

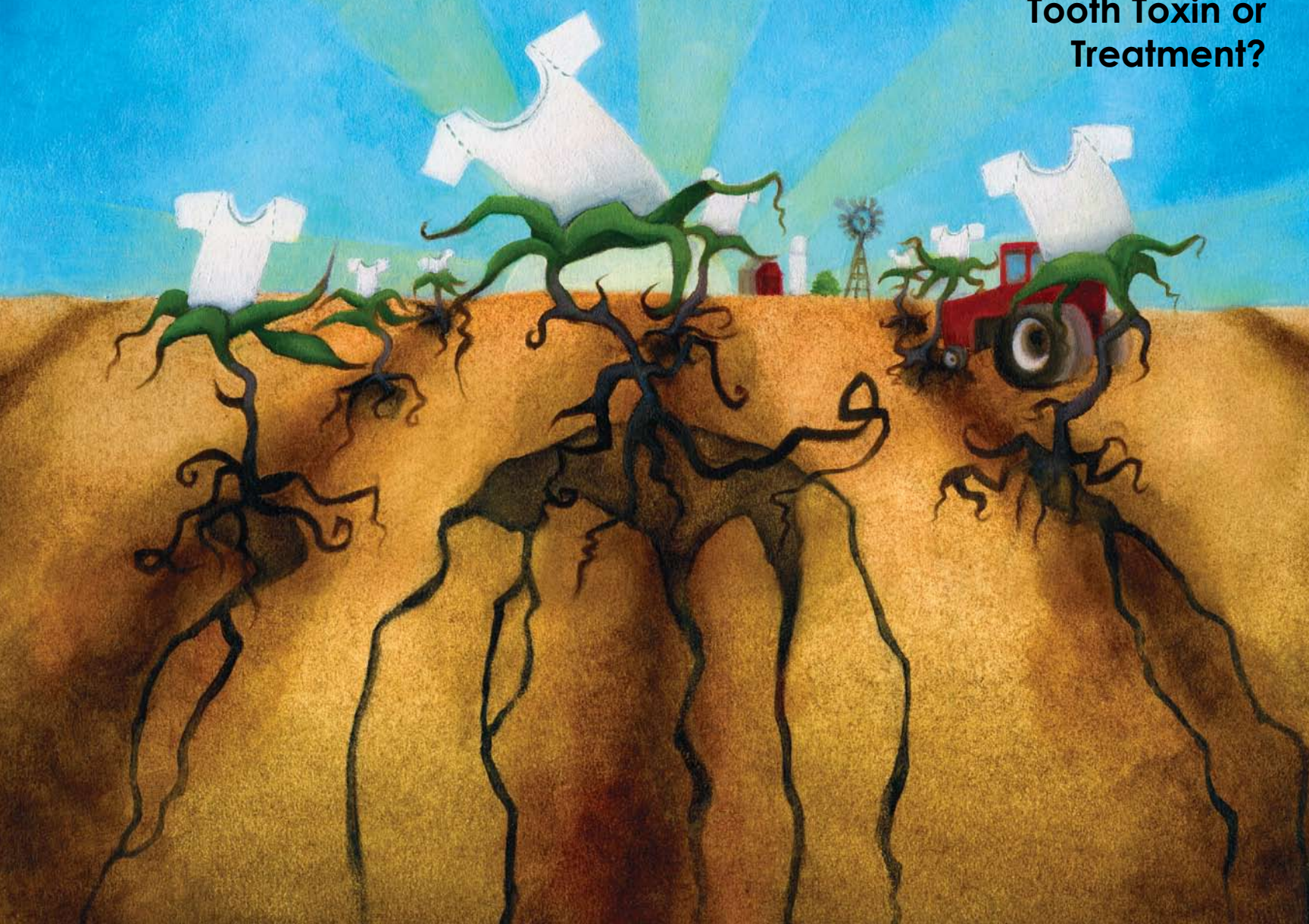
SAGE MAGAZINE

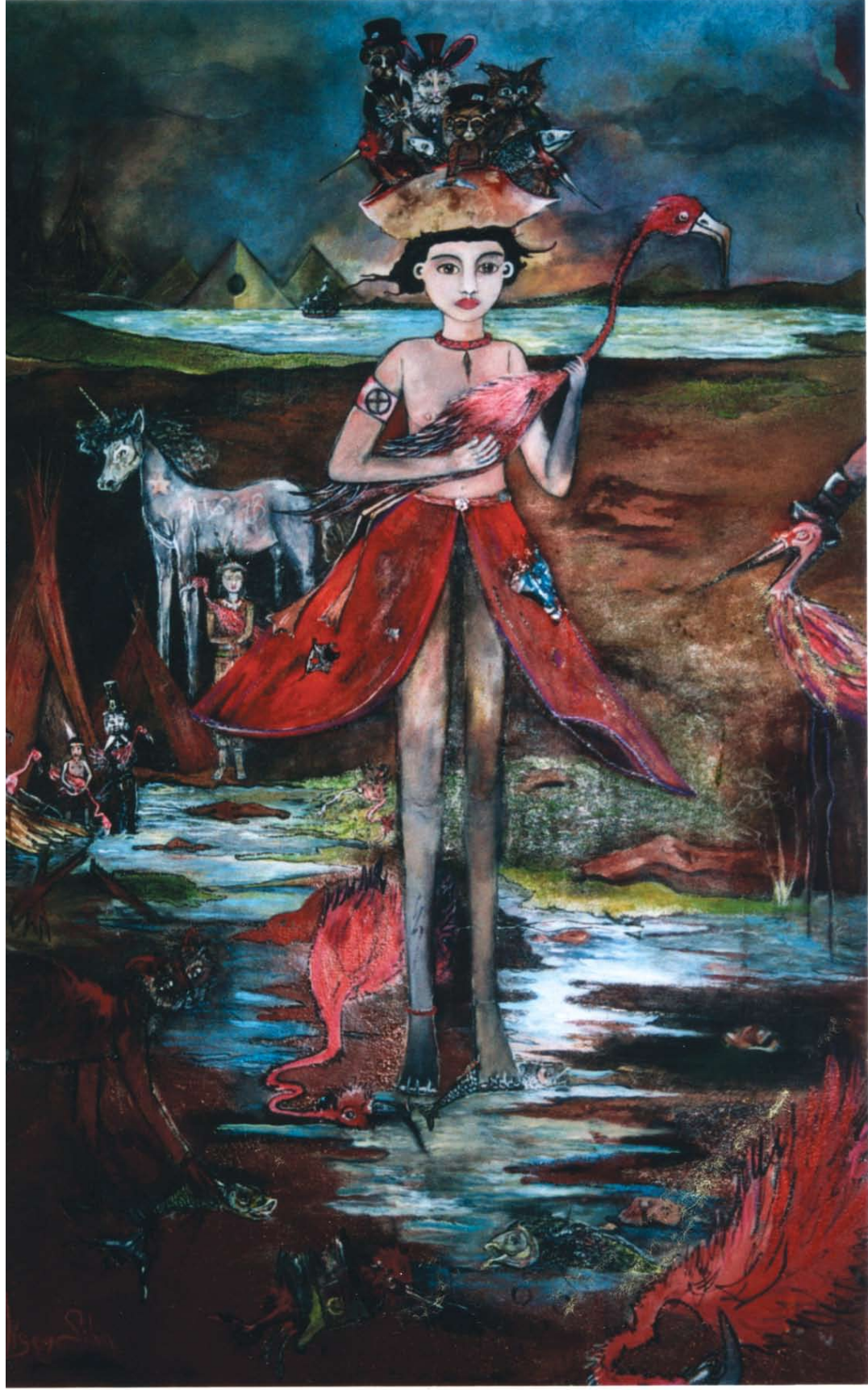
volume I, issue II

**Cotton's Journey
Around the World**

Smoke-Free Stoves

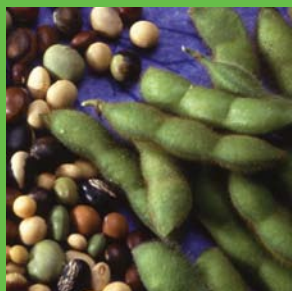
**Fluoride:
Tooth Toxin or
Treatment?**





SAGE MAGAZINE

volume I, issue II



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FROM THE EDITORS

WHAT WE WEAR

SAVING THE WORLD (AN ENVIRO-FASHION REVOLUTION): A PLAY AND INSTRUCTIONAL DEMONSTRATION

ACT I, SCENE I

In a trendy San Francisco boutique, a well-dressed man and woman are flipping through the organic cotton jeans racks, oblivious of the other's presence. The man wears vegan Vans, faded black pants and a Sweat-X logo-free T-shirt. The woman is dressed in an organic cotton zip-up hoodie, second-hand denim skirt, American Apparel leggings and buckle-toe ballet flats. The Shins' "Girl Inform Me" comes on in the store, causing both to momentarily glance up and make eye contact, looks of recognition crossing their faces.

Skye: Hey, Trenton. How are you? How's it going in the saving old-growth redwoods business?

Trenton: Great, Skye. I just finished living in a tree for six months to protest Corporate America's clear-cutting of the Earth's precious trees to feed their greasy, capitalistic maw. It was a great time.

Skye: That is so awesome, Trenton. Well, while you've been living in a redwood, I've been lobbying to institute national greenhouse gas emissions standards on Capitol Hill.

Trenton: Man, that is so great. Hey, don't you just love these organic cotton jeans?

Skye: Yeah, they fit so well. I mean, I'm not going to trade in my Sevens, but I love looking great and feeling good about my purchases.

Trenton: Me, too. Since I can't go naked, I'm glad I have the option to dress myself in a socially responsible and environmentally benign way. And after getting down off that tree, I couldn't wait to wear something other than threadbare Gramiccis and hiking boots. It feels soooo nice to look good again.

Meanwhile, by the dressing room, two sorority girls in skinny jeans and Phi Mu sweatshirts are talking to each other while looking in the full-length mirror.

Pam: Those jeans look make your ass look so hot, Jill. What brand are they?

Jill: I don't know... *(looks at tag)* Hey, look at this. These are made out of organic cotton. Wait, are these jeans for hippies?

Pam: No way. Hippies only wear hemp and shop at



PICTURE ONE • GARRET MILLER

stores that smell like incense. Those jeans are rockin'. You'll totally be the hottest girl at the Sigma Chi Chardonnay Getaway.

The disinterested salesgirl sits behind the counter. She wears all black, has dyed-black hair cut in a pageboy and multiple piercings. She talks on the phone.

Salesgirl: Yeah, uh, I'm like, I don't really care what she thinks because I totally, like, counted out the register before closing and it was, like, two dollars over. *(pauses, listens)* I know. I know. She is such a bitch. Whatever, I'm only working here so I can get a discount on those organic cotton T-shirts that my boyfriend is, like, in love with. I'm just going to, like, buy him ten of them and then, like, quit.

Outside, in the foggy cold, a family of four—mother, father, and teenage son and daughter—hovers at the entrance to the boutique. All are dressed in shorts, sensible shoes and I ♥ Frisco T-shirts. They speak in hushed voices, with Midwestern accents.

Daughter: But, Mom, I'm *free-zing*! I thought it was supposed to be warm in California. I need new jeans or else I'm going to freeze to death out here.

Mom: I told you I am not buying you another pair of jeans. It is not that cold out. You are sixteen years old, now stop acting like a child.

Dad: Come on, hun. Just buy her the jeans. Look at her! She's shivering! Besides, says here they have organic jeans. That's better than recycling.

Son: Uh, actually, can I get some of those, too?

Mom: Fine. Fine. Whatever you want.

Dad: Actually, hun, I think you should get yourself a pair, too.

Daughter: *(smiling)* Thanks, Daddy.

A young couple dressed in sweatpants and oversized sweatshirts and pushing a baby stroller wanders past the storefront windows, pausing to look at the displays.

Wife: Organic jeans? Are those things edible? Like that organic food they're stocking at Wal-Mart now?

Husband: I know—the whole world's going green.

Wife: Hmmm... Maybe when I lose this baby weight...

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California Takes on Climate

KELLY LEVIN & RACHEL GOLDWASSER

Californians, with their fabulous weather and famous people, have always had a lot to brag about. And greenies have long known that California often leads on environmental issues as well. Now, in addition to surfing, Cameron-and-Justin sightings and cleaner cars, California has added the nation's most far-reaching domestic climate change policy: a new law that imposes controls on multiple sectors to cut carbon dioxide emissions.

Building upon his June 2005 Executive Order that established statewide emissions mitigation targets, Governor Schwarzenegger signed Assembly Bill 32, which requires a 25 percent reduction in statewide CO₂ emissions by 2020. All major emitters and industries will be targeted, including imported electricity from other states.

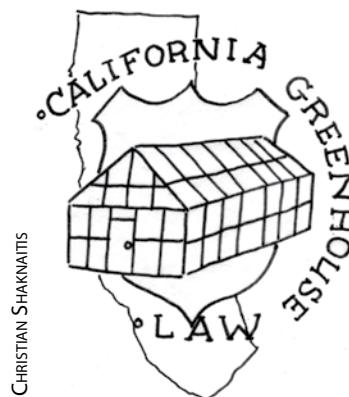
The California Air Resources Board, which has been tasked with figuring out how these reductions will be made, certainly has its work cut out for it: Developing the mechanics of the mitigation targets will arguably be one of the Board's most ambitious projects ever. The Board will be holding public hearings and soliciting comments prior to its fast-approaching deadline of January 1, 2009.

As if Assembly Bill 32's reductions were not inspiring enough, this October Governor Schwarzenegger signed an agreement with New York Governor George Pataki to explore a bicoastal linkage between California and the Regional Greenhouse Gas Initiative (RGGI), a cap-and-trade program used by Northeastern and Mid-Atlantic states. Interregional cooperation over greenhouse gas markets could develop into a larger, more robust trading arena.

In the absence of concerted federal action to address climate change, it is in some states' self interest to be early actors on the climate change front. Certain states, including California, will be disproportionately affected by climate change. A recent study by researchers at the University of California, Santa Cruz, claims that climate change will cause California to suffer warming temperatures and snowpack decline, severely compromising the state's water supply.

Some contend that the focus on energy alternatives and decreasing greenhouse gas emissions will generate new jobs and revenue. Furthermore, leading states will benefit from making the transition on their own terms if a national climate change policy is ever implemented. As the leader of clean tech in the U.S., California is well suited to lead the charge in emissions reduction, and doing so will help it increase its dominance in this fast-growing field. Companies also have an incentive to jump on the reductions bandwagon before Assembly Bill 32's regulations take effect, since they will receive credits for their actions.

These state-based initiatives may establish a stepping stone for more widespread programs at the federal or international level. Not only will Assembly Bill 32 and RGGI create programs that could be scaled up to the federal level, but they also may create political pressure in Washington.



Multiple requirements in multiple states will complicate regulatory compliance for many large companies. The most lasting effect of the state initiatives may be that they leave some firms begging for uniform federal regulations now. ▣

A Haven for Hawks

JOSHUA BERMAN

It's a brisk and sunny Sunday in mid-October. From a distance, the group of people chatting around the empty picnic table and milling in the center of the field seems incongruous until one notes the black binoculars slung around every neck. A silhouette appears far out on the horizon and conversation slows; a dozen pairs of binoculars flash up, a dozen pairs of eyes focusing on the small raptor skimming over the treetops. "Sharpie," someone calls out, and there is a murmur of assent from several hawk watch veterans. The sharp-shinned hawk courses low over the field and wheels up sharply as it approaches the harbor. It circles higher and higher and finally blinks out over the water, headed for warmer climes. A tick mark is placed on the official tally sheet and chatter resumes at the Lighthouse Point hawk watch in New Haven, Connecticut.

New Haven, once renowned as the "Elm City" for its beautiful elm-lined streets, has witnessed the disappearance of much of its natural splendor. The city harbor's once profitable oyster industry has been decimated as a result of industrial pollution and sewage waste, and the city's coastal wetlands were extensively filled during the mid-20th century to create a right-of-way for Interstate 95 along the coast. Nevertheless, opportunities to observe wildlife in New Haven persist, and bird enthusiasts from southern New England and beyond know that Lighthouse Point Park, situated at the southeastern

tip of New Haven harbor, remains the place to come to see birds on a crisp fall morning with winds from the north.

The park's strategic location on the coastal flyway brings migrating birds by the thousands, and the topography of the harbor funnels these birds to a single point, making Lighthouse Point an ideal location to conduct a census. The hawks that migrate through New Haven will winter anywhere from the southern United States down into Central and South America. Similar hawk watches are conducted all over the country, including at well-known sites at Cape May in New Jersey and Hawk Mountain in Pennsylvania. As the birds travel south, flyways join together and the birds amass larger and larger numbers until the streams and tributaries of hawks become a river of birds pouring down through Mexico. Migration totals from a count conducted atop the roof of a hotel in Veracruz, Mexico have averaged over five and a half million hawks over the past four years.

Hawk census data from Lighthouse Point Park extend back to 1970, and isolated reports exist of enormous numbers of migrating raptors at the site from the turn of the last century. In recent years, volunteers have done all the work of hawk-counting for the census of raptors that migrate through the park. Seven volunteers, each responsible for one day of the week, keep a tally from early morning to mid-afternoon. The data are compiled and made available online at the website HawkCount.org. In a typical year, the annual census at the site is around 13,000 hawks. Although this number has remained relatively stable since 1995, hawk counts from the 1980s were often double this figure and the causes of the decline are unknown.

"Eagle," the cry goes up, and activity stops. All eyes admire the mottled plumage of the young bald eagle gliding effortlessly over the field. Without flapping, the bird soars out over the Long Island Sound and vanishes south, leaving in its wake the uplifting sense that there is hope yet for nature in the Elm City. ❧

Christo Cloaks A River

PATRICK HOLMES

In a few years, for two weeks during the summer, artists Christo and Jeanne-Claude plan to cover portions of the Arkansas River with luminous fabric panels. To the artists, the central Colorado river is the ideal setting to highlight the coalescence of the human and the natural. To local residents, the idea of these "New Yorkers" (actually Christo was born in Bulgaria) decorating and potentially trashing their river strikes exactly the wrong balance between man and nature.

Christo and Jeanne-Claude describe their installation artwork as containing elements of painting, sculpture, architecture



ROAR members protest "Over the River."
Cathey Quinn

and urban planning. The artistic duo's encore to "The Gates," an installation of saffron-colored fabric archways following pathways throughout New York's Central Park in February of 2005, is called "Over the River." Amongst those who live near to the proposed project site, reactions are fiercely divided. Local resident Dan Ainsworth and his group Rags Over the Arkansas River, or ROAR, have taken up a vocal opposition.

"It's totally asinine," Ainsworth bursts as he describes the plan to construct concrete anchors to harness support cables and overlay fabric panels across sections of the river. In a brief conversation, Ainsworth disparaged Christo and Jeanne-Claude's art as "curtains," "tarps," "tents," "rags" and even "eyesores." He expressed his concern over traffic, safety, pollution, and fish and wildlife and carefully itemized the 5,200 anchors, 55 million pounds of concrete,

five imperiled big horn sheep herds and additional hours of daily commute for area residents that will be caused by the project. "It all just doesn't add up," he concludes. The Bureau of Land Management is conducting an Environmental Impact Statement to determine the potential impacts of the project and while some figure appear to be more prominent than others, a Colorado Division of Wildlife report confirms that the area's namesake sheep herds would likely be sensitive to the construction effort.

When Christo came to town to discuss the project with area residents, an outreach effort, which ROAR member Cathey Young dismissed as a "prefabricated horse and pony show," Ainsworth waltzed straight up to Christo and asked one simple question: "Why on earth do you want to do it here?" In response, Ainsworth recalls, "I was treated to the most ridiculous diatribe."

This "diatribe" concerned the changing relationship between people and art. As Christo puts it, "30,000 years ago the Greeks hung tapestries that were the most beautiful forms. 5,000 years ago the Europeans locked up all of the art. I simply want to bring it back to the people. We do our art, we display it and then we take it down."

Many local residents are more sanguine about the project. A consortium of local businesses, government officials, and residents support it. A whitewater paddling guide and independent paddler, Andy Neinas, also Chairman of the Colorado River Outfitters Association, expresses his enthusiasm for the project. He is careful to note that his support has nothing to do with filling whitewater boats with paddlers eager to experience "Over the River" from underneath. "We don't have any difficulty filling up that time of year," he explains. Philosophically, Neinas seems to understand the connections between people, art and river that Christo and Jeanne-Claude are hoping to explore. "Any boater worth his or her salt accepts the fact that rivers change," Neinas says. "It's the old adage—you can never step foot in the same river twice. We should enjoy this opportunity; it's a temporary project." ❧

MATERIALS

DIAMONDS

ALEXIS ARIEFF

Diamonds have long captured man's fancy. First mined in India at least as far back as the fourth century B.C.E., diamonds were revered by local rulers for their supreme hardness and beauty. According to the American Museum of Natural History, the first known written reference to diamonds occurs in a Sanskrit text praising the stones as "revolving like a spindle and brilliantly shining."

Diamonds have enjoyed a near-unchallenged status in Western culture as the ultimate symbol of romantic love. For decades, the De Beers slogan, "A Diamond is Forever," has spearheaded one of the most successful advertising campaigns in history. De Beers, a South Africa-based diamond cartel, has historically used its market dominance to maintain an artificially scarce diamond supply on the global market. Today the company controls roughly half of the world's diamond production.

The stone's sparkling image was badly tainted in the 1990s, when nongovernmental organizations including the U.K.-based group Global Witness began to draw attention to the ways in which African rebel groups and militaries turned to diamonds to finance their interminable warfare. Worldwide outrage at images of Sierra Leonean farmers whose limbs had been hacked off by diamond-funded militia ultimately persuaded the international community to work towards preventing so-called "conflict diamonds" or "blood diamonds" from reaching the market. The result was the Kimberly Process, adopted in 2002 by the United Nations, De Beers and dozens of governments, which aimed to certify and track "clean" diamonds for

legitimate international commerce.

Global Witness noted

in a report this year that despite some measured success, diamond certification "has not eliminated the problem of diamond-financed insurgencies." One problem is that certification requires cooperation and effective governments, attributes not found in many African states where diamonds



CHRISTIAN SHAKNATIS

are mined. Smuggling and corruption pose the largest threats to the international certification scheme, and have resulted in the proliferation of forged Kimberly certificates. Global Witness has reported that illegal diamond mining in Liberia (barred from the Kimberly Process since former warlord-President Charles Taylor used diamonds to finance his own insurgency and several in neighboring Sierra Leone) could threaten that country's fragile peace by "creating unregulated profits which could end up in the hands of warlords," according to Global

Witness campaigner Natalie Ashworth. Industry officials, however, point to the trivial role that these blood diamonds play in the marketplace, where they account for less than one percent of global trade according to De Beers Chairman Nicky Oppenheimer.

The process of extracting diamonds and preparing them for individual sale also produces severe ecological and social side effects. Even in zones labeled "conflict-free," the process of extraction is often based on quasi-slave labor rife with human rights abuses. Additionally, ad hoc extraction methods, such as pumping through river silt to get at diamond deposits (a common technique amongst illegal miners in Brazil) also threaten delicate ecosystems. Meanwhile, grinding poverty dominates the lives of individual miners, who receive a pittance for their stones before large mark-ups are applied at the wholesale and retail level.

There are, however, diamond-rich countries that have used the wealth from these gems for constructive purposes. Botswana is southern Africa's stable, democratic diamond success story. The country's economic miracle has even spawned an academic cottage industry seeking to explain what went right. The most plausible explanations lie in the mode of diamond extraction—Botswana's diamonds are deeply entrenched in the earth, requiring massive state investment in infrastructure to extract them. Diamonds in Sierra Leone and Liberia are mainly alluvial, having been brought to the earth's surface by geological forces, and therefore are readily accessible to roving bands of soldiers, militia and other parties to African civil conflicts. Despite the damaging human and environmental effects that have arisen from diamond extraction in many parts of Africa, the story of Botswana is welcoming—and a heart-warming indication that diamonds can indeed be a responsible government's best friend. ▣

From your pizza to the toxic waste dump, mushrooms—fungi—might be an answer to the pollution that is plaguing soils and waterways.

Mycorrhizal fungi are not your average mushrooms. Mycorrhizae are a special type of fungi that latch onto the roots of plants, increasing nutrient and water uptake, making the plants and the soil healthier. But mycorrhizal fungi also have the ability to filter and clean up toxins within the soil, a process known as bioremediation.

How do mere mushrooms accomplish such a feat? Mycelia, masses of cells on the fungi that resemble tangled threads, use enzymes to decompose certain materials, including pollutants, from the soil. The first use of mycorrhizal fungi was in the late 1960s, when German scientists used them to remove pollutants at a coal gasification plant contaminated with coal tar. Today, The Energy and Resources Institute in India, and the Pacific Northwest National Laboratory in the United States, are two of several research institutes looking into the potential of mycorrhizae-based bioremediation projects.

Black Liquor to Greenbelts

In India, liquid waste from pulp and paper mills, sometimes called black liquor, is one of the nation's main river pollutants. TERI's Center for Mycorrhizal Research in New Delhi works to provide small-scale pulp and paper mills with an economically-feasible and environmentally-friendly option for wastewater disposal: mycorrhizal fungi.

Project operators use mycorrhizal fungi as a pollutant filter that cleans up the toxic black liquor. A greenbelt surrounding the factory serves as a bioremediation system and contains the toxic discharge. The system prevents the black liquor from seeping into neighboring fields and contaminating the surrounding soil and ground water. It also reduces the use of land for toxic disposal,

MUSHROOM MAGIC

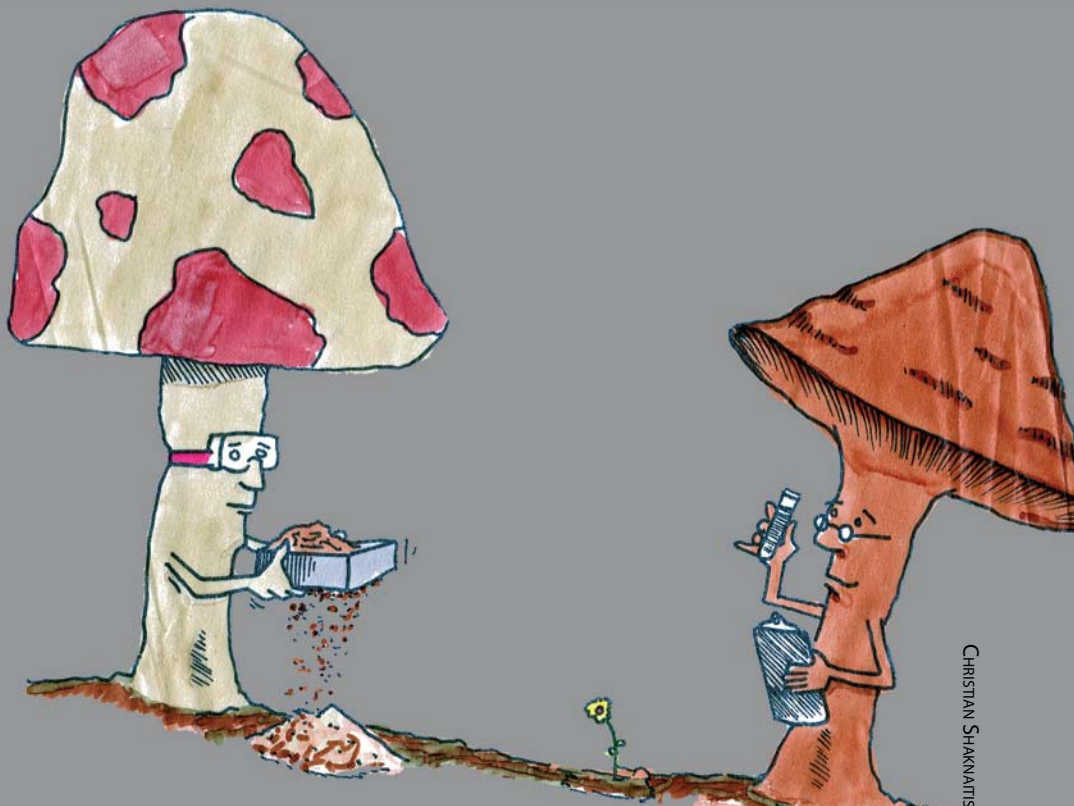
PEYTON SMITH

leaving land previously used for dumping available for agriculture. The resulting waste treatment area is used as a multipurpose revenue-generating greenbelt. Commercially valuable tree species on the multiuse greenbelt are visually appealing and provide additional income.

Tasty or Toxic?

In the Pacific Northwest, mycorrhizal fungi have a larger task: cleaning up diesel-contaminated sites. on Department of Transportation lands in Bellingham, Washington, that served as a diesel dumping grounds for the past 50 years. Paul Stamets, an eccentric fungus fanatic

who worked alongside PNNL, tested the capability of oyster mushrooms (yes, the very ones you find at the supermarket) to clean up the diesel-contaminated sites. Within eight weeks, the soil was 98 percent free of toxins from diesel and 12-inch diameter mushrooms were growing on the land. The best part is eating the resulting fungi...yum. ☞



CHRISTIAN SHAKNATIS

ARTIST'S PORTFOLIO

RON BEACH JR.



DOOR UNTITLED 1

The work of Ron Beach Jr. reverberates daily mundane interactions that simultaneously bring humans together and isolate them from each other. More personally, Beach recreates his own life scenarios, from the ironic and humorous to the deep and severe, painting a visual plateau where these experiences and the reactions to them exist on the same level. Beach's collection of weathered and often damaged doors, windows, desks and any other urban artifacts that he finds all serve as his canvas. These materials are considered worthless remains from the past, thrown away by residents of New York. Beach renovates these pieces of urban decay by painting the caricatures of the city and their connection to daily tribulations that he experiences and that resonate within him long thereafter. The resulting scenes are often chaotic, colorful and aggressive scenes, describing addictions, extreme emotions, sexuality, popular culture, and image and insecurities, issues that undeniably live within all humans. His daily observations, which are seemingly subtle upon occurrence, explode on his materials as recycled energy that he stores within his own psyche. The raw freedom he exposes, which often remains confined among most of humanity, allows the viewer to incidentally relate to his crooked outlined characters, narrative scenes and loud color palate. The quest Beach embarks on with each piece attempts to redefine the meaning and worth of all things, be it the trash of urban life or the repressions that exist in all humans.



DOOR UNTITLED 2

Melting Glacier

Ten years ago the hike to ice
took half an hour less.
Your blue extended acres more.
We step on stones once
rolled inside your gut.
And now our crampons
bite your skin,
trample your folds,
your dark rifts,
millennia exposed in slits.
We plant our metal teeth
on your defeated chest.

Caterpillars

Bracken, staghorn fern,
bright sun, slight breeze
and caterpillars, not just three or four.
I sit on stone they own
and with my pen as catapult
I flick them grassward.
But up they crawl again,
creepy nightmare fodder.
I send one flying from my jacket sleeve.
Okay. You win. I leave.

Sandhill Cranes, Platte River, Nebraska

Every spring they stop here. Thousands
descend on parachute wings,
each quarter-second another,
legs dangling until their forked feet feel sand,
then curtsy, folding briefly at the knees,
landings so soft they could be airborne seeds.

Their gabbles, rattling wooden pebbles,
saturate the shallow Platte, its braided sandbars
all breath and flutter, the sough and sway
of one-legged half-sleepers.

The sun sends its vermilion
through low-hung clouds, then
makes way for the wide white moon,
lighting the cranes like candles,
repeating a vigil of nine thousand years.



Robins

They have flapped
from northern spruce and fir
to hickory and beech,
and now their high-up flutter fills the air,
floods the sky like snowflakes never falling,
calling, circling,
searching for this evening's rest.

We turn our faces to their swirling din,
open the pockets of our souls.
The robins tumble in.

FOOD FOR THOUGHT

Re-Regulating Farm Funding

STEPHANIE PAIGE OGBURN

As the 2002 farm bill nears its 2007 expiration date, debate surrounding government support for U.S. farmers intensifies. Congress faces two options as it debates the next iteration of the bill: It can extend the 2002 edition for another year or two, or it can adopt a whole new style of farm supports, epitomized by a bill called the Healthy Farms, Foods, and Fuels Act of 2006. The alternative bill, sponsored by Senator Ron Kind (D-WI), takes a conservation-based approach to farming that is intended to spark Congressional conversation leading up to the new farm bill. Although Kind's proposal does not call for cuts in commodity subsidies, decreased subsidies are another hot topic in farm policy debates.

Held this July, the World Trade Organization's Doha round of talks—intended to streamline international free market policies geared towards

agriculture—largely fell apart on account of the United States' unwillingness to cut back on agricultural subsidies. Since then, large farm advocacy organizations in the U.S., such as the National Farmers Union and the American Farm Bureau, have pushed for an extension of the 2002 bill. They want to maintain the farm bill's status quo until WTO irons out its regulations.

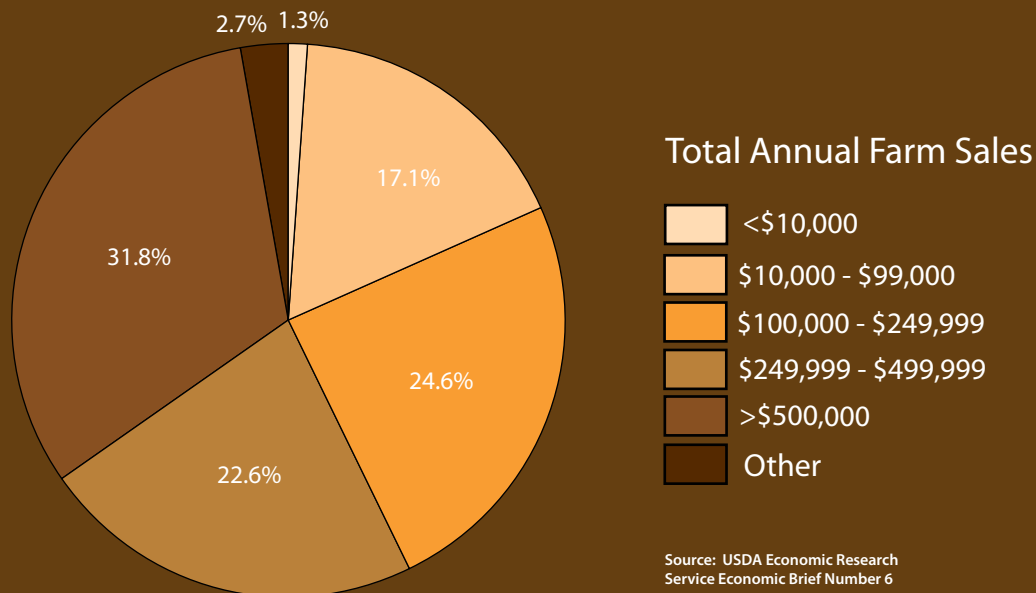
The 2002 farm bill authorized \$180 billion in payments to farmers. According to the National Conservation Resource Service, a branch of the U.S. Department of Agriculture, this money went toward conservation payments, crop insurance subsidies, disaster payments and subsidy programs; the bulk of the fund, 49 percent, was allocated to subsidy programs. The geographic distribution of those subsidies is highly skewed, with a few Midwestern states receiving the majority of the payments (see chart, next page). Since the commodities receiving subsidies are often sold on the international market, farm subsidies have less to do with keeping food prices low for consumers in the U.S.,

and more to do with allowing farmers to out-compete growers in other countries.

Farmers who raise five crops—corn, rice, wheat, cotton and soybeans—receive 93 percent of the \$88 billion spent on subsidies. These farms also tend to be the largest, most profitable farms. Farmers whose yearly sales were less than \$100,000 only received 18.1 percent of commodity subsidies. These small farmers, who make up 85 percent of the growers in America, rely almost completely on income they make off-farm, at non-agricultural jobs, to support their farming businesses.

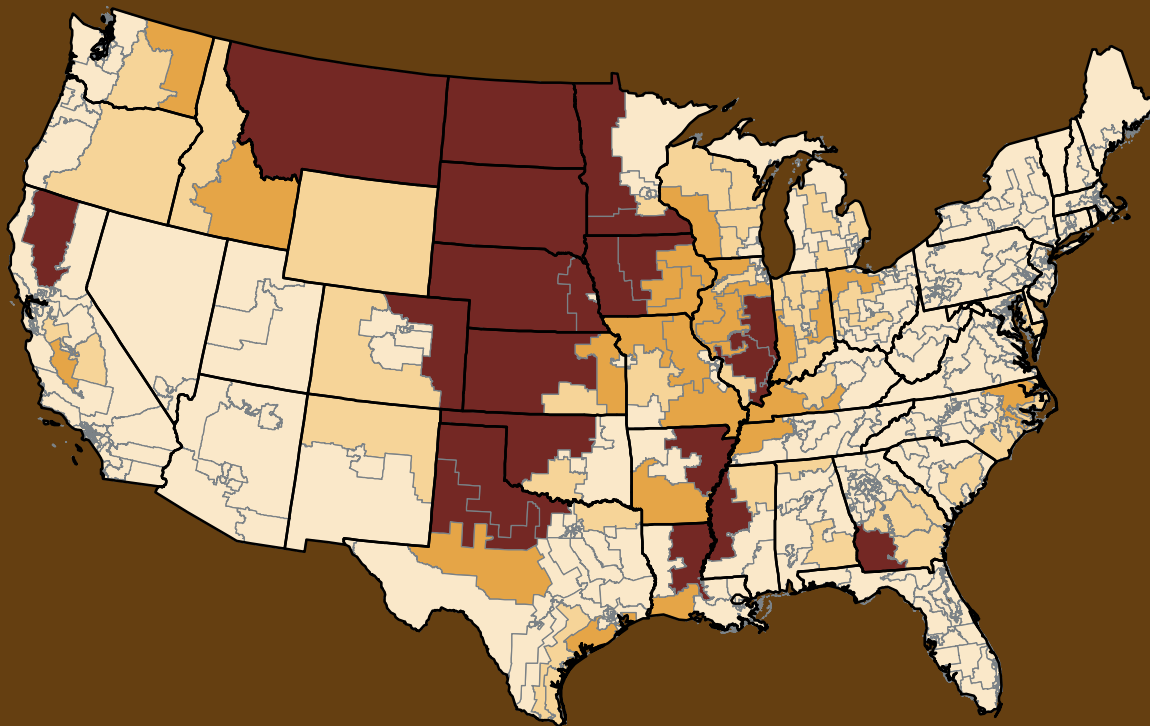
Profit margins, as measured by the USDA, are negative for farms with sales below \$100,000. Earl Butts, secretary of agriculture under Richard Nixon, engineered agricultural subsidies to take the form of direct payments and to encourage higher production. When asked about his policies, he famously said: "Adapt or die." As farm bill debate wages in the halls of Congress next year, who adapts—and who dies—will be a question of policy. ❧

The majority of government commodity payments go to large farms
This graph shows the percentage breakdown of commodity payments by total farm sales.



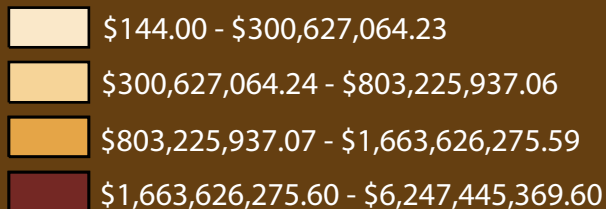


The five major crops receiving commodity subsidies: soy, rice, wheat, corn and cotton.
 Images courtesy of the USDA Agricultural Research Service photo gallery.



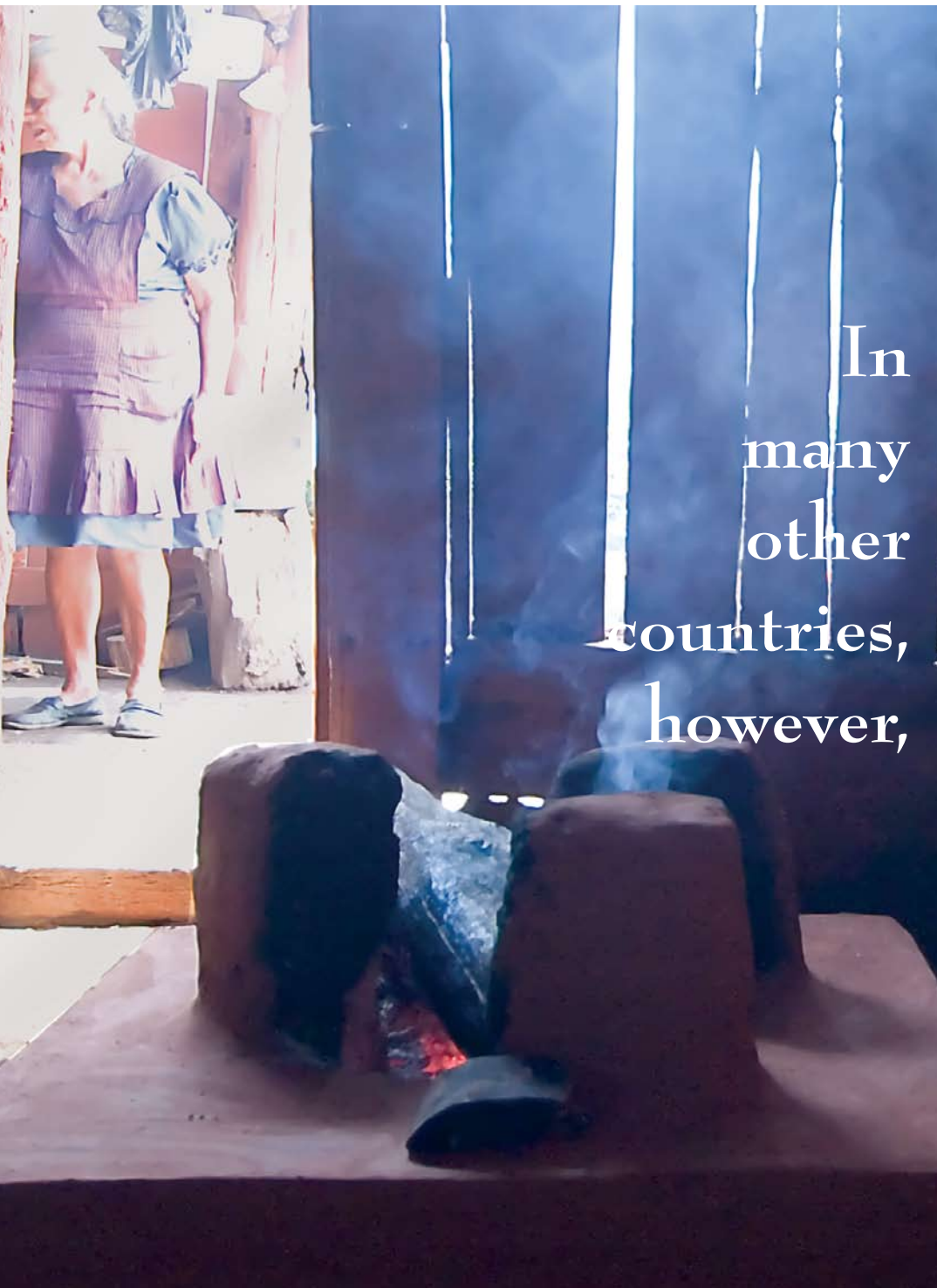
Total Commodity Subsidies

Dollars Paid to Congressional Districts



Source: Environmental Working Group
<http://www.ewg.org>

CLEANING U



In
many
other
countries,
however,

In a classic
American
winter, softly
swirling
chimney smoke
and roasted
chestnuts
contribute
to a homey
atmosphere.

fire is a nec

A necessary component of household energy, its romantically-conceived smoke fills the lungs of two billion people with its toxic combustion byproducts. Without chimneys to carry smoke and soot outdoors, indoor air pollution can reach levels two hundred times the United States Environmental Protection Agency's standard limit for exposure. Women and young children spend the most time near the fire and inhale a daily level of toxins equivalent to smoking two packs of cigarettes. According to the World Health Organization, indoor air pollution kills 1.5 million people each year and is the fourth leading cause of death and illness in developing countries.



P K I T C H E N S

AMANDA MOSS COWAN



essity of life.

In Mexico, approximately 25 million people cook with fuelwood, and rural women typically spend three hours each day making tortillas over an open fire. To satisfy traditional cooking needs while burning wood more efficiently and removing harmful fumes from the home, the Interdisciplinary Group for Appropriate Rural Technology (*Grupo Interdisciplinario de Tecnología Rural Apropia*) developed the Patsari stove. Replacing open fire stoves with the Patsari stove retains tradition while reducing indoor air pollution by 70 percent, greenhouse gas emissions by 30 percent, and saving up to 60 percent of fuelwood. The stove's optimized combustion chamber is more efficient; it burns wood more cleanly

and thoroughly, and its exhaust tunnels direct heat from the fire to cooking surfaces.

TRADITIONAL THREE-STONE FIRE (LEFT)

The traditional three-stone fire, or *fogón*, is a tough competitor for the Patsari. Essentially free of cost, the *fogón* heats quickly, is durable and provides space heating. But it floods the air with toxins.

FINISHING UP THE CONSTRUCTION (ABOVE)

Since slight variations can reduce the stove's efficiency and performance, dimensions are carefully checked. An experienced technician can build just one stove per day. Materials and labor cost approximately \$100. With

average per capita income of little more than one dollar a day, the upfront cost of a stove represents a large capital investment for families, so most stove costs have been partially or fully subsidized by the Mexican government and international donors.

INSTALLING THE CHIMNEY (TOP RIGHT)

The final step is the most important. A small hole is cut in the roof, and a simple chimney made of metal tubing and a pre-fabricated cap is run from the stove to the outside of the building, making sure that the chemical cocktail of pollutants does not end up inside. This chimney saves lives.

SMOKE RISES (BOTTOM)

Soot from traditional fires covers everything in the kitchen, including the cook. Over time, constant exposure blackens pulmonary tissues and ceiling beams alike. But lung cancer concerns do not rank first in the decision to switch to the Patsari. For many women, keeping dishes free from soot is the deciding factor in adopting a new stove with a chimney.

WORKING TOGETHER IN A SMOKE-FREE KITCHEN (RIGHT)

Women in rural Mexico often live with their husbands' families. A young bride who wishes to switch from the open fire to an improved cookstove may face opposition from her mother-in-law who also uses the stove; older women are often resistant to learning an unfamiliar technology. This young woman persisted and prevailed, and now her mother-in-law is a fierce champion of the Patsari. Having a smoke-free kitchen allows the family to spend more time together there. 𐄂



Global Warming Haiku

JED HOLTZMAN

o global warming!
the winter olympics will
never be the same.

you're here too early!
i never got to see ole'
Kilimanjaro.

carbon dioxide
is God's way of making sure
soap operas will stop.

all you polluters
i'm part of the solution.
i'm holding my breath.

the greenhouse effect
will make the plants grow real tall
let's hide in the corn.





Global Warming Haiku

ERIN BARNES

M-I-C (See You Real Soon!)

Goodbye Florida
Disneyland was a great place
But now is no more

Old White Men Make Me Sleepy

Oh my dear Al Gore
You tried so hard in your film
But it was a snore

International Cooperation

Oh shit! We are all
Out of freshwater. Let's go
Steal some from Brazil.

Redneck Thoughts

The basement is a-
Flooding. Man, and we thought that
Katrina was bad.

New York City Winters, Redefined

It's one hundred and
Thirty degrees at this year's
Macy's Day Parade.

Politics of UnCooperation

The whole world hates us.
My Kyoto-Montreal
Dreams have vanished with the wind.

ARTIST'S PORTFOLIO

JESSICA A. QUALIS

I use mixed media for my pieces, combining graphite figure drawings with black and white photographs from the Holocaust, Abu Ghraib prison, the Rwandan massacre and historic black lynchings. Using mirrors positioned to create oblique angles, I place my body in contorted poses to draw and paint in order to convey the relationship between myself and the subjects I am discussing and exemplifying. The figures I draw and paint are of myself so that I may create this bond between the people of the past and present who have been dehumanized, humiliated to the extreme, demoralized, browbeaten and placed on display to the world like a crucifixion. With materials such as twigs, dirt, sand, charcoal and contè, I create miniature scenes within each piece of work, thus creating landscapes thrust with dynamic emotion. From a distance, these individual microcosms become a cohesive whole, grabbing the viewer's attention, invoking a question forcing the viewer to cogitate the meaning or message.



SHACKLED AND UNSTIRRED, BOUND TO SERVE YOU



OH LAWD, PLEASE ALLEVIATE OUR SUFFERING AND REPRIEVE US FROM DEATH # 1



SING ME THAT OL' WHITE HYMN # 1

From Back to storefront boutique



Cotton farmers with their harvest: The Maikaal Project, India
Shona Quinn

**Around the World and Back Again
Following the Cotton Cycle**
SHONA QUINN



Once I had a favorite cotton t-shirt—

simple and comforting, white and so well worn that the cotton felt like silk. After ten years in the fashion industry, traveling around the world purchasing fabrics for companies such as Anne Klein, Aeropostale and Calvin Klein, my t-shirt had become more than a favorite article of clothing. I'd realized that it had a history—a life cycle that began long before I first put it on.

My years in the fashion business took me all around the globe, from Thailand to Malaysia, from Hong Kong to Egypt. I worked with manufacturers developing fabrics and buying apparel. Based on all of these experiences, I could easily visualize the genesis of a conventional t-shirt such as the one I loved, from its origins as the flower of a cotton plant to a finished product hanging proudly in a shop

window, a journey that involved numerous countries and industrial processes.

As I learned more, this journey became increasingly concerning to me. I knew that the intricate chain of cotton production demanded a great deal of energy and water and made use of toxic chemicals. I read about the impacts of globalization, exploitative labor practices and industrial pollution, all of which play important

roles in the garment industry. And I realized that despite my knowledge of the details of a t-shirt's metamorphosis from flower to final product, I still had much to discover about this journey's social and ecological implications.

I also learned that some t-shirts follow a different path—a shorter cycle with a smaller ecological footprint. And I discovered a Swiss business, Remei AG, that supplies yarn and garments made of certified organic cotton processed in an ecologically and socially responsible manner, using cotton produced at its organic farms in India and Tanzania. Remei focuses on developing long-term relationships with each business partner in the textile chain—from farmer to designer to dyer. But beyond creating a clear and committed organizational network, Remei also follows self-imposed social and environmental standards and requires its partners to act accordingly.

In an industry where conventional producers make deals with unfamiliar partners within indistinct supply chains, Remei manufactures its products using a transparent production process. Its supply chain is well understood and carefully managed, inspiring Remei to establish the trademark bioRe® to identify products that conform to its high standards. Following the scent of these innovative business practices, I decided to track the life cycle of one of Remei's cotton tees.

For many conventional t-shirts, their origin is in the fields of the American Southwest. Here, farmers plant hundreds of thousands of acres of a single crop—cotton—covering an area from the high plains of northwest Texas to the mountain ranges of New Mexico. Occasional dirt roads provide the only visual break in this enormous expanse of agriculture. Overhead, airplanes spew forth pesticides in an effort to perpetuate this unnatural monoculture and kill off the innumerable aphids, the natural enemies of the cotton plants. After 20, 30 or 40 applications

With the combination of heat, water, and chemicals that envelops the workers and leaves a stench-filled toxic steam, wondering: Is there a better way?

of these chemical cocktails—sodium chlorate, methyl parathion, cyanazine and dicofol—the growing season is over.

Harvested cotton replete with its chemical residues is then gathered in commercial units known as bales, weighing 480 pounds apiece. One third of all the cotton bales produced in the United States are shipped across the border, mostly to Mexico. The majority, however, travel halfway around the world to places like China and Indonesia, where the cotton fiber is spun into yarn. Inside these spinning mills, millions of tiny fibers hang in the suffocating air. Spinners wear bandanas around their faces, hoping to screen out some of the cotton particles. Finished cones of yarn, individually wrapped in plastic, are boxed and shipped by a team of workers to the next processing location.

At the knitting mill, workers place the yarn on inefficient second-hand machines discarded long ago by now-closed factories in places like Greensboro, North Carolina. After knitting the yarn into oatmeal-colored fabric, workers plastic-wrap it for delivery to a dyehouse, the location of which may be anywhere from the next town over to somewhere in another country.

Dyehouse workers receive the fabric and use toxic chlorine compounds to bleach out the natural color, then infuse it with dyes and brighteners that carry heavy metals and other carcinogenic chemicals. Formaldehyde, a known carcinogen, is often used to soften the fabric. With the combination of heat, water and chemicals comes a stench-filled toxic steam that envelops the workers and leaves a visiting buyer, like myself, wondering: Is there a better way?

Due to tough competition and incentives to cut corners to improve profit margins, small- to medium-sized facilities in developing countries sometimes break environmental laws. This may involve releasing millions of gallons of toxic water to flow untreated into local waterways. Although environmental regulations prohibit discharging untreated wastewater, factory equipment often fails to function properly and local governments lack the resources to enforce environmental codes.

Once the dyeing process is complete, bolts of fabric are labeled with natural-sounding colors such as eggshell white, sea green, midnight blue or chestnut brown. For a fourth time, cotton from the fields of Texas is plastic-wrapped and boxed. Finished fabric then travels to a country where labor rates are low, such as Bangladesh. Here, the fabric ends up in a factory crammed with sewers who are working seven days a week, fourteen hours a day earning eight cents an hour stitching sleeves.

Black lettering is emblazoned across the chest of the t-shirt in yet another stage of the production process: printing. Separated from those involved in the sewing operation, the printers are saturated in the smell of kerosene (a fixative for black ink) as they stamp logos on garments. Apparel factory workers plastic-wrap and box each t-shirt and truckers take the boxes to a port where they are loaded onto metal containers to complete the round trip journey back to the land from which they came.

Once the cotton is back on U.S. soil, workers at a distribution center unpack and repack the container, placing it on an eighteen-wheeler which barrels cross country

er and chemicals comes a stench-filled toxic steam ves a visiting buyer, like myself, wondering:

y?

emitting diesel fumes as the driver races to meet a store deadline. A salesperson removes the t-shirt from its box and places it on a mannequin in a window display, where a young American much like myself first falls in love with it—unaware of the processes or the chemicals, oblivious to the hardships of the workers she will never know living in a town she will never visit.

In Mhow, India, the manager of the bioRe India Project, Rajeev Baruah, greeted me warmly. As we drove towards the cotton fields, signs of city life faded; smaller towns appeared and then they, too, gave way to open spaces. Rajeev had the frame and face of a seasoned diplomat, tall and tanned with deep dark eyes. His voice was filled with expectancy and promise as he pointed out the sowers and the brown landscape beginning to turn green. The project's farming initiative is called the Maikaal Project, named after the mountain

range Maikaal, the water source for a local river. "It started as a pilot program 11 years ago with one farmer and 15 acres, and now includes over 1,100 farmers covering 8,000 acres," Rajeev informed me.

Rajeev attributed the success of the Maikaal Project to its commitment to addressing issues of concern to cotton farmers. Few options were available to farmers prior to the project. Discouraged by "decreasing yields, decreasing soil fertility and increasing farming costs," Rajeev explained that farmers were interested in hearing about new land management plans. Each season, farmers increased their reliance on conventional pesticide controls, including more potent sprays and more frequent applications, to which pests swiftly adapted. "Investment in chemicals was driving costs upward," Rajeev said. Farmers realized they were on a "pesticide treadmill" and wanted to get off.

Support services also drew farmers to the Maikaal Project. "Extension personnel visit farmers on a regular

basis," said Rajeev, advising them on crop management and sensitizing them to important aspects of organic farming: water management, crop rotation plans and education on beneficial plants and insects. The farmers also learn from each other by touring the fields together, discussing new farming techniques and near-forgotten traditional farming practices. These "inter-farm" visits help build confidence in new farming practices and help revive productive methods their fathers and grandfathers used.

The Maikaal project includes a 30-acre test farm, which operates as a laboratory and learning facility where farmers observe new irrigation methods and planting techniques. Maikaal now provides funding and education to farmers on "intercropping" methods: the interspersing of cotton and beans together in the same field. Intercropping allows nitrogen-fixing beans to enrich the soil depleted by the cotton, helping to ensure long-term fertility and thus long-term income.



Organic cotton in bloom: The Maikaal Project, India
Shona Quinn

As Rajeev and I drove on the Mumbai-New Delhi highway, a primary artery linking commerce to consumers, horns blasted at unflinching oxen and carts. A winding road took us up a steep mountain where we narrowly passed overloaded trucks inching along at a snail's pace. Rajeev pointed out men on tractors sitting at the top of the mountain and explained a side business: "Some trucks are too weighed down with merchandise to make it up the mountain, so for a fee, tractors tow the trucks up."

As we reached the bioRe Maikaal farm, I scanned my new surroundings. In front of me stood a small concrete building which served as an office. Attached to its left side was a small stable for animals, mostly oxen. To the right I saw a canopy made of wooden planks that protected a small plant nursery, and behind the building an expanse of trees and brush breaking up small plots of land. Beyond these fields stood a mountain range appearing to keep watch over this special plot of land.

Rajeev introduced me to Dinesh Tripathi, an extension agent small in frame but solid in stance. He had the look of a farmer and an unhampered stride as we trekked through the muddy fields to reach a testing site. Dinesh explained the need to rotate crops seasonally to ensure healthy soil: "After a season of cotton-growing, a 'restoring' crop is planted that rejuvenates nutrients in the soil. This way local food supplies can be supplemented by the same cotton-growing field." He pointed to a husband and wife moving together and practicing an intercropping technique—first corn, then beans, then corn again.

A quarter of a mile down the road from the Maikaal test farm, a ginning mill separated seeds and debris from the cotton. The seeds, a valuable organic byproduct, feed the farm animals at Maikaal. In the United States, genetically modified seeds laden with pesticide residues are either fed to beef cattle or pressed for oil. This cottonseed oil is used widely in the U.S. food industry and can be found in many favorite children's snacks: chips, cookies, cakes and even

peanut butter—the cotton industry's impact is not limited solely to t-shirts.

After ginning, cleaned cotton shaped into large square bales traveled next door to a mill where it is combed, twisted and spun into thread. Here, management provides earplugs and masks free of charge, encouraging workers to protect their hearing and lungs. Additionally, sweepers constantly clean the mill, and vents improve the air quality.

The cones of yarn produced here are issued lot numbers so they can be traced back to this spinning mill.



Raw cotton moves to the next processing phase: ginning, using old-fashioned human transportation: The Maikaal Project, India
Shona Quinn

In the afternoon, Dinesh and I rode his motorcycle to visit the village of Dhargaon and met with farmers tending their fields. As we approached the village, I saw a little boy pumping water from the village well. We stopped the motorcycle and children immediately surrounded us, happy to see Dinesh and curious to see me. The children escorted us to the home of Farmer Patel.

Dirt floors and walls formed of local clay bricks gave Farmer Patel's one-room house an earthy scent. Sunlight entered through two windows on opposite walls. In the corner of the room, a small hole in



the ground served as the toilet. Two cots leaned up along the side of the walls, and a small picture of a saint stood out on the opposite wall. There were no chairs or tables. Four hooks on the wall held a second pair of clothes for each member of the house. I noticed a t-shirt on one hook and was reminded of the overwhelming task of understanding one simple t-shirt.

Dinesh introduced me to Farmer Patel, a slim man of medium height, but strong. His face and hands were bronzed by the sun and he wore a weathered cotton shirt, dark cotton trousers and black rubber sandals.

The simple pleasantries we exchanged belied the importance for me of this visit, a visit for which I had traveled halfway around the world. Farmer Patel was one farmer, planting seven acres of cotton plants to produce three bales of cotton. Nothing could seem farther from the mammoth international cotton industry tilling some eighty million acres of soil to produce eighty-seven million bales of cotton fiber and in the process applying twenty-five percent of the world's insecticides.

Before I left, Rajeev asked if I would plant a young tree by the ginning mill. As I

bent down to cover the roots of the tree with soil, I knew that I would move on but that the farmers, extension agents and managers involved in the Maikaal Project would stay, continuing to develop their part of a sustainable cotton chain. While this stage in apparel production is not the most fashionable, the picture it paints—of farmers who care about the earth and the soil they till—is appealing.

The rains of Madayh Pradesh followed me to Bombay where I had come to see a testing lab, dyehouse and sewing factory. Flooding gridlocked a main intersection in town. Businessmen and women removed their shoes and waded toward high ground and a dry path to their destination. Suited in a white lab coat, Dr. Nadiger, Laboratory Director for the Textile Committee of the Indian government, had the characteristics of a wise professor, quiet and reserved until one hit upon his passion—textiles and the environment. Currently the press is buzzing about new scientific breakthroughs, including genome research and DNA developments. But a quiet murmur is building in some scientific circles where researchers are learning to detoxify materials by replacing harmful chemicals with safer "greener" ones, referring to the practice as "green chemistry." Dr. Nadiger, a supporter of this research, shows patience with an industry that is reluctant to tackle this new frontier. Yet he holds an unwavering belief that someday, green chemistry will be a requirement for the textile industry.

Making reference to my white cotton t-shirt, Dr. Nadiger provided a quick crash course in green chemistry. "It can be bleached white using chlorine or hydrogen peroxide," he noted, pointing out that hydrogen peroxide is non-toxic. "Chlorine is damaging an already fragile system, but it is still widely used within the industry."

Dr. Nadiger ushered me downstairs to a series of testing laboratories, with

glass walls dividing each lab room. He explained that yarns and fabrics are tested for physical characteristics like strength, fineness, abrasion resistance, color fastness and flammability. He then took me into a corner room, a facility referred to as the "eco-testing" lab.

Pristine white counters with high-tech computer equipment line the walls. This is where many inch-square swatches, each representing 100,000 yards of fabric, are tested for environmental and health hazards such as carcinogenic dyes, pesticide residue, heavy metals, formaldehyde and pentachlorophenols (PCPs). Although manufacturers do not request eco-testing of fabrics as frequently as the physical characteristic tests, it is the most significant test for those that care about human health issues. As I stood in this "eco" lab, I wondered if designers who work for large companies like the Gap or Wal-Mart have ever seen such a room. If they had a choice between two shades of blue, one using toxic compounds and the other benign, which would they choose?

The next morning, I awoke with anticipation. My schedule included a tour of a dyehouse and sewing factory with Sunma Verma, the product manager of one of bioRe's partners. As we drove on the outskirts of the city to New Mumbai, Verma fielded questions from his factory managers via cell phone while carrying on a conversation with me. He described with precision the social and environmental benefits within the bioRe dye house and sewing operations, and I realized immediately he was not just another product manager but a special link in the bioRe chain.

Verma explained that the most severe damage to the environment prior to reaching the consumer occurred in the farming stage and in the dyeing and finishing stage of cotton production. (The largest overall environmental impact is water and energy-intensive washing and drying.) I had seen how Remei mitigates environmental impacts through organic

farming practices, and now I would learn how they lower impacts in the dyehouse.

Arriving at the dyehouse, Verma ushered me towards a row of immense dye vats that looked like gigantic washing machines. The dyers use a "recipe" for each color. The list of ingredients includes salt, dyes and other chemicals, and significant amounts of water. The effort this dyehouse makes to replace heavy metal dyestuffs, chlorine bleach and carcinogenic finishing chemicals with safe alternatives sets it apart from its conventional competitors. Heavy metals like cadmium and chromium are conventional components of dyes. Unfortunately, once these compounds enter the waste stream, they pollute the food chain. Chlorine bleach and optical brighteners are used to whiten and brighten fabric, but they are toxic. Verma explained, "We use 'oxygen' bleach, better known as hydrogen peroxide. It bleaches fabrics white without the toxic byproduct."

Creating new recipes that convert conventional dyes into eco-friendly ones is not an easy task and is possible only with the strong support of the research and development department within a chemical company. Ciba Specialty Chemicals, a company based in Basel, Switzerland, has taken up the task, working with Remei's designers and dyehouses to provide apparel made with environmentally safe colors. Replacing dyes made using chromium, a heavy metal and known carcinogen, with heavy-metal free dyes is just one example. The cost of eco-dyes can be slightly more than conventional dyes due to their higher quality. But if pollution to water was internalized as a cost to producers, eco-dyes would become the cheaper alternative.

As we proceeded out the back door to see the dyehouse wastewater treatment facility, Verma pointed to a new monitoring device recently installed to measure liquid effluent, explaining that the wastewater goes through two stages of treatment before it is piped to the municipal wastewater

Hand-picking cotton: The Maikaal Project, India
Shona Quinn



treatment plant. Someday this dyehouse may look to "close the water loop," an ecological step these facilities have yet to address. Instead of treating the water and releasing it, the wastewater would go through a purification system and be piped back into the dye house to be used over and over again, reducing the burden it places on the local water system. This process already takes place in some dyehouses in the United Kingdom, but the expense remains prohibitively high here in India.

As we left the dyehouse, I considered this unusual yet logical new partnership between a chemical giant, a designer and a dyehouse. Throughout my trip, the people with whom I spoke mentioned the concept of "integrating the chain" from farmer to retailer. But it was not until visiting the dyehouse and learning about its collaborative work with Ciba and Remei's designer that I appreciated this web of relationships.



As we drove to the apparel factory, located within an industrial park, paved roads changed over to dirt. In the distance an expanse of metal shacks covered a field, a far different image from that of the cotton fields of Maikaal. I assumed this was where the labor force for this industrial park slept, since few people can afford cars that would allow them to live farther away and commute to work.

Looking at the buildings surrounding me, I noticed many barren structures, some half built and others falling down. Still, the area was brewing with activity. We pulled up to a newer concrete building and climbed the steps to the second floor. As we walked amongst the sewers, Verma listed important requirements for a positive working environment: it must be clean, spacious, well-lit, temperature-controlled, ventilated and have adequate bathrooms, access to clean drinking water, official wages, normal working hours, vacation time, the right to create unions and social security. I quickly realized that most Indian factories do not offer the basic working conditions that Americans take for granted.

We moved upstairs to the screen-printing area. Expecting the smell of fumes, I was surprised to smell nothing. Verma explained that the bioRe label only produces water-based prints, and therefore no toxic fumes are present in their factories.

As I watched t-shirts being packed in recycled plastic bags and placed in boxes, I felt a sense of respect for those within this chain. Verma pointed to a side label showing a series of lot numbers that trace each stage of the chain. "We know where our products come from and how they are made. It's a clear chain." Each contributor to the process was linked via that label to the final product.

From here the boxes are shipped to a port in Hamburg, Germany via boat—planes emit too much carbon dioxide. The bioRe transportation policy requiring the use of ships and trains, not planes and trucks, to reduce greenhouse gases is not in full practice yet. BioRe has not been able

to use trains due to the retailers' timing constraints, so once the goods are in Germany, trucks are used to reach a distribution warehouse in Switzerland.

As I packed my bags, preparing to leave India and follow the boxes to their destination, I thought about the man who transformed this "project" into a sustainable business model—Patrick Hohmann, General Manager of Remei AG—and I looked forward to meeting him on the last leg of my journey.

In Switzerland, riding a train from Zurich to the Remei offices in Rotkreuz, I couldn't help but see the sharp contrast in landscape and culture. Squared-off farmlands and a time-oriented society replaced the curve and continuity of India's landscape. Yet, a momentous bridge is being built. Those involved in this chain of cotton production have developed a strategy where people of different cultures work with shared values and respect to create a quality product with mutually beneficial social, ecological and economic outcomes.

Patrick Hohmann strode into the Zurich office. His friendly face and calm demeanor gave the mistaken impression that the ten years he committed to this project were easy. Yet he was confident that with Remei's solid foundation and continued respect and appreciation for each partner in the chain, this business would flourish.

As with Farmer Patel, our meeting was brief yet significant. We discussed his project in Africa and how it differs from the Maikaal Project. I asked him what business and market value mean to him. Hohmann explained: "Value is the art of using social compatibility and sustainability as drivers of economic development." Value, then, is not restricted to monetary worth. Instead, it is a belief within a group or society that includes environmental and social aspects; these values guide economic action. This strategy of long-term development is spreading in Europe,

but relatively unknown to businesses within United States. As I left our interview, Hohmann stopped me and presented me with a gift: one of his company's white cotton t-shirts.

While in Switzerland, I also interviewed Petra Schonenberger, a buyer for Coop, a retail store that sells clothing and groceries. We discussed the company's strategic decision to sell their bioRe apparel, marketed in the store as Naturaline, at the same price as their conventional apparel. Petra explained that management based this decision on their desire to build their sustainable product line. "Even though bioRe apparel profit margins are lower than conventional apparel, consumers are putting a higher value on our brand." And while brand value is hard to measure, Coop believes that since their customer base is growing, consumers are happy with their products.

The morning after my visit with Hohmann, I visited a Coop store. It carried everything

from food to clothing. An unassuming mobile with the Naturaline label whirled above the bioRe shirts. I noticed a tag on a shirt with a picture of an Indian woman picking cotton. It read, "For bioRe, meeting ecological and social requirements is the natural thing to do." I'm not sure how many customers understand everything that is contained within this simple message, but as long as they buy the shirts, the bioRe supply chain will remain a strong alternative to conventional apparel production.

As I flew back to New York, the skies were clear and I took my last look at the mountain ranges of Switzerland. I thought about the differences and similarities between the people I'd met as I followed the life cycle of this new kind of cotton product: a sustainable t-shirt.

Meeting the Indian farmers and their families allowed me to put a face to the men and women working in the cotton

fields. Their days are long and hard, but meaningful—meaningful to the farmers as their quality of life improves and the health of their soil is revitalized, meaningful to the cotton buyers who see hope and profits in a sustainable business, and meaningful to a consumer like myself who knows the market always follows the money.

My initial search for the history of a t-shirt had come full circle. I knew from the outset that cotton t-shirts originate in the soil of a field, not a store. But I was unaware of the complexity of each link, each one associated with social and environmental hurdles that many businesses are afraid to tackle. On the trip home, I thought back through all of these links. I remembered Dr. Nadiger and his ability to simplify the technical issues of green chemistry. I remembered gazing at the dyehouse wastewater treatment plant and realizing how the strong arm of a chemical company can bring forward positive environmental change. And I remembered Patrick Hohmann, steadfast in his belief that each of our actions is significant, giving me a bioRe t-shirt to remind me of the alternative. One t-shirt is not an industry. But like a seed, if tended well it will flourish and branch out.

Back in New York, I walk along the streets of SoHo. I pass a small boutique that captures the trend of the entire fashion industry by displaying the hottest new color, crimson red, in a cotton t-shirt. Because red is both a deep and bright color, heavy metals were most likely used to fix the dye. I wonder where the shirt came from and enter the store to look at the label. China. For a moment I think about what China's textile industry must be like and imagine a trip there.

Then I remember the gift given to me by Patrick Hohmann: a basic white cotton t-shirt. Unlike my old white t-shirt, I know the past of this one. I know the hands it passed through before reaching mine. I know the fields from which it came, and I know it's a favorite even before I try it on. I leave the store and return home to a t-shirt with a story, and a future that is sure to be a good one. ♪



CAMPESINO COLLAGE • JORGE FIGUEROA

Two-headed Moose Fetus Found Near Clear

We believe there is no
or very little evidence
linking this discovery
to the top secret military
radar listening post
installation near Clear,
and furthermore that
the people of Clear
have absolutely nothing,
or little, to fear.
It's just an impossibility.
There are hazards,
of course, but you have
to be right there,
practically kissing
the radar face to be
in any danger
whatsoever. Of course
we'll be conducting
an intense investigation
including X-rays, dissection
and genetic screening,
and all that good science,
but as of this moment
in time we firmly
believe that this incident
has absolutely no
or little relevance to
the issue at hand.
We wish to assure
you that to us
the public health
is of the absolute
utmost importance,
and the people living
near Clear, including
those who ate the cow
moose have nothing,
or little, to fear.

August Singularity

A funnel cloud pirouettes over the airport, declining
to touch down while jetliners and hawks circle
in rising spirals, fleeing the turbulence, what's left
of the sun and reflections of lightning sparking
their wings. On the local news at six, Jill Valley's
hair-do looks a little windswept, broadcasting live
from the Western Montana Fair. Next week, she'll marry

Channel 13's sportscaster who's just had his eyeliner
tattooed on. The storm, she says, has just about blown over.
Look, the Ferris wheel is up and spinning again, cotton candy
machines churn out pink sweetnesses. In silos across Montana,
National Guardsmen stayed busy this weekend replacing all the old intercontinental
ballistic missiles with new ones. And a quorum
of last year's planning committee voted to push the fair up a week
to escape this low pressure system that rumbles into town

the same time every year, but now, somehow,
a Holstein cow has blown quite out of the barn,
drifts like a black and white splotched zeppelin across
the suburbs and over the South Hills. Storm cellars empty
all over the city as we go out into a world scoured raw
by rain and fat wind where the saddle broncs stop bucking
across the rodeo arena, where lawyers rest crucial cases,

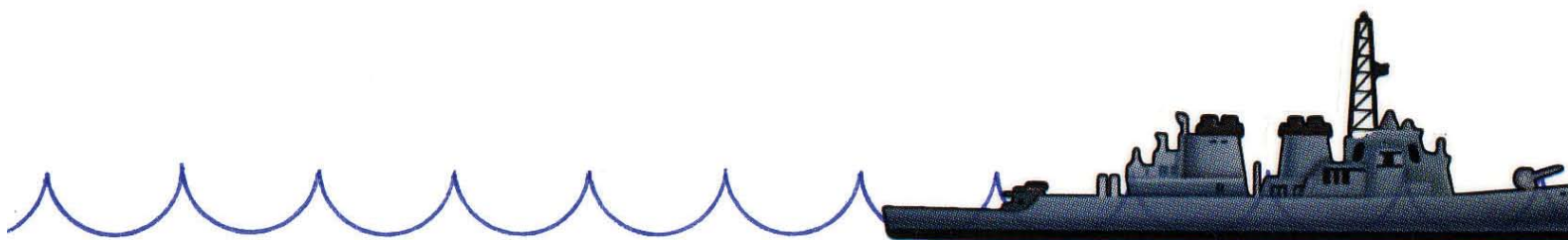
where cutthroat trout stop their wary slurping
and college professors switch off desk lamps, slither
out of basement offices, blinking like miners emerging
from earth's big belly into the silence that yawns across
clearcuts when loggers kill their chainsaws and even
the nearly sawn through Ponderosas teeter on their stumps
and look up and wonder.

Omega Bend

DERICK BURLESON

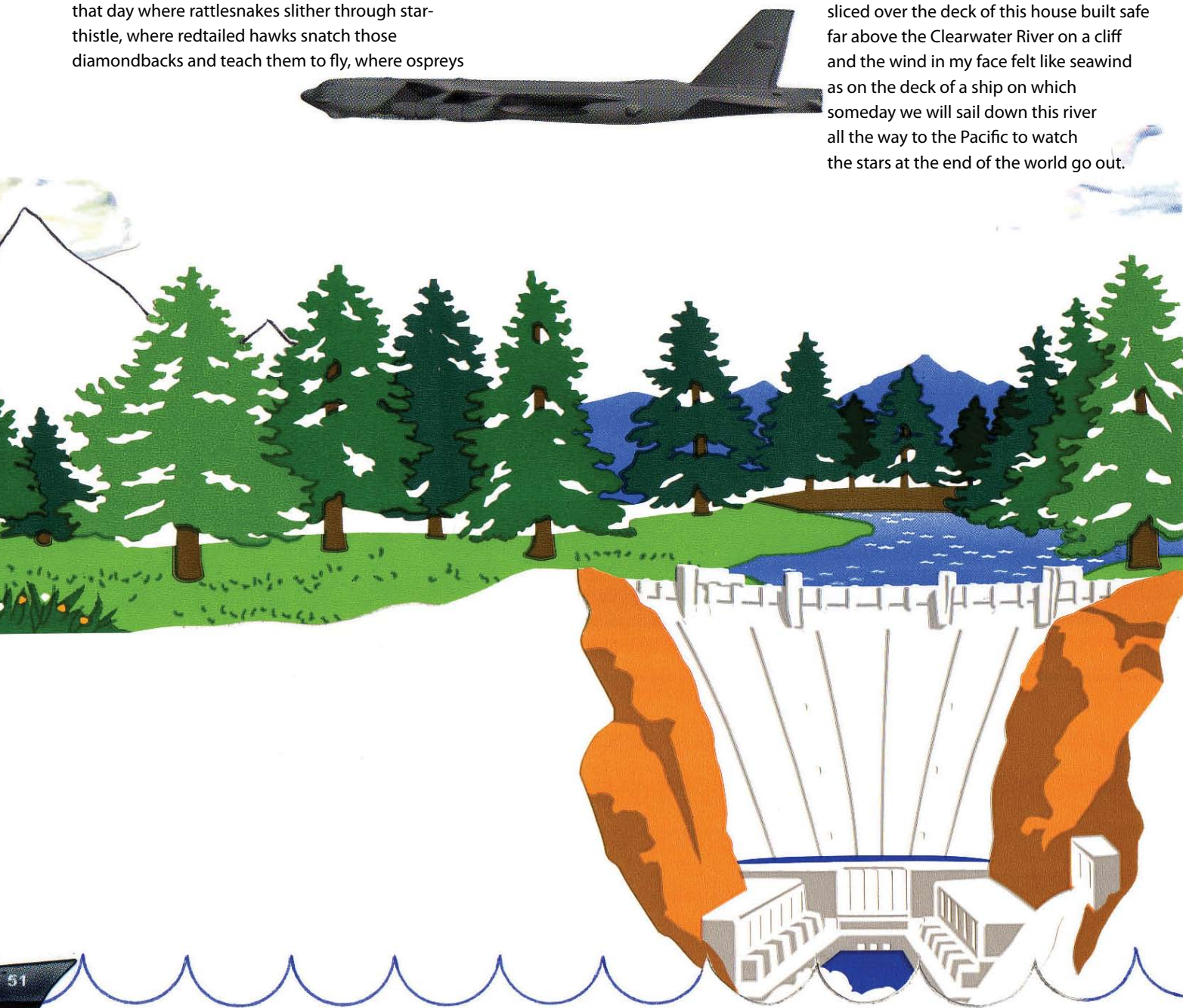
Here's where the world comes to an end.
Floods all spring and a red shirt still
hung neatly on the same white plastic
hanger that once swung in the cramped
closet of a cramped trailerhouse too close
to the riverbank hangs now on the snagged
roots of what was once a yellow pine
growing too close to the river, only now
the river has gone back to its banks,
now river has gone back to its banks

and sun wants you to believe it's July.
If the river snatched the silver star
I've worn around my neck three years now,
snatched the star from around my neck
when I baptized myself in its snowmelt,
when I pinched my nose shut and my body
fell back into clear water just thawed
from Bitterroot snow, whose sin was that?
I hope a stone wears it now, that star,
or that it washes up on the beach of fine



sand glittering alive with flecks of mica.
The children still wet from the river
rolled themselves in warm sand that afternoon
as in powdered sugar or powdered gold
and flung it into the sun all afternoon
in bright streamers of joy: the river sand,
the sun wanted to eat us all with joy
that day where rattlesnakes slither through star-
thistle, where redtailed hawks snatch those
diamondbacks and teach them to fly, where ospreys

snatch rainbow trout and teach them to fly,
where every morning wind blows upstream
and evening blows down, where that afternoon
truly loved the gold of wheatfields, the gold
pastures of cheatgrass and sweetgrass growing
through the pumice of an ancient volcano where
the sharpest possible sliver of the new moon
sliced over the deck of this house built safe
far above the Clearwater River on a cliff
and the wind in my face felt like seawind
as on the deck of a ship on which
someday we will sail down this river
all the way to the Pacific to watch
the stars at the end of the world go out.



The Furor Over Fluoride

KATHERINE JAMIESON

of residents of Colorado Springs, Colorado, and discovered a peculiar phenomenon. Though mottled and discolored, afflicted with what locals called, "Texas Teeth" or "Colorado Brown Stain," his patients' teeth were mysteriously resistant to decay. For the next thirty years, McKay and other scientists traced the sources of the stains, concluding that it was the high concentration of naturally occurring fluoride in the town's water that gave residents their exceptional dental health. Thus began a campaign to spread the wealth nationally, especially after the discovery that a lower fluoride concentration

In Portland, Oregon, a water war rages. This Pacific Northwest city of half a million isn't fighting over water scarcity, but over a public health initiative that most Americans take for granted: fluoridation. Portland, the largest city in the U.S. that does not fluoridate its water, is an exemplar of an increasingly common debate that has well-meaning community members pitted against each other. Most big cities in the U.S. were fluoridated by executive action in the 1940s, but nowadays, when given the opportunity to vote on the issue, two-thirds of U.S. communities oppose it. Fluoridation is currently being challenged at a grassroots level in Alaska, Texas, Florida and California, and since 1999 water fluoridation has been rejected by over 70 communities nationwide.

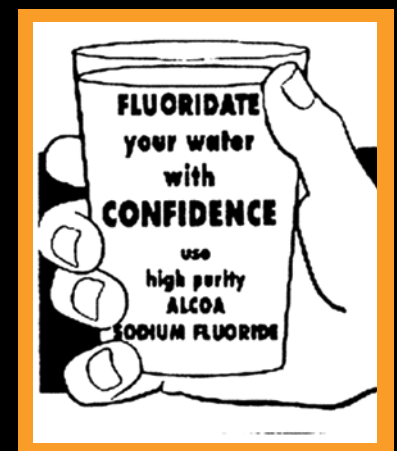
Lynne Campbell, a Portland resident who left her advertising job six years ago to oppose the push for fluoridation in her

hometown, recently left her position as Executive Director of the Oregon chapter of Citizens for Safe Drinking Water to promote anti-fluoridation efforts on a national level. "Forcing populations to ingest a medication (fluoride) laced with lead and arsenic, a known carcinogen, is antithetical to health," she said in a recent interview with Eugene Weekly, "especially for children." In the opposing camp, Kurt Ferre, a Portland dentist who promotes local fluoridation efforts, reasserted his confidence in fluoride to the Portland Tribune. "I will continue, along with the Oregon Dental Association, to advocate for community water fluoridation as the most cost-effective way to help reduce dental decay across our population."

The origins of these polarized positions can only be explained by a brief look at the controversial history of fluoride in the U.S. In 1901, a young dentist named Frederick S. McKay peered into the mouths

kept teeth cavity-free while maintaining their pearly white veneer. On January 25, 1945, 107 barrels of sodium fluoride were added to the drinking water supply of Grand Rapids, Michigan, inaugurating the Age of Fluoride in the United States.

Government and corporations, along with most Americans, applauded the fluoridation



1950 Alcoa Advertisement for Fluoride—a byproduct from the company's industrial facility.

innovation. Fluoridation promised a 65 percent reduction in cavities, with no side effects. Over the past 60 years, Colgate, Crest and the American Dental Association have made it household knowledge that without fluoride everyone would be walking around with mouths full of hideously stained, rotting teeth. In 1999, the Center for Disease Control trumpeted water fluoridation as one of the "Ten Great Public Health Achievements of the 20th Century," and by 2000, 162 million people, roughly half of the population, drank water from a fluoridated supply. Fluoride is America's most pervasive mandatory pharmaceutical.

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While most Americans have taken fluoridation of water for granted (or perhaps just forgotten about it altogether) the battle over fluoride's safety has been raging in the scientific community since the element was first mined for industrial use in the 1800s. As early as 1933, Lloyd DeEds, a senior toxicologist with the USDA, wrote that, "Only recently...has the serious nature of fluoride toxicity been realized. It is a well-established fact that chronic intoxication [poisoning] may manifest itself in man as recognized abnormalities only after constant, or at least frequent, exposure over many years." DeEds's was an early voice of concern about the dangers of fluoride as an environmental pollutant, but two physicians, George L. Waldbott and Frederick B. Exner, became vocal opponents after fluoride was put in the water supply. Exner was the first to draw clear connections between government and industry interests and their refusal to expose the risks of fluoride to the public. Speaking at a conference in

1961, he stated, "It is now clear that the one utterly relentless force behind fluoridation is American 'big industry'; and that the motive is not profit, as such, but fear."

Exner was alluding to the fact that American industrial expansion was completely dependent on fluoride. Many heavy industries produce fluoride as a waste product, including steel, fertilizer and aluminum factories and coal-burning power plants. Christopher Bryson's extensively researched 2004 book, *The Fluoride Deception*, draws strong connections between the increased need to dispose of fluoride that arose during World War II and the development of the atomic bomb, and the initial push by the Public Health Service (today a part of the Department of Health and Human Services) to deem the chemical safe and beneficial for human consumption. Treasury Secretary Andrew Mellon, who ran the Public Health Service in the 1920's, was the founder and major stockholder in the Aluminum Company of America, the company at the forefront of early fluoride research. In 1939, ALCOA-sponsored biochemist Gerald J. Cox, who had no training in medicine or dentistry, made the first public proposal that the U.S. should fluoridate its water, and then went on to promote its use nationwide. According to 1999 estimates, instead of having to pay to dispose of their waste, these industries are given about \$180 per long ton (2,240 pounds) of fluoride by water municipalities.

If opposition has been around for so long, one could reasonably ask why fluoridation has gone largely unquestioned until the past few decades. Edward L. Bernays, the nephew of Sigmund Freud, deserves credit for the early and powerful popularizing of fluoridation. Bernays was hired as a public relations strategist by ALCOA lawyer Oscar Ewing to use his uncle's theories to create a propaganda campaign. He masterfully revolutionized the image of fluoride, which was commonly sold as rat and bug poison at the time. By the late 1940s, cities across the country were demanding to be fluoridated, unwilling to be denied this great boon for their residents' health any longer.

"Have you ever heard of a thing called fluoridation? Fluoridation of water? Fluoridation is the most monstrously conceived and dangerous communist plot we have ever had to face."

-General Jack D. Ripper
Dr. Strangelove, 1964

Another strike against the anti-fluoridation movement was that many of the early opponents to fluoride were part of extreme right-wing groups. In 1947 the same Oscar Ewing was put in charge of the Federal Security Agency. (This agency was eventually folded into the Department of Health and Human Services.) A Truman "fair dealer," he was a proponent of progressive programs like nationalized medicine, and fluoridation was grouped in with his other proposals, inciting conservatives to attack it as "creeping socialism." During the McCarthy era, the Ku Klux Klan and the John Birch Society charged that fluoridation was a communist plot initiated by the Soviets or corrupt government officials to poison Americans' brain cells. Bernays had a field day with these vocal and clearly unreliable opponents, successfully painting anyone who opposed fluoride, including reputable scientists, as an untrustworthy kook.

Kim Kaminski, a lawyer and the Executive Director of Oregon Citizens for Safe Drinking Water, has seen this bias continued in the current fluoridation debate. "Proponents of fluoridation always try to portray people against fluoride as kooks. I work closely



Teeth with fluorosis
Image courtesy of the Fluoride Action Network

a dentist, two lawyers, doctors, people with Masters degrees. These are reasonable people." She also emphasizes that a lot of doctors and dentists are opposed to fluoridation but are afraid to speak out against it publicly. "A lot of dentists have been blacklisted in the past and it's hurt their practices. They're afraid of being targeted, getting the ADA and the state agencies down their back."

Prominent modern scientists have spoken out against fluoride much to the detriment of their professional standing and credibility. In 1991, Dr. William Marcus, the former chief toxicologist for the EPA's Office of Drinking Water, lost his job after insisting on an unbiased study of fluoride's links to cancer. "I was right about fluoride's carcinogenicity, and now we know that," he said in a 1999 interview with Salon. In 1994 Dr. Phyllis Mullenix became an unwitting fluoride opponent. "To be honest, I thought studying fluoride would be a waste of time," Mullenix told Salon. "I mean it's in the water supply, so it's got to be safe, right?" She was as startled as anyone to find that fluoride is a powerful central nervous system toxin and negatively impacted brain function in rats. Mullenix said that she was ordered by a superior not to publicize the findings because they would jeopardize future grants from the National Institute of Dental

Research. She recounted that just hours after insisting that she would publish her results in a scientific journal, she was fired from her job as head of toxicology at the Forsyth Institute in Boston.

The fluoride debate was most recently pushed into the public consciousness in early July 2005. Just as the National Fluoridation Symposium was kicking off its 60th anniversary celebration, Harvard University opened an investigation of Chester Douglass, a prominent dentistry professor, for allegedly suppressing research by one of his doctoral students in a report to NIH. Douglass, who edits a newsletter funded by Colgate, and his student, Elise Bassin, began with the same raw data from a seven-year study of fluoride exposure and osteosarcoma, a rare and often fatal bone disease found mostly in boys. Bassin, however, focused her research on patients under 20 years old, something rarely done in fluoridation studies. She found that for boys drinking water with 30 to 99 percent of the fluoride levels recommended by the CDC, the risk of osteosarcoma was estimated to be five times as high as among boys drinking unfluoridated water; at 100 percent or more of the levels, the risk was seven times as high.

The finding had a domino effect, inspiring the Environmental Working Group to petition NIH to list fluoride in water as a carcinogen, and 11 unions, representing more than 7,000 EPA

employees, to call for a national moratorium on fluoridation programs. Bassin's findings, however, were just the most recent spark in this long-standing public health debate. EPA unions have been pressing the agency to limit fluoride in water since the 1990s when similar studies, like Mullenix's and Marcus's, first convincingly implicated fluoride in a variety of health concerns. Even in light of this compelling evidence, opponents still played on the extremist stereotype to discredit Bassin. Myron Allukian, a Harvard associate clinical professor, defended his colleague in the Harvard Crimson by saying that critics of Douglass's work are "probably fringe groups reminiscent of the movie Dr. Strangelove."

Then, in March of 2006, the National Academy of Sciences' National Research Council released a 576-page report, "Fluoride in Drinking Water: A Scientific Review of EPA's Standards," confirming some of the health risks that fluoridation opponents have been asserting for decades. The report acknowledged that ingesting the EPA's standard for the maximum amount of fluoride allowed in drinking water, four milligrams of fluoride per liter of water, can have adverse health side effects. Children exposed to the current maximum allowable concentration "risk developing severe tooth enamel fluorosis, a condition characterized by discoloration, enamel loss, and pitting of the teeth," (what Frederick McKay first saw in his Coloradoan patients) which can actually put them at risk for tooth decay and infection. The impact of this level of fluoride ingestion on bones was also acknowledged: "People who consume water containing that much fluoride over a lifetime are likely at increased risk for bone fractures." The report stopped short of linking fluoride with cancer, saying that the evidence is still too "tentative and mixed" to prove the connection.

The report focused on people who have the highest maximum concentration of fluoride in their water, just over 200,000 Americans; it did not discuss the health risks and benefits for the millions of Americans who have 0.7 to 1.2 mg/L of fluoride in their water. However, it did acknowledge that Americans are now ingesting more fluoride from unexpected sources. Because food is produced and processed with fluoridated water (which often also concentrates the fluoride), Americans are

exposed to fluoride in infant formula, processed cereals, juice, soda, tea, wine, beer, seafood, fish, canned soups, mechanically de-boned chicken and salt. The report also acknowledged the high variability of fluoride exposure depending on region; some areas have higher concentrations in their water due to naturally occurring fluoride and industrial pollution. Lifestyle is also a factor, as some people need to drink more water than average because of exercise, outdoor work or medical conditions.

As fluoride has always been promoted heavily for children's health, it was significant that the report recognized that, relative to their body weight, children and infants "are exposed to three to four times as much fluoride as adults." Children often swallow toothpaste as well, a practice that alone can give them more than the recommended amount for total daily fluoride ingestion.

If fluoridation's safety is up for question, why is it still promoted heavily by well-intentioned dentists, politicians and policy makers? Generations of medical professionals and the public have been inculcated with the fact that fluoridation is not only safe and effective, but a godsend to oral health. After 60 years of unwavering support from the ADA and the Public Health Service, a reversal at this point would likely cause uproar. "The might of the government is very hard to overcome," commented William Hirzy, a senior scientist in pollution prevention and toxics at the EPA, in a 2005 interview with Metrowest Daily News. "You know how difficult it is for the federal government to admit they made a mistake...How long did it take for the public health service to get off endorsing lead as a great thing in gasoline?" From the beginning, fluoridation has been largely an American experiment. While remaining 98 percent unfluoridated, Western Europe has seen the same sharp drop in tooth decay in recent decades as the U.S., most likely due to improvements in dental care, nutrition and the use of antibiotics. Germany and Holland abandoned early fluoridation program in the 1960s and 1970s, and now they, Sweden and France prohibit fluoride on public health grounds. A study by the British government in 2000 showed that water fluoridation may

How'd it get in there?

Fluoride occurs naturally in fresh water, but many cities add fluoride to their water supply for its oral hygiene benefits. Southern Connecticut adds fluoride to water during the treatment process before it enters the municipal supply, a technique used in other U.S. cities. Injection pumps add the chemical to the water in the form of liquid fluorosilicic acid, an acid made up of fluorine and silicon (other widely used compounds include sodium fluoride and sodium silicofluoride). The South Central Connecticut Regional Water Authority buys the acid for \$0.15 per pound from a chemical supplier, Thatcher Company of New York. The Thatcher Company is a distributor that purchases the chemical—an industrial by-product—from a plant in Florida, and ships it by rail to New Jersey, where the chemical is then shipped to Thatcher's clients. The United States Center for Disease Control and Prevention estimates that fluoridating water costs between \$0.50 and \$3 per person per year, depending on the size of the community in which the person lives. Fluoride costs are factored into household water utility bills. In Connecticut, fluoridation costs account for less than one percent of the average household's bill.

Although regulations vary from state to state, over 65 percent of the U.S. population—more than 246 million people—received optimally fluoridated water in the year 2000. Connecticut's unique state law mandates that all cities with more than 20,000 people fluoridate their water supply based on the acceptable monthly average, set by the CDC at 0.80 to 1.20 mg/L (about 1 drop of fluoride for every million drops of water). According to Tom Barger, the Water Quality Supervisor of the South Central Connecticut Regional Water Authority, sometimes levels will increase up to 4mg/L due to equipment malfunction; this level is permissible for very short periods of time only. Alarmed systems test for fluoride concentrations in the water every 30 seconds, alerting water quality monitors to recalibrate the system should the concentration minimally exceed the optimal level; the system can also be shut down entirely. This strict monitoring of concentration levels ensures that extreme concentration spikes occur only very rarely. For information on fluoride in your water supply, visit the Center for Disease Control's "My Water's Fluoride" web page at: <http://apps.nccd.cdc.gov/MWF/Index.asp>.

But I don't eat Fluoride, do I? Sure you do. It's in:

- Toothpaste
- Juice, Soda, Gatorade
- Wine
- Tea
- Salt
- Cereals
- Fish & Canned Fish
- Pureed Baby Food
- Artificially Deboned Chicken (eeewwww! Gross)
- Chicken Sticks
- Lunch Meats
- Powdered Infant Formula
- Breast Milk

To question fluoride is to question an intimate fact of day-to-day life: the water with which we fill our glasses, rinse our dishes, bathe our children. It is to challenge the medical establishment, powerful corporate interests and a strong public mindset. As evidence of fluoride's risks builds, though, the tide is beginning to turn. "The mask is finally falling," says Joel

But for anti-fluoridation activists around the country, who have been convinced of fluoride's dangers for decades, the changes aren't happening fast enough. "I'm amazed at how they continue to get away with this," says Kaminski. She stresses that fluoride is not a panacea for dental health, but that "education, good diet and access to affordable dental care" are the real way to reduce cavities. But she echoes Griffiths optimism about the recent

SODIUM FLUORIDE

CLASS 6.1 UN 1890 POISON

WARNING: Hazardous if swallowed or absorbed. Do not breathe dust. Avoid contact with skin and eyes. Wash thoroughly after handling. Keep container closed. Do not eat, drink or smoke while using this material. **Consult an Expert.** If you are in any doubt, contact your local health authority or poison centre. **CALL A PHYSICIAN** immediately if you have been exposed. **Supplies in London:** in 1985 17400. **Supplies in other parts of the world:** contact your local health authority or poison centre. **For more details see page 10 of the 1985 edition of the Yellow Card.**

6

Chemtech
Products

1528 East Penn Road, Suite 101
St. Louis, Missouri 63103
314-835-7100

Sodium Fluoride Barre

A. Students at Columbia University's Department of Earth & Environmental Sciences

<http://eesc.columbia.edu>

Answer Key to Organic Sex Quiz

1. a) 2 b) 3 c) 1 d) 4
2. a) 2 b) 1 c) 4 d) 3 e) 6 (extra points for being sexy!)
3. a) 2 b) 1 c) 4 d) 3 e) 5
4. a) 4 b) 2 c) 5 d) 1 e) 3
5. a) 1 b) 1 c) 1 d) 1 e) 1
6. a) 2 b) 4 c) 1 d) -3 (poor lil' guys)
7. a) 1 b) 4 c) 2 d) 3 e) 5
8. a) 1 b) 3 c) 4 d) 2 (high stylin!)
9. a) -1 (gross!) b) -14 c) -2 d) 5
10. a) 1 b) 2 c) 4 d) 3

Any negative number: Stop Flushing Your 'Doms Down the Drain!

0-10: Dirty Birdy

11-20: You're Not Even Trying, Are You?

21-30: Average Blow (I mean Joe)

30-40: You May Be Doing the Nasty, But You're Doing it Clean

40+: Greenie Weenie (Hai I said "weenie")

Advertise in **SAGE**.
It's better for you than brushing.
sagemagazine@yale.edu

Q U I Z

HOW ORGANIC IS YOUR SEX?

1. Let's get you a lover. Your idea of a romantic first date is:

- a) the tried and true Dinner And A Movie.
- b) going skinny-dipping in the silvery New England moonlight.
- c) hittin' up a killer NASCAR race. Denny Hamlin's only 80 points back!!
- d) volunteering to help harvest pumpkins at the nearby community farm.

2. Good job. When wining and dining that special someone (to get them into bed, obviously), you:

- a) take them out for a nice French meal.
- b) grab some burgers and fries and eat 'em in your parked car.
- c) cook them a four-course feast of kale, chard, collards and escarole.
- d) go to that new Thai fusion place everyone's been talking about.
- e) show up with chocolate-covered strawberries and champagne, and say, "Let's skip dinner."

3. You get back to your house with your evening guest. Your consummate love nest consists of:

- a) a queen-size bed.
- b) a four-poster bed with leopard skin comforter. Oh, and the stuffed polar bear trophy in the corner.
- c) a straw mat on the floor.
- d) a blanket on the top of the town water tower.
- e) a spongy grass clearing by your favorite pond.

4. The music is just right and you are owning the situation. When you go to slip into something more comfortable, you have in mind:

- a) a faded hemp T-shirt (and Chacos).
- b) lacy lingerie and fishnets. (Mail order, baby!)
- c) your birthday suit.
- d) skintight black leather pants and a Lycra corset. (Whip not included.)
- e) soft cotton PJs.

5. You've browsed each other's STD reports and you're thinking about protection. Your preferred birth control plan is:

- a) condoms. And lots of 'em!
- b) using the phase of the moon to stay in sync with your ovulation cycle.
- c) the Pill (pick one or two). Progestilicious!
- d) birth control? What birth control?
- e) abstinence. True Love Waits.

6. The nightstand drawer is open and your stock of accoutrements is happy to be seeing the light. Your sex toys of choice are:

- a) made of silicone—it really feels like skin!
- b) vegetables. cucumbers, zucchini, whatever's in season.
- c) made of plastic and hard as a rock.
- d) whoa. Are those hamsters?!

7. All your work has finally paid off. Things are pretty hot, and you think some lubrication might be nice. You go for:

- a) Crisco.
- b) calendula and anise tincture.
- c) K-Y. All-purpose!
- d) your Earth Balance. Mmmmmm.
- e) just plain saliva. It's nature's choice.

8. This is a family magazine, so I can't discuss what you're doing now. But you're doing it:

- a) with all the lights on.
- b) by candlelight.
- c) in the dark.
- d) by the glow of your jalapeño Christmas lights.

9. Your biological urges have been fulfilled, but your evolutionary ones have been outsmarted—you used a condom. It's time to dispose of it by throwing it:

- a) in the recycle bin.
- b) in the toilet and flushing it.
- c) on the floor next to the pizza box.
- d) in the trash can.

10. Ahhhh. Post-coital bliss. You decide to finish the evening off by:

- a) smoking a cigarette. Just like in the movies!
- b) rolling over and falling asleep. Just like in the movies!
- c) reading Baudelaire to each other.
- d) reading *Small is Beautiful* to each other.

Answer Key Opposite Page



CHRISTIAN SHAKNATIS

New Label Acknowledges, Promotes Immigrant Labor

ARIANNA SPARKS

Hoping to capitalize on the burgeoning Latino market and the recent surge in food certification programs such as organic, American farmers are turning to a new labeling scheme. Its name: Hispanic Harvested.

The label aims to take advantage of existing structures in the farm labor market, which uses 90 percent Latino workers, mostly from Mexico, but also from other Central American countries.

"We're proud of our Latino laborers, and we want consumers to be proud of them too," said California vegetable grower Lloyd Paumgartner, who lost three fingers in a meat grinder operated by a Mexican. This certification, Paumgartner adds, is farmers' way of saying "let them in" to the United States government, which has been hotly debating entry restrictions for Latino workers.

The label, which appeared recently for a test-run in California grocery stores, has inspired some consumers, and in others, it has prompted a change of heart.

"I always thought illegals were good-for-nothing wetbacks who used my tax dollars to get pregnant and make schoolchildren speak Spanish," said Joe Danish, a San Diego resident. Danish, who was standing in line waiting to purchase soda and pork rinds, thinks the label is a positive step. "It's actually not often that I buy produce, sometimes onions and peppers for my barbeques. It's good to know that these illegal Mexicans are being put to work," he added.

Soon, salsa, Tabasco sauce and other processed foods, whose raw ingredients and factory labor come from Hispanic immigrants, will also carry the label, although in the California pilot program it has only been applied to fresh-picked products. There



THE CA

FAUX NEWS: FAIR

are hopes of extending the label beyond simply produce and vegetable products, since Latinos also work in domestic sweatshops and meat-packing plants.

The American Farm Bureau, a farmer lobbying and advocacy organization, helped farmers draw up the certification guidelines.

"Ninety percent of the laborers have to be Latino, and the picking has to be done by hand, not by machine," said Mary Kay Thatcher, Bureau public policy director. Corn and soybean growers, she says, aren't entirely happy with this rule, as most of their crops are harvested by machinery. Thatcher admits this is a problem, and says solutions are in the works.

"We hope, by tracing the immense quantities of oil, fertilizers and pesticides used by these farmers to production sites (*maquiladoras*) in Latin America, we can also include these growers in this certification program," she said. "Perhaps we'd have to change the label to something like Latino Labor," she adds, since, under that system, harvesting wouldn't be the only farm-related work done by Hispanics.

The label—a small, circular seal—is red, white and green (the colors of Mexico's flag). It features the silhouette of a day laborer, crouched in a field picking vegetables or orchard produce. On the label, the laborer wears a face mask and a hat, to protect him or her from chemicals and the elements. The image of a mouse with a long moustache and large sombrero was the runner-up image for the exciting new label.

"We wanted to show a worker doing what he does, but in a safe, controlled manner," said Ben Yapa, the label's

designer. "All workers should look like this," he added, noting that not every laborer wears the appropriate clothing. He hopes the label will encourage proper safety precautions among Hispanic workers buying the labeled products.

Farm workers on Paumgartner's farm are not quite sure what to think of the new certification scheme.

"We just want to make money to send to our families," said José Chavez, glancing up from his tomato-harvesting crouch. But Joshua Newstrom, a professor of agricultural economics at North Dakota State who served as a primary advisor on the label, expects the label to boost sales in both the liberal white and Latino customer base.

"Everybody buys these products," Newstrom said. "Now, by purchasing Hispanically Harvested products, both Latinos and Latin-lovers can make a statement about their support for immigration, about equal opportunities for Hispanics, about the free exchange of both trade and labor across country boundaries."

Paumgartner, the California grower, agrees. "I love my workers," he said. He thinks the labeling scheme will put pressure on lawmakers to allow more immigration, and force acknowledgement about the real backbone of the country's economy: immigrant labor. "Anything that helps them jump that river a little quicker and easier is something I support," he said. ♪



BBAGE

AND UNBALANCED

Major Scientific Progress Made on Climate Change

DARTH WANDERLUST

Democrats announced an exciting new breakthrough on the world's foremost environmental problem: coming up with a catchy name for climate change. Their new name: "Super Deadly Weather Disaster II."

"We couldn't be more excited about this new nomenclature," says Dr. Dümenglüm, of the radical fringe group Union of Concerned Scientists. "We really think that this is going to solve the problem of climate change once and for all," expounds Dümenglüm. "Traditionally, science has just referred to the phenomenon as

'Global Warming,' since—obviously—we were observing a warming of the globe. Then we shifted over to 'Climate Change' because, technically, climate could get colder in some places while getting warmer in others, and we didn't want to embarrass ourselves."

Although millions of dollars went into redrafting letterheads and campaign materials, society still grappled with potential devastation at the hands of global warming. "The fact is, neither of these names worked very well in scaring people enough to care about the problem," Dümenglüm added. "Who's afraid of a little warm spell? And what's wrong with changing the climate every once in a while? Flexibility is good."



UCS then hired a veteran marketing firm, DogmaCorp International, to run focus group trials in order to come up with the perfect weather catastrophe appellation. Progress was admittedly slow at first. "World War III," "Sweatin' to the Oldies," "World War IV," and "Cheney/Rumsfeld 2008" frightened people immensely, but unfortunately were already taken.

Eventually, scientists came to a consensus: the disaster-formerly-known-as-climate-change was transformed into "Super Deadly Weather Disaster II." "Basically, whatever weather disaster springs to mind—the Asian Tsunami, Hurricane Katrina—well, we're talking about its sequel. That's how bad this is going to be," Dr. Dümenglüm enthused.

Promotional posters placed around the New York and Los Angeles metropolitan areas seemed to show the success of the discovery. Passersby showed angst and cowered in neighborhood bars. "I'm outraged! And terrified," said John Crabtree of Brooklyn. "What is the government going to do to protect my family? I'm a taxpayer, God damn it!"

Evidence of the new name's enhanced political leverage has already emerged. When asked about his position on Super Deadly Weather Disaster II, Senator Inhofe (R-OK) replied, "I don't know what it is, but I sure as hell ain't votin' for it."

Despite the increased concern that has erupted worldwide since the re-branding breakthrough, U.S. President George W. Bush seems unfazed. "Bring it on! The American people welcome this opportunity to show the world our ingenuity and love of freedom." Vice-President Dick Cheney was unavailable for comment. Aides said he had "gotten the hell out of Dodge" and headed for an undisclosed location. ☞



FISH IMAGES • MICHAEL NUDEMAN

NEWS IN BRIEF

Wall Street, NYC. The latest—and littlest—upstart venture capital firm has just gone public. TeenyWeenyTechnologyTM, TeenyTech for short, began in July 2006 with its inaugural invention: the ChapStik. The ChapStik rivals BlackBerry, iGo, subnotebooks, mini-laptops and the cell phone for the newest, tiniest on-the-go technology. The ChapStik, created by micro-maniacs John Small Pockets and Sharon D. Minutive in their Roller Blade City, CA offices, is a laptop with all the normal software, a cell phone, minifax machine and a computerized personal secretary that can be installed into a tube of your favorite flavor of lip moisturizer—be it Blistex, Kiss My Face, Burt's Bees or the traditional Chapstick brand. TeenyTech anticipates releasing its first update, Chapstick 2.0 Cherry Flavored, early next year. Cherry Flavored will have expanded capabilities, and can be installed into circular metal lip balm containers.

Cape Cod, Mass. Former Secretary of Defense Donald Rumsfeld announced just one day after his retirement that he is now following his lifelong dream: starting his own non-profit organization to save diminishing whale populations around the world. The organization, Moby Dicked, is kicking off its campaign by challenging indigenous Japanese, Icelandic and Eskimo whaling cultures, demanding that they stop killing whales to use in their whale lard-burning oil lamps. "All those squinty-eyed frozen heathens think that killing those poor, cute little whales is their natural right, but they are wrong," said the former Secretary, adding, "Why can't they just plug their lamps in, like everyone else?" Before becoming a missile defense expert and waging war on terrorism, Rumsfeld was a Navy pilot. "I loved watching those majestic creatures breaching and squirting and belly-flopping in the ocean next to the bombs I dropped," he said. "I work at a standing desk in the dark for 18 hours a day. There's no need to continue the depletion of these great creatures just to ease eye strain."

THE CRITICS' PAGES

A BOOK

Cotton: The Biography of a Revolutionary Fiber

DEB JENSEN

Penguin Books, 2005, \$15, 383 pages

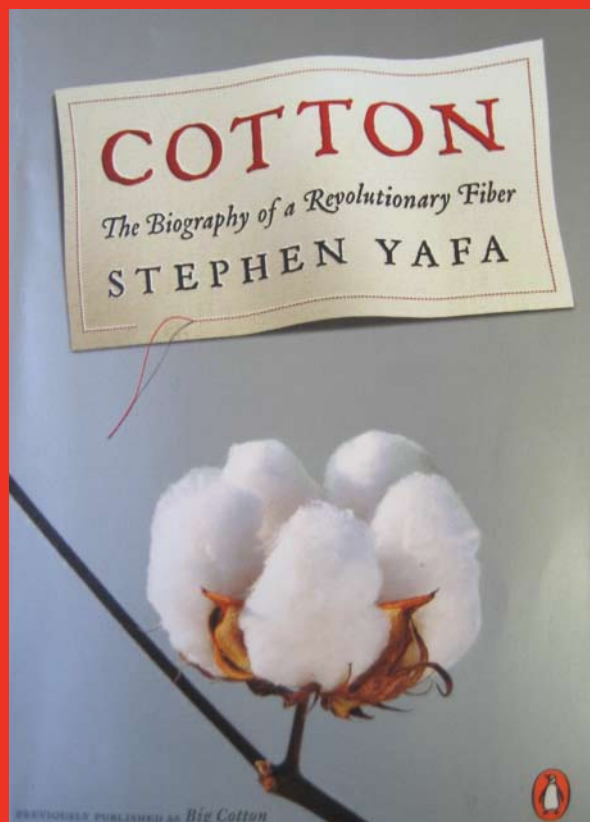
"No one wrote an epic like *Gone With the Wind* as a paean to the glory and hardship inspired by the rise and fall of textured soy protein or fructose. Somewhere along the way the myth and reality of cotton merged to form a perfect union, much like the red and white stripes on the American flag."

In this, his first work of non-fiction, Stephen Yafa—wine columnist for the *San Francisco Chronicle*, playwright, screenwriter and novelist—manages to wrangle the big topic of Big Cotton into a credible history/social commentary/economic essay/pop culture review. Sound a bit wide-ranging? That is exactly the author's premise. Cotton is omnipresent. Yafa offers a divergent look at the history of America from Revolutionary War to present, a Howard Zinn-like approach that makes you go, "Huh."

Although presuming to capture the entire life history of cotton, including its biological evolution and interplay with world cultures, the U.S. story prevails, and it's plenty complex and gritty. Almost every citizen will find a personally relevant fiber, as did the author who stumbled upon the topic during a midlife quest that took him back to his boyhood home, a faded town in Massachusetts that once was at the center of U.S. textile manufacturing.

Yafa's effort to illuminate sometimes gets

lost in puns, similes and uneven research—a bias as wide as a bolt of chintz. Occasionally, the book reads like a collection of sound bites. Overall, however, ample anecdotes



juxtaposed with a cottony perspective on some of America's most grueling social and political struggles make for an easy read. The chapters about denim are the best in the book. Slavery, brilliant innovation, the California gold rush, child labor, DDT, The Gap, B.B. King, the World Trade Organization and the genetically modified organism debate are all stitched into the story. One aspect that didn't make the cut is an account of the ecosystem function, habitat loss and

impact to American Indian tribes when colonial agriculture commenced. This is no scholarly tome, but the notes, glossary, bibliography and index are useful and provide evidence that substantial research was undertaken.

The author's relationship with his topic is one that combines both fascination and repulsion. And by the end of the book, I felt the same way. From an environmental and social justice point of view, cotton is a stinker. Growing it requires too many insecticides, herbicides and chemical fertilizers, not to mention the climate-changing fuel burned throughout the process. Farm workers get sick. U.S. government subsidies manipulate world markets and squeeze poverty-stricken small farmers in underdeveloped nations. Outsourcing to China has contributed to 300,000 U.S. workers losing their textile manufacturing jobs since 2000.

But my cotton turtleneck feels so snugly and my jeans are at that stage of denim perfection. As usual, a bit of knowledge leads to pangs of conscience.

Yafa says, "Organic cotton accounts for less than one-third of 1 percent of world-wide production—most of it originating in Turkey, Peru and Uganda." In California, the Sustainable Cotton Project, led by an organic farmer, uses "shrewd guerrilla tactics" in marketing to the likes of IKEA, Levi's, Gap and Nike. Can a wee little band of people with a change in conscience influence an industry and affect social change? In the realm of Big Cotton it has happened before. And cotton is not going away. It is, after all, *The Fabric of Our Lives*.® ♪

Organics Meets the Blue Jean

Kuyichi, a European company that engages Peruvian farmers in a partnership, has created a jean that "hugs the butt" in a very sexy way.

Rawganique, a company out of British Columbia, has been producing fashion for a "fragile planet," such as unisex hemp pants and organic cotton jeans, since 2000.

Levi's has decided to join the fringy fashion companies and will introduce their new line of organic jeans in late 2007. Natural dyes and recycled zippers will accompany the organic cotton.

A WEB SITE

U.S. Department of Òm

JED HOLTZMAN

<http://www.planetdan.net/pics/misc/georgie.htm>

Stress. It's "America's #1 health problem," according to the American Institute of Stress. The vise of modern existential angst—work, family, bills—tightens every year as the amount of money spent by frazzled citizens on spa treatments, yoga lessons and Feng Shui consulting climbs and climbs. At the same time, average real incomes continue their downward slide, leaving behind a nation buried in credit card debt. There seems to be no way out of this vicious cycle.

Luckily for us all, one man has bravely soldiered forward to help us free ourselves from the anxieties of our daily lives. Ladies and gentlemen, for the mere cost of an internet connection—which you would have purchased anyway to skim Craigslist, eBay and Amazon for things you don't need—you have at your disposal: An Untitled Web Page That Will Change Your Life!

Go to this site and you will find, quite simply, Bush (as in George W.). And orbs. And falling. Forever.

These things merge into a potent meditative tool, a moving mandala of political dissatisfaction I shall deem "The Falling Bush Game." The Falling Bush Game features the leader of the free world tumbling, flopping and sliding over orbs of varying sizes. As this URL unfolds before you, your worries will fade. Your eyes will glaze and your breathing will become even. Muscles in your back and neck will relax as you stare at the undulating image of Bush in front of you. Every once in a while, he will get stuck on an orb



Bush Takes a Dive



and need a little tug with your mouse to send him on his way. Or, by clicking your mouse, you can also spin and launch the President at will, helping him fall in a variety of entertaining ways. Best of all, this virtual stress release means that no one gets hurt! There is no need for awkward conversations with Homeland Security!

On the other hand, Planet Dan, the apparent author of the site, might have had the pleasure of a few conversations with the Feds. I'm unaware of when he was sufficiently inspired to create this monument to our president's limberness, though perhaps the 2004 election pushed him over his programming edge. I discovered this little corner of the "internets" a year ago, so I would not be remiss in telling you that it has existed for at least that long. From his Web site, I can only assume that Planet Dan is a kindred spirit—overworked, underpaid and depressed about the news. And one day he simply decided to take matters into his own hands. The result: an astounding contribution to worldwide meditative enlightenment.

Hats off to you, sir. ♪

Gap, Inc. recently introduced their new line of clothing Gap (RED), and will contribute half the line's profits to the Global Fund to Fight AIDS, Tuberculosis, and Malaria. Interestingly, Gap, Inc. also has a factory (sometimes known as a sweatshop, see page 43) in Lesotho, a small country in southern Africa. 320,000 adults and children in the country of 2 million either have AIDS or are HIV-infected, according to 2003 statistics. "Life isn't easy in Lesotho, but there isn't a sense of hopelessness," says Gap, Inc.'s Chief Foundation Officer Bobbi Silten. Hmm, not easy, he says.

Dressing for Success

JOHANNA ZETTERBERG

What does an environmentalist look like? Think about it. Get a picture in your head.

What came to mind for you? Was it the long-haired, bearded kid in Birkenstock Arizonas, patchwork corduroys and a Stewart/Colbert '08 t-shirt accessorized with a Save Our Wild Salmon petition at your front door? Or was it the dude in the Keens, the Patagucci vest, Gramiccis and buns of steel whose dust you're eating on the trail? Or perhaps it was the guy next to you at the stoplight, idling noiselessly in his Prius, distracted by the newest Utne Reader sticking out of the solar backpack on the passenger seat?

The idea of dressing for success came out of a conversation I had with friends fresh after summer break. We were still wearing what we had worn during our summer internships; we all worked on environmental issues but in very different capacities. Elizabeth, casual in flip-flops and surf shorts, looked totally approachable, cute as the dickens and infinitely reasonable in the context of American fashion. Zachary, in his signature button-down shirt with cowboy boots peeking out from under his Carhartts, exuded a sophisticated blend of field experience and academic research. I was wearing the slightly form-fitting, slightly funky, completely-appropriate-at-the-office dress that maybe told the world, "psst...check out the unexpected ruffled edge on my sailor-pant-inspired neckline...imagine this calculated risk-taking and progressive creativity applied to the intractable problem of global warming!"

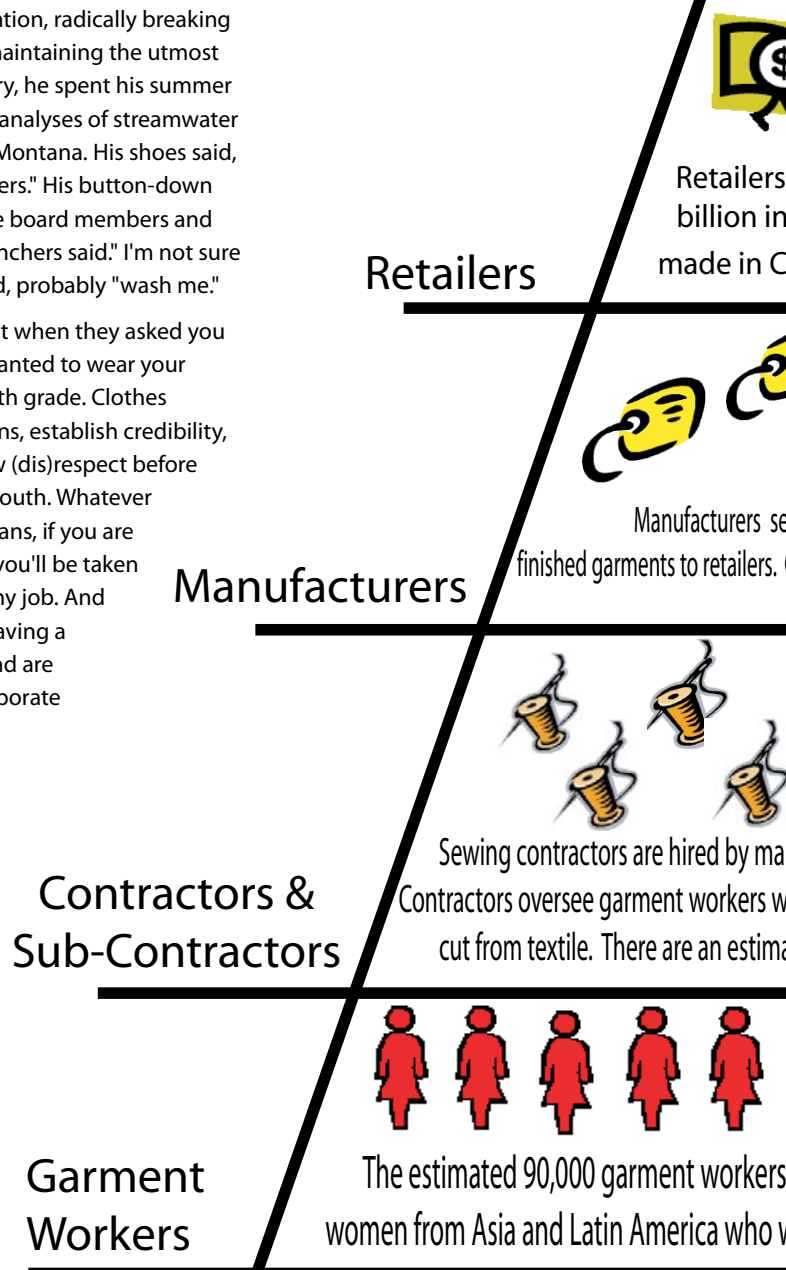
Though our individual appearances were completely different, we were each dressed to kill in our various capacities as environmental advocates.

Elizabeth spent her summer roaming the beaches of Hawaii, gathering public input for a coastal management plan. By looking like everyone else on the beach, it was easy for her

to get people to talk to her honestly about a controversial subject, because she fit in as one of them. I was in New York City, working for a foundation that supports the grassroots effort of mayors nationwide to reduce local greenhouse gas emissions, filling the void at the federal level on climate protection. My dress mirrored the work of the foundation, radically breaking the status quo while maintaining the utmost in civility. As for Zachary, he spent his summer performing economic analyses of streamwater rights adjudication in Montana. His shoes said, "I can talk to the ranchers." His button-down shirt said, "I can tell the board members and politicians what the ranchers said." I'm not sure what the Carhartts said, probably "wash me."

Your parents were right when they asked you if you were sure you wanted to wear your pajamas to school in 8th grade. Clothes communicate intentions, establish credibility, reveal values and show (dis)respect before you even open your mouth. Whatever "environmentalist" means, if you are one, dress the part so you'll be taken seriously. Just like in any job. And the next time you're having a particularly bad day and are tempted to shout "corporate pig!" at the Suit on his BlackBerry, Wall Street Journal tucked under his arm, think twice. He might just be the guy responsible for the green power purchasing option at your local electric utility. ♣

CALIFORNIA'S GARMENT INDUSTRY



Pyramid of Power

Hip & Happy

AMY ALTON

I'm still not sure what compelled me to start buying American Apparel—whether my desire to be socially and environmentally conscious won out over my need to be fashionable and trendy, or vice versa. It could have been the hip and edgy ads featuring tight asses in cute, little bootie-short underwear. It could have been the not-so-beautiful beautiful models enticing me with those suggestive glances. Or it could have been the promise of simple, comfortable clothing that wouldn't come at the cost of exploiting workers. Whatever the impetus, I found myself standing in line to snap up American Apparel t-shirts, tank tops, hooded sweatshirts, and yes, even spandex leggings.

sell \$24 clothes California.

and distribute Often they design the clothes.

manufacturers to make the clothing. who sew together parts of the garment ated 4-5,000 factories in California.

in S. California are mostly immigrant work 10-12 hours a day to make clothing.

Over and Profit

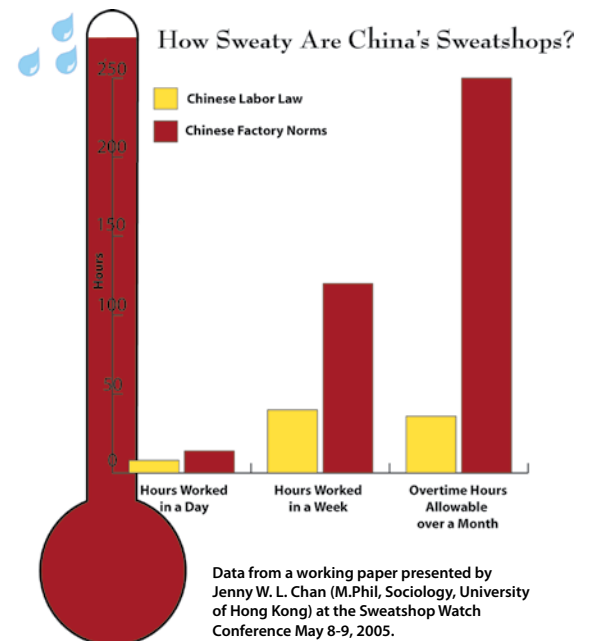
(c) Sweatshop Watch, 2005

American Apparel stands as the antithesis to the smarmy business practices of the garment industry, where many workers slave away in sweatshops, often in developing countries. Its clothes are made in a factory in downtown Los Angeles. The company's vertical integration allows them to consolidate every stage of production under one roof, which saves costs. Because of this, AA is able to pay employees a living wage, provide loads of social programs and perks, and still be competitive with other clothing manufacturers. But is their clothing any good?

I think so. American Apparel's clothes speak for themselves. Shoppers can choose between short-sleeves, long-sleeves, collared shirts, jackets, shorts, pants, skirts, dresses, swimwear, intimates and accessories in a variety of colors and fabrics. The line is simple, colorful, and reasonably priced, and the clothes fit well. The cotton t-shirts and zip-up hoodies are among the softest and warmest I have worn. The quality of the clothes is improving over time; more recent items seem to be holding up better than the older stock, which frequently fell victim to holes and struggled to retain its color through the wash. My latest purchase, however, a charcoal gray jersey t-shirt dress, remains a favorite. It's still on the cutting edge of fashion and as snug as it has ever been.

American Apparel has built its consumer base through market appeal and advertising, rather than relying on the social conscience of its customers. In fact, most shoppers I asked were unaware they were supporting a socially responsible and eco-friendly company. One sorority girl looking for her

Halloween costume was surprised to learn her black dress was actually made in Los Angeles, just a few hundred miles down the coast from the Oakland store. The company has tapped into the MySpace subculture, targeting the younger set with modern, racy advertisements. Whether this will alienate the older, more tranquil environmentalist consumer, I don't know. I did see a hippie in the store the other day, buying an organic cotton shirt for her dog. No matter who the company sells to, the bottom line remains the same—American Apparel succeeds in making comfortable, colorful, soft and simple clothing for today's socially conscious (or unconscious) consumer. More importantly, I like my leggings, and with winter around the corner, I may need another sweatshirt. ♪



Sweatshop

—The word exited earnest liberal-activist bitch sessions with its headline-making entrance into the vernacular sometime around 1995. Word had just gotten out that Kathie Lee Gifford's Wal-Mart clothing line was made by young children working in labor rights-abusing factories in Honduras. This news sparked a media frenzy and ended with the ex-morning show host in tears vowing firmly to fight sweatshop labor in the production of her clothing. Three years later, however, she was again fingered, this time for factories in El Salvador.

But sweatshop labor doesn't only exist in developing nations. In Los Angeles and other parts of southern California, workers—mostly Asian and Latino—work hard days, often for less than minimum wage. This graphic (left) from the non-profit organization Sweatshop Watch, illustrates the structure of California's garment industry.

LISTED

BRIEF, NOT BOXERS

Top Ten Most Confusing Foods

10. Campbell's Soup At Hand
9. Baby corn
8. Turducken
7. Red Delicious—red, but not delicious
6. Jell-O
5. Texturized vegetable protein
4. Instant potatoes—how do potatoes become powder?
3. Pirate's Booty
2. Tasti D-Lite—where did the calories go?
1. Mock duck

Top Seven Worst Things About Organic Panties

7. Bad news: you're a hippie
6. Saggy ass and bunch butt
5. Natural dyes make for not hot off-white panties
4. You just wasted \$50-60
3. Organic decomposition or crotch rot?
2. No one will have sex with you
1. The looks from everyone else in the locker room

Top Eleven Worst 80s Comeback Trends: Current and Impending

11. Crimped hair
10. Hypercolor T-shirts
9. Big bangs
8. Unplucked eyebrows
7. Leggings
6. Scrunchies
5. Side ponytails
4. Skinny jeans
3. Spiral perms
2. Single-ply mesh
1. Neon

Top Seven Best Energy Drinks

7. Liquid six
6. B-to-the-E
5. Amp
4. Sparkxx
3. Spykes
2. Guaraná
1. Bacchus F

Top Ten Foods Items

You Didn't Know Contained

HIGH FRUCTOSE CORN SYRUP

10. Lots of Breakfast Cereals
9. Ketchup
8. Cough Syrups
7. Pretty much everything made by Kellogg's, Nutri-Grain, Nabisco
6. Thomas' English Muffins
5. Oscar Meyer Lunchables
4. Pickles
3. Most Breads
2. Cottage Cheese
1. Hansen's Natural Sodas

Top Three Best Things About Organic Panties

3. No synthetic material-induced infections
2. You're saving the earth
1. If the plane goes down, you can use them as a parachute



hip	The Keeper (a.k.a. Diva Cup)	Kleen Kanteen	Buying local AND organic	Agri-tourism	Keens	Urban wind power	Açaí
hippie	Organic cotton tampons	Nalgene	Buying imported organic	Ecotourism	Chacos	Rural wind power	P♥M
dippy	Toxin-laden, bleached cotton tampons	Disposable plastic bottles	Buying at the Safeway	Club Med	Birkenstocks	Coal	Echinacea

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Activism has our industry looking for cover.

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Harness the Wind, Not the Wild

JOSH WEIL

Ten years ago, my father, brother and I cleared a patch of woods and built a cabin along a swale deep in the Blue Ridge Mountains of Virginia. Sometimes at dawn, we sit on the porch admiring a view as endangered in America as any ivory-billed woodpecker or spotted owl. The mist clears; barns and apple trees reveal themselves. Miles away, one lone neighbor's light winks on. It's so quiet we can hear the cattle pull at the grass.

People want to put windmills here, 400 footers that will send an alien whooshing out over the valley. Sunlight that used to touch limestone rocks and ancient beech trees will hit a battalion of giant white towers and flare off whirring 70-foot blades.

How selfish of me, you say, to decry the spoliation of my own view at the expense of a clean energy alternative to the oil and coal addiction that is destroying our planet.

The truth is, it's not my view I'm worried about. It's the fervor to build these turbines on other ridges just like it, from the Blue Ridge Mountains to the Adirondacks, in sites scattered across the majestic expanse of the Great Plains and intruding upon carefully preserved views of Nantucket Sound.

Many of us who call ourselves environmentalists mean, at heart, that we are lovers of the natural world. What good, then, is protecting our environment at the cost of despoiling

the last places in America where we can still experience peace in nature?

There is an alternative. But nobody's talking about it. It's time we did.

Ask yourself this: Why erect these machines in rural landscapes? Why not put them in manmade environments like individual home lots or industrial sites? What if urban and suburban America tapped into the vast resource right above it?

That's what I wondered when I stood in Manhattan looking at a windmill on East 11th Street. Thirty years ago three radical architects got a crazy idea, and like the best innovators in a country built on innovation, they ran with it. They stuck an old farm turbine five stories up on the roof of a tenement building. Though defunct now, it once powered lights in the hall and fed a battery in the basement. And to those critics within the wind power industry who harp on the problems that did in that first urban windmill, I would point to three decades of innovation that have put us on the cusp of making a dream a reality: harvesting energy right where it's used most. That would be more efficient, more easily integrated and less susceptible to transmission loss, and safer. In this post-9/11 world, a decentralized, localized system of power generation would make it nearly impossible for terrorists to blackout a city's grid. Though



An Urban Windmill in Cleveland
Wind Turbine Images Courtesy of the National Renewable Energy Laboratory

urban wind power doesn't have as much resource potential as conventional wind farms, it easily has enough to warrant sparing the most pristine landscapes.

So why is almost no one—from environmental groups to Big Energy—talking about urban wind power? Because it's not really feasible? In the United Kingdom, Windsave Ltd. and British Gas plan to roof-mount windmills on thousands of private homes. In Massachusetts, the town of Hull obtains its energy from a turbine overlooking the high school football field. On one windy day it can provide a year's worth of energy for three homes. From inventors like Bill Becker, who are creating dramatic new designs, to companies such as Proven Energy that are already mounting turbines on urban rooftops, one thing is clear: Harvesting urban wind power is doable.

What's lacking is the guts to challenge the accepted model of wind power, the guts shown by those young architects in New York's East Village back in the seventies. When it comes to America's wind power industry and the debate that surrounds it, such a bold vision is as endangered as our country's rural landscapes.

It's time we tapped into that spirit so we can harness the power of the wind without destroying the natural world we're trying to save. ♪



Milk Virgin • ALISON SILVA



OUT TO DRY • ALLISON MEIERDING

That brand new white t-shirt has its own dark history, dripping with sweat, labor and chemical waste.

COVER

FIELD OF TEES • ALLISON MEIERDING

Imagine an idyllic setting for the grand scale output of t-shirts. Then imagine what the production of consumer goods means for this idyllic setting.