlic, crushed
1 small hot pepper, finely chopped
1 tablespoon grated fresh ginger
4 tablespoons finely chopped fresh coriander
1 1/2 tablespoons tamarind concentrate, dissolved in 3 cups water
1 teaspoon salt
1/2 teaspoon pepper

Heat oil in a saucepan, then sauté chicken pieces over medium heat until light brown. Remove chicken and set aside, but retain oil.

Add onion, garlic, hot pepper, ginger and coriander, then sauté over low heat for 10 minutes. Stir in remaining ingredients and chicken pieces then bring to boil. Cover and cook over medium heat for 40 minutes or until chicken is tender, adding more water if necessary. Serve hot with tamarind rice.

Tamarind Beef

Serves about 6

A very tasty Caribbean dish cooked on a good number of the islands in the West Indies with all types of meat.

2 pounds beef, cut into 1 inch cubes
2 tablespoons soy sauce
1 medium onion, chopped
4 cloves garlic, crushed
1 tablespoon grated fresh ginger
1 tablespoon chopped fresh coriander
1 teaspoon oregano
1 teaspoon salt
1/2 teaspoon pepper
1/8 teaspoon cayenne
4 tablespoons cooking oil
2 tablespoons tamarind concentrate, dissolved in 3 cups water

Place meat, soy sauce, onion, garlic, ginger, coriander, oregano, salt, pepper and cayenne in a bowl then thoroughly mix and allow to marinate from 1 to 2 hours, stirring a few times.

Heat oil in a saucepan, then add marinated meat with its juice and stir-fry over high heat for about 3 minutes. Stir in tamarind and bring to boil. Cover, then cook over medium-low heat for 1 hour or until meat is tender, adding more water if necessary. Serve with tamarind rice.

Split Pea Patties with Tamarind Chutney

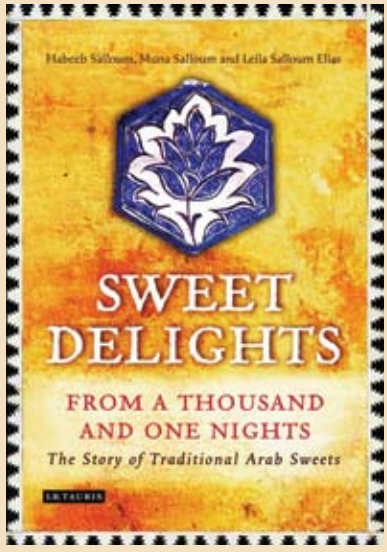
Makes about 30 patties

This popular Caribbean dish had its origin in India.

Chutney

2 tablespoons tamarind concentrate, dissolved in 1/2 cup warm water
1 tablespoon vinegar
1 tablespoon sugar
2 cloves garlic, crushed
1 1/2 teaspoons grated ginger
1/2 teaspoon ground cumin
1/2 teaspoon ground coriander
1/2 teaspoon pepper
1/8 teaspoon cayenne

To make the chutney, combine all ingredients in a saucepan then bring to boil. Cook over medium heat for 5 minutes then allow to cool while preparing the patties.



Habeeb has written numerous cookbooks. His newest, *Sweet Delights from a Thousand and One Nights*, is available for $29.00 from Amazon.com.

Patties

2 cups split pea flour
1 cup whole wheat flour
1 small onion, very finely chopped
4 tablespoons finely chopped green onions
1 teaspoon very finely chopped hot pepper
1 teaspoon baking powder
1 teaspoon salt
1 teaspoon cumin
1/2 teaspoon pepper
water
oil for deep frying

Combine all ingredients except water and oil then stir in enough water to make a thick batter.

Heat oil in a saucepan until very hot, then drop in batter by tablespoon and fry until golden brown. Drain on paper towels, then serve warm with chutney.

Tamarind Flavored Banana and Yogurt Dessert

Serves 8

4 cups plain yogurt
2 medium bananas, cut lengthwise, then sliced into 1/2 inch thick half rounds
4 tablespoons melted honey
1/2 teaspoon cinnamon
1 tablespoon tamarind, dissolved in 3 tablespoons hot water

Thoroughly combine all ingredients in a bowl, then chill and serve.

Dulce de Tamarindo *(Tamarind Sugar Balls)*

Makes about 50 balls

1 cup tamarind concentrate, thoroughly mixed with a little hot water (2 to 4 tablespoons)
4 1/2 cups brown sugar
1 teaspoon cinnamon
1/4 teaspoon ground cloves
Icing sugar

Place all ingredients, except icing sugar, in a mixing bowl and thoroughly knead. Roll into balls—about 1/2 inch in diameter. Roll in icing sugar then refrigerate overnight before serving. If kept for a long period, store in airtight containers. If sweeter balls are desired more brown sugar can be added.

Roasty, Toasty, Warming Tea

By Jerri Cook
Countryside Staff

I'm not a fan of hot chocolate. It's fine as a treat, but on a wind-battered day when I need something warm and filling, but not full of sugar and calories, I turn to tea, specifically roasted barley tea. Roasted barley is the perfect base for a warming tea. It provides energy and a subtle nutty taste that goes well with winter-sourced ingredients.

Roasting barley is simple. All you need is barley, any kind will do, even the pearled barley you buy at the grocery store, and a pan. I use a cast iron skillet because it roasts more evenly and gives my barley a nice dark color, which is how I prefer it. However, a lighter color works well for lighter teas, like wintergreen and other mints. For a golden and aromatic roast, put the barley in the oven at 350°F for about 15 minutes. If you want it nice and dark, turn down the temperature and leave it in longer, but keep a watchful eye out. It burns in a blink.

If you'd rather not stand in front of the oven watching your barley brown, use an air popper meant for popping popcorn. It works great for quick roasting barley and other grains for tea.

Let the barley cool for at least an hour before putting it in a sealed jar. When it's time to make a warming tea, grind a tablespoon of barley for every pint of tea using a pestle and mortar or coffee grinder. It doesn't need to be pulverized into powder, just a thorough bruising will do. If it is over-ground, your tea will be cloudy—drinkable, but cloudy.

I put the ground up barley in a tea ball, adding naturally sourced herbs, fruit, and often barks to make a full-bodied, highly aromatic tea. I've added wintergreen that I sourced in the dead of winter. I learned how to do this from my neighbor Ann Sherfield. She and her husband own Forest House Farm, and are experts at wild food sourcing. I've added rose hips that were left hanging on the unruly wild rose bushes near my driveway. (Another of Ann's successful tutelages.) And combing wild mushrooms with barley tea makes a brew that warms you up and puts some color in your cheeks.

I've made fruit teas by adding a handful of fresh cranberries that were hiding in the back of the refrigerator and some orange zest to the steeping barley tea and then straining.

If I need a sweetener, I can add honey, maple syrup, or straight up white sugar. For me, a little sweetener goes a long way. Too much ruins it for me. That's why I don't particularly care for hot chocolate—it's just too sweet.

In 2004 Japanese researchers found that barley contains a compound that destroys peroxynitrite, a particularly nasty oxidant that causes cardiovascular, inflammatory and neurodegenerative diseases if left unchecked in the human body. Scientists have also learned that barley helps normalize the viscosity of blood, helping to keep the body properly hydrated. All that's impressive, to be sure, but I'd like to add my own non-scientific observation. It takes the edge off my mindless winter hunger. When I have the urge to feast, a nice cup of roasted barley tea takes the edge off.

The next time you feel restlessness or cabin fever setting in, roast a pan of barley and join me in a nice cup of tea. If you brew up something tasty, let me know. I've got all winter to experiment.

Bioscience, Biotechnology, and Biochemistry 2004

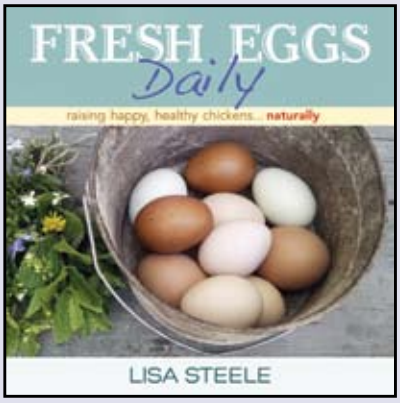
Countryside Bookstore

NEW BOOK!

Fresh Eggs Daily

Raising Happy, Healthy Chickens...Naturally

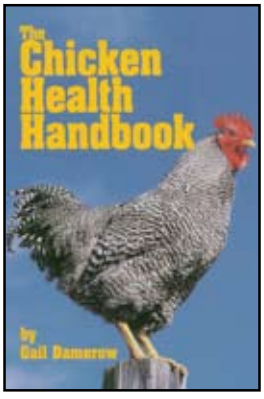
Lisa Steele



More than ever, Americans care about the quality and safety of the food they eat. They're bringing back an American tradition: raising their own backyard chickens for eggs and companionship. And they care about the quality of life of their chickens. *Fresh Eggs Daily* is an authoritative, accessible guide to coops, nesting boxes, runs, breeding, feed, and natural health care with time-tested remedies. The author promotes the benefits of keeping chickens happy and well-occupied, and in optimal health, free of chemicals and antibiotics. She emphasizes the therapeutic value of herbs and natural supplements to maintaining a healthy environment for your chickens. Includes many recipes and 8 easy DIY projects for the coop and run. Full color photos throughout. **Hardcover, 160 pages, $17.95**

The Chicken Health Handbook

Gail Damerow



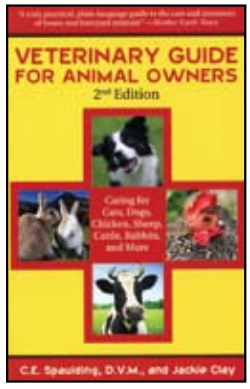
A must-have reference for the small flock owner, Gail discusses the problems and diseases common to chickens of all breeds and all ages. It also explains how to hatch healthy chicks, provide proper nutrition, fight parasites, spot diseases and infections in their early stages, protect the flock from predators and build safe houses and yards. Practical charts help pinpoint common symptoms and causes of disease. An extensive listing provides quick access to treatments and remedies for everything from poor egg production to crooked toe syndrome. Generously illustrated. **344 pages, $19.95**

Veterinary Guide For Animal Owners

2nd Edition

Caring For Cats, Dogs, Chickens, Sheep, Cattle, Rabbits and More

C.E. Spaulding and Jackie Clay

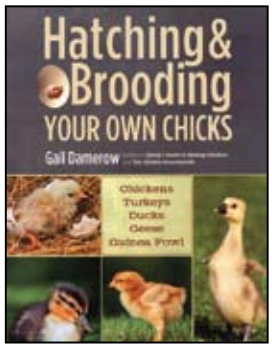


This easy-to-use reference guide provides everything you need to know about caring for and treating pets and barnyard animals. With complete chapters on cats, cows, dogs, goats, horses, pigs, poultry, rabbits, and sheep, it includes hundreds of strategies for preventing and curing common problems. How to sex a rabbit; The best way to dehorn a buck; Preventing cannibalism in chickens; Treating saddle sores; Controlling shock; Nail care for dogs and cats; Giving medications…and much more! *Veterinary Guide for Animal Owners* provides a wealth of practical, no-nonsense information that no animal owner should be without. **432 pages, $14.95**

Hatching & Brooding Your Own Chicks

Chickens, Turkeys, Ducks, Geese, Guinea fowl

Gail Damerow



If you want to incubate, hatch, and brood chicks yourself, rather than buying them from a hatchery, this is the guide you need. Poultry authority Gail Damerow explains exactly how to hatch healthy baby chickens, ducklings, goslings, turkey poults, and guinea keets, addressing everything from selecting a breed and choosing the best incubator to ensuring proper set-up and sanitary conditions, understanding embryo development, and feeding and caring for newborn chicks in a brooder. **240 pages, $24.95**

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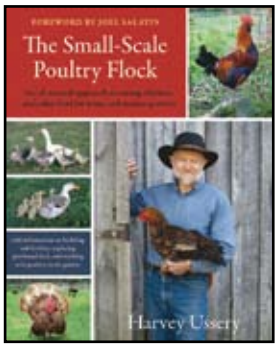
Poultry

The Small-Scale Poultry Flock

An All-Natural Approach to Raising Chickens and Other Fowl For Home and Market Growers

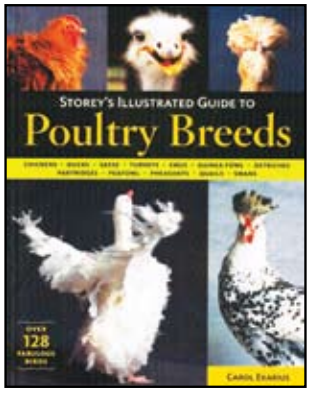
Harvey Ussery



A comprehensive guide to whole-systems, mixed-flock poultry husbandry. Lively, thoughtful, and engaging, it is filled with essential information on basic care, housing, pasturing the flock and putting it to work, holistic health, poultry in the kitchen, and creative strategies for more home-produced feeds, including cultivated earthworms and soldier grubs. Contains detailed butchering instructions with dozens of photographs and the best guide to working with broody hens available anywhere. **394 pages, $39.95**

Storey's Illustrated Guide to Poultry Breeds

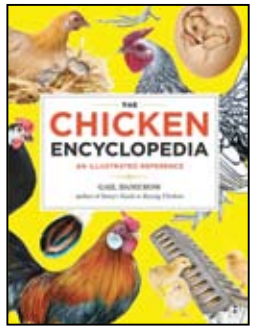
Carol Ekarius



This definitive guide to North American barnyard and wild fowl includes a brief history of each breed, detailed descriptions of identifying characteristics, and colorful photography of more than 128 birds that celebrate the birds' quirky personalities and charming good looks. If it's fowl facts and photos you want, you'll find them all here. **277 pages, $24.95**

The Chicken Encyclopedia

Gail Damerow



New and indispensable for all chicken enthusiasts! Beginners and old pros alike will welcome Gail Damerow's latest contribution to the poultry world, *The Chicken Encyclopedia*, a listing of more than 1,000 entries, 100% related to chickens! Anything you want to know about chickens is either included here or it's probably not worth knowing. Not only a reference work, it's interesting enough to read on its own, to get an education in chickenology. Or enjoy flipping through it to pick up fascinating facts on every page. The full-color photos and illustrations are also superb, both educational and a pleasure to look at. **319 pages, $19.95**

Reinventing The Chicken Coop

14 Original Designs with Step-by-Step Building Instructions

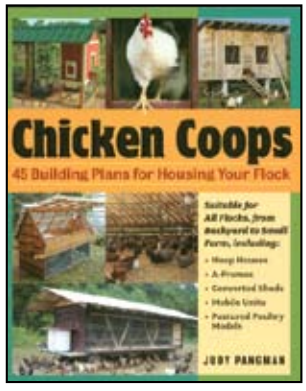
Matthew Wolpe & Kevin McElroy

Backyard chickens meet contemporary design! Matthew Wolpe and Kevin McElroy give you 14 complete building plans for chicken coops that range from the purely functional to the outrageously fabulous. One has a water-capturing roof; one is a great example of mid-century modern architecture; and another has a built-in composting system. Some designs are suitable for beginning builders, and some are challenging enough for experts. Complete step-by-step building plans are accompanied by full-color photographs and detailed construction illustrations. **192 pages, $19.95**

Chicken Coops

45 Building Plans for Housing Your Flock

Judy Pangman



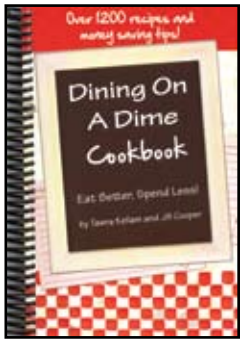
Whether you keep one hen or 1,000 hens, you will find a housing plan in this comprehensive book. Coops range from fashionable backyard structures to large-scale, movable shelters. You will also find plans for converting trailer frames, greenhouses and sheds using recycled materials and simple ways to make waterers, feeders, and nestboxes. **166 pages, $19.95**

The Homestead Kitchen

Dining on a Dime Cook Book

Eat Better, Spend Less!

Tawra Kellam and Jill Cooper

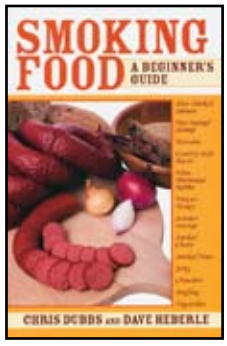


Penny pinching guru Tawra Jean Kellam has told her story to millions of listeners and readers on the radio, in women's magazines (including Woman's Day and Woman's World) and on the web. Now she's put her best tips and tricks for saving money and eating better into this wonderful new book. Includes 1,000 money saving recipes and tips. Learn the basics of frugal cooking with items you already have in your pantry! Eat better while spending less! Make inexpensive mixes, gift baskets, and jars. Includes menu ideas, inexpensive cleaning tips, menu ideas for picky eaters, and more! **480 pages, $21.95**

Smoking Food, A Beginner's Guide

Everything You Need To Know About Home Smoking

Chris Dubbs & Dave Heberle

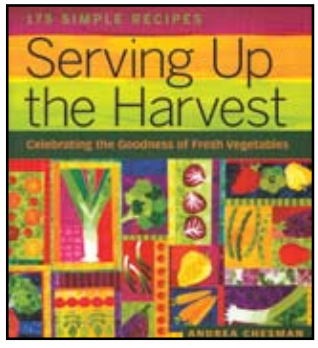


In *Smoking Food* you will learn that smoking is an art, not a science. Learn how to choose the best fuels (you can use corncobs!), how to build smokers from old refrigerators and cardboard boxes, and, of course, how to smoke everything from turkeys to turtles. Their advice is ingenious and cost-conscious. They include low-sodium preparations, alternatives to preservatives like sodium nitrite, and thoughts on safely handling meat. With more than one hundred recipes and tips for making brines, marinades, cheeses, appetizers, soups, and main dishes. **185 pages, $12.95**

Serving Up The Harvest

Celebrating the Goodness of Fresh Vegetables

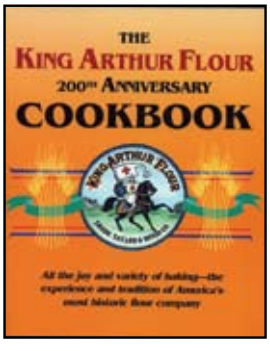
Andrea Chesman



Andrea Chesman is a cook and gardener who knows what it's like to be staring down pounds of vegetables and panicking about how to use them all before it's too late. Simple. Delicious. Planned to fit the season. That's the approach Chesman brings to the 175 simple recipes packed into this creative volume. The vegetables are organized seasonally by crop-readiness, so you can move through the book, trying new recipes, as the growing season progresses. There are many vegetarian options, but even when combined with meat, vegetables get top billing. **501 pages, $18.95**

The King Arthur Flour 200th Anniversary Cookbook

Brinna B. Sands



This complete guide to the baking arts contains over 1500 recipes. In it, you'll learn how to make a wide variety of yeast breads, sweet breads, pastries, and desserts and even pastas and sourdough breads. The book includes many "primer" sections of technical information on ingredients, utensils, and nutrition. The author's aim is to give you an intuitive understanding of the baking process, such as your mother or grandmother may have had. A fun section devoted to other things you can do with flour and great for kids includes recipes for modeling dough, dog biscuits, and a winter pudding for birds. **616 pages, $25.00**

Woodstove Cookery

At Home on the Range

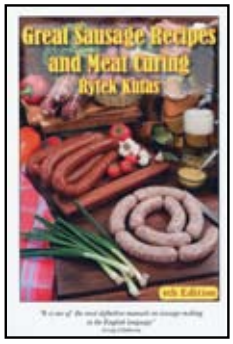
Jane Cooper

A wood cookstove, for me? Sure, if you like delicious food, want to save money, and believe that a stove should do more than cook food. But isn't it difficult to use? There are some techniques to learn, and they're described in this book. Take author Jane Cooper's warm hand and be guided into the world of woodstove cookery. You'll learn how to buy a stove, new or used, how to set it up, how to fuel it for various uses, how to keep it clean and in peak operating condition. And how to cook on it? Yes, a lot about that. And dozens of recipes, with emphasis on the cooking best adapted to the kitchen range — baking bread that tastes as good as it smells, cooking stews that gain goodness in hours on the back of the stove, roasting meats and much more! **196 pages, $12.95**

COUNTRYSIDE BOOKSTORE

Great Sausage Recipes and Meat Curing

Rytek Kutas



Great Sausage Recipes and Meat Curing is the most comprehensive book available on sausage making and meat curing and has sold more than 500,000 copies worldwide. It is easily understood, contains a wide variety of recipes, and is very effective in helping solve common problems. You will learn how to: cure and smoke meat using natural and synthetic casings; how to select and store meat and choose the perfect other ingredients; how to make fresh Italian sausage, dried beef, andouille sausage, kippered salmon and more! **Hard cover, 552 pages, $29.95**

The Gourmet Butcher DVD

From Farm to Table

Cole Ward

For more than 30 years, master butcher Cole Ward has been teaching chefs, butchers, farmers, caterers and meat-lovers how to cut and prepare their own meat. Now you can, too: In four episodes, master butcher Cole Ward and chef Courtney Contos will show you how to turn a side of Beef, Pork and Lamb into heaven on a plate. *The Gourmet Butcher* delivers Cole Wards entire course plus many extras in a four-hour DVD series that will take you through every step of the butchering process: breaking down a carcass into primal cuts, turning those primal cuts into gourmet or retail cuts, then transforming them into table-ready gourmet dishes. **DVD, $ 29.95**

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Homestead business:

Keep Calm and Call a Lawyer, or Not

By Jerri Cook
Countryside Staff

This was supposed to be an article about freelance opportunities for those homesteaders who have professional skills that could prove profitable during the long winter months. A little side work can do wonders to take the edge off cabin fever. I was going to point out the opportunities on sites like ODesk.com, Guru.com, and Aquent.com, three sites I have personal experience with. But, thanks to a posting on Guru.com, all that has changed.

As you read this, I have finished my law school studies and am preparing for finals and the bar exam. Law school is expensive, so I decided to pick up a few extra dollars on the professional freelance market, as I've done for over 30-years whenever things get tight. However, these days, I don't have to send out piles of query letters or apply with a temporary staffing agency. For the better part of the last decade, I've been using reputable online platforms to find side jobs. That's what I was doing on Guru.com when a bizarre job posting jumped out at me. The posted job was uppercase and read:

I NEED AN ATTORNEY. THIS IS A FIVE MILLION DOLLAR CASE FOR SOMEONE WHO IS BRAVE ENOUGH TO STICK IT OUT. CONTACT ME IMMEDIATELY.

I felt bad for the guy. There is no way any reputable attorney would contact him, for two glaring reasons. First off, the poster seems to think he can lure a lawyer with a big money claim. His bias is showing. He clearly believes that all lawyers are slobbering profit hounds who will devour each other for a chance to pounce on a pile of money. His plea might get an answer, but not from anyone who respects the values of American jurisprudence.

To make matters worse, the misguided poster sends the clear message that he knows all about the law. He knows how much the case is worth, not the court or a jury. See the problem? No lawyer wants a client who is sure their lay knowledge is superior to the lawyer's hard-learned knowledge. And can you blame them? Who would put up with some urban dweller coming to their homestead and telling them how to raise their small stock? No one. That's who.

I made the mistake of contacting the poster and suggesting he contact his local bar association or his State bar association for a list of attorneys in his area. What I got back was a mindless rant about government control of the courts and some conspiracy-theory gibberish I couldn't quite make out. This guy was angry and frustrated about his legal situation. And that's the problem.

When you need a lawyer, you've got to dial back the emotional response, and as fast as possible. A lawyer isn't a counselor. I know this for a fact. My law school didn't offer one psychology class in four years. Lawyers aren't prepared to deal with anything other than the facts and the law. If you need an attorney, that's the second thing you need to know. The first thing you need to know is if you even need an attorney.

First things first

According to a *2010-2010 United States Consumer Law Attorney Fee Survey Report,* the average hourly fee for an attorney with three or less years of experience is $162 an hour. So, before you volunteer to pay someone a boat load of money, make sure you need their services.

If you've been hauled into family court, small claims court or traffic court, you may be comfortable representing yourself. Courts across the nation are reporting a sharp rise in self-represented litigants (SRL):

Approximately 200,000 divorce petitions are filed annually in California. Seventy percent of those cases involve at least one self-represented litigant at the beginning of the case. That figure increases to 80 percent by the time of judgment.

This is not simply a California issue. Utah, for example, reports that 49 percent of petitioners and 81 percent of respondents in divorce cases are self-represented. In New Hampshire's superior court domestic relations matters, almost seventy percent of cases have one self-represented party. Indeed, national data indicates that 60 to 90 percent of family law cases nationally involve at least one self-represented litigant, while 5 percent or fewer of cases in general civil dockets include a self-represented litigant. – California Law Review.

To be fair, courts are also complaining the pro se litigants slow down the already clogged court system. Even so, every county in the United States has a small claims court where damages are capped at $10,000 or below, and most have special courts that handle non-criminal traffic offenses. The American Bar Association reports that the vast majority of SRLs appear before these sorts of courts, and with a little research and preparation, these litigants do a fair job of representing their own interests, as long as they can keep their emotions in check. It's the research and preparation part that separate the successful SLR from the emotional wrecks and the crazed-

conspiracy litigants.

One important caveat is appropriate here. If you are charged with a crime, find an attorney. Even if you're the smartest person you know, you're still not qualified to represent yourself in a criminal proceeding. The minute the stainless steel bracelets come off, contact your State bar association or the public defender's office.

Ready, set, go

If you're the one hauled into court, you're the defendant. If you're the one doing the hauling, you're the plaintiff. If you decide to represent yourself, you are either the plaintiff *pro se* or the defendant *pro se*—without representation. If you're going it alone, a little research will go a long way to ensure you don't shoot yourself in the foot in the courtroom.

Before deciding to hire an attorney or to go it alone, I recommend reading *Represent Yourself in Court: How to Prepare & Try a Winning Case*, available from NOLO.com. Written by two attorneys, one who happens to be a professor at my law school, this book is a recommended supplement for 4th year law students at law schools across the country. It explains the legal system in plain English, with a strong focus on the legal process. It's not enough to have a grasp on which area of law you're dealing with—contracts, torts, family law, administrative law, etc. As an SRL you are charged with knowing and complying with local court rules and deadlines. This book helps you locate your local rules and understand their importance to the legal proceedings.

If after due consideration and diligence, you decide you need a lawyer, the next step is critical. If you blow it here, it could cost you. Don't look on the Internet for an attorney. Don't look in the local phone book. Don't call someone who Uncle Joe and six-pack twins told you was good at lawyerin'. Contact your State bar association. Find the number online, or dial up your local clerk of court and ask for the number or address. Your State bar association will be able to provide you with a list of licensed attorneys practicing in your area who may be able to handle your issue.

Once you have a list of attorneys, it's time to contact them.

Why won't an attorney take my case?

Once you've compiled a list of attorneys who may be able to help you, it's time to prepare to communicate with them. Whether you plan to contact attorneys via the Postal Service, e-mail, or phone, you still need to write out your thoughts in a way that helps you communicate with an attorney.

While you may have a thorough grip on the details of your case, communicating your needs to an attorney can be difficult. This is one of those times where it's really not your fault. It's theirs. Attorneys have been taught to think differently than everyone else. When they started law school, they solved problems in the same manner as any other human. Now, they solve problems like attorneys. In four years of law school, they learned a different thought process and a different language to describe it. In short, when writing an attorney, you must write and think in FIRAC.

The acronym FIRAC stands for Facts, Issue, Rule, Analysis, and Conclusion. It's how lawyers think every second of every day, and if you're looking for legal representation, you can make things much easier on yourself by using FIRAC. Fortunately, this isn't as hard as it sounds.

Let's look at a common problem that may necessitate the need for legal representation. When preparing a letter to attorneys you may potentially hire, just follow the FIRAC:

Dear Mr. Finch,

I'm writing to you today seeking possible representation in a matter involving my neighbor, Goldie Lauchs. For quite some time, Ms. Lauchs has been repeatedly trespassing on my property, helping herself to our food and even sleeping in our beds. My young son has been traumatized by this and has developed problems sleeping. [Facts]

I am wondering if there is some legal recourse available to my family to stop these repeated trespasses. [Issue] It is my understanding under Bearville Statute 101, Ms. Lauchs could have to pay for new locks on all our doors. [Rule and Analysis]

If you are interested in possible representation, please contact me at the number/address below. [Conclusion]

Regards,

P. Bear

You'll notice how short the letter is. The shorter the better. Don't go into too much detail about your case. Just a short, one-page letter will do. Send all the attorneys on the list the same letter—just make sure to change their name in the greeting. If you're more comfortable calling, use the letter as a template to tell the person who answers what you need.

Some people might wonder how they should know what the rule is, and why they should know it. After all, isn't that the attorney's job? It

never ceases to amaze me that people who have a serious medical problem will go to great depths to understand the issue and the potential cures. But when faced with a serious legal issue, the tendency is to dump the whole thing in a stranger's lap and run. If you have a legal problem, take a few hours and do some research. The local library has free resources available, and most courthouses have at least a small legal library that is available to the public. At the very least, look up your State's statutes concerning your issue. Any librarian can help you find the information. This lets an attorney who receives your letter know that you are intelligent enough to help with your case, but not so bossy as to think you know more than they do.

If you've been served with a Summons and/or Complaint, the clock is ticking. As the defendant, you must respond within a specified period or risk a default judgment against you. The Summons will tell you how long you have to respond. Don't ignore it. Begin the process of finding legal representation immediately. You may want to speed up the process of finding an attorney by calling or emailing them rather than relying on the Post Office.

Unless you're the defendant (the one being sued), never send any documentation to an attorney unless they ask for it. If you're the defendant, include the case number and if possible, a copy of the Summons and Complaint. Your letter or talking points might look something like this:

Dear Mr. Mason,

I am writing to you today seeking legal representation. Enclosed please find a copy of the Summons and Complaint served on me by my neighbor P. Bear, who accuses me of trespassing. [Facts]

I have had to sleep in Mr. Bear's home on more than one occasion, but this is because he refuses to let his older children sleep in his home, and I am forced to shelter them, leaving me with nowhere to sleep. Can I bring a counterclaim? [Issue]

After reading Bearville Statute 102, I believe that I have a defense to the alleged trespassing because of necessity. [Rule and Analysis]

Any guidance you could give me on this matter would be appreciated. Please feel free to contact me at the number or address below.

Regards,
Goldie Lauchs

Nobody rides for free

When people ask me why an attorney won't take their case, what they usually mean to ask is why an attorney won't take their case for free. The answer is simple. For the same reason doctors don't generally see patients for free. It costs a lot of money to become a doctor, lawyer, engineer, architect, etc. As it stands right now, I owe the government almost $140,000. They want it back, with interest.

While you have a right to an attorney under the 5th and 6th Amendments if you're charged with a crime, no such right exists if you're sued. Neither plaintiffs nor defendants are entitled to an attorney in a civil action. Many people, including myself, have serious concerns about this practice. It's true that in a criminal trial a defendant could lose their freedom or even their life, but rights are also won and lost in civil actions, especially where one party cannot afford an attorney. That hardly seems like justice. I've often wondered if there shouldn't be some sort of tax credit for litigants who have had to seek redress in the courts, but that's a thought for another day.

If you find yourself in a sticky legal situation that promises to be so expensive that it might devastate you financially, and you don't have the funds to bring or defend a civil action, there are some resources. They're scarce, but there.

All states have pro bono hours for licensed attorneys. These are the suggested, and sometimes mandatory, hours that attorneys are expected to work for free in order to serve the public good. In every state, there are non-profit and public interest groups offering free legal services. LawHelp.org has a state-by-state list of organizations offering free or reduced legal assistance. It's not a complete list of resources, but it should be a helpful starting point for those facing legal issues that they don't understand and can't afford.

In some states, consumers can purchase legal expense insurance plans that protect them if they're ever a defendant in a criminal or civil case, but these plans do little to help if you need to bring a legal action. If you're the plaintiff, you're on your own. While there has been some praise of legal insurance plans, like any other consumer insurance, you need to be aware of what you're purchasing. Most legal expense plans won't cover you if you try to sign up after you've become a defendant.

Epilogue

Am I going to practice law? It's the question being asked of me often these days. Here's the answer. Yes. No. Maybe. Can you repeat the question? It's true I plan to sit for and pass the California Bar Exam. But I'm not sure I want to practice law.

I'm at my best when I'm helping others help themselves. Instead of practicing law, I'm hoping to start a legal aid clinic where I can help people learn how important the law is to their everyday lives. I like the idea of legal coaching or unbundled legal services, concepts that are gaining in popularity. Instead of full-on representation, the legal coach or unbundler helps guide the *pro se* litigant through the legal process. This appeals to me more than charging my neighbors upwards of $150 per hour for legal services. In my neck of the woods, that's a week worth of wages for some folks.

If I do end up practicing, I think I'll use the barter system whenever possible. I've heard wails of protests from some of my lawyer friends, but bartering is a system I'm comfortable with. Cash may be king, but I'm not bowing. As long as Uncle Sam gets his cut in cash, I don't see a problem. In the meantime, I'm preparing for a three-day bar exam. If you're of a mind to, I could use some whispered prayers in the next few months. I'm scared to death.

*Judges Say Litigants Are Increasingly Going Pro Se – at Their Own Peril: www.abajournal.com/news/article/judges_say_litigants_increasingly_going_pro_se--at_their_own_*

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Country neighbors:

The Off=Grid Christmas Tree

By Lisa Jansen
3piggal@gmail.com

My family had a Christmas tradition while I was growing up. The night before Christmas Eve my Dad would load the whole family up in our car and drive around town. We would tour the residential areas to look at Christmas lights. Electricity was cheaper then. Almost everyone in our small farm town put up lights. Lights were strung on rooflines, in bushes and trees. Many people placed their Christmas tree in a picture window and plugged it in. Some folks had pine trees in their yard and wrapped them in lights. The whole town sparkled. The display lit the heart and imagination as we drove our little town.

I no longer live in town. My hometown grew rapidly and I headed for the hills. I live in a very remote part of the Tahoe National Forrest. I am off the utility grid and my little farm is solar powered. The first Christmas I lived here I put up a PVC pipe arch at the end of my driveway and wrapped it with a string of LED lights and plugged them into my solar system. Next to the gate I placed some homemade plywood cut-outs of the three wise men. I'd run the lights while people were driving home from work. During that season I went to the local store, Mother Truckers, and the owner said, "If you keep running those Christmas lights we'll have to kick you out of the hippy club." I guess most off-grid residents don't run lights that much. As I looked around, I found I was the only one in my neighborhood running lights.

Most people in my neighborhood don't live near the road. Houses are usually set back and many can't even be seen from the road. Our roads are mainly gravel. They generate dust during the summer and mud during the winter. It would be hard to see Christmas lights mounted on the houses here. It is unusual for homes here to have power near the road. It is also unusual for people to have extra power. Solar systems are expensive to buy and install. The common off-gridder calculates how much power his family will

conservatively use and designs his system according to that calculation.

Christmas just isn't Christmas without lights to me! Over the years living off-grid I've used a number of types of illumination. As I mentioned, I used plug-in LED lights. Then, to avoid using extension cords, I purchased battery powered LED lights. But the best was yet to come. After a major decrease in my income due to the economy, I had to get resourceful. Even solar systems cost money to generate electricity, because they include a back-up generator for cloudy days. The generator requires fuel. How could I light up Christmas for myself and others without spending much money? I wanted to light up hearts and imaginations again. With the help of a very artistic friend, an idea was born.

For a couple of years someone, I never found out who, decorated a pine tree near the river. They hung regular indoor Christmas ornaments on the tree. As I drove by my headlights reflected off the ornaments for just a split second. After passing it the first time, I slowed down to have a chance to enjoy it longer. There was something magical about a shimmering Christmas tree in the middle of nowhere. It was not privately owned property, it was state park land. The reflection was slight and lasted only a whisper of a second, you could miss it if you were going too fast.

I told my friend about the tree years after it had stopped being decorated. He immediately suggested reflectors. We both set out finding different kinds and sources of reflectors. The first reflectors came from a garage sale. They are large plastic reflectors, the kind you'd find posted next to a driveway or on a bicycle. These are large and don't look holiday-ish during the day, but light up great at night.

The second source came from somewhere unexpected. One of the major roads here, a paved one, was being resurfaced. My creative friend noticed the road crew had put in temporary reflectors until the stationary ones arrived. When the road crew made the switch my friend stopped and asked what they did with the temporary ones. They said those reflectors were thrown away. My friend asked if he could have them and they said take all you want! The temporary road reflectors are a very heavy reflective plastic. They were very hard to cut into shapes. With the heaviest scissors I had, we cut stars and icicles, then we poked a hole in them and put in a hook. They caught the headlights with fantastic reflection.

After that we started looking for something we could attach to Christmas ornaments, so we searched for reflective tapes. Auto parts stores carry reflective tape; K-Mart carries reflective tape in the automotive department. And in Sacramento, we found a safety supply store. They had reflective tape, but it was much heavier. No matter where we purchased it, it worked. Just cut the tape into small strips and attach it to the ornament. That small strip lights up the entire ornament.

The first year we decorated one tree. We picked a tree that comes into the headlights of on-coming cars on a turn in the road. That way the tree gets the full advantage of the car headlights. You also have to slow down for the turn and it gives you the effect of the lights a little longer than a straightaway. We didn't tell anyone that we did it, we just listened for comments at the local store or cafe. The feedback was a very pleasant holiday surprise experienced by all who saw it. The next year we decorated two trees on that turn. People started adding their own ornaments to the trees. A foil star appeared at the top of one tree and strings of popcorn on both. Then tinsel was added. This participation of others tells me I have met my goal. The hearts and imaginations of others are being touched. The sparkling magic of Christmas with no solar system, no grid, not even batteries! I think even ol' penny pinching Scrooge would be impressed!

Country neighbors:

20 Years On a West Virginia Homestead

Time for Life's Chapter 3

By Marcy & Jim Lilly
hlrinc@yahoo.com

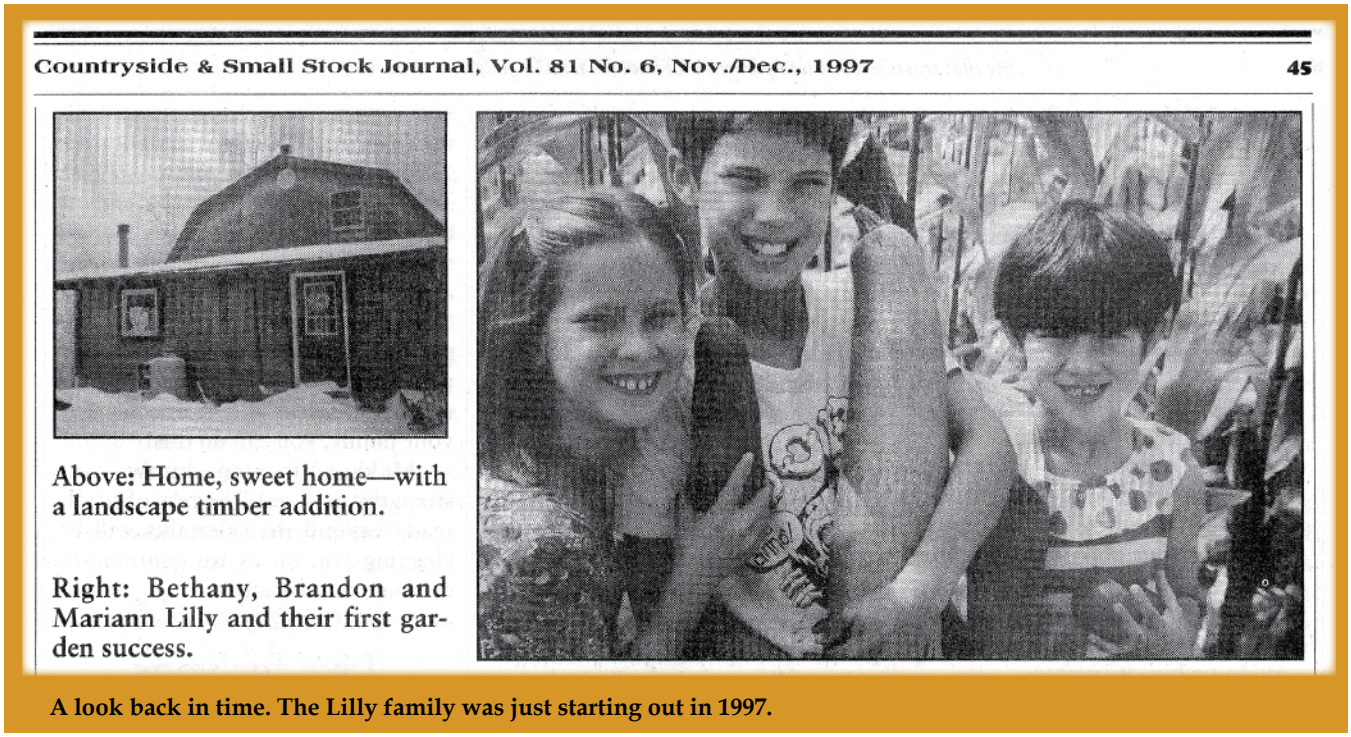
I think of a lifetime as divided into three chapters. The first chapter, you are growing up in your parent's house. The second stage of your lifetime is getting married, settling down, finding the job that you love and concentrate on, and raising your children…whatever your passion is. And the third chapter is your final hurrah.

For the second chapter of our lives, the last 20 years, we have been homesteading and having a blast doing it with our three children. They were three, five and seven when we moved here, and what a homeschooling education they have had! We found a piece of land that was undesirable to most—no water, no electricity, no pasture area and very little flat land here on a West Virginia mountain top ridge. It was exactly what we were looking for. We have had one neighbor in 20 years, and they lasted two years before deciding that roughing it out here was way too hard! Too hard? Nonsense! (This said with tongue in cheek, of course!)

We had an article in the Nov/Dec 1995 and 1997 issues of Countryside telling our story. Even then I was pretty surprised that we could actually do it…we could actually homestead! It was hard work, but every year we would sit down and write out what we had accomplished, and were astonished at all we could accomplish, and on very little money! Where there's a will, there is a way.

The first year we built our two-story house out of blocks, with no electricity. It was extremely cold that winter—we had no insulation in the blocks and a small wood stove heating us. Many days we just huddled around the wood stove, talking or reading stories. My husband's job went on hold for about six months, and we survived on less than $200 a month (and that was in a good month when relatives helped us out!). We read *The Long Winter,* by Laura Ingalls and compared our life to hers.

Since that very difficult first year we built our homestead as frugally as possible. This wasn't a hobby farm with money to spend on window boxes for the chicken coop. This was finding the most frugal way to get what we needed. The kitchen has a large four-foot porcelain sink that I found by the side of a street ready for the trash man. The bathtub is a



Countryside & Small Stock Journal, Vol. 81 No. 6, Nov./Dec., 1997 45

Above: Home, sweet home—with a landscape timber addition.

Right: Bethany, Brandon and Mariann Lilly and their first garden success.

A look back in time. The Lilly family was just starting out in 1997.

claw foot tub that a family member was ready to junk with a bathroom remodel. The sink in both bathrooms were bought on sale when a hardware store went out of business, and stored for years before using them. Our "new" light in the kitchen is an authentic Amish buggy wheel (Jim's Amish friend gave us three) and Jim then made it into a light with canning jar globes.

We have built as we had money—pallet boards for walls, ceilings and cupboard doors (some are walnut, some cherry). We still have a huge amount of pallet boards stashed for future use. We have built rabbit hutches, covered the walls in the barn, made Christmas presents (scroll saw clocks, knickknack shelves, magazine rack)—the sky is the limit with these boards.

We collected water ion blue plastic barrels outside (we used to tell people that our "running water" was our son Brandon—running for water). Now we have three cisterns. We added a second addition to the house with landscape timbers. This was my favorite. My middle daughter, Bethany (seven) used a brace and bit and drilled a hole through each landscape timber to a rod to run up from the floor to ceiling as a stabilizer.

The Lilly kids helped with all aspects of building the homestead.

Then, with an inheritance, we built a 30 x 60 two-story barn. Still with no electricity, although by this time we did have a generator. When my husband went to work, the children (ages 12, 10 and 8) and I framed the walls on the ground. When Jim came home, we raised them using ropes and determination. The inside poles are 15-feet tall. Brandon (12) was in charge of holding it straight,

while Jim and I nailed boards to stabilize it. We warned him *not* to look up the pole…the moving clouds in the sky would give the impression that the pole was moving. He, of course, looked up and panicked that it was moving, but kept his head and held tight…when it was in place we moved to the next pole. By the time we were finished, white faced, he had to sit down and compose himself… but what a trooper! We have since added heat to part of the barn.

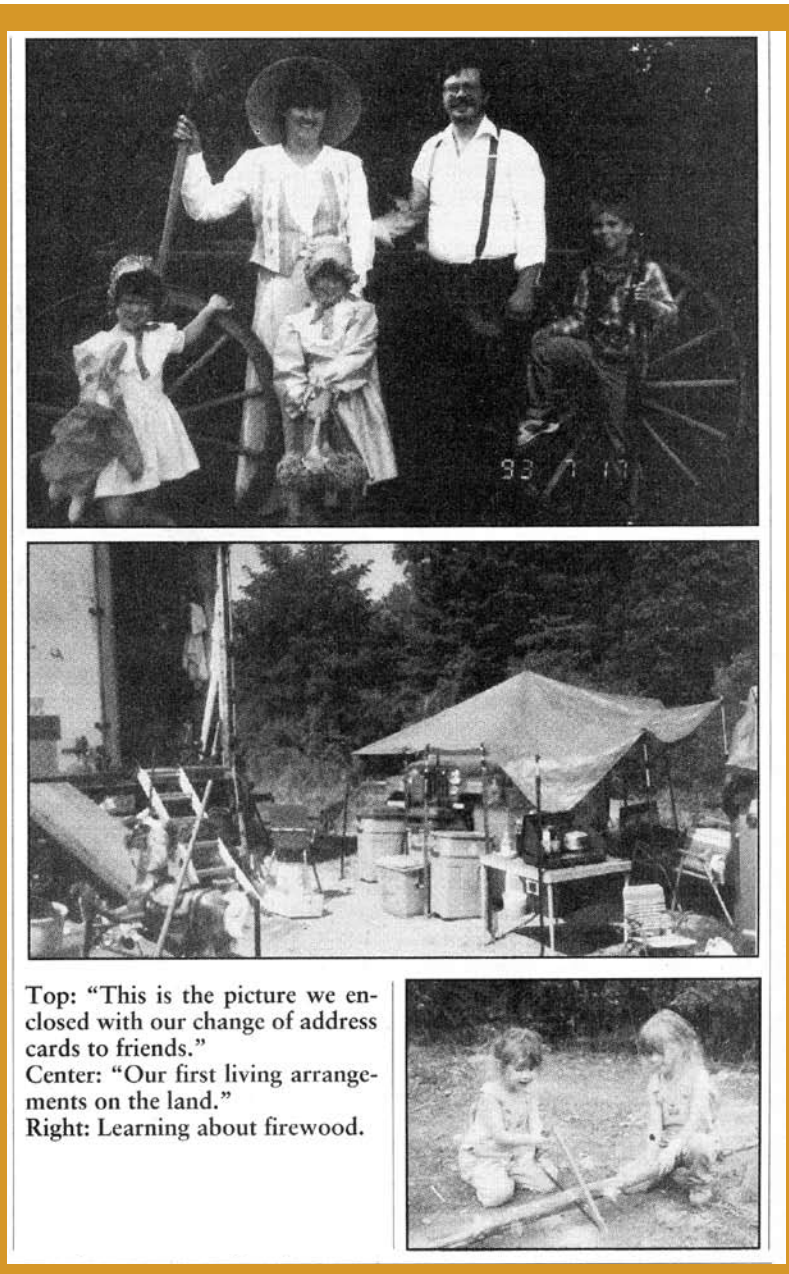
Without air conditioning, it could get very hot. We found that, because we worked outside in the heat, we weren't as affected by it as people who were in the air conditioned home or office all day. When the kids and I were digging post holes one year, my youngest daughter, Mariann, had the job of holding an umbrella over the person wielding the post hole digger so they didn't have the sun directly on them. Everyone had a job.

Our last building project was in 2008 when we added an Amish "daughty haus" (Grandparent's house) for my mother and attached it to our little block and landscape timber home. Jim and I did this by ourselves, except for the basement, which we contracted out. Other than that, we started with the floor joists and ended with me hoisting the metal roofing up to him, and he nailed it in place.

Now the house has grown from a 26 x 28 block home to a long 76 x 28! We heat the house with an outside water stove, which led us to adding radiant heat in the floors of the daughty haus. We added an instant hot water heater that works only until the hot water from the outside stove reaches the house, which saves water. We bought tile that was discontinued for the kitchen counters. (We moved the kitchen to the daughty haus, so we could eat as a family with my mother.) When we added this last addition, we had electricity officially run to the house, which meant no more going outside to plug the two extension cords together when we wanted electricity. After 15 years, this was a luxury!

Over the years we have raised a variety of animals and exotics, from the common to the not-so common: cockatiels, quail, peafowl, rhea, emu and ostrich, camel, wallaby, Watusi cow, silver fox, prairie dogs, wolf dog, llama, porcupine, just to name a few. We have had reptiles and a variety of rodents, of which I personally had to overcome my fear of. At one point we had over 30 different species of exotics! We opened a little petting zoo and had visitors and school children come for field trips. Our children gave them tours, explaining in great detail information on each of the animals. To advertise the opening, my youngest walked a llama in the Christmas parade, while the other two handed out fliers.

I used to tell the kids that we weren't rich in money, but we were rich in other ways. At night you can see a million stars, and we have spent evenings bundled up in blankets watching the sky for meteors. The night provides a melody from the insects, tree frogs and toads. We could heat our home from what the land had to offer. We could raise animals and our food. Because we



Top: "This is the picture we enclosed with our change of address cards to friends."
Center: "Our first living arrangements on the land."
Right: Learning about firewood.

Another page from their 1997 journey.

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The finished barn.

home schooled, we could drive by the school on our way to do something fun and feel sorry for the kids sitting in the classroom on such a beautiful day.

The kids played outside most of the time, as we had no tv or electronics to occupy them. They climbed trees, caught black snakes and saved toads that were in the driveway at night. They made up stories, and sang all the time. Their imagination was always a source of pride for me.

Not that they are grown and out of the home, our oldest son lives a suburban life in Colorado. He has not gone to college, but has talked his way into marketing jobs that have turned down college grads.

Our middle daughter trains horses, raises pastured pork and beef, all while taking care of her husband and two boys (a two-year-old and a newborn). Her days are always long and her work ethic is admirable!

Our youngest is in North Carolina and is a general manager of a restaurant. She is living in her van to save money so she can buy a place in the country, because, as she says, "It's just not home without the animals around!" Why waste money on rent when you can easily sleep in your van, join a gym for showers, and eat at work?

The homesteading mentality of doing it on your own, without help, is instilled in our children. The homeschooling that they received makes them think outside the box. They are prepared for what life gives them, and they do not panic.

When the Derecho came through here in June 2012 and the power was out for quite a while, people panicked. There was a run on the grocery store… One woman told me she ran through Wal-Mart looking in people's carts to see what they bought, and she came home with canned chicken. "And I don't even like canned chicken!" she cried.

We have lived without electricity and built our house with hand-tools. We collected water in barrels. When power goes off, we don't panic. We just go about our business. When Hurricane Sandy dumped 30 inches of snow on us last October, we were snowed in completely. But we, again, went about our business. We have had a generator for years, and put it to use to keep the egg incubators running.

Since the kids have gone, we have re-vamped the barn, added enclosed pens, two large brooder boxes and have a quail and pheasant raising operation. We have started a small processing area so we can process our rabbits and pigs. For our quail, pheasants and chickens, we have a scalder and a homemade feather plucker.

The beauty of homesteading is the unlimited opportunities out there. We have spoken often of building a windmill and the house and barn are situated perfectly for solar to be added. We have been researching plans to start an aquaponics project in the basement… growing mushrooms… the list is endless and the opportunities are too.

The land we chose was undeveloped land, with no electricity, no water and very steep terrain with no pasture. Average people weren't interested .We live on top of a narrow ridge. A lot of the land does not have easy access unless you have a horse or four-wheeler, which was a plus in our eyes. We have never had a 4-wheeler, but our horses were a perfect addiction.

When we first arrived there was no topsoil, and digging into the sandstone dirt, we found no worms! Not being gardeners, this wasn't a huge factor, although we have grown fresh vegetables in different raised beds. However, the animals have provided the greatest compost, and now there is topsoil, and an abundance of worms!

There is always work to be done, whether working on the house, fencing, keeping up with the animals. (Yes, there are still things to be finished. Jim once promised me that it would be done in 25 years. After all, Monticello took 25 years!) The land does provide wild blackberries, huckleberries, black cohosh, moss, and wild mushrooms. There is an abundance of wildlife—deer, squirrels, wild turkey, and bears. We haven't had a lot of trouble with predators here, although we know they are close by, the dogs have always kept them away. This year, with no dogs, we have relocated six opossum, a skunk, and saw a bobcat running around the chicken coop, and the deer are now walking up into the yard.

Now we find ourselves ready to do something we have longed for. So with a heavy heart, we are going to sell our mountainous 30 acres. We want to be free to go and visit our grandsons and to travel to see our son in Colorado. I guess it took our daughter living in a van, to realize that we are getting older, and it is time for us to begin the third and last chapter of our lives.

So if you are sitting on that fence wondering if you should take the plunge, go for it. I am sure you will not regret any of it, no matter how difficult it seems at first.

Share your dreams with the gift of…

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If you want a simple gift for someone who you know is interested in simple country living, there is no question about it: COUNTRYSIDE will be a treasure, and you'll be a hero!

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Include my own renewal (name and address above): _____

Total number of subscriptions: _____

If 1 or 2, multiply times $15. If 3 or more, multiply times $14. Add $6/yr. U.S. funds for foreign delivery.

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Nix cabin fever:

Feeling Stuck in a Rut?

Diversify Your Experiences

Tips for Expanding Your Horizons

No matter your politics, religion or lifestyle, the maxim "all of life is a wager" is a reliable one, says Marshall Chamberlain, a self-described recluse and, by many standards, modern-day Renaissance man.

"It seems to me that most people live in a state of inertia and pursue only the most prescribed avenues. To me, the world is much too rich not to sample what life's buffet has to offer," says Chamberlain, who has experienced life as a businessman, an officer in the U.S. Marines, husband (and divorcee), father, world traveler, boat dweller, writer and all-around adventurer. He's also the author of "*The Mountain Place of Knowledge,*" the first book in the Ancestor Series of adventure-thrillers (www.marshallchamberlain.com).

"Spend your days putting off your dreams, and the time to realize those dreams can easily slip away. Considering time and the unknowable nature of one's expiration date, all of life is a wager. I say the time for taking action on those ideas—usually relegated to daydreams—is *now*."

If the weekly working grind has got you feeling like a drone, Chamberlain offers the following tips on the way to becoming a true adventurer:

Parlay your strengths into new adventures.

With a period of his life invested in the USMC, Chamberlain became accustomed to a largely physical, Spartan-like existence. After his divorce, he decided to simplify the needs of his everyday life, so he became self-sufficient, living aboard a 30-foot sailboat for the better part of 10 years. He also traveled the world, participated in activities communing with nature, and pursued his passion to become an author of adventure-thrillers.

Make a list of what's really important to you; trim the fat soon after.

To put it simply, most of us will not know in advance of our death. We know one thing: we will one day die. With a finite amount of time to wager, we simply don't have the time to watch the same bad movie every Friday night. Go big! Lose 20 pounds of fat and gain 20 pounds of muscle; or take a chance with that crush you've been nursing for six months; or buy a guitar and learn how to play it! You don't have time for a banal life.

Become fluent in a second language (literally and figuratively).

Indeed, become familiar with Spanish, French, Italian or some other language. More importantly, become fluent in a new language to approaching life. Start saying yes to ideas that you've harbored for a long time. One thing leads to another; perhaps in learning Italian you'll develop a passion for the language's rich culture. This could lead you on a trip to Italy. Who knows? The important takeaway is: Don't fear a new kind of fluency.

Confront your fears.

Are you sick and tired of the sheer predictability of your 9-to-5 existence? Nothing shrugs off the dreary residue of the daily commute than jumping out of a plane to put things in perspective. If you have a fear of heights and skydiving is too overwhelming, consider going to the top of the tallest building near you. Confronting fear not only fills you with adrenaline…you will also likely walk away filled with confidence. But don't let the adventure stop there! Let this be a lesson in affirming life's exciting potential; keep the adventure going by testing your limits.

About the author:

Marshall Chamberlain is a man focused on his passions, with no time for extraneous niceties like pets, lawns, mortgages or plants. He has a Master's Degree in Resource Development and a graduate degree in International Management. He was an officer in the U.S. Marine Corps and spent many years in investment banking, venture capital, and even as a professional waiter. He is obsessed with preparedness, survival and independence. This combination of traits leads him to all manner of adventure, including serious Stone Age survival classes.

By W. L. Felker

I get up, morning is here.
The stars still out;
the black winter sky looms
over the unborn lambs.
The barn is cold before dawn,
the gates slow.
— Robert Bly

The Ephemeris for January

The Phases of the Tufted Titmouse Moon and the Snowdrop Moon

In spite of the arrival of deep winter with the new moon, the tufted titmouse usually begins its mating calls as the year begins.

January

1: The Tufted Titmouse Moon is new at 5:14 a.m.

7: The moon enters its second quarter at 10:39 p.m.

15: The moon is full at 11:52 p.m.

24: The moon enters its final quarter at 12:19 a.m.

30: The Snowdrop Moon is new at 4:39 p.m.

The Sun's Progress

Solar perigee (the Earth's position closest to the sun) occurs on January 4 at 12:00 p.m. The sun enters Aquarius on the 20th.

The Planets of January

Venus is the evening star for a week after New Year's Eve. By the 8th of the month, it drops below the western horizon and reappears in the east as the huge morning star in January's third week. Trading places with Venus, Jupiter is the morning star until January 5, disappears from the predawn sky on that date, only to return in the evening sky. Look for Mars rising in Virgo after midnight. Saturn will follow the Red Planet in Libra.

The Stars

At 10:00 p.m. Orion is almost centered in the southern sky. Sirius, the giant Dog Star, is at his heels. Capella is overhead, Perseus follows Andromeda and the Great Square into the west.

The Shooting Stars

The Quadrantids are the meteors of January. Look for them in the northeast after midnight on the 1st through the 5th.

A Calendar of Holidays and Special Occasions for Gardeners, Ranchers & Homesteaders

January 14 & 19, 2014: ***Muhammad's Birthday (Mawlid Al-Nabi)***

January 31, 2014: ***Tet, Vietnamese New Year and Chinese New Year*** (The Year of the Horse)

February 4, 2014: ***Mardi Gras Season*** begins around this time, lasting until the big celebration on March 4.

February 27, 2014: ***Dominican Republic Independence Day***

Meteorology

New moon on January 1 and 30, and full moon on January 15 are likely to intensify the weather systems due around those dates. The coldest January days usually fall between the 7th and the 10th, as well as between the 15th and the 18th. Storms are most likely to occur on January 1-2, 8-12, and 19-24 (the transition time to Late Winter).

Peak Activity Times for Livestock, Fish, Game and Dieters

Fish, game, livestock and people tend to feed more and are more active as the barometer is falling one to three days before the weather systems that arrive near January 1, 5, 10, 15, 19, 25, 31.

The Ephemeris for February

The Phases of the Snowdrop Moon

Throughout February, late winter gradually turns into the first phase of early spring. By the end of the month, the earliest spring bulbs, the snowdrops and the snow crocus, often come into bloom.

February

6: The Snowdrop Moon enters its second quarter at 2:22 p.m.

14: The moon is full at 6:53 p.m.

22: The moon enters its fourth quarter at 12:15 p.m.

The Sun's Progress

On February 18, Cross-Quarter Day, the sun reaches a declination of 11 degrees 53 minutes, its halfway point to equinox. It enters Pisces at the same time.

The Planets of February

Venus continues as the bright morning star throughout the remainder of the winter. Mars and Saturn rise after midnight, both planets moving up from the eastern horizon near bright Spica. Jupiter is the dominant light in the west after sundown.

The Stars

By midnight during February's first week, giant Orion begins to move west from its dominating January position in the center of the southern sky. The star grouping of Canis Major takes its place along the horizon.

Meteorology

If strong storms occur this month, they will be most likely to strike on or around February 2-4, 6-9, 14-18 and 24-25. Full moon on February 14 is likely to increase the intensity of the weather system that typically arrives near that date.

Peak Activity Times for Livestock, Fish, Game and Dieters

Fish, game, livestock and people tend to feed more and are more active as the barometer is falling one to three days before the weather systems that arrive near February 3, 6, 11, 15, 20, 24.

The Almanack Daybook

~ *January* ~

1: Today's new moon could increase the severity of the New Year's cold front, the first front of deep winter.

2: Under lights, seed bedding plants and cold-hardy vegetables.

3: Increase feed by about a third if your animals are nursing twins. Increase by fifty percent if they are carrying triplets.

4: Clip your fingernails in preparation for lambing and kidding (or holding hands).

5: Plenty of forage for your livestock will help ensure that they produce enough heat to keep warm in these bitter days.

6: More dangerous than the cold could be confinement of your animals in the barn. Lack of proper ventilation can lead to excess humidity and a build-up of ammonia.

7: The moon enters its second quarter today, the best time to work a little more with your family and livestock.

8: Re-evaluate your hay supply for nutrient levels.

9: Sparrows, stimulated by the lengthening days, begin chattering and courting near dawn.

10: The approach of full moon increases the likelihood of storms in mid-January.

11: Osage fruits are still being eaten by the squirrels. Almost all the goldenrod and aster seeds are gone.

12: Spring begins at supermarkets throughout the country as daffodils, crocus, hyacinths and primroses appear in the aisles.

13: January and February are the months for making an environmental assessment of your property. Look for factors that impact erosion and pollution.

14: The celebration of Muhammad's birthday today and the 19th could increase the demand for halal meat from your ranch.

15: Today's full moon is likely to strengthen mid-January cold waves. Crime, dementia and irritability are also worsened by the full moon.

16: In the South, maple sap could start to run after the January thaw reaches the Gulf region.

17: Lunar lore holds that more abortions and births occur during the moon's third quarter (now).

18: In the Southeast, bright yellow jessamine blossoms climb through the fencerows, forecasting spring.

19: If rain freezes on top of snow, check to make sure your livestock can get to adequate amounts of water.

20: The sun moves into Aquarius today, above the waning moon, encouraging all your mid-winter pruning.

21: Schedule routine maintenance and foot clipping under the dark, fourth-quarter moon. Animals kept out of doors will most likely need foot clipping less often.

22: Heavy winter lice infestations can decrease weight gains in livestock dramatically.

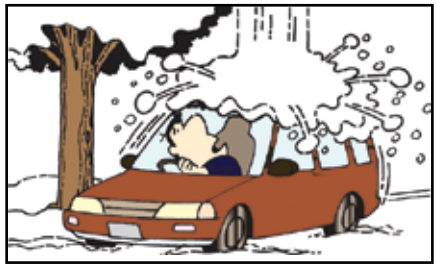
23: Get ready to put in sweet corn throughout the Deep South. Schedule the seeding of oats and barley, too.

24: Plan to break bad habits when the moon is weak (today) as it enters its final phase.

25: Lambs and kids brought out by the January Thaw run a higher-than-average risk of being chilled by the January 25 weather system.

26: When cardinals sing before dawn, late winter has begun. Opossums and raccoons become more active, and they appear at night along the backroads.

27: Today is the pivot day between deep winter and late winter. Average temperatures start to rise throughout the country (at least on paper).



28: In milder regions, moss is growing thick and sending up its delicate stalks. Patches of thin wild onions, covered with dew, glow blue-green in the low sun.

29: Do your pruning before the moon is new.

30: Today's new moon and the approach of a pre-February thaw will encourage sap to start running in the central portion of the nation.

31: Today is Vietnamese New Year and Chinese New Year (the year of the horse). Celebrants may come looking for your sheep or goats in the 70-pound live-weight range.

~ *February* ~

1: Under the dark moon, put in seeds of cabbages, kale and broccoli under grow-lights so they will be ready for March planting.

2: For guidance about the progress of the season, the groundhog is a fickle prophet. Other creatures, however, take up the slack, most notably the skunk.

3: The first major waves of robins and bluebirds come north across the Ohio River.

4: Frost-seed pastures and the lawn throughout the next two weeks.

5: Spray trees with dormant oil when temperatures rise into the upper 30s or 40s and the weather is expected to be mild for 48 hours.

6: Once again, the moon's entry into its second quarter creates positive lunar energy for difficult tasks.

7: As ewes and does in larger herds get close to birthing, they can be grouped together in a "drop area" for observation.

8: The more often you weigh your animals, the more accurate you can assess their rate of weight gain or loss.

9: All across the deserts of the Southwest, wildflower season begins with the first rains.

10: Consider hypothermia jackets instead of heat lamps for new lambs.

11: Continue worming on a regular basis through the winter months.

12: Azaleas are blooming in Ala-

bama. In the lowlands of Mississippi, swamp buttercups, violets and black medic are open.

13: Tomorrow is full moon day: watch for late abortions in weaker livestock. Move animals to market if they have persistent birthing problems.

14: Today's full moon is likely to delay the arrival of the mild, mid-February weather that often ushers in the season of early spring.

15: Sometimes the weather doesn't change for the better in the early days of the year's second month, but the sound changes and replaces the silence of dormancy, bird songs accumulating like spring leaves.

16: Fields of daffodils open in southern Georgia, and bee season has started all along the Gulf coast.

17: Check to make sure your buildings are properly ventilated, but keep livestock from drafts. Ensure that your animals have plenty of water and that it's not frozen.

18: Today is Cross-Quarter Day, the date on which the sun has travelled half of the distance to spring solstice.

19: Consider the use of artificial insemination to enhance certain characteristics of your livestock, to introduce new traits, or to preserve traits and reintroduce them years in the future.

20: The 20th of February cold front marks the end of the snowiest part of the year in most states. Of course, blizzards love March in the northern Plains.

21: This time of year, many owners make use of an energy lick tank supplement.

22: The moon's entry into its final quarter today and the likelihood of a short period of gentle weather encourage spraying of fruit trees.

23: Weigh new lambs and kids as exactly as you can, recording pounds and ounces.

24: Grouping ewes and does (with their newborns) in groups of five to 15 can be a practical way of tracking the progress of the newborns.

25: Mardi Gras will be here in only 10 days. Consider advertising your lambs and kids to this barbeque market.

26: Barometric changes can trigger flare-ups of arthritis in people and also in your pets and livestock.

27: Exercise the herd and flock throughout these coldest months.

28: In the Deep South, be sure to watch for bloat in livestock let out to pasture.

Lunar feeding patterns for people and beasts

All creatures are typically most active (and may eat more)with the moon above them. The second-most-active times occur when the moon is below the earth.

Date: Moon Above; Moon Below

January

1–6: Afternoons; Midnight to Dawn
7–14: Evenings; mornings
15–24: Midnight to Dawn; Afternoons
25–31: Mornings; Evenings

February

1–5: Afternoons; Midnight to Dawn
6–13: Evenings; Mornings
14–21: Midnight to Dawn; Afternoons
22–28: Mornings; Evenings

Winners of the November-December Sckrambler

A total of 55 readers responded to the November-December challenge by my deadline of October 25, and a prize of $5.00 was promised to the 4th, the 27th, the 49th, and the 71st person to unsckramble the sckrambled words.

The 4th person to respond correctly was Maria Bentien, Ukiah, California; the 27th was Richard Taylor of Wentzville, Missouri; the 49th was Joanna Prentiss of Vero Beach, Florida. But they could not have won without the other entries!

Answers to the November-December Sckrambler

LAMAANKC: ALMANACK
EDISYRTNOUC: COUNTRYSIDE
ARIUSSAGITT: SAGITTARIUS
CELPIES: ECLIPSE
IPUJTER: JUPITER
IMIGEN: GEMINI
OOIRN: ORION
SDRIAUT: TAURIDS
NIDSLEO: LEONIDS
HHNKKAUA: HANUKKAH
GHATSKNVIIGN: THANKSGIVING
WHITERPAPES: PAPERWHITES
SYLLIAAMR: AMARYLLIS
URSISD: URSIDS
SMTSRHCIA: CHRISTMAS
VENDAT: ADVENT
VERHAST : HARVEST
SETTIAPOINS: POINSETTIAS
TEROLCHOLES: CHOLESTEROL
SMRA: MARS

The January-February Sckrambler

AOLMLW
TUBRET AEBN
TUCETEL
SIHADR
AINHCSP
ETEB
EAKL
AYD ILYL
IIAZNN
SSCMOO
UERPLP WERCONFLOE
RISI
OAADRNM
APSN APE
IAAECSPL
OEUACAPLTN
NYPSA
CHATBROLE TUBNOT
EXFOLVG
TASIBEL

If you are the 1st, the 11th, the 44th, the 77th, the 100th or the 150th person to return your correct Sckrambler solutions by my deadline of December 25 to Poor Will, P.O. Box 431, Yellow Springs, OH 45387, you will win $5. There should be no typos in this puzzle, and no typo prize will be awarded. If you happen to find a typo, however, you may simply skip that word without penalty. Send your entries by regular mail (postcards preferred) to Poor Will at P.O. Box 431, Yellow Springs, Ohio 45387. The names of any winners whose correct responses are received after my deadline to Countryside will appear in a later issue.

Capture Your Countryside... and share it with us!

Countryside is proud to present an on-going photo contest. Send us photos from your homestead—livestock, grandchildren, garden, barn, etc.—and we may share it with Countryside readers! Each issue's "Featured Photo" will receive a FREE Countryside t-shirt!

E-mail your photo(s) as jpeg attachment(s) to friend@countrysidemag.com with "Capture Your Countryside" in the subject line, be sure to include your name, mailing address, phone number and a brief description. Or mail photo(s), including your name, mailing address, phone number and a brief description, to "Capture Your Countryside," 145 Industrial Drive, Medford, WI 54451.

Any photos received will become the property of Countryside Publications and can be used at anytime. Countryside Publications retains the right to publish and/or reproduce any and all photos submitted in future issues or publicity, with or without mention of source.

Featured Photo

This is our sweet cow named Americus. She got her name from the white patch on her forehead—it looks just like a map of North America. She was trying to give us kisses! – *Melissa Blake, New York*

Canning tomatoes in our kitchen last June. – *Sue Tait, Alabama*

This is my five-year-old granddaughter, Ariana Rose. She was a flower girl in a wedding one weekend, and the next week she was grouse hunting with the family. She has four older brothers. My son captioned the pictures, "From flower girl, to Daddy's girl." – *Anna Frechette, Minnesota*

Two-week-old Holstein bull calf nursing on his adoptive mother after her calf was stillborn.
– *Amanda Hepworth, Michigan*

Just a few hours old. – *Kimberly Nance, Oklahoma*

This is Demetri, one of our recent rescue potbelly pigs recovering from his neutering procedure, while enjoying the warmth of our pellet stove. He sure made himself right at home! – *Tara Butchart, California*

Countryside's Breeders Directory

Alpacas/Llamas

Colorado

JEFFERSON FARMS NATURAL FIBERS–Two locations: 8950 W Jefferson Ave., Denver, CO 80235, 303-870-3056 or 8815 Cty Rd. 150, Salida, CO 81201, 719-539-4752. <jlevene@comcast.net> <www.jeffersonfarmsnaturalfibers.net> Alpacas & Paco-Vicuñas. Specializing in Paco-Vicuña luxury fibers.

Georgia

PEARSON POND RANCH & LLAMA CO., 242 Llama Lane, Ellijay, GA 30540. <www.pearsonpond.com> Over 150 llamas to chose from–Traditional–Surries.

Ohio

LOFTY PINE FARM, Deb Yeagle, 2882 Cty. Rd. 82, Lindsey, OH 43442-9753. 419-665-2697. <loftypine@yahoo.com> Llamas, Suri & Huacaya alpacas-starting $300, fleece, judge. Teeswater, Merino sheep.

Vermont

NORTH OF THE ANDES ALPACAS, Rhonda Henning, 6394 Chester Arthur Rd., Enasburg, VT 05450. 802-933-5166. <northoftheandes@myfairpoint.net> Huacaya. Fiber or pet males $300, bred and open females starting at $800, all ARI registered. Email for pictures.

Bullfrogs

Idaho

RANA RANCH BULLFROGS, PO Box 1043, Twin Falls, ID 83303-1043. 208-734-0899. <phrogpharmer@aol.com>American Bullfrogs (Rana catesbeiana). Deep soothing music on your pond. Purpose bred bullfrogs-healthy, hardy and prolific. Free info sheet.

Capybaras

Texas

CAPYBARAS, We have them, adults, subadults and seasonal babies. Quality, healthy, free range, non-stressed animals. Also Huacaya alpacas. Bill Schuchman, Jourdanton, Texas. 830-277-2149. <alicemarley7@yahoo.com>

Cattle

Kansas

LA DORADA, Elizabeth Lundgren, D.V.M., 22484 W. 239 St., Spring Hill, KS 66083. <watusi@aol.com><www.ladorada.com> Ankole-Watusi cattle.

UNDERHILL FARMS, Lynn & Karen Kaufman, 187 21st Ave., Moundridge, KS 67107. 620-345-8415. <info@underhillfarms.com> <www.underhillfarms.com> Belgian Blue Cattle.

Nebraska

BOHATY'S BRITISH WHITES, Walter & Nancy Bohaty, 1371 42nd Rd., Bellwood, NE 68624. 402-367-4741. <nbohaty@gmail.com> <www.britishcattle.com> Registered British White cattle.

Ohio

RIVERVIEW FARM, Fonnie Thoman, Crown City, OH. 740-256-1724. Miniature Jerseys–semen available. Also miniature horses. <www.miniaturejerseys.com>

Oregon

WHISPERING HILLS FARM, Joe Schallberger, DVM, PhD & Sue Schallberger, DVM, 6515 Kurtz Rd., Dallas, OR 97338. 503-704-2408.<wisper@comcast.net> <www.whisperinghillsfarm.com> Polled Shorthorns. Fast growing grass-fed Shorthorn genetics. Also Suffolk sheep.

Pennsylvania

WILSON LAND & CATTLE CO., Russ Wilson, 1532 Stitzinger Rd., Tionesta, PA 16353. 814-354-2325. <ancattle@gmail.com> <www.blackanguscalf.com> Registered Black Angus.

Texas

AAVALON FARM, Sharon & George Adams, 1059 AnCR 468, Palestine, TX 75803. 903-549-2036. <aavalonfarm@hughes.net> <www.aavalonfarm.com> Belted Galloways. Semen available. Visitors welcome.

Dogs

Oklahoma

AMERICAN WORKING FARMCOLLIE ASSOCIATION, Elaine Reynolds, HC 1 Box 23, Felt, OK 73937. 920-857-6979. <farmshepherd@yahoo.com> <www.farmcollie.com> Multipurpose Farm Dogs: English & Australian Shepherds, Standard & Border Collies, Shetland Sheepdogs and Kelpies.

HEAVENS LITTLE ACRES, Marshall & Jana Hager, 5716 N. State Hwy. 97, Sand Springs, OK 74063. 918-245-1291. <hlacres@aol.com> Akbash LGD, raised with Nubian dairy goats. Dogs

Tennessee

CASTLEROCK'S SPECIAL ASSISTING CANINES, Giant Schnauzer & Swedish Vallhund herding, livestock guardian, service dogs. Cindy Choate, Memphis, Tennessee. 901-553-9401. <castlerock003@yahoo.com> <http://castlerockspecialassistingcanines.homestead.com>

West Virginia

TIMBERS CROSS FARM, Sue Doohan, HC 75 Box 32, Strange Creek, WV 25063. 304-765-5453. Maremma/Pyrenees Crossbred. Neutured & vaccinated. Sold as working pairs only. Started pairs $500 / Experienced pairs $700. Pups available occasionally, $150 each. Buyback guaranteed.

Equine

Ohio

STRASSERHUTEN FARMS, Robert & Corinne Strasser, 4318 Hattrick Rd., Rootstown, OH 44272-9770. 330-325-1373. <rstrasser@neo.rr.com> <www.strasserhutenfarms.com> Irish Dexter cattle, miniature donkeys. Grass-fed freezer beef for sale.

Game Birds

Minnesota

OAKWOOD GAME FARM, INC., PO Box 274, Princeton, MN 55371. 800-328-6647. <oakwoodgamefarm.com> We sell day-old pheasant and chukar partridge chicks and eggs. Ask about our new smaller quantities on eggs and chicks.

Wisconsin

PURELY POULTRY, PO Box 466, Fremont, WI 54940. 800-216-9917. <Chicks@PurelyPoultry.com> <www.PurelyPoultry.com> Indian Red Junglefowl, Guineas, Peacocks. Ducks: Mandarin, Ringed Teal, Whistling Ducks, Wood Ducks, Mallard Ducks. Swans: White Mute, Australian Black, Trumpeter, Whooper, Black Necked. Quail: Northern Bobwhite, Jumbo Bobwhite, Texas A & M, Valley, Gambel, Blue Scale, Mountain, Mearns. Partridge: Chukar, Hungarian. Ringneck Pheasants: Chinese, Jumbo, Kansas, Manchurian Cross, Melantistic Mutant. Ornamental Pheasants: Red Golden, Yellow Golden, Blue Eared, Brown Eared, Lady Amherst, Silver, Timminicks Tragopans. Wild Turkeys: Eastern and Merriams.

Goats

Arizona

WITCH HAZEL DAIRY, Hazel McGuffin, PO Box 622, Vernon, AZ 85940. 928-358-0741. <witchhazeldairy@gmail.com><witchhazeldairy.weebly.com> Nubians

California

AMBER WAVES Pygmy Goats. Shipping worldwide since 1982. 951-736-1076. <debbie@amberwaves.info> <http://amberwaves.info> A small family, friendly farm located in beautiful southern California. We specialize in rare color's kids. Deposits accepted year-round. Customers include Hollywood Elite and International Dignitaries. All major credit cards welcome and special interest free financing available through PayPal. Goats

HYONAHILL, Ruth McCormick, 24900 Skyland Rd., Los Gatos, CA 95033. 408-353-1017. <ruthmcc@flash.net> Registered Oberhasli dairy goats. Beautiful, quiet, delicious milk. Send for color brochure. Goats

TALL-TAIL'S, Dorothy Lovato, 4181 Leon Dr., Clayton, CA 94517. 925-672-3097. <dilovato@aircloud.net> Oberhasli & Saanens. Buck service.

Indiana

CU AT LIL' RED BARN, Margot Cassel, 7501 N. Nebo Rd., Muncie, IN 47304. 765-730-0145. <lilredbarn@hotmail.com> <www.lilredbarngoats.com> Nigerian Dwarfs.

Iowa

D & E DAIRY GOATS, 2977 Linn Buchanan Rd., Coggon, IA 52218. 319-350-5819. <rranch@iowatelecom.net> Alpine, Saanen & LaMancha. Selling 200 head annually.Goats

Massachusetts,

MENDING WALL FARM, Ed & Judy Lowe, PO Box 722, Assonet, MA 02702. 508-644-5088. <mendingwall@meganet.net> <www.mendingwallfarm.homestead.com> Nigerian Dwarf, Tennessee Fainting.

Oklahoma

CIMARRON VALLEY RANCH, Cleveland, Oklahoma. 918-694-9281. <deb@cimarronvalleyranch.com><www.cimarronvalleyranch.com> Nigerian Dwarf goats, Dexter cattle, Miniature Hereford cattle.

HEAVENS LITTLE ACRES, Marshall & Jana Hager, 5716 N. State Hwy. 97, Sand Springs, OK 74063. 918-245-1291. <hlacres@aol.com> Akbash LGD, raised with Nubian dairy goats.

Wisconsin

WILD GERANIUM HOLLOW FARM, Season Treder, N6476 Cty. Rd. N, Princeton, WI 54968. 920-229-4930. <wild_geranium_hollow@yahoo.com> <www.wildgeraniumhollowfarm.com> Miniature Nubian, Nigerian Dwarf Goats. Perfect milking goats for your small farm.

Hogs

Arizona

THE ROCKING ROBIN RANCH, Prescott, Arizona. 928-925-6886. <www.kunekunepig.com> Registered: Heritage KuneKune pigs, mini Jersey cattle, Nubian goats & Bulldogges.

Arkansas

FARMERS HEREFORD HOGS, Thomas Hardin, 13776 E. Hwy 56, Ash Flat, AR 72513. 870-322-8423. Registered Hereford hogs.

Missouri

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Pennsylvania

WHITE BISON FARM, Dave & Jodi Cronauer, 394 Russet Rd., Patton, PA 16668. 814-674-2330. <apache_jc@yahoo.com> <www.whitebisonfarm.com> Idaho Pasture Pigs, KuneKune Pigs, American Bison, Gypsy Vanner Horses.

Large Black Pigs

Kansas

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Michigan

HORTON FARMS, Robert & Christine Horton, 11650 Remick Rd., Blanchard, MI 49310. 989-561-2386. Large Black Hogs.

Miniature Cattle

Arizona

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Colorado

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Miniature Horses

Wisconsin

TRAILS END STABLE, Medford, Wisconsin. 715-785-7286. Reg. AMHA-AMHR Miniature Horses.

Miniature Livestock

Alabama

LNL MINIFARM, Levon & Lynn Sargent, 663 Hulsey Rd., Henagar, AL 35978. 256-657-6545. <http://users.farmerstel.com/lnlsargent> <lnlsargent@farmerstel.com> ADGA Nigerian Dwarf Goats, AGHA Guiena Hogs, KuneKune crosses, AMJA Jersey, crossbred mini beef cattle, Babydoll Southdown Sheep & AMHA Horses.

Miniature Pigs

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Miniature Sheep

Kansas

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Pigeons

Arkansas

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Sheep

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Michigan

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AMERICAN EMU ASSOCIATION, 1201 W Main St., Suite 2, Ottawa, IL 61350. 541-332-0675. <info@aea-emu.org> <www.aea-emu.org> Emu.

AMERICAN HIGHLAND CATTLE ASSOCIATON, Historic City Hall, 22 S. 4th Ave., Ste. 201, Brighton, CO 80601-2030. 303-659-2399, fax: 303-659-2241 <info@highlandcattleusa.org> <www.highlandcattleusa.org> Benefits of Raising this Fantastic Heritage Breed: Lean, Tender, Flavourful Beef; Excellent Utilizer of Poor Quality Forages; Caving Ease; Strong Maternal Instinct; Docile Temperament; Breed Recognition Like No Other.

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2013 Countryside Index

After chores:

Growing Up a Farmer's Daughter

By Miriah Reynolds
Belgrade Montana

"Ladies and gentlemen and goats of all ages!" my brother shouts from the barn roof with a hammer as a microphone. "Welcome to….. (long pause) to the sheep and steer riding spectacular!" Inside the barn, I'm sitting on the back of our sweetheart steer named Bullseye prepared for the experience of a lifetime. Bullseye was not very enthusiastic as he munched on hay. My other brother Hudson dramatically opens the stall gate and I let go of the hayloft ladder. "And they're off!" Holden yells. Moments later Bullseye nonchalantly walks out of the barn with a mouthful of breakfast. I'm in my bathing suit kicking my heels into his side, holding onto a bailing twine cinch, my other hand up in the air. Bullseye, does not buck or run, he merely stumbles out of the barn and stops at my mom's hosta to take a mouthful. Riding the Suffolk sheep was always more exciting and dangerous. Our hands always lingered with the greasy feel of lanolin from holding onto the wool. The ewe's would faithfully turn around and run back into the barn- attempting to remove our heads from the low doorjamb in the process!

Sometimes I look back and think of how crazy my brothers and I were. And yes, riding the family steer in my bathing suit is not something to put on my resume', it is one of the many things that I cherish growing up as the farmer's daughter. I'd like to share a few glimpses of a day in the life of growing up as a farm kid. Hopefully you can relate as a kid or a parent, after all, embrace growing up country!

For as long as I can remember Saturdays were booked solid by livestock shows and farmers markets. (And most of the time, both.) Farmers markets were always the highlight of my week growing up mostly because of the awesome food we would trade other farmers for, and it was a way for me to make some money. Friday nights before the market were the usual milking chores, wrapping goat milk soap, making hand scrub, labeling cheese, and checking off the list for Saturday morning. The morning mostly ran like a well oiled machine. The trucks would be packed up and parked ready to go. The only things we would have to pack, as my mom said, was "goats, cheese, and kids." The markets were always so much fun haring our handmade products with customers and educating people about our goats. It was truly one big social event with the farmer market family. I can distinctly remember after the markets we would be exhausted. Our whole family would pile onto the dairy steps and reminisce about the day and eat cheese and bread. One thing we always laughed about was the 'customer of the day' as we called it. The person who ate their cheese sample over the other samples, or the woman who tried to eat the hand scrub, all the way to the man who asked if our goats were giraffes. (I'm not kidding.)

My mom homeschooled my brothers and I for several years. (Actually I was homeschooled until I graduated.) People who did not know us perceived us as the farm kids who were homeschooled and lacked a social life. Wrong. Between 4-H, Bible studies, church, music lessons, goat shows, livestock events and everything else, we had a hopping social life. My mom and dad always put 110% into our education, making us well-rounded individuals, and I am so grateful for that. Our farm was greatly incorporated into our schooling. Learning how to run a business, keep records, and be fluent public speakers were a few of the extras that came with being homeschooled. Plus, I got a high school credit in Equine and Caprine Science—how cool is that? I remember going into the grocery store or the bank and the cashiers would faithfully ask why we were not in school. Quick with a response I'd say; it's parent teacher conference—Mom's talking to herself again. The cashier always gave my mom a disapproving glare. Being homeschooled was so awesome and taught me so much more than I think I would have learned in public schools.

MIriah's family sells goat milk soap at area farmers markets.

Growing up on a farm is the best way to be raised. At an early age I learned the meaning of life and death, and that hard work really does pay off. Raising dairy goats and being responsible for their livelihood is an incredible feeling. Getting up every morning before school and milking, and repeating the routine each night truly instills dedication into a person. Although this is a small glimpse of what it was like growing up on a farm and being homeschooled, the main point I'd like to get across is that growing up farmer is fabulous!

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