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DECEMBER 1990 ©



I am very excited about this Third Anniversary Issue because it heralds in several changes. The first and most important is that of author Renee' Ashley joining "THE GARDEN DOCTOR" as literary editor. She introduces herself to you all in a letter in this issue, but she modestly left out her impressive credentials: her poems and short stories have appeared in "Organica", "Carolina Quarterly", "Omnibus", "Gryphon", "The St. Petersburg Times", and "The Tampa Bay Review". Her play "Jack O'Lantern" was produced by the Quartz Theatre in Oregon. She is also now the literary editor for The Tampa Bay Review. Many of you will recognize her name, for several of her finely crafted poems have appeared in past issues of "THE GARDEN DOCTOR". Her honesty, empathy and creative energy will surely help to deepen and refine this magazine. Please keep her busy by submitting to her your finest poems and short stories. The March 1991 issue will bear the first fruits of her editorship; she has selected a short story by Leland Ballard entitled "Petunias".

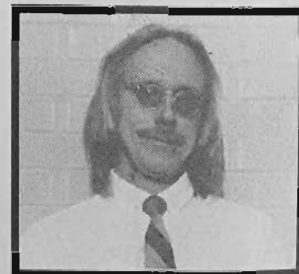
Another change is an open invitation to writers, artists, botanists and other interesting humans to submit their drawings, photographs, articles and article ideas. I have met many of you folks and have learned that "THE GARDEN DOCTOR" attracts a narrow but complex slice of humanity. This magazine was never intended to be a self-indulgent mouthpiece for my ego, but a kaleidoscope of the good energies that thoughtful souls create and discover within and without them. I admit the pay is meager; \$5 for poems, \$20 for articles and short stories, \$20 for cover illustrations, and 1 free issue for article ideas that get used. Please enclose a SASE for returns. Guidelines are simple: 1. Photos and drawings should be of natural phenomenon, such as clouds, minerals, fossils, plants, animals, etc. 2. Short stories or articles or poems, while not necessarily "upbeat", should not celebrate pain. A sad poem can just as well point the way to empowerment and growth-potential. In other words, "THE GARDEN DOCTOR" will not publish paralyzing, existential "life sucks" angst. We all need ENCouragement, not DIScouragement.

A third change involves hiring ALL of you as the official sales staff. How? Easy. For every gift subscription you give this holiday season, or for every subscription you sell to a friend, neighbor or associate, you'll be paid 1 quarterly issue, to be added to your own current subscription. Thus, if you give or sell 4 subscriptions, you'll earn 1 year of "THE GARDEN DOCTOR". You can use this earned yearly subscription to renew your own, or you can give it to whomever you'd like. You can pool with a friend; if each of you gives or sells two subscriptions, together you'll earn 1 year of "THE GARDEN DOCTOR" to share or give to another friend. If you sell a subscription outright, have them make their check out to THE GARDEN DOCTOR and mail it to me...I'll personally credit your subscription 1 issue for each subscription you sell. Granted, it's not a Mary Kay pink Cadillac, but it's a start. I've spent the last three years trying to make this the best alternative environmental-gardening magazine I know of, but have simply not given proper focus to the VITAL matter of achieving a broad enough readership to compensate for the lack of advertising dollars that sustains most magazines. I can't help but think ya'll will enjoy earning issues-for-subscriptions. I'll tell my mail carrier to get a wheelbarrow!

As "THE GARDEN DOCTOR" enters its fourth year, I wish to thank all you loyal longtime subscribers, all of you who have so generously given many gift subscriptions, all you who have dropped a line to share your enthusiasm and ideas, and also the poets who have submitted their work. I also am grateful to the several publications who've given this magazine the great reviews that attracted many of you readers in the first place. I also want to thank Renee' Ashley's son Jason Cronk for recently providing some elegantly simple but pragmatic suggestions to make this magazine economically viable instead of a hemorrhage in my personal finances. I will share some of those ideas with you all in the March 1991 editorial. My goal for 1990 was to end the year with 1,000 readers. I'm hopeful that the \$18 price, some advertising efforts and the "free-issue-for-each-gift-subscription" makes that happen. I wish you all a healthy, growth-filled New Year!

cover plant photograph:
Seseli gummiferum
 by Karl Blossfeldt 1932

John





G

reen Herons (*Butorides virescens*) are actually more blue than green; they seem dark all over when seen from a distance. Measuring 14 inches in length, they have a 25 inch wingspan. They wade through both salt and freshwater on bright orange or yellow legs while searching for small prey. Their call is a sharp, descending "kew". They are most common in the southeastern United States.

GOOD

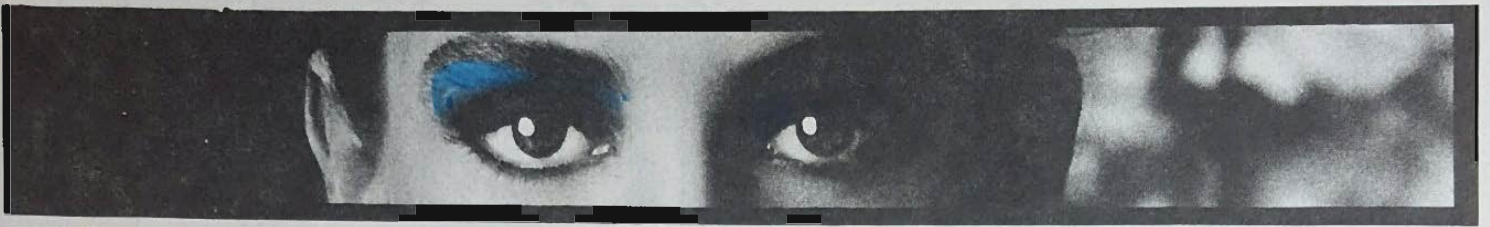
A company called **Cryodynamics** has developed an affordable refrigerator that uses harmless, inert **helium** as the coolant instead of the ozone-destroying, atmosphere-warming CFC's (chloro-fluorocarbons) that have been used for decades in both refrigerators and air conditioners. The company is also exporting the helium-cooled refrigerators to developing countries, whose use of CFC's has been climbing steadily as they seek to raise their standard of living.

Research at **Argonne National Lab** has resulted in a photo- and bio-degradable plastic made from potato peels and dairy whey, both of which are considered waste products by manufacturers. The carbohydrates in both materials are first converted into sugars, then lactic acid molecules, which are then linked into lengthy chemical chains called polymers. The polymers are then united into the new plastic, which can be shaped into bags and sheets. Sunlight and naturally-occurring soil bacteria can decompose the plastic if discarded. **1990 Fermentation Technologies Conference.**

NASA, while investigating methods of sustaining life on future space stations, has discovered that plants like Gerber Daisy, spider plant, dwarf banana, ficus, English ivy, dracena, and sansevaria can remove and consume significant amounts of indoor air pollutants like benzene, trichloroethylene (TCE) and formaldehyde. Potted mums did best, removing 41% of the TCE, 53% of the benzene and 61% of the formaldehyde contained in air at ordinary concentrations in so-called "sick buildings" where people experience respiratory and other health problems stemming from the outgassing of these pollutants from carpet, paint, plywood and adhesives. The leaves and roots of the plants, in conjunction with soil bacteria, consume and breakdown the gases. Researcher Bill C. Wolverton at **NASA's John C. Stennis Space Center** in Bay Saint Louis, Mississippi, says that early data suggests that one 10-12 inch potted plant per 100 square feet of floor space may significantly reduce organic chemical air pollution in these "sick buildings". **Science News**

Jon Michnovicz and Leon Bradlow of the **Institute for Hormone Research**, located in New York City, reports that **indoles**, nitrogen-bearing compounds found in cabbage, broccoli, collards and other cruciferous vegetables, lowered blood levels of a form of estrogen known to stimulate breast cancer cells. The June 6, 1990 issue of **Journal of the National Cancer Institute** contains the full research report. While both feel much more research is needed to confirm the cancer-suppressing capabilities of indoles, they note that breast cancer is much less common in women living in Asia, who eat a great deal of cruciferous vegetables including bok choy, Chinese cabbage (wong bok), daikon, sprouting broccoli, rape, tat soi and others.





Margaret Head's View of the News

Two things in 1990 so shocked and revolted me that the hunting of wild creatures for "sport" and profit now seems raw and self-indulgent cruelty. Which two things? First, seeing televised scenes of grinning, testosterone-starved rednecks shooting prairie dogs in Nucla, Colorado for "fun". Second, watching an Audubon PBS special that showed, yes, grinning testosterone-deficient North Carolinian rednecks torturing cornered black bears with dogs trained to be vicious, or killing a treed bear with a shotgun, laughing as it fell to its death, then cutting off its claws to sell as trinkets and cutting out its still warm gall bladder to sell illegally to quack Asian doctors who tout the digestive organ as a medical panacea.

Why mention the blood-testosterone levels of these good ole boys? Well in my book a real man doesn't find pleasure in using a high-powered rifle to snuff the life out of a harmless 1 pound mammal from a hundred yards. These guys looked full of themselves, swaggering, thumbs in their belt loops, full of "Bud" but none the wiser for it. A friend of mine, Janet Burgdorfer, was one of the protestors who trekked to Nucla and screamed themselves hoarse trying to scare the prairie dogs back into their tunnel homes before the bullets flew. She tells me these "men" shoved her repeatedly, cursed at her, and spat on her. I thought guns and booze are considered an unsafe mix. And if these guys were desperately trying to feed their families during hard times, I'd feel differently; after all, prehistoric cave paintings indicate that hunting wild game got humanity through the last Ice Age. But these pinheads shot the prairie dogs as they joked and drank, leaving the animals to die then rot, obviously not considering what it must feel like to suddenly be pierced by a piece of hot lead travelling at just below the speed of sound. Like people, prairie dogs don't necessarily die instantly when shot...many suffered long, agonizing deaths. These rednecks, we're told, had a great time in Nucla, Colorado...the name of this barbaric little town, which dreamed up the massacre to draw in tourist dollars, seems very appropriate, since it seems to celebrate pointless, faceless killing. I'm not often given to long sweeps with a broad brush, but Nucla now **DESERVES** its grim economy and location. I hope you'll make a point of spending **NOTHING** there if you ever have to pass through.

The scrotal dwarfs in North Carolina showing off their fresh bear claws and gall bladders were no better, bragging of clandestinely killing the beautiful mammals in OUR national parks and wildlife refuges with the complicity of park rangers getting behind-the-Jeep "perks" of cash. Clearly remembering sordid scenes from "Deliverance", I can't help but wonder what other little "perks" goes on behind those Jeeps. These mountain boys, like the Nucla hunters, no, make that "sadists", plus the legions of insecure poachers seeking to reinforce their frail masculinity by hanging cougar and elk heads on their den walls seem like dull-witted juveniles in search of manhood through brash but cowardly means. After all, how much bravery is required to shoot a cougar from a helicopter?

Real men, (and women for that matter) eschew hateful pointless violence in favor of introspection, hard work, and perseverance in the cultivation of honorable habits that include a reverence for life. Hunting wild animals, in this culture, in this country, in this century is no longer **VITAL** to feed or protect one's family. It is vulgar embellishment for the ego.

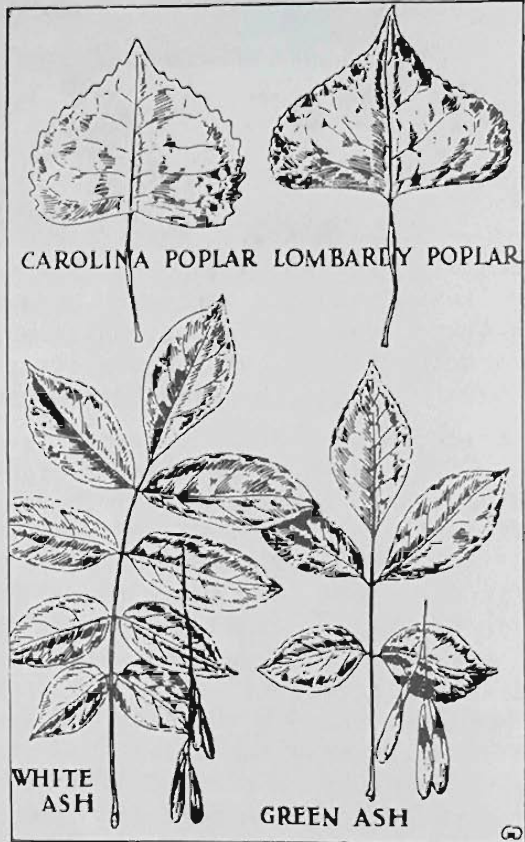
Women hunters in America are rare; why are so many male hunters seemingly obsessed with the perceived size and potency of their gonads? These are the guys who, at 37, still screech their tires when the traffic light turns green. I say they should cut off, stuff and mount their "jewels" and display them over the fireplace or on the hoods of their big-wheeled trucks for all to "ooh" and "ahh" over...this would also help the population crisis, since these guys also like to keep "the wife" silent and pregnant. Killing a nursing bear for her claws and gall bladder and leaving her cubs to starve makes a man less than a man. Sadly, unlike bears, these guys are abundant, for in 1989 600 bears met this terrible fate in North Carolina **ALONE!**

Thoughts

YOU are thinking and feeling about a thousand things in these years in which you are laying the foundations of a world. What a solemn thing that is to say, and yet it is true that every one of us, in the days of our youth, is building a world, as certainly as he who builds up stones and crowns them with towers and domes. We come into a world that is open to receive us; for a few short years we live in the world as we find it; but soon, perhaps almost sooner than we know, we are making our own world, carving our own way, shaping our own thoughts, controlling our own destinies.

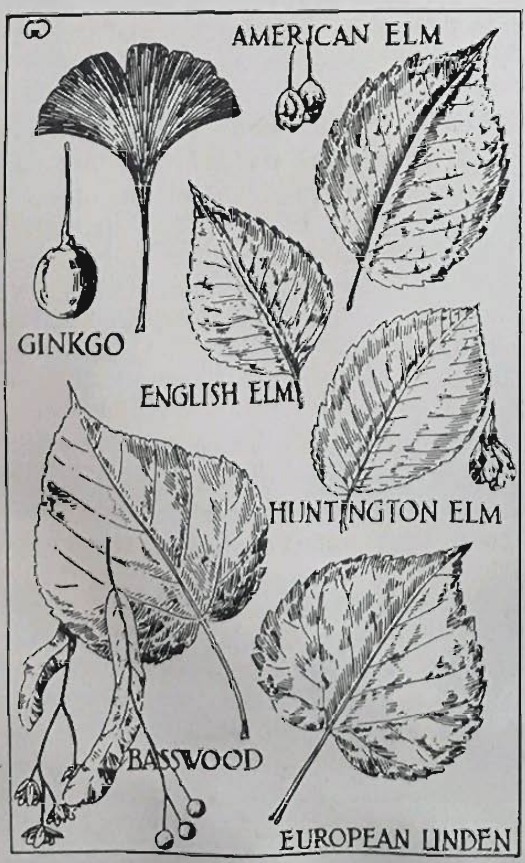
What shall we take, and what shall we reject? The things we put into our pockets may be as nothing, though they may be made of gold; but the things we put into our minds are all the world to us, though they fall from the skies or rise from the valleys or pour out upon us from the hills, and cost us nothing. *We are what we think.* We are as old as we feel, as rich or as poor as our imaginations. We are as strong as our faith or as weak as our fears. It is these things that make up life for us; it is your *mind* that makes your world, and your *mind* is what you make it.

(By Arthur Mee)

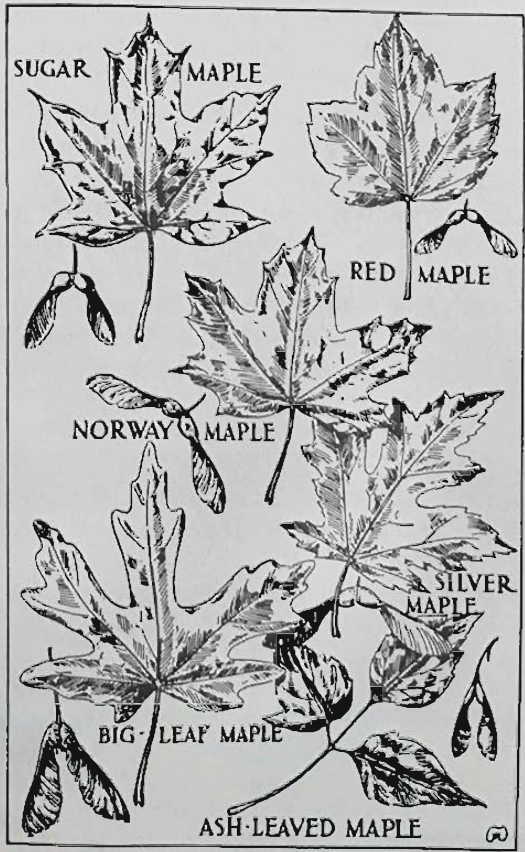


CAROLINA POPLAR LOMBARDY POPLAR

WHITE ASH GREEN ASH



GINKGO AMERICAN ELM
 ENGLISH ELM HUNTINGTON ELM
 BASSWOOD EUROPEAN LINDEN



SUGAR MAPLE RED MAPLE
 NORWAY MAPLE SILVER MAPLE
 BIG-LEAF MAPLE ASH-LEAVED MAPLE

I had a pleasant time with my mind, for it was happy. Louisa M. Alcott

SHARING SECRETS

A parcel-sized rural mailbox mounted on a 4 foot high post in the garden makes a convenient, weathertight place to store garden gloves and small tools, twine, etc.

To make a female mosquito trap (the males don't bite) fill a garbage can with 1 foot of water, add 2 cups detergent or Ivory Soap flakes and mix thoroughly. If possible keep the trap in a shady part of the yard...when the mosquito tries to land on the surface tension of the water (now broken by the soap) to lay her eggs she instead will sink and drown. One less mosquito and a whole lot fewer hatchings! Check the trap occasionally to be sure that rainfall doesn't add enough water to dilute the soap. If you live in an arid region check to see that evaporation doesn't dry up your trap.

Winter brings hard times to wild birds, so stock up on big tubs of cheap peanut butter, which birds enjoy not only for its flavor but more importantly for its calorie-rich oil; oils and fats help the birds' metabolisms keep their tiny bodies warm. Smear the peanut butter on big pine cones and hang them from your clothes line or from low branches or from your apartment window ledge or balcony. Or try smearing big blobs of it on tree trunks. Or wipe the snow from your bird bath and drop in a big gob.

Apple growers fighting off codling moths might consider bringing a "herd" of chickens into the orchard, especially if they can liberate some of the miserable inmates from a local commercial eggfarm. Aside from rescuing the birds from horrifying cramped conditions, you will now have grateful allies who delight in scratching the ground in search of codling moth larvae. They will also fertilize the orchard soil with their droppings as they shred the mulch you hopefully periodically spread between the fruit trees. Fallen fruit containing eggs and larvae will also be eaten. They'll need shelter for nighttime roosting; wooden crates laid on their sides, or even 55 gallon drums on their sides are fine. Try to elevate the roosts on blocks or stumps to a height of two feet or more to discourage predators from nabbing them while they sleep. Every few weeks put new clean hay in their roosts. Not only will you have pest control and fertile soil, you'll have fresh eggs free of additives and stress hormones, plus the satisfaction of seeing once-imprisoned birds free to run and stretch.

When starting seeds indoors on a window sill, make a reflector using a large piece of cardboard (say 12" x 24") covered with aluminum foil, shiny side out. Positioned behind the seedlings, the reflector will keep them from getting "leggy" by lighting them from behind as well. This can also be useful for your houseplants when winter sunlight is scarce.

Ajuga reptans, also called "carpet bugle" is an aggressive ground cover that grows well in most climatic regions, in sun or shade and with VERY little care. It makes a lush, soft substitute for water-hungry finicky lawn grasses, as its many runners quickly form plantlets that in turn produce more runners. Available in green, variegated or a beautiful burgundy-leafed varieties, Ajuga can be used to reclaim a weedy area by setting out a plant every 4 feet. Mulching with 8" of hay between the ajuga plants, watering deeply every two weeks and feeding 2-3 times annually with cottonseed meal, Ringer Lawn Restore or poultry poop will speed up its conquest of the area. Blue flowers late in spring are a bonus.



Love beauty; it is the shadow of God on the universe.
Gabriela Mistral

The Wall Street Kernel

SOLAR CARS: INVESTING IN A RAY OF HOPE

by Irving R. Ravine

Not only is the automobile the chief source of air pollution in modern cities, it is a core aspect of industrial economies everywhere; the production of steel, glass, fuel, lubricants, rubber, plastics, batteries, and platinum are primary industries dependent on the car, as are several service industries. The structure of our cities and even our daily lives arise from the central role the car plays in society. So despite the air pollution, traffic deaths and waste of resources, the beloved automobile is simply not going to go away. We love our cars.

But our lungs dictate that the internal combustion engine that has powered autos for 9 decades become extinct, with an environmentally and economically viable alternative evolving in its place. And while burning hydrogen in place of gasoline in existing cars would nearly eliminate air pollution (not to mention our addiction to cheap foreign oil) it would require the rapid development of a whole new infrastructure to both manufacture and deliver it, assuming the oil companies would not block that effort. But ultimately, the best solution would be the proliferation of electric cars powered EXCLUSIVELY by sunlight, which doesn't pollute, can't be price-gouged nor controlled by cartels or madmen. Thanks to some hard work and realistic dreaming by two progressive companies, sun-driven cars at your local dealership may not be too far off. And these companies may provide investors with a budding Ford or General Motors to buy into cheap. Venture capital invested into these firms now could spell a sunny future for your portfolio.

The Kyocera Corporation, based in Tokyo, has developed a prototype hatchback called the Solar Commuter Vehicle-SCV-0, for short, that seats two people and carries a fair amount of groceries, etc., at speeds up to 40 mph., with a range of 100 miles between charges of household current. It relies on 23 square feet of solar cells on its roof and hood to charge the sealed nickel-zinc batteries as it is being driven. Not intended to replace the highway cruiser, the car is designed for the short, slow-speed hops that comprise the bulk of city driving, and that also release the most pollution per mile travelled. Before releasing the car for retail sale at a target price of \$14,000 in 1995, Kyocera will seek to reduce the weight of the car, expand its range and speed, and eliminate the need for periodic charges of household current, which, after all, is produced by polluting power plants. The SCV-0 may well be the first true sun-powered car for the street.

Another very promising company is Solectria Corporation of Arlington, Massachusetts. Mentioned in previous issues of this publication, this innovative firm recently won a road competition for solar cars with a sleek red 2 passenger sports car called the Lightspeed. A 30 horsepower electric motor at each front wheel zips the car to 60 mph in just 8.5 seconds. Range on a sunny day is 150 miles thanks to solar cells on the roof that charge the nickel-cadmium batteries. When refined for greater range, it too may be sold for under \$20,000. As the efficiency of solar cells and batteries goes up, sun-powered cars will shine.

SUNFLOWER

by Joele Renee' Ashley

Marion was a farm boy, a cowboy and a he-man. Certainly he had no use for flowers, wouldn't know a daisy from a marigold, but this one caught his eye because it was such a weird sight after all the monotonous miles of scraggly woods, cotton fields and tenant farm shanties.

He'd just rounded a bend in the old highway when he saw it, an enormous bright spot of yellow and green in a field of gray dirt.

He parked his pickup by the side of the road and got out to take a closer look. People won prizes for oversized pumpkins and tomatoes and sweet potatoes at the fair. Well this was the biggest damned flower he'd ever seen, and he got it in his mind to take the thing home with him.

There was a house -- if you could call it that -- nearby, a weathered gray box with tarpaper roof. On closer inspection you could see that some of the boards had rotted away and been replaced with plain old cardboard. Broken-down furniture, all springs and cotton stuffing, littered the sagging porch. There was no sign of life except for some diseased-looking chickens that pecked hopefully in the dirt, and a balding old dog who cooled himself in shade of the outhouse. He got up once to sniff around the open well, like maybe he remembered a bone he'd buried there, but then he seemed too tired to pursue it after all, and plopped back down in the shade.

Marion sized the place up and walked on.

He was halfway to the sunflower when he knew that he was being watched. He whirled around to meet the gaze of several bare-footed black children. Little spooks. They seemed to have appeared from out of nowhere and were lined up like so many chocolate bunnies, studying him with their wide, solemn eyes.

Marion ignored them and walked on to the spot where the sunflower stood. It was a big mother of a flower all right, towering over Marion's six foot frame, its face twice the size of his own. Hot damn.

Marion reached into his pocket and pulled out his mother-pearl knife, flicked it open, contemplated just how far down to cut the stalk. But he could still feel those goddam little spook-eyes burning him like a bad case of heat rash. He glanced up with annoyance, thinking to holler "Shoo!", but now in front of the children stood a huge black man in overalls, glaring at Marion along the barrel of a sawed-off shotgun. Marion analyzed this new development rather quickly and concluded that the crazy black son-of-a-bitch wouldn't think twice about blowing somebody's brains out over a damned flower. But on the other hand, he might be reluctant to waste a bullet unnecessarily. Marion just moseyed on over to his pickup and got the hell out of there, though he couldn't resist the impulse to glance backwards just once. The man and his children were silently gazing, not at Marion, but at the sunflower which nodded gracefully to and fro.

A ways down the road, Marion reflected; flowers were for women, and of no interest, anyhow, to a man like himself.

Dear Garden Doctor Readers, John has decided to expand the literary content of his magazine and I think that's an exciting idea. He's made me the first official staff member of The Garden Doctor. I'm honored. Send your short stories, poems, plays, essays and black and white drawings to: Joele Renee' Ashley, Literary Editor, The Garden Doctor, 17151 Rainbow Terrace, Odessa, Florida 33556. Be sure to enclose a stamped self-addressed envelope for any returns. Until I hear from you guys, I may be publishing some of my own stuff, so spare me and hurry with your submissions. The Garden Doctor pays \$5.00 for poems and \$20.00 for short stories. If you're a struggling writer as I am, you know that's a lot better than many literary magazines, which pay only in contributor copies. Can't wait to see the talent to be culled from Garden Doctor readership. Peace and love, Renee'. P.S. In this issue you'll find my story "Sunflower" which John decided to print before asking me to be literary editor. Please don't be offended by the racial prejudice of the protagonist, who is a jerk. I believe a careful reading will show clearly that the real hero of the story is the black father. I read "Sunflower" to a black friend (who's also a writer) and she said it was cool.

TODDLER FODDER



Many of the readers of *THE GARDEN DOCTOR* have young children... "TODDLER FODDER" will give parents and kids fun projects to do together to explore the understated wonders of the natural world. Science all too often is taught in such a way as to snuff out curiosity and the love of learning, when in fact good science can be a joyous and systematic means of making friends with the universe.

Sprouting ordinary seeds between two damp sponges is a fun and easy way to let kids learn of the basic requirements of plant growth. You'll need a saucer, two clean sponges, some edible seeds like dried beans or popcorn seeds, some water and a sunny window sill. **First**, have your child set one wet sponge in the saucer. **Second**, let him or her arrange 5 dry seeds near the middle of the sponge. **Third**, soak the other sponge and let the child stack it on the seeds and other sponge. **Fourth**, put the "sponge farm" on a sunny East, South or West window sill. The experiment has begun! Pour a bit of water on the sponges **DAILY** to be sure they and the sprouting seeds do not dry out. Each day, let your kids lift the top sponge to reveal the seeds, first swelling, then splitting (in the case of beans and lentils) as the roots emerge. A good magnifying glass will let everybody see the root hairs spreading out across the wet sponge. Explain that root hairs do the job of absorbing moisture and nutrients for nearly all green plants. As the embryonic plant emerges from the seed coat, explain to the kids that this tiny unfolding plant was inside the dry seed all along, waiting for warmth, moisture and air to trigger growth. And lest your children get the idea that living things are disposable, be sure to help them plant the sprouts in your garden or in a flower pot if it is wintertime.

Not only can this be a fun family project, it can be evolved into a fine science project: germination rates could be observed if the saucer is kept in the refrigerator, if the sponges are not kept damp, if salt water is used to water them. Keeping the saucer tipped on its side will cause the new roots to follow gravity down. Germination rates of differing seeds under the same conditions can be monitored.

And of course this can also be a fun introduction to the art of growing "sprouts" for the family table...perhaps keeping the family in alfalfa, lentil or mung bean sprouts could be your child's contribution to food production, or their first weekly allowance.

If you have a neat science project for children, send it in...if your idea is chosen you'll get one issue added to your subscription.



White Pine



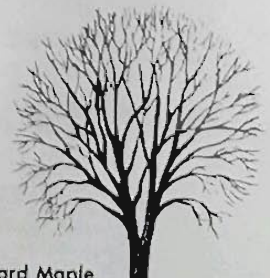
Dogwood



Beech



Red Cedar



Hard Maple

Different species of trees can often be recognized from a distance by their characteristic shapes. When deciduous trees drop their leaves their branch patterns are visible.

Sprouting edible seeds is an easy, cheap way to grow and enjoy fresh produce even if you live in a snowy-winter region or a highrise apartment. Sprouts are richer in vitamins A & C than the seeds they emerged from. ALWAYS use untreated food-grade seeds, as many commercial seeds for farm and garden have been treated with agricultural poisons. Grocery and health food stores sell lentils, navy beans, rapeseed, flax, dried sweet corn, mung beans, clover, alfalfa, fenugreek, hulled sunflower seeds, unhulled oat and barley seed, soybean, anise, fennel, radish, carrot, broccoli, millet, pea, buckwheat, lima bean, wheat and others for sprouting. To grow sprouts just pour 1 cup of seed into a clean, large, wide mouth jar (like mayonnaise or peanut butter jars), then stretch a piece of cheesecloth or old pantyhose or nylons over the mouth of the jar. Use a strong rubber band to secure the fabric tightly. Pour warm water THROUGH the fabric till the jar is half-filled, and let it soak overnight to start the germination process. Next morning pour off the soak-water THROUGH the fabric; use this water on a houseplant. Rinse the seeds, pour off the excess water, then position the sprouter UPSIDE DOWN on a saucer so that the vital drainage can occur. Lay two pencils side by side, about 3 inches apart on that saucer, and set the inverted sprouter on them; this extra step helps insure good air circulation and drainage. Rinse the seeds 2-4 times daily to wash away the waste products produced by the growing seedlings. Insufficient rinsing will result in stinky, fermenting seeds great for impressing your new in-laws. Exposure to sunlight will allow the seedlings to develop chlorophyll and Vitamin A, although some people, preferring pale sprouts, will grow them in a dark place. Remember, sprouts are literally seeds, SPROUTING, ... KEEP THEM WARM! Most sprouts are ready for harvest in 3-5 days, depending on your preference... sprouts are generally sweeter and more tender if grown for a shorter time, more nutritious and fibrous if grown longer. Serve sprouts raw, as is or with a dressing, stir-fried, steamed, in salads, on sandwiches or sprinkle them on soups just before serving.

Seed type	Rinses per day	Length at harvest (inches)*	Sprout time (days)	Approximate yield* (seeds to sprouts)	Characteristics
Alfalfa	2	1-2	3-5	3 tablespoons = 4 cups	Easy to sprout: pleasant light taste.
Lentil	2-4	¼-1	3	1 cup = 6 cups	Chewy bean texture: can be eaten raw or steamed lightly.
Mung	3-4	1½-2	3-5	1 cup = 6-8 cups	Easy to sprout: popular in oriental dishes. Will remain crisp up to 7 days in refrigerator.
Radish	2	¼-1	2-4	1 tablespoon = 1 cup	Sprouts taste just like the vegetable.
Soybean	4-6	1-2	4-6	1 cup = 4-6 cups	Difficult to sprout because they ferment easily: need frequent thorough rinses: should be cooked before eating for optimum protein availability.
Sunflower	2	When sprout is length of seed	1-3	½ cup = 1½ cups	Good snacks, especially if lightly roasted: become bitter if grown too long.
Wheat	2-3	When sprout is length of seed	2-4	1 cup = 3½-4 cups	Simple to sprout: very sweet taste.

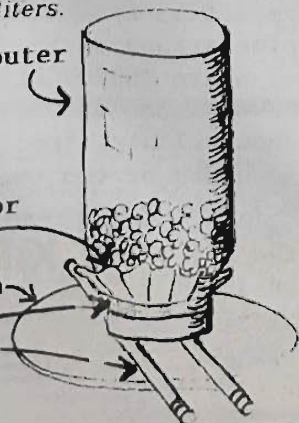


*To convert to metrics, use the following conversions: 1 inch = 2.5 centimeters; 1 tablespoon = 15 milliliters; 1 cup = 240 milliliters.

inverted sprouter

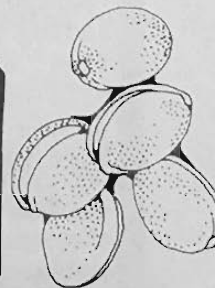
cheesecloth or old nylons

drainage dish
rubber band
pencils



"Many Americans don't like the simple things. That's what they have against we conservatives."

Barry Goldwater, 1964





In these golden years of the 20th Century, organic gardening and living is coming into fashion, no longer a spacey oddity. Young Americans and old alike are learning that artificial pesticides are toxic to us too! Make the switch today!

"CH-CH-CH-CHANGES"

by Davy Bowid

A mature, organically-maintained landscape that includes flowers, veggies,

lawn, trees, shrubs, berries and native plants relies PRIMARILY on a teeming, complex biocommunity in which birds, fungi, bacteria, nematodes and predatory insects together help control the numbers of plant-eating "pest" organisms. But it usually takes 2-3 years for this balance to arise; an organic yard or farm becomes a safe haven for creatures fleeing poisoned properties. So for those transition years SOAP SPRAY is a very helpful, SAFE insecticide and fungicide. But before we discuss what soap spray IS and how to make and use it, let's talk about what it's NOT!

SOAP SPRAY is **NOT** detergent, which is an artificial chemical cleaner. Efforts to use dishwashing detergent liquid to control pests often not only fail, but can also result in damaged leaves. Soap, on the other hand, has been made for centuries by boiling lye (sodium hydroxide) rinsed from wood ashes, with some kind of oil or fat. Castile soaps, for instance, are based on coconut oil and lye. Lye is a highly alkaline material and is why soap sprays can be very effective controls for leaf and lawn fungi, which require ACIDIC conditions to get established. The oil or fat in a given soap serves to plug up the breathing holes in an insect's abdomen. Quite often, beneficial insects like praying mantis, ladybugs and lacewings are NOT killed by the gardener's use of a soap spray due to their extensive wings or wing-coverings that shield their abdomen from the suffocating spray. This relative selectivity is what makes soap spray so valuable for those first few years of transition to a balanced biocommunity in the garden and on the farm.

Making a soap spray insecticide or fungicide is easy. First, buy some REAL soap, such as **Ivory Snow** soap flakes, **Kirk's Castile** bar soap, or good ole' **Octagon** bar soap by the Colgate company. If you purchase a bar soap, use a cheese grater to pulverize it into tiny flakes. To make a small batch of soap spray, just dissolve 1 **HEAPING TEASPOON** of soap flakes in 1 **QUART HOT WATER**. Stir thoroughly, let sit 1 hour, stir again and pour the soapy water into a spray bottle, like an old "409" bottle or a trigger spray bottle. Keep it handy, near the garden, on your patio, etc., so if you notice aphids clustered on the new growth of your roses or okra, you can quickly spray the affected portions of the plant **TILL DRIPPING**. It's a good idea to check again in 7-10 days, as it takes about that long for bug eggs to hatch. For roses, perennial phlox or squash with powdery mildew, black spot or other leaf fungi, **SPRAY THE PLANT TILL DRIPPING** every 7 days or so, more often during the rainy season. The soap spray doesn't poison the fungus, but rather makes the leaf surface inhospitable (i.e. alkaline) for the fungal organisms. As an insecticide, soap spray is most effective on small-bodied pests like **APHIDS, THRIPS, SPIDER MITES, SCALE, MEALY BUGS, NEWLY-HATCHED CATERPILLARS AND GRASSHOPPERS**, and **WHITE FLY**. Organic landscapers can fill their spray tanks with varying strengths of soapy water to control infestations of pests in their customers' landscape till a balance between prey (pests) and predator is established. For severe scale infestations on woody plants, try adding 2 cups of vegetable oil per gallon of soapy water, shake **THOROUGHLY** till emulsified, and stir frequently while spraying, making sure the branches and twigs **ARE DRIPPING**. Mild soap sprays are excellent for controlling pests on houseplants, too...test the spray on one leaf of delicate plants like African violets, wait a day or two then check for burning.

You can buy bottles of pre-made soapy water like "Safer's"; why spend \$3 on a bottle of soapy water when you can make a gallon for just pennies? Either way, switching from chemical warfare agents like Diazinon (Nazi Germany) or 2,4-D (U.S. in Vietnam) can usher in your golden years of gardening.

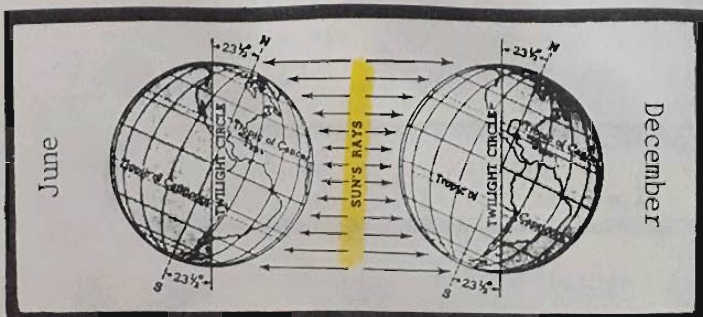


WINTER

is a cooling of each hemisphere (respectively) of the earth as that hemisphere slowly leans AWAY from the sun due to the $23\frac{1}{2}$ degree tilt of our home planet on its axis. In OUR summer this tilt leans our (Northern) hemisphere TOWARDS the sun, while the Southern hemisphere leans AWAY, giving them their winter. And when winter chills North America, Europe, Greenland and Eurasia, summer glories in Australia, Africa, South America and the South Pacific. A surprising number of people think that "winter" is a planet-wide phenomenon, but it comes (thankfully) to only $\frac{1}{2}$ of the globe at a time.

Gardeners see winter in different ways depending on where they live. In icy, snowy areas, winter is a time to enjoy all that dried, canned, and frozen produce put up from the previous summer. There is great comfort in entering this cold, threatening season surrounded by stored food, for in nature winter IS fatal to a great many living things; that is why so many creatures migrate towards the equator each autumn. But the home organic gardener can wisely imitate those animals who stay put and prepare for winter by storing food in their humble homes all summer long. Notice too the sun's low position in the sky at noon in midwinter; winter is a vivid demonstration of our planet's intimate relationship with the closest star. The seasons are purely the result of tiny annual shifts in Earth's position relative to the sun. Knowing and understanding this can fill us with a deepening awe and sense of context as our precious years pass. On the pragmatic side, snowy winter gardeners can curl up in their favorite chair with a big skwoonchy blanket and sketch the spring garden-to-be, or browse through seed catalogs (or back issues of **THE GARDEN DOCTOR**) while snow flakes brush against their windows.

But for gardeners in mild winter regions like peninsular Florida, southwest coastal Texas, Central America, the Virgin Islands, southern California and south western Arizona, the winter months are THE time to grow the **FROST HARDY** (heat-hating) annual vegetables and flowers. The entire cabbage family (Broccoli, kale, collards, Brussel's Sprouts, turnips, radishes, bok choi, mustard, cabbage, daikon, rape, and others), and most leafy crops, and most root crops (except tropicals like cassava and sweet potatoes) prefer cooler temperatures. Gardeners in mild winter regions who try to grow these crops in spring or summer usually fail, because these plants can tolerate light frosts but NOT the stifling heat found in these areas in spring and summer. Thus successful gardeners in these regions begin planting the seeds of the **HARDY ANNUALS** in late autumn and make their final planting in late winter to allow the plants to mature before the return of hot weather. Snapdragons, sweet peas, calendulas, pansies, sweet alyssum, Shirley poppies, California poppies, and stocks are best grown as winter annuals in mild winter areas.



Above all, winter can help to teach and remind us of the cyclical nature of life itself as we pass through our own inner seasons of hot and cold, light and dark, birth and death. Truly we are all fearfully alive on the shimmering skin of a beautiful blue and green planet.

"No matter what our facade, we are all children". Benjamin Rand, "Being There"

0 n your seed packet with 1 BEET JUICE FINGERPRINT write **ANISE (*Pimpinella anisum*)**. This annual relative of dill has just a few basic requirements, making it an easy herb to grow. First, it wants a FULL SUN LOCATION; shade will make it lanky and weak-stemmed. Second, it wants a FERTILE, LOOSENEED SOIL OF A NEUTRAL pH that drains well. Third, it needs FOUR or more months of warm, frost-free weather. And lastly, it grows best if given AMPLE MOISTURE, so mulching the soil around each plant with 4"-6" of hay or grass clippings is a good idea. Before planting, work plenty of organic matter (manure, grass clippings, alfalfa meal, chopped hay, etc.) into your soil, along with a liberal dusting of powdered limestone IF your soil is quite acid. If your soil is a heavy clay, plant the seeds $\frac{1}{4}$ inch deep; $\frac{1}{2}$ inch deep if your soil is light and sandy. Keep the seedbed damp with light daily waterings for two weeks. Space the plants about 10" apart. In a few months when the seed heads form plump seeds that are barely turning brown, cut off the seed heads and dry them on a screen or in a paper bag. Rub the seeds loose in a week or two and store them in tightly sealed jars. Their sweet licorice-like flavor makes for a fine pastry or cup of tea. Try the leaves snipped raw onto salads or in your teaball. **Note*** Gardeners in hot, mild-winter regions like peninsular Florida, the Virgin Islands, Central America or southern California should plant anise in the late autumn or early winter as anise succumbs to extreme heat-and-humidity.

0 n your seed packet with 2 BEET JUICE FINGERPRINTS write **FENNEL (*Foeniculum vulgare*)**. This tender perennial is a relative of dill and anise. Culture and harvest is the same as anise. However, some varieties produce a bulbous cluster of crisp, juicy, celery-like (in shape only) licoricy stems, which may be served raw or steamed. Fennel seeds, together with sage, give Italian sausage its characteristic flavor. Vegetarians may add both these herbs to spaghetti sauce for a richer flavor. Fennel was used by the Greeks to treat over 20 illnesses, and also used it as an appetite suppressant. It has been used more recently to treat gallstones and gas, coughs, & lung diseases. Some folks believe that mothers can produce more and better milk by drinking a tea made by boiling fennel leaves and seeds in barley water. Like anise, fennel will grow best in mild winter areas if sown in late autumn through midwinter.

0 n your seed packet with 3 BEET JUICE FINGERPRINTS write **CALENDULA (*Calendula officinalis*)**. This frost tolerant easy-to-grow annual is an edible member of the daisy family. Grow it in full sun in soil of a neutral pH and enriched with plenty of organic matter. Plant the seeds in spring in snowy climate regions two weeks before last expected frost; sow the seeds in late autumn through midwinter in mild winter regions like Florida or Nicaragua. Plant the seeds about $\frac{1}{2}$ inch deep and keep the seedbed damp the first two weeks with a light daily watering. The seedlings will transplant easily when about 3 inches high; space them about 12 inches apart. The flowers are good in arrangements, and the petals have long been used as a saffron substitute and spice, and also to make a delicate tea. For centuries Europeans have used the leaves as a strong-flavored cooked green. Try sprinkling the fresh petals on salads. When the first wave of blooms begins to set seed, cut the entire plant back by HALF, fertilize with fish emulsion, manure, kitchen waste or cottonseed meal and watch the plants regrow and bloom again. Your particular seeds are 2nd and 3rd generation, open-pollinated descendants of the hybrids "Pacific Beauty" and "Gypsy". The flowers will range from single to fully double; look for yellows, oranges, bi-colors and contrasting eyes. The plant is still sometimes called "pot marigold".

" I am NOT a number, I am a free man!" No. 6, "The Prisoner"

TROPICAL TOPICS



by Dr. Jack A. Randa

E

very few years, gardeners and homeowners in subtropical regions like peninsular Florida, southern California, southwestern Arizona and southwestern coastal Texas are hit hard by a powerful cold front that brings below-freezing air temperatures, especially in the evening. Whereas a light, mid-winter frost in these regions is not terribly uncommon (nor terribly disastrous), a **HARD FREEZE** that brings sustained air temperatures of 28 degrees Fahrenheit or less for 12 or more hours can wreak havoc on tender annual vegetables and flowers **PLUS** perennial fruit and ornamental plants like citrus, papaya, jatropha, hibiscus, pentas, jasmine, plumbago, gardenia, banana, mango, allamanda, Surinam cherry, orchids, palms, cycads, ixora, philodendrons, euphorbia species, tradescantias, crinums, African iris, epiphyllums and many others. But alas, there are **SEVERAL** preventative steps you can take when your weatherperson points to a descending cold front headed your way.

The first, and easiest, is to do a **DEEP, HOURS-LONG WATERING** the day before the front is scheduled to arrive. Why? Well-nourished, well-watered plants resist freeze damage better than starving, thirsty plants. Also, a thoroughly moist soil mass retains heat gained in the daytime far better than does dry soil. Warm soil will slowly release this stored-up heat at night as the front passes through. Which leads to the next option you can use.

PROVIDE ADDITIONAL HEAT. Many people know about running strands of Christmas lights through their shrubs and plants **BEFORE** covering them up with sheets and blankets (**NOT** plastic!). Don't use the tiny twinklers, but the old-fashioned big-bulb type. The blankets trap the substantial heat released by the bulbs and keep the live plant tissue from freezing. If you have an isolated plant to protect, invert a garbage can over it and place inside a lit votive candle or two to warm the air around the plant. Simply covering a plant with a blanket can help just by trapping heat released by the soil overnight. Remember, in a bad (28 degree or less) cold front, the culprit is **NOT** frost but the air temperature itself.

Packing the bases of perennial plants with 18 inches of hay can limit freeze damage to the uppermost portion of the plants. If you keep the ground level stem alive, the plant can regrow in the spring.

Citrus and strawberry growers often respond to severe fronts by watering their plants **NON-STOP** during the first night of the freeze. Why? The plants are coated with ice, which resists falling below 32 degrees. Hence, the ice coating acts as an insulator! But this is an emergency measure reserved mainly for these two commercial crops.

To protect woody trees or palms, you can position a lit charcoal barbecue grille beneath each tree; subtropical cold fronts are very often windless, so the grille produces a rising column of heated air that warms the tree or palm. Charcoal briquettes will burn most of the night, especially if you add more just before retiring. Several such charcoal "fires", if spaced throughout the landscape, may succeed in raising the average air temperature of your yard sufficiently to minimize freeze damage. This is **NOT** farfetched; citrus growers often save their plantations by spacing kerosene heaters or burning stacks of tires throughout the grove, although the latter is clearly a brutal assault on air quality. Charcoal, on the other hand, burns quite cleanly and is a bio-mass fuel.

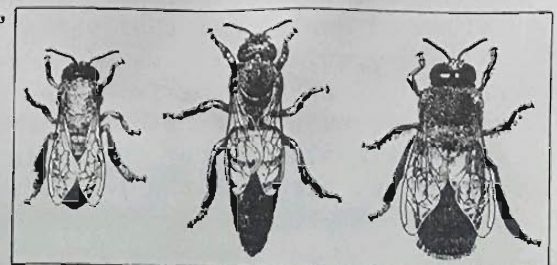
Next issue: Healing a freeze-damaged landscape and farm.



the clothesline can serve as an anchor to steady us in the hectic waters of our too-busy lives. The "demands" of modern life seem to compel us into ever-busier schedules no matter how much we speed up our days. "Time-Savers" like the clothes dryer can in fact serve to just speed up the treadmill. DECIDING to hang damp clothes on a sunny clothesline can create a reliable, blessed "quiet space" in a frenetic day. The zen of clothes hanging; the repetitive calming movement of fastening the wooden clothespins can allow our thoughts to settle as we ACTUALLY notice the play of shadows on the sheets, the color of the sky, the scent of the wind, the movements of birds in trees. And if you figure in the time spent earning the hundreds of dollars it costs to purchase and operate a clothes dryer, it really doesn't take more

time to dry your laundry using a \$2 clothesline. Clothes dried this old-fashioned way not only smell fresher but use solar power instead of fossil fuels to lose their moisture. In humid rainy areas in summer, or in snowy winter areas, it may well take a day or two for things to dry (or freeze-dry!)...if you don't wait till the last minute to wash a load you won't desperately need an item on the line anyway. But the big point is that life is not a destination but a journey; all too often obeying the urge to ALWAYS hustle because we "have to" translates into a subconscious stance that we'll live our lives AFTER "we're all caught up with our chores", which, of course, we never are. We MUST integrate islands of calm into our daily activities or we may well arrive at old age feeling we missed something. And we would have. Slow down. Breathe deep. Count to ten, slowly. Listen to that songbird chattering as it wings overhead as you hang the damp shirt on the line. Each new moment is all we will ever have.

Honey is sometimes jokingly called "bee vomit", but when bees sip the sugary liquid called "nectar" from the nectary glands at the inside base of a flower, they do not swallow it into their digestive tract but into a special sac called the "honey stomach". An enzyme called "invertase" secreted by this sac as the bee flies back to the hive begins to convert the sucrose (table sugar) in the nectar into the simple sugars "levulose" and "dextrose". Once in the hive, each worker bee regurgitates (vomits?) the now-changing nectar into wax hexagonal cells; this wax is secreted by special glands on the abdomen of each worker bee. Other worker bees then use their wings to fan the newly-deposited nectar to evaporate water from it. Nectar is watery, whereas honey is very thick. As the nectar thickens, the invertase enzyme continues to alter the nectar. When the bees determine the nectar to be "ripe", they cap each wax cell with a wax lid. Inside this tiny bottle the nectar finishes aging and becomes the honey the bees use to survive the winter. Modern domesticated bees produce FAR more honeycomb than they can eat each winter; that is why the beekeeper can harvest many pounds of honey from each hive each fall and not destroy the bee colony. The average composition of honey is as follows: 40% levulose, 34% dextrose, 2% sucrose, 17% water and 7% miscellaneous ingredients including protein, malic acid, citric acid, iron, calcium, sodium, sulphur, magnesium, manganese, phosphorus, pollen, aluminum, copper, albumen, dextrine and nitrogen. Honey contains 100 calories PER TABLESPOON. Light-colored honey is produced from the nectar of alfalfa, clover, bean, basswood, apple, cotton, citrus, palmetto, tupelo, mesquite, mangrove, sage, sainfoin, logwood, campeche & campanilla. Amber honeys come from goldenrod, magnolia, eucalyptus, poplar, sumac and royal palm. Dark, strong-tasting honey comes from the nectar of buckwheat, heather and mixed wildflowers. Special thanks to Sue Burrell of Mill Valley, California for suggesting this short article. One quarterly issue of THE GARDEN DOCTOR has been added to her subscription as payment for the idea.



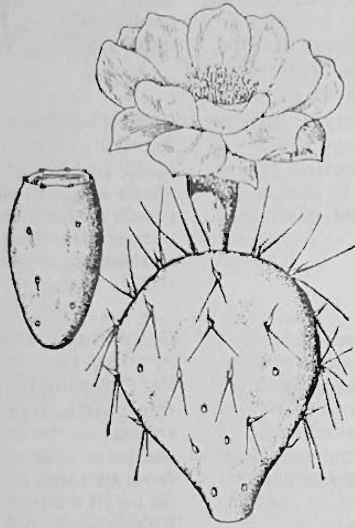
COURTESY U.S. BUREAU OF ENTOMOLOGY
Worker Queen Drone

WESTERN PRICKLY PEAR. DEVIL'S TONGUE

Opuntia Rafinesquii

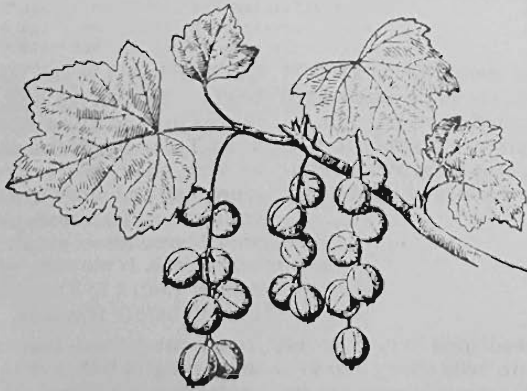
Opuntia humifusa

THIS cactus is found in sandy or rocky soil from Ohio, Michigan, to Minnesota and south to Texas. In many respects it is similar to the eastern species; but the deep green joints are more oval or nearly



Western Prickly Pear (*Opuntia Rafinesquii*)

round, the bristles are reddish brown, and the spines are three or four together, one of them being larger and stronger than the others. Occasionally a plant is found without spines. The flowers are yellow, often with a reddish center, about three inches in diameter, with ten or twelve petals. The fruits are an inch and a half to two inches long, and about half as thick, filled with a purplish edible pulp.



Golden Currant (*Ribes aureum*)

MISSOURI, GOLDEN, OR BUFFALO CURRANT

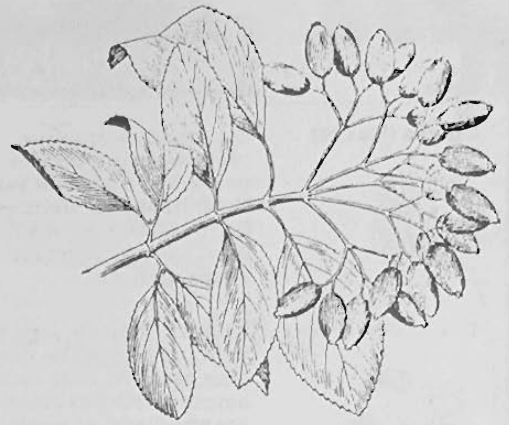
Ribes aureum

Ribes odoratum

THE Golden Currant is a native shrub found from Minnesota to Texas west to Washington and California, but is frequently cultivated throughout the East as an ornamental shrub and sometimes escapes to waste lands and woods.

It grows from four to eight feet high with slender curving branches. The leaves taper to the base that is broadly wedge-shaped, and have three cut-toothed lobes. The flowers, which appear early in May, are arranged in short racemes with leafy bracts. The blossoms are almost an inch long, golden yellow with a pleasing spicy odor; hence the common name of Clove Bush.

The fruit is black, occasionally yellow, with rather an insipid flavor. The bushes apparently do not bear well in the East, probably because of the lack of proper insects to pollinate the blossoms. Some people enjoy the fruit, but it is disagreeable to others. Good pies and jellies are made from it. The Crandall, a form cultivated for its fruit, was developed from this species.



Black Haw (*Viburnum prunifolium*)

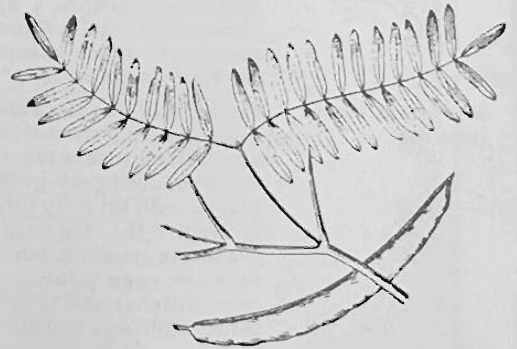
BLACK HAW, OR STAGBUSH

Viburnum prunifolium

THIS is a shrub or small tree in many respects quite similar to the preceding species, but the leaves are very different. Those of the Black Haw are much smaller, generally only an inch or two long, narrowed at the base, obtuse or rather blunt-pointed, the edges finely saw-toothed. In some respects they resemble those of the plum tree, as the specific name suggests. The white flower clusters are from two to four inches broad and appear as the leaves are unfolding. The fruit becomes bright red, later changing to blue-black with a bloom. It is much the size and shape of that of the last species, perhaps a little smaller.

The Black Haw generally grows in dry soil on hillsides, open thickets, along fences and roadsides. Occasionally it may be found in moist situations. It is native from Connecticut, Michigan, and Kansas, south to Georgia and Texas.

The fruit of the Black Haw was a favorite with the writer and his companions during boyhood. We knew all the bushes for a mile around.



Mesquite (*Prosopis glandulosa*)






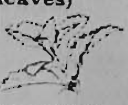


MESQUITE, OR HONEYPOD

Prosopis glandulosa

THIS is a small tree, often a mere shrub, found in the dry or desert regions from Kansas to Nevada, south to Texas, New Mexico, Arizona, and California and adjacent Mexico. The roots go down for moisture often to a depth of sixty feet. When in tree form, the bark is slightly ridged with reddish brown scales. The twigs are yellowish green with spines in the axils of the leaves. The latter are compound with numerous entire narrow leaflets. The small fragrant greenish yellow flowers appear from May to July. They are arranged in dense axillary spikes from two to five inches long. The bean-shaped pods, when mature, are slightly flattened, nearly straight, and about six inches long. The pulp surrounding the seeds is sweet, hence the name of "Honey-pod." The flowers furnish the bees with much nectar for the making of honey. The pods are often eaten by Indians and Mexicans. Prof. E. L. Greene says that the mesquite meal, which the Indians and Mexicans make by drying and grinding the pods and their contents, is perhaps the most nutritious breadstuff in use among any people. The green pods are also gathered by the Indians and, when cooked, are considered a great delicacy.

The Arizona Mesquite, *Prosopis velutina*, may be only a variety

As more and more city folk get re-acquainted with nature, they are discovering many of the tasty and nutritious wild plants commonly eaten by most folks just two generations ago. These illustrations can help you learn to spot these plants while hiking and camping.

Herb	Characteristics	Growing	Preserving
Chives (leaves) 	Perennial. Attractive border plant. Similar to green onion but milder and finer leaves. Used whenever light, oniony flavor is desired in salads, dips, sauces, vegetables, soups, fish, etc.	Plant bulbs or starter clumps in light, medium rich soil in sunny place. Cut flower stalks to the ground after blooming. Divide clumps to thin every third spring. Space mature plants 5 inches. Grows well in containers indoors or out.	Use leaves fresh by snipping off the tops with scissors. Chives lose their color and flavor on drying. To freeze, wash and chop finely, then continue method as for basil.
Coriander (seeds) 	Annual. Delicate lacy foliage with pinkish-white flowers. May reach 20 to 30 inches in height. Produces small orange-flavored seeds used in cold cuts, curry powder, cakes, cookies, poultry dressings, French dressing and Scandinavian cooking.	Plant seeds in light, medium rich soil in sunny place. Avoid transplanting. Space mature plants 10 inches apart. If allowed, plant will reseed.	Cut off seed heads and dry in an airy place on screens over cloth-lined container. When seeds are dry, shake out of heads and store in air-tight containers. Flavor of seeds will improve if stored a month before using.
Dill (seeds, leaves) 	Annual. Feathery foliage and flower umbels. Grows 2 to 3 feet tall. Seeds have slightly bitter taste and are used in soups, pickles, cheese dishes, breads, sauces, meats and fish. Dill weed has delicate bouquet; used to flavor fish sauces, salads, dips, potatoes and meats.	Plant seeds in medium rich, sandy, well-drained soil in sunny spot. Plants need wind protection. Avoid transplanting; may be staked when 18 inches high. Thin seedlings to 12 inches. Do not plant near fennel or they may cross-pollinate.	Cut young leaves and spread in a thin layer to dry until brittle. Crumble leaves and store in an airtight container. To collect seeds, cut flower umbel stalks or pull entire plant from ground. Hang upside down in a sunny place to dry. Shake seeds out when dry and store in airtight containers.
Fennel (stems, leaves, seeds) 	Annual that often reseeds itself. Bright green feathery foliage with yellow flowers. Produces yellowish brown seeds with sharp, sweet licorice-like flavor. Leaves used as garnish or flavoring in sauces and salads. Seeds commonly used to flavor sausages, salads, dressings, pickles, soups, sauces.	Plant seeds in well-drained soil in sunny spot. Thin seedlings to 2 feet apart. Don't plant near dill, coriander or caraway if you plan to save the seed to replant. Makes a good container plant indoors or outdoors when kept trimmed to 12 inches.	Young stems can be used like celery. Pick your leaves to dry, as for basil. Cut off flower stems before seeds fall. Hang over a cloth in a warm, dry place until seeds can be shaken out. Store in airtight containers.
Marjoram, sweet (leaves) 	Perennial. Treat as annual since it rarely overwinters. A small bush with white flowers. Produces gray-green leaves with slightly bitter undertone that are used to season vegetables, lamb, sausage, eggs, poultry, cheese dishes and potato salad, stuffings and soups.	Plant in medium rich soil. Seedlings require shade until well started, then full sun. Space mature plants 8 to 10 inches. May be grown in containers indoors or outdoors.	Cut stems just before buds begin to flower, leaving a few leaves to send up another crop. Tie in bundles and dry in an airy, shady place. Crumble when dry and store in airtight containers. To freeze, pack small bunches in plastic bags and freeze. If storage will be longer than 2 to 3 months, blanch before freezing.
Mint, Spearmint, Peppermint, Apple mint, Orange mint (leaves) 	Perennial with purple flowers. Refreshing odor and flavor. Often used as garnish. Flavor combines well with lamb, peas, fish sauces, candies, chocolate and vegetables. Crush leaves just before adding to a dish.	Plant seedlings in rich, moist soil. Thin beds every 3 to 4 years. Do not allow stalks to go to seed. Can be grown in containers indoors or outdoors.	Pick young, fresh leaves to dry. Hang in bunches in a warm, dry place away from strong sunlight. When dry, crumble and store in airtight containers. To freeze, see basil.
Tarragon (leaves) 	Perennial. Slender dark green leaves with sweet anise scent that are considered an essential ingredient in many French dishes. Goes well with eggs, poultry, fish, shellfish and many vegetables. Used as flavoring in pickles and vinegar.	Plant in well-drained soil in full sun. Propagate by root divisions. Space mature plants 3 feet apart and subdivide every 3 years. Can be grown in containers indoors or outdoors if given enough room for the roots.	To dry, see mint. To freeze, see sage.
Thyme (leaves) 	Perennial. Small shrub with tiny brownish-green leaves. The leaves have unexcelled aroma and flavor. Good with roast meats, fish chowders, sauces, soups, stews, stuffings and salads. Makes a flavorful tea.	Plant in well-drained soil in full sun. Clip back each spring. Space mature plants 10 inches apart. Good in containers indoors or outdoors.	Cut sprigs before the plant flowers. Hang in a dry shady place for a few weeks then rub leaves from stem and store in airtight containers. To freeze, see sage.

"First comes spring and summer, but then we have fall and winter, and then we get spring and summer again." Chauncy Gardener, "Being There"

For well you know that it's a fool who plays it cool by making his world a little colder. "Hey Jude" The Beatles

Hi John, It is so nice to hear from you; We enjoy our newsletter everytime we get it, but your personal letters are great! You were right, my yard is the talk of the neighborhood! All the flowers are just beautiful. My next door neighbor has copied me with all hibiscus. We just pulled out the tomatoes, and cut back the Pentas in front of the house. I made little cuttings of all of them for my girls. We look forward to seeing you in November, and we will go eat Black Beans/Rice again. Can't wait for you to see your masterpiece. **Tony & Jean Coniglio, Tampa, FL** (Tony & Jean were in the audience when I gave a presentation to their Sertoma Club last winter during my "winter phase" in my home town of Tampa. They hired me to landscape their beautiful Mediterranean-style home near the stadium. I found them to be a truly delightful upbeat couple, fun to work with, talk with, and eat beans with. I couldn't help but notice the steady stream of visiting friends and their adult children as I installed their landscape of subtropical perennial flowers; their warmth and good humor has surrounded them with love. John.)

Dear John: I'll bite. A check for \$36.00 is enclosed to renew my subscription and enter one as a gift for Prue Smith in Portsmouth, R.I. Christian and I have just returned from a long sejour in Reunion (several weeks between us), so you can imagine our surprise at seeing it mentioned in September's PHUKINAY!! Matter of fact we were married at Cilaos, an informal ceremony of our own making. We were quite impressed with the rainfall during Firinga, the cyclone that passed through Reunion in January 1989--56" in 24 hours. Reunion is a lovely island, volcanic and majestic in the center area, thoroughly french-ized on the periphery, a very volatile place. THE GARDEN DOCTOR arrives and gets read immediately. I am squirreling the garden content away in the back of my head, as after nearly six years travelling by sea, my place is a jungle. Gardening is for next year; remembering what I have forgotten, several more years. An extended sea voyage certainly helps develop one's fitness for the 'guerilla action' you suggest. There simply isn't any extra water to wash down the drain! Electricity, clothing, possessions, are naturally looked upon in a different light. Refrigeration is a decided luxury and one easily done without. Your illustrations, the information, the jokes and the language are all A-1. I skip the poetry. I especially appreciate the hand-coloring and information oddments. I thank you for your labor of love. **Anne Lathrop, Lebanon, Connecticut**

Hi John, Thank you. My initial GARDEN DOCTOR magazine came in the mail this past week--- and I'm overwhelmed! I, too, am a vegetarian, for some 15 years now. So---enclosed find some "fine folks" for gifts & my own renewal as well. Thanks so much. It's a joy---(My heart skips a beat or two & my smile is wide) ---when I gaze into THE GARDEN DOCTOR. Thanks SO much! **Edward Dudas, Clermont FL** (Thank YOU so much Ed; sometimes I get REAL phukin discouraged about the slow growth of this magazine, but then I'll get a supportive letter like yours containing MULTIPLE gift subscriptions and I get all fired up again, believing again that I AM doing something right with each issue. Thanks much and take care, John).

Keep it coming, John! **Jo-Ann & Jack Seiquist, Los Gatos, CA.**

Dear John, I just read an issue (June '90) of your magazine. Delightful! It was such fun with all the drawings & learning a little bit of a variety of things about our planet & its many children. May I suggest the addition of alfalfa meal pellets to your indoor garden compost recipe? I believe that'll help w/odor! **Billie Jo Secrist, Juneau, Alaska.**

Dear John, Please enter a gift subscription for Nelda Holder Clemmons... Hope all is going well with you. We're hanging in! Looking forward to seeing you with the first frost! **Pay Gross, Odessa, Florida**



This is really a renewal but I can't find my special reminder... Thanks for all the wonderful tidbits, ideas & inspiration--- your magazine is itself a delightful garden for the senses. If you haven't done it already, would you please enlighten us about bees and how they make honey... I must have known at some earlier time, but (alas) it has slipped away... Thanks, **Sue Burrell, Mill Valley, CA.** (Thanks Sue for renewing and your supportive letter, and thanks too for the article idea about honey; look for it in THIS issue. I've extended your subscription 1 issue in payment for your idea. Thanks, John)

Dear Garden Doctor; O.K., O.K., your threats of extinction have moved me. I can't bear the thought of not receiving your wisdom and humor in my mailbox. Please send a gift subscription to the good folks at Gathering Together Farm... Please start them with the September issue as I know they will be as charmed by Anita Kruschev's makeup techniques as I am. Thanks, **Sheila Lyons, Corvallis, OR** P.S. \$24 is NOT too much. A movie is no cheaper and rarely as much fun.

Dear Doctor: You have a GREAT publication! Keep at it! Please send a gift subscription to my brother-in-law Brian Martin (my hero) in celebration of his birthday. Thanks, **Frank Phillet, Alberta, Canada** (Thanks Frank for spreading THE GARDEN DOCTOR into another province of Canada... If any of you folks give a subscription to a friend outside the U.S., PLEASE add \$6 to each gift as the U.S. Postal Service will not allow the use of my recently acquired bulk mail permit outside the U.S. until I have 200 readers in EACH country. As a result it costs 96c to \$1.87 to mail EACH issue to readers in Canada, England, Nicaragua, etc instead of 17.7c per.

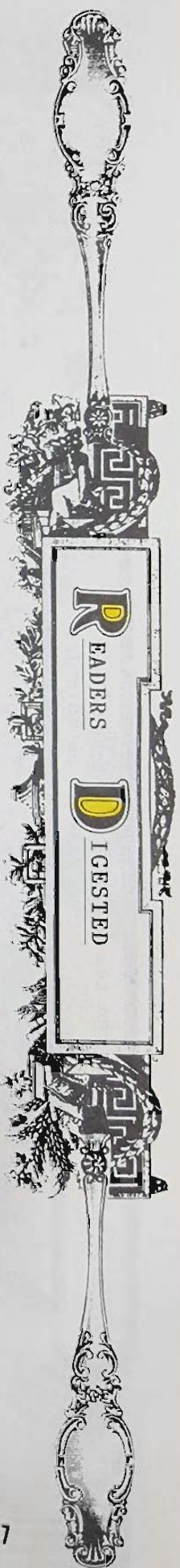
Dear John, ...I've decided to send my subscription right away! The originals of TGD will soon be on their way back to Florida with my friend Sally Sharp, who values you and your magazine very highly... Your magazine is a delight and I am hoping to soon put the information to use--- fall garden sort of thing. Best wishes for continued success. **Doris J. Veatch, Jackson Tennessee.** (Thanks Doris... Sally and I go back to 1970; she's VERY special to me too. John).

Dear John, I am answering for Grundle who recently ordered THE GARDEN DOCTOR for her mother's birthday. You asked where we heard about it. The article in the East/West mag. inspired us to get it... It is as good or better than they implied. Sincerely, **Nancy & Grundle, Tallahassee, Florida.**

Greetings, Rec'd note concerning renewal. And I enjoy from cover to cover my copy when rec'd. SO--- here's my ck. for \$18. Don't want to miss an issue or my free seeds. When I can't use all seeds the lady across the street enjoys planting 'em. They are all used. Thanks so much for your great newsgarden mag. Bright Blessing & happy gardening. **Sylvia Bennet, Lawndale, CA**

Dear John, Thankyou so much for the extra copy of THE GARDEN DOCTOR. It enabled me to share it with a special friend. I enjoyed every page of your magazine, but "Dirty Something" was my favorite--- humor and practical advice all in one. Botanically Yours, **Joan Maloof, Quantico, MD**

Dear John, I just wanted to write a quick note to send along with my renewal to let you know how much I look forward to your magazine. It's an absolute wealth of information for people who care about living gently on the Earth. Your friends, **Paul & Paula Stathes, Tampa, FL.**

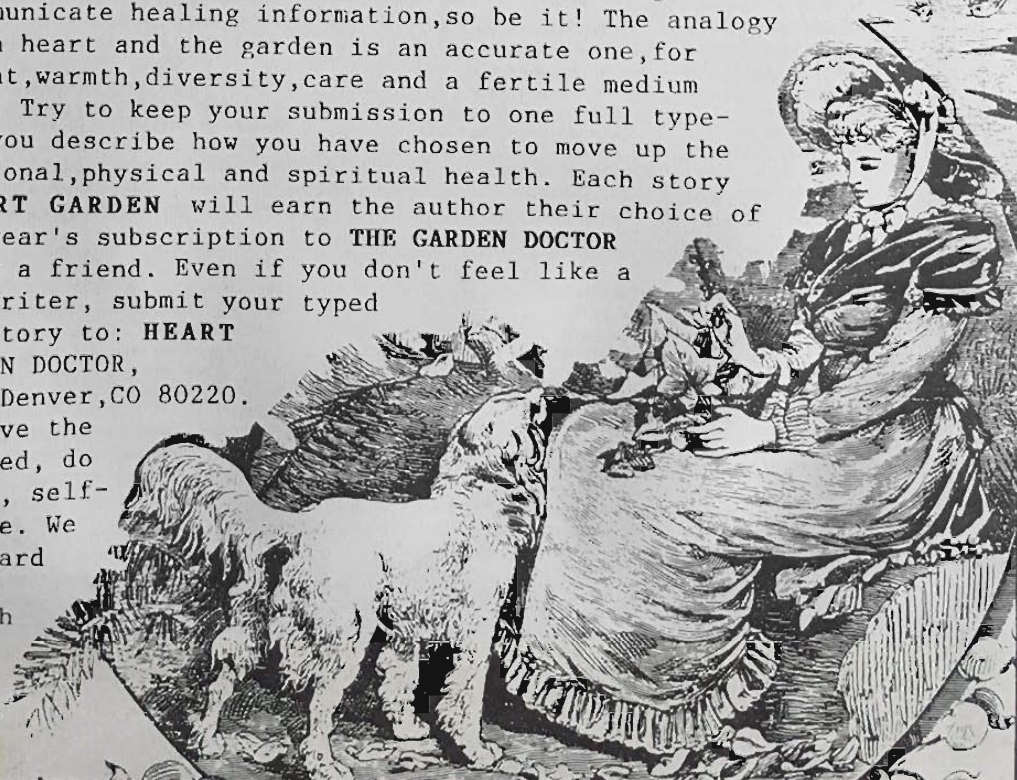


HEART GARDEN



At birth we humans arrive into a universe that offers us a wealth of opportunities to deliciously indulge in the act of being by virtue of our senses, our imaginations, our intellects and our ability to transcend both the moment and ourselves. But we are also confronted with a brutal array of assaults on our "is-ness": our body's incessant survival needs, hostile microorganisms, war, calamity, fear, crime, poverty-potential, plus spiritually and emotionally impoverished humans seeking to diminish us (sometimes under the guise of "loving" us). In the quest for happiness, health and inner growth we MUST acknowledge these adversaries if they are to be addressed, avoided or conquered. "Denial" of a love relationship's grim affect on us, or the damage wrought by an ill-chosen job is only novacaine on wounds that continue to deepen and fester. "Hanging in there" bravely on a life course taking us away from our inner needs, our true selves and our greatest potential is a kamikaze approach to our **one and only** chance at THIS life in THIS time. Perhaps the greatest tragedy of human life rises from an unwillingness (stemming from fear, laziness, or an infatuation with our own pain) to venture into newer, healthier and happier ways of thinking, feeling and living. The bitter, cryptic bumper sticker stating that "Life's a bitch; then you die" is a self-limiting, self-fulfilling life stance, NOT a statement of unavoidable truth.

"HEART GARDEN" is a new feature in this magazine that will give varying authors (including readers of THE GARDEN DOCTOR) a forum in which to share with us how they choose to heal, to grow, to prosper, to explore their own "is-ness" as their lives progress. Since each person encounters different challenges, such as divorce, marriage, being Gay in a homophobic culture, being black in Racist America, encountering severe health problems or emotional crises, being laid off from a "secure" job, moving to a new city, losing a loved one, and other life difficulties, many of you will likely have gained skills and knowledge that readers of THE GARDEN DOCTOR may not yet have acquired. Your article need not be a "how to" step-by-step methodology; if sharing the events of a life episode and how you chose to grow as a result would communicate healing information, so be it! The analogy between the human heart and the garden is an accurate one, for both require light, warmth, diversity, care and a fertile medium in which to grow. Try to keep your submission to one full type-written page as you describe how you have chosen to move up the spectrum of emotional, physical and spiritual health. Each story published in HEART GARDEN will earn the author their choice of either \$20 or a year's subscription to THE GARDEN DOCTOR for themselves or a friend. Even if you don't feel like a world-acclaimed writer, submit your typed human adventure story to: HEART GARDEN, THE GARDEN DOCTOR, 1684 Willow St., Denver, CO 80220. If you wish to have the manuscript returned, do include a stamped, self-addressed envelope. We all can look forward to hearing and learning from each other.




I may cry some day, but the tears will dry whichever way....
"Walking on Thin Ice" Yoko Ono

Loyalty to petrified opinion never yet broke a chain or freed a human soul.
Mark Twain



ITALIAN HERBS

by
Reba
Derchy



Oregano izza SO much more flavorful snipped fresh from a growing plant...Mama mia, what's-a-matta-for-you using that dry stuff when itza so easy to grow most places? "Butta Reba, I tried and it DIED" you say. Well, pull up a loaf of garlic bread and letsa go over a few tings. First, there is *Origanum heracleoticum*, called "Greek" oregano or "winter marjoram". It izza low-growing, has VERY hairy leaves, and may die in harsh winter areas. Try to get this one if you live in Florida or San Diego, for it does not need a deep winter dormancy to be perennial. Then there is *Origanum vulgare*, considered by many to be the "true" oregano. It tolerates hard winters well, grows 2 feet tall, has less hairy leaves, and its flowers may be purple, pink, lilac or the white of the first type I mentioned. This oregano variety has medicinal as well as culinary uses; teas, salves, etc.

Both varieties need the same growing conditions: FULL sun all day long, well-drained heavy soil of a neutral or even alkaline pH (oreganos came from the Mediterranean area, where soils are infertile, dry and alkaline). So be SURE to add some crushed limestone, eggshells, bonemeal or crushed seashells LIBERALLY to your soil. If growing your oregano in a pot, use a big one; say a 10 inch clay pot. Cover the drainage hole with 2 inches dry grass clippings or chopped hay. Then add a heavy soil mix; try 1 part compost or composted horse manure, 1 part coarse builder's sand, 1 part chopped dry straw, hay or dry grass clippings, and $\frac{1}{4}$ part crushed limestone (to help create alkaline soil conditions). Fill the pot with this mixture, leaving 2 inches of space at the top; plant your baby oregano plant inna the center, then filla thata 2 inches with a mulch of hay or dry grass. Water deeply weekly. Mama mia, thatsa it!

HARRY KRISHNA'S

karmic relief

RESOURCE REPORT

Mendocino Permaculture Association
P.O. Box 74
Boonville, CA 95415

The Guano Company
3562 East 80th St.
Cleveland, Ohio 44105
(Bat & seabird poop)

The Garden Club of America
598 Madison Avenue
New York, NY 10022

Morton Old-Fashioned Apple Trees
Rt. 1, Box 203
Gatlinburgh, TN 37738
(old varieties for the SE, including "Limbertwig" varieties)

Maui Permaculture Institute
Harmonious Earth Research
P.O. Box 1805
Kihei, Hawaii 96753

Fernald's Nursery
Rural Route 2
Manmouth, IL 61462
(pecans, hickory, butternut, chestnut, walnut, hazelnut)

Le Marche
P.O. Box 190
Dixon, CA 95620
(catalog \$2, heirloom, foreign, hard-to-find vegetables)

Hurov's Tropical Seeds
P.O. Box 1596
Chula Vista, CA 92012
(edibles, medicinals, ornamentals)



Wisconsin Greens
Jeff Peterson
Rt. 2, Box 170 A
Luck, WI 54853

Buckthorn Ginseng
Rt. 4
Richland Center, WI 53581



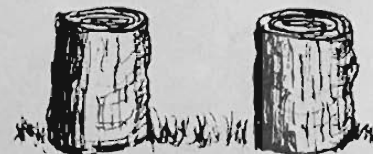
PESTICIDES DO THE DARNDEST THINGS

by Bart Sinkwetter

Nearly all Americans have in their bodies residues of the BANNED pesticides DDT, aldrin, chlordane, dieldrin and heptachlor. Hey kids, 95% of rural Americans and 50% of all Americans get their drinking water from groundwater sources....the EPA has learned that at least 20 pesticides have been found in the groundwater of at least 24 states. In California, for example, 57 pesticides have been found in the groundwater. In the San Joaquin Valley, 2,499 drinking wells are contaminated with the banned pesticide DBCP. 1,473 of these wells yield water unsafe for drinking OR bathing. PESTICIDE ALERT.

GREGORY
PECS
SEZ:

Position two fat sections of log vertically about 3 feet apart in your yard: use them to do dips and deep push-ups to build up your chest, back, arms, abdomen and shoulders.



I HAVE SEEN AMERICA

I.

sleeping under railroad trestles
while the dawn leaks out
like a fading train whistle,
and the poet
dreams of a new America
for all trees, plants,
animals and humankind.

II.

They want to own you.
They want to see it in
your face. See the lines,
hear your voice humbled
in your throat,
saying who you are:
Janitor, maintenance man,
shrub cutter and garbage
hauler, bossman's man,
pickup driver, grandson
of a slave, father and
grandfather of too many
children, just another
worker with dirt on his hands
and smut on his clothes:
That's why they hired you:
They want to see it in your eyes:
They want to send you off
with the wax of defeat
stiffening your tongue.

They will pay you
in blessings. They
will move you
to the suburbs.
They will ply you
with Chivas Regal,
lunches that go on too long,
Nikon cameras, a
world shimmering
a world away--on
color TV--between
episodes of sports glory
that keep you in your
easy chair. It will
not come cheap, unless
you've a mind for
30-year mortgages.
They don't give a
damn for your body.
They want your soul.
They want your child-
ren, well-mannered
and polite. They know
they are
the sons and daughters
of revolution.

Richard Vander Veen

Come and raise your eyes in wonder
At the breaking of the day.
Leave behind your dreamy slumber
Hear what all creation says:
There is only ever One Light
That, being splintered, tricks the eye
Into seeing many colors,
Into living many lives.

Alan Shore

(reprinted with permission of
"Science of Mind" magazine)

MULTIFLORA

Oh rose you grow so wild
that I must cut gorgeous green
sacrifice skin to stray thorns
one drop of red blood
records each careless reach.

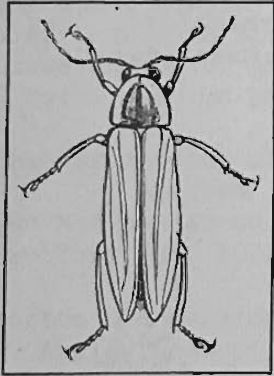
Spring brings white waves
farms filled with
fragrance and pain
the thing that was enemy
becomes beauty again.

Joan Maloof

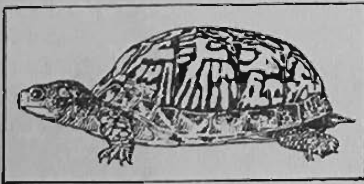
If your poem is published you'll get \$5 in thanks.
Send your best work to POETRY, THE GARDEN DOCTOR
1684 Willow St. Denver, CO 80220



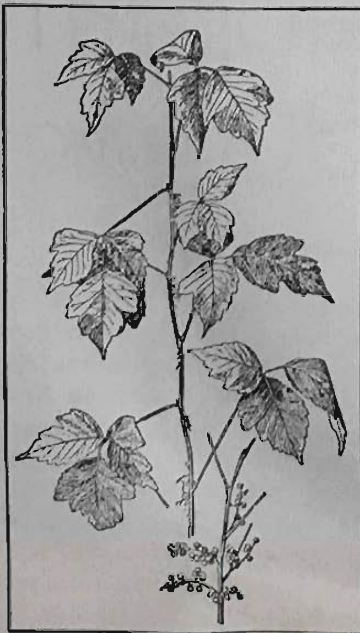
AXIS DEER, OR CHEETAL, OF INDIA



FIREFLY
Photuris pennsylvanica



BOX-TURTLE



COURTESY U.S. DEPT. OF AGRICULTURE

POISON IVY

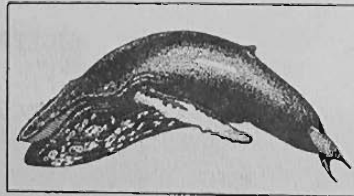
Left, spray showing rootlets. Right, fruit

Nature Study

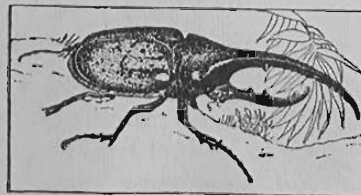


HI! WHAT a joy to be a child or a butterfly on a happy day of sunshine and merry winds! While a bee is all busyness because there is so much to do putting away honey for the winter, the butterflies haven't a care in the world. Nobody to look after but themselves, living on an occasional sip of nectar, they spend the livelong day flitting and drifting about in the golden air.

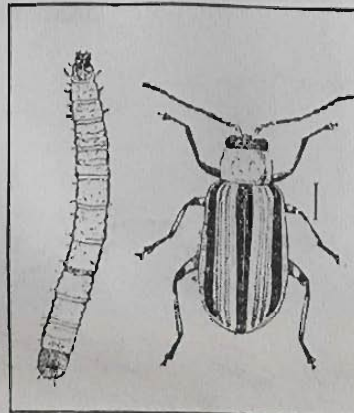
It is the "wondrous sculptured dust," the scales on their wings, that breaks up the rays of sunlight falling upon them and produces all the beautiful colors and shadings of butterflies and moths. But how a gaudy butterfly, like the Kallima of India, ever got put together so that the moment he settles on a twig and folds his gay wings he looks like an old withered leaf—that nobody knows. Possibly you may be the very boy or girl to find out some day. Many Nature secrets quite as mysterious have been solved by men of science who began by amusing themselves with Nature's puzzle pages just as you are doing this very minute.



HUMP-BACKED WHALE



HERCULES BEETLE



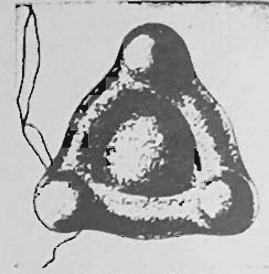
COURTESY U.S. DEPT. OF AGRIC.

STRIPED CUCUMBER BEETLE

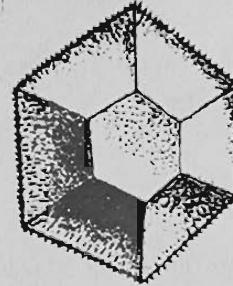
Right, adult beetle showing distinctive stripes. Left, larva



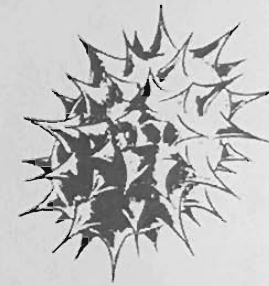
Passion Flower



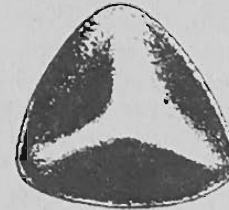
Willow-Herb



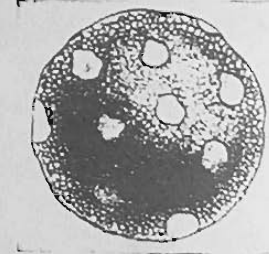
Dandelion



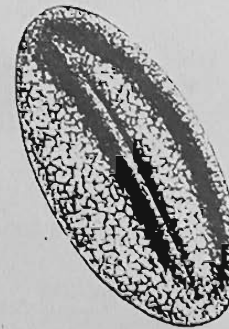
Marguerite



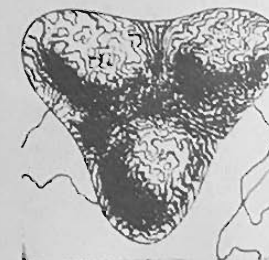
Nasturtium



Phlox

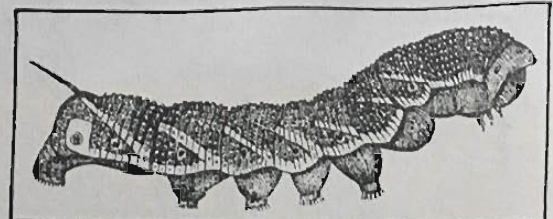


Tiger-Lily



Rhododendron

How immeasurable and unthinkable are the powers of Nature! No two flower-seeds are quite the same; neither are their pollen-grains. Nature has patterns enough and to spare, and she makes nothing, we must believe, without care and purpose. These few pollen-grains have been photographed under the microscope, and we see how beautifully they are made, though we cannot tell why this should be this and why that should be that. It is part of the great mystery that Life will one day reveal to its children.



TOBACCO WORM

Larva of a sphinx moth (*Phegotherontius carolina*)



BAD NEWS

The Hudson River is so heavily poisoned with industrially-produced PCB's known to be powerful carcinogens, that catching and eating striped bass from that river has been banned since 1978.

Massachusetts Audubon Society

The fabric protector **Scotchgard** contains the toxic chemical 111 trichloroethane, which is a potent destroyer of the vital radiation-blocking gas ozone in our upper stratosphere. What'll it be; those DEADLY stains or merely skin cancer, crop destruction and cataracts?

Due to "possibly criminal price-padding" by **Northrop** the new "revised" per plane cost estimates indicate the subsonic bat-bomber will COST MORE THAN ITS WEIGHT IN GOLD! **NBC News**. Ponder that, and the S&L bailout when next filing your taxes.

Think the Spanish matador is a brave man? Think again. Before the "fight", the bull is led into a small pen and beaten by several men using SANDBAGS. Then its eyes are smeared with Vaseline to impair its vision. Its horns are also sanded dull. Several men precede the matador in the arena to tease and tire the already weakened animal; one man always severs a prime artery in the bull's back to insure the macho matador confronts an animal feebled by blood loss. As the crowd cheers the matador finally seeks to kill the bull with one thrust of his sword but usually fails. Yet another "assistant" kills the bull (while the matador bows) by stabbing the now-prone animal's braincase with a knife. **World Society for the Protection of Animals**. Write: Ambassador Julian Santamaria, Office of the Embassy, 2700 15th St. Washington, D.C. 20009

Relying on animal products like cheese and meat for Vitamin A (from retinol) can result in a much higher risk of esophageal cancer than relying on vegetables for Vitamin A (from carotene). **American Journal of Epidemiology**.

Believe it or not, it is legal in **Montana** and **Idaho** to kill a nursing mother bear just to cut off her toe claws to sell as jewelry and/or to cut out her gall bladder to sell to quack Asian doctors who have wiped out bears in their own countries. It is also legal to leave the cubs to starve or to kill them for their claws. Write: Gov. Cecil Andrus State Capitol, Boise, Idaho 83720. Gov. Stan Stephens, State Capitol, Helena, Montana 59620

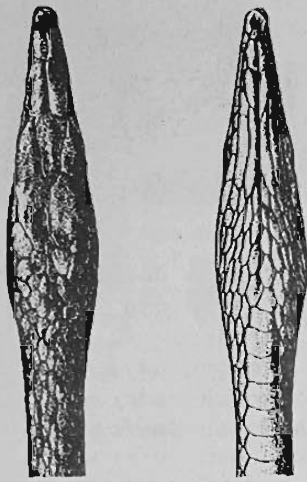
According to ecologists from the New York Botanical Garden's Institute of Ecosystem Studies **80%** of the 274 lakes in New York's Adirondack area have acidified significantly in the last 50 years, likely due to the increase in the acidity of rainfall that has also occurred during that time period.

India and **China** (you know, those fun-loving Tianenman Square octogenarian farts George Bush granted "Most Favored Nation" status to?) have so far refused to sign the **Montreal Accord** signed by over 100 other nations in an effort to significantly reduce emissions of atmosphere-damaging gases by the end of this century.

Seventeen small mammal species in Australia have become extinct since the arrival of European settlers. **PBS**

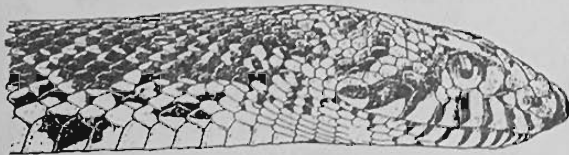
The 1990 **INTEREST** on the national debt was \$254 **BILLION** dollars! **ABC NEWS**. (Master the possibilities).

No one knows the age of the human race, but all agree that it is old enough to know better. Unknown

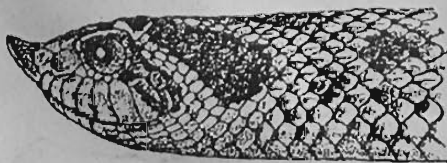
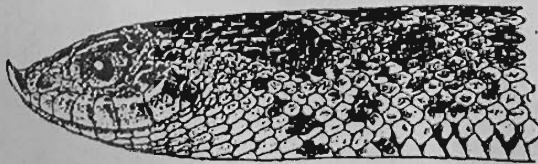
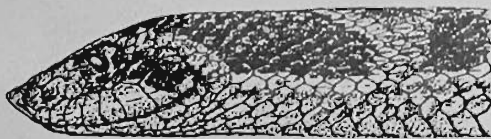


Arizona vine snake (*Oxybelis microphthalmus*).

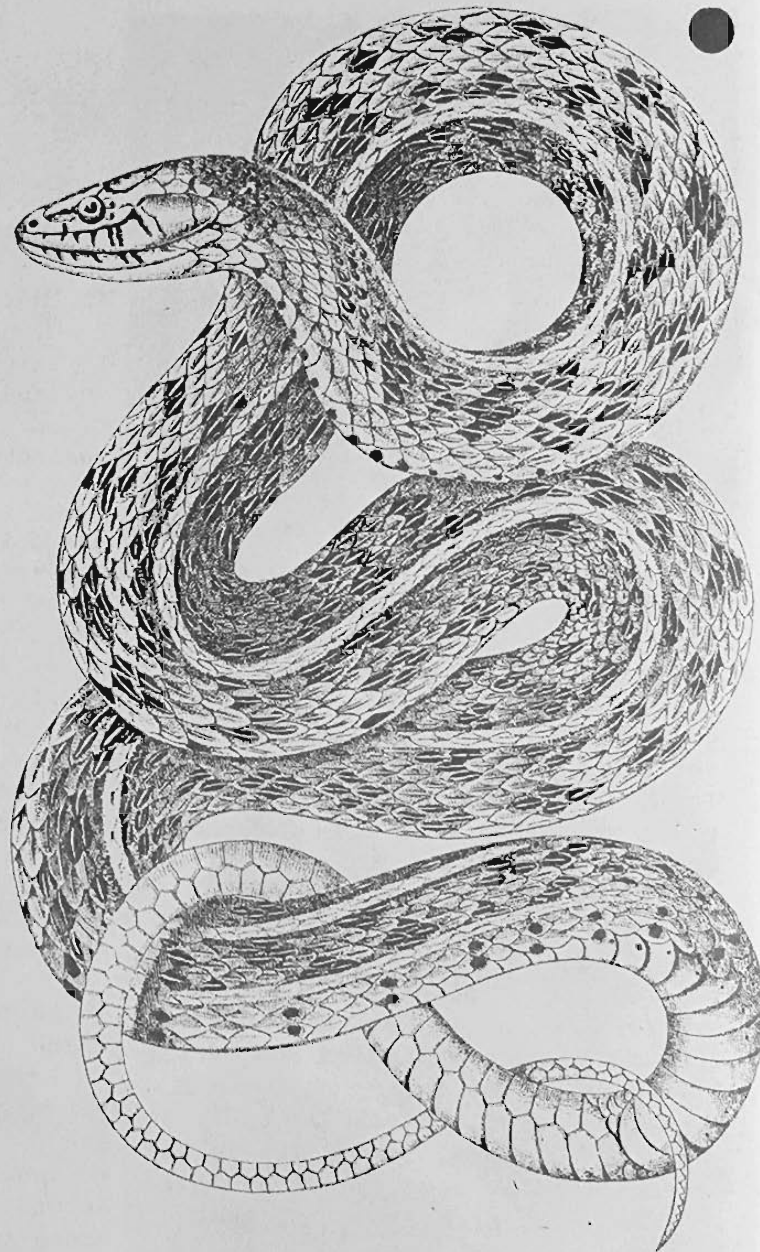
Size.—Total length of type specimen 52½ inches (1350 mm.), of which the tail amounts to 21¾ inches (550 mm.).



Common bull snake (*Pituophis sayi sayi*).



Three species of hog-nosed snakes. (Top) Common hog-nosed snake (*Heterodon c. contortrix*). (Middle) Western hog-nosed snake (*H. n. nasicus*). (Bottom) Southern hog-nosed snake (*H. simus*). Note great development of "shovel" in *nasicus* and *simus*.



Less than 5% of the world's snakes are venomous, and ALL snake species eagerly flee from humans. (Would YOU attack a creature 200 times YOUR height?) They attack humans only when stepped on, startled or cornered. Yet many people, out of fearful ignorance, use a shovel to promptly decapitate ANY snake they see. This is a poor example for children, who could be shown instead cautious curiosity. Let them see the timid nature and the many varied shapes and colors of these valuable, sentient creatures. Tell children that without snakes we would be overrun with rats, mice, moles, plant-damaging insects and the other small pesky animals snakes eat. Cast aside your fear and loathing and aim new eyes at these shimmering legless marvels of Nature.

PHUKINAY!



Richard Nixon gets an annual Presidential Pension in the amount of \$107,000 plus "benefits". **NBC News**

An elephant's trunk, which is actually a combination of the nose and upper lip, is composed of 100,000 muscles. It can hold 2 gallons of water and can sniff scents originating from 5 miles away. The trunk is strong enough to pick up a log yet sensitive and dexterous enough to pick up a dime. **PBS**

In 1986 Robert Gancarz of Jacobstown, New Jersey grew a pumpkin that measured 11 feet, 11¼ inches in circumference and weighed 671 pounds! **Guinness Book of World Records.**

The two Voyager space missions to Jupiter, Saturn, Uranus and Neptune TOGETHER cost \$550 million, just about HALF the cost of ONE B-2 Stealth Bomber. **Washington Post.**

The ice sheet that covers 98% of Antarctica averages 7,090 feet in thickness but in some places is nearly 3 MILES thick. The ice sheet is so heavy that most of the continent itself has been pushed below sea level. This ice, (which contains 90% of the ice on Planet Earth) if melted, would raise global sea levels by about 60 meters. **Wilderness, summer 1990**

The giant canyon Valles Marineris on Mars would span the U.S. from Los Angeles to New York. **NASA**

Ovid Harrison of Kite, Georgia grew a 40 3/4 pound sweet potato in 1982. **Guinness Book of Records**

The giant crested pterodactyl called **Quetzalcoatlus northropi** stood 10 feet tall and had a wingspan of over 36 FEET!

The tropical Voodoo Lily, a member of the Arum Family, in its bloom phase, can have a metabolic rate equal to that of a hummingbird! How? It uses an aspirin-derivative called salicylic acid to suddenly metabolize the carbohydrates stored in its tissues. This heats the plant to a temperature of 110 degrees Fahrenheit for a few hours, volatilizing aromatic compounds in the flower that attract pollinating insects. **National Academy of Science.**

Incredibly, paleobotanist Charles Smiley and his colleagues have found, in 20 MILLION YEAR OLD SHALE in Idaho a STILL GREEN, unfossilized magnolia leaf. They also succeeded in decoding an 820 segment strand of STILL ACTIVE DNA from chloroplasts in the cells of the astoundingly well-preserved leaf. **Science News**

In 1978 a carrot weighing 15 pounds 7 ounces was grown by Ms. I. G. Scott of Nelson, New Zealand. **Guinness Book of World Records**

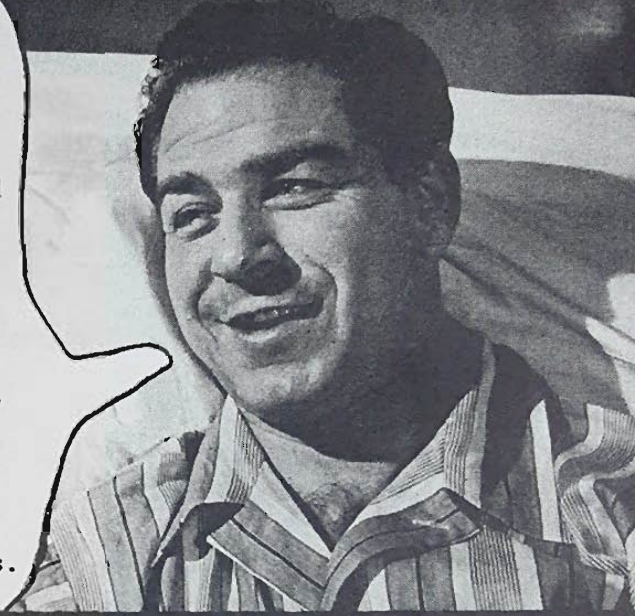
Philip A. Gingerich of the University of Michigan in Ann Arbor reports the discovery of fossils of a prehistoric ancestral horse the size of a Siamese cat. *Hyracotherium sandrae*, now the oldest known horse in North America, roamed over what is now Wyoming over 50 million years ago. **Science News**

A lightning bolt may be 200 miles long but 6 inches thick. **It's A Fact**

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