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©  
MARCH  
1990



# This

magazine does not yet generate a profit, so I subsidize it and support myself by teaching organic gardening and landscaping courses, creating organic landscape gardens, and by acting as a landscape consultant. Since the annual glaciation of Denver freezes out these income sources for 5 months, and since homesickness had gotten the better of me, I shut down my home in Denver in November 1989 and headed south, with my cat Lovely and my dog Sergeant in the cab of my pickup, and my vital belongings, magazine graphics and data files, plus my 3 chickens (rescued in March of 1989 just as they were to be shipped to a Campbell's Soup plant) all packed into the camper shell. This issue was published in Tampa, Florida, my "home", where I spent the winter servicing landscape customers old and new, and basking in the warmth of the gentle climate and the company of old treasured friends.

The trip there once again afforded me the chance to try to determine the ranges of various plants, and to broaden my understanding of climate and the distribution of soil types. For instance, the creosote bushes I first noticed in southern New Mexico seemed to vanish as we approached Ozona, Texas, where cedars and live oaks first made their appearance. Thin-leaf yucca, common in Colorado, disappeared in west Texas, as did cottonwoods. As we approached the Mississippi the heavy alkaline clays of the West faded into the acidic sandy soils of the Southeast. Even the clouds changed; high, wispy and thin at the high altitudes of New Mexico and Colorado, they became close and puffy in the humid dense air of southeast Texas and on to Florida. I'm a lucky man that noticing these things can make me happy.

But the trip also saddened me at times, for everywhere the land and even the sky was scarred by human activity. Once vast prairies were invariably sliced and diced into parcels by endless miles of fence, behind which usually grew imported pasture grasses instead of native vegetation. The predominant large mammals were not pronghorn antelope and buffalo but hybrid "beef" cattle grazing on those alien grasses. The first letter in the names of towns was often painted as a giant white capital letter on the rocky crowns of mesas close to each town as if all the garish road signs weren't enough. Road-killed wild animals dotted the roadside. Low brown domes of air pollution revealed distant cities beyond the horizon long before the city itself was visible. Aircraft exhaust trails cut X's into the stark sky over the silent center of New Mexico. It hurt to see that Florida's once biologically diverse climax forests are being turned into suburban deserts of asphalt and monthly-poisoned monocultural lawns. And yet I could not sit as judge, for I was travelling in a petroleum-powered truck riding on a smooth ribbon of petroleum compounds. My only firm conclusion was that the human species has been breeding far too successfully in far too many places for far too long. We are elbowing our way into every secret sacred place, staining it with our waste and killing off the unique creatures that have lived there for millions of years.

But I am more optimistic than ever these days, and for good reason. People everywhere are suddenly realizing that ultimately, it is how each of us lives that is damaging the planet, not just the Big Bad Corporations who produce the commodities we demand. Sure, Exxon screwed up BIG TIME in Alaska, but our demand for gasoline provides them the market for Alaskan oil. So more and more people are carpooling more and more often, or combining trips. Others are solarizing their homes. Or getting infomed. I hope this handcrafted magazine is helping in that process while giving its readers a good laugh here and there. The situation our planet faces IS grim, but grim depressed people often give up without trying, feeling "it's no use". But a good sense of humor can empower us into vital action. Hence "The Garden Doctor" aspires to be the Saturday Night Live of environmental-gardening magazines. 1990 will be a litmus year for it, however, as readership must be doubled if it is to survive. Write me to share the changes in the format or content you'd like to see, if any. Many thanks to those of you who have held on from its crude beginnings two years ago, who give gift subscriptions to your friends and relatives, who show each new issue to friends and colleagues, and who consistently renew their subscriptions. Those of you who don't, PLEASE DO if you see "The Garden Doctor" as informative AND entertaining. To paraphrase those guys hip deep in almonds, "One new reader from every reader, that's all we ask".



Remember...April 22 is Earth Day 1990

cover plant: *Cornus circinata*  
by Karl Blossfeldt 1932





# GOOD NEWS

Both GM and Volkswagen have sold 3.5 million cars in Brazil that run on 100% ethanol, much of which is derived from agricultural waste.

Fernando Cesar Mesquito, president of the Brazilian Institute of Environment and Renewable Natural Resources reports that the destruction of Amazonian rain forest slowed by 30% during 1989 due to increased government control and inspection. Associated Press.

Based in Menlo Park, California, **Molecular Devices Corporation** has developed a "biosensor" that may put an end to using animals to test cosmetics and other consumer products. Stanford University scientist J. Wallace Parce said in his study published in the journal **Science** that cells are kept alive in a chamber using a solution to both nourish the cells and flush away waste products. A sensor beneath the chamber monitors changes moving across the surface of individual cells after the introduction of a test product. Since human cells can be maintained and used for testing, the accuracy of these tests should be improved while sparing rabbits the agony of having caustic irritants dropped into their eyes while spending their lives immobilized by neck and/or body restraints.

22 year old MIT graduate James Worden has designed and built a fully operational and PRODUCIBLE solar-powered car. Called the **Solectria**, the three wheeled one-seater is designed for commuting to and from work. It weighs 270 pounds and uses an 11' X 6.5' solar panel atop the body to power an electric motor capable of bringing the aerodynamic car to a speed of 90 miles per hour. Two models more conventional in appearance are due for "semi-mass production" within two years. The sports model is tentatively slated for a \$20,000 price tag, while the economy model should go for around \$12,000. Not only are these vehicles competitive in price, their operating costs should be nil since they use no fuel. Just imagine rush hour on your city's freeways; thousands of silent sleek electric cars whizzing down the road, the air free of visible or "smellable" pollutants, with neither the Greenhouse Effect or holes in the ozone layer resulting from the simple act of going to work. Seems odd that a young student instead of GM, Ford or Chrysler will bring us the first practical solar car. AP

Dr. James W. Anderson of the University of Kentucky reports that "when eaten consistently, oat bran can reduce blood cholesterol by 15% to 20%." The Toledo Blade.

Good judgment comes from experience, which comes from poor judgment. unknown

Life is like a deck of cards. The hand that is dealt you represents determinism; the way you play it is free will. Jawaharlal Nehru 1889-1964



# BIRDS THAT HELP US



Redstart

1/2 life size



Shrike

1/2 life size

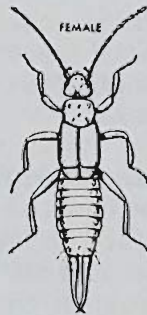


Bobwhite

1/3 life size



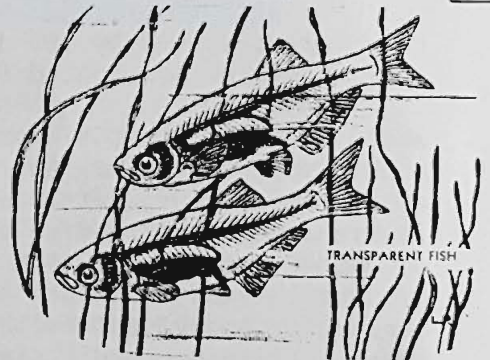
MALE



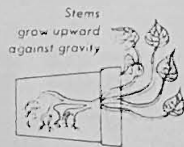
FEMALE

Male and female Earwigs. The pincers at the end of the abdomen are strong and movable. So far no one has been able to determine how the insect uses them.

Transparent Fish, or Glass Fish, below, has flesh so transparent that plants can be seen through its body. An observer can clearly see its brain, gills, air bladder, and skeleton.



TRANSPARENT FISH



Stems grow upward against gravity

NEGATIVE GEOTROPISM



BULL ELK



COW ELK



Figure C. Last Expected Date of Spring Frosts



# SHARING SECRETS



A teakettle of boiling water is a cheap and environmentally benign method of eliminating weeds from cracks in sidewalks and driveways. It will also put an end to antnests.

Be wary of the free sewage sludge given away in many communities, for it is very often high in the toxic metals cadmium and lead....industries sharing the public sewage lines often dump waste containing compounds of these metals into those lines. Ask to see a state-certified analysis of the sludge before bringing it home, as heavy metal contamination of soil is very difficult to reverse.

Conserve water easily by keeping a plastic bucket by the bathtub and a milkjug or decorative watering can by your sink. Just collect the water that usually goes down the drain as you wait for water to get either hot or cold!! Neat huh? Use this rescued water to fill your pets' water bowls, to water your potted plants, or in the garden.

To keep your carrots from splitting, which is caused by severe fluctuations in soil moisture levels, keep the garden well-mulched with 4"-6" of grass clippings or hay between the rows. Mulch applied and kept this thick not only enhances soil fertility by feeding beneficial soil organisms, it greatly reduces water loss by both shading the soil surface from the sun and shielding it from wind. It also lowers soil temperatures which further reduces evaporation. One more benefit: deeply mulched soil also remains much looser, making pulling up your carrots easier and with less breakage.

For a very quick privacy hedge that also produces "tons" of low-calorie crunchy tubers, just buy a few pounds of "Jerusalem Artichokes" or "sunchokes" from the specialty section of your produce market and plant a piece of a tuber 6" deep and 18" apart in the spring OR fall. This rapid-growing perennial member of the sunflower family will, with the onset of early spring, produce a dense "hedge" of strong vertical stalks that can reach a height of 8 feet. If brutally cut back to a height of three feet in midsummer, they will not only grow back more uniform and dense in appearance, the crunchy nutritious tubers will attain greater size. Such a trimming will also greatly increase the number of the 3"-4" yellow daisies that appear near summer's end. Sunchokes grow best in regions where snow in winter is likely, as there the perennial roots will be afforded a good period of dormancy. The nutty tasting roots are low in calories because instead of starch they are composed primarily of inulin, a carbohydrate undigested by the human digestive tract. So to hide a toolshed, to create a privacy screen, or to shield your yard from a noisy dusty road, just plant this nuclear war-proof American native and get out of its way.

Softened water can kill your plants due to high levels of dissolved salt. Water softeners also rob the water of both calcium and magnesium, nutrients critical to both human and plant health. Softened water should also never be used in your aquariums. What is it good for? Laundry and bathing.

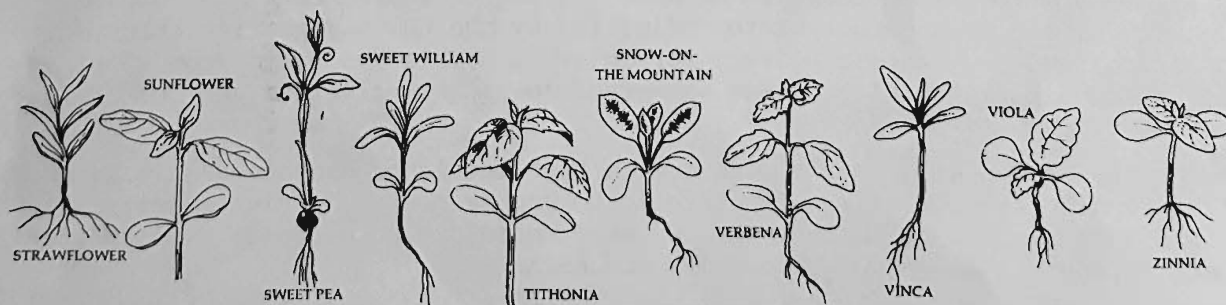
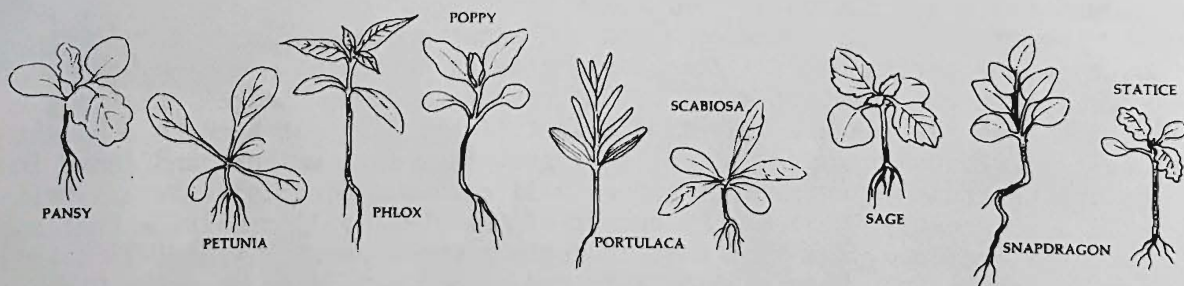
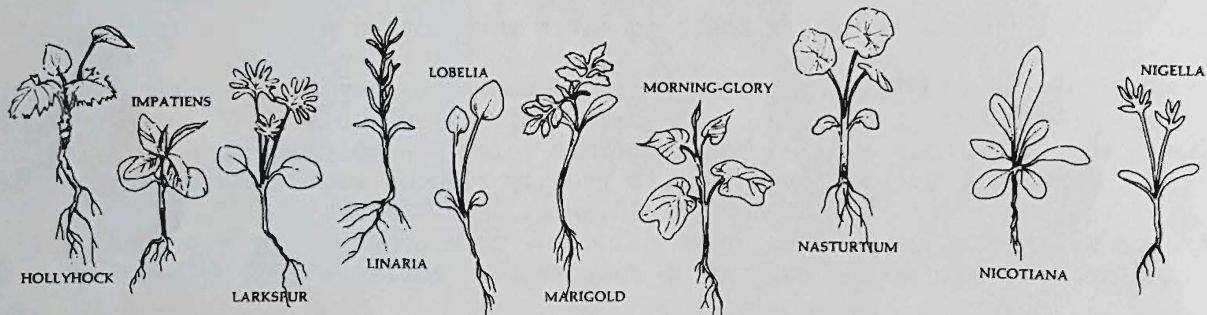
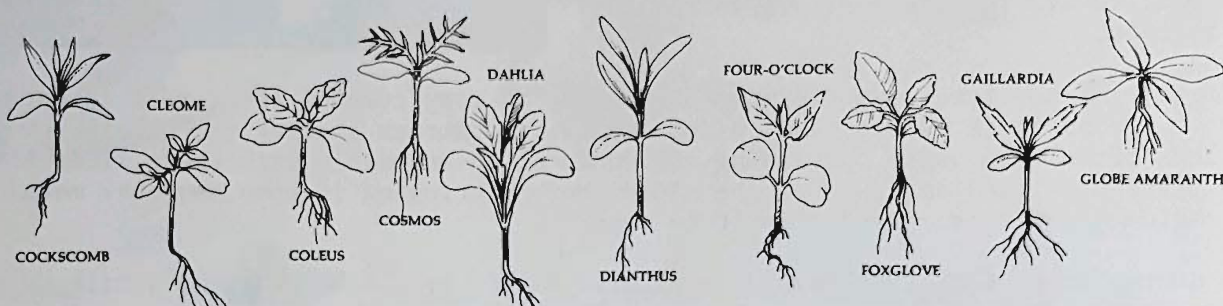
Small tree seedlings in your gardens can be pulled out easily using a pair of pliers, especially after a good rain or deep watering has softened the soil.

Fish markets often give away for the asking the heads and innards, which, if buried 10" deep provide a balanced source of nutrition for flowering and fruiting shrubs, vegetables and perennial flowers.

God grooves in mysterious ways. Margaret Head 1953-



# FLOWER SEEDLINGS IDENTIFIED



"Everyone smiles as they drift past the flowers that grow so incredibly high".  
The Beatles



# TROPICAL TROPICS



by Dr. Jack A. Randa

Let's discuss some of the fundamental reasons why subtropical and tropical gardening is so different from that in cooler regions. Without a basic understanding of soil, plant species' climatic needs, and especially climate itself, gardeners in the tropics can spend years repeating their mistakes, tossing good time and money after bad, thinking they lack a "green thumb", which, after all, is nothing more than an indicator of advanced gangrene. So rather than discuss individual plants and their culture, together let's examine what makes subtropical and tropical regions so unique.

The first and most important (but usually overlooked) factor is a lack of SUSTAINED COLD WEATHER. While this is great for the culture of lush tropicals, it makes growing hardy perennials extremely difficult. Why? Hardy perennials are plants that evolved in colder regions where the ground often freezes each winter. These plants long ago adapted to these harsh winters by going dormant after the first few hard frosts, which first kill the above ground portions of the plants and then subsequently induce dormancy (rest) in the roots so as to survive the winter. The arrival of increased warmth and daylength in spring breaks dormancy and triggers renewed growth. Here is the point: Hardy perennials REQUIRE A SUSTAINED CHILLING to complete their annual cycle and begin it again. That is why the tulips, peonies, lilacs, bearded iris, horseradish, daffodils, Oriental poppies and many more that thrive and multiply in snowy climate regions rarely survive more than one year in mild climate areas like Central and South Florida, the Caribbean, southern California or southern Arizona. As an experiment one can try growing these plants in containers, which can be placed in a spare refrigerator for 3 months each winter in an effort to "trick" the plants into dormancy. While this technique sometimes succeeds, the growth of the hardy perennials once taken out of the refrigerator will often be adversely affected by the next factor in tropical gardening:

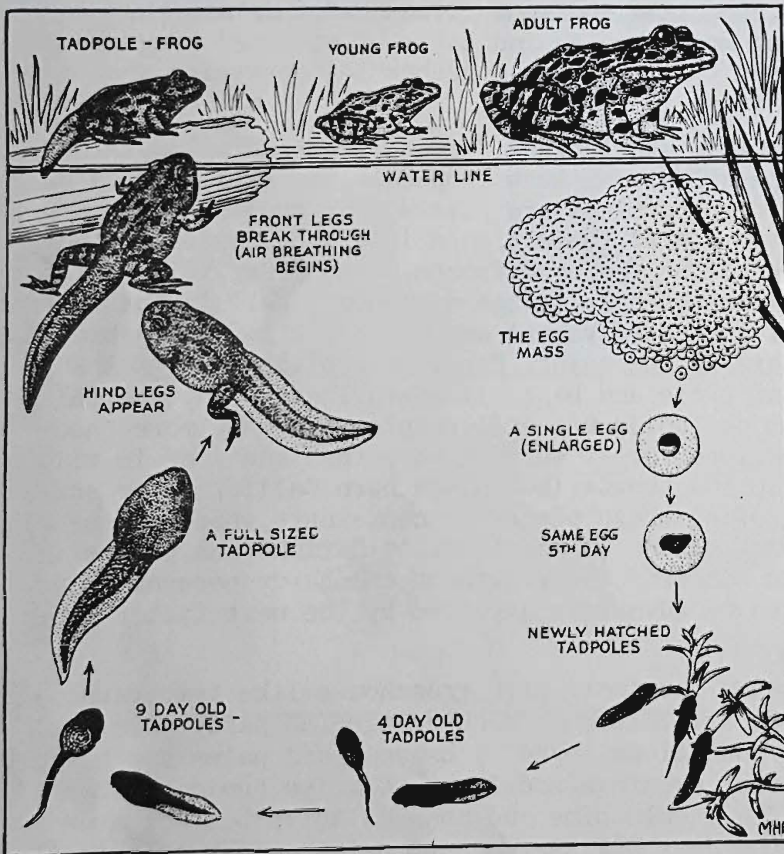
**HEAT-AND-HUMIDITY.** The tropics are noted for their high, greenhouse-like temperatures and stifling humidity, neither of which drops all that much each evening. So hardy perennial plants grown here are subjected to two conditions loved by bananas and palms but hated by plants that evolved in regions with cooler evenings and lower relative humidities. So tropical gardeners may succeed in keeping their columbine and monarda ALIVE but not even remotely thriving. Think of it this way: One does NOT see coconut palms and strelitzia (bird-of-paradise) in the gardens of snowy climate regions because it is too cold for them there. One does NOT see blue spruce and lilacs in the tropics because it is too hot and humid for them.

Lastly, let's discuss SOIL, which unlike climate in the tropics, can be modified somewhat. Tropical soils are usually very poor, with a low content of organic matter and vital minerals. It is also quite often acidic due to high rainfall and high decomposition rates (decaying organic matter releases various acids). But hardy perennial plants prefer the rich, clay-based, neutral or even alkaline soils often found closer to the earth's poles than the equator. (Many regions of clay soils were formed in part by the action of glaciers grinding down granite formations. Even during prehistory's many Ice Ages the tropics were free of



glaciers, hence the frequent absence of clay beds there). Gardeners here are well-advised to incorporate HUGE amounts of manure, hay, grass clippings, crop refuse, etc. into their soil to boost humus levels. (Humus is partially-decayed plant and animal matter. It is dark, spongy, incredibly absorbent and is THE basis for soil fertility). An annual sprinkling of dolomitic limestone to combat soil acidity while supplying calcium and magnesium is very nearly vital unless one grows strictly native plants.

So the next time you tropical and subtropical gardeners curl up in your favorite chair to lust after the pictures in a bulb catalog from, say, Michigan, bite your lip and order nothing unless you wish to employ your refrigerator in an experiment. Some longtime tropical gardeners eventually move to snowy regions to be able to FINALLY grow the hardy perennials, which include some of the world's most treasured and beautiful flowers like hollyhocks, heirloom roses, fritillarias, peonies, daffodils, delphiniums, columbine, plus hundreds of others. Rather than try to recreate hardy perennial gardens in the hot tropics, transplants to these regions would do better to discover the incredible array of plants that thrive in the heat and humidity. After all, how many Ohio gardeners can walk out their back doors one summer day and return to the kitchen moments later with fresh bananas, ginger root and avocados?



LIFE HISTORY OF THE FROG

A shallow pool, even a garbage can lid set into the soil, gives frogs a place to lay their eggs. Readily killed by pesticides, they prefer lushly-planted yards, eat harmful bugs and sing after rain.



It might be interesting to speculate upon the probable length of a "de-patriarchalized Bible". Perhaps there would be enough salvageable material to comprise an interesting pamphlet". Ibid



# H

ow can you buy or sell the sky, the warmth of the land? The idea is strange to us

If we do not own the freshness of the air and the sparkle of the water, how can you buy them?

Every part of this earth is sacred to my people.

Every shining pine needle, every sandy shore, every mist in the dark woods, every clearing and humming insect is holy in the memory and experience of my people. The sap which courses through the trees carries the memories of the red man.

The white man's dead forget the country of their birth when they go to walk among the stars. Our dead never forget this beautiful earth, for it is the mother of the red man.

We are part of the earth and it is part of us.

The perfumed flowers are our sisters; the deer, the horse, the great eagle, these are our brothers.

The rocky crests, the juices in the meadows, the body heat of the pony, and man-- all belong to the same family.

So, when the Great Chief in Washington sends word that he wishes to buy our land, he asks much of us. The Great Chief sends word he will reserve us a place so that we can live comfortably to ourselves.

He will be our father and we will be his children. So we will consider your offer to buy our land.

But it will not be easy. For this land is sacred to us.

This shining water that moves in the streams and rivers is not just water but the blood of our ancestors.

If we sell you land, you must remember that it is sacred, and you must teach your children that it is sacred and that each ghostly reflection in the clear water of the lakes tells of events and memories in the life of my people.

The water's murmur is the voice of my father's father.

The rivers are our brothers, they quench our thirst. The rivers carry our canoes, and feed our children. If we sell you our land, you must remember, and teach your children, that the rivers are our brothers, and yours, and you must henceforth give the rivers the kindness you would give any brother.

We know the white man does not understand our ways. One portion of the land is the same to him as the next, for he is a stranger who comes in the night and takes from the land whatever he needs.

The earth is not his brother, but his enemy, and when he has conquered it, he moves on.

He leaves his fathers' graves behind, and he does not care. He kidnaps the earth from his children, and he does not care.

His father's grave, and his children's birthright, are forgotten. He treats his mother, the earth, and his brother, the sky, as things to be bought, plundered, sold like sheep or bright beads.

His appetite will devour the earth and leave behind only a desert.

I do not know. Our ways are different from your ways.

The sight of your cities pains the eyes of the red man. But perhaps it is because the red man is a savage and does not understand.

There is no quiet place in the white man's cities. No place to hear the unfurling of leaves in the spring, or the rustle of an insect's wings.

But perhaps it is because I am a savage and do not understand.

The clatter only seems to insult the ears. And what is there to life if a man cannot hear the lonely cry of the whippoorwill or the arguments of the frogs around a pond at night? I am a red man and do not understand.

The Indian prefers the soft sound of the wind darting over the face of a pond, and the smell of the wind itself, cleaned by a midday rain, or scented with the pinon pine.

The air is precious to the red man, for all things share the same breath--the beast, the tree, the man, they all share the same breath. (continued)



The white man does not seem to notice the air he breathes. Like a man dying for many days, he is numb to the stench.

But if we sell you our land, you must remember that the air is precious to us, that the air shares its spirit with all the life it supports. The wind that gave our grandfather his first breath also receives his last sigh.

And if we sell you our land, you must keep it apart and sacred, as a place where even the white man can go to taste the wind that is sweetened by the meadow's flowers.

So we will consider your offer to buy our land. If we decide to accept it, I will make one condition: The white man must treat the beasts of this land as his brothers.

I am a savage and do not understand any other way.

I have seen a thousand rotting buffaloes on the prairie, left by the white man who shot them from a passing train.

I am a savage and I do not understand how the smoking iron horse can be more important than the buffalo that we kill only to stay alive.

What is man without the beasts? If all the beasts were gone, man would die from a great loneliness of spirit.

For whatever happens to the beasts, soon happens to man. All things are connected.

You must teach your children that the ground beneath their feet is the ashes of your grandfathers. So that they will respect the land, tell your children that the earth is rich with the lives of our kin.

Teach your children what we have taught our children, that the earth is our mother.

Whatever befalls the earth befalls the sons of the earth. If men spit upon the ground, they spit upon themselves.

This we know: The earth does not belong to man; man belongs to the earth. This we know.

All things are connected like the blood which unites one family. All things are connected.

Whatever befalls the earth befalls the sons of the earth. Man did not weave the web of life: he is merely a strand in it. Whatever he does to the web, he does to himself.

Even the white man, whose God walks and talks with him as friend to friend, cannot be exempt from the common destiny.

We may be brothers after all.

We shall see.

One thing we know, which the white man may one day discover--our God is the same God.

You may think now that you own Him as you wish to own our land; but you cannot. He is the God of man, and His compassion is equal for the red man and the white.

This earth is precious to Him, and to harm the earth is to heap contempt on its Creator.

The whites too shall pass; perhaps sooner than all other tribes. Contaminate your bed and you will one night suffocate in your own waste.

But in your perishing you will shine brightly, fired by the strength of the God who brought you to this land and for some special purpose gave you dominion over this land and over the red man.

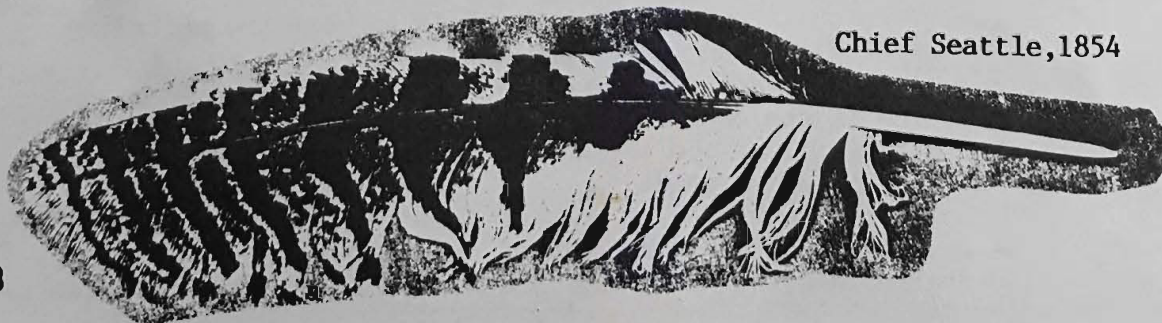
That destiny is a mystery to us, for we do not understand when the buffalo are all slaughtered, the wild horse are tamed, the secret corners of the forest heavy with scent of many men, and the view of the ripe hills blotted by talking wires.

Where is the thicket? Gone.

Where is the eagle? Gone.

The end of living and the beginning of survival.

Chief Seattle, 1854







Wood Pewee

Orchard Orioles

9

We should all be concerned about the future because we will have to spend the rest of our lives there.  
Charles F. Kettering



Please send "tasteless original" adult version...Especially enjoyed "Beware Lawn Fetish of American Males". **Lu Weber, Plantation, Florida**

Dear Garden Doctor, Love the magazine. But how about sending us the "The Garden Doctor" adult version for the rest of our subscription. Merry Christmas, **Maria Kuriloff, Malverne, New York**

Dear Garden Doctor, I cannot live another moment without your illustrious publication. Alas-My Friend Don cannot live without your wisdom, though he doesn't know it yet, either. **Sheila Lyons, Corvallis, Oregon** (Thanks Sheila, for giving The Garden Doctor both to yourself and to Don.J.S.)

Hey John, Thanks very much for the September issue of your publication you sent me a while back. Enjoyed the hell out of it. My wife can't figure out the irrelevancy and how it all ties together, but I think it's all funny AND interesting. There is a real sympatico feeling. **John Koenig, Iola, Wisconsin**

Dear John-Thank you from my heart for your publication, letters, seeds and interest. What a unique source of inspiration! I'm glad you're out there. Will include your subscription in our funding list for 1990. Look for us to be on your list. Thank you for being in Colorado! Please keep in touch. **Lana Thomas, Malachite Small Farm School, Gardner, Colorado 81040**

Dear Garden Doctor, Your publication is truly entertaining and informative. Please write some articles on companion growing. **Sally Newkirk-Sharp, Jackson, Tennessee**

Dear Doctor-I read about you in Utne Reader, and you sound neat. I want to send you to my Mom. **John Spellman, South Portland, Maine**

...You have a great vision-Happy Holidays, **Don Kerson, Mill Valley, California** (Thanks to Don & Sue Kerson for giving The Garden Doctor to Bill, Katy, and Nancy for Christmas J.S.)

Dear John, So far we have enjoyed 2 issues of your fine publication-one of each variety-in the future please make ours the "original" (uncensored) version. **B & S Rynberg, Gibraltar, Michigan** (Thanks to B & S Rynberg for giving The Garden Doctor to D., J., and M. Rynberg J.S.)

Hi John! Please renew our subscription to The Garden Doctor, (tasteless original, please). Sorry we missed your talk at Rocky Mountain Environmental Health Association earlier this year. All our best for the New Year. **Kathryn Dieterich-Rurup, Aurora, Colorado**

...Make me happy and send me the "tasteless original" version instead, please. **Donna Barrington, Bronx, New York** (Thanks for giving The Garden Doctor to Charles! J.S.)

Dear Doctor: It's been a year since I got your sample copy, but better late than never. Please send 2 subscriptions, one to my mother and one to me. **Barbara Wigginton, Salem, OR**

Dear John, I would like to subscribe to The Garden Doctor. Enclosed is \$24 for the first year....by the way, I heard about your magazine through the Recommended Reading column in the Utne Reader. **Mike Holland, Chapel Hill, North Carolina**

....Just last week we met 2 dolphins in the ocean waters and they played with us for nearly an hour....My 2 children and I love your Garden Doctor. My 14 year old son especially likes the Good News, Bad News and Phukinay. They have provided the basis for many a great family discussion. We read them out loud to each other and since I have them on the reading rack in the bathroom, I will often hear a young voice call out "Hey Mom listen to this, Phukinay, 62,897 people were killed...." Your social commentary is as provocative as your gardening info. Thanks. Best wishes for a peaceful 1990. **Sasha Marohn, Fredericksted, St. Croix, U.S. Virgin Islands** (Thanks Sasha! J.S.)

I am he as you are he as you are me and we are all together. The Beatles





pring comes to our hemisphere due to the earth's  $23\frac{1}{2}$  degree tilt on its rotational axis AND due to that tilt leaning us TOWARDS the sun (during daylight hours) during a portion of our journey around that close yellow star. This also means that the other hemisphere is leaned AWAY from the sun (during daylight hours); thus our spring and summer is their autumn and winter.

For the gardener in mild winter regions like central and southern Florida, southern California, s.w. coastal Texas and the Caribbean, spring comes around March and is the time to plant the frost-tender

vegetables and flowers that love warm, frost-free weather. On the next two-page planting chart they are followed by a "T" for tender.

Call your agricultural extension service agent in the state government listings to learn the average last frost date for your area. Your garden site should be in FULL sun ALL day, away from trees and buildings. Organic agriculture holds that healthy soil is vital to healthy plants: cover your garden with 1 inch of poultry manure, horse or sheep manure, compost, grass clippings, or a similar bulky organic waste material. If these are unavailable, you can sprinkle a  $\frac{1}{4}$  inch layer of soybean meal, cottonseed meal or alfalfa meal (from feedstores) evenly over the entire garden. If your soil is quite acid in your area (ask the extension agent) lightly sprinkle dolomitic limestone over the entire garden. Starting at the upper left corner of the garden and working forward, turn the soil so that each shovelful is returned upside down...with practice, you can zip through the garden in no time. This places the new nutrient sources and the old mulch layer down deep to keep the soil loose and fertile. Use a rake to break up the biggest clumps, avoiding walking on the soil so as not to pack it back down. Cover the entire garden with 6 inches of hay, grass clippings or pulverized tree waste from a tree trimming company. Water the a good long time with a coarse spray to settle down and soak the new mulch layer. Then, kneeling on a board (again, to avoid packing the soil with your body weight) use your hands to "part" the new mulch as you would use a comb to part hair. Each "part" may be 4 inches wide, with each "part" about 12-14 inches apart. The end result is a neat arrangement of parallel rows of bare soil about 4 inches wide separated by 12-14 inch wide zones of mulch about 6-8 inches thick.

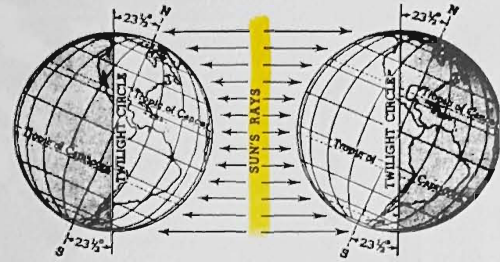
Rather than make a hole for each seed, just drag your finger or a stick down each



row of exposed soil, then sprinkle the seeds down the length of this furrow...make the depth of each furrow appropriate for the seed being planted by varying the pressure on your finger or stick when dragging it through the soil. Use your hand to push the appropriate thickness of soil back over the freshly-planted furrow. If your soil is very sandy (and thus holds water poorly) water the new garden daily for 10-15 minutes for the next two weeks to insure good germination. Heavy clay soils hold water well, so a watering every other day the first two weeks should be fine. Heavy clay soils can also act like cement and trap the emerging seedlings, so be sure not to cover the seeds too deeply. After two weeks, water the garden using an oscillating sprinkler for 1 hour every 5-7 days, 5 if yours is sandy soil, 7 if heavy clay. Rows planted this closely will result in a highly-productive "crowded" garden that shades itself from the summer sun, thus greatly reducing evaporation while suppressing weeds. Consequently, within a couple of months the garden will thrive with just 2-3 hour long waterings per month, ESPECIALLY if you make a point of continually adding grass clippings, horse stall cleanings, spoiled hay, bush trimmings, kitchen waste, tree waste, seaweed...in short, anything natural that will rot (Conservatives, take note: liberals, minorities and Commies are natural but NOT to be used for mulch). Try to keep those mulch zones between your rows of veggies at a thickness of 8 inches or more for taller crops, about half that for shorter crops. A continually renewed mantle of decaying organic matter is perhaps THE distinguishing feature of organic agriculture...it retains moisture, releases nutrients vital to plants, improves soil texture, reduces soil temperatures on hot summer days, moderates soil pH, suppresses weeds, fosters earthworms (they add fertility and keep the soil loose with their tunneling), fosters the beneficial fungi and bacteria that control disease, fosters the beneficial nematodes that eat harmful nematodes and insects, fosters single cell algae that enrich the soil, fosters mycorrhizia fungi that hasten decay, fosters rhizobia bacteria that convert atmospheric nitrogen into a natural nitrogen fertilizer, plus provides a safe haven for the eggs and young of beneficial insects. Read books by RUTH STOUT to broaden your understanding and enthusiasm for deep mulching. We are all indebted to her.

Using pesticides to exclude plant-eaters from the garden is an "Apartheid Approach" to gardening, for even the "natural" pesticides kill beneficial critters. Such a belligerent mindset is expensive, difficult, unsafe, and makes the garden itself an adversary instead of a productive, calming retreat in a hectic world.

June



December



# VEGGIES

Veggies and flowers followed by an "H" are frost HARDY and can be planted in the garden 2 weeks before last expected frost in snowy climate regions. Mild winter areas like S. California & S. Florida: plant them December through February to beat the heat.

VARIETY	WHEN	SEED DEPTH	EDIBLE PORTIONS
BEETS H	APRIL-MAY	1/2"	LEAVES, ROOTS
BOK CHOI H	APRIL-MAY	1/2"	LEAVES, STEMS, FLOWERS
BROCCOLI H	APRIL-MAY	1/4"	LEAVES, STEMS, FLOWERS
BRUSSELS SPROUTS H	APRIL-MAY	1/4"	LEAVES, STEMS, FLOWERS
BUCKWHEAT H	APRIL-MAY	1/2"	LEAVES, FLOWERS, SEEDS
CARROTS H	APRIL-MAY	1/2"	LEAVES, ROOTS, FLOWERS
CABBAGE H	APRIL-MAY	1/2"	LEAVES, FLOWERS
CHARD H	APRIL-MAY	1/2"	LEAVES, STEMS
CAULIFLOWER H	APRIL-MAY	1/2"	LEAVES, FLOWERS
COLLARDS H	APRIL-MAY	1/2"	LEAVES, FLOWERS
CHIVES H	APRIL-MAY	1/4"	LEAVES, ROOTS, FLOWERS
CHICORY H	APRIL-MAY	1/4"	LEAVES, ROOTS,
CORN SALAD H	FEB. -MARCH	1/2"	LEAVES, SEEDS
CILANTRO H	APRIL-MAY	1/4"	ROOTS, LEAVES, FLOWERS
DAIKON H	APRIL-MAY	1/2"	LEAVES
ENDIVE H	APRIL-MAY	1/4"	LEAVES, SEEDS
FAVA H	FEB. -MARCH	1"	LEAVES
KOHLRABI H	APRIL-MAY	1/2"	SEEDS (allergic reaction possible)
KALE H	MARCH-APRIL	1/2"	LEAVES, STEM
LETTUCE H	APRIL-MAY	1/2"	LEAVES, FLOWERS
MUSTARD H	APRIL-MAY	1/4"	LEAVES
ONION H	MARCH-MAY	1/4"	LEAVES, FLOWERS, SEEDS
ORACH H	MARCH-APRIL	1/2"	LEAVES, BULB, FLOWER
PEAS, SNOW PEAS H	MARCH-APRIL	1"	LEAVES, SEEDS
PARSNIP H	APRIL-MAY	1/2"	SEEDS, SEED PODS, FLOWERS, LEAVES
PARSLEY H	APRIL-MAY	1/2"	ROOTS
QUINOA H	APRIL-MAY	1/2"	LEAVES, SEEDS
RADISH H	APRIL-MAY	1/2"	ROOTS, LEAVES, FLOWERS, SEED PODS
RADICCHIO H	APRIL-MAY	1/2"	LEAVES
RAPE H	APRIL-MAY	1/4"	LEAVES, SEEDS (source of canola oil)
SPINACH H	MARCH-APRIL	1/2"	LEAVES
SALSIFY H	APRIL-MAY	1/2"	LEAVES, FLOWERS, SEEDS, STEMS
ANISE T	MAY-JUNE	1/2"	LEAVES, STEMS, SEEDS
AMARANTH T	MAY-JUNE	1/2"	LEAVES, FLOWERS
BASILS T	MAY-JUNE	1"	SEEDS, SEED PODS, FLOWERS, YOUNG LEAVES
BEANS, POLE, BUSH T	MAY-JUNE	1"	LEAVES, FLOWERS
BORAGE T	MAY-JUNE	1/2"	LEAVES

SETS, 2" - 6"



Earth Day...celebrate & participate by an organic gardener, bicycling to work...



April 22, 1990 is the 20th anniversary of attending rallies, planting trees, becoming

BASELIA T	MAY-JUNE	1"
BLACK-EYED PEAS T	MAY-JUNE	1"-2"
CORN T	MAY-JUNE	1"
CUCUSA T	MAY-JUNE	1"
CUCUMBERS T	MAY-JUNE	1/2"
CANTALOPES T	MAY-JUNE	1/2"
CHINESE BITTER MELON T	MAY-JUNE	1/2"
DILL T	MAY-JUNE	1/4"
EGGPLANT T	MAY-JUNE	1/4"
IRISH POTATO T	APRIL-MAY	1/8"
FENNEL T	MAY-JUNE	1"
LEEKs H	MARCH-MAY	1/4"
OKRA T	MAY-JUNE	1/8"
OREGANO T	APRIL-MAY	1/8"
PEPPERS T	MAY-JUNE	1/4"
PERILLA T	MAY-JUNE	1/2"
PUMPKINS T	MAY-JUNE	1"
PEPPERMINT T	APRIL-MAY	1/8"
SOYBEAN T	MAY-JUNE	1"
SWEET POTATO T	MAY-JUNE	1"
SQUASH T	MAY-JUNE	1/8"
SAVORY T	MAY-JUNE	1/4"
TOMATOES T	MAY-JUNE	1/4"
TOMATILLAS T	MAY-JUNE	1"
WATERMELONS T	MAY-JUNE	1"

PIECE OF TUBER, 4"

SLIPS, TUBERS, 4"

SEEDS, SEED PODS, FLOWERS, YOUNG LEAVES	
RIPE & UNRIPE SEEDS, DRIED SILKS (tea)	
IMMATURE FRUITS 6"-20" long	
IMMATURE FRUITS, YOUNG LEAVES	
MATURE FRUITS	
IMMATURE FRUITS	
LEAVES, FLOWERS, SEEDS	
FRUITS	
TUBERS ONLY (rest is toxic!)	
LEAVES, STEMS, SEEDS, FLOWERS	
LEAVES, BULB	
UNRIPE PODS, RIPE SEEDS, FLOWERS	
LEAVES	
UNRIPE & RIPE FRUITS	
LEAVES	
FRUITS, FLOWERS, LEAVES	
LEAVES, FLOWERS	
SEEDS	
LEAVES, TUBERS	
FRUITS, FLOWERS, YOUNG LEAVES	
LEAVES	
FRUITS ONLY (rest is toxic!)	
RIPE FRUITS	
RIPE FRUITS	

SHIRLEY POPPIES H	MARCH-APRIL	1/8"
CALENDULAS H	MARCH-APRIL	1/2"
SNAPDRAGONS H	MARCH-APRIL	1/4"
LARKSPUR H	MARCH-APRIL	1/4"
SWEET PEAS H	MARCH-APRIL	1/2"
CLEOME T	APRIL-MAY	1/4"
SWEET ALYSSUM H	APRIL-MAY	1/4"
PANSIES H	APRIL-MAY	1/4"
SCABIOSA T	APRIL-MAY	1/4"
ZINNIA T	MAY-JUNE	1/4"
LOVE-LIES-BLEEDING H	APRIL-MAY	1/4"


BUY YOUNG PLANTS

NONE	
PETALS	
FLOWERS	
ENTIRE PLANT QUITE TOXIC!!	
NONE	
NONE	
FLOWERS ON SALADS	
FLOWERS, LEAVES	
NONE	
NONE	
LEAVES, SEEDS	

# ANNUALS FLOWERS

February and March are great times for snowy climate gardeners to cut dormant branches of pear, peach, apple, forsythia, cherry and plum to "force" to bloom early indoors in a vase in 7-10 days.





On your free seed packet with **ONE** beet juice fingerprint write: **Burnet** (*Poterium sanguisorba*). A member of the rose family, this perennial herb grows best in poor dry chalky soil in a full sun location. A healthy specimen reaches about 1 foot in height and is topped by rather untidy looking clusters of tiny white or pink flowers... these may be removed to not only enhance the otherwise graceful appearance of the plant, but also to encourage further growth of the cucumber-flavored leaves, which are used in salads, in cold summer drinks, to flavor vinegars, and to brew hot or cold teas. Colonists brought this plant to America, considering it useful against infection and gout if added to beer or wine. While mature plants can be lifted and divided as a means of propagation, burnet is also easily grown from seed in early to mid spring. Since burnet prefers a somewhat alkaline soil, add a good sprinkling of dolomitic limestone to your soil if it is acidic, which is likely if you live east of the Mississippi River. If you are using compost to start your seeds in small cups or peat pots, add a bit of dolomite also, as compost is often acidic due to acids released by the decomposition process. Cover the seeds with  $\frac{1}{4}$  inch soil, which should be kept warm and slightly moist as the seeds germinate. Since burnet is not wild about being transplanted, either plant the seeds in their permanent garden home, or start them in little cups or peat pots, one seed per pot. Both peat pots and paper cups will simply rot away once set into the garden, thereby avoiding disrupting the young root system. Burnet prefers climatic regions where snow can occur each winter, as this induces needed dormancy... gardeners in the hot humid regions of the world may find burnet to be a slow-growing "annual".

On your seed packet with **TWO** beet juice fingerprints write: **Sweet Basil** (*Ocimum basilicum* var. "Compact Green Bush"). Like all basil, this densely-growing small-leaved variety is a frost-tender, heat-loving annual member of the huge mint family. It is very easy from seed, easy for even a beginning gardener. Fill a good-sized clay pot with soil enriched with rooted manure, compost, dry grass clippings or leaf mold. Basil prefers a neutral soil, so add a spoonful of dolomite or a dozen crushed eggshells. Thoroughly water the soil, let it drain, then sprinkle the seeds on the damp soil. Cover them with one-eighth inch of soil; this barely covers the tiny seeds. Water gently, so as not to dislodge the seeds, and put the pot in a warm sunny location. To keep the soil from drying out or chilling, you can make the pot into a "greenhouse" by stretching clear food wrap over the top and fastening it with a big rubberband. Remove the clear wrap as soon as the seedlings appear (7-10 days if not sooner) so as to not "cook" them inside the miniature greenhouse. When frost danger in your garden has passed, the easily-transplanted seedlings may be set outdoors. Water them immediately after transplanting, then mulch the garden with a few inches of grass clippings, spoiled hay, etc. Space the plants 12" apart, and pinch off the top of the plants when 6" tall to encourage bushiness. Basil leaves lose most of their flavor when dried; snip off the leaves just as blooms appear, pack them into a blender, add just enough boiling water to both blanch them and to enable you to "buzz" them into a thin

On your free seed packet with **THREE** beet juice fingerprints write: **Cinnamon Basil** (*Ocimum basilicum*) Culture same as above, cinnamon taste, scent.

There are very few monsters who warrant the fear we have of them.  
Andre Gide 1869-1951





WECOMMENDED WEADING by Sandy Neesta

I've got a new review of a great book for you, but first let me tell you that my speech therapy has really paid off, for my lithp is nearly under contwol. Thanks for your months of patience.

People drawn to gardening and to caring about the health of our Planet Earth are often intuitive, sensitive people that sometimes feel a hunger in the soul best fed by rich, finely-prepared poetry and fiction. Through these words we can sample precious nameless feelings and carry a faint taste of them throughout our lifetimes. A literary magazine published in Florida offers a true smorgasbord to its readers each spring and fall. Behind its stark cover is a bright palette of nearly 60 pages of poetry and short stories contributed by writers of varying levels of fame working in a full spectrum of styles. Managing editor Gianna Russo, herself a poet for nearly 15 years, selects works from all over the U.S.. National Book Award winner William Stafford and Frances Brock, whose fine poetry has been featured in several publications and will soon be published in an anthology by An-hinga Press, have appeared in the **Tampa Bay Review**. Some of Florida's up-and-coming writers contribute much diversity; energetic performance poet Phyllis McEwen Taylor, noted for her provocative poems fashioned from black eco-feminism, appears often, along with Rick Wilbur, Willie Reader, a professor of English at the University of South Florida, John Iorio, plus Silvia Curbelo and Robert Pawlowski, who both were awarded a residency fellowship in France by the Atlantic Center for the Arts and La'Napoule Arts Foundation. The hauntingly enigmatic short story writer and poet Renee' Ashley, whose work is gaining an increasingly broad notoriety, is also a frequent contributor.

This modest magazine has enjoyed good reviews by Avant Times, The Tampa Tribune, plus radio station WMNF and public access cable TV channels. And now, The Garden Doctor. The premier issue, Spring 1989 of the **Tampa Bay Review** completely sold out both through book store sales and mail order. It is quite affordable at \$4 per copy, or \$7 for an annual subscription.

Writers are invited to submit their work for consideration should include a self-addressed stamped envelope with their submissions. The guidelines for submission appear on the inside front cover: 1-2 short stories or 1-2 short drama pieces should be sent to: Fiction Editor, 17151 Rainbow Terrace Drive, Odessa, Florida 33556. 1-6 poems (no inspirational or traditional sentimental rhymed verse), plus any other correspondence, should be sent to: **Tampa Bay Review**, 5458 N. Rivershore Drive, Tampa, Florida 33603.

I look forward to reading the March 1990 issue. In the meantime, you'll find on the next page a few "snacks" from the last two issues. The poem by Frances Brock appeared in the Fall 1989 issue. The others appeared in the Spring 1989 issue. So if you enjoy good writing, or have a friend who does, I heartily weccomend you subscwibe TODAY by sending \$7 to: **Tampa Bay Review** 5458 North Rivershore, Tampa, Florida 33603. It is "soul food" in the truest sense.

John Starnes, editor of **The Garden Doctor**, will teach a 6 week course on organic landscaping and gardening beginning this April. For information write: University of Colorado at Denver, Campus Box 164, 1200 Larimer St. Denver, Colorado 80204-5300



## My Heart is a Planet

### The Room

She lies in the center  
 of the bed, quilts pressing  
 toward her spine; the room  
 has been changing since he slept here.  
 By morning the walls will be trees;  
 a breeze ruffles her hair.  
 The ceiling melts into corners,  
 baring the sky; she lies  
 in the center of the bed.  
 The wind picks up  
 quilts, tables, the cat.  
 Air fills her nightgown; her ribcage  
 rises, opening like a shell.  
 She is waiting for the sky to fall.  
 She wants to see behind it.

Deborah Browning

### The Magic Well

She steps onto a carpet of light  
 curving blue across the path  
 and past his silver lantern  
 blinking like an eye.  
 This place they go to is familiar  
 as love, but only half-remembered,  
 like a mother who dies young.  
 It is years since they have come,  
 come off into the darkness  
 bringing just their lamplight and  
 the music of leaves.

Here are the willow trees  
 reaching down their various arms,  
 and then, the well like a river  
 kissing deep into the world,  
 a mouth of secret promises--  
 they fill their dipper full.

The first sips taste of nothing  
 and only the nightbirds' trill  
 moves the air  
 until she notices  
 stars glimmering up from the well  
 stars shimmering in her palms  
 the veins of light she rubs on his cheeks  
 and eyes burst into tiny suns,  
 his arms like shining candles,  
 her embrace like a hoop of flames  
 and they dance,  
 naked firewalkers,  
 they dance  
 twin comets orbiting the well,  
 they dance,  
 laughter of meteors,  
 through the blazing hoop  
 through the brilliant world  
 they dance, enter the well.

Gianna Russo

white scarves flared from the mouths of the foxes  
 and what does your heart say my dear young man?

my heart is a river  
 that will not unwind

she opened the moon and would not close it behind her  
 tell me true my dear young man who put the dance in your eyes?

the high snarl, the sigh of lead  
 what you perceive is the firelight glancing off my rifle

she tied a rainbow at her waist  
 and what else do you know my dear young man?

that in sleep the body filters the soul  
 that my soul is a great explorer

i am the daughter of three magicians  
 i am not used to angry sorrow

i am the son of warriors and gypsies  
 men of lost names, women the night has cast aside

i ask this in the manner of brides and certain flowers  
 what does your heart say my dear young man?

my heart is a planet  
 that no one has seen

Tom Abrams

Foxfire

In this hillside cabin  
 blinded by leaves  
 no clock presides.

Under a skylight  
 we unfold, untie, unzip and see  
 what each one is,

loosed from taut  
 necessities.

Disarmed by that  
 simplicity,

I open to every stroke  
 of air, of sun, of woodland note;  
 of yours.

They find me  
 in my darkest coves.

Outside we make a nest  
 in the wet fern,  
 where other pliant forms surrender  
 their design,  
 register without confusion  
 even my small cries for freedom, fenders

against a feral logic and ease.  
 Insects, birds, snakes,

the small warm  
 mammals, wherever they keep  
 their silences,  
 reserve old strategies for  
 flight, alarm.

Resisting plans, I ask  
 your fingers to frame  
 a trough in the occult ground  
 and pack me down.  
 I'll lie in cool compression  
 and wait for pilgrim  
 hands to find me,  
 inch by inch, again.

Frances Brock





# Biblical Flora

by Ben Herb



The Bible's pages make many mentions of herbal plants familiar to us even today. Some are referred to as food, others as medicines, and yet others as sacraments in assorted monotheistic rituals. Whether one regards the Bible as a colorful collection of allegorical stories, or as THE revelation of Cosmic Wisdom, it can be interesting to learn of the various roles herbal plants play in the lives and dramas portrayed. Below are a few examples.

**Chicory-*Chicorium intybus*:** This pale blue flowered relative of the dandelion was apparently common in ancient Egypt, where it was eaten copiously as a blood and liver purifier. It was even called "the liver's friend". This hardy perennial's roots can be dug up in the fall after the first hard frost, potted and "forced" indoors to produce the pale, tender, slightly bitter delicacy known today as "endive". The roots are also commonly washed, chopped, roasted and ground then used as a coffee substitute. Grow chicory in full sun in moist, humusy soil of a neutral pH. Space the plants 18" apart. "The 14th day of the second month at even they shall keep it and eat it with unleavened bread and bitter herbs." Numbers 9:11

**Mint-*Mentha longifolia*:** Mentioned in the New Testament, this mint species, now commonly called "horsemint", was likely the one strewn on synagogue floors as a room deodorizer, the scent released as foot traffic crushed the spicy stems and leaves. Unlike spearmint or peppermint, it is quite bitter, and to this day is eaten as a "bitter herb" at Jewish Passover feasts. Like all mints, it prefers a rich, quite damp soil of neutral or slightly acidic pH, and its aggressive runners will quickly take over an area. Horsemint's blossoms are a pale pink, and appear in mid-summer. "Woe unto you, scribes and Pharisees, hypocrites! For ye pay tithe of mint." Matthew 23:23

**Aloe-*Aloe succotrina*:** Perennial, like all aloes, this species still grows in the Middle East. Flower stalks bearing red tubular flowers appear on mature plants in late summer and can reach 4 feet in height. It grows best in a slightly acidic, composty soil in a frost-free, semi-shade location. Easy to propagate from the little offshoots that form at the base of a mature plant, this species is mentioned in the New Testament as the aloe whose sap was mixed with spices to make an anointing "oil" used in embalming bodies. "Nicodemus... brought a mixture of myrrh and aloes, about an hundred pound weight." John 19:39

**Coriander-*Coriandrum sativum*:** This annual relative of dill, anise and fennel still grows wild in Egypt. Its seeds have even been found in Egyptian tombs! Sow the seeds when frost danger has passed in the spring. Choose a full sun location, enrich the soil with plenty of organic matter like rotted manure or compost. Since this quick-growing plant likes a neutral or even slightly alkaline pH, dusting the garden with dolomitic limestone is a good idea. As always, keep the soil between the plants mulched with hay, grass clippings, etc. to discourage weeds, retain moisture and increase soil fertility. When about 12" tall the plants will flower and later form the little fruits commonly called "seed". Gather these when brown and dry them for a week or so in the shade. The flavor of the "seed" is much improved if aged a few months or longer in a sealed container in a dark, cool place. "Manna... was like coriander seed; white: and the taste of it was like wafers made with honey." Exodus 16:31







# MARY TSE-TUNG'S

LITTLE PINK BOOK  
of cool addresses to write to!!!

## ABUNDANT LIFE SEED FOUNDATION

P.O. Box 772  
Port Townsend, WA 98368  
(seed-saving organization, herbs, catalog \$1)

## ARCHIAS' SEED STORE

P.O. Box 109  
Sedalia, MO 65301: this very old  
seed house carries open-pollinated  
corn, cover crops, fruits, vegetables.

## ORGANIC FARM and GARDEN SEEDS

131 Organic Lane  
West Columbia, SC 29169

## SIEGERS SEED COMPANY

7245 Imlay City Road  
Imlay City, MI 48444  
Bulk seed sales only.

## HERB GATHERING

5742 Kenwood Avenue  
Kansas City, MO 64110  
(French veggies, herbs, catalog \$2)

## RIPLEY'S BELIEVE IT OR NOT SEEDS

10 Bay Street  
Westport CT 06880  
(giant and foreign veggies)

## SIBERIA SEEDS

P.O. Box 2026  
Sweetgrass, MT 59484  
(short-season crops, catalog 50¢ and SASE)

## KITAZAWA SEED COMPANY

1748 Laine Avenue  
Santa Clara, CA 95051  
(Source of Japanese vegetable seeds).

## CORNS c/o

Carl Barnes  
Rt. 1 Box 32  
Turpin, OK 73950  
(over 200 varieties of open-  
pollinated corn. \$1, refundable)

## FAR WEST FUNGI

P.O. Box 428  
So. San Francisco, CA 94050  
(mushroom spawn, growing supplies)

## KALMIA FARM

P.O. Box 3881  
Charlottesville, VA 22903  
(unusual garlics, shallots, multiplying  
onions and other alliums)

## SPRING MEADOW SCHOOL OF ORGANIC FARMING AND GARDENING

441-B North Country Road  
Saint James, Long Island, New York 11780  
1-516-862-6667

## FOREVER FORESTS

P.O. Box 212  
Redwood Valley, CA 95470. Sponsors  
tree-planting weekends for volunteers,  
and works to encourage farmers to create  
forest preserves. Fights erosion with  
cover crop seeding projects and more.

## DOW SEEDS HAWAII

P.O. Box 30144  
Honolulu 96820  
(seeds for tropical and sub-tropical  
flowering and foliage plants.)

## FRIENDS OF THE TREES

P.O. Box 1466  
Chelan, Washington 98816  
(nearly 200 pages in length, this VERY  
complete directory is a must. \$7)





## Margaret Head's View of the News

Whew! Here we are at the most optimistic entry to a decade in my memory! It seems to me that many of the world's people are choosing awareness of problems long ignored, empowering themselves with facts, then cultivating a determination to set things right gently but firmly. How do I love these days? Let me count the ways, sweetums.

First and foremost, the wounded condition of our one and only planetary biosphere is being addressed in increasingly wide-reaching "grassroots" modes of action. People are firing their ChemLawn (what's in a name?) services. They're asking their grocers to carry organic produce, to not carry brands of tuna produced at the expense of dolphins, to not sell eggs packed in CFC-puffed foam cartons... Let's be sure to ask these store managers KINDLY, and to thank them for sticking their necks out by risking inventory changes. Speaking of CFC's, global production of these refrigerant gases currently corroding holes in the ozone layer is being curtailed as automakers and other manufacturers seek out environmentally-benign substitutes. Some foam food cartons are now puffed with inert gases instead of CFC's. State and national governments have passed laws mandating the end of CFC's in car air conditioners as early as 1993, thus pushing industry to REALLY search for substitutes. Cars themselves are becoming increasingly (and beautifully) streamlined so as to consume less fuel per mile travelled. Lead is being phased out of gasoline around the world as catalytic converters are being phased in to reduce air pollution. The perfect fuel, HYDROGEN, is finally being seriously researched as a substitute for the fossil fuels largely responsible for the Greenhouse Effect due to their release of prehistoric carbon dioxide into the atmosphere, thus upsetting the global thermostat. Biomass fuels, like alcohols and crop waste, are being mainstreamed to power cars, trucks, home-heating systems and powerplants.

New solar cell production methods are putting us closer to the goal of a home producing its own electricity: "rooftiles" will soon convert sunlight into electricity. More and more homeowners are recognizing that The American Lawn is a vulgar, out-dated example of conspicuous consumption that hogs precious water while encouraging the use of pesticides and petro-chemical fertilizers. Once sacred as "Apple Pie" and "Love it or Leave it", this monocultural monstrosity is being greatly reduced in size or replaced altogether by low-care perennial ground-cover plants (ajuga, wedelia, lemon thyme, clover, sedums, creeping phlox), perennial flower gardens, vegetable gardens, and home orchards made water-wise through deep organic mulches of leaves and cheap wood waste from lumber yards. More and more people use a cinderblock compost heap to turn kitchen waste into rich soil instead of wasting it in a watertable-polluting landfill.

As of this writing Dan Quayle isn't President yet. Long Live Bush! (God, I NEVER thought I'd say that!)

Good ole Gorbachev has paved the way for a global political and economic healing I NEVER thought I'd live to see. As a result, U.S. military spending is set to decline, perhaps allowing us to address Grandpa Reagan's legacy of an obscene national debt.

Jim Bakker is in prison instead of fleecing his flock, who FINALLY seems to be seeing Tammy Faye for what she really is. PUH-RAISE Jesus; I NEVER thought they'd wake up. (I swear that woman uses asphalt for mascara).

Another cause for optimism is the rapid spread of vegetarianism as people realize the environmental costs of commercial "meat-farming": deforestation and subsequent erosion and reduced rainfall and air purification; air pollution (drift from fertilizer and pesticide application on grain crops grown to feed the animals, plus all the exhaust produced by tractors and transport vehicles). water pollution from runoff from manure and urine, eroded pasture, and fertilizer and pesticides; the waste of the billions of gallons of water used to not only support the animals directly but also to produce food for them before they are killed and eaten themselves. All that grain could instead be used to feed HUNDREDS OF MILLIONS of starving human beings instead of a few million privileged people. Seeing this as dietary Imperialism converts some people to a vegetarian lifestyle, while others switch to lose weight and improve their health. Learning of the horrifying living conditions and means of slaughter compels others still. Whatever the reason, millions are using their diets to foster positive change.

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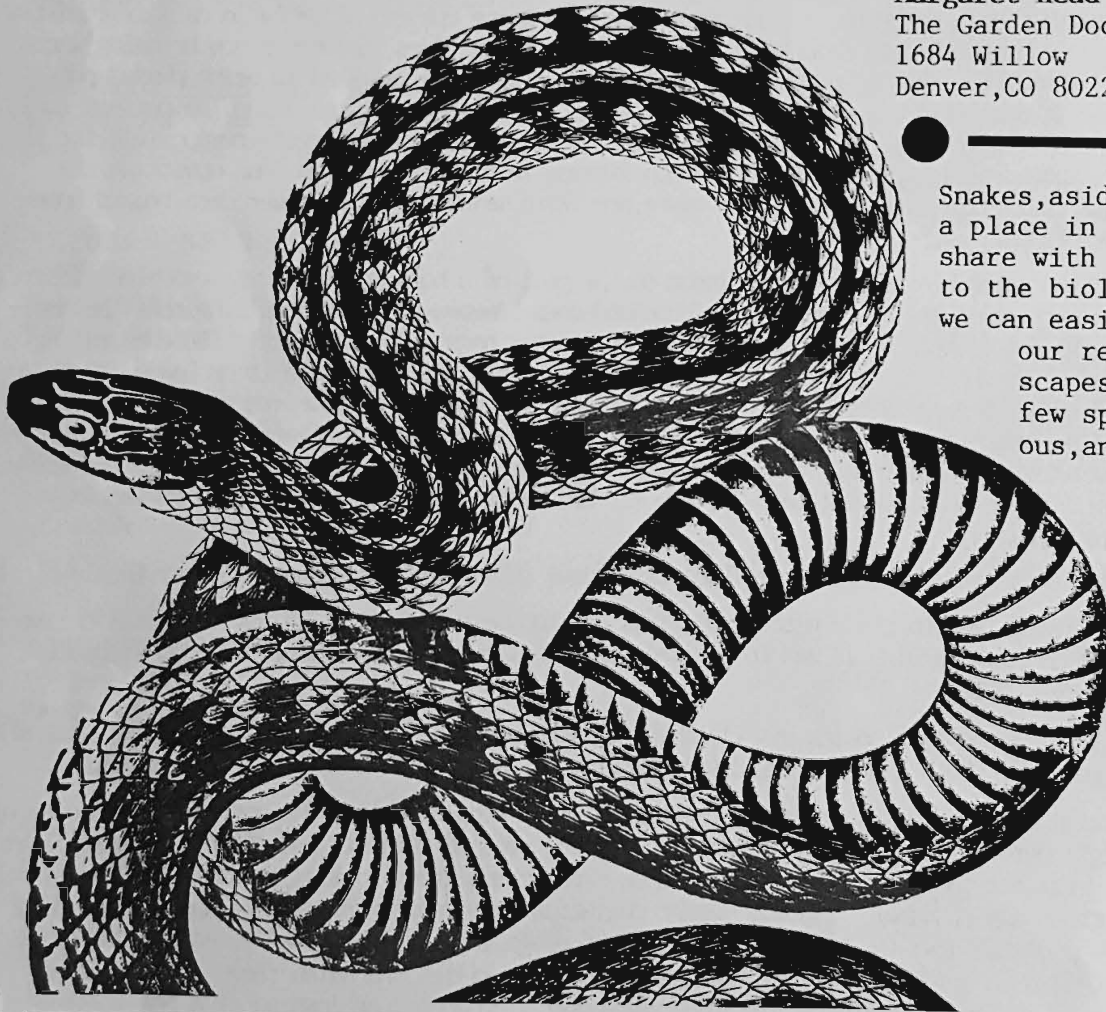


Recycling is becoming integral to many households, as everyday people learn they can turn waste glass, steel, paper, aluminum and plastic into money. While it can still be difficult to find a recycling center, many grocery stores have a recycling counter so that people can turn their trash into money in the same place they purchase it in the form of wrappers and containers. Plus the big aluminum recycling machines are turning up in more and more parking lots to make recycling more convenient for the consumer and more profitable for the recycling industry.

Yes hons, it seems that yuppies are re-discovering their hippie roots (I guess all that acid and mescaline way back when did us some good after all). It may not be the Age of Aquarius, but it seems the 90's will be a decade characterized by millions of people leading victorious daily lives, learning as we grow and vice versa. Total self indulgence during the 80's was fun for a while, perhaps a necessary collective response to the in-some-ways ascetic 60's vision of social activism. But maybe, just maybe, we'd like to see our kids get an intact planet and a few less over-priced, short-lived trendy gadgets. Sure, the problems facing us are immense and plentiful, but hey, we're waking up and changing how we live in ever increasing numbers. Who knows, maybe BMW's will be replaced by hydrogen-powered Fords as **THE** status symbol of the 90's, **ESPECIALLY** if they are parked in front of homes with **NO LAWN AT ALL!!!**

By the way, it seems many of you wonder just who the hell I am. Well, a woman has her secrets, but let's just say I'm real tight with the editor of this magazine...he and I go back a long way. I'm a self-made woman who sees herself as sort of a hybrid of Gloria Steinem and Tina Louise ("Ginger" on Gilligan's Island), with a good dash of Bette Midler and Jane Goodall tossed in to boot. I've got long red hair, green eyes, long legs, a bust that won't quit and best of all, a good head on my shoulders. Oh yes, I'm modest, too! I enjoy hearing from you folks, whether you like my column or not, so drop me a line. Ta Ta!!

Margaret Head c/o  
The Garden Doctor  
1684 Willow  
Denver, CO 80220



Snakes, aside from deserving a place in the world we share with them, contribute to the biological diversity we can easily encourage in our residential landscapes. Why? First, very few species are venomous, and these can be easily recognized. Second, they eat rats, mice, moles, and troublesome insects. Third, they were here first.

"Those who think we are powerless to do anything about the Greenhouse Effect forget about the White House Effect: as President I intend to do something about it". George Bush, campaign speech





In these golden years of the 20th Century, organic gardening and living is coming into fashion, no longer considered a spacey oddity. The fame of pesticides' danger is widespread; my column will help you make the switch.

## "Ch-Ch-Ch-Changes"

by

DAVY BOWID

Weeds often tempt even the organically-minded person

to reach for a can of toxic herbicide; after all, that's what the media tells us to do if we care about what our neighbors think of us. But this blanket hatred of "weeds" is a combination of an incomplete understanding of what they are, how they get es-

tablished, and subsequently how to control them safely, cheaply and eco-logically.

Actually, weeds can be a useful diagnostic tool in determining the health and vigor of your soil. Why? Weeds generally prosper in soils of declining fertility; soil poor in organic matter and often excessively acid or alkaline. Rather than buy soil pH testing kits of questionable accuracy, you can first learn to identify weeds by name and then to use their presence to develop an understanding of your soil. For instance, a predominance of sheep sorrel, oxalis or cinquefoil indicates a quite acid soil condition. Alkaline dry soils tend to support bindweed, Russian thistle, amaranths and mallow. Poorly-drained soils, which are often also quite acid, will support dollarweed, horsetail, tradescantia, Joe-Pye weed (eupatorium) and sedge grasses. So getting and keeping your soil rich in organic matter and of a neutral pH (use dolomitic limestone on acid soils, deep mulches and a little powdered sulfur on alkaline soils) is the best way to keep weed populations down to acceptable, manageable levels.

Weeds, in controlled numbers, can actually benefit the home landscape and farm, for they can reduce erosion, attract beneficial insects and birds, and add organic matter to your soil. Deep-rooted weeds can break up subsoil hardpan layers and bring valuable minerals to the surface. Weeds' roots also help keep the soil from compacting.

Okay, so weeds CAN be useful. But let's face it, sometime they're a pain, or worse, seem to threaten our yards and gardens. So here are a few ways you can "Nuke 'Em" without addin more poisons to an already poisoned environment:

- 1. EAT THEM!** "Right", you say. But hey, many of our "weeds" are escapees from the gardens of the Europeans who first settled in North America, having brought the seeds from back home to be grown in their new homeland. Dandelions, chicory and lamb's quarters are even sold in vegetable seed catalogs! These, plus chickweed, pigweed, sorrel, wild violets, purslane, dock and many many others make delicious, nutritious cooked greens. Many people no longer try to completely eradicate "weeds" from their yards but simply control their numbers by routinely harvesting them. These people have dropped an adversarial aspect of their relationship to their yard by escaping the brain-washing of the pesticide marketeers who have for years entrenched in us the notion that **ALL WEEDS ARE BAD... KILL THEM!!**
- 2. MULCH THEM!** To clear out a garden taken over by weeds, first feed the soil **GENEROUSLY** with pH adjusters (dolomite, sulfur), poultry manure, cottonseed meal (both of these are acidifiers also, great for alkaline soil), horse manure, fish emulsion, soybean meal, compost, rock powders, brewer's waste, etc. Broadcast these nutrient sources heavily on the garden site, **RIGHT ON TOP OF THE WEEDS...** no need to pull them up (you like THAT part, right?). Then cover the **ENTIRE** bed with a 1 inch thick layer of damp newspaper (let several stacks 2 feet high sit out in the rain or when you water your yard till they are soaked all the way through... they will **NOT** become mush but instead become easy-to-handle, thick "tiles"). As you cover over the garden site (start from the top left corner) be sure to overlap the edges by 4 inches so that weeds will find no openings to grow up through. Then cover the newspaper-tiled garden with 8 to 10 inches of hay, grass clippings or leaves. Water the garden with an oscillating sprinkler for 4 hours to both settle the mulch and newspaper layer down against the weeds but also to soak the nutrient sources into the underlying soil. In a few weeks most of the weeds will die and decay, further feeding the soil. In 2 months even the deep-rooted perennial weeds will likely have died out: use one hand to pull back the mulch at each spot where you wish to plant something, slit the exposed now-soft newspaper with a knife, plant your plant, then tuck the mulch back up around it. **Note:** If you wish, you can turn the freshly-fed soil, weeds and all, with a shovel, **BEFORE** putting down the weed-killing layer of newspaper. But earthworms and other biological soil-looseners will greatly soften your soil during the two month waiting period. Either way, your bed will be weed-free, poison-free, rich, moist and fertile.
- 3. COOK THEM!** Use boiling water to kill weeds in driveways, sidewalks and patios. Cheap, simple and safe.



# The Wall Street Kernel

## Some obstacles to clean, abundant energy

The production of carbon dioxide through the burning of fossil fuels--thought to be a massive contributor to the greenhouse effect--is a problem attracting increased attention. In September, a World Energy Conference in Montreal dealt chiefly with the prospects of hydrogen as a possible solution.

Why hydrogen? Because the chief fuels we use as a source of energy are wood, coal, oil, and natural gas. Coal consists almost entirely of carbon atoms. Wood, oil and natural gas consist largely or entirely of combinations of carbon and hydrogen atoms. When any of these burns, the carbon atoms combine with oxygen to form carbon dioxide, but hydrogen atoms combine with oxygen to form water.

However, pure hydrogen does not occur on Earth. The easiest way to release it from its combinations with other atoms is to break up the carbon-hydrogen combinations in natural gas and store the hydrogen. But in doing so, more unwanted carbon dioxide is formed.

One way of getting hydrogen without producing carbon dioxide is to start with water, a combination of hydrogen and oxygen. If the atoms are forced apart, the hydrogen can be stored and the oxygen harmlessly released into the atmosphere.

To separate water into hydrogen and oxygen atoms, we have to run an electric current through it in a process called electrolysis. However, an electric current is a form of energy that is formed most cheaply and easily by burning coal, oil or gas.

We therefore must produce an electric current by some form of energy that doesn't involve fossil fuels. We can use the power of falling water or wind or nuclear fission. Falling water, however, is restricted to certain places, wind is erratic and fission is feared by the public. An alternative is direct solar power.

Sunlight falling on photoelectric cells will produce an electric current that can be used to electrolyze water and produce hydrogen. Photoelectric cells are expensive, however, and usually inefficient. They cannot compete with fossil fuels as a source of energy.

Every effort must be made, then, to make photoelectric cells cheaper and more efficient. The best hope would seem to be the use of silicon, which is the second most common element in Earth's crust. There is a catch, though. Silicon atoms exist only in combination with other atoms, and it is expensive to extract the pure silicon needed for photoelectric cells. For that reason, the less silicon we can use in photoelectric cells, the cheaper they will be.

In the past, silicon has been formed into crystals that can convert 30% of the sun's energy falling on them into electricity--fairly good efficiency. However, making the crystals is tedious work, adding to the expense.

John Ogden and Robert Williams of Princeton University have been working on "amorphous silicon," which is less efficient than crystalline silicon, converting into electricity only 6% to 13% of the solar energy striking it.

However, it's much cheaper to form than crystalline silicon.

Ogden and Williams also point out that it is easier to prepare a thin film of amorphous silicon than of crystalline silicon, reducing the weight of the resulting photoelectric cell to 1/200 of one made with crystals.

Despite the lesser efficiency of amorphous silicon, then, it could make it cheaper to produce a given amount of electricity.

We may look forward, then, to the possibility of large arrays of silicon-film photoelectric cells in sunny areas, producing vast quantities of electric current out of sunlight to electrolyze water and produce hydrogen, the clean, non-polluting fuel of the future.



Isaac Asimov is professor of biochemistry at the Boston University School of Medicine and has written over 400 books.

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### ECO-LOGICAL STOCK PICK

After going public in 1987 at just \$6 a share, Wellman split 2 for 1 in 1989 and by the end of '89 was trading in the vicinity of \$36 per share. 1989 price range-18 3/8 to 43. In 1988 Wellman recycled 70% of the plastic beverage bottles returned in the U.S., manufacturing from them polyester fibers for carpets. Now posed for expansion after having doubled its capacity through an acquisition, it has begun a joint venture with Browning-Ferris to recycle plastic waste. Watch this one.



# Sane Lawn Care

by John Starnes

You're busy, I'm busy, so I'll try to keep it short and sweet. First, before the herbicides were invented and "marketed," people had fine lawns. In our grandparents' day a lawn consisted of a blend of various grasses plus white clover . . . the grasses not only worked together to help choke out weeds, they created a more complex visual texture that served well to disguise the weeds. Dutch white clover's roots harbor rhizobia bacteria that convert atmospheric nitrogen gas into a natural nitrate fertilizer.

## Doin' it naturally

Back then, people did just fine with two lawn feedings annually — spring and fall. They used weird easily gotten stuff like cottonseed meal, soybean meal, dried chicken poop or — often nothing at all. Fallen clippings decayed by beneficial bacterial and fungi, plus the nitrates provided by the rhizobia, met the lawn's nutrient needs. Those organisms are readily killed by commonly used fungicides like Benomyl or Daconil.

Since birds poop a lot as they feed, it's a good idea to sprinkle old bread, cereal etc. on the lawn instead of just in a feeder. Then instead of being a poisoned patch of ground, a lawn can serve as an urban wildlife refuge.

Such an old-fashioned polycultural (multi-species) lawn is a reassuring contrast to the modern monocultural (single-species) lawn kept in a frail state of seeming health using poisons.

## Wars' by-products

You should know that the diazinon used to kill insect life in lawns was developed by the Nazis as nerve gas to kill humans with. And the 2,4-D sold to kill those "deadly" weeds was one of the

two active ingredients of the herbicide Agent Orange that the U.S. government sprayed on both the jungles of Vietnam and our troops. Recently those sprayed vets won a lawsuit against the government for illnesses they now suffer as a consequence. Why has chemical warfare been re-packaged and retailed to us as the way to grow a lawn? Do children, pets or wild birds belong on such a lawn? Hell no!

Five thousand square feet of Kentucky Blue, St. Augustine or any other *single species* of grass presents a smorgasbord to its pests, consumes huge amounts of precious water and fertilizer, and seems to demand the use of poisons. A lawn insanely greened with periodic doses of "agricultural crack" is like an insanely dark tan — unnaturally gotten, unhealthy to maintain. Such a monocultural lawn is an obsessive symbol of flagrant over-consumption, and domination of Nature. As such it reminds me of a 1972 Pontiac Bonneville — two and a half tons of steel and chrome getting eight miles to the gallon, sputtering poisons into the air, just to move a 150-pound human being.

## Autumn remedy

An autumn over-seeding of a multi-species grass seed blend can convert a Detroit Monster of a lawn into a nimble efficient Honda lawn. Add a couple pounds of Dutch white clover seed to the blend for good measure. Broadcast this over your existing lawn some cool fall day, cover the lawn with a half-inch of compost, rotted manure or even ordinary garden soil to give the seeds a medium to root into. Covering the lawn with four inches of hay to shade the seedlings and hide them from birds is a good idea; that's why you see new highway shoulders so mulched. To insure great germination, water the newly-seeded transition lawn daily for one half hour in each area for three weeks;

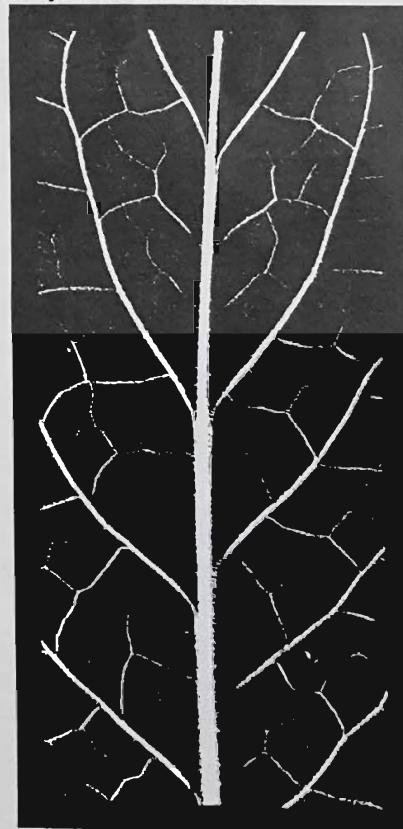
then, rake up the hay, put it in your vegetable garden, and switch to a deep weekly watering (two-hour if using an oscillating sprinkler) to encourage deep roots and to conserve water.

## What grasses where?

Crested wheatgrass (Ephraim and Fairway) plus some fescues and perennial ryegrass are good for arid-climate and snowy-climate regions. In the humid or snow-free regions, try blending the various running grasses with white clover, dichondra, or replace the lawn altogether with a groundcover like wandering jew, iceplant, widow's tears, lippia, rhoeo discolor.

Consider greatly reducing the lawn area by creating large, deeply-mulched (thus water retentive and largely weed-free) beds of perennial flowers and/or ornamental veggies, thus filling your yard and home with color, fragrance and safe, fresh food.

We don't have to choose between a nice lawn or no lawn at all . . . there is always a third alternative.



Only men wrote the Constitution; women were expressly excluded in intent and content. Wilma Scott Heide 1970

Finally man invented the atomic bomb, the biggest phallus in history.  
Elizabeth Hames 1948





# BAD NEWS

The human race cuts down 4 BILLION trees DAILY!  
ABC Nightly News

17,000 rivers and streams in the U.S. are "significantly polluted" according to the Environmental Protection Agency.

Japan announced in 1988 its intention to kill 400 minke whales in the Antarctic this past winter.

50% of Africa's total elephant population has been killed by poachers in the last 8 years....many of these 600,000 magnificent animals that died bore no ivory because they were the BABIES that died of starvation following the deaths of their mothers.

The Exxon Valdez oil spill in Prince William Sound has resulted in the discovery of the corpses of 800 sea otters, 28,000 sea birds and 116 bald eagles. One can only wonder how many more casualties were NOT found due to having sunk to the sea bottom.

Fish and alligators in Everglades National Park in South Florida contain 10 TIMES the federally set safe levels of mercury, a highly poisonous metal discharged by certain industries. Dangerous levels of mercury were also found in gamefish caught near Panama City, Lake Okeechobee, Tampa Bay and the Suwanee River.

Acting under the direction of George "I'm an environmentalist" Bush, EPA head William K. Reilly acted in concert with Japan and the Soviet Union in opposing an international proposal to stabilize Greenhouse Effect gases emissions by the year 2,000. More than 60 other nations at the conference on global warming held in the Netherlands in November 1989 approved the measure, which would have then led to international conferences to determine feasible emissions-reductions goals. But since in 1988 the U.S. accounted for 24% of total world carbon dioxide (CO<sub>2</sub>) emissions (according to the Dutch Environment Ministry) Bush and Reilly's sabotage of the international accord will greatly reduce its efforts to forestall climate change caused by industrial waste gases. "stay the course, thousand points of light, no new taxes, read my lips".

Soviet biologist-ecologist Alexei Yablokov estimates that one fifth of the Soviet people live in "ecological disaster areas", while another 35-40% live in ecologically "unfavorable" areas. Jack Anderson.

In fiscal 1989 INTEREST on the U.S. national debt of 2.8 TRILLION dollars exceeded government spending on Social Security, making debt service the SECOND LARGEST annual government expenditure. The largest expenditure? Military spending. Hmmm. 24

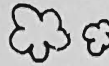
A government which robs Peter to pay Paul can always depend on the support of Paul. George Bernard Shaw 1856-1950



.....William Saroyan  
1908-1981

In the time of your life, live---so that in that wondrous time you shall not add to the misery & sorrow of the world, but shall smile to the infinite variety and mystery of it all.

# PHUKINAY!!



The tree species Eucalyptus deglupta of New Guinea can grow 35 FEET in just 15 months. Guinness Book of World Records.

Voyager spacecraft surveying the planet Saturn detected wind speeds of 1,100 miles per hour raging in the multi-colored toxic atmosphere.

Antarctica contains 70% of the world's fresh water in the form of 90% of the world's ice. Nature. PBS

The human heart beats 40 million times annually.

A 20,000 mile tall square inch of earth's atmosphere weighs just 14.7 pounds at sea level.

In 1973 Ernest T. Eksten of Bremerton, Washington grew a hollyhock measuring 17 feet 10 inches high! Guinness Book of World Records.

The butterfly species Melania of Central America lives on jungle bird droppings instead of nectar to obtain the amino acids it needs to extend its life from the usual few days to several months to allow it to lay more eggs.

The leaves of the cherry tree, if consumed, can kill you due to their cyanide content.

Spider silk is so strong that a 1 foot long piece would break only under the weight of another strand 10,000 miles in length.

Dr. Don Thomas of the University of Sherbrooke in Quebec has discovered that 95% of the forest regrowth on cleared land in West Africa is the result of bats dropping seeds while in flight.

The Great Blue Whale is far larger than any dinosaur known to have existed, for adult males can weigh up to 196 TONS.

Ants are so numerous that the combined weights of the world population of ants exceeds the weight of all humans, all other mammals, reptiles, birds, fish, other insects, crustaceans plus all other animal life forms COMBINED! Isaac Asimov.

In 1974 Mrs. Violet Philips of Cordelea, Queensland, Australia, grew a lemon that weighed 5 pounds, 13 $\frac{1}{4}$  ounces and measured 24 inches in circumference. Guinness Book of World Records.

Only 1 1-billionth of the sun's total energy output reaches the earth. NOAA

The sun's magnetic field reverses polarity every 11 years, which is also the length of the sunspot minimum-to-maximum cycle. National Oceanic and Atmospheric Administration.



At least once a year everyone is a genius. George C. Lichtenberg

"FINALLY I've found an environmental-gardening magazine I can believe in, one that helps me and my family stay informed and entertained while learning how to make our home and yard safer, more beautiful and ecologically sensible! **THE GARDEN DOCTOR**, praised by *Organica*, *The Tampa Tribune*, *Utne Reader*, *The Denver Post*, *East West*, *Vegetarian Life* and *Environ*, is unique in that its 24 richly illustrated pages are HAND-COLORED, all of them free of those gosh darn irritating, space-wasting paid advertisements that clutter most magazines. Instead I find useful features like "Ch-Ch-Ch-Changes" (which helps us make the switch AWAY from pesticides), *The Wall Street Kernel* (leading edge environmental economic news), *Good News*, *Bad News*, *Sharing Secrets* (organic gardening tips), plus book and product reviews, a poetry page, science facts, and a truly beautiful two page planting chart to help us plan our organic veggie and flower gardens. Our kids like the new Bird Identification Page, its drawings gleaned from plush 19th century hardbound books. Shucks, with holes in the ozone, mass extinctions and global warming, I treasure this upbeat magazine's offbeat humor tucked into its convenient, money-saving tips on how we can all easily live more Eco-Logically. Each quarterly (March, June, September, December) issue is hand-designed by editor John Starnes, making it truly a limited edition collectible! We especially look forward to the **3 FREE PACKS OF UNUSUAL SEEDS** inside each issue, and appreciate the page describing how to grow them. Since "**THE GARDEN DOCTOR**" is like several publications in one easy to read ad-free journal, we save both time AND money, two things OUR household is usually short of. A one year subscription to the magazine that *Organica* called "**The most interesting, humorous and informative publication to come over the transom at Organica in many months**" costs just \$24, and only \$18 for the gift subscriptions we give our friends, relatives and colleagues. Heck, by showing a few issues to our next door neighbor we got him to quit having his lawn sprayed with those poisons that used to drift into our yard as the kids played. So why not join us plus *The Denver Botanic Gardens*, *The Atlanta Botanical Gardens*, *The Dawes Arboretum*, *Smith & Hawkins*, *Buzzworm* and *Harper's* plus *The Agricultural Extension Service of Illinois* and subscribe TODAY! Send just \$24 to:



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