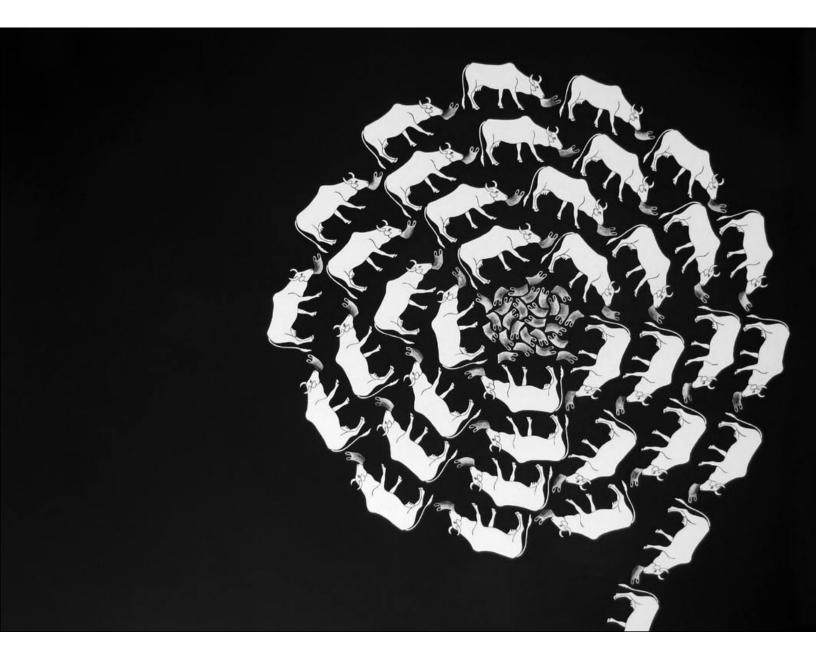
The Land Report

A publication of The Land Institute / Number 94 / Summer 2009



Khao Maata (eat mother), by Priti Cox. Acrylic and ink on canvas, 36 by 48 inches. The artist will show at The Land Institute's Prairie Festival. She writes, "Sacred cows and plastic bags are symbols of the old and the new India that now co-exist everywhere in the country. However, one is suffocating the other. The recycling system in which cattle roam the streets willynilly and eat food waste has been disrupted by the plastic bag." For more about the festival, see page 8.

Salvage James Everett Kibler

The Breaking of Nations Lionel Basney

A Way of Knowing Wes Jackson

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Want to share a story from *The Land Report?* Unless the writer objects, you may photocopy from the magazine or get the piece by e-mail. Write to Scott at bontz@ landinstitute.org or our street address in the column at right, or call him at 785-823-5376.

The Land Report is published three times a year.

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Associate editor: Darlene Wolf

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The Land Institute Mission Statement

When people, land and community are as one, all three members prosper; when they relate not as members but as competing interests, all three are exploited. By consulting nature as the source and measure of that membership, The Land Institute seeks to develop an agriculture that will save soil from being lost or poisoned, while promoting a community life at once prosperous and enduring.

Land Institute Staff

Christina Arnold **Dorothy Barnett** Scott Bontz Carrie Carpenter Cindy Cox Sheila Cox Stan Cox Lee DeHaan Tiffany Durr Liz Elmore Jerry Glover Adam Gorrell Gary Hale Maril Hazlett Eileen Horn Stephanie Hutchinson Joan Jackson Nancy Jackson Wes Jackson Patricia Johnson Ron Kinkelaar Glenn Laubhan John Mai Grant Mallett **Bob Pinkall** Harris Rayl Steve Renich John Schmidt David Van Tassel

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2440 E. Water Well Road Salina, KS 67401 Phone: 785-823-5376 Fax: 785-823-8728 theland@landinstitute.org www.landinstitute.org

74 Percent of Funds Raised for Capital Campaign

he spring Land Report announced The Land Institute's Perennials on the Horizon campaign with a \$1.44 million pledge that will greatly improve on our current make-do facilities. That lead gift from 13 families, descendents of Joyce Hall, founder of Hallmark Cards in Kansas City, encouraged more donations. The campaign is now at the \$2.21 million mark toward a total goal of \$3 million.

Our highest priority: building a 13,000-square-foot, \$2 million research center. We also need to improve our 22-year-old greenhouse for plant breeders' work toward perennial grains, and to renovate other facilities.

The research center site south of the greenhouse is marked and fenced for construction. We expect final permits soon. Then bulldozers can begin digging the basement. We will report progress on www.landinstitute.org.

A former intern who helped build the greenhouse wrote to say he was sure that by now it must need serious attention, and he is right. The greenhouse allows us to speed plant breeding by growing two generations in one year. Also, the hand pollination necessary to develop some hybrids for perennial grain crops is best done out of the

wind. Renovation will bring the greenhouse up to the general standard for plant research, improving both efficiency and plant health. Without expanding the exterior, which would raise heating and cooling costs, the building will gain 38 percent more space for plants by removing interior walls and installing moveable plant benches that can pack together and move aisle space. A concrete floor will replace one of rock that collects debris and feeds insects, fungi and diseases that can infect the large mass of indoor plants. There will be centralized control of vent motors, fans and heat pumps, and a system that monitors soil moisture to control water delivery. A retractable internal canopy will prevent loss of heat through re-radiation on winter nights.

The administration building, a former farmhouse, will better accommodate expanding staff with renovations for work flow and visitor reception. Also planned is improved energy efficiency, including new windows. The same goals apply to an old house at our 72-acre research farm. This building will offer overflow offices, workspace for temporary staff and storage. We also plan a shed to protect from weather our researchers' variety of field equipment, valuable to the demands of small, scientific plots.

> Your inquiries and help are invited. Please call Joan or Carrie at 785-823-5376, or email development@landinstitute.org. For online donations see www.landinstitute.org.

A Step Toward Perennial Crop Sunflower

We now have proof that "bridge crossing" in sunflower can bring together genes from annual and perennial sunflower species, which before succeeded rarely. The "bridges" in this case are two perennial sunflower species with more chromosomes than the rest of the sunflowers. These species may themselves be the products of ancient, rare hybridizations between annual and perennial species. This could explain why breeders at The Land Institute and the University of Minnesota have found that the plants cross with many other sunflower species—both annual and perennial—fairly easily. One head can be crossed with big-seeded commercial annual sunflowers, and another crossed with drought-tolerant perennials. The two kinds of hybrids can then be crossed, bringing together genes from both the main perennial and the annual groups of sunflower species. The bridging species might have no traits of



This spring Geotechnical Services pulled subsoil from 25 feet down L so engineers know how to design structural support for The Land Institute's new research center. Scott Bontz photo.



Six plants, all combining the genes of annual crop wheats with those of wild perennial relatives, show the variety available to select from in breeding perennial wheat. They are printed here life size. Some 1,300 of these new plants were grown in the greenhouse this winter and photographed. Then they were threshed. The photos will be used to provide a permanent record of the range of head types obtained from diverse breeding approaches. Once data on seed production,

seed size and plant survival is available, plant breeder Lee DeHaan will be able to study and publish photos of some of the most promising lines. The annual wheat used to make the hybrids shown here included bread wheat, durum wheat used for pasta, and a type no longer grown commercially. The perennial parents of these plants all belong to the genus *Thinopyrum*, and are commonly referred to as wheatgrasses. Photos by Scott Bontz with the help of other staff members.



interest to us, serving only to join other species. However, in this case both bridge species are locally adapted perennials. It may turn out that they have all the hardiness and longevity genes that we need, and that the crosses with other perennials were unnecessary.

The hybrids are partially sterile: They produce little pollen and very few seeds. But plant breeder David Van Tassel and technician Sheila Cox have noticed that sterility has declined after several generations of planting the rare seeds. The scientists now have thousands of plants in the field, some with modest fertility. Some of the most croplike ones, however, had few seeds. About 100 of these special plants are being given an extra generation of sterility reduction. After this "make-up" generation, the scientists will take seeds from any family that has at least modest fertility and seed size, and begin more standard cycles of selective breeding. In hopes of getting any seeds, Cox and Van Tassel have allowed plants to mate randomly. But in future years they will allow only the highest yielding plants to cross only with each other. Selecting for seed yield in the second year simultaneously improves heat and cold tolerance, vigorous regrowth, reduced sterility and increased seed size. This suite of traits can only come from plants that contain compatible genes originally from both annuals and perennials.

Another route toward perennial crop sunflowers is domestication of wild species without making hybrids between different species. This bypasses the problems of sterility, but does not allow the breeders to take advantage of annual crop sunflowers' genes for high yield. After two years of evaluating 2,000 Maximilian sunflowers, a wild perennial, Van Tassel picked for continuing work the 50 crop candidates judged best all-around. He did the same with another wild perennial in the sunflower family, Kansas rosin seed, Silphium integrifolium. He dug up and moved these elites to a new plot, where they will be crossed with each other for another round of selection. Van Tassel picked the Maximilian plants by a combined score of seed size, seed head size, shattering—the dropping of seed before harvest—and all-important yield, the total weight of edible seed. Rosin seed was picked only by seed size. Its other traits were less certainly a result of genetics rather than growing conditions.

Van Tassel also selected from his Maximilian field 13 plants with extreme traits that didn't necessarily add to yield. For example: a plant with only one seed head per stalk. This feature makes annual crop sunflower easier to harvest, but for now makes a low-yielder of wild Maximilian, which typically has dozens of smaller heads. Another example: Three plants lacked good yield but had little shattering. By selection for continued mating both the best all-around plants and those with just one good feature, Van Tassel is covering the bases to stack up genetics for the best crop plant.

Work on Perennial Wheat Spreads to Other Nations ...

Plant breeder Lee DeHaan has sent seeds of perennial wheat breeding lines to an increasing number of interested breeders in other countries. Noted in earlier *Land Reports* has been collaboration with Canadian, Australian and Chinese scientists. DeHaan is now also fulfilling requests from Spain, Sweden, Turkey and Nepal. He sends seed from hybrids between annual crop wheat and perennial intermediate wheatgrass. The plants will not necessarily prove perennial in the various climates, but the Australians report that some plants, with irrigation, have weathered a summer hotter than in central Kansas.

DeHaan also has sent seed to several other states. A former summer helper at The Land Institute, Kathryn Turner, will begin graduate school this fall at the University of Minnesota, and test DeHaan's hybrids for disease resistance and adaptation to Minnesota climate.

... And Perennial Grain Breeders of the World Unite

DeHaan, Van Tassel and Stan Cox of The Land Institute will be among 15-20 other breeders from the United States, Australia and China for the first international perennial grains workshop, September 14-19 in Kunming and Sanya, China. Cox said this is a small, preliminary meeting that they hope will lead to a larger conference in the United States or Australia next year. For more about the Chinese effort and our scientists' visit there last year, see the fall 2008 *Land Report*.

Jackson Visits Washington for 50-Year Farm Bill

In mid-July, Land Institute President Wes Jackson, writer Wendell Berry and Fred Kirschenmann of the Leopold Center for Sustainable Agriculture traveled to Washington to propose a 50-year farm bill to members of the Department of Agriculture and Congress. The aim is a sustainable farm landscape—one the remains productive—by 2059, treating each of the regular five-year farm bills as benchmarks. The audience in Washington was receptive, and The Land Institute will continue to spread the idea and develop support among constituencies nationwide.

Landmark Climate and Energy Legislation

In June the U.S. House passed the American Clean Energy and Security Act, a critical first step toward reducing greenhouse gas emissions, and arguably the most important environmental legislation in over 30 years. Though the bill is far from perfect, it would place a steadily declining cap on greenhouse gas emissions, reaching 80 percent reduction by 2050. Earlier in the month, the Senate Energy and Natural Resources Committee passed the American Clean Energy Leadership Act. This bill includes several of the same measures—a renewable electricity standard, efficiency provisions and support for carbon sequestration. It also allows oil drilling in the Gulf of Mexico and aid for

Alaska's natural gas pipeline, and does not limit greenhouse gas emissions. The House bill is expected to emerge from Senate committees in time for a floor vote before the global climate conference in Copenhagen this December. Conference committee will provide another gauntlet. Lobbyists on both sides are busy.

The Land Institute's Climate & Energy Project has worked to build awareness and understanding of both bills, and has participated in several coalitions to strengthen them. In particular, it seeks strong targets for both renewable energy and energy efficiency, which numerous reports show will reduce the costs of emission reductions while creating jobs, protecting national security and increasing economic resilience. The Climate & Energy Project strongly supports a national—and global—cap on greenhouse gases.

Graduate Fellows Program on Hold

The recession hasn't kept The Land Institute from meeting budget, thanks to contributors sticking with us. But the downturn could drag on long and deep, and we don't want to assume too much. So for the fiscal year beginning July 1 our funding of research by graduate students is on hold. Since 1998 we have funded 75 fellows for research fitting our aim of perennial grain agriculture.

Jackson in Rolling Stone

The April 2 edition of *Rolling Stone* included Land Institute President Wes Jackson among its "100 Agents of Change," a list that the magazine said was "not necessarily about power in the old-fashioned sense but about the powers of ideas, the power of innovation, the power of making people think and making them move." It follows the one-paragraph sketch of Jackson with his "Next Fight": "Getting the Obama people to think differently about agriculture," and his "Key Quote": "We live off of what comes out of the soil, not what's in the bank."

Academy Honors Board Member Worster

Land Institute board member Donald Worster was named to the American Academy of Arts and Sciences. The honorary and policy research organization began in 1780 and has included such thinkers and leaders as Albert Einstein and Winston Churchill.

Worster, a University of Kansas history professor, joins the academy this year with scientists including Nobel Prizewinning gene researcher Mario Capecchi, artists including actor Dustin Hoffman, and foreign honorary members including former South African President Nelson Mandela.

Worster is a pioneer in the field of environmental history and author of books including biographies of John Wesley Powell and John Muir, and *Dust Bowl: The Southern Plains in the 1930s*, which won the Bancroft Prize. He has served on the Land Institute board since 1989, including seven years as chairman.

Worster and his fellow inductees will be honored at a ceremony Oct. 10 at the academy's headquarters in Cambridge, Massachusetts.

Presentations

Land Institute staff members spoke at conferences and colleges in Texas, Nevada, California, South Carolina, Minnesota, Ohio, Colorado, Missouri, Alaska, Missouri and Kansas. For Wes Jackson's commencement address at the University of South Carolina's School of Public Health, see page 16.

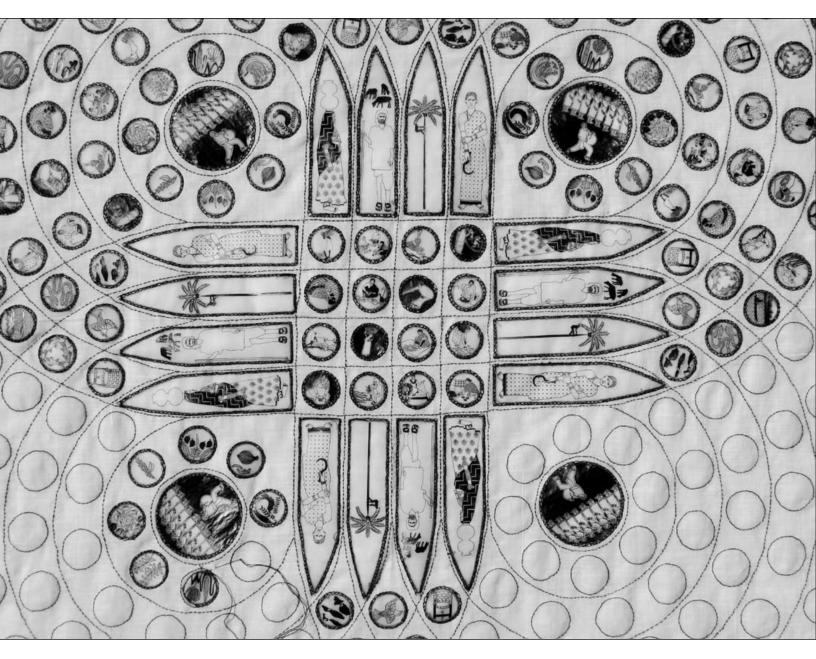
Upcoming: Aug. 4, Albuquerque, New Mexico, Ecological Society of America. Aug. 29, Coon Rapids, Iowa, Agricultural Progress Day, part of the Khrushchev in Iowa 50th anniversary celebration. Nov. 5, Santa Fe, New Mexico, Quivira Coalition. Nov. 6-8, Lake Shetek, Minnesota, Minnesota Naturalists' Association. Nov. 11, Overland Park, Kansas, Johnson County Community College. Nov. 16, Chicago, University of Chicago. March 15, Portland, Oregon, Illahee Lecture Series. April 11-12, Cincinnati, Ohio, Xavier University.

For more, call or see Calendar at landinstitute.org.

Prairie Festival Recordings

September 26-28, 2008, The Land Institute

Quantity	Title	Speakers
	Report from The Land Institute	Land Institute research staff
	About the Festival	Mark Parkinson, Curt Meine, Wes Jackson
	The True Wealth of Nations: Teddy Roosevelt and the American Conservatio	Donald Worster n Ethic
	Local Heroes: Power to the People	Dana Beach
	Faith in the Land: Shaping a New Economy	Barbara Kingsolver, Steven L. Hopp
	Panel Discussion about Conservation	Curt Meine, Conn Nugent, Doug Tompkins
	The Future of Agriculture: Winner Takes All?	Angus Wright
	The Next 50 Years on the American Land: Perennializing Policy and the Landscape	Wes Jackson
Total numb	er of individual CDs x \$15 =	Name
Complete sets (one of each talk) x \$100 = Total:		Address
		City
		State ZIP code
-	ethods: We accept checks and money orders and MasterCard, Visa and Discovery.	Phone
Card purchases can be by mail, fax or phone.		□ MasterCard □ Visa □ Discover
Place orders to The Land Institute, 2440 E. Water Well Road, Salina, KS 67401. Phone: 785-823-5376. Fax: 785-823-8728		Card number
		Expiration date
		Signature



etail from *Vasudhaiva Kutumbkam* (the earth family), by Priti Cox. Ink on tracing paper embroidered on *khadi*, 44 by 44 inches. This work in progress is based on traditional Indian floor designs called *rangoli*, and celebrates India's village communities where the human and the nonhuman form parts of a continuous whole. The piece will be finished for display at the Prairie Festival. Cox says about her show, *Vanishing*

India: "Under the structure of corporate globalization today, the India in which I grew up is slowly disappearing. Trade liberalization has uprooted people from their land, wrecked livelihoods that have sustained communities for generations, and usurped natural resources. Incorporating strong cultural symbols and traditional Indian art forms, Vanishing India is my attempt to capture the dignity and humanity of a struggling and dying culture."

Prairie Festival

September 25-27, 2009, at The Land Institute, Salina, Kansas

Celebrate and talk of land and country, at a place working to make farms like natural ecosystems, resilient and healthful.

The Speakers

Richard Harris reports on science for National Public Radio. He shared a Peabody Award for investigative reporting about the tobacco industry. He is co-founder of the Washington, D.C., Area Science Writers Association, and past president of the National Association of Science Writers.

Wes Jackson is president of The Land Institute and author of books including Altars of Unhewn Stone: Science and the Earth.

Verlyn Klinkenborg is on the *New York Times* editorial board. He wrote the books Making Hay, The Last Fine Time, The Rural Life and Timothy; or, Notes of an Abject Reptile.

John Todd applies biology and ecology to engineering, with "living machines" of bacteria, plants and animals combined to treat waste. He co-founded the New

Alchemy Institute, Ocean Arks International and Living Technologies. He teaches at the University of Vermont. With his wife, Nancy Jack Todd, he has written books including From Eco-cities to Living Machines.

George M. Woodwell led Woods Hole Research Center in Falmouth, Massachusetts, for 20 years. He has edited and written books on the effects of nuclear war, the global carbon cycle, biotic impoverishment and forests. He was president of the Ecological Society of America, and helped found the Natural Resources Defense Council, the Environmental Defense Fund and the World Resources Institute.

Plus: Art by Priti Cox (sample at left) and photos by Jim Richardson ■ Land Institute scientists report on their work ■ Barn dance and bonfire ■ Saturday supper of food grown in Kansas (mostly) ■ Any updates will appear under Calendar on landinstitute.org.

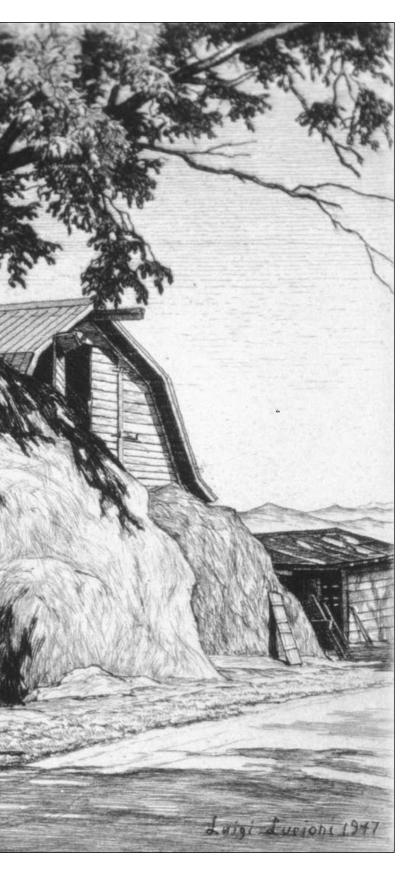
Registration

Saturday	□ Visa □ MasterCard □ Discover Exp/
Friends of the Land x \$12 =	Number
Others	Signature
Sunday Friends of the Land x \$ 6 =	To register by phone, call 785-823-5376 weekdays.
Othersx \$ 8 =	Names of those attending:
Student rate, \$10 for weekend,	
not including dinner x \$10 =	
Attending: □ Saturday □ Sunday	
Children under 12 attend free x \$0 =	Street
Dinner Saturday evening,	City
paid by September 18 x \$12.50 =	
Vegetarian (not vegan) meal? □ Yes □ No	State Zip
Enroll as Friend of the Land, one year, tax-deductible, \$50	Phone
minimum. (You are already a Friend of The Land if you	E-mail
have given since September 30, 2008.) \$	
Additional tax-deductible contribution\$	We will not confirm your reservation. Programs, nametags and meal tickets will be at the registration desk. No
Total enclosed \$	refunds □ Send man

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The Big Haystack, by Luigi Lucioni. Etching from the Steven Schmidt Collection, courtesy of the Spencer Museum of Art, University of Kansas.



Salvage

James Everett Kibler

These fragments I have shored against my ruins. —T. S. Eliot

uccess" and "Progress" are words that we of the machine culture have usually made synonymous. In their blurring we have endangered nature and man himself. Success, as a wise old gentleman declared, is the how not how much of achievement, and progress isn't progress if it results in destroying beauty. Readjustments of the meanings of these two words must occur if man is to have a future.

As a counter to the modern false sense of progress as a virtual end in itself, Allen Tate, that famous Fugitive-Agrarian, wrote in 1948 that the task of the civilized intelligence is perpetual salvage. I have found that the culture of the South, tattered though it may be by a war on its own soil that claimed more lives by percentage than the societies engaged in both world wars, still exhibits its vestiges most literally beneath my feet. I live and write in a two-centuries-old plantation house in the county of my birth in South Carolina. There, shards of the past rise to the top of the soil in broken pearlware pieces, feather-edged china, transferware dishes, bits and pieces of glass that served in their time and still come to remind us of the hands that touched them and the dramas these people lived out.

Recently I reclaimed from an antique dealer a well-used collection of sheet music from antebellum times that was the basis for a sister plantation's evening entertainments on the pianoforte, harp and guitar. I know from letters extant in the family who lived there that in February 1865, the delicate pianoforte was kicked to pieces and the mother-of-pearl inlaid Spanish guitar that played these notes was dashed by soldiers against a tree. The musical instruments were cruelly destroyed before the eyes of the women of the house.

My home once had its own pianoforte, and no doubt the same melodies sounded there. As I brought the volume home, its pages yielded more than music when a young friend resurrected the songs on her harp and hummed the melodies no doubt unheard for a century and a half. Books from the library at the great house, scattered now for so many years, turn up here and there. Their handtooled leather bindings, faded ink signatures and penciled annotations strive to tell stories, and often succeed. I gather the books together. Some were pillaged in 1865. Others at

sister plantations were dispersed in that and various other ways. I bring them home.

In letters and snippets of diaries, ledgers and bills of purchase and sale, in wills and inventories for probate, in agricultural censuses, in interviews with the oldest survivors on the land, in iron-enclosed grave plots deep in thick forests, in crumbled, moss-covered brick mounds that mark old home sites, the picture slowly emerges of who and what we were.

It is the record of my kin on the land and of their neighbors and community. It is a story assembled out of fragments into a base strong and solid enough to build upon and sustain those who dwell thereupon. Like the worn stones of Irish round towers, the story speaks of foundations, solid building blocks to lay in courses as the stone masons do in the stonecutter's art.

We rightfully speak so often today of sustainability in a world of finite and diminishing resources, but few sound the need to anchor the world in stories of well-loved places that have their own way of sustaining. Stability is the essence of their design. It is the human element, dearer than any statistic or abstraction, that they provide.

To love a place well, one has to know it well, its history, its flora and fauna, both the certainties and caprices of its seasons, its deep traditions, the land in night and day and the creatures that move there, often silently and unseen. Patient and slow observation is a key to that knowing—close seeing and careful rumination upon it. To know that place well, one has to live there over a long duration, preferably of generations.

Life there must be slow and careful, like the stonecutter's craft or the hot bending of wrought iron. It must have the rhythms of the froe, drawing knife or plane on honest wood. It must build what will last, and not the shoddy, to be discarded carelessly. The old saying that if it ain't broke, don't fix it, should coexist with the new understanding that if it can't be fixed, don't build it. Life mustn't settle for the consumer-driven society of waste and planned obsolescence. It mustn't consist of mere momentary gratification and the quick fix that leads to long-term disasters. It is such false progress in a throwaway society that finally is given to discarding lives as easily and thoughtlessly as a candy wrapper.

One of the besetting sins of the day is alienation, disconnection from community, land, place and tradition. Another is the isolation that results. These both lead to fragmentation of the individual psyche into shards reminiscent of the splintered china pieces I find underfoot. But one of the *-tion* words not often mentioned in the malaise called Modernism is deracination. Perhaps we all take rootlessness so much for granted that we move

at a whim as a matter of course without even thinking. It has become a defining feature of modern life. Everything seems to be in frantic motion or on wheels, even our houses. We pick up and relocate capriciously, going where the more lucrative job is or where the most economically advantageous retirement site happens to be.

Wendell Berry, that wise essayist-novelist-poet of Kentucky, who tills the soil in the county of his birth and knows his place about as well as human can, has defined abuse for us in the most telling way—abuse whether of people, resources or land. *Use without love is abuse*, he declares.

Deracination, which prevents an intimate knowledge of place, leads inexorably to abuse of people, resources and place. Staying put on the land more often than not has the opposite effect. That is why the latter is not encouraged by the powers that be. It makes abuse more difficult and prevents commodification for the quick profit. Tradition is the nemesis of the commodifiers. Committing oneself to a well-loved place is one of the oldest covenants of civilized man. It is a primary enemy of so-called progress as defined by the materialists of industry, and of promoters, marketers and other such hucksters.

Tate was indeed right: The task of the civilized intelligence *is* perpetual salvage. If the planet is to continue to tolerate us and not shake us off like so many fleas on an irritated dog, that must be a primary mission embarked upon quietly but resolutely. To be civilized is to focus attention on the smallest dooryard things of home, to defend them against greed, exploitation and abuse, to cherish them, sacrifice for them and hopefully pass them on to the succeeding generation unbroken and perhaps even strengthened against future fracturings.

Creating a heaven on earth is too big a task for the finite mind of mortal man, but as far as it is possible, it will first be a matter of revering and protecting the smallest dooryard things. In my opinion, it will most certainly not be a product of the pavers of the world, the real estate developers, industry, chambers of commerce, think tanks and big plans, big ideas, big outlays of cash, and big and bigger government programs. Abstraction is the archenemy of dooryard things. The old-fashioned rose that great-grandmother planted at the back door never ceases to surprise each spring after a bleak winter, with its modest pastels and fragrance. Its faithful coming over the years bears its own testimony that abstractionists can never fathom. Its fragile petals put all their bad big ideas to shame. It is heaven on earth enough for me. The wise saying of the ancient Greeks is pertinent in this restless time: As deep our roots in earth, so high our branches to the sky.



he text of this poster, reproduced one-fourth its original size, says, "Fusion, the process by which the sun and other stars generate their energy, is being developed to produce electrical power on earth. It is safe, environmentally attractive, and its fuel, deuterium, exists in abundance in ordinary water. The deuterium in the Pacific Ocean could provide enough energy to generate electricity for billions of years. Scientists hope to build a fusion reactor by about the year 1995."

We're 14 years past that date, about 40 years beyond when the poster was printed for the Atomic Energy Commission, and for more than half a century have been trying to make fusion work on Earth. It remains utterly impractical. But even as the sun still shines, scientists and engineers keep trying. Charles Seife writes in Sun in a Bottle: The Strange History of Fusion and the Science of Wishful Thinking, "There's something about fusion that is a little different, that makes generation after generation of scientists deceive themselves."

Perhaps it's the funding. In 2006, governments of more than half the world's population, including the United States, agreed to spend \$5 billion building in France an experimental reactor called ITER. They hope it will be the

first fusion device that can produce more energy—if not more money—than it consumes. And in May, after taking seven years longer and almost three times more money than initially planned, the Energy Department dedicated in California the \$3.5 billion National Ignition Facility, which, for another \$140 million each year, will work on fusion power, astrophysics and maintaining the nation's nuclear weapons. Now optimists predict fusion will become a major energy source by the middle of the current century.

Scientists and engineers involved are more wary. NIF Director Ed Moses was hopeful in a *New York Times* story but gave no guarantee for achieving practical fusion power. Reporting on ITER, the magazine New Scientist quoted a fusion veteran: "I think it will be 100 years before we have commercially viable energy."

In about a third of that time, The Land Institute, with an operating budget of about \$2.3 million, hopes to have commercially viable perennial grains. These should take far less artificial energy to farm than do annuals—and so less need for pursuits like trying to get fusion from water. With roots alive over winter, perennial grain plants also will get the jump on annuals come spring to make better use of the free, dependable fusion from the sun. —Scott Bontz



round workers and a crane "fly" a 144-foot fiberglass blade for attachment to a wind turbine tower in December. The Meridian Way Wind Farm spreads 67 of the turbines over 18,000 acres of high ground near Concordia, Kansas. The developer, Horizon Wind Energy, says about 250 acres were removed from cropping for the machines, roads and other facilities. The turbines will supply enough electricity to run 60,000 average homes.



The World Wind Energy Association says wind turbine capacity, the amount of electricity that can be produced with optimum wind, is growing about 20 percent per year. The United States last year passed Germany to become the leader in total capacity. But turbines still provided only about 1 percent of America's electricity. By that gauge, Denmark leads the rest of the world by far, at almost 20 percent. Scott Bontz photo.

What Will Be Required of You, O Graduate? A Way of Knowing

Wes Jackson

Address to the Arnold School of Public Health at the University of South Carolina on May 7.

ongratulations, graduates! Congratulations, parents, spouses, partners, grandparents! I'm your commencement speaker. We all know that commencement addresses are not remembered. But here are three things I have to say:

- In your time you will be called on to provide leadership in your profession and in your community.
- You will be required to remain alert and to be ready to incorporate developments certain to arise both within your profession and related ones.
- We are all expecting you to place health ahead of professional advancement and fashionable trends.

Now, I bet you've already forgotten the first one.

How about this: You are beneficiaries of a scientific revolution that weakened and toppled countless long-held beliefs and superstitions. You are descendents of a *new spirit* that arose in Western civilization beginning in the 1300s. That spirit expanded with the age of voyages, a rediscovery of the thinking of the ancients, the Reformation and the thinking of the fathers of modern science around 1600—men like Copernicus, Francis Bacon, Rene Descartes and Galileo, followed by Newton. These men are your intellectual ancestors. Out of their thoughts and approach to knowing developed a secular literature that benefited improvement of general health. You will be expected to build on this history.

How memorable is that? Here's something else: Not only will you grow professionally more than you can now imagine, but at times there will be expected of you a certain amount of civic activism. Do you stand ready to step beyond your profession and meet this civic duty in a spirited manner? I hope so, because what comes next I really do want you to remember. I want you to honor what we might call *A Way of Knowing*.

One of the first lessons a scientist learns is that 100 percent agreement on scientific matters is rare. Sometimes a consensus on a health issue is reversed. And it won't be reversed by talk radio or talking heads on TV. It will be by those who publish in refereed scientific journals. You graduates are products of this way of knowing. You will be expected to honor the thinking of the majority of

researchers who work in the field. There will be some number of the field who disagree with the consensus. That is their right. I could even argue that it is their obligation. There is a small number of medical researchers who do not believe the HIV virus is the cause of AIDS. One is on the faculty at UC Berkeley. I have a friend who knows him and who thinks his argument plausible. If he wants to overturn the dominant idea with data, power to him. However, though I am no expert on AIDS, based on the overwhelming consensus of most scientists so far I don't want a blood transfusion from someone who authorities tell me is carrying the HIV virus. I'm not trained or equipped to run the experiment myself. I'll stick with the consensus.

Which brings me to my final and most important message. I'm not a *climate* scientist. I have had no training in the discipline. But, because I hold to a way of knowing, I accept the view of 99 percent of the men and women who publish in refereed journals on climate. What have they concluded? Humans burning fossil fuels—coal, oil, natural gas—are the major source of the CO₂ increase in the earth's atmosphere. This is causing the planet to heat up, and for our health, and the planet's, we must cut our fossil fuel consumption to 20 percent of what it is now long before century's end. If we do, we will have been the first species in 3.45 billion years to voluntarily practice restraint in the use of energy-rich carbon. Always before it has been the checks and balances of disease, predators, famine and war, that have kept the numbers trimmed.

I trust that the best way of knowing on material, energy and health matters is through scientific methodology. There are 2,000 scientists on the Intergovernmental Panel on Climate Change and the National Academy of Scientists, and among them is an overwhelming consensus. Unfortunately, for purported balance, the media give disproportionate time to the one percent who are not convinced.

I encourage each of you to continue your intellectual work, including the history of science. You will see how much of what you accept is faith in this way of knowing. Most people lack the instruments and the skill to check on experimental design or to scrutinize the data and how it is analyzed. I used to ask my students if they believed that Earth went around the sun or if the sun went around Earth. Of course, they all believed the former. I would then ask them why they believed that and if they ever stopped to

check it out for themselves. They hadn't. Few people have in our time. To do so requires some pretty fancy math.

This is only one of countless numbers of conclusions we mostly accept because others devoted to a scientific way of knowing, in their particular field, tell us it is so. How do I know the pancreas secretes insulin, that it isn't the liver or the spleen or my femurs? I accept these as truths based on faith in a way of knowing.

You graduates, in your training as products of this scientific way of knowing, are expected to accept the methodology, experimental design, instruments, correlations, leading to a consensus of the majority. You rightly remain free to be critical. If you are doubtful of the consensus, then immerse yourself in pollen analysis and tree ring data, get the read-out from sensors positioned in hundreds of places around the globe. Check on the melting ice at the poles and mountain tops. Study species shifting

to higher latitude. Learn how climate scientists know of the increase in greenhouse gases.

I have studied some of the arguments of the few climatologists who oppose their colleagues. I hope they are correct: Before me on my bulletin board as I type this commencement address are pictures of my grandchildren.

But the question finally becomes, what is prudent? If 99 percent of climate scientists turn out to be wrong, what has been lost? If people on planet Earth act on the consensus and reduce fossil fuel consumption and turn out to be wrong, what is lost? But if the consensus is right and we refuse to respond, climate change is likely to present the greatest challenge to public health in the history of our species.

I congratulate you again, and I hope you are ready. Your generation and your gifts are all we have between now and the coming challenges.

The Farm on the Great Plains

William Stafford

A telephone line goes cold; birds tread it wherever it goes. A farm back of a great plain tugs an end of the line.

I call that farm every year, ringing it, listening, still; no one is home at the farm, the line gives only a hum.

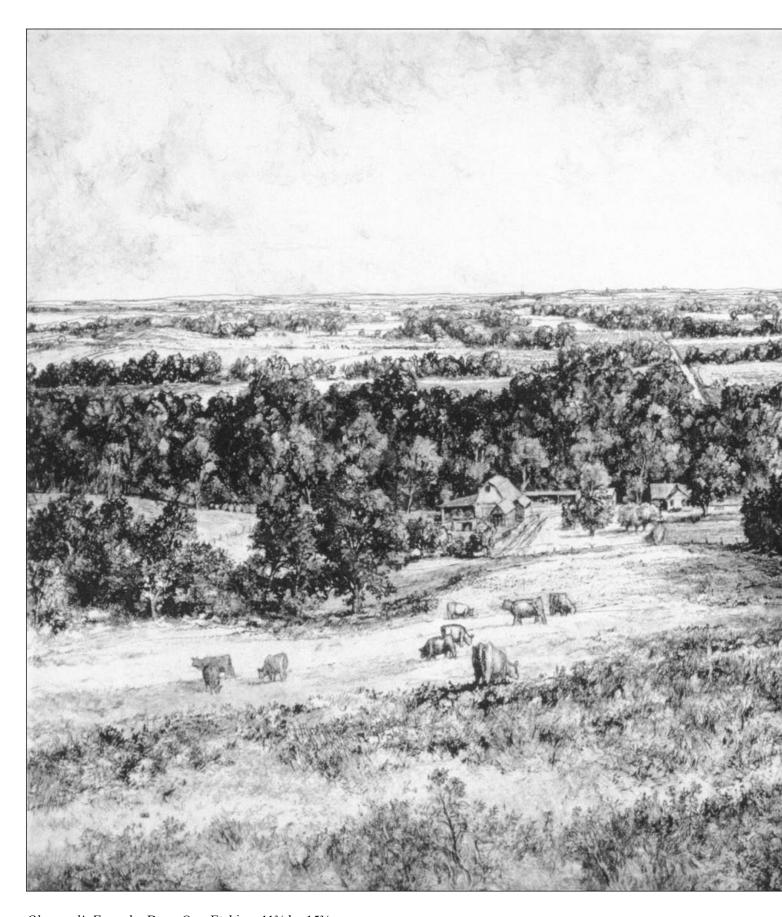
Some year I will ring the line on a night at last the right one, and with an eye tapered for braille from the phone on the wall

I will see the tenant who waits the last one left at the place; through the dark my braille eye will lovingly touch his face.

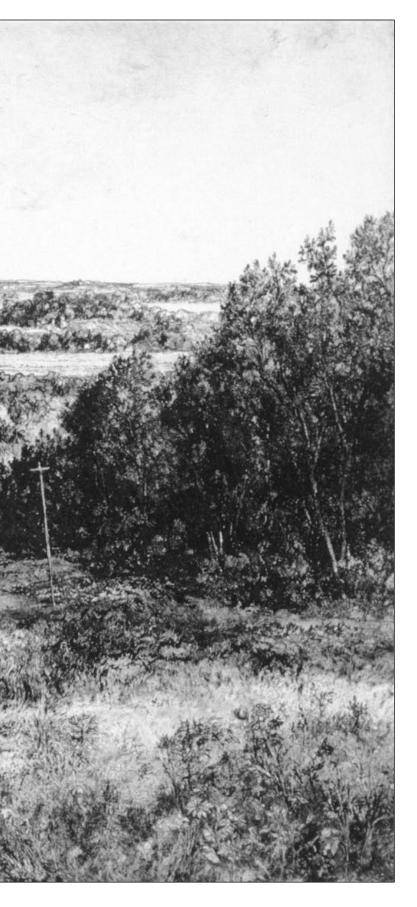
"Hello, is Mother at home?" No one is home today. "But Father—he should be there." No one—no one is here.

"But you—are you the one...?" Then the line will be gone because both ends will be home: no space, no birds, no farm.

My self will be the plain, wise as winter is gray, pure as cold posts go pacing toward what I know.



Olmstead's Farm, by Doug Osa. Etching, 113/4 by 153/4 inches. From the Steven Schmidt Collection, courtesy of the Spencer Museum of Art, University of Kansas.



The Breaking of Nations

Lionel Basney

"The inherent lawlessness of the uprooted ..." —Hannah Arendt

'n December 1799, Dorothy and William Wordsworth, orphan sister and brother, moved from southwest England to Dove Cottage, near Grasmere, in the Lake District. They had long planned and wished to find a home they could maintain on William's small, invested income—a home close to a rural culture and to the mountains that they both loved.

A modern mind cannot help being moved by this event, this moment. It was as momentous, in its way, as industrialization itself, because it exemplified, so early on, one of our typical responses to industrialization—the withdrawal from its destructions, the hope of finding a renewed spirituality in nature. What came after the move to Grasmere was Thoreau on Walden Pond, John Muir in the Sierras, homesteading in Alaska and Deep Ecology.

Dorothy and William were both writers. William was writing the poems that expressed that new, half-Christian spirituality we call Romanticism. Dorothy began, in May 1800, to keep a journal that runs, in the fragments we have, through January 1803. The "Grasmere Journals" are an example of great personal prose; they have the power to give us the feel of being alive in a particular time and place. In this vein of writing there have been essayists (Montaigne), letter writers (Dorothy Osborne, Horace Walpole) and diarists (Pepys, Parson Woodforde, Boswell)—none more lucid, selfless and imaginatively powerful than Dorothy.

One constant of the journals is the procession of beggars past Dove Cottage. Dorothy's first entry, for May 14, closes:

"A young woman begged at the door—she had come from Manchester on Sunday morn with two shillings and a slip of paper which she supposed a Bank note it was a cheat. She had buried her husband and three children within a year and a half—all in one grave burying very dear (expensive)—paupers all put in one place"

It goes on like this for the whole 30 months of the journals. What Dorothy was recording—though she herself could only look for causes—was another crucial fact about modern life: that it creates and feeds on the constant disorientation of people. Dorothy lived, wanted to live, in an established community. The industrial culture has always destroyed these communities wherever it found them.

The beggars in Grasmere were the fringe of an enormous demographic unsettling, in which hundreds of thousands of people were dispossessed of their inherited places and funneled in hit-or-miss fashion toward the industrial cities. Neither the industries for which these people became a "labor force" nor the day's social planning was prepared to deal with them in anything but hit-or-miss fashion. Anyway, there were advantages in confusion: It meant that the mill owners, banks and urban builders could do very much what they pleased—could act, that is, according to what they were coming to see as another "law of nature," the law of the freedom of capital, the law of laissez-faire commerce.

The human pain this new law implied was not, of course, entered in mill accounts. It was hidden by the "naturalness," the apparent unstoppability, of industrialization itself; also by the rationalization, made explicit in the 1830s, that all of this agony was justified by benefits to the rest of society. That this "one-should-die-for-the good-of-the-people" reasoning—what we might call the Caiaphas argument—has serious moral and practical flaws was not much considered. But there were always witnesses to the suffering. Dorothy's journals, in this dimension of them, join the writing of William Cobbett and Harriet Martineau in a line that runs through Engels and Ruskin to Harry Caudill and Wendell Berry.

Dorothy's entry for Wednesday, September 3, 1800, records the funeral of a woman who, without family, was "buried by the parish." It is wonderfully written, without affectation and full of joy. What it rejoices in is the competence of the "parish" to acknowledge and dignify the pauper's death:

"The coffin was neatly lettered and painted black and covered with a decent cloth. They set the corpse down at the door and while we stood within the threshold the men with their hats off sang with decent and solemn countenance a verse of a funeral psalm. The corpse was then borne down the hill and they sang till they had got past the Town-end. I was affected to tears while we stood in the house, the coffin lying before me. There were no near kindred, no children. When we got out of the dark house the sun was shining and the prospect looked divinely beautiful as I never saw it. It seemed more sacred than I had ever seen it, and yet more allied to human life. The green fields, neighbours of the churchyard, were as green as possible ... I thought she was going to a quiet spot."

The entry's consolation arises from a sense of community. Dorothy records here the "alliances" that surrounded the

death even of a solitary ("no near kindred"). The entry offers a kind of definition of community: It is what holds people together by the strength of "common things." This community is their resilience in the face of death; its evidence is their instinctive propriety, their confidence about what ought to be done. The parish and the funeral are Christian, and yet the people have a kind of spiritual independence: The only religious rite Dorothy records, the one that fits the situation, is the psalm the people sing (Dorothy had seen the local priest "half-drunk the day before in a pot-house").

But the community extends beyond its people. This extension gives it what we would call an ecological significance. The fields are the "neighbors of the churchyard" because the people work in the one and rest in the other. The places are neighbors as the people are, and the people are neighbors of their places.

Dorothy was less aware, I think, of the strains between Christianity and Romantic naturalism than William and their mutual friend Samuel Taylor Coleridge were later to be. What moves her to tears is the closeness of the sacred to the domestic. Neighborliness domesticates the mystery; it brings it home. The dead woman is at home in death as in life, in a "quiet spot" within the community of people and land.

The tradition of writing that recorded the coming of industrialization is full, too, of pictures of community. This is because the nature and meaning of industrialization were felt most clearly where it collided with settled, traditional agricultural communities—the kind of community that today persists, mostly marginally, in Africa and Asia. In 1750 most people lived in such communities. In order to succeed, however, industrialization needed the cooperation, or at least the conformity of most people. Therefore it had to change the kind of life they were living.

The popular history of the Industrial Revolution sees it as essentially scientific and financial, something that arrived quickly and inevitably as machines were invented and capital accumulated. But such an event must have, or make for itself, a social opportunity. It does not happen in a vacuum. There was a way of life in place, on the ground, when the revolution began, and this way had to be destroyed—not "transcended" or "improved upon"—before industrial culture could come into its own.

Karl Polanyi stated the reasons for this destruction in *The Great Transformation*, his classic study of the coming of industrial Europe. Polanyi saw the necessary animosity of the capitalist market to traditional societies. The market "liquidated" them, "smashed them up," to use Polanyi's phrases, in order to create a "free" social arena in which people could be forced to sell labor to buy what they needed.

The trouble with traditional communities is that they offer too many securities. No one starves, because everyone has a right to share the crop or hunt, however poor; no one

lives or dies alone, not even elderly paupers, because life is lived in the clan or parish. You cannot buy such securities; they have nothing to do with money, and therefore the market cannot profit from them. Your right to enjoy them comes by birth and subsequent good conduct—that is, by God's will and personal virtue. To make people into "labor" and "consumers" meant depriving them of these unbought advantages.

It also meant depriving them of an orderly and fruitful environmentalism (Polanyi, writing in 1944 made too little of this). It meant taking away the subsistence base people held in common—fields (in the early days), forests, rivers and ocean. Such things, cultivated or harvested according to local custom and laws, gave people a subsistence that depended only locally on market conditions. This subsistence base was an obstacle, therefore, to the coming of a nationally organized industry and economy. Bruce Brown suggests, for instance, that the destruction of fish in English rivers was a *precondition* of industrialization: Now the countryside could not support the people. They would no longer be its neighbors. The earth was to be reserved for industrial uses.

The industrial culture was created then, by a war on people that was also, inevitably, a war on the earth. Polanyi is eloquently adequate about the war on people. Legislation "emancipat(ed) the labored" from the traditional community, he wrote, "for the avowed purpose of making the threat of ... hunger effective"—or roughly the same tactics Stalin used to collectivize Soviet farming, with similarly horrifying callousness about human life. The difference is that Stalin was using exceptional means for a specific ideological end, whereas the hostility of industry to traditional communities is part of our normal life. An industrial economy detaches people from the earth for two reasons: to make us depend for subsistence on the market, and to gain access to the earth we would, in self-defense, protect.

It is easy to praise "community" in the abstract, without having much sense of what we mean. It is easy to sentimentalize traditional societies. (Anthropologists have often written in an elegiac vein, anthropology being an invention of the society that is destroying the traditional society under study. In this sense, native people were right about cameras: They do kill, or at least embalm.)

For much of American society, the ideal of "community" is a secular version of the body of believers—a dream of a secure emotional context with no requirements as to belief. But community in the abstract is not a Band-Aid or a universal pill or a form of providence. It will not, by itself, solve the dilemmas and heal the self-wounding of human life.

Putting the question of community in ecological terms, however, sharpens it considerably. It becomes (something like) the question, How is it practical for us to live? when "practical" means "sustainable in the given natural condi-

tions of the planet." The answer is (something like), It is practical for us to live in small coherent communities, and not otherwise.

Here we run into a problem of definition. What size is "small"? How large can a community become without losing its coherence? A village can feel whole, integral—but what about a small city? A single church, potentially—but what about a denomination?

We cannot solve the problem with numbers, however, because it is not a numerical problem. The solution is moral and psychological, and is suggested by Marty Strange in his defense of family farms when he asks, "How big is the typical farm in the family farm system?" and answers, "It is about as big as its neighbors." That is, a community extends as far as you can have neighbors—as far as you can have personal knowledge of, and take effective personal responsibility for, other people and places other than your own. The student who bicycled down my country road had no neighborhood with anything there. The community of Dorothy Wordsworth's journal entry was so powerful that it made the earth, in specific fields and pastures, into a neighbor.

But Strange's example says more than that, because it raises the question of subsistence, of necessity. This is the question we began with by beginning in the supermarket: How are we to conduct the commerce with nature necessary to feed ourselves? Our answer so far in the industrial era has been that a global marshaling of scientific knowledge, money and fossil fuel will force the earth to support us. This will seem true, however, only if we accept a further assumption: that most of us should be "freed"—as we say—from having to participate in providing our own subsistence. Only when we get out of the way can the machine, and the multinational, have their opportunity.

The premise of an earth-careful culture, by contrast, is that as many people as possible should have responsibility for looking after the earth. They should have the chance, that is, to learn the knowledge and virtues that are required. They cannot do this, however, without the help, the common wisdom and the mutual accountability of a genuine community. These are the resources and restraints that make looking after the earth possible.

This connection between communities and subsistence is one of the most important things Wendell Berry has taught us. If we need healthy land in order to eat, agricultural land also needs the direct care of responsible people; the obligation is, so to speak, reciprocal, between fertile soil and a community stable and wise to care for it.

To what degree community itself implies, or supplies, the necessary virtues is a complicated question. Alasdair MacIntyre has argued that any human project demands virtue just to function: There would have to be honor among thieves, or nothing would get stolen. Historically, however, communities often do wrong, and what is more, they derive some of their cohesiveness from doing it. Bullies and

militarist nations get along fine as long as they have someone to bully.

The distinction here is between virtues internal to the community—the ones that hold it together—and its external vices. The environmental crisis transcends the distinction: It has made us realize, as we often say, that all humanity and the whole planet are joined in one enterprise, from which nothing is "external." All our virtues and vices will eventually come home to us in good and bad effects.

Another way of saying this is that necessity brings morality out of hiding. We are living, as Schumacher said, in the convergence of wisdom and practical sanity. The practical effects of virtue and vice are clear now for anyone who wants to look.

But this is not enough by itself. For us to exercise practical goodness, it must have direct, personal substance for us. Community, that is, is the link between necessity and morality, or between survival and goodness. The known circle of people and places turns goodness into actable obligation. Goodness is something you owe your neighbors, something you will feel the result of doing. The obligation to a rainforest is too distant and abstract. It takes all of the power of the media to keep it in our minds. But the field next door faces you every time you look out the window.

It is as obvious as our moral disquiet that we Americans live comparatively restless, isolated and anonymous lives. It is potentially an error, though, to think that our failures at community are failures pure and simple—that we have been trying all along to preserve community and have only not managed. We must keep Polanyi's thesis in mind: Industrial society had to destroy communities. They are its natural enemy, because they preserve and nourish things it needs to exploit. They offer free, in return for membership, what the market needs to sell for profit.

Modern thinking about society repeats one distinction obsessively—the distinction, in Ferdinand Tonnies' famous terms, between *gemeinschaft*, or traditional community, and *gesellschaft*, modern "rational" society. Writing in the 1880s, Tonnies saw the move from one to the other as society's growing up; modern society was adult. *Gemeinschaften* were responses to physical necessity. They had to be orderly, stable and conscientious to survive. The *gesellschaft* freed us from necessity—from necessary labor, that is, and therefore—so the argument went—from superstition and social restrictions.

This freedom was the gift of modern technology—a freedom from labor and from scarcity at the same time. Machines would channel nature toward producing a flood of useful things. Free of necessity, people would make communities voluntarily, not because they had to. Communities could be like the intellectual, aesthetic and patriotic brotherhoods, clubs and circles that the German

bourgeois of Tonnies' day joined to uplift the spirit and improve the mind.

We fiddle obsessively with this distinction because, as Christopher Lasch observes, we cannot escape the fear that the difference between kinds of society is an ethical difference as well—that in swapping the moral and practical clarity of the village for the modern city, we have lost a necessary frame for understanding and disciplining social life as a whole.

For in 20th-century America we have taken the notion of voluntary community a step further: It is essential to our idea of freedom that *individuals* set the terms for *communities*, and not the other way around. We hold communities together; they cannot hold us together. We don't belong to a church, really; we join it temporarily, on sufferance. Now churches must sell themselves to the shopper—they advertise, week by week, in the newspaper, sometimes even on the entertainment page—and the shopper may join and drop half a dozen churches, one after another, depending on whether they suit. Whatever this open market in faiths means for spreading the gospel, it is clear what it means for practicing it: How are we to learn the ways of this spiritual neighborhood? We never know who our neighbors are.

When we think about the loss of community, then, we should remember that it is a premise of modern culture that we do not *have* to have communities at all. The modern city, which offers so many random experiences, so many provisional selves, has been raised in the absence of community. What Emile Durkheim, Tonnies' great successor, formulated as an explanation for urban suicide—anomie, the loss of a significant context—is actually the city's promise: that people can live there without obligation, friendship, commitment, dependence or self-restraint, and still expect the market to work to support them.

This discovery is one of the insights of novels in the industrial age. "He had got completely away from everyone, like a tortoise in its shell," Dostoevsky says about Raskolnikov, the murderer in *Crime and Punishment*. Not everyone who lives in a city lives, or wants to live, such a life, but this life is in the logic of the city, where the market concentrates its productivity, where anything can be had for money.

In this the city merely extends the logic of modern culture. Freedom from necessity finally removes nature from contact with other parts of life. It creates the climate of sheer fact—"Facts alone are wanted in life," says Dickens' Gradgrind, another character from a city novel. It also drains our moral and spiritual lives of substance, by taking away the practical need to exercise virtues. These virtues are not needed after all; all that we need is money, or a place in the market where money may be made. We do not have to be good to be comfortable, or even to survive.

Tonnies, Durkheim and Dickens did not live long enough to see the result of this. But it is plain to us: Its

name is the exhaustion of the earth, by a market without moral restraints. Necessity, it turns out, was not overcome, only postponed: The surplus of goods and services is only possible for a limited time, for a few people. Community, apparently, is not voluntary; if we do not learn to live with neighbors, we may not live. Apparently we will have to live under obligation, with charity, after all.

Tt is a kind of oblique evidence for this fact that even the Aconsumer market, in whose name traditional communities are destroyed, must appeal to our hunger for community to keep us buying. The distributor's truck at the supermarket dock is wearing a slogan like "Serving the American Coffee Drinker Since 1955." Now serving, genuine servanthood, is possible only among neighbors. It defines the motive for sharing labor without demanding payment. But the truck only pulls up to the dock because money draws it.

The slogan uses, and cheapens, a crucial practical and scriptural principle that is also a principle of workable community. The market also preys on and cheapens the ordinary small everyday bonds that tie people together. In a store the other day, I discovered an "Official Michigan Mosquito Trap," made in China, stuck to a card where "Michigan" had been inserted in a space left blank for any state or place name.

To be caught by the trap a mosquito would have to be as big as a sparkplug, which was of course the joke. The ferocity of local insects is the kind of joke that ties a community to its natural place. But there was nothing spontaneous, local or funny about the bit of market junk I saw; it was just a consumer item.

What the market offers in place of communal ties to a local place is a "lifestyle," the predesigned mode of consuming that mimics a way of life. You can have a Ralph Lauren "Western" room—"Indian" rug (no Native Americans have touched it), a "Mexican" chair (ditto), a "pioneer" fireplace (there are no more pioneers)—in your Cape Cod in Georgia, none of it implying the slightest connection with an actual community in place or with the historical experience of any.

Yet the dependence of the consumer market on community is deeper even than these thefts and parodies. The corporation that supplies the market will practice the virtues of community within itself, because without them no organized effort at anything is possible. That is, the institution that sells the freedom to try anything cannot afford to operate in these terms. No real community can.

Tust across the river from where I sit is an abandoned gravel quarry, fenced and posted with "Keep Out" signs. It is growing up in poplars and bushes, but it is an ugly place, where the ground was gouged, ransacked and then abandoned. The warnings are purely legal. The people who live around the pit will never be a concern to the corporation unless a child scrambles into a hole and is hurt.

The land was used and then left. It is no one's neighbor, nor is it—except for birds and the trade in ragweed seed—a neighbor of the land around it. The corporation maintains a handsome office building in Grand Rapids—I have driven past it—but it is no one's neighbor: The distance between where it does business and the land that business has affected is the same as the difference between the corporation's people and the people who live by the pit. It is our small strip mine, without the acid seepage and mudslides, but with the same scrupulously legal harm to the place and neglect of the local community.

The argument then comes to this: Our natural environment cannot be cared for but through extensive, direct, personal responsibility for it, and this responsibility is only practical, finally, in self-conscious communities. We need an ethics, a theology and a politics that will feed the life of such communities.

It is customary at this point to make reservations about such an argument. We feel compelled to say what we do not mean: We don't mean that everyone should be a farmer; we don't mean that everyone must live in the country.

I do not, as a matter of fact, mean these things, but, as Thoreau said, I mean something more like them than we may be comfortable with. The trouble with reservations is that they turn into excuses: If we don't have to live in the country (we think) then we don't have to make ways to take extensive, direct, personal responsibility for the condition of the earth in our places. We can leave all of that to someone who likes it. But the fact is that farmer or not, city-dweller or not, this is precisely what we have to do.

There is a spiritual principle here. "Carry one another's burdens," Paul says in Galatians. A moment later he speaks of the "family of faith." This law that makes family is the practical articulation of the commandment to love your neighbor.

Now you cannot love your neighbor by starving her children or poisoning the earth they play on. We cannot take up one another's human burdens, then, without taking up the burden of the earth, which is our common inheritance and home, and whose health or illness penetrates everything that we do. We live in a culture that breaks families of all kinds, and leaves increasing amounts of land to be consumed by a few on our general behalf. Such places have no neighbors, human or natural. No communities, large or small, exist to serve them and bind them to other places. And yet to be a neighbor to such a place is to accomplish two desirable things at once: to nurture and protect the place, and to discover that you belong there.

From the writer's book An Earth-Careful Way of Life: Christian Stewardship and the Environmental Crisis.

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The Writers and Artists

Lionel Basney (1946-99) was a poet and English professor at Calvin College in Grand Rapids, Michigan. He wrote about, among other things, the Luddite movement, Samuel Johnson, Wendell Berry and Gary Snyder.

Priti Cox is a native of India who has lived in Salina since 2000. She works in mixed media, and focuses on "the collective suffering of segments of society caught in the middle of the power games that are overwhelming the planet."

Wes Jackson is president of The Land Institute, and author of books including *Altars of Unhewn Stone: Science and the Earth.*

James Everett Kibler is author of *Our Fathers' Fields*, a three-centuries-long story of the house in which he lives, and a series of novels about his home county in

South Carolina. The latest is *The Education of Chauncey Doolittle*. He farms without machines or fossil fuels.

Luigi Lucioni (1900-88) was born in Italy and moved to the United States in 1911. He lived and worked mainly in New York City, painting portraits and still life, but also is known for his lithographs of Vermont landscapes.

Doug Osa has for 30 years portrayed the Kansas landscape in prints and paintings. He lives in Olathe, Kansas, with his wife, Ruthie. More of his pictures are on his Web site, dougosa.com.

William Stafford (1914-93), born and raised in Kansas, was a conscientious objector in World War II, and taught at Lewis & Clark College in Portland, Oregon. He wrote dozens of books of poetry, and prose including *Writing the Australian Crawl* and the memoir *Down in My Heart*.

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