

September

- Stalk w/ the prairie.
- partridges.
  - "Space" (sharp tails)

Month on Harvest Moon.  
Full on Sept. 8

The gem. (You may  
fear it, but...)

Janet + the grouse/gem.

(Draw from the trophy  
bird story)

A skinny hunter:  
her, OK, we, Tess Oct

→ Use the Force (Janet)  
(David wasn't trying to  
make his wife had. we  
always do this.)  
One shot gun —  
lots of boots.

Stories →

"Use the Force" (already in file)

~~"News from Mt. Olympus"~~

~~Dear Section from Holandry~~

"Space" (filename "Prairie")

Work in "middle of Nowhere" ?

# Pronghorns' Lightning Speed May Be Legacy of Past Predators

Continued From Page B9

subjected to the natural rigors faced by their ancestors.

Until 10,000 years ago, the rigors of life for pronghorns appear to have been extreme.

In order to survive, at one time or another these doe-eyed cud-chewing creatures had to evade the North American cheetah, the giant short-faced bear, a long-legged creature that was probably an impressive runner, as well as lions and jaguars, which were even bigger and faster than they are today. The young and the weak faced an even greater array of dangers with saber-toothed cats roaming about as well as numerous types of wolves and plundering dogs.

But the worst, by far, were the hyenas equipped with cheetah-like limbs and huge jaws full of ripping teeth.

"I don't think there's a predator alive today," said Dr. Byers, "that would've been as ferocious as that long-legged hyena would've been — its back as high as a person's waist and running in packs as it probably did. It would have been able to get on a group of pronghorns and drag them down and rip them apart. It would have been truly formidable."

Once the pronghorn is envisioned amid such predators, its speed seems much less extraordinary and much more obligatory, as it is hard to imagine any save the fleetest getting out of the Pleistocene alive.

And fast they became. One researcher clocked pronghorns at 55 miles an hour, though biologists guess that they may go even faster. Others tracking pronghorns by light plane going at 45 miles an hour say they have seen pronghorns put on a little burst of speed and effortlessly slip away. Pronghorns are endurance runners as well, going at 45 miles an hour for several miles without showing any signs of exhaustion.

Despite the explanatory power of ghosts of predators past, those studying behavior rarely stop to consider such vanished enemies, which was one of the major reasons Dr. Byers said he decided to write the book.

Dr. Daniel Rubenstein, a behavioral ecologist at Princeton University, called Dr. Byers's work "high quality" and agreed, saying that typically behavioral researchers would only consider such historical explanations if forced to do so. "Digging back into

the past to see why traits originated is almost a last resort," said Dr. Rubenstein, who described it as an explanation used only after researchers could not find any current use for a behavior.

Part of the reluctance to entertain such ideas, is the difficulty of testing hypotheses in which the principal players are all extinct.

Dr. John Fryxell, a behavioral ecologist at the University of Guelph in Canada, who called the soon-to-be-published book "convincing," said historical explanations were always more difficult to test. Just as scien-

## The idea of relict behaviors is controversial among biologists.

tists cannot repeat and manipulate the "big bang," researchers theorizing about long-dead predators cannot remove and rearrange extinct hyenas. They must instead examine whether other modern-day evidence supports their theory of the predators' importance.

In Dr. Byers's case, there is much supporting evidence, as many aspects of pronghorns' lives appear to have been shaped by their ancient enemies.

Many animals that rely on grazing will herd, roaming about in large groups. A group affords more eyes to spot an approaching predator and for any one individual in the group the chance of being attacked is diluted. So herding animals suffer the inconveniences of crowding, including struggling for food and dominance, in exchange for the safety of numbers.

Yet though adult pronghorns have nothing to fear from the carnivores around them now and nothing to gain from herding, they continue to do so in what appears to be another adaptation to ancient threats.

Dr. Byers says he has found hints of the past in pronghorn mating as well. If peak speed and endurance were once key to survival, one might expect pronghorn females to pick fathers for their offspring on the basis of vigor and athletic prowess,



Pronghorn antelope, moving at high speed across a snow field, can run about 60 miles an hour and sustain 45 miles an hour for several miles.

Joe McDonald/Animals Animals

which is exactly what females do. When the mating season begins, males work to herd groups of females.

But as soon as a female is ready to mate she begins to attempt escape, leading the male on sprinting chases and drawing the attention of challenging males. Females typically stand back and watch as males struggle to fend off challengers, then choose the victor as their mate.

Today the pressures on the pronghorn population are predation on fawns by coyotes, bobcats and even golden eagles, as well as hunting of adults by humans.

It is not only pronghorns that hang on to ancient defenses. Dr. Coss and his colleagues found that California ground squirrels from populations that have been free from snakes for

70,000 to 300,000 years still clearly recognize rattlesnakes. Exhibiting stereotypic anti-rattlesnake behavior, the ground squirrels approach with caution, throw dirt and fluff up their tails. But fear, even of snakes, does not last forever. Arctic ground squirrels in Alaska, free of snakes for some three million years, seem unable to recognize the threat of a rattlesnake. These hapless squirrels exhibited only a disorganized caution, even after being bitten repeatedly.

Dr. Susan A. Foster, an evolutionary biologist at Clark University in Worcester, Mass., and her colleagues have also found relict behaviors in stickleback fish. Working with a population that has long been free of sculpin, a dangerous predator, researchers presented preserved scul-

pin to the fish. To their surprise, researchers saw the sticklebacks immediately engage in stereotypic anti-sculpin behavior, treating the predatory fish with caution, avoiding its mouth and swimming behind to bite it.

In what will surely be the most controversial of the new studies, Dr. Coss and his colleagues are searching for relict behaviors in humans.

Researchers questioned 3- and 4-year-olds and adults about childhood nighttime fears. While the overwhelming majority of males reported being fearful of attack from the side, the greatest number of females reported being fearful of attack from below. Dr. Coss says these differences may be due to the life patterns of ancient hominid ancestors.

According to some theories, early

female hominids were more adept climbers (evidenced today, in part, by the greater flexibility of the young adult female foot) and spent more time in trees than males. More likely to sleep in elevated roosts, females were most vulnerable to attack from below. Males sleeping on the ground, however, would have been more vulnerable to nighttime attack from the side.

Some might suggest that researchers were most likely detecting the ghost of television and movies watched. But Dr. Coss, while acknowledging the powerful effects of these media, suggests the opposite. Hollywood, he says, may be capitalizing on the primal fears that humans still carry from the days when they were easy, tender targets for many a predator.

September

# Hercules of Bees Is Rescuing a Rare Mistletoe

Pollinator's feat is like an ant's opening a twist-top bottle.

By CAROL KAESUK YOON

An international team of researchers has brought good tidings about a rare species of mistletoe: a tiny bee may be coming to its rescue.

The mistletoe, known as *Peraxilla tetrapetala*, is found only in New Zealand and produces spectacular sprays of scarlet flowers each Christmas. It is threatened, in part, because its handsome evergreen leaves (good for kissing under) are extremely tasty to a voracious opossum that was introduced to New Zealand for the fur trade. Researchers discovered last year that the mistletoe's unusual flowers were pollinated by two honeyeater birds that are also in decline.

The blossoms work something like a childproof cap. To get at the flowing nectar inside, the two honeyeater species, tuis and bellbirds, must forcefully twist the tip of the flowers, which then burst open, spraying the birds with pollen as they prepare to drink.

Now, in a feat nearly on a par with an ant's opening a twist-top bottle, very tiny solitary bees are muscling their way in. While neither as effective nor as efficient as the honeyeater birds, the bees appear to be providing crucial seed production for this increasingly rare plant, especially in areas where the birds are rare. Scientists reported the finding about the bees in the current issue of the journal *Nature*.

"My husband said, 'I think that bee is trying to open that flower,'" said Dr. Joan Edwards, a co-author of the paper with her husband, Dr. David C. Smith. The two scientists, ecologists at Williams College in Williamstown, Mass., were the first to witness the work of the bees.

"I told him, 'No, these are bird-pollinated,'" Dr. Edwards said. "We watched and, lo and behold, this tiny bee pops this flower right open. We just knew instantly it was something really exciting."

Three co-authors of the paper from New Zealand, Dr. Dave Kelly and Jenny J. Ladley, both at the University of Canterbury in Christchurch, and Dr. Alastair W. Robertson at Massey University in Palmerston North, have studied the mistle-



Small native bee, center, harvesting pollen from mistletoe, *Peraxilla tetrapetala*, is replacing birds in the job.

toe for several years. Dr. Kelly, who along with colleagues independently discovered the work of the bee shortly afterward, said: "We were flabbergasted. It seemed impossible that an insect could do it."

Though a symbol of Christmas-time, the mistletoe is in fact a parasitic plant. Suspended in tree branches, just as it is hung over doorways, this particular species of mistletoe lives as a shrublike growth in beech trees. The plants grow directly into the tree branches, tapping their hosts for water.

Even without the help of the birds and the bees, a small number of flowers on these plants always produce seeds through a process known as self-pollination.

But when there are a lot of birds around to start popping the flowers' tops, the number making seeds is tripled. The birds, expert in getting at the nectar, can open a flower in one-fifth of a second. Completely dusted from earlier explosions, they pollinate flowers as they dip their beaks into one and then another.

The tiny solitary bees, just one-third of an inch long, undertake a Herculean struggle with each bud. Often not successful, they move from one to another, chewing away at the top of the closed petals trying to trigger them. Even when successful, the bees take 20 to 40 seconds per flower. These efforts can help a plant produce twice as many seeds as it would on its own.

"It's a neat switch," said Dr. Nickolas Waser, an ecologist at the University of California at Riverside, who said the mistletoe and its pollinators were an extreme example of what is actually a fairly common phenomenon. Plants often experience changing suites of pollinators, he said, not just because of declines but often because of seasonal changes in the abundances of different insect and bird species. "It's very lucky for us that these pollinator systems are not perfectly specific, because if they were we would have suffered a lot more extinction," he said.

Dr. Edwards said of the mistletoe's newly found ally, "It's the bee who saved Christmas."

# Key West Reefs Dying Of Mysterious Disease

By NICK MADIGAN

KEY WEST, Fla.

Diving offshore south of here recently, Craig Quirolo was shocked to find much of the coral a sickly white, smothered by a mysterious, creeping disease that was choking the life from reefs more than 5,000 years old.

"They're sick and they're dying," said Mr. Quirolo, who founded the Reef Relief conservation group. "When the coral reefs go, the fisheries go, and there goes our food chain."

The newly discovered affliction, named white pox by marine biologists, comes after several other ailments have consumed coral ecosystems around the world, a situation most often linked to pollution and other intrusions by people.

But the white pox is so new that scientists do not yet know what causes it, let alone how to stop it. If it spreads unchecked, the scientists fear, the entire shallow-water marine ecosystem of the Florida Keys could be thrown off balance.

Coral colonies, composed of innumerable tiny polyps living in a symbiotic relationship with brilliantly colored algae called zooxanthellae, are under assault, experts say, not only from pollutants like agricultural runoff, oil slicks and trash, but also from dropped anchors, probing divers and global warming.

Dr. James Porter, a marine ecologist at the University of Georgia who has been studying corals off South Florida for more than two decades, said that in some areas near Key West, the white pox had killed 50 percent to 80 percent of the elkhorn coral, or *Acropora palmata*, the dominant coral form in the area.

The two reefs most affected are Eastern Dry Rocks and Rock Key Reef, five to seven miles south of Key West, part of a wide swath of reefs that attract many divers, snorkelers and fishing enthusiasts.

After being alerted by Mr. Quirolo, Dr. Porter came here and collected samples of the diseased tissue.

"I knew immediately when I got in the water that there had been a tremendous loss of coral since my last visit one year ago," Dr. Porter said from his office in Athens, Ga. "Much of the coral had died, and there was diseased coral all over the reef."

Dr. Porter sent the samples to

Deborah Santavy, a marine microbial ecologist at the United States Environmental Protection Agency's regional office in Gulf Breeze, Fla., who confirmed that the coral polyps were dead or dying but could not say whether the cause was a bacterium, a fungus, a virus or something else.

White pox appears as blotches all over the coral, from base to tip. In its advanced stages, the living tissue of the coral becomes flimsy and falls away from the coral skeleton.

"Over all, a diseased *Acropora* field has a distinctly beaten-up appearance, as if a toxic substance had been splattered onto an otherwise healthy stand," Dr. Porter wrote in a letter to Dr. Santavy that accompanied the diseased specimens. "The size of the discolored areas range from a few centimeters in diameter to large patches some 20 centimeters in diameter," or almost 8 inches.

White pox shares some of the char-

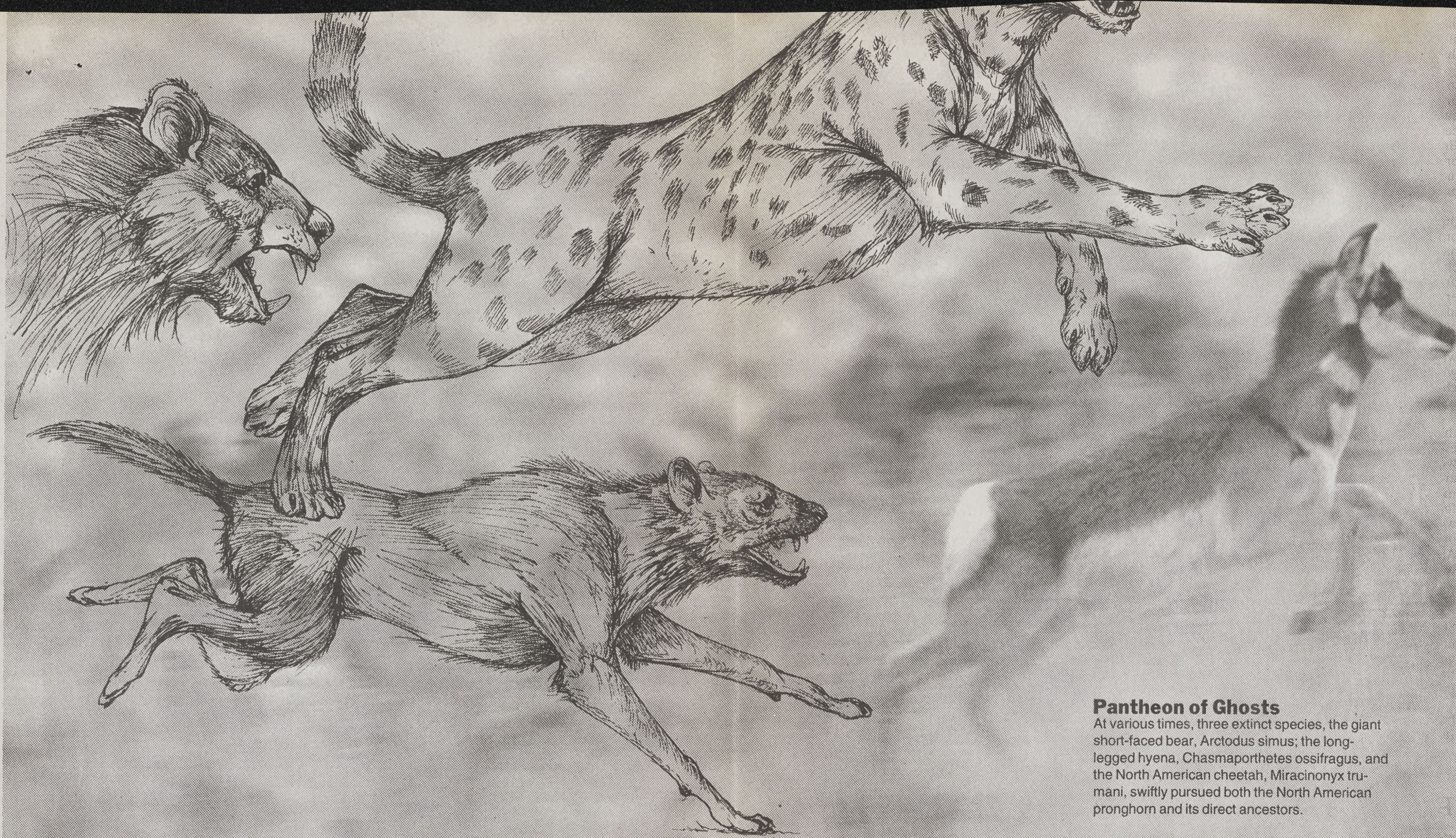
## 'When the coral reefs go, the fisheries go.'

acteristics of the "white band" disease that decimated coral reefs off St. Croix, in the United States Virgin Islands, in the early 1990's.

White pox looks somewhat like an attack by the coral-eating snail, or *Coralliophila*, a natural predator of elkhorn coral. But the diseased reefs harbor no such snails, which do their damage more tidily — in neat rows and circles — than the random destruction of the white pox.

"This is new to science, and it's scary," Dr. Porter said. "No one has seen it before anywhere, as far as I'm aware. We're still dealing with the 'What is it?' question and have not yet gotten to the 'Why is it there?' question."

Two other kinds of coral diseases have been discovered off Key West in the last two years, Dr. Porter said. One, known as yellow blotch, or yellow band, is also present in the San Blas Islands off Panama. The other, white plague type 2, has been reported in the Bahamas.



### Pantheon of Ghosts

At various times, three extinct species, the giant short-faced bear, *Arctodus simus*; the long-legged hyena, *Chasmaporthetes ossifragus*, and the North American cheetah, *Miracinonyx trumani*, swiftly pursued both the North American pronghorn and its direct ancestors.

## Pronghorn's Speed May Be Legacy of Past Predators

By CAROL KAESUK YOON

Racing at top speed across the Western plains, as close to flying as four hooves can take it, an American pronghorn in motion is a biological marvel running nearly 60 miles an hour, faster than anything else on the continent.

A quick dash and the antelope easily shakes off even the most determined coyotes and wolves, presenting biologists with a high-velocity mystery. What is this perfection of running speed doing here where there is no creature

capable of pursuing the chase?

After studying pronghorns for 14 years on the National Bison Range in Montana, one researcher says he has the answer. The scientist, Dr. John A. Byers of the University of Idaho in Moscow, says the pronghorn runs as fast as it does because it is being chased by ghosts — the ghosts of predators past.

In a book to be published next year by the University of Chicago Press, "American Pronghorn: Social Adaptations and the Ghosts of Predators Past," Dr. Byers argues that the pronghorn evolved its heady running prowess more than 10,000 years ago when North America was

rife with fast-cruising killers like cheetahs and roving packs of long-legged hyenas.

"The realization just grew and grew that I was looking at an animal that was adapted to this former world," Dr. Byers said. "These were predators that would have been really, really nasty."

As researchers begin to look, such ghosts appear to be ever more in evidence, with studies of other species showing that even when predators have been gone for hundreds of thousands of years, their prey may not have forgotten them.

"It's going to be a very controversial idea," Dr. Richard Coss, a behavioral ecologist at the

University of California at Davis, said of what he calls relict behaviors. Researchers used to thinking of behavior as infinitely adaptable and very quickly evolving "may not find the idea of relict behaviors comfortable," he said.

Though controversial, the idea is far from new. As seems to be true of every interesting notion in evolutionary biology, Charles Darwin explored this possibility himself more than 100 years ago. Darwin speculated on whether behaviors suited for life in the wild might persist for long periods in domesticated animals no longer

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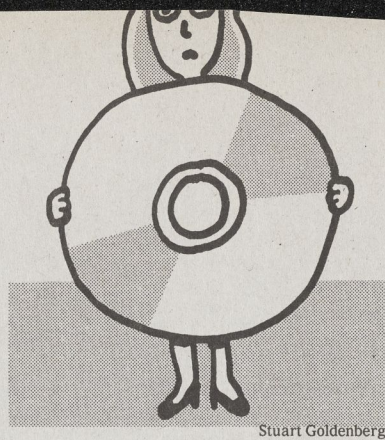
In the flood of technology inundating my office I nearly overlooked what must be the first program ever to come with peripherals like sequins, rosettes, ribbons and five pairs of tiny shoes. Luckily an unscheduled refueling stop in Billings, Mont., gave a proud papa in the airplane seat beside me time to extol his daughter's "creativity" with a CD-ROM for making Barbie doll clothes.

The very pink Barbie Fashion Designer, a \$40 Windows program from Mattel Inc., is already sold out at some outlets. Along with the shoes and so forth, it comes with four sheets each of paper-backed percale and tricot fabric that can go through standard ink-jet and laser printers to create patterns that can be turned into doll clothes. It also comes with colored markers, glitter paint, "hook and loop" fasteners and adhesive seam stickers that eliminate the need for sewing. You supply the leggy, chesty plastic gal with the wide eyes and perpetual smile.

Think paper dolls with a three-dimensional twist. Starting with a 2-D on-screen Barbie, choose a theme and assemble an outfit, complete with accessories like handbags, scarves and shoes. A few clicks of the mouse add patterns and colors. A virtual trip to the dressing room shows what the ensemble should look like in three dimensions.

Then comes the fashion show. After a wait that depending on your computer's speed and the outfit's complexity can be as long as five minutes (and is counted down by hot pink high heels that form the numbers five through one), Barbie flounces down the runway in your creation. The three-dimensional rendering suffers from the limited 256-color palette, but the motion is surprisingly lifelike. Barbie retains the stiff, awkward motion of a doll, but the fabrics billow and swirl.

That is just prologue. Now the printer enters the picture, producing pictures of Barbie in her new outfit on a magazine cover or alone, in black and white outlines or, if you



have a color printer, in color. And the printer can use the supplied fabric to make pieces of the Barbie-sized outfit, ready for assembly.

A \$10 refill package or three is probably a good idea, along with extra paper to print out the admirably detailed instructions. Fancy items like a multi-part bridal outfit can demand more than 35 sheets of paper and half a dozen sheets of fabric. Even tiny items, like the mask for the surgeon's outfit, may need an extra sheet; smart parents with limited budgets will print the smaller patterns on paper and use them to cut leftover fabric scraps.

The instructions should be printed first to get a sense of a project's difficulty. Patterns should be printed on paper before committing them to fabric, but expect the final colors to be less vibrant. Before printing on fabric, be sure to check it for loose and frayed threads that might upset the printer's digestion.

Cutting and assembly are best performed somewhere the computer is not. According to the manual, glitter paint will "stick to and stain contact surfaces, and is permanent once dry." The readme file says, "Seam sticker adhesive residue on scissors can make cutting difficult." It is not desirable on a mouse or keyboard, either.

As usual with software, some things do not work quite right. On one system, the program crashed repeat-

program will disappear. If you print anything. The minimized program may be restored by clicking its name on the taskbar in Windows 95 or by using Alt-Tab in Windows 3.1, but that should not be necessary at all.

Parents near the computer will learn how to turn off the mind-numbing repetitive music. Children may inadvertently learn some practical math; instructions for a pair of pants I put together and a bridal dress I did not demanded two seam stickers 20 dots long when the ones in the package are just 17 dots long.

There are other oddities. For some reason, Barbie adamantly refuses to march down the runway without shoes, even when she is modeling a bathing suit. And her ingeniously stuck-together clothes are rather fragile; according to the manual, they "cannot be laundered, ironed, steamed or dry cleaned."

Even Mattel cautions that "Some adult assistance may be required for assembly of fashion." The toll-free customer service hotline answered promptly and took great pains to solve problems, but that could change after Christmas. Before or after buying, try to read the information on the Web at [www.mattelmedia.com/barbie/fashiondesigner/faq/index.html](http://www.mattelmedia.com/barbie/fashiondesigner/faq/index.html), where you will find the entire manual along with troubleshooting files that are significantly more detailed than the ones that come with the program.

In the generous spirit of the season, I will note that the program offers outfits for firefighting as well as ballet but spare readers a more general critique of the Barbie phenomenon. Adults with a more jaundiced point of view may find company at the independent Website [www.maui.net/~mcculc/barbie.htm](http://www.maui.net/~mcculc/barbie.htm). There, in a very different spirit with the warning that "some of the art displayed here may be offensive to some viewers," the famous fashion victim can be seen dressed as a variety of religious icons in costumes that seem to be missing in the authorized version.

## hormone may mean more years.

By DENISE GRADY

Well into what should have been her dotage, a dwarf mouse with peach-color fur, weighing barely half an ounce and measuring two inches from the tip of her snout to the base of her tail, retained her youthful looks and energy. Her younger, full-size relatives became grizzled and humpbacked, and slowed from scurrying to hobbling, long before she sprouted her first gray hair. She outlived them all.

By the time she finally died last fall, she was four years and two months old, an unheard of age for her species, about twice the life span of a normal mouse.

"She was incredibly old," said Dr. Andrzej Bartke, a professor of physiology at the Southern Illinois University School of Medicine, in Carbondale. He did not know whether she was the world's oldest mouse, but, he said, "It's certainly a reasonable guess."

The venerable peach mouse was one of a breed of long-lived mutants known as Ames dwarfs, described last month in the journal *Nature* by a research team led by Dr. Bartke and Dr. Holly M. Brown-Borg, an assistant professor of physiology at the University of North Dakota School of Medicine and Health Sciences, in Grand Forks. The researchers found that the dwarf mice, which are a third the size of normal ones because they lack growth hormone, generally survive at least a year longer than their normal-size counterparts.

"The difference is huge," Dr. Bartke said. "We're talking about almost half a life span. It's like a person, instead of living 70 years, living 105." Dr. Bartke and Dr. Brown-Borg are trying to find out why the mice live so long, and hoping that the animals will yield new information about aging and its possible links to growth and body size, not only in mice, but in other species as well. "The main interest in these mice is that they're a new model for the extension of life, and there are few models," Dr. Bartke said.

Ames dwarfs were first found in the 1950's in a colony of laboratory mice at the University of Iowa, in Ames. No one knows where they came from. They may have resulted from a spontaneous mutation, Dr. Bartke said, or from a mutation caused by radiation. He said, "I was told the colony in which they were found was at some prior point used for some radiation biology work, but it's hard to know." In any case, the mutation has left them with few or none of the cells in the pituitary gland that would normally secrete growth hormone, thyroid-stimulating hormone and prolactin, a hor-



Southern Illinois University School of Medicine

Ames dwarf mouse, above right, about two inches long, lacks growth hormone and is a third the size of its normal sibling, which it outlives; a giant mouse, below right, ages much faster than its normal sibling.



Dr. M. Cecim

## PERIPHERALS

# Death and Taxes Joined by Computer Failure

By L. R. SHANNON

The failure of two computers in the same week should teach you something. You would also think I had learned the lesson long ago.

The first to go was the Dell Dimension XPs P166s. It is only a few months old, and the failure was probably my fault. The night before, after dinner, I had deleted a few unneeded

16 colors at 640 by 480 pixels, pathetic now for a high-class computer. The Dimension had come with a graphics accelerator, the 9FX Reality 332 from Number Nine Visual Technology, which allowed me to display millions of colors at 800 by 600 pixels, the highest quality legible on a 15-inch monitor. But where was the driver, the little program that lets the graphics accelerator do its job? It was on the hard disk

of drivers on a CD-ROM by priority mail. When I mentioned that I had tried to get help from Dell, I think he chuckled. He also said I could download the right driver from Number Nine's Web site. I told him that I could not, without saying why.

The other computer that failed that week, a few-year-old Macintosh Quadra 660AV, is my Internet connection and main writing machine.

## Rare models for extending life grow by half an ounce.

Dr. Wolf is trying to determine whether it is the large animals' high level of growth hormone and other growth factors that somehow diminishes the ability of their cells to reproduce, and shortens the dogs' lives.

"Within a species, our concept is that evolution sets a life span for that species, which occurs over millennia," he said. "When you vary things within a species, such as essential

olism and their levels of free radi-

# The population of prairie species is dropping fast

7/20/93

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For example, predators and scavengers such as crows and magpies nest in trees. Native prairie birds nest on the ground. A

"It means getting out ahead of it before you've got a spotted owl on your hands."

I once heard the following statement: "Oh, so you're in medical school? My sister is a nurse, too!"

I cannot tell you how angry this makes me, and I am not alone. Many of my female classmates also feel this way.

Do you have a response that expresses our feelings without offending the speaker?

By the way, my class in medical school is 40 percent female — the highest percentage ever in this school.

MS. FUTURE DOCTOR IN L.A.

**DEAR FUTURE DOCTOR:**  
Anyone who is confused about the role of a student in medical school should be told that future physicians are trained in medical schools, and future nurses are trained in nursing schools.

\* \* \*

**DEAR ABBY:** You ought to be ashamed of yourself for advising Mrs. Bogus (whose name was changed from Buguslaski) to stick with "bogus" because it's much easier to spell, pronounce and remember. I am proud of my brothers for not changing our name, which is Szczepanski, to one that might have been easier to spell and remember. I am also proud of our grandchild-

**DEAR THERESA:** (Do you mind if I just call you "Theresa"? ) You win.

\* \* \*

**DEAR ABBY:** An acquaintance of ours offered to get us some fireworks for our Fourth of July celebration. He dropped them off and we paid for them.

When we opened them, we realized there is no way they could be legal for private use.

Abby, I don't know what to do with them! They are in our garage covered up. How can we get rid of them without getting into trouble? Please hurry your answer.

INNOCENT YET GUILTY  
IN FLORIDA

**DEAR INNOCENT:** Since I don't know the size of your town, or what public services it offers (such as Hazardous Waste Removal), the place to call would be your fire department. Explain that you have some combustible materials that need to be disposed of. I'm sure they will be happy to be of assistance.

\* \* \*

les Times Syndicate

tells you that West is likely to be short in diamonds.

Your best play is to take the first heart and lead dummy's king of clubs, discarding your last heart. East never gets in with a heart to give West a ruff.

The same play would work if West led a diamond at Trick One and shifted to a heart later.

#### DAILY QUESTION

You hold: ♠ A K 2 ♥ Q 10 6 5 2 ♦ 2 ♣ A Q 10 4. You open one heart, and partner responds 1NT. You next bid two clubs, and he tries two diamonds. The opponents pass. What do you say?

**ANSWER:** Since partner couldn't respond two diamonds at his first turn, he has long diamonds, but little strength. His hand will win tricks if diamonds are trumps; otherwise, it may win none. Since your side lacks the values for game, pass.

West dealer

Both sides vulnerable

#### NORTH

♠ J 10 4  
♥ A 9 3  
♦ 8 7 3  
♣ K 9 5 2

#### WEST

♠ A K 2  
♥ Q 10 6 5 2  
♦ 2  
♣ A Q 10 4

#### EAST

♠ 5  
♥ K J 7  
♦ 10 9 6 4  
♣ J 8 7 6 3

#### SOUTH

♠ Q 9 8 7 6 3  
♥ 8 4  
♦ A K Q J 5  
♣ None

West	North	East	South
1♥	Pass	2♥	2♠
3♣	3♠	Pass	4♠
Dbl	All Pass		

Opening lead — ♥5

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writer correction fluid or black marker.

Make sure the new address you're mailing it to covers the old, and put

your return address on the left corner. There shouldn't be a problem.

— Heloise

## Today's puzzle

#### ACROSS

1 Month  
6 — rain

54 PR enclosure  
57 Sault Ste. —  
58 — of voice  
59 Seaweed

#### PREVIOUS PUZZLE SOLVED

CHAP SPIT RABAT

~~(11 no.)~~

Do you know what you're  
eating in the city? Do

you know how your  
dinner lived, before it

was grilled skinless breast  
of chicken with herbs?

~~If you see, you would~~  
give you an <sup>it</sup> ~~idea~~ <sup>idea</sup> in terms of  
pheasants.

Put birds upside down  
on big conveyor.

~~One processor at~~  
~~the station cuts off~~  
the heads (mechanically,  
brakes) + a other place.  
Then on conveyor belt to  
people who check legs +  
breasts. Pretty dirty place.

Chool laying ~~the~~ her eggs a  
year.

Fryer gets 6 weeks, <sup>7</sup>ed all  
the time.

Prairies

Leaving the Prairie  
(Cryptic)

The smell of <sup>(Silver?)</sup> sage: walking in a hot garden.

~~Short grass~~ Shortgrass prairie dominated by  
buffalo grass + blue grama (6-12" high).  
(SD has short + some mixed-grass)

"North America's characteristic landscape." (west Whitman)  
(European productivity)

fragrant hawks, heaven larks, lark landings + longjars

You walk in the sky, expand w/ the prairie.

Western clarity + a touch of eastern humidity  
made these clouds. They are the "screamy"  
all the change there is.

wild flowers dead, in mid-sept., but rose hips  
red as drops of blood.

For what it's worth, I saw ~~for~~ more game (but  
not as much variety) on the prairie ~~as in~~ than on the  
African highlands. Antelope, mule deer - & the birds.

I think if MT fills up with debris I'll go to S.D.



## Facts about Habitats for Birds

### Wetlands

Wetlands—estuarine and freshwater—are among the most productive ecosystems on earth. They are also enormously important to birds, including waterfowl, shorebirds, wading and marsh birds, and many songbirds. It is no accident that wetland-dependent birds have experienced great declines:

- Overall, the United States has lost more than half of the wetlands that existed prior to European settlement. The area of wetlands lost is about the size of the State of California.
- From the 1950s to the 1970s, the average annual rate of wetlands loss in the contiguous US was about 458,000 acres. This is an area about half the size of Rhode Island each year.
- In some states and regions, wetland losses have been dramatic: Iowa has lost 99% of its natural marshes; Missouri, Nebraska, and Illinois, about 90%; and Michigan and Oklahoma, about 70%.
- Waterfowl have been hit particularly hard by wetland losses: prime waterfowl habitats around the Great Lakes have decreased by 35-98%; by the mid-1950s more than half of approximately 115,000 square miles of prairie wetlands had been drained.
- Draining for agriculture has been the number one cause of wetland loss and degradation, although the oil and gas industry, livestock grazing, and water diversions for irrigation and other uses have taken their toll as well.
- For coastal wetlands outside of the State of Louisiana, urban development—which is correlated with increased population density—has accounted for most wetland losses.

- Much of the drainage of wetlands has been subsidized by the US Government. In western Minnesota alone, nearly 100,000 acres of wetlands have been lost through federally subsidized construction of ditches and canals.
- With a doubling of carbon dioxide in the atmosphere, coastal wetlands in the US might be reduced by up to 80% due to sea level rise.

### Grasslands



Tall-grass, mixed-grass, and short-grass prairies once covered much of the landscape in the American heartland between the Mississippi River and the Rocky Mountains. Other areas had grasslands too, including barrier islands and dunes on the Atlantic coast, the Southwest, and the Central Valley in California. Sparrows and other songbirds, shorebirds (e.g. the long-billed curlew and upland sandpiper), grouse and prairie chickens, and many raptors are among the birds dependent on grassland habitats. As a group, grassland bird species have shown steeper and more consistent, geographically widespread declines than any other group of birds breeding in North America.

- Grasslands comprised about 17% of the North American landscape—about 314 million hectares—prior to European settlement.
- Tall-grass prairie once covered 400,000 square miles in the central lowlands of Ohio, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Missouri, Texas, Oklahoma, Kansas, Nebraska, and the Dakotas: since 1830, the tall-grass prairie has been reduced in extent by more than 95%.

- The primary tall-grass prairie remaining in a natural state is in the Flint Hills of Kansas, where most of the prairie is unsuitable for cultivation.
- In several Great Plains states, mixed- and short-grass prairies have decreased in area by about 75%.
- Longleaf pine savannas in Texas have declined by 90%, from 930,000 to 70,000 acres.
- In the Tulare Basin of California's Central Valley, grassland and shrub habitats have decreased by 94%, from 1,859,711 to 108,349 acres.
- The character and species composition of the second-growth forests often differ from that of the original, and an estimated 40% of today's forest in the eastern US is contained in fragmented suburban and rural woodlots.
- Only 20% of the original wet bottomland hardwood forests in the lower Mississippi alluvial plain remains.
- By the 1980s less than a quarter of the original old-growth forest was still standing in the Pacific Northwest and much of that was highly fragmented by logging roads, clearcuts, and the like.
- As the climate warms due to the "greenhouse effect," there could be profound changes in the distribution and extent of North American forests: for example, the boreal forests of Minnesota could be replaced by southern hardwoods.



### North American Forests

Vast woodlands once covered much of eastern North America from the boreal forests of Canada to the pine forests of the Southeastern US. In the more arid west the Rockies and the Sierras were forested too. From the coastal Pacific Northwest north to southeast and southern Alaska, we still find North America's only temperate rainforest. Hundreds of bird species make their home in forests, including warblers and vireos, finches, flycatchers, swifts, pigeons, woodpeckers, and owls.

- Overall, since the time of European settlement, 83-98% of the original forest cover in the contiguous US has been logged or lost to natural factors.
- More than 99% of the virgin forest in the eastern US has been felled; what remains is primarily second growth forest.
- In the Northeast and New England there is more forest today than there was during Revolutionary War times, when much of the landscape was cleared for agriculture.

### Tropical Forests

The tropical and subtropical forests of the Western Hemisphere—in all their types (wet and dry, high and low, deciduous and coniferous)—are home to an astonishing variety of birdlife, including thousands of species. In addition to providing habitat for resident quetzals, trogons, parrots, and other incredible birds, tropical forests are also home to migrant species that nest in temperate regions both to the north and the south. Because of the small land area available to northern migrants on wintering versus breeding grounds, the destruction of one acre of habitat in the tropics may have the same effect as a 10-acre loss of forest in the north.

- Tropical forests worldwide are being eliminated at the rate of nearly 50 acres/minute, which amounts to an area the size of Cuba each year. One half of this destruction is in Latin America: by the year 2000 only half of the pre-European settlement forest cover in Latin America will remain.



### Riparian Forests

- In Latin America, the rate of deforestation is about 10 times as great as the rate of reforestation.
  - Even in Costa Rica, a country with a high level of environmental sensitivity, 83% of the original forest cover had been removed by 1983.
  - Only about 1% of the land area of El Salvador remains in natural vegetation; Haiti has 1.2% of its natural vegetative cover.
  - By the 1950s, almost all of Cuba's evergreen forest had been converted to sugarcane.
  - In the 1980s, Costa Rica had the highest relative rate of deforestation in Central America, followed by El Salvador, Nicaragua, and Honduras.
  - Conversion of forests to pasture for cattle ranching and such crops as bananas, cotton, and sugarcane are major factors in the loss of tropical forests. When markets are strong for products from non-forest land uses, forest clearing may increase. Strong markets for forest products may promote forest conservation.
- Riparian forests—thin strands of woodland along streams, rivers, and seasonal waterways—are vital to the diversity and survival of birds, especially in arid western states. As many as 200 species of birds are found in western riparian habitats, and 60–80% of breeding birds in arid western states are associated with riparian vegetation.
- Riparian woodland vegetation occurs on less than 1% of the western North American landscape.
  - In the arid southwest, less than 1% of the native riparian woodlands remains.
  - In California, only 2-5% of the riparian woodland existing prior to European settlement remains.
  - Along the Colorado River within Colorado, more than 90% of riparian habitats has been destroyed.
  - In Texas, more than 60% of the original bottomland hardwood and riparian vegetation has been destroyed, and, as of 1986, losses were continuing at a rate of about 12% per decade.

**Note:** These statistics have been compiled by Brian Ladd in the National Audubon Society's Migratory Bird Conservation Program Office, 4150 Darley Avenue, Suite 5, Boulder, Colorado 80303. Please write Mr. Ladd if you want more information about *Birds in the Balance* or a list of citations from which these facts were drawn.



# Woody Draws – Pockets and Ribbons of Diversity

by Deborah Richie

If I were to describe Montana to someone who has never experienced this landscape, I'd speak of mountains, rivers, forests, prairie, and of course, the sweep of sky. It would be easy to overlook the subtleties that for birds, animals and plants are as essential as air to their lives. One such subtlety of landscape is the woody draw.

The word "prairie" connotes the earth stretched taut without a tree in sight. Look again. Montana's plains often rumple. Within the creases there may be verdant ribbons of green. Here, where springs seep or water channels through clefts at least part of the year, a tangle of trees and shrubs thrive. Migrating birds spot these oases from afar and rest there, weary travelers safe in a haven surrounded by grassland. Deer vanish within a labyrinth shared by owls, magpies and a myriad of songbirds.

Across our open landscapes you can find woody draws, differing in composition of plants and animals, but alike in the refuge they offer within a windswept savanna or steep, grassy hillside. In eastern Montana, green ash trees burst from draws, acting as magnets for songbirds, as well as weasels, bobcats, coyotes, foxes, grouse and white-tailed deer. Once you stray as far east as Ekalaka and north to the Missouri River, you'll find American elm and green ash casting shade together.

One summer morning I set out with Denver Holt, Missoula's most popular owl researcher, not to look for long-eared owls, but simply to appreciate the woody draws that are their home. We meandered in the ranch lands west of Missoula, those weedy, grassy places that are often looked at as expendable. Jets thunder overhead bound for the airport. Breezes carry the stench of the Frenchtown Mill. Yet, here in one morning of woody draw exploration the list of birds went something like this: nesting red-tailed and Swainson's hawks, long-eared owls by the half dozen, catbirds, yellow warblers, vesper and savanna sparrows, cedar waxwings, chickadees and a willow flycatcher weaving a diminutive



cup nest. The list of trees and plants intertwines with the birds: aspen, chokecherry, hawthorn, wild rose, snowberry, clematis, black cottonwood and here and there a towering ponderosa pine.

Seeing is not the only way to discover woody draws. In spring, they quiver with the melodies of warblers. In the heat of summer, you feel the cool of the shadows. In winter there is reprieve from an icy gale.

We need to pay attention to woody draws, as we would to a spectacular mountain peak or free flowing river. Through a

century of overlooking these oases, we have lost many of them. Overgrazing by cattle has introduced weeds to woody draws, opened up their jungly interiors and prevented tree seedlings from taking hold. Near Missoula, woody draws are being scooped up by bulldozers readying the ground for a subdivision.

A woody draw may never have the appeal to us of a stately grove of pines by the river. After all, hawthorns are thorny and sometimes you practically have to crawl and scratch your way through the tangles. Yet, like the play of light and shadow that accompanies a cloudburst, woody draws dapple the summer golden grasses and weeds, each one a refuge.

Deborah Richie is the Watchable Wildlife Coordinator for the U.S. Forest Service and works on cooperative projects through the Montana Natural Heritage Program. She shares her considerable writing skills with a variety of programs, including The Montana Nature Conservancy.

Conservancy members will be interested in her recent article, "Birds of Passage," which appeared in the July/August issue of Montana Outdoors. The article describes the migration of neotropical birds and their struggle to survive in the face of habitat loss. For reprints contact your local National Forest Service office or the Montana Department of Fish, Wildlife and Parks.

## Watch your mailbox...

*the Conservancy's Fall Appeal will be arriving soon!*

The Montana Nature Conservancy continues to protect Montana's most important lands — those that provide refuge to wildlife and plant species as well as those that lie along Montana's precious rivers and streams.

Thanks to you and your continued commitment to protecting Montana's land and water for future generations, the Conservancy is able to fulfill its important mission. When you receive your appeal in the mail, please respond as generously as you can.



### Flea Beetles Released as Biocontrol Agents

by David Carr

What comes to mind when you hear the word "exotic?" Bridget Bardot or Marlene Dietrich? While Webster defines exotic as "outlandish," its primary meaning is "introduced from another country." Starlets and harlots might be intriguing for biologists to contemplate, but it's the concept of being from another country that really drives them wild.

To the biologist, exotics mean alien species — something a little more menacing than E.T. Why should we be concerned? Many of us enjoy such exotic species as the brown trout or ring-necked pheasant. Unfortunately, exotics also include plants like spotted knapweed, animals such as the red deer or pathogens like white pine blister rust. Species that have come from another place may have no enemies in their new setting.

Noted conservation biologist Michael Soule believes that exotics will homogenize and impoverish the world's biota. He contends that the lack of natural enemies will allow some alien species to completely dominate or out-compete native species. We live in a very cosmopolitan world with a great deal of travel between countries, and as a result, exotic organisms continue to spread.

Leafy spurge is one such exotic that has

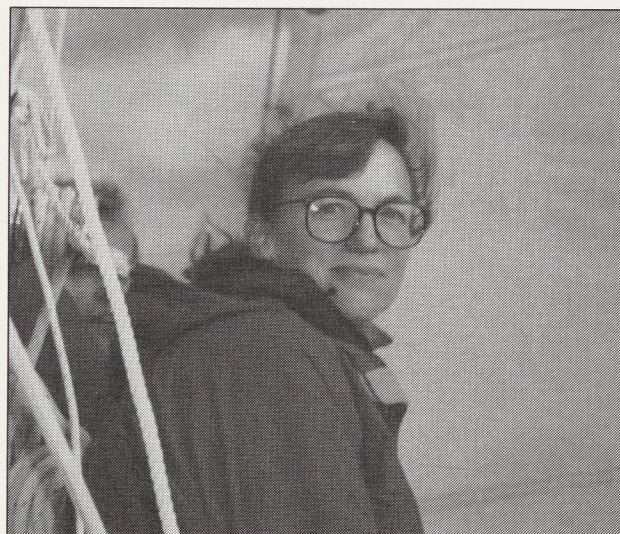


*Euphorbia esula*

been a particular problem at the Pine Butte Preserve. In some areas on the preserve leafy spurge has formed a near monoculture, replacing native plant communities. The Conservancy has been trying to contain and control leafy spurge for nearly eight years at the preserve, using chemical, mechanical and cultural methods. Yet we still feel we are losing the battle. In an effort to find another tool in our fight, John Randall, the Conservancy's national exotic plant specialist, and Pine Butte preserve manager Dave Carr have spent the last year studying the feasibility of releasing the leafy spurge flea beetle *Aphthona nigriscutis*, itself an exotic insect.

This study has revealed that there are inherent risks in the use of biocontrol, i.e. the insects could also feed on the native spurge. After extensive studies we have concluded that the risk to plant communities from using the beetle is less than not utilizing it — particularly since there have been hundreds of releases of the same beetle throughout Montana.

This winter The Nature Conservancy's Board of Governors approved the release of flea beetles at Pine Butte. This summer we released 6,000 flea beetles in cooperation with the Lewis and Clark National Forest and the USDA Animal and Plant Health Inspection Service. This release will be monitored for three years by botanist Peter Lesica and preserve staff to determine the effects of the flea beetle on the native spurge *Euphorbia robusta* and other native plants at Pine Butte.



Lisa Flowers under full sail as she assumes her new duties as Pine Butte Education Program coordinator.

### Education Program Update

Bob Petty, who has ably served as the Pine Butte Education Coordinator this summer, has assumed his new duties as Education Program Coordinator for the Wallace Ranch Project. Bob is again residing in Missoula with his wife Maggie. Bob did a great job at the Preserve this summer, and we wish him the best of luck in his exciting new program.

Local teacher Lisa Flowers has replaced Bob as Pine Butte Education Coordinator. Lisa has taught science for six years in such diverse places as Shelby and Miles City. She has a bachelors degree with a minor in geology from the University of Montana. Currently she is working on her Master of Science for Teachers of Biological Sciences, also at U. of M. As part of this course of study, she is developing a conservation education curriculum at the Boone and Crockett Club's Theodore Roosevelt Memorial Ranch.

Lisa lives on a small farm near Choteau with her husband Tom and their four-year-old daughter Annie. Welcome Lisa! 🌱

open? (Sept

We picked the apple  
yesterday and it is sitting  
on the table this  
morning, red & small &  
not very firm, only  
senior of grapes, red it,  
& red. But it ~~hasn't~~  
a ha. no worms. They  
know that this is  
no ~~place~~ climate for  
garden fruit.

Title: sharp-tail / prairie <sup>Sy<sup>4</sup></sup>

— "Walking in the sky" —

See Steve Boddy, p. 102.

"you are often the tallest thing  
you can see," on the prairie.

---

I don't throw much of  
a shadow.

Sept

Trans to the hunt

Summer is for building  
up the surplus to tide  
population through the  
winter. 70% of the  
phoenix will die. would  
like to lose  $\frac{1}{2}$  the deer, but  
won't. Barb - 90+%

(Question is not whether  
the surplus will be eaten  
but who will do the  
eating.)

## Sustainable Stimuli

Natures are strong enough,  
+ not ~~to use~~. so  
strong ~~that they give~~  
you ~~the whole~~. enough to  
pervert you.  
pervert

(production) open  
It's been going on since  
the eggs were laid and  
the father dropped, but  
back then the process ~~would~~  
might have been close to  
gathering. From now on  
it will be hunting.

Shrou

Don't want to fish all year, though I could in M.T. Would get jaded. How many trout can one catch + release? Quoting Lewty C.: "I don't need to hot-lip every fish in the river."

→ Like a sharp break signaled by fall color.  
~~Different more (?)~~

Shrou starts when the kid goes back to school. Ruffs an emotional favorite, but hidden by leaves, then — so thick they can't even fly.

Blues ~~more~~ (speaking). ~~May learn faster~~. Live in the most splendid cover of any bird. But ~~to~~ wildly unpredictable (words chosen carefully).

Ruffs after the leaves down. Grey birds here, much grayer than the grey partridge. Ruffs in grey woods are ghosts, never seen by me till I start pointing them. Then it disappears too. Have switched to ~~unromantic~~ looper calls; unromantic but avoids the blissing whistle of a dog when pointing a bird within 10 yards of me.

Major ~~color~~ for flies. Major bird. pheasants have ~~color~~ color; grouse have major. the soft-billed fly to take advantage of it.

Jan

My bias (?): prairies need a friend & I'm ~~not~~ <sup>in</sup> available. Like them better than anywhere else, at their time of the year.

What I mean by prairie. Short-grass, prairie - pastures - high plains (though they're hilly).

The most threatened of major American ecosystems.

Loons - Paleocene Epoch, Sept

Tremolo (laughter)

yodel

wail (long call)

talking call

Part of also Watson's memoir.

No content, for me. Crane

almost a goose.

~~(Jan)~~  
4 Seasons

Balance almost on knife-edge of Sept  
the 4<sup>th</sup> parallel, between  
cold & hot.

There's a balance to this place. It's  
half-way from the equator to the pole;  
it's high enough to be ~~to~~ dry & low  
enough that you can boil potatoes. It has  
4 seasons of about equal length: ~~3 months~~

~~each of spring, summer, fall, & winter.~~

You can get winter in summer & summer in winter,

but mostly June, July & Aug are summer,

fall ends with Thanksgiving, you can expect

the snow days begin in late February,

& from March through May things start  
growing.

Best summer days are cloudy & cool - showers

HS<sup>or</sup> Parallel  
a balance  
equinox

It's a natural  
moderate, balanced  
or - sign.



Wildness Incarnate:

# The Sandhill Crane

**N**ATIVE AMERICAN AND AFRICAN DANCERS, Japanese Ainu, Australian Aborigines, and European ballet companies share a common choreographer. In fact, nearly every culture lucky enough to live among cranes has mimicked the birds in its dances and featured them in its myths. Spend some time in the company of cranes and you'll see why. In courtship they telegraph joy, while in flight, they flaunt a delicious freedom. Even in repose, sandhill cranes cut a royal figure, the kind that roosts in your memory for good.

For a few years, I went searching like a pilgrim for sandhill cranes, but

they eluded me. That first year, pulling up to Nebraska's North Platte River too late in the season, I saw nothing but the shallow sloughs, and only my imagination could recreate the traffic jam of

## WATCHABLE WILDLIFE

trumpet, wing beat, and stir caused by half a million birds in one place. I had missed the spring migration of the mid-continent population (which includes the lesser and Canadian sandhills that breed in eastern Montana) by only a few days.

After two more seasons of near misses, I moved to western Montana,

where the sandhills finally found me. A friend and I were looking for a campsite in the Absaroka-Beartooth Wilderness, high atop a tussocked and potholed plateau in the very late

twilight. Thankfully, sunset had lingered, and we could see a couple of waist-high greater sandhill cranes feasting on grasses, grains, and insects scared up in their scratching. We stood rubbing our eyes, wondering what would possess such giant birds to alight on such a high-altitude perch.

The following autumn, I was again visited by sandhills, this time only a few paces west of my home in the Bitterroot Valley. A chorus of insistent



DAN & CINDY HARTMAN

strange habit. They call the poorwill "the sleeper."

Other birds are sleepers too. Whip-poor-wills, nighthawks, swifts, willow tits, common redpolls. The rufous hummingbird often sinks into a controlled torpor at night to conserve energy and reduce weight loss while it is not feeding.

Birds, like mammals, are warm-blooded, and warm-blooded hibernators and aestivators are different from cold-blooded creatures in that they can control their body temperature. Although they normally maintain a relatively high and steady body temperature, during hibernation they can drop their temperature to within a few degrees above the freezing point of water in some cases.

The term deep hibernation is used to describe mammals whose body temperature usually drops below 50 degrees F. Torpor is used for animals that show a drop in body temperature to about 60 degrees F.

In either case, body metabolism slows drastically, but the animal has the ability to rewarm itself at any time by generating its own body heat as it arouses from the hibernating state.

The largest deep hibernators are the eastern woodchuck and the western marmot, or rockchuck. They, along

with other deep hibernators like the ground squirrel, enter hibernation curled in a ball. Typically, their respiration rate drops first, followed by a drop in heart rate, and then a drop in body temperature.

The ground squirrel descends into hibernation, like a swimmer entering cold water, in a series of test "step-downs." Over a period of a week its temperature drops to a lower plateau every other day until it hovers around 42 degrees F.

Hibernation is not continuous but punctuated by arousals that are more frequent at the beginning and the end of the hibernation season. During these wakeful periods some animals, like hamsters, chow down on food stores they have cached away in their burrows. Other animals, like bears (who Indians thought gained sustenance during hibernation by sucking their feet because bears shed their keratinous foot pads during winter and then lick their tender soles), actually rely on fat reserves to provide the little nourishment necessary for their logy metabolism.

How logy can hibernators get? In the depths of deep hibernation a squirrel that normally breathes at a frantic rate of 200 breaths a minute takes only one or two breaths. And it slows its heart

rate from as much as 400 beats a minute to around five. At times, breathing may stop altogether for up to an hour—a phenomenon called apnea. In this self-induced stupor, a squirrel can be tossed back and forth like a ball without waking. (The things researchers do for science!) But, at all times during hibernation, animals are hyperresponsive to internal and external stimuli and will automatically increase their metabolic rate and body temperature in the face of dangerously low ambient temperatures, even as they continue to hibernate.

Arousal from deep hibernation is a process that brings the hibernator groggily and grumpily awake. Muscular activity is a major source of heat production, and it involves violent shivering as breathing and heart rate and finally body temperature once again increase to normal.

And what makes it all happen? One researcher lays it on the line this way: "Very little is known about the physiological mechanisms that orchestrate these changes." Hormonal secretions in the pineal gland and pancreas are being studied, along with a "blood-borne substance" that may "trigger" hibernation. But the real nitty-gritty of hibernation and aestivation still remains one of nature's intriguing secrets. ■



by JANINE M. BENYUS

MIKE LOGAN

*Fully inspired  
now, the cranes  
explode into the  
vertical leap  
display, the heart  
of the crane  
dancing. From a  
coiled crouch,  
each bird springs  
as high as 15  
feet into the air,  
with its wings  
spread wide, its  
head held high,  
and its legs  
dangling in front  
for balance.*



MIKE LOGAN

*Nearly every culture lucky enough to live among cranes  
has mimicked their bounding, joyful dances.*

garooo-a-a-a calls came rising from my pasture, floating towards two spiraling specks in the morning sky. The cranes were out there somewhere, but like true mythic creatures, they stayed hidden from our view. By this time, I had read up on sandhill crane behavior, and I could visualize what was happening in the tall grasses.

Most likely, the birds were part of the Rocky Mountain sandhill crane population, which tallies about 20,000 birds. The adults are impressive: as tall as a toddler, gray-brown with dark wing tips, white cheek patches, and ruby red crowns. The juveniles have a rusty brown head and neck, and have not yet grown their red cap. Males and

females build large platform nests in remote wetlands ranging from northwestern Colorado through northeastern Utah, western Wyoming, eastern Idaho, western and south central Montana, and southwestern Alberta. They prefer river valleys, shallow marshes, wet meadows, or small islands, and here in Montana, they often take up residence at elevations above 4,000 feet. Important nesting areas include the Big Hole, Beaverhead, Jefferson, Gallatin, upper Missouri, Smith, Musselshell, Blackfoot, and Clark Fork river drainages, and the Centennial Valley.

In late summer and early autumn, you can see cranes "staging" (concentrating in flocks) before they wing their

way south to more lucrative feeding grounds in New Mexico. Montana's largest staging area is along the Beaverhead River between Dillon and Twin Bridges. Beginning in mid-September, the birds stream south to Colorado's San Luis Valley, and by mid-November, most are on their way to the Rio Grande Valley of New Mexico. Perhaps the cranes in my pasture were fueling up before heading that way.

The call that we heard means "good feeding here"—it's a flag-down signal for members of the migrating flock that are still aloft. This plaintive trumpeting can carry up to two-thirds of a mile, thanks to the coiled French-horn-like

windpipes in the crane's throat. Location calls insure that the migrating flock remains together during rest stops. When it's time to take off again, the cranes stand erect, face into the wind, and signal their plans with a high-frequency flight intention call.

If our ground crew had been persuasive enough, we would have seen the pterodactyl soaring that cranes are known for. Like an airplane banking, the cranes simply tilt their seven-foot wingspan and spiral downward, getting larger and larger by the minute. They land dramatically, backstroking with their huge wings and touching down on spindly, landing-gear legs. If we'd witnessed a landing in our field, then crept closer with the help of binoculars or spotting scopes, there's no telling what we would have seen. Sandhills perform a repertoire of over 50 behaviors. Here are a few that you may be able to spot, divided into basic behaviors that individuals perform and social behaviors that emerge when cranes gather.

## Basic Crane Behaviors to Watch For

If the sandhill you're watching is still a speck in the sky, grab your binoculars. You can tell an in-flight sandhill from a great blue heron by watching how they hold their neck. Unlike the heron's "S" shaped neck, cranes usually fly with their neck straight out like a spear and their legs

outstretched behind them. For optimum soaring, they look for rising warm air currents called thermals. Hitching a ride up on these elevators, then gliding from one to the other, they can make light work of their transcontinental journeys.

Once a crane touches down, you may see it walking with a gait similar to ours or running with a slight bounce in its step. If it's running for a take-off, you'll see it flap its wings once or twice to keep balanced. Most of the time, however, cranes on a meadow will be strolling in search of their next meal. They stalk mice, lizards, frogs, or snakes, and probe with their bills to unearth rootlets and insects. In agricultural fields, they take advantage of grain or corn kernels left after harvest, while in natural meadows, they zero in on wild grains and berries.

After a meal, they may fly back to their roosting sites—preferably wetlands where they can stand in shallow water without worrying about land predators. Here, you'll see them meticulously combing their feathers into alignment with their beak and back slicking (waterproofing) with oil produced by a gland at the base of their tail. Sometimes, and no one is sure exactly why, sandhills will also paint their feathers rusty brown with a mixture of grass and mud. The best



MICHAEL S. QUINTON

time to watch for this preening is between August and October, when molting feathers on the body, neck, and wings are being pushed out by new ones underneath. Once their flight feathers drop, the grounded cranes lie low, hiding in dense cover and preening for hours on end until they can fly again.

In addition to preening, you'll also see plenty of stretching—of wings and legs and neck and even jaws—especially when the birds first awake.

## Social Crane Behaviors to Watch For

### Communal Behaviors

Sandhills flock and roost together when migrating to make the most of a patchy food supply and to multiply their vigilance against predators. As soon as a suspicious character arrives, the birds assume the tall alert posture, standing rigidly erect with their necks straight up, their bills horizontal, their

*During migration, feeding cranes (above) utter a plaintive trumpeting to signal "good feeding here" to birds still aloft (left).*



MICHAEL S. QUINTON



*When eggs or chicks in the nest are threatened, either parent may perform a spread-wing distraction display to refocus the intruder's attention.*

submissive.

When a crane wants to "cry uncle," it lowers its posture and tries to make itself and its bright crown as inconspicuous as possible. In the neck-retracted submissive posture, the bird holds its body horizontal, pulls its neck back, and loosely folds its wings. In striking contrast to the dominant's stiff gait and enlarged crown, the submissive bird walks in a loose-jointed fashion and keeps a low crown profile.

What happens when two cranes meet, and neither one submits? Bill sparring contests usually occur when a resource such as fresh water is limited or when pair formation is in progress. These brief but important duels allow male rivals to show their stuff and win a place in the pecking order. Once rankings are set, the birds can resolve their conflicts with just a subtle show of crown or stiffness of step.

The sparring begins with some face-to-face bill jabbing. Next, with their wings spread wide and their upraised bill tips almost touching, the cranes vault into the air and kick at one another. These kicks rarely log any serious injuries, however, since one bird usually retreats or backs down. As if to get the last word, the dominant may end the sparring episode with a bill stab, a head-lowered charge, or a low bow.

By the way, these threats and sparring behaviors are also reserved for invaders, such as foxes, dogs, or even a human that gets too close. If a sandhill begins to threaten you, you're much too close.

## Breeding Behavior

When cranes leave their parents, they travel with a flock of other

feathers sleeked, and their bodies nearly vertical. This contagious behavior spreads through the flock like a red alert, readying them for flight or fight. If you are causing this response, you're too close, and may be inadvertently bankrupting the cranes' energy. By comparison, when you're at a safe distance, the sandhills will notice you with curiosity, but not alarm. In this non-contagious alert investigative posture, they'll stand with their bodies either horizontal or vertical, and their heads scanning back and forth.

## Conflict Behavior

You're most likely to see squabbles (mostly consisting of blustery threats) just before breeding season, when mating pairs are establishing territories. Outside of breeding time, when cranes are back together in flocks, you may also catch them raising their hackles over questions of dominance.

Some threat displays are not directed at a target per se, but broadcast as a general warning to all would-be enemies. Cranes sometimes perform the low bow when flying into the midst of a flock or when landing next to an intruder in their territory. The bird bends its neck steeply downward and tilts its lowered head so its bright red crown is plainly visible. By contracting or relaxing its muscles, the crane can control how much of this red skin area is exposed and how engorged, and thus

red, it is. The ruffle bow is similar to the low bow except that the crane shakes its feathers as it bows. A third type of nondirectional display used to defend a territory is the bill-up unison call, a call that you'll also hear in courtship.

The mellowest sign of one-on-one defense is the directed walk threat. The displaying crane parades around the offending party with its head angled downward, its crown expanded, and its flight feathers raised in a vertical fan shape. It steps stiffly, carefully placing each leg, pumping its head, and showing off its engorged crown. As a finale, the crane may lower its head with a growl and touch its leg or flank in a mock preening movement.

The next step in aggressiveness is the head-lowered charge, in which the crane clamps its wings tight to its sides, extends its neck, and runs towards its opponent, bill aimed like a jousting lance. If the opponent doesn't retreat quickly enough, the charger won't hesitate to nip its wing or pluck some feathers. The charge may also turn into an aerial pursuit, in which the aggressor kicks at the fleeing bird with its feet.

When a dominant bird wants access to a drinking or feeding spot, it may aim at the other crane with a bill stab—a frozen version of head-lowered charge, without the running. If the subordinate knows what's good for it, it will move aside and act properly

*They think this place is theirs.*

*Cranes build their dishlike nests in wide, lonely wetlands filled with sedges, cattails, or bog plants. Three to five feet in diameter, the nests are usually perched safely above floodline on a mound of dead reeds and rushes.*

juveniles for two to three years. It is here that they find their lifelong mates. Their courtship is filled with intricate displays and joyous dancing, all designed to cement the cranes' bond and synchronize their sexual time clocks.

Though it usually functions as a territorial defense, the unison call, a duet, is also used to form and strengthen the bond between mates. The birds stand side by side, and as they sing, the female keeps her bill horizontal while the male tilts his straight up. Typically, the female utters the first note, touching off a series of long, pulsed, staccato calls that alternate between male and female.

Three attraction-getting displays are part of the springing, whirling dance that cranes are known for. In the upright wing-stretch display, the male raises his wings while walking in full alert posture in front of the female. In the horizontal head pump, both male and female spread their wings and bring their heads down to the ground and back up again, several times in a row. Occasionally they'll try a vertical toss, grabbing a stick or piece of vegetation and flinging it into the air.

In the bow display, the birds pop up and down like ballet dancers warming up at the barre. Beginning in a crouch, each bird tilts its body forward and extends or lifts its wings. Suddenly, it stands up, extends its neck for a moment, then crouches again. Between bows, each crane may take a surprise jump.

Fully inspired now, the cranes explode into the vertical leap display, the heart of the crane dancing. From a coiled crouch, each bird springs as high as 15 feet into the air, with its wings spread wide, its head held high, and its legs dangling in front for balance. Watch for a few wing flaps before the



HARRY ENGELS

crane floats back to earth. One leaper often inspires the others, until the entire flock is bounding like birds on a trampoline. The enthusiasm that fills the dancing flock is contagious, and as you will see, it can easily sweep away human hearts as well.

Luckily, breeding season is not the only time you'll have a chance to see dancing. Young cranes dance to develop motor skills, submissive cranes dance to thwart a dominant's aggression, threatened cranes dance when they're nervous, and some cranes just dance because they feel like it.

After the formalities, either sex may

initiate mating. The male signals with a parade march, walking up to the female with his flight feathers erect, his bill jutting straight up to the sky, and his crown bright red as in "ready." The female postures in much the same way, holding out drooping wings and purring the pre-copulatory call. Finally, the male lowers his bill and leaps onto the female's back, flapping his wings to maintain his balance. After a brief mating, he dismounts by stepping backward or by hopping over the female's head. Before parting, the couple stands side by side with their crowns expanded and their bills pointed



MICHAEL S. QUINTON

*Crane chicks are covered with down and able to leave the nest within hours of hatching.*

between the mother and her chicks. If so, move quickly away so the mother doesn't have to waste energy in an elaborate defense.

### Status

Here in Montana, Fish, Wildlife, & Parks surveys in 1992 indicated a population of 4,000 to 5,000 greater sandhill cranes, a healthy increase over the last 20 years. That number will grow as more birds are born here and then return to repeat the cycle. Despite the good news in Big Sky Country, all is not well on the birds' wintering grounds in the Rio Grande Valley of New Mexico. Mid-valley, crane habitat is being swallowed by suburbia and dewatered by irrigators. Roosting wetlands are in limited supply, and new crop rotation practices are reducing the acres of cereal grains that once supplemented crane diets. At the same time, alfalfa farmers on surrounding private land are complaining that swelling flocks of hungry sandhills and snow geese are devouring profits. Biologists are also concerned about the sheer numbers of geese and cranes; with so much of the population in one place at one time, a storm, disease outbreak, toxic chemical spill, or other environmental accident could spell major tragedy.

Because cranes are slow breeders—raising an average of less than one chick per pair per year—significant dieoffs that occur on the wintering grounds will not be easily recouped. No matter how fertile habitat conditions may be in Montana, we can't ensure sandhill crane survival unless we protect and create quality habitat in all portions of their range. The alternative is a world with fewer *garooo-a-a-a* calls, a little less dancing, and a lot less magic. ■

skyward. In slow and perfect unison, they may perform a low bow display or a ruffle bow. To wind down, they may preen or engage in a little celebratory dancing. After watching this incredible spectacle, you may feel like dancing yourself!

### Parenting Behavior

Cranes build their three- to five-foot-diameter nests in wide, lonely wetlands filled with sedges, cattails, or bog plants. The dishlike nests are usually perched safely above floodline on a mound of sticks, mosses, dead reeds, and rushes. Cranes utter a low moaning nesting call as they build a nest and again while incubating their one or two eggs.

A mere two or three days after hatching, precocious crane chicks are strong enough to follow their parents to feeding grounds where they try their hand at stalking and probing. Until their accuracy improves, you'll no

doubt hear their peeping food-begging call or see the parents and chicks bill touching, a sign that food is being begged or delivered. Thanks to the steady stream of handouts, the gangly juveniles are able to grow large enough in three months to join the flock for the long migration back to their winter haunts.

Besides dishing out dinner, crane parents are also kept busy on predator-mobbing patrol. Working as a team, the pair surrounds intruders and barks out loud single-syllable guard calls until they retreat. If eggs or chicks are in the nest, either parent may perform a spread-wing distraction display to refocus the enemy's attention.

To reassure their parents, sandhill chicks purr contact calls while foraging, playing, or being brooded. Should a chick become separated, chilled, or hungry, it summons its parents with a loud, unbroken stress call. If you hear this call, make sure you're not standing

HABITAT

*Saving*



(Sept  
Hunting, is a combination  
of 2 activities that are  
obsolete: walking +  
seeking wild food.

Economically obsolete.

Emotionally always there.

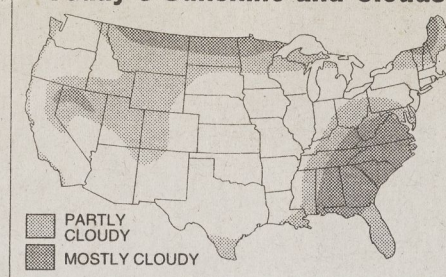
meanwhile, abundant sun will cause temperatures to soar into the 80's today in eastern Colorado, the central and southern Plains, Texas and the southern Mississippi Valley.

A area of low pressure will promote clouds and isolated showers today in northern California, northern Nevada and Utah. Elsewhere in the West, the weather will be mainly sunny and dry, though morning low clouds will plague portions of the Pacific Coast.

### Focus: Foggy Month

October is the foggiest month in the East. During a typical October, clear skies and light winds are fostered by Canadian high-pressure systems that

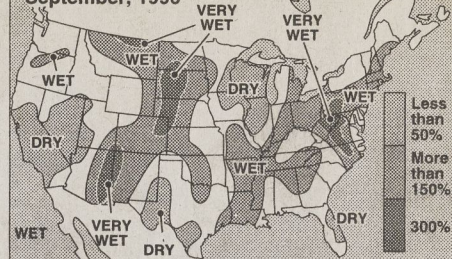
## Today's Sunshine and Clouds



## Weather Highlight

September was exceptionally wet from North Carolina into the central Appalachians. It was also soggy in the western Plains and the southern Rockies.

## Percentage of Normal Precipitation September, 1996



often settle over the region. With the lengthening darkness of October nights, the stage is set for the ground to lose much more infrared energy than it

gains from a cloudless atmosphere. As the earth cools, air in contact with the ground also cools. If winds blow at only a few miles per hour, the slowly upward-

spreading chill is contained in a layer of air next to the ground. The chill then coaxes water vapor to condense into trillions of tiny fog droplets.

## United States and Foreign Cities

**U.S. Cities** Following are the highest and lowest temperatures for the 19 hours ended 7 P.M. (E.D.T.) yesterday, the precipitation for the 18 hours ended 2 P.M. (E.D.T.) yesterday and expected conditions for today and tomorrow.

**Weather conditions:** C-cloudy, F-fog, H-haze, I-ice, PC-partly cloudy, R-rain, Sr-showers, S-sunny, Sn-snow, SS-snow showers, T-thunderstorms.

Cities	Yesterday	Today	Tomorrow
Albany	66/48 0.02	67/46 PC	70/46 PC
Albuquerque	75/47	0 80/49 PC	81/51 PC
Anchorage	43/32	0 44/27 R	43/33 C
Atlanta	71/53	0 74/60 C	77/66 C
Atlantic City	70/56 0.12	72/55 S	72/57 S
Austin	79/54	0 82/55 S	86/58 PC
Baltimore	70/52 0.01	75/47 S	75/49 PC
Baton Rouge	76/50	0 77/49 S	80/53 PC
Billings	81/45	0 78/45 S	67/47 C
Birmingham	74/44	0 78/54 S	77/62 C
Boise	84/54	0 83/54 S	77/53 S
Boston	69/61 0.59	65/54 S	67/50 S
Bridgeport	67/59 0.16	70/51 S	71/53 S
Buffalo	64/50	0 63/47 S	72/55 PC
Burlington	64/50 0.01	57/45 PC	68/40 PC
Casper	79/39	0 82/44 S	76/48 S
Charleston, WV	66/46	0 73/45 S	70/53 PC
Charlotte	66/59	0 65/55 C	65/56 R
Chattanooga	72/48 0.01	76/51 PC	75/60 C
Chicago	66/50	0 75/46 PC	74/53 PC
Cincinnati	70/43	0 74/46 S	75/54 PC
Cleveland	68/46	0 70/44 S	74/52 S
Colo. Springs	72/43	0 79/45 S	78/44 PC
Columbia	70/64 0.15	69/63 R	74/62 C
Columbus	70/45 0.01	73/45 S	76/52 PC
Concord	70/50 0.22	68/42 S	74/40 S
Dallas-Ft. Worth	81/48	0 83/54 S	84/58 S
Denver	79/48	0 81/49 S	82/48 PC
Des Moines	67/46	0 78/49 S	81/55 S
Detroit	72/46	0 72/40 PC	71/52 PC
El Paso	84/50	0 85/51 S	85/53 S
Fairbanks	34/32	0 36/30 Sn	34/28 Ss
Fargo	54/33	0 61/40 PC	65/43 C
Hartford	68/57 0.20	66/49 S	67/43 C
Honolulu	90/70	0 88/75 S	89/75 S

Houston	76/50	0 82/52 S	85/55 S
Indianapolis	72/43 0.01	75/46 S	77/51 S
Jackson	75/45	0 78/48 S	80/54 S
Jacksonville	90/70 4.10	87/70 C	87/70 C
Kansas City	79/46	0 82/56 S	82/57 S
Key West	88/82	0 86/80 Sr	87/81 PC
Las Vegas	91/62	0 92/62 S	91/66 S
Lexington	70/45	0 75/45 S	74/54 C
Little Rock	79/48	0 81/48 S	82/51 S
Los Angeles	85/62	0 81/62 S	78/62 S
Louisville	72/46 0.01	77/47 S	77/54 C
Lubbock	81/43	0 82/48 S	83/50 S
Memphis	75/48 0.75	80/50 S	80/58 PC
Miami	90/80	0 86/79 Sr	89/79 PC
Milwaukee	64/50	0 71/43 PC	72/54 PC
Minn.-St. Paul	57/41	0 71/42 PC	69/48 PC
Mobile	79/57	0 79/55 PC	81/65 PC
Nashville	72/45	0 76/46 PC	75/57 C
Newark	67/57 0.10	75/53 S	78/55 S
New Orleans	77/62	0 77/61 S	79/59 PC
New York City	67/58 0.18	73/56 S	78/57 S
Norfolk	73/58 0.48	75/57 PC	77/59 PC
Oklahoma City	79/46	0 82/52 S	82/54 S
Omaha	72/46	0 81/48 S	81/54 S
Orlando	91/71 0.18	90/72 PC	89/73 PC
Philadelphia	66/55 0.02	75/50 S	77/55 S
Phoenix	97/66	0 100/71 S	96/72 PC
Pittsburgh	64/46	0 72/47 S	74/52 PC
Portland, Me.	68/55 0.26	69/48 S	68/47 S
Portland, Ore.	75/55	0 72/50 PC	67/50 PC
Providence	67/58 0.24	66/51 S	70/47 S
Raleigh	66/57 0.04	70/53 C	67/55 C
Reno	84/40	0 80/41 S	76/44 PC
Richmond	68/58 0.01	77/50 S	77/54 PC
Rochester	66/46	0 61/46 S	71/52 PC
Sacramento	90/55	0 85/56 S	82/55 PC
St. Louis	77/48	0 79/50 S	80/56 S
St. Thomas	85/72	0 89/78 PC	90/75 PC
Salt Lake City	82/48	0 83/50 S	79/54 PC
San Antonio	81/50	0 83/53 S	87/57 PC
San Diego	72/62	0 74/64 S	72/64 S
San Francisco	63/52	0 67/53 PC	68/53 PC
San Jose	70/59	0 74/55 PC	74/55 PC
San Juan	87/75	0 86/75 PC	87/76 PC
Seattle	55/52	0 66/51 PC	64/50 PC
Shreveport	75/48 0.01	78/49 S	80/52 S

Sioux Falls	59/43	0 73/48 S	75/53 PC
Spokane	79/46	0 75/47 PC	71/46 S
Syracuse	66/53	0 61/48 S	71/51 PC
Tampa	90/73 1.38	90/75 PC	90/75 PC
Toledo	72/46	0 72/41 S	75/48 PC
Tucson	95/61	0 95/64 S	93/66 S
Tulsa	79/50	0 81/53 S	82/56 S
Virginia Beach	75/59 0.13	76/57 PC	77/59 PC
Washington	70/57	0 76/53 S	77/55 PC
Wichita	81/48	0 83/55 S	86/57 S
Wilmington	66/55 0.01	74/48 S	77/51 S

**Foreign Cities** Following are the highest and lowest temperatures and daily precipitation (reported in inches) for the 24 hours ended 7 P.M. (E.D.T.) yesterday and the normal temperature range for this time of the year.

\*Not available. tr-trace.

Cities	Yesterday	Norm
Acapulco	92/75	0 88/ 75
Amsterdam	62/54	.09 61/ 54
Athens	73/63	0 81/ 63
Auckland	60/52	.08 61/ 50
Bangkok	91/77	1.34 90/ 77
Beijing	77/61	0 73/ 52
Berlin	57/45	0 61/ 45
Bermuda	81/75	0 82/ 73
Brussels	65/54	.01 64/ 48
Budapest	66/43	trc 68/ 50
Buenos Aires	71/52	0 66/ 48
Cairo	90/70	0 88/ 66
Caracas	92/75	.16 88/ 77
Casablanca	76/63	0 77/ 61
Copenhagen	54/48	0 59/ 46
Dakar	86/77	.08 90/ 75
Damascus	91/50	0 86/ 57
Dublin	65/54	.16 61/ 48
Edinburgh	60/50	.27 57/ 46
Edmonton	42/32	.12 57/ 32
Frankfurt	63/46	trc 64/ 48
Geneva	71/41	0 64/ 48
Guadalajara	70/61	.94 79/ 59
Havana	87/71	0 90/ 72
Helsinki	48/45	.02 52/ 41
Hong Kong	86/75	0 82/ 75

Istanbul	65/55	.20 72/ 59
Jakarta	*	0 88/ 73
Jerusalem	87/62	0 82/ 61
Johannesburg	79/54	0 75/ 50
Kiev	51/34	0 61/ 45
Kingston	91/77	trc 88/ 77
Lima	69/59	0 63/ 57
Lisbon	85/64	0 75/ 61
London	66/57	.02 61/ 48
Madrid	90/55	0 77/ 54
Manila	86/78	* 88/ 75
Martinique	88/73	.08 88/ 73
Merida	94/75	0 90/ 73
Mexico City	64/55	0 72/ 52
Montego Bay	84/73	0 88/ 77
Monterrey	81/64	0 84/ 68
Montreal	65/50	.94 63/ 45
Moscow	42/23	0 55/ 43
Nairobi	76/32	0 75/ 54
Nassau	89/79	.01 86/ 75
New Delhi	97/73	0 93/ 70
Nice	73/59	0 73/ 57
Oslo	50/32	.31 52/ 39
Panama City	85/73	* 88/ 73
Paris	73/50	0 66/ 50
Prague	56/43	.01 61/ 45
Quebec City	63/50	.91 59/ 41
Rio de Janeiro	77/68	0 75/ 64
Riyadh	100/75	0 99/ 66
Rome	78/52	0 75/ 59
Seoul	80/61	0 73/ 54
Shanghai	78/70	.09 77/ 63
Singapore	90/79	.04 88/ 75
Stockholm	55/43	.08 54/ 43
Sydney	69/61	1.73 68/ 54
Taipei	78/71	.24 84/ 70
Tokyo	74/61	0 75/ 61
Toronto	66/48	.20 64/ 45
Tunis	75/64	0 82/ 63
Vancouver	62/48	0 61/ 46
Vienna	63/54	.08 64/ 48
Warsaw	55/46	.02 61/ 46
Winnipeg	46/32	0 59/ 37

Compiled by WSI from National Weather Service observations, forecasts and reports.

A black and white photograph showing the lower half of a person standing in shallow water. The person is wearing a dark, double-breasted jacket with visible buttons and light-colored, pleated trousers that are rolled up at the ankles. Their legs are partially submerged in the water, and their reflection is clearly visible on the calm surface. The background is a bright, overexposed area, likely a beach or a body of water under a bright sky.

# People weekly Performs

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(Prairie)

B-1 border coming  
up behind me

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Eagle taking pronghorns.

I am the eagle / hawk  
Walking in the Sky

12/20/93. Pulled Hawk off  
point. Saw a joshawk  
flew over.

←  
The eagle & the antelope.

Syr

Energy :

from 1 to air  
to 10 front

Pror: ~~Part. to me.~~

Sky to me.

A red-tailed hawk takes off from its perch on a fence post along the Bridger Mountains north of Bozeman. Besides a great place to spot hawks, the Bridger range ranks as the No. 1 golden eagle flyway in the United States. This weekend's Bridger Raptor Festival at Bridger Bowl will prove so as the raptor migration is at its peak.

# Raptor Festival highlights golden eagle flyway

By DEBORAH RICHIE  
Special to the Chronicle

Perched on a knife-edge ridge of the Bridger Mountain range, two observers from HawkWatch International focus binoculars on specks approaching from the north.

Within a few minutes, three golden eagles glide by at eye level. Outstretched wings cast immense shadows. Each head feather captures the sun's radiance.

For wildlife viewers willing to hike two miles and 2,100 feet up, it's a chance to merge with migrating eagles and hawks beside, below and above you.

In fact, Montana's Bridger range ranks as the No. 1 golden eagle flyway in the United States. On a peak fall day, HawkWatch spotters may tally as many as 250 of these regal birds of prey. They welcome hikers to join them and will take time to share tips on identifying birds.

Steve Hoffman, director of HawkWatch International, a non-profit conservation and education group based in Salt Lake City, predicts this year's Bridger raptor count will be higher than last year's, based on early migration data gathered in Nevada's Goshute Mountains. Last year's wet nesting season was tough on the birds, he says. This year's improved nesting success ought to lead to more migrating juvenile birds.

The Bridger Raptor Festival on Saturday and Sunday at Bridger Bowl commemorates the anticipated peak weekend of migration. Free workshops on Saturday will hone skills needed to identify 17 species of raptors. Experts will interpret

## Festival includes several free workshops

The Bridger Raptor Festival will be Saturday and Sunday from at Bridger Bowl. Admission is free.

Eagle viewing will take place from 9 a.m. to 4 p.m. both days with raptor experts on the ridge at Bridger Bowl.

Hikers should park at the main lodge and follow signs to the ridge. The hike takes 1.5 to 2 hours and is steep. No facilities will be available on the mountain. Hikers should wear sturdy footwear and pack water, food and warm clothing.

Saturday the festival kicks off with an introduction to raptors at Bridger Bowl from 9 to 9:15 a.m. Basic raptor identification techniques will be discussed from 9:15 to 9:45 a.m.

Keynote speaker Al Harmata will talk on the status of bald and golden eagles in Montana from 9:45 to 10:30 a.m. in

the Jim Bridger Lodge. Harmata is a local raptor expert.

Big Sky Wildcare will talk about raptor rehabilitation from 10:30 to 11 a.m., followed by a discussion on the ecology of raptors from 11 to 11:30 a.m.

A drawing will be held to benefit HawkWatch International. Tickets are \$1 each or six for \$5 at Wild Birds Unlimited, Barrel Mountaineering, Cactus Records, Bozeman Food Co-op and at Bridger Bowl on Saturday.

Prizes include binoculars, a season pass at Bridger Bowl and a polar fleece jacket.

The festival is sponsored by Bridger Bowl, Gallatin National Forest, Hawk Watch International and the Montana Department of Fish, Wildlife and Parks.

the natural history, monitoring, rehabilitation and conservation of birds of prey.

Just as winter skiers stand in line to ride a lift to the summit, migrating eagles and hawks choose the easy way to save energy on long flights. They sail along for hundreds of miles, relaxing on a cushion of air. The combination of

steady westerly winds drafting upwards along a north-south ridge make the Bridger range a raptor Mecca. Birds climb onto the wind tram as far north as the Canadian Rockies and trace feeder ridges south to the Bridger Range.


(More on **Raptors**, page 18)

# IN SEATTLE



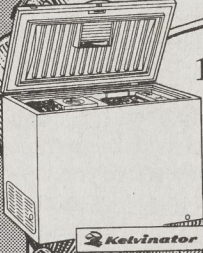
ts to an exciting Football Weekend in Seattle!  
 cle's Football Contest for your chance to win!

p Airfare on **Horizon Air**  
 Night Hotel Accommodations  
 ts to the Dec. 8 Seahawks Game!



**KELVINATOR 14 CU.FT. UPRIGHT FREEZER**

Why move 5 things to find one? Consider a new upright.



**\$348<sup>00</sup>**

**KELVINATOR 15 CU.FT. CHEST FREEZER**

Our most popular all around model!!



**\$359<sup>00</sup>**

**KELVINATOR 9 CU.FT. UPRIGHT FREEZER**

Less than 24" wide so it fits almost anywhere.



**\$459<sup>00</sup>**

## Raptors/ *from page 17*

Golden eagles particularly seek out the lift of ridge winds to support their heavy bodies. Sixty-five per cent of all raptors counted here are goldens. About two-thirds are dispersing juveniles migrating several hundred miles as food supplies in the north decrease. Some adults may not leave their summer home at all, depending on food availability.

While golden eagles may be the glamour birds of the aerial parade, each raptor has its own remarkable story. The Swainson's hawk, for instance, flies thousands of miles to winter in the pampas of Argentina.

Typically, the first two weeks in October offer prime viewing. The best time of day is in the afternoon, when the updraft winds are strongest.

Donations from the Montana Watchable Wildlife tax checkoff help support public education about eagles and hawks migrating over the Bridger range. The site is featured in the Montana Wildlife Viewing Guide and is part of a net-

### Annual raptor count (average 1991-1994)

Golden eagle	1,514
Sharp-shinned hawk	243
Cooper's hawk	130
Bald eagle	76
Unidentified	73
Red-tailed hawk	67 <i>Only?</i>
American kestrel	47
Northern goshawk	45
Northern harrier	33 <i>Only?</i>
Rough-legged hawk	30
Prairie falcon	11
Merlin	7
Broad-winged hawk	5
Osprey	4
Peregrine falcon	4
Swainson's hawk	4
Ferruginous hawk	1
Turkey vulture	1
<b>TOTAL</b>	<b>2,295</b>

work of wildlife viewing areas marked by highway binocular signs.

RS

13

S

# Private property opens up

## **Block management:**

Seven million new acres  
open to hunting this year

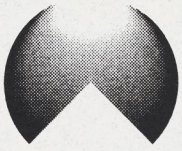
Montana Department

(Sept)  
She { miracle  
{ magic / Creativity  
here is Huck. There  
weren't any birds till  
he made them. I  
could walk all day  
& not see one.

---

There aren't any there,  
& then Huck comes and  
there are

Creatimism for you.



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Program for Environmental Writers

Haggers  
~~a dog~~ was in his main  
connection to the world.


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Sept

Hunting is walking  
for a paper, & the  
paper is for I. The method  
& the purpose are I'd  
expect. ~~The~~ 11/6 are  
used to walk ~~for~~  
for his foot, today.  
It is the entry of  
the car, and the  
supermarket. Everyone  
~~used to~~ had to  
walk, 100 years back,  
& now we don't.



Summer draws to an easy end as shoppers at the Springdale Colony stand purchase the last of the summer vegetables Saturday morning at this season's final Farmers Market in the Bogart Pavilion.

DOUG LONEMAN/CHRONICLE

# Raspberries are gone; so is Farmers Market

By GAIL SCHONTZLER  
Chronicle Staff Writer

9/19/95

Every space under the Bogart Pavilion was filled with sellers of everything from zucchinis to handmade earrings and cinnamon rolls. Every parking space for blocks around was packed by people heading to the Farmers Market.

But gone were the raspberries, the lavender — the sun. Gray skies sent bone-chilling winds through the market's final Saturday.

It was last rites for summer.

"Buy now or forever hold your piece!" a woman selling dried flowers called out to a customer, who couldn't believe this was the last of the Farmers Markets.

'I always feel extremely sentimental. I love it, it's one of my favorite Bozeman activities — so friendly and purposeful at the same time.'

— Marcia Youngman

Youngman said. "I love it, it's one of my favorite Bozeman activities — so friendly and purposeful at the same time."

Buyers will miss the bustle and flower bulbs, the dolls and dried roses. But some of the vendors were ready for this good thing to come to an end.

"It's a lot of work," said Averil Heath of Springhill.

and it went pretty well. On their best Saturday, they sold 195 flies, making about \$140.

Now that the market is ending, Matthew said, "We get to relax a little."

The Farmers Market was started 21 years ago by three women who wanted to give their kids a way to sell radishes and flowers and make a little money during the

market's

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Administrator  
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s. You can  
vall, but

pulled his 9mm pistol and commenced  
ing.

"We think he emptied a clip," a plant  
employee is quoted as saying, "but we  
could only find eight casings on the pave-  
ment."

The story states that during the battle,  
the officer, seeking to escape the wood-  
chuck, "jumped up on the cruiser and in-  
jured his knee." Fortunately, before any-  
body else could be hurt, the woodchuck  
went to that Big Burrow in the Sky.

I wish I could tell you that this was an  
isolated incident. I wish I could look you in

Natural Resources  
"found no abnormal behavior from the  
squirrels."

Of course not. They may be squirrels,  
but they are not stupid. They're not about  
to go after a government official, not after  
what happened to the woodchuck. No,  
they put on a cute little Walt Disney show  
for the Maryland Department of Natural  
Resources, squeaking and scampering  
around with acorns in their cheeks. But  
you may rest assured that as soon as the  
coast was clear, they resumed smoking  
tiny cigarettes and planning their next at-

the same reaction to this story as I did,  
namely: How come this never happens, on-  
camera, to MY local TV reporters? Until we  
get solid answers to this and many other  
questions raised by this column (such as:  
"Why would anybody print this column?"),  
I am urging everyone to avoid all contact  
with nature in any form, including vegeta-  
bles. Speaking of which, you should also  
write your congressperson.'

*Dave Barry is a columnist for the Miami  
Herald.*

Chicago Tribune

CHINA

BEIJING

CERTAINLY!...  
FIRST DOOR  
ON THE LEFT!

WOMEN

## Focus

Most of us mortals need it. We need a  
trout or duck or deer to see clearly &  
serve <sup>as a</sup> measuring of progress or failure.  
~~We <sup>try to</sup> focus on <sup>at the moment</sup> everything, for us, it~~  
~~to see <sup>is</sup> rather not to focus at all. to~~  
see a blur.

~~Thoreau~~ Thoreau could do it, though. He  
would have been hard to follow. You might  
have found yourself lying on your back  
in the rain, watching with you stars &  
green. [?]

Or maybe Thoreau was simply able to  
focus on many things. It was his life, and  
he eliminated all ~~but rather~~ distractions,  
all but nature.

Distance (Sept)

for smells or sight,  
People may be oppressed

by it or expand?

Distance is the gift  
of clear sky.

Walking in the sky -  
more like yellow line /  
2 bar. Separated from  
other stuff. - not  
part of species 1st  
section.

---

Western migrants get both  
of vag. max / depression when  
they hit the prairie.

check Bernard De Koto

1841 - year of Death  
for across the wide western  
people living their hearings.

Most American <sup>hate the</sup> ~~don't like~~ prairie for its emptiness of ever — for what it's not. But it has more animals than the forest.



A REPORTER AT LARGE

## THE UNLAMENTED WEST

*Militias, Freemen, mad bombers—why do so many extreme and dangerous individualists seem to come from one place?*

BY JONATHAN RABAN

*Sounds like*

*M. J.*

*Most Americans do not like the prairie. We're a wet-land people.*

**M**OST mornings at this time of year, I gut the skinny national edition of the New York Times on my third-floor deck—looking east, over the green Seattle suburbs, to the spin-drift snowcaps of the Cascade Range. Past the Cascades, sagebrush takes hold, in the dry coulees and lumpy prairie country of eastern Washington. The land turns green again in Idaho, in the fir-clad foothills of the Rocky Mountains. And after the Rockies, it's back to dust and sagebrush on the arid plains of eastern Montana and the Dakotas. I've driven that route so often that the intervening mountains offer no serious impediment to the thousand-mile view from the deck: on a

good day, I can see clear to the North Dakota badlands—to Dickinson, Minot, Bismarck, and the coffee-colored gleam of the Missouri River, where the Midwest begins.

For people on this fertile coast, most of "The West" is, as people like to say, Back East. It belongs to the past. It is where parents and grandparents lived and—mostly—failed, leaving a forlorn trail of abandoned homesteads, bankrupt businesses, exhausted mines, and empty logging camps behind them. Serial failure is the driving theme in the family narratives of a great many of my immediate neighbors: high hopes dashed, rekindled, dashed again, as families crawled westward, in meagre increments of a hundred

miles or so, until at last they found a modestly secure anchorage somewhere between the Cascades and the Pacific.

It is an unquiet past. The news from the Back-East West that finds its way into the Times reads like a string of bubbles of bad gas, rising from the depths of the grandfather era and bursting noxiously into the present. Angry disputes over land use, grazing rights, logging, mineral royalties. . . . The strangely antique figures of James (Bo) Gritz, Randall Weaver, the Freemen of Justus Township, the Trochmann brothers and their homemade army, Ted Kaczynski reading Thackeray and the Bible in his red plywood cabin. Photographs of these charac-

learn how to pronounce the names of foreign capitals. (Given American ignorance of geography, our troops would never leave their bunks.) Dowd doesn't give Clinton credit for attempting to halt further genocide in Bosnia (a responsibility he could have shirked; it's hardly been a popular move in the polls), because giving him credit would mean acknowledging that he is a political leader of some marrow and conviction rather than a Jules Feiffer cartoon with jumpy nerves. She never comes out and argues that Clinton has been a *bad* President, or that anyone on the current scene would be any better. (She did entertain a brief flutter for Colin Powell, whom she swooned over in a "Bridges of Madison County" parody as a "graceful, hard male animal," loping out of the Presidential race "like a fine leopard on the veld." Mandingo!) Clinton's sin seems to be not that he is a failed President but that he is an erratic performer. He doesn't quite satisfy her.

Dowd's depiction of Hillary Rodham Clinton is no less derogatory. In a column dated August 10th, she took an easy poke at Mrs. Clinton's syndicated column—"To read Hillary Rodham Clinton's new column, you would think everything was peachy keen"—before embarking on a detailed recap of Mrs. Clinton's alleged chicanery. Shortly after William Safire delivered his "congenital liar" insult, Dowd tried to top him by comparing the First Lady to—unless I misread her—a dead fish. The column begins by recounting a dinner she had with Mrs. Clinton in 1992 (the Journalist's Credo: Let no anecdote go to waste), during which Mrs. Clinton

told a story about the summer during law school when she went to Alaska and got a job in a fish-processing plant. She was supposed to scoop out the entrails, but she began to get worried about the state of the fish.

"They were purple and black and yucky looking," she recalled. She questioned the owner about how long the fish had been dead. He told her to stop asking questions. She didn't and was fired. "I found another job," she said coolly.

A less tendentious spirit might think that this anecdote reflects admirable pluck on the part of young Hillary—her not wanting to pass on bad fish and her willingness to con-

front the boss. To Dowd it demonstrates the moralistic side of the future First Lady: "She reminded me of Sister Sarah, the mission doll from 'Guys and Dolls.'" A pious do-gooder, and a hypocritical do-gooder at that: "Now Mrs. Clinton is the authority, and she doesn't take kindly to being prodded. If anybody notices something yucky about her financial and political entrails they are supposed to trust that she is working for the greater good." To Dowd, H.R.C.'s bossy ambition ("Her much vaunted idealism has a way of riding roughshod over those around her") reeks of hubris. And "reeks" is the word. Her entire column is funnelled toward the big payoff of the final sentence: "As she must remember, the fish rots from the head down." (In a more recent column, she relished the fall from grace of the Clinton adviser Susan Thomases, who was part of the rot: "I miss her rabid maneuvering on behalf of the First Lady." I've no doubt.)

Reading Dowd's rotting-fish column, I recalled a throwaway remark by Nora Ephron in "Scribble Scribble," which said, "The anecdote is a particularly dehumanizing sort of descriptive narrative." I didn't grasp the comment at the time (the book was published in 1978), but now I understand what Ephron meant: the anecdote has become an all-purpose put-down device, which boxes complicated issues and individuals into a single caption. Maureen Dowd's columns have become a series of cutie-pie captions. Her pieces on Bob Dole—mocking his name, his backroom expertise, his attempt to project vigor—are almost Dadaist in their free-form dither. Lacking the underdog fight of her colleague Bob Herbert, the brass-knuckled know-how of William Safire, the newfound purpose of Frank Rich, the "Network"-anchorman evangelism of A. M. Rosenthal (who writes as if he were shouting from the fire escape), she trots out a tricky line of patter that pins her targets to the page without ever betraying a particular point of view. Dowd is making mischief on the Op-Ed page, but that's all she's making. Her columns are so light they're beginning to levitate. Like the Cheshire cat, she leaves only her grin behind. ♦

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ters should be printed in sepia. They belong to that sad and unlamented West where bitterness and fury were the natural offspring of impossibly great expectations.

I

FROM the spring of 1907 through the fall of 1908, the Chicago, Milwaukee & St. Paul railroad lumbered through the Dakotas and into Montana. From the top of any butte, one could have seen its course through the badlands: the lines of horse-drawn wagons, the heaps of broken rock for the roadbed, the gangs of laborers, engineers, surveyors. From a distance, the construction of the new line looked like a disaster of war.

As the Milwaukee Road advanced, it flung infant cities into being at intervals of a dozen miles or so. Trains needed to be loaded with freight and passengers, and it was the essential business of the railroad company to create instant communities of people whose lives would be dependent on the umbilical of the line. So the company built skeletal market centers on company-owned land. Its creations were as arbitrary as those described in Genesis. The company said, "Let there be a city": and there was a city.

Each was a duplicate of the last. Main Street was a line of boxes, wood and brick, laid out on the prairie, transverse to the railroad line. The boxes housed a post office, a hotel, a saloon, a general store, a saddlery, a barbershop, a church, a bank, a schoolhouse, and a jail. Beside the line, sites were earmarked for the grain elevator and the stockyard. A few shacks, and the city was done. Photographed from the proper angle, with railroad workers for citizens, it could be promoted as the coming place in the New West.

The railroad moved into Montana like Caesar marching through Gaul, freely inventing the land it occupied as it went along. Like Gaul, this part of Montana had been named long ago—by the Indians, by the United States Army, and by ranchers, who had raised cattle, sheep, and horses there for the last forty years. But the railroad ignored the existing names, preferring to adorn the landscape with bright new coinages of its own. It canvassed directors and senior managers for the names they had given their daughters. The president of the railroad, Albert J. Earling, had two daughters, Isabel and May. The girls' names were fused to pro-

duce Ismay, which sounded modern and tripping on the tongue, although someone might have warned the company that it could, sometime in the far future, be vulnerable to the addition of a spray-painted initial "D." The recent offspring of other Milwaukee Road officials seem to have included a Lorraine, an Edina, and a Mildred.

At Lorraine, the first of the Montana towns, the company dammed a creek to create a lake and a reliable source of water for the locomotives. Lorraine's father must have fallen out of favor with the board, for Lorraine was Lorraine for only an eye-blink before it was renamed Baker, in recognition of A. G. Baker, the chief construction engineer on the project. Edina, thirteen miles down the line, went the same way as Lorraine. There, a crew of Bulgarian workers lobbied to have the city named Plevna instead: 1908 was the year of the declaration of Bulgarian independence from Turkey, and Plevna, liberated by Russian troops from its Turkish occupiers in 1877, was a city dear to Bulgarian nationalists.

The West was still thought of as a great blank page on which almost anything might be inscribed. Its history could

be erased, its future redrafted, on the strength of a bad breakfast or a passing fancy. The half-built new towns, in which the typical business was a shed with a two-story trompe-l'oeil façade tacked on its front end, were architectural fictions, more appearance than reality; their creators, the railroad magnates, doodling a society into existence, were like novelists.

Nothing in the geography prepares one for the arbitrary suddenness of these prairie railroad towns. They simply occur—as accidents do—when you're least expecting them. For mile after mile, the sagebrush rolls and breaks. The bare outcrops of rock and gumbo clay monotonously repeat themselves. Then you catch a glint of sun on a distant grain elevator. And then you're *here*: in a bar on Main, with Rexall's next door and, across the street, a used-furniture showroom in the remains of what was once the opera house. The bartender is lost in the sports section of the *Billings Gazette*. The essential coordinates of place are here. This is a distinct local habitation with a name. Yet something's wrong. Why is here *here*? Why isn't it somewhere else?

Nearly a century after they were born, these towns are still haunted by the accidental nature of their conception. Their brickwork has grown old, the advertisements painted on the sides of their buildings have faded pleasantly into antiques, yet the towns seem insufficiently attached to the earth. Such lightness is unsettling. It makes one feel too keenly one's own contingency in the order of things.

As the railroads pushed farther west, into open rangeland that grew steadily drier and steadily emptier, the rival companies clubbed together to sponsor an extraordinary body of popular literature. In school atlases just a few years earlier, the area had been called the Great American Desert—an imaginative vacancy, without any flora or fauna. Railroad writers and illustrators were assigned to come up with a new picture of free, rich farmland—a picture so attractive that readers would commit their families and their life savings to it, sight unseen.

The pamphlets were distributed by railroad agents all over the United States and Europe. They were translated into German, Swedish, Norwegian, Danish, Russian, Italian. They turned up in bars and barbershops, in doctors' waiting rooms, in the carriages of the London

tube and the New York subway. Newspapers carried advertisements for them: by filling in and returning a coupon, you could receive a free copy by post.

When a pamphlet arrived, it was bigger than one had expected. What slid from the manila envelope had the glamorous, bang-up-to-date look of a best-seller. Its cover was dominated by a warm golden yellow—the color of sunshine, ripe wheat, money. The land from the Dakotas to the Pacific was drawn as a single, enormous field, and across it ran the straight line of the Milwaukee Road. The main body of the picture showed a fresh-faced young man steering a plow drawn by two horses. As the virgin earth peeled away from the blade of the plow, it turned into a breaking wave of gold coins.

One would have to be a fool to take the cover seriously. Yet, the more you looked at the text inside, the less fantastic the claim made by the cover came to seem. It was in black-and-white—facts and figures, and testimonies of experts and of new settlers already coining money from their homesteads. At the Great New York Land Show, held in Madison Square Garden, Montana had carried off the prizes for the best wheat, best oats,

best barley, and best alfalfa in the United States. In print, these crops took on a solid, succulent weight. "Oats grow to perfection. There is something about the climate that favors them and produces a bright, plump, heavy berry that averages forty pounds to the bushel." As for alfalfa, the "noted alfalfa grower" I. D. O'Donnell turned in a lyrical prose poem:

Alfalfa is the best mortgage lifter ever known. It is better than a bank account, for it never fails or goes into the hands of a receiver. It is weather proof, for cold does not injure it and heat makes it grow all the better. A winter flood does not drown it and a fire does not kill it. . . . Cattle love it, hogs fatten upon it, and a hungry horse wants nothing else.

Some pamphlets were aimed at readers with firsthand experience of farming: Southern sharecroppers; tenants and paid hands in rural Iowa and Minnesota; Scandinavian wheat farmers bankrupted by the devastating success of the American grain belt. But many were addressed to the wider audience of urban daydreamers—people who, cut off from nature, yearned for a draught of country air and the daily intimacies of village life. The pamphlets sought out the haggard schoolteacher, the bored machinist, the clerk, the telegrapher, the short-order cook, and

## PASTELS BY DEGAS

Those shoulders. An erotic thing submerged in duration.  
Her hands are entangled in undone red plaits  
So dense that, combed, they pull her head down.  
A thigh, and under it the foot of another leg—  
For she is sitting, her bent knees open,  
And the movement of arms reveals the shape of a breast.  
Here undoubtedly. In a century, a year  
That are gone, and how to reach her?  
How to reach the other, in the yellow robe?  
She puts on mascara, humming a tune.  
The third lies on the bed, smokes a cigarette  
And looks through a fashion journal. Her muslin shirt  
Shows a white roundness and pinkish nipples.  
The painter's hat hangs on the entresol  
With their dresses. He liked it there, to gossip, sketch.  
Our human communion has an acrid taste  
Because of familiar touch, avid lips,  
The shape of loins, talk of immortal soul.  
It flows in and recedes. A wave, a hissing surf.  
And only a red mane flickered in the abyss.

—CZESLAW MILOSZ

(Translated, from the Polish, by the author and Robert Hass.)

the printer, and promised to turn each of them into the prosperous squire of his or her own rolling acres.

"Uncle Sam gives you a cordial invitation . . ." The terms of the Enlarged Homestead Act, passed by Congress in 1909, after a great deal of lobbying by the railroad companies, were generous. The size of a government homestead on "semi-arid land" was doubled, from a quarter section to a half section; from a hundred and sixty acres to three hundred and twenty. One did not have to be an American citizen to stake a claim—though it was necessary to become one within five years, when the homestead was "proved up." The proving-up was a formality that entailed the payment of a small fee and an inspection of the property to verify that it had been kept under cultivation. That done, the full title to the land was granted to the homesteader.

*Three hundred and twenty acres.* In such a space one could imagine a dozen big fields, filled with rippling crops of wheat, oats, alfalfa, barley; ample pastureland for sheep and cattle to wander over; a tree-shaded house, a red barn, a walled kitchen garden for vegetables. There would be poultry scratching in the yard, beehives in the clover, a winding gravel drive. . . . It wouldn't be a farm, it would be an estate. It was an astounding free offer by any reckoning.

IN 1909, the roadbed was still soft, and when the emigrant train pulled out of Marmarth, North Dakota, its speed didn't rise above that of a reasonably agile man on foot. With the temperature outside close to ninety degrees, the oppressive breadth of America was brought painfully home to every passenger. The stations—Selby, McLaughlin, Haynes, Reeder, Bowman, Rhame—slowly came and slowly went, their names empty of any meaningful association. At close to noon, the Missouri River was crossed, at Mobridge, South Dakota; after that, there was nothing in the geography to engage the eye. The badland formations—mushrooms of sandstone on stalks of pale-gray clay—arrived as a welcome break; they gave one something to look at, provided a talking point in their queer resemblance to animals, human faces, architecture.

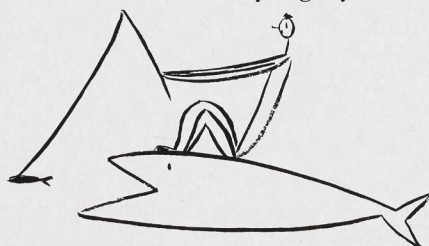
In one of the coaches, sitting alone above a spreading pool of tobacco juice on the floor, I see Worsell. In the informal

society of the prairie, where everyone was on first-name terms with everyone else, Worsell would always be remembered only as Worsell, or Mr. Worsell, or That Englishman. He was not a man who inspired affection. A prevailing distaste colors the recollections of Worsell that now survive. He was clearly one of those unfortunates whom no one ever credited with an interior life, with secret hopes, with romantic affections. The carapace of Worsell, that unlovely shell, is part of the official history of the prairie; but in exploring Worsell's crepuscular history, I have had to light my way with guesswork and some imagination—a fact which in itself tells one something of Worsell's isolation in an otherwise gregarious and neighborly society.

Worsell was a Londoner and, at thirty-four, an old soldier. He'd been invalidated out of the South African War because of his leg, and had blued his discharge pay on a ticket to America, the land of big helpings and easy pickings. He had no luck in New York and, following the talk in the hostel where he'd put up, made his way to Minneapolis. He tried his hand at a number of things—working in a hardware store, housepainting, and hauling logs with a timber outfit in northern Minnesota.

In Minneapolis, he met a Swedish girl named Kirsten Torup, who had recently arrived in America with her family; in her company, Worsell felt positively talented. His fluent English made him the custodian of all things American. He was a welcome guest in the tenement building where the Torups had an apartment. He corrected everyone's pronunciation. He grew a mustache and bought a phonograph.

Worsell and Kirsten married, and their son, Arthur, was born in August of 1902. But when Arthur was four Kirsten died of the flu, and Worsell's world, never robust, went to pieces. Utterly unequipped for single parenthood, he farmed the child out to his wife's relatives. He paid irregular visits to Arthur—strained occasions, on which he was usually slightly drunk.



In 1909, he was following the drift of the talk in the bars in Minneapolis, just as earlier he had followed the drift of the talk in the New York hostel. Free land was free land, and Worsell wanted a piece of it for himself.

Across the aisle of the coach, a woman was feeding her family sandwiches—thin slices of bread smeared with ketchup. She offered one to Worsell. He wasn't hungry, but he never passed up a free offer. The scrape of ketchup was so faint as to barely color the bread, but food was food, and You eat what you can get was Worsell's motto.

More than forty hours after leaving Chicago, the train arrived in Ismay, where a crowd of husbands had been waiting for it since early afternoon, a good number of them in "Nigger Bob's" saloon. The dazed and travel-stained emigrants lifted their bags and boxes down onto the track. They had been expecting a city, with street lamps, signs, illuminated storefronts. They stood under a clear night sky, looking in perplexity at a bare scattering of buildings, their blocky shapes silvered by starlight.

Many spent their first night in Montana at the Milwaukee Hotel, a honeycomb of closet-size rooms, each just large enough to hold a bed, a chair, and a nightstand with a chamber pot below. The curtains—so thin that the new residents could see the stars through them—stirred in the drafts that wormed their way through the poorly carpentered window frames. Some of the emigrants heard for the first time the intense contralto sobbing of coyotes, and wondered apprehensively if they were wolves.

## II

MIKE WOLLASTON and I have been wrangling all morning. Mike is the grandson of a homesteader, and we've just spent an hour in the wrong township. We are now, we think, in the right one: Township 9, north of Range 53 East, southern half of Section 2, eleven miles northwest of Ismay. The land was proved up by Mike's grandfather, Ned Wollaston, on April 27, 1917, and granted to him, and to his heirs and assigns forever, under the Presidential seal of Woodrow Wilson. We are definitely on the Wollaston place, but the homestead has gone missing. A photograph was taken by Mike's father, Percy Wollaston, in the late nineteen-

thirties. In the chemical gloaming of underexposure stands a trim two-story farmhouse with barns and outbuildings.

We expected to find the place in ruins, but there isn't so much as the ruin of a ruin in sight. The open range, green now, in May, and splashed with yellow and purple wildflowers, is empty except for a herd of cattle two or three miles off. As we try to match the topography to the photograph, bump for bump, the missing homestead slides about over the prairie like an egg on hot oil. Maybe the swale has changed its course. Maybe grass has grown over the exposed rock of the ridge. Mike and I, both fifty-something, shiver at the discovery that a mere half century is sufficient to consign his grandfather's farm to the realm of archeology.

Killdeer wheel overhead, the most miserable-sounding of all Peterson's Western Birds. The wind keens in the long grass. Cigars clenched between our teeth, we follow the zigzag line of the swale, searching for landmarks.

And then, suddenly, we have a perfect fit. The ridge, the notch, the swale, and a low hill in the distance are aligned exactly as they are in the photograph. A barbed-wire fence is close to where Mike's father must have stood with his Brownie—and here, at our feet, is the rotted stub of a juniper post. A coil of rusty wire lies on the rock behind us. A patch of emerald, over to the right, must have been the pigpen. The shit from Ned's

pigs—years older than either of us—must still be doing a useful job. And there, where the original topsoil lay undisturbed beneath the floor of the house, is the Wollaston homestead.

Crossing the swale, Mike dislodges a ragged metal hoop. "Top of a milking pail," he says. A little farther on, he eases from the earth a cobweb of rust and pronounces it to be a component of a threshing machine.

"If you say so . . ."

When he was a small child, shortly after Pearl Harbor, Mike was evacuated from Great Falls to Ismay, along with his elder brother and two sisters, and they all lived there with their maternal grandmother for the duration of the war. Though the homestead was only a short ride away, they were never taken to see it, nor was it spoken of.

"Look." Mike has found a small rusted metal frame on which a single plank dangles loosely from a bolt. "My father's sled."

"Rosebud," I say, and wish I hadn't.

For a full minute, he stands silent, cradling his father's sled. Then he lays it back in the grass as carefully as one might lay down a sleeping child. "It's better where it is." He affects a hardboiled grin. "My father only talked once about the homestead. We were sitting up late over a glass of whiskey. There was a silence. Then he said he hoped he'd never again have to see anything like his mother down on her knees day after day praying for rain. That was it."

Maybe his father's taciturnity was meant to protect his memory of the homestead, for in the early seventies he wrote a memoir of his prairie childhood. Percy Wollaston wanted his grandchildren—born in the nineteen-sixties—to understand how close they were to the kind of pioneer life that by the time of Watergate had come to seem merely part of the quaint costume drama of the remote American past. Mike's father was then living in a handsome log house near Eureka, Montana, on the wet, green western slope of the Rockies. Elk and deer trampled his lawn; a trout stream chuckled over granite boulders thirty yards from his living-room window. In this forest clearing, he sat, listening to the water, at a manual Smith-Corona and re-created on the page the dry and treeless country around Ismay between 1910 and 1927.

He wrote in well-carpen-tered sentences. He was a practical man, whose life had been spent attending to details, and the habit of patient craftsmanship showed in his writing. As the story took hold, he found himself able to look out at the world through the promiscuous, relentlessly observant eyes of his six-year-old self. He illustrated his work with pen-and-ink drawings that showed how to build a claim shack or make a "stoneboat" to clear the land of rocks.

He sketched the homestead as it had been in 1912. A photocopy of this drawing is pegged out with stones on the ground between Mike and me. We are sitting on one of the remaining ruins we've discovered, the wall of the dug-out barn, built in a hurry to shelter the horses in the fall of 1910. Its flat roof was shaggily thatched with hay bought from a neighbor. Its pine-log beams were cut from a stand of timber in hills ten miles away.

The air is thick with heat. In sweat-sodden shirts, we walk down a path to what would have been the front door of the house. A shallow, winding valley enfolds the farm on all sides. The fenced lawn would have extended almost as far as the creek. Close to the house, the flower beds, watered each evening with kitchen slops, would have been tight-packed with clematis, chrysanthemum, aster, and larkspur.

It is a view to be proud of, and "homestead" seems too cramped a



*"All he does is eat, sleep, and paint."*

word for a spread so grandly conceived as this. The Wollaston place was built to be a family empire, handed down to grandchildren who would grow up on it and farm it in their turn.

Ned's grandson makes a sharp turn around the corner of the farmhouse kitchen, as if the walls still stood, and finds the flagstone path to the henhouse.

Past the henhouse is the bonfire site. Sagebrush has grown over the ashes, but we dig out the remains of a car seat, some charred timber, a lawnmower wheel, the broken half of a toy pistol—Percy's six-shooter. A tarnished coin at my feet turns out to be a paper-thin stamped medallion of a woman's head, her hair flying, Art Nouveau style, with a projecting metal tab. I hand it to Mike.

"What I think?" he says. "It's the clasp to an old-timey photograph album."

We search for its other half. No luck.

"They must have burned the family photos when they left."

A MILE southeast of Mike's grandfather's place, Worsell held down his claim.

His land was rough—three hundred and twenty acres of lumps and bald patches, with a southerly tilt that would expose it to the full, broiling heat of the summer sun. It had no creekbed, but did have one great advantage: on its northern and eastern sides, it was already fenced.

Worsell had grown up in East London, in a tenement block off Bethnal Green Road, where the view had been of a brick wall and of the windows of rooms that were bleak mirrors of the Worsells' own. Worsell, a small man with a pinched and beaky face, could grow big in the plains of Montana. His Army days had set Worsell up with at least one useful skill: he was expert at wangling things out of people—leave, rations, whatever was going. On the prairie, he wangled tools, rides into town, wagon space for lumber from the store in Ismay, and "advice."

He frequently sought "advice" from his neighbors around noon or six o'clock, and would cast a hopeful eye at the pan of soup on the stove or wrinkle his nose appreciatively at the smell of baking bread. "Don't mind me" and "If you're sure it wouldn't be a trouble" were his catchphrases.



*"Congratulations, dude, and you may now play tonsil hockey with the bride."*

It took Worsell a week to build his house—a flimsy contraption that bulged and twisted. A nail driven in at one corner caused the opposite corner to spring apart. The house swayed in the lightest breeze. He stiffened it with planks, ten feet long and an inch thick, fastened at odd angles to the frame. Then he wrapped his creation in jade-green tarpaper. Tarpaper was a wonderfully forgiving material. It could hide almost any lapse in craftsmanship. It was pliable and easily cut, and when it was impregnated with asphalt could keep out the worst of the weather, and was the salvation of every hasty, lazy, cheeseparer, or ham-fisted person who came to homestead on the prairie. Tarpaper was as important in its way as barbed wire, and Worsell's shack was a classic piece of Great Plains vernacular architecture.

The better sort of claim shack had a raised floor with pine boards. Worsell's was bare earth. But it was his own earth, and Worsell, man of property, found comfort in the dusty soil under his feet, with its tufts of grass, flattened and dying, and its spicy, clovelike smell.

His one big investment was a stove. Claw-footed and squat, the stove, the cheapest model on offer, was built like its owner. Buffalo turds were its best fuel, but they were rare finds. Sunbaked over some thirty years to the consistency of

building bricks, these ancient stools needed to be chopped up with an axe to fit the firebox, where they burned as slowly as seasoned oak.

In front of the stove was a dark stain in the earth. The stain grew bigger and matured into a pond of brown tobacco juice. Worsell, a man of soldierly habits, spat accurately and always at the same target. His rare visitors left the house with a single image of his domestic arrangements: the gleaming pool of Red Man juice, which Worsell topped up in conversation whenever he wanted to add emphasis to a point.

Worsell's shack was a blot on the neighborhood. His neighbors the Wollastons were shocked by its squalor. The Londoner had brought into their hopeful country the taint of the Bethnal Green slums. His reputation for dirtiness and cadging soon spread, and his name became a byword. It was a noun, a verb, an adjective. A lost tool was "worselled." Dishes left unwashed overnight were "worsells." Anything poorly made was a "worsell" job.

In the summer of 1910, Worsell summoned his son, Art, then seven years old, to join him on the claim. The child became an object of widespread social concern on the prairie, befriended by the Wollastons and others, who fed him regular square meals. Nearly

seventy years later, Art, dying in a Seattle flophouse, recalled his father's shack with shame.

### III

MIKE and I tack east, then south, then east again as the road makes ninety-degree turns along the section lines. One can no longer get really lost on the prairie: these roads, with their slavish devotion to the cardinal points of the compass, have converted the land into a full-scale map of itself.

Our course converges with a drab-green rift of cottonwoods along O'Fallon Creek. We cross a bridge—the creek is now a river, swollen and turbid from recent rains—then jolt over the one-track line of the old Milwaukee Road, and we are in Ismay, or what was Ismay but is Ismay no longer. The name on the sign has been painted out and replaced with "Joe. Population 28."

Easy come, easy go. When it first came into the world, Ismay was idly, capriciously named, as if it were a goldfish or a hamster. It nearly jettisoned its name in 1912, when the Titanic went down and Bruce Ismay, the chairman of the shipping line, allegedly elbowed his way ahead of women and children in the race for the lifeboats. Then the town voted to remain Ismay and tough out the jokes at its name's expense. Ismay even made it into the gazetteer of the "Times Atlas of the World," sandwiched between Ismaning, Germany, and Ismetpaşa, Turkey. But the glue on the name lost its sticking power, and Ismay is now Joe.

In 1993, when the Kansas City Chiefs acquired the quarterback Joe Montana from the San Francisco 49ers, three Kansas City disk jockeys came up with the idea of turning Joe Montana—or, rather, a Joe, Montana—into a place on the map. What was needed was an ailing townlet, just big enough to have a United States post office, for souvenir-mail frankings. It could become the object of tourist pilgrimages. It could build a museum of Joe Montana memorabilia. It could make a killing with Joe, Montana, T-shirts. This was an offer that no ailing townlet could afford to turn down. The station called one-stoplight towns and then no-stoplight towns, and met with gruff refusals. People are attached to the names that had served their parents and grandparents, even when the names are of the kind that you might think

anyone would have been glad to be rid of: Molt, Iron, Straw, Yaak, Stumptown, Twodot, Agency, Crackerville. Zero, Montana, might have been a likely taker, but it had lost its post office in 1957. Finally, they got through to Ismay, the smallest incorporated city in the state, six miles from the nearest blacktop road, and largely in ruins. Ismay bought the pitch and in July, 1993, changed its name.

THE remains of Ismay are haunted by a dust devil, whose shifting, angular track keeps pace with our own as we drive through town. At a street end, the dust devil reveals its source: a curly-haired woman in glasses and stretch pants, astride a bright-red garden tractor with balloon tires. The postmaster. She wears her government name tag on her blouse—Loreen Nemitz.

Mrs. Nemitz is the genius loci of the town. The Nemitzes, newcomers by local standards (they arrived in Ismay from the Midwest in the nineteen-seventies), pretty much run the place. Her husband runs the trucking business; a son runs the grain elevator; he is also the mayor; a daughter-in-law is the treasurer of the Joe, Montana, business.

The family headquarters is a double-wide trailer, set among trucks, cars, and assorted machine and auto parts.

"Nice place you have here," Mike says warmly. Mrs. Nemitz, scenting sarcasm, puts his face on trial for a split second, but finds it not guilty.

I think that perhaps Mike and I are being mistaken for plainclothes investigators from some federal agency. In my bland, know-nothing English voice, I say that I am interested in Ismay's transformation into Joe.

"You a reporter?" Mrs. Nemitz asks.

"No—" But she has my number.

"They did an article about us in *Sports Illustrated*."

A copy is produced. The smiling Nemitzes are center stage. The text, about the little town that changed its name, is predictably larksome.

"We've been in the *Washington Post*, the *Chicago Tribune*, the *Los Angeles Times*, *Newsweek*, *USA Today*. We've been in all the newspapers."

The town now has an agent—a man in Billings. Not since 1910 has Ismay been the focus of such publicity.

The whole town was flown to Kansas City, where it watched the Chiefs play,





*The homesteaders had to learn that evaporation was their great enemy: Give in to it, and you are on the road to ruin.*



*"Hey, I've operated on this guy before—there are my initials."*

had an audience with Joe Montana, and returned home with a clutch of autographed footballs. A San Francisco TV station made a film. Next month, the town is going to be on David Letterman.

"All twenty-eight of you?"

"They're flying us out to New York, all expenses paid."

"The date's not quite fixed yet, but they're talking about June 23rd."

"Dave himself is real eager to have us on the show."

"That's going to be a big boost for Joe Montana Day."

This year's Joe Montana Day is July 3rd. The first Joe Montana Day, held in 1993, drew some two thousand visitors; even though it was advertised only locally, the town sold boxes and boxes of T-shirts, sweatshirts, bumper stickers, baseball caps, and souvenir mugs. The town did a fine trade in commemorative cards and letters franked "Joe, Montana."

This year, the Nemitzes are forecasting something more on the scale of the Normandy landings. After the Letterman show, the tourists could be piling into Joe

from every corner of the United States and Canada. Retired couples in Winnebagos, roaming the country in search of novelties and "attractions," are already on their way.

"Joe Montana is coming?"

"Maybe. We hope."

"Our agent is talking to his agent."

"You want to see the film the San Francisco people made about us?"

The tape is already lodged in the VCR.

It begins in happy comedy. In a rented car, on the deserted ribbon of U.S. Highway 12, a TV crew is trying to find Joe, Montana. That we are way back in the back of beyond is established when the presenter turns on the car radio and sets the scan button to march up and down the airwaves on the FM band. From 76 MHz to 108 MHz, the radio, empty of voices, holds only static, like the sound of wind in dry grass. The car stops. The crew seeks directions from a trucker. She's never heard of Ismay. The name rings a faint bell, however, and she gestures vaguely southward. And so it goes—with

people racking their brains, shaking their heads, and gazing unconfidently in the wrong direction. The blacktop gives way to dirt; the crew—a merry bunch of prairie sailors—spots "Joe, MT," painted on a plank nailed to a fence post, and eventually discovers the Ismayites, living, as it were, in Ultima Thule.

The crew is next seen riding down Main Street while the mayor points out the major buildings in the town.

"What is this building over here?"

"The Masonic lodge," says the mayor. "It's kinda condemned now."

"Kinda condemned?"

"Kinda condemned," says the mayor. "This is Pringles Real Estate Office."

"Condemned?"

"Condemned."

THAT the town now has an agent and a busy round of newspaper interviews and TV engagements is consistent with the character of its landscape. This isn't the territory of cautious, spendthrift realism: it cries out for

one to build castles in the air, and then to add half a dozen more battlements just because there is ample space for them.

When Mike's grandfather, Ned Wolleston, arrived here with his family, in September, 1910, he had more reason than most of his neighbors to be thinking big.

Ned was born in England, the thirteenth child of a Liverpool shipping agent and son of the cloth. Ned was aged four in 1876, when his father, aged fifty-one, brought his family to the United States. Hawk-nosed, tombstone-bearded, and with plenty of capital, Ned's father arrived in the brand-new town of Fairmont, Minnesota, and took the place by storm.

He began by building a house the size of a palace, with sixteen rooms and a wraparound porch supported by elaborately ornamented timber columns. He then started a bank, founded the Episcopal church of St. Martin's, opened a general store, and farmed four hundred and sixty acres of wheat and barley. But what people would remember best was his

windmill—a Norfolk-style saltshaker with thirty-foot sails. The tireless Englishman, a whirligig of businesses and projects, was a Minnesota landmark.

To be a child of such a father must have been a tough assignment. None of the sons bore much resemblance to a windmill. One became a grocer, one a surveyor, one a Colorado miner. And so it went. When Ned was sixteen, he enlisted in the Minnesota National Guard, and in five years he climbed to the rank of sergeant. After his discharge, in 1893, he knocked about the Dakotas working as a cook, a carpenter, and a cowhand on ranches there. And then, in 1900, responsibility settled on Ned all of a sudden, when, at twenty-eight, he married a Fairmont widow, Mrs. Dora Marietta, and found himself the stepfather of her three children. Dora was keen to have more. For a year, the Wollastons ran a store in Madison, South Dakota, and then they rented a small mixed farm a couple of miles south of the town. Percy, Mike's father, was born in that farmhouse, in September, 1904.

Ned must have felt that he was still living in the shadow of his father. His land was not his, and it was a handkerchief-size scrap compared with the Wollaston holdings in Minnesota. By 1908, he would have been following the newspaper reports on the proposed Enlarged Homestead Act. The bill endured a rough passage through Congress, with the big ranchers and their Washington lobbyists opposing it at every stage. The railroad interests needed the bill, and feared bankruptcy if it failed to pass; the ranching interests saw in it the ruination of the West.

When Theodore Roosevelt, himself a onetime Dakota Territory rancher, finally signed the bill into law, on February 19, 1909, Ned Wollaston was euphoric to get the news—but it was shortly followed by his father's death. Ned had always seen himself showing his father around his own acres.

Mike's father tells of hearing Ned and Dora talk in the evenings at the time of the Homestead Act:

I remember my parents discussing something about "taking up a claim." The imagination and curiosity of a four- or five-year-old boy began to conjure up pictures of some vague object being taken up bodily. . . . On another evening Mother said, "Percy and I could hold down the claim if you had to go somewhere to find work,"

and I envisioned Mother and myself trying to hold down a huge tarp or canvas in a terrific wind.

Unlike the schoolteachers and clerks, barbers and bottle washers who were jumping aboard the emigrant trains, Ned was an experienced farmer, and he could see the difficulties ahead. Although eastern Montana was only four hundred miles northwest of Madison, its climate was a lot drier, and he would have to make do with, on average, five or six inches less rainfall a year. With twenty inches or more, you'd be in clover. With fifteen or less, you could be in trouble. The latest rainfall figures for Miles City, Montana, were: 1907, 14.75 inches; 1908, 19.08 inches; 1909, 13.31 inches. Right on the margin. But nearly all this rain had fallen in the growing season—and Mildred and Ismay generally did better, by as much as an inch, than Miles City. There should be enough. Just.

In the spring of 1910 Ned rode the train alone to Mildred, where he scouted out the land, now crowding with homeseekers. The lobby of the Mildred hotel was a polyglot din of Russian, Swedish, German, Irish, English, Greek, and American voices. Ned found a glorious site for a farm, ten miles out of town. Old buffalo trails and newer cattle tracks converged on a spring that was shaded by a gnarly cottonwood tree. A coulee bisected the half section, making a green valley where the cornflowers were in bloom. He hired a locator to check the property, filed his claim at the Miles City Land Office, and rode back in an exultant mood to Madison, and saw his crops through to harvest. When the harvest was done, Ned and Dora put most of their goods and livestock up for auction, keeping only the animals, tools, and furniture that would fit into a single emigrant car.

Building his own house on his own land that fall, Ned thought often of his father. Among the first crops raised in the virgin soil of the homestead were some freakishly big turnips. One weighed twenty-one pounds. In 1912, Ned took the train back to Minnesota, to buy more cattle at the South St. Paul stockyards. He made a detour to Fairmont, to present one of these amazing vegetables, scrubbed clean and sliced in half to prove its integrity, to the new president of the bank founded by his father. For several weeks, the turnip stood on exhibition in the window of his father's old place of business,

an emblem of the bounty of the Western plains. You could raise a four-figure loan on the surety of such a turnip.

THE yards of the hardware stores in Ismay and Mildred were packed with bales of fencing wire. Freight cars laden with wire stood in the railroad sidings. The wire, double-stranded, with barbs twisted on one strand, was shipped from the Glidden factory, in Illinois. Its trade name was The Winner.

Each homestead needed between five and seven miles of fences. For every mile of fence, one needed to cut and haul some eleven hundred posts—in a country where timber grew in isolated pockets, often many miles from any homestead. The new arrivals lived and breathed fencing. It was hard, cold, tedious labor—a much bigger job than the building of a house and barns. But in the course of it this ill-assorted bunch of dazed railroad passengers was slowly transformed into a coherent society.

The fences are still a wonder. You can sight along a surviving line of posts, and not a single one is out of true, though the ground on which they're set dips, rolls, and breaks, and the unwavering vertical of the fence keeps on being lost to sight, then pops up again, exactly—but *exactly*—on its marks. People were proud of their fences. The fences were not merely functional. They were a statement of the belief that this unruly land could be subdued and civilized.

The ranchers watched with affected disdain as the newcomers stole the range from under their noses. They'd lost the political battle against the Enlarged Homestead Act. They were outnumbered by the homesteaders. In the eighteenthies, "fence wars" in Texas and elsewhere had only rallied public opinion to the homesteaders' side. The ranchers were cast as villains long before they reached for their wirecutters. So in 1910 the Montana ranchers' best hope was that the homesteaders would quickly fail, pack their bags, and take the damnable train back to wherever it was they had come from. The ranchers fought mostly on the morale front, losing no opportunity to broadcast the view that the prairie soil was far too dry to farm, that even a small herd of cows would starve on a miserable half section of land, and that the homesteaders were poor fools—unwitting dupes of a bunch of conniving politicians and rail-

road barons—whose only hope was to get out as fast as possible, before they were overtaken by inevitable ruin.

Some eight decades later, at a rodeo in Marmarth, North Dakota, just over the border from Montana, I sat next to a rancher in his eighties, Bud Brown, who said that he'd grown up on a three-hundred-section ranch in Custer County.

"That's a hell of a big ranch, isn't it?"  
"Not then, it wasn't."

Mr. Brown's voice told one something about the grand isolation of a ranch upbringing. Although his grandparents had emigrated from England to the United States in the nineteenth century, Mr. Brown himself had not yet learned to speak with an American accent. He spoke a queer, fossilized version of Broad Norfolk. In the nineteen-forties, when I was a small child in a Norfolk village, I used to hear voices exactly like Bud Brown's, and it came as a jolt to hear this accent in the mouth of an old man in a white Stetson.

"So from your three hundred sections how did it look to see these guys farming a half section apiece?"

"Honyockers!" Mr. Brown laughed. "They couldn't do it. They'd just starve out." *Thoi'd joist stoorve oit*, with the last word delivered on a rising, querulous note, in the Norfolk way.

"Honyockers!" I don't know where the word comes from. The Dictionary of American Regional English says that it may be a blend of "Hunk" (for "Hungar-

ian") and "Polack," but that sounds like a grope in the dark. What it effectively does is to travesty the word "homesteader" syllable by syllable, and render the homesteaders themselves as ridiculous oafs, saps, dimwits. It gathers up all the anger and contempt that the ranchers felt for the newcomers, and squeezes them together into a single utterance, like the sound a man might make when delivering a gob into a spittoon. "Honyockers!"

The fence builders took much of the sting out of the word by adapting it for themselves. The hostility of the ranchers helped to sharpen the honyockers' sense of community. They were in this together, and they would prove the ranchers wrong. The straighter and tighter the fence, the more defiantly it talked back to the scoffing ranchers.

#### IV

THE first week of June, 1995, brings perfect spring weather to the prairie. The weather is a stroke of luck for me, for I'm seeing the prairie as the homesteaders saw it during their first Montana spring. They arrived in a run of moist years—1910, 1911, 1912—and the land was living up to its descriptions. The old hands—the ranchers and the early, quarter-section honyockers—couldn't remember a time when it had been so wet and green, and the newly arrived settlers were able to look at the brimming creeks and fenced squares of tender wheat, and see them as

a prophecy come to pass. It was *as it was written*—a conclusive rebuttal of all those jaundiced critics who had argued, in Congress and elsewhere, that this country was unsuitable for the small farmer.

In this age of belief in the efficacy of Science and the march of Progress, the homesteaders' bible was an eccentric, self-published little book entitled "Campbell's 1907 Soil Culture Manual," by Hardy Webster Campbell. The "Campbell Method" of dry-farming urged on its adherents a mystical faith in the power of capillary attraction and an abhorrence of the devilish works of evaporation.

Immediately following a shower of rain, you were to harness your horses to a disk harrow and pulverize and loosen the surface of the soil. This was to prevent the loss of precious moisture, to open the soil to the nitrogen in the air, and to prepare the ground for the next shower. Rain falling on loosened earth would percolate faster into the subsoil, where it would top up the building "reservoir" of stored water. Give in to evaporation, and you are on the road to ruin.

PERCY, remembering the Wollaston family's first year on their claim, came up with image after image of the wonderful fertility of the virgin soil.

When the cows that Ned had brought from Madison were let loose on the new pasture, they nibbled at the grass for a short while, then sank to their knees and lay about like so many overstuffed sofas. "They had grazed almost continuously in Dakota," Percy wrote, "and at first we thought there was something wrong with them, but then realized that there was more nutrition in the grass so that they were quickly satisfied."

Plowing began in the spring of 1911. "Dad started the first furrow. That was a ceremony in itself." The first of the strips of sod turned like a wave away from the blade of the plow.

Much of the grass was what we called niggerwool and I don't know any other name for it. It was a very short, curly grass, highly nutritious and nature's own answer to soil conservation. The roots matted together so that the sod would turn in strips several feet long before breaking. Just under the grass there was a black layer of fine rich soil from half to three-quarters of an inch thick. I realize now that this was the accumulation of centuries of fertilization and the only really good soil there was.

Looking back on the Plains from his Rocky Mountain home in the nineteen-



"Oh, sure, I remember him. He was quiet, mostly kept to himself, paid the rent on time. You know, we were only married for sixteen years."

seventies, Percy saw that the whole civilization of his childhood had been erected, perilously, on a finger-thick crust of decomposed vegetable matter and dead beetles. From the moment the first plow blade bit into the crust, the homesteaders began unwittingly destroying the foundations of their new life, and in a very few years the crust was gone—used up, scattered, blown away by the dry summer winds.

The idea of that treacherous half-inch seam of good soil haunts Percy Wollaston's memoir and shapes its rueful tone. It came to haunt me, too. I went hunting for "niggerwool," and found clumps of it still growing on patches of land too rough, angular, and inaccessible (so I thought) to have ever been injured by a plow. Digging with a penknife, I eased out fist-size lumps of sod. The tight, curly grass, with its matted root system, was exactly as Percy described it, but the layer of soft black soil had disappeared.

I talked to two people who still farmed on land close to the Wollaston place. Both were children of homesteaders; they doubted his account. "Niggerwool" is threadleaf sedge, and got its common name as much for its densely tangled jet-black roots as for its curly tops. Percy must have mistaken the roots for soil, the farmers said.

"It wasn't the soil. It was the rain," one of them, Wynona Breen, told me. "When the rain came again, in '39, '40, the old people said that everything came up just the way it did in the beginning."

THAT initial, exceptional spell of fair weather came close to living up to its glowing description by the Milwaukee Road's in-house pamphleteer ("The clear, dry air is extremely invigorating and, combined with the large percentage of bright days, makes the climate one of the most healthful and pleasant in the world"), and people built their houses for Montana's "pleasant" climate. From 1910 to 1915, they spread themselves over the land, started their repayments, and generally felt their adventure to be turning into a success. It was the winter of 1916 that gave the settlers their first taste of the pitiless, extreme character of the Montana climate. When stable, high-pressure Arctic air settled in over the prairie, it brought blue-sky days without a cloud to insulate the earth at night. There was almost no



*"I'll have someone from my generation get in touch with someone from your generation."*

precipitation. And the north wind, with no shelter belts of trees to divert it, raked the homesteads, keening and whistling through every crack in their amateur carpentry, prying off their tarpaper siding. The temperature dropped, and went on dropping: past zero, into the tens, twenties, thirties, forties.

The Wollastons, bred to the big-minus-number winters of the northwestern interior, took the bitter weather in their stride. Their neighbors from the eastern states and from Britain, southern Sweden and Norway, and Germany had never known that cold could be so cold. They had expected snow, ice, the pitcher frozen in the morning, earth standing as hard as iron, water like a stone. But the cold of Montana, when it finally came, was an insult and a shock.

Lynn Householder, whose Log Cabin Ranch had begun as a half section, homesteaded by his father in 1911, told me how people used to keep going. "The wind blew for three days. Thirty below, and night and day it never changed. They had newspapers and cardboard glued up on the inside walls of the houses, but that cold keeps coming through. In those winter blizzards, you feel very much alone. You listen to the walls move—and that's

in a modern house. The potbellied stoves would run out of fuel, and people would have to tear down the fences that they'd put up in the summer."

But the cold was the least destructive element in Montana's repertoire of violent weather. Lightning-strikes set the prairie ablaze, cyclones whirled away farm buildings, and hailstorms, coming out of nowhere in the sweetest, moistest summers, took just a few minutes to put an end to a family's dreams.

Hail is *personal*. It falls in narrow swaths. It ruins one farmer's crop and leaves his neighbor's standing. It has a habit of visiting itself on the people who can least afford to bear the losses caused by its devastation. It prefers the uninsured field to the insured one.

I heard a lot about hail. Like tumors, hailstones come in standard sizes: the size of a pea, a walnut, a golf ball, a pool ball, a baseball, a grapefruit. There was talk of cars totalled by hailstones; of light aircraft on the Baker airfield, their fabric torn to rags; of cattle killed on the open range, leaking their bespattered brains into the ground. The talk gave a new slant to the phrase "heavy weather": among the larger hailstones that have fallen in the United States, according to official records and

not bar legends, are the grapefruit-size ice bombs that hit Potter, Nebraska, and Coffeyville, Kansas. These measured five and a half inches in diameter; one weighed a pound and three-quarters.

Hail is a product of turbulence—of spinning updrafts and downdrafts within a local storm. A droplet of water is whisked aloft to the freezing level, and turns into a pellet of ice. The downdraft returns it to the soggy regions of the cloud, and there it gains a coating of moisture before its next ascent. And so it goes. The hailstone bounces up and down like popcorn in a roaster, growing layer upon layer of alternate snow and ice, until its accumulated weight causes it to crash.

The hail that annually wrecked the hopes of many homesteaders was usually of the pea or walnut variety. It battered the flimsy houses on the prairie, forcing their occupants to go underground for shelter. Falling, as it did, in June and July, the middle of the growing season, it crushed the tender wheat, leaving acres of splayed and broken stalks to wither under the sun.

**W**IND, fire, lightning, ice . . . At first, Montana's fierce and capricious climate was seen to come with the territory. People battened down for these assaults, and came to accept them as part of the annealing process. Urban types took pride in coming through each new calamity. They were learning to be farmers. It was exhilarating just to find that one could cope. Facing up to the wrecked wheat field after a hailstorm, burning the fence to keep warm in winter, digging a fire trench to keep off the flames in summer were emblems of the homesteaders' growing know-how.

Until 1917. That year, barely five inches of rain fell between May and August, and the harvest was disappointingly thin. The arid summer was then followed by another winter of shocking cold. Percy Wollaston recalled, "One night our thermometer registered sixty-three degrees below zero." When the thaw eventually came, the spring wheat was planted, and on several successive mornings a thin drizzle, more mist than rain, colored the soil before the sun emerged and baked it dry. In late May, the midday temperature was already in the nineties. On the Wollaston place, the iron windmills that served the cattle troughs creaked monotonously overhead

but produced an alarmingly feeble dribble of yellow-tinged alkaline water.

Everybody searched the sky for signs of coming rain. Percy Wollaston again:

The most threatening clouds would build up, promising utter deluges of rain. Lightning would flash and the thunder rumble but nothing happened, and the storm, if any, seemed to follow the course of Powder River or Fallon Creek. Many is the night I can remember Dad and Mother sitting hopefully and finally despairingly watching the course of these storms.

Like a cruel parody of rain clouds, dark swarms of grasshoppers rolled in from the west, and settled on the sparse and stunted wheat. Every shoot crawled with the insects. One could count up to two hundred and fifty 'hoppers on a square foot of soil. The homesteaders tried to poison them with ingenious recipes of horse dung, molasses, crushed fruit, salt, and Paris green, but, as one farmer put it, "for each 'hopper killed, it seemed as though an entire family came to the funeral."

The cattle grazed on the dry range until it was bald. Their ribs showed through their hides as they lay immobile in the heat. The afternoon winds lifted the topsoil into a drift of fine dust, through which the sun appeared swollen and pockmarked, like an enormous, overripe blood orange.

**M**OST people were baffled and frightened by the disastrous turn in the weather. They had been encouraged to believe—by the government, by scientists, by the railroad literature—that this couldn't happen, that, in Campbell's words, "the semi-arid region is destined to be in a few years the richest portion of the United States."

But some viewed the weather in a more constructive light.

Wynona Breen's father, Henry Zehm, along with her uncles and grandparents, had filed on claims near the Wollaston place. Like the Wollastons, the Zehms had come to Montana from Fairmont, Minnesota. The Zehms, devout Seventh-Day Adventists, were, at least by the Episcopalian Wollastons' standards, religious cranks. Back East, in Fairmont, the Zehms might have been considered funny peculiar. When the rain stopped and the grasshoppers descended on the earth, Wynona Breen's grandfather quietly rejoiced. A plague of locusts ate the miserable remains of the spring wheat. Lightning bolts set fire to the dry buffalo

grass. Hailstones pounded the buildings. The papers carried reports of the carnage of the First World War. Everything was set fair for the sounding of the last trump, the rending of the sky, the great shout of the descending Lord, come to whisk the righteous off to their eternal home. The Second Coming was at hand.

**T**HE righteous will rise up and live for a thousand years—I never knew exactly where, but not on this earth—and the earth will be cleansed by fire and made new," Wynona Breen said. "It's all in the Bible."

We were talking in the bare but cozy living room of the original house on the Zehm homestead—old stove, old rocker, old table, old prints on the walls. Only a pile of rental videos, ready for return to the store in Terry, gave away the fact that we were in 1995. Mrs. Breen herself, nut brown, with big, capable hands, had put a distance between herself and her Adventist upbringing; she, alone among her siblings, had drifted from the Church. Her independence of mind and her humor showed in her broad face, which was weathered in the style of the local landscape, fissured with gullies and dry coulees. With her round glasses and curly gray hair, she was still the even-toned schoolmistress, weighing each sentence carefully as she spoke it.

"So the worse the weather got, the happier it made your parents?" I said.

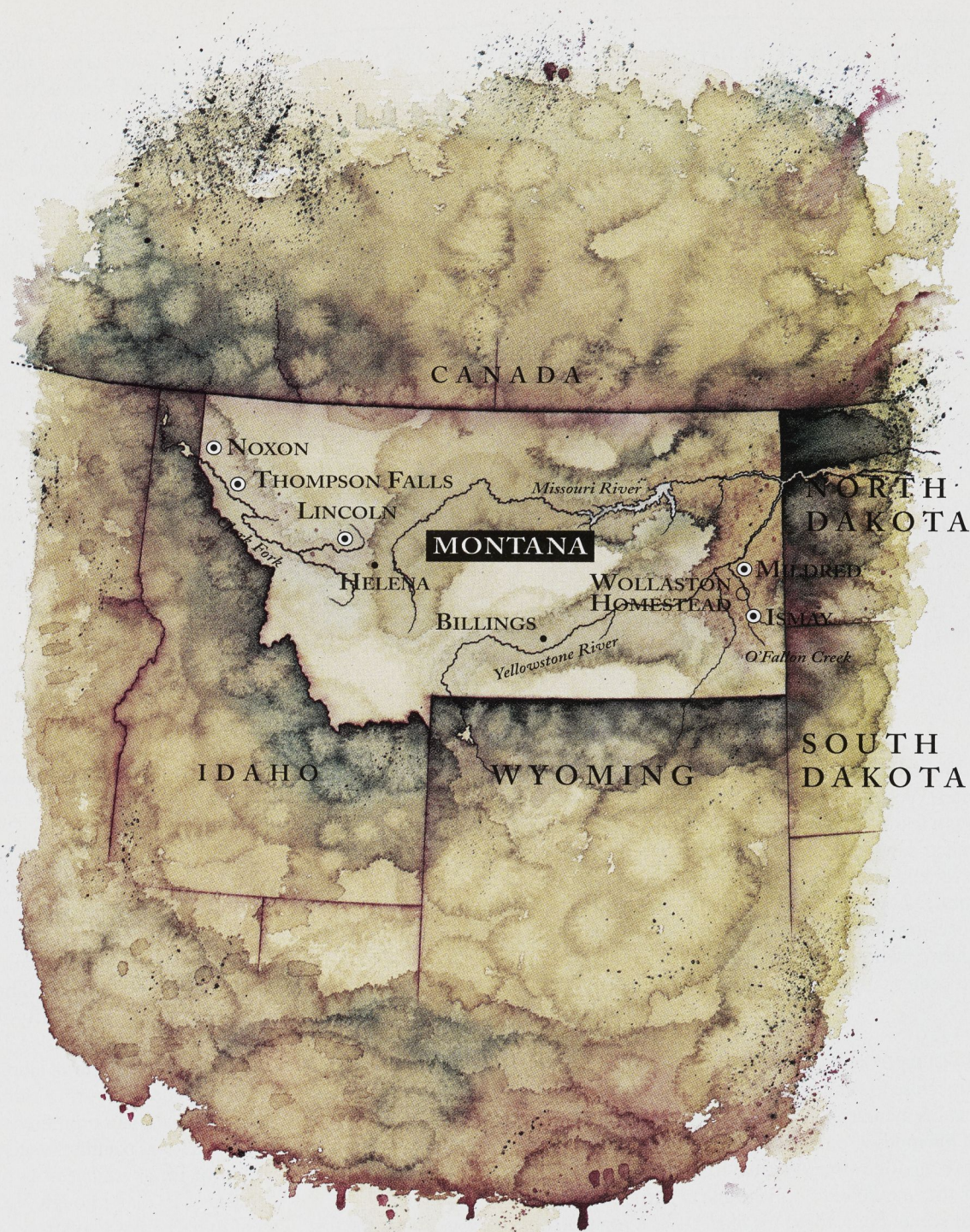
"Well, there was certainly a good deal of satisfaction at things like the grasshoppers. My folks never hesitated to mention those things, and quote the texts."

"But the Zehms would be saved on Judgment Day?"

"Oh, yes. We were the saved, among the righteous."

In 1993, during "the Waco deal," Wynona felt a spasm of sympathy for David Koresh and his flock.

"My husband, Charlie, and I were in Dallas at the time, staying with our daughter, who is a lawyer there. And she, of course, would have gone out with her little gun and shot Koresh herself. But Charlie and I couldn't help telling her, 'Now, that man has the right to live there any way he pleases. He built that place, and paid for it.' So far as we know, he wasn't doing anything terrible. He was on his own property, and was trying to keep anybody else from coming on, even if the people trying to come on it were officials."



*The railroad moved into Montana like Caesar marching through Gaul, freely inventing the land it occupied as it went along.*

I realized that I had missed something very obvious in the furor over the Waco siege. The Branch Davidian "compound" was in essence a homestead. "It was built and paid for": the labor that Koresh's followers had put into its construction entitled them to enjoy freedom on their own land; and, like so many homesteads—like the house in which Wynona and I were sitting—it was a sanctuary for unconventional re-

ligious beliefs and social attitudes. People like the Zehms chose to come to the West at least partly because they felt themselves to be outsiders back East, and the isolated homestead set them free from the conformist values of the small town. When Westerners watched the confrontation near Waco on CNN, they could see their own family histories reflected in the Koresh place in the Texas prairie, and when the

Bureau of Alcohol, Tobacco, and Firearms and the F.B.I. moved in it was as if the family homestead were being violated. People felt tenderness for the Branch Davidians—not merely out of some Neanderthal dogma about property rights but because their sense of themselves as Westerners was under siege.

That Koresh had chosen to await Armageddon in what looked like a badly

## THE GUY WHO INVENTED AN ALCOHOL SUBSTITUTE



R. Chart

constructed motel in the wilderness was for most non-Westerners an alienating image: it was a feature of the Branch Davidians' general dangerous craziness. But it wouldn't look like that to a Westerner with a homestead on the Plains in his or her family background: it would look like Grandpa's farm—where, perhaps, Armageddon had been as eagerly awaited as it was in Waco.

**P**ERCY WOLLASTON had confided to his son, close to midnight and over whiskey, that his memory was haunted by the sight of his mother, on her knees every day praying for rain. Writing his memoir for the grandchildren, he didn't disclose that scene. He wanted his readers to enjoy the homestead as an adventure, and in his writing the faces of Ned and Dora are sometimes colored by anxiety and disappointment but never by despair. Perhaps he needed to rescue from his boyhood something wholesome and of heritable value precisely because his keenest memories of homestead life were too bleak to bear.

Percy turned thirteen in 1917. He was young when the world was young. His narrative, which has been moving confidently forward, abruptly loses its momentum around the time the war began in

Europe. It loops back to 1910, skips ahead into the nineteen-twenties, drifts sidewise through assorted reminiscences about neighbors, coyotes, well-digging, cowboys, an old rifle, a pet monkey. In the process, it adumbrates a large, sad space that Percy couldn't bring himself to write about.

In 1917, less than twelve inches of rain fell. Though the numbers fluctuate slightly, each subsequent year (1918, 1919, 1920) was worse than the last one, with too little rain falling on ground already parched beyond hope. Fifteen inches of rainfall was the make-or-break rule of thumb. Much less than that, and the topsoil turned to dust.

Worsell's son, Art, was among the first to escape. He was just seventeen when, in August of 1919, he jumped a freight train and rode the rails to Butte. Others had left before him. W. J. Faus, one of the Wollastons' neighbors, had left in 1917. The Fauses, along with their eight children, gave up farming and moved to Ismay, and, later, to Terry, where William Faus opened a store, Faus Groceries.

Emil Ebeling also gave up farming. In 1919, the spring wheat failed to germinate. The dry seeds baked in fields of hot dust. Ebeling moved to Terry as well, and there became a barber.

Emanuel Falkenstern, one of the many German-speaking refugees, had been a blacksmith. A strong churchman with a famous singing voice, he, his wife, and their family of eight children (the prairie swarmed with the young children of these optimistic emigrants) lived on a homestead near Duck Creek, hoping against hope for a break in the weather. In 1922, the family moved to Terry, where Emanuel set up shop as a blacksmith again.

At the end of 1919, three years into the drought, the county agent at Glendive, in nearby Dawson County, sent out a communiqué. It reads like a message in a bottle:

A very small amount of fall seeding was done this year, as the rainfall was very small, less than 10 inches for the entire season. Our farmers raise few hogs, and are not going into the pig business very fast. A two-foot snow in October and a long continued cold spell has put the stockman square up against a feeding problem, the most serious this country has ever experienced.

The farmers are selling off everything they possibly can. It is impossible here to have social meetings, as we have few buildings suitable and the roads are impassable. No farm improvements are being made—most people are thinking about food and clothing. . . . We are facing a very severe winter.

**R**AIN suddenly chose to come back to the prairie in 1927. The Wollastons were tired. Ned was fifty-four, Dora sixty-two. They were grizzled, lonely, and undecieved by this show of kindly weather. With the copious spring rains, eastern Montana was again promoted as the new Eden, and it was painful to watch new people move in, as guileless as the homesteaders of 1910. Although Ned's attachment to his land was as strong as ever, he could not subject Dora to another evil winter, and he hardly had the stomach for it himself. But he could not sell. When he talked of moving, strangers called at the house and made offers, which rankled in his soul. Eight thousand dollars for his valley, his home, his fields, his hives on the hill, for the best years of his and Dora's life? From the moment he set foot on the claim, Ned had seen the homestead as the estate that he would pass on to his son.

He agreed to rent the farm on a year-by-year basis to a young couple named Shumaker. He sold them his stock,

horses, and implements. He would keep the bees. Three wagonloads of books and furniture went to Mildred, to be loaded on a boxcar. Then Ned packed the Ford until it resembled a toppling haystack of assorted household goods, and in March, 1927, he and Dora drove sadly west.

Those homesteaders who clung on were faced with a hard reckoning. In every sense of the phrase, the railroads had taken them for a ride. They remembered the misleading pictures in the brochures. Vanity had led them to read too much into the glossy descriptions. Humbled now, and wiser, they reproached themselves more than they did the railroads or the federal government. The homesteaders now saw themselves as contrite realists. They understood, at last, how dry the land really was, and how it needed to be gentled back to health. They resolved to save for the bad years, not splurge in the good ones. From now on, they would use the plow lightly, let the soil lie fallow, and feed it with nutrients. This land might not be much, but it was theirs. They had abused it. Now they would atone for that abuse. The homesteaders who survived into the nineteen-twenties found that their attachment to the land had grown beyond reason, as love does.

## V

I AM watching "Late Show with David Letterman," hoping for news of Ismay and its reinvented self—Joe, Montana. I learn the top-ten least favorite flavors of the beverage Snapple. I see the usual string of actors trying to plug (in the new, wry, unpluggy, postmodern way) their current movies. I see a football player, but he isn't Joe Montana. I see a performing dog who gets stagefright and fails—to everyone's satisfaction—to do his tricks. Letterman himself, with jaded eyes and contrived farm-boy grin, presides over the nightly parade of foolery like a babysitter with a bag of poisoned candy in his pocket.

The audience roars when Letterman throws simple folks to the lions, and there is a clear space for the Nemitz family and the Joe, Montana, story. But each night this space is filled by other eager victims.

If Ismay could get its four minutes, the prairie roads would be packed with tourist cars, and tourist dollars, on Joe Montana Day. I badly want it to happen, if only because it would produce a queer, distorted echo of the past, with a swarm of novelty-seekers descending on the

town, much as the credulous homesteaders had descended on it in 1910.

On June 10th, I receive a press release from Linda Dozoretz Communications, of Sunset Boulevard, Los Angeles:

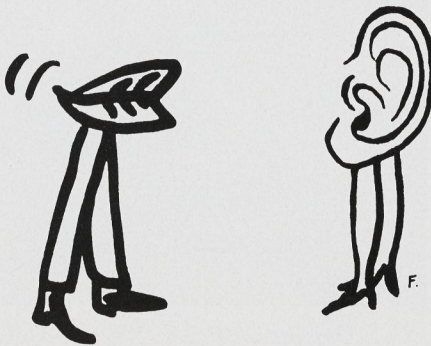
## STATEMENT REGARDING JOE MONTANA

Despite published reports, Joe Montana never agreed to appearances this month in Joe and/or Billings, Montana. He hopes to be able to visit Montana in the future.

At the end of the month, I drive to Montana, and arrive in Ismay to find three big Winnebagos already camped by the bridge over O'Fallon Creek. Their owners are retirees who have come to pay homage to the half sections of land on which their parents had come to grief. Prosperous, in summer pastels, they are representatives of the great homesteading diaspora, and are hardly less conspicuous here than a party of American Jewish tourists on the ancestral Russian shtetl.

In the town, ruined houses are being cordoned off with plastic tape, as if they were a crime scene. Prohibitive notices are everywhere: "Private," "Keep Out," "No Entry." Ismay now sees itself as famous, and is affecting the surly manners of a besieged celebrity. Across from the post office, people are unloading Porta Potties from a truck; I count twenty-eight yellow plastic cabins in the town so far, and there are more to come.

ON the morning of July 3rd, there are roadblocks on the three approaches to town, and a five-dollar-a-head entry fee. My car is consigned to a lonely spot of prairie; the spot is fenced off, with white tape, for the first time in sixty years. I walk through the streets of collapsed houses, which are pleasantly uncrowded; say hello to the O'Fallon Creek Cow Belles, who are setting up their Bossy Bingo stall (you win if the cow poops on your number); and make my way toward the far end of the town, where the parade is billed to start.



It is led, on horseback, by Gene Garber, a rancher with thirty sections to the west of Ismay. Families ride by in creaky wagons; six disabled veterans from Miles City are jammed into a Model T; Ric Holden drives a late-model Thunderbird advertising "Ric Holden for State Senate"; and, from a Chevy pickup adorned with the slogan "Forsyth—Goosehunting Capital of Montana," a man with a black box and a six-foot antenna is radioing instructions to a lifelike mechanical goose, which pads along a little way behind the truck.

The postmaster predicted four thousand visitors "minimum" (some people predicted from six to eight thousand). At noon, I reckon that there are three hundred and sixty people, including everyone involved in the parade. It is a fine, good-neighborly turnout, but it is several thousand short of the number required to bounce Ismay, or Joe, back into the mainstream. Up at the fire hall, where the boxes of Joe, Montana, T-shirts, caps, coffee mugs, sweatshirts, bumper stickers, and coozies are stacked from floor to ceiling, there are no signs of active trading.

So another promotional idea bites the prairie dust. By nine the next morning, the Porta Potties, several in mint condition, are back aboard their truck. A crew of volunteers has been at work since dawn, and many of its members have the blanched and jittery look of people nursing an unaccustomed hangover. There was a fireworks display followed by a dance in the fire hall. Drink was taken. Some of the revellers have fallen asleep in the dirt among the ruins. The prevailing mood is one of crapulous melancholy.

## VI

FOLLOWING the route taken by Ned and Dora Wollaston as they drove west in their Model T in 1927, I sped through the hardtack landscape of failure and abandonment—the wrecked houses, boarded-up schools, junked farm machinery—that marks the line of the Milwaukee Road on its ill-fated passage through eastern Montana. More than four hundred miles west of Ismay by road, the Continental Divide is crossed at Rogers Pass on Highway 200, and for the Wollastons, as for me, the Divide was the boundary between two worlds: the dry and the wet, the poor and the rich.

Beside the highway, the Blackfoot River began as a thin trickle over mossy

boulders in the firs. Every few yards, another creeklet joined the flow, and the river quickly gained a rapid, purposeful, Pacific-bound appearance as it rumbled within earshot of the car. At forty-five hundred feet, the road levelled, the river slowed and widened, and a high valley, moist, green, and prosperous, opened up around the highway. Between the stands of pine and aspen lay alpine meadows with grazing herds of cattle. The country here was riddled with trouty streams, named with gruff Montana humor: Sucker Creek, Humbug Creek, Sauerkraut Creek, Keep Cool Creek, Poorman Creek. New log cabins, varnished like boats, dotted the landscape. Here was the beginning of summer-home, recreational Montana, where the woods were loud with the *pop-pop* of hunting rifles, and, in season, the unfolding parabola of a fly line would glint in the sun above every creek.

The town of Lincoln, the capital of this happy valley, was a mile-long avenue of motels ("Hunters Welcome!"), R.V. courts, bars, eateries, crafts shops, and sporting-goods stores. My attention must have been failing, for I did not notice an unkempt bearded man, just three weeks older than I am, pedalling away from the Lincoln Community Library with a sackful of books on sociology and Chinese philosophy. I would like to have spotted Theodore Kaczynski, the Unabomber suspect, a full five months before his arrest by the F.B.I., but, as I later found, it would have been nearly impossible to single him out from all the other bearded loners on bicycles, with self-inflicted haircuts, who are part of the Lincoln landscape.

I drove on west, with water, lots of it now, always at my elbow. I followed the Blackfoot to its confluence with the Clark Fork, switched to the Jocko, ran down to the Flathead, and caught up again with the Clark Fork at Paradise.

A light rain was falling. There were weeping-willow trees in people's yards, and brown bulrushes in the ditches at the roadside. The Clark Fork was full of cigar-shaped wooded islands. As the rain cleared and sunlight caught the edges of the clouds, the water turned soapstone green—reflecting the conifers on the high slopes above. Small farms were crowded into the narrow space of the valley floor. A few acres could support a family here: a dozen dairy cattle, an orchard, a plowed



*Downtown Fallon, Montana, photographed from the top of a railroad car in 1904.*



*Nearly a hundred years after the prairie towns were born, they are still haunted by the accidental nature of their conception.*

field sown with winter wheat, two ponies on a wood-fenced pasture—all this within the compass of a handkerchief, by prairie standards. To Ned it must have looked as green as his idea of England. Anything would grow here, if you could find a patch of soil to call your own.

At Thompson Falls, Ned and Dora took a room in the Black Bear Hotel, on Main. Land-hungry, Ned scouted around town for an affordable chunk of the place. On the twenty-fifth of April, 1927, he paid Orrie K. Goodwin a total of five hundred and fifty dollars for eight lots on the block bounded by Clay and Church Streets and by Third and Fourth Avenues. They amounted to a little less than two-thirds of an acre.

Ned's small new world was on a wooded slope with a clear view over the town and the river. The house he built is still there, snuggled in among add-ons by later owners, and I saw immediately the plan that he had in mind. The front of the house looks south, as the homestead had looked south over the swale. At the back, as at Ismay, a stone path leads north from the kitchen to the henhouse. The new house was the old house, transplanted to a Rocky Mountain Eden.

**M**OST of the homesteaders went on farther west, and I didn't want to lose sight of their continuing trail.

Nearly forty miles on from Thompson Falls, there was a sign for a town named Noxon, on the far bank of the river, and I crossed a bridge over the Clark Fork in

search of a late lunch. In closeup, Noxon was less attractive than it should have been—a rambling string of bungalows and trailers, with a general store, a gunshop, and the Landmark Café.

I opened the café door on an amiable buzz of talk between the owner and three men seated around a table. The talk stopped dead. I hoisted myself onto a stool at the bar and asked for coffee and a hamburger. The owner took my order but didn't make eye contact.

The four men of Noxon closely resembled each other. All had black spade beards. All were around forty. The three at the table were dressed in camouflage caps, plaid flannel shirts, suspenders, work pants, and big black lace-up boots. I made an inventory of my own clothes: an olive-green shirt, a gray herringbone-tweed jacket from Brooks Brothers, corduroy slacks from Eddie Bauer, and a pair of blue leather deck shoes. In the Landmark Café, Noxon, I might as well have been wearing a ball gown, high heels, and a wig.

The silence behind me became an inaudible muttering, as conversation resumed in strict sotto voce. My food came. It was good, and I said so, but still the owner wouldn't catch my eye. I then remembered where I had seen the name Noxon: in the *New York Times* a few months before. Noxon was the headquarters of the Militia of Montana, which had come to sudden public attention in the aftermath of the Oklahoma City bombing. The Landmark Café was evidently the regimental mess.

When I thanked the owner for a fine lunch, he turned his back on me and busied himself with the coffee machine. To give him and his café their full due, the place was more grimly unwelcoming than any other restaurant I have eaten in in my life, but the hamburger—and the coffee, too—were beyond reproach.

I spent a short while prowling along a mountain road behind the town. At regular intervals, there were mailboxes by muddy tracks leading deep into the trees. It was prime survivalist real estate. As the homesteaders had been drawn to this valley for its easy pickings, so a later generation of surly romantics found in it the perfect site for a life in the woods. With a hunting rifle and a pair of dogs, you could sally forth from your cabin like Natty Bumppo, snacking on huckleberries. When the dogs growled in the dark, you'd go out to the stockade with night-vision binoculars, searching the forest shadows for lurking federal agents.

That version of the West, half Boy Scout playacting, half paranoia, with some queer Bible-reading thrown into the mixture, seemed to bear directly on my own theme. Its leading figures were like bad-blood descendants of the homesteaders. In their resentment of government, their notion of property rights, their harping on self-sufficiency and self-defense, as in their sense of enraged Scriptural entitlement, one could see the perverse legacy of the homesteading experience and its failure on the Plains.

When, earlier in the year, a bomb destroyed the Alfred P. Murrah Federal Building in Oklahoma City, killing a hundred and sixty-eight people, the gist of every editorial I saw was "Terror in the Heartland: How Could It Happen Here?"

In private, and closer to the so-called heartland, I heard a quite different response: "Any farm kid could have done it. You'd think it would happen more often than it does." Farmers in the West regularly make bombs. They use them to blast stumps, blow up walls of rock, and make quick work of ditchdigging. The sound of distant explosions is an everyday part of country life. "If I were to start on it now, this morning, I could have it ready to blow up a federal building by two o'clock this afternoon. So could you." Fertilizer saturated with diesel fuel and packed into a confined space (like that of a rental van) is more stable and more eco-



*"You had more money than God. That's a big no-no."*

nomical than dynamite, and needs only a detonator to set it off.

My informant fished a suitable detonator out of a drawer. "Like this." An Atlas blasting cap, the size of a refill cartridge for a fountain pen. Blasting caps could be got—against a purchaser's signature—from a rural hardware store. You push the blasting cap into the explosive mixture and complete the circuit with a battery and a doctored clock.

In fact, the heartland folk were not only already heavily armed but had virtually unlimited access to deadly explosive matériel. Given the political tensions between the country and the city, especially in the West, it seemed likely that there would be another farm-bomb horror. If it ever came to war, the country was in a position to blow the city clean out of the ground.

## VII

**S**HORTLY after Ted Kaczynski was seized at his cabin, on the afternoon of April 3rd of this year, I drove back to Lincoln, to find out why this taciturn refugee from big-city life in Salt Lake, Berkeley, Ann Arbor, Cambridge, and Chicago had chosen the high valley as his sanctuary from the urban industrial world. Newspaper reports had described Lincoln as the heart of the heart of the backwoods—which didn't chime with my fleeting memory. Journalists from the world's press were still quartered in the town's half-dozen lodgings, so I packed my fly rod and went to Lincoln as an uncredentialed fisherman, scoping out the Blackfoot River.

I stayed at the Lincoln Lodge Hotel, a fine log pile, built as a dude ranch in the nineteen-twenties, when Lincoln was beginning to make itself known as a hunting-and-fishing resort. It was now owned by Diana Holliday and a partner. Diana turned out to be from Ismay and we traded gossip from the far east of the state. She'd never gone back to the homestead on which she grew up. Her memories of Ismay were of penury ("There were five of us children, and the family lived on ninety dollars a month. For clothes, my mother used to go to the dump at Terry"), dust, and bitter cold. She had longed to escape to a greener world. She'd lived in Great Falls—"and that was so green to me, after Ismay," she said. Last summer, she and a partner had bought the old hotel in Lincoln, and they were in love with the town—its water-

iness, its woods, its air of unpretentious prosperity.

"When I heard on the TV that they'd caught the Unabomber in a 'remote' part of Montana, I thought they must mean some place like Jordan. I couldn't believe it when they said Lincoln. This isn't 'remote'!"

"To a reporter from New York, I suppose, Lincoln might look like the wilderness. Maybe that's how it looked to Ted Kaczynski, too."

I took an evening stroll through town. Novelty windmills creaked in front yards. Antique wagon wheels were propped against the sides of houses. Most of the year-rounders had some cottage industry to support them; they were taxidermists, woodcarvers, flytiers, or the makers of painted plywood butterflies. I peered through the window of the Lost Woodsman Gallery—Sculptures by Rowley. His rough-cut bears, Indians, and frontiersmen, hewn from pine logs, were masterworks of Easter Island kitsch. The ornamental wagon wheels came, I guessed, from Roly-Poly Land Antiques.

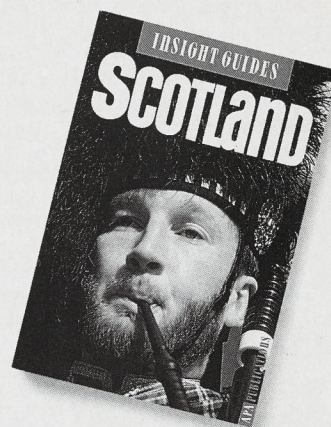
Deer wandered from cabin to cabin, scrounging for leftovers. People put out bowls of oats, and restaurants fed them on the wilted remains of their salad bars.

Kaczynski, mooning around Montana in '71, had lit on this idyllic family-vacation spot, with its friendly animals and tinkling streams. To the Chicagoan, the docile student, raised on the high-school American classics, Lincoln must have looked like Thoreau's pond, Twain's river, and Cooper's forest conveniently rolled into one.

I sent myself to sleep reading the Unabomber's tangled thesis, "Industrial Society and Its Future." The author, who identified himself only as "FC," was a very urban nature lover. "The positive ideal that we propose is Nature," he wrote, but his idea of Nature was infuriatingly hazy and sentimental. He doted on the early settlers of the West for eating "wild meat" and living in such isolation that "they belonged to no community at all." With characteristic bathos, he opined that "Nature makes a perfect counter-ideal to technology for several reasons" and that "most people will agree that nature is beautiful." The word "natural" cropped up in sentence after sentence as a synonym for "good."

In the dead center of the thesis—paragraph 115 out of two hundred and thirty-

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two paragraphs—was a fragment of miserable autobiography, an unmistakable cry from the Unabomber's heart.

The system HAS TO force people to behave in ways that are increasingly remote from the natural pattern of human behavior. For example, the system needs scientists, mathematicians and engineers. It can't function without them. So heavy pressure is put on children to excel in these fields. It isn't natural for an adolescent human being to spend the bulk of his time sitting at a desk absorbed in study. A normal adolescent wants to spend his time in active contact with the real world. Among primitive peoples the things that children are trained to do tend to be in reasonable harmony with natural human impulses. Among the American Indians, for example, boys were trained in active outdoor pursuits—just the sort of thing that boys like.

I never camped in the woods! I never went fishing! I never had an air gun! They never let me be a boy!

Ted Kaczynski was nearing thirty when he arrived in Lincoln. Was it his lost boyhood of "active outdoor pursuits" that he found here?

THE next morning, Bill Holliday, Diana's husband, said, "He wasn't too different from a lot of folks round here. Vets, mostly. They make do without electricity. They hunt and fish—live off the fat of the land. They keep themselves to themselves."

"They ride bicycles?"

"A lot of people get around on bicycles," Mrs. Holliday said. "It's so flat."

I went out to the river. The Blackfoot swirled greenly under the road bridge, but was too swollen with snowmelt to be fishable. As it was, I followed Stemple Pass Road over toward the Kaczynski place, with Humbug and Poorman Creeks chattering within earshot. It was a pleasant forty-minute walk, past summer homes and pastureland, to the school-bus stop beside Gehring's Lumber, where the F.B.I. had pinned its search warrant to a post and officiously blocked the logging trail that led to Kaczynski's cabin. The cabin was just out of sight, but I could see the satellite dish of its immediate neighbor, like a creamy giant mushroom in an aspen glade.

It was woodsy, but it was not "the woods." When the spirit of Emersonian self-reliance failed him, Kaczynski could ride his bike to the Blackfoot Market and pick up Del Monte food, whose cans, meticulously labelled, figure prominently in the F.B.I. inventory. But this proxim-

ity to town must have had its disadvantages. Snowmobiling is Lincoln's economic mainstay in the winter months, and when Kaczynski was laboring on his life story (Item MB28 in the inventory is a "Brown Clasp Envelope Marked 'Autobiography'") he must have been plagued by the din of the rainbow-striped machines whizzing past the cabin, for the logging road, which takes a zigzag path through a shallow canyon, is perfect for snowmobilers. FC was similarly troubled: his thesis complains of "noise-making devices" intruding on his autonomy.

Yet here were deer, elk, bears, rabbits, and fish. The F.B.I. inventory, with its fishhooks, bows and arrows, and guns (one of them homemade), alongside the chemistry set, the peanut-butter jars, the Hershey's-cocoa cans, the Raspberry Super Sip bottles, suggests the life not of a man but of a dangerous boy.

Item L9 interested me: "A Plastic Bottle Labeled 'Strychnine Oats.'" I mentioned it to Diana Holliday. "You feed oats to the deer, don't you?"

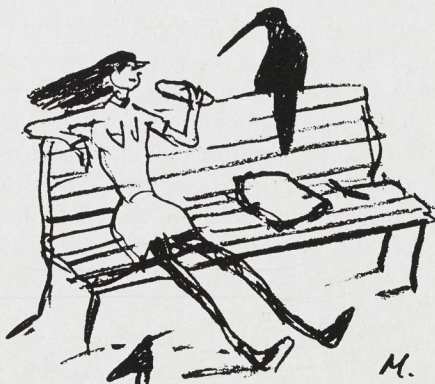
"Oh," she said, "that makes me *really* angry at him. He hated the deer. They used to eat his garden."

The positive ideal that we propose is Nature.

LAMBKIN'S BAR & CASINO, at the center of Lincoln, was loud with talk, and welcoming.

"You're from Seattle?" the bartender said. "That's where all the serial murderers come from. Ted Bundy. The Green River Killer. . . . This guy is our first. We're kind of inexperienced."

She was down to her last six "Lincoln, Home of the Unabomber—The Last Best Place to Hide" T-shirts. The first edition had arrived at nine the previous evening; fifteen hours later, I bought the last T-shirt but one. A rush reorder had been sent out to the factory.



Profits on the T-shirt sales were going to Lincoln's volunteer fire department, which had set its sights on a defibrillator. By Saturday morning, the defibrillator was in the bag, and the volunteers were looking at the next item on their shopping list—a compressor for filling air cylinders. After that, they needed new jackets.

"It's split this town right down the middle," according to Jay Verdi, a bearded firefighter who is also the fire department's P.R. man. "Some folks are mad as hell at us for doing it."

I thought of the fire hall in Ismay, stacked from floor to ceiling with Joe, Montana, shirts. Lincoln's sudden blaze of notoriety and fortune seemed more securely rooted.

"Did you pay any attention to Kaczynski before he became famous?" I asked Jay Verdi.

"I rode with him to Helena once. In 1978. I was buying a new Blazer. Sat with Ted on the stage."

"What did you talk about?"

"He said, 'Hello.'"

"And that was all he said, all the way to Helena?"

"At the end, he said, 'I won't be riding back with you.' That was a long sentence for Ted."

As I was leaving, Verdi said, "The two guys who made the arrest—I heard that when they grabbed him, he didn't struggle, or anything like that. The wind just went right out of him. Total relief."

## VIII

THE story of the homesteaders and their flight from the land is so American that some Americans will hardly see it as a story. These people came over, went broke, quit their homes, and moved elsewhere. So? In this country, everybody has the right to fail—it's in the Constitution.

The homesteading experience was more than that: it scorched people too deeply to be forgotten in a mere generation. It still rankles. The abandoned homesteads of eastern Montana and the Dakotas stand as a warning to the credulous. Here, on these three-hundred-and-twenty-acre plots of dust, the Western forefathers were suckered.

In 1994, on the twenty-fifth anniversary of the Apollo moon landing, the *Washington Post* concluded from the results of a poll it had recently conducted

that twenty million Americans give credence to the idea that the moon walk was a hoax, perpetrated in the Arizona desert by the federal government, for the financial benefit of the powerful corporations who were the NASA contractors. In my experience, almost every bar in the West has its resident skeptic, who will expound this theory at tediously detailed length.

After all, in 1909 the government really did drop people onto an expanse of land that closely resembles the dusty surface of the moon. The homestead scheme was, indeed, pushed through Congress largely for the benefit of the great railroad companies. The corporation bosses, like Albert Earling and James J. Hill, ran their lines to the coast at—as it turned out—the expense of hundreds of thousands of innocent would-be farmers, who bought the government pitch and saw their families “starve out” on their claims.

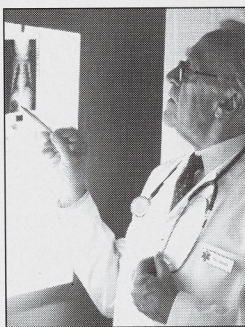
Around the time of the first catastrophic drought, in the late 'teens of the century, Montana children were taught to vilify James J. Hill in the schoolyards, where they chanted:

Twixt Hill and Hell, there's just one letter;  
Were Hill in Hell, we'd feel much better.

Those children, educated into cynicism, have not been slow in passing on their knowledge to their children and their children's children. No matter what the federal government did to make amends to the homesteaders (and the New Deal Administration, through Rexford Tugwell's resettlement program, did much), the federal government would be remembered by many in the West as a trickster, never to be trusted again. The fresh-faced young farmer plowing gold coins out of the prairie, near Ismay, would be remembered, too, as an exemplar of the enormous, treacherous power of the advertising industry.

In places like Justus Township, where people are inclined to believe in black helicopters, and in unholy conspiracies among government, big business, and the media, the bleak and haunted landscape offers its own nourishment to the paranoid political imagination. With its broken fences and splayed houses (many still furnished, with rotting clothes in the closet, and dirty dishes in the sink), it looks like a landscape in an allegory—the site of Everyman's betrayal by the giants Government and Industry, which is where, or so they say, the decline of the West began. ♦

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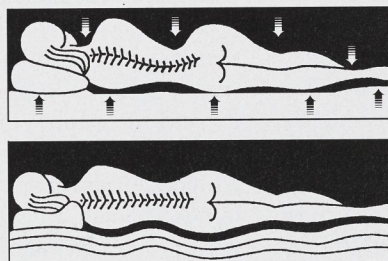
After years of research, designed to improve the quality and durability, Tempur-Pedic was introduced to hospitals in Sweden, with reports of instant relief from arthritis, back and muscle pain after

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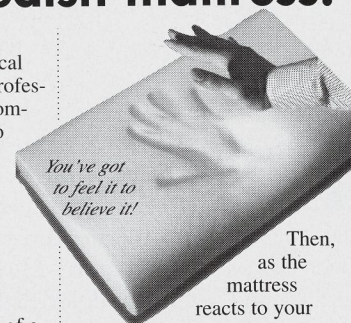
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## A CRITIC AT LARGE

## DR. SPOCK'S BABY

*Fifty years in the life of a book and the American family.*

BY ANN HULBERT

**D**R. BENJAMIN SPOCK, who is ninety-three, has been the pediatrician on perpetual house call for millions of American families over the past half century. His "Baby and Child Care" was published in May of 1946, has been revised five times, and has sold more than forty-three million copies. Today, Dr. Spock's own house is a twenty-two-foot cream-colored Winnebago named the Tortoise, parked in the yard of friends in Miami, where Spock and his second wife, Mary Morgan, spend half the year. Until 1992, they lived on the Carapace, a thirty-five-foot sailboat, but they sold it when Spock's footing became less sure on deck, and because they wanted to be in closer touch with his doctors. Spock, who has worn a pacemaker since he had a heart attack nine years ago and who suffered a brief stroke-like episode six years ago, has also taken his health into his own hands. Or, rather, Mary Morgan, who is fifty-two, has taken it into hers. Every day, she devotes many hours to preparing macrobiotic meals for the two of them in their tiny kitchen. On the refrigerator door hangs a child's drawing with the caption "Dr Spk is a vare anyoosurl dkr."

One evening recently, the Doctor and Morgan entertained a female acupuncturist named Sachi at a restaurant in Coconut Grove. Dr. Spock had a cold, and Sachi had spent that afternoon pounding his back, applying needles, and practicing yoga with him. During dinner, Dr. Spock, the friendly New Englander (his "mahvellous" is full of patrician folksiness), left the New Age talk mostly to the women, and hungrily turned to the meal that Morgan had ordered specially for him. His wife extolled the curative powers of the arugula, the sea vegetable, and the kale. Sachi serenely said

that she could see all the food sparkling with energy, and that she had prayed to her swordfish before biting into him. "I could just tell somehow it was a he," she commented, and Morgan agreed, saying, "I saw him in the kitchen and he had a very masculine eye." Dr. Spock, teasing in a slightly tense-jawed way, remarked that the two of them could be taken for nuts, and kept on eating.

Dr. Spock's wry equanimity hardly seems a revolutionary trait, but fifty years ago it made him the spokesman for and the symbol of a radical departure from dogmatic rigidity in American attitudes toward child rearing. Scientific-minded pediatricians in the first half of what progressives anointed "the century of the child" issued patronizing directions to mothers about their children's physical care, especially their feeding. The doctors insisted above all on "regularity," for healthy intestines and for good character. Save the baby from "summer complaint" (severe diarrhea), they instructed, and make him a solid citizen fit for an industrial society. By the nineteen-twenties, bullying behaviorists had taken over. John B. Watson, whose "Psychological Care of Infant and Child" reigned throughout the thirties, informed parents that their children were theirs to shape, and ridiculed mothers as emotionally overwrought cuddlers and clingers, rather than cool trainers with the capacity to treat children "as though they were young adults." Love, Watson was convinced, bred unwholesome dependence. (With rising disgust, he monitored a cozy family car ride during which one poor small passenger was kissed thirty-two times—"four by his mother, eight by the nurse and twenty times by the grandmother.")

Dr. Spock offered children and parents a welcome end to scolding and

strictures. "Trust yourself. You know more than you think you do," he told parents in the now famous opening paragraphs of his book. "Don't take too seriously all that the neighbors say. Don't be overawed by what the experts say. Don't be afraid to trust your own common sense." Trust your children, he went on to urge young middle-class mothers and fathers, and show them plenty of affection. The response was an outpouring of trust in him, as a warmly nonauthoritarian authority for an age of prosperity. "I feel as if you were talking just to me," one of his early followers wrote him. "You make me feel as if you thought I was a sensible person."

His book sold three-quarters of a million copies in its first year, without advertising. The *American Journal of Public Health* judged "Baby and Child Care" to "typify the present-day departure from rigidity in schedules and training" and praised it for its moderation: "Dr. Spock has succeeded to an amazing degree in striking a middle ground in his advice." His secret, a columnist explained in the *Times*, was that he knew how to offer "suggestions on dealing with children as people" yet didn't cease to treat parents as people, too: in the more flexible and egalitarian family that Dr. Spock described, parents weren't held up to an impossible standard. The *Times*' writer appreciatively cited Dr. Spock's tips for the mother whose child has collapsed in a raging heap. "You can't dodge all temper tantrums. A mother would be unnatural if she had that much patience and tact," Spock wrote, and proposed that when the meltdown happens on "a busy sidewalk" the parent simply "pick him up, with a grin if you can force it, and tug him off to a quiet spot where you can both cool off in private."

Dr. Spock spoke like a down-to-earth amateur, who favored the human touch, whenever it was possible, over mechanistic technique. Don't ask "Do you want to eat lunch?" and get into an argument, he advised, but lead or carry the child to the table, "still chatting with him about the thing that was on his mind before." He conceded that "you might get the idea that I am advising you to swoop down on him and give him the 'bum's rush,'" but he assumed that his readers would manage more smoothly. "It helps to be tactful," he

Most Americans ~~do not~~ feel threatened by the prairie. They dislike ~~it~~ for what it has — dirt, sagebrush, sun — but especially for what it does not have. There are no trees except along water, and there is not much of that. There are no mountains and few houses ~~+~~ — there perhaps a few by homesteaders.

~~However~~ Huck who gave me the ~~pr~~ the ~~prairie~~ <sup>the</sup> prairie he gave in wildlife.

Huck gave me the prairie by finding what it does have: wildlife. ~~more~~ ~~than~~ ~~the~~ ~~woods~~ ~~this is~~ ~~the~~ ~~home~~ of the ~~greatest~~ ~~wildlife~~ ~~spectacle~~ in ~~the~~ history: the herds of buffalo, & even on horseback chasing them.

(Space)

Sgt?  
Dog

A friend asked me why I had painting  
dogs, and I gave him <sup>a</sup> small ~~answer~~ answer.  
Painters are not convenient. They are  
companyable, but only in rest. In the  
field they are <sup>driven</sup> ~~half-disciplined~~ independent  
thinkers, more energetic than we, ~~and~~ and  
hard to see now here, let alone reach.  
But they find use space. They make sense  
of it. They fill it with life. I owe  
the prairie to the painter. Huck & Jerry.

Huck was a fool;  
me. Gets his meat  
by cooperative hunting.

(and the wolves are  
their pack)

(See The Bear.)

Hunting and sex are  
at the core. The  
rest is additive.

Everything old that  
is not reproduction, getting  
food, & getting food  
is hunting (& gathering,  
which ~~is~~ is a kind

of hunting). (all the rest  
is modernism: hiking, birding,  
climbing ...)

(Left)  
(The Dumpster)

Sex is the only piece  
of nature left to ~~many~~  
city-dweller, the only  
touchy-feely ~~that~~ with  
<sup>Consequences</sup>  
~~can that be~~ in a world  
of getting good and  
wild life with round backs.



Dr. Craig B. Stanford

Chimp in Gombe National Park, Tanzania, with red colobus monkey meat; it is estimated chimps kill a fifth of these monkeys each year.

## Meat Viewed as Staple Of Chimp Diet and Mores

The finding may bear  
on the evolution of  
human behavior.

By VERNE G. KOPYTOFF

LOS ANGELES

If chimpanzees were human, their thirst for blood could be called barbaric. And if human morality applied to their practice of trading food for sex, many would spend the mating season in jail.

Researchers studying chimpanzee hunting habits are gaining new insight into the lives of man's closest animal relative. Once thought of as docile vegetarians, these able hunters forage for meat with a passion and motivation not chronicled until recently.

Dr. Craig B. Stanford, an anthropologist at the University of Southern California, has documented the chimpanzee's success in the pursuit of flesh. Given other similarities between chimps and man, he suggests that early humans could have chased game millions of years before current evidence suggests. Dr. Stanford described his research, the largest study to analyze the chimpanzee's predilection for meat, in

the May-June issue of American Scientist magazine.

Dr. Stanford found that chimpanzees hunt with such gusto in Gombe National Park in Tanzania that each year they lay waste to one-fifth of their territory's population of the red colobus monkey, their preferred prey. These long-tailed victims, crowned with a thatch of red hair, are plucked with abandon from the trees where they forage near the border with Zaire.

The 45-member Kasakela chimpanzee community, living in the low-lying forest of Gombe, eats one ton of meat on average each year, said Dr. Stanford, a 38-year-old associate professor at U.S.C. During one hunting binge in 1992, they killed 71 red colobus monkeys in 68 days.

This level of predation is surprising to many primatologists, but seems less so when compared with the diet of humans, the only other primate known to eat meat regularly. According to Dr. Stanford, chimpanzees can consume up to a quarter-pound of meat a day when they hit their hunting stride, rivaling at times some contemporary tribes of hunter-gatherers.

"Every article ever written on human evolution up until now says, 'Isn't it fascinating that chimps eat meat, but it's trivial compared to what modern humans eat,'" Dr. Stanford said. "Well, the Pygmies of

Continued on Page B8

Hunting & Sex

And we had to ask the  
chimps to find out what  
we're like.

(Epigraph in story)

Oct?  
Sept?

Two new discoveries have encouraged astronomers to think they have found promising ways to explore the powerful dynamics of those cosmic phenomena known as black holes.

As a place where matter is so densely packed and gravity is therefore so strong that nothing can escape it, not even light, a black hole cannot be seen. But scientists have gathered increasingly persuasive indirect evidence that such objects exist. Some appear to have the mass of several million Suns and are the most probable sources of intense radiations from the centers of many galaxies and enigmatic stellarlike objects called quasars. Much smaller ones may have little more than three or four solar masses.

Now astronomers are concentrating on learning more about the enormous energies and bizarre behaviors of gas, dust and stars in the dangerously close environs of black holes.

X-ray detectors on a Japanese spacecraft have given astronomers what they say is the best close-up look yet at the awesome power of a black hole's gravity sucking in surrounding gases. Other research results in recent weeks include radio-telescope observations of high-energy jets of material issuing at nearly the speed of light from the vicinity of an ordinary star orbiting what appears to be a small black hole.

In a report in the current issue of the journal *Nature*, a team of Japanese and European astronomers described X-ray emissions from the center of a galaxy 150 million light-years away. The emissions were coming from the innermost region of the disk of gas and other material that has formed like a whirlpool around a supermassive black hole. Previous research had focused on regions much farther from the black holes.

Because the X-rays are coming from so close to the edge of the black hole, their wavelengths are stretched out, reflecting the titanic struggle by the radiation to keep from being pulled into the hole and beyond detection. The X-rays were emitted by gas drawn into a spiraling plunge toward the hole itself, moving at about 60,000 miles per second, or a third the speed of light.

The observed effect of the enormous gravity on the X-ray waves is characteristic signature of black holes, as established in theoretical models developed by astrophysicists. Astrophysicists said the research suggested that similar studies might produce a better understanding of how black holes release such tremendous energies and what black holes might look like.

"This is the first time we're actually making measurements where

we can clearly say that we're dealing with matter that's close to a black hole," said Dr. Andrew C. Fabian, an astronomer at Cambridge University in England, who is a member of the research team.

In a commentary accompanying the report, Dr. Jules P. Halpern, an astronomer at Columbia University, said this was "a long-awaited discovery that represents the closest we have come to actually seeing" a black hole.

The observations were made by Japan's ASCA scientific satellite, and scientists at the Institute of Space and Astronautical Science at Kanagawa, Japan, were the principal authors of the research report.

A combination of observations in wavelengths ranging from gamma rays to radio waves, including visible light, produced the other black-hole discovery reported this month, in the June 8 issue of *Nature*.

In an analysis of time-lapse pictures showing peculiar motions of powerful jets of high-energy particles from a double-star system, Dr. Robert Hjellming and Dr. Michael Rupen, astronomers at the National Radio Astronomy Observatory in Socorro, N.M., determined that these jets were produced by a black hole and that material in the jets was traveling close to the speed of light. They are called relativistic jets because with material traveling at such great speeds, the ordinary physics of Newton's laws no longer applies to conditions there and the region is subject to bizarre distortions in time and space according to Einstein's laws of relativity.

Dr. Hjellming said in a telephone interview that the radiotelescope's detailed pictures of the jets revealed wiggles and corkscrew structure that "removed all doubt" that a black hole was the source of such dynamics. Scientists had suspected that the invisible mass associated with the observed star was a black hole, but could not confirm it until they could study the behavior and velocity of the jets.

"This is the first time we can say that one of the components of a jet-emitting binary is a black hole based on fundamental astronomy, rather than on fitting observational data to complicated models," Dr. Hjellming said.

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# Field Studies Show Meat Is a Staple of Chimp Diet and Mores

Continued From Page B7

Zaire are among the lowest meat consumers on the human spectrum. And there is no question that chimpanzees are, in some months, very close to that amount or are already there."

Dr. William C. McGrew, an anthropologist at Miami University of Ohio who studies chimpanzee behavior, said: "You pick up any textbook and it would say that meat eating by chimpanzees is insignificant. This is the first time meat has been shown to be important nutritionally."

Among the first scientists to debunk the myth of chimpanzees as banana-eating vegetarians was Dr. Jane Goodall, a British primatologist, who nearly 30 years ago announced to a startled scientific community that chimpanzees were part-time carnivores. Further research showed that these natives of equatorial Africa kill fellow chimps, use tools and mourn their dead — all behaviors once thought of as uniquely human.

As early as the 1960's, Dr. Geza Teleki, an American primatologist, said after observing male chimps swap meat for sex with females that nutrition was only one of several reasons chimpanzees ate flesh.

Dr. Stanford builds on this finding, saying that male chimpanzees often hunt as a way to finance their sexual barter when traveling with sexually receptive females. And the more such receptive females are present, the more likely a group of chimpanzees will hunt.

Time after time, Dr. Stanford documented how male chimpanzees dangle a dead red colobus monkey in front of a sexually swollen female, sharing only after first mating. He said that human sexual relationships could have been just as material-based.

"When chimps arrive at a tree holding meat on the hoof, the male chimps seem to have an awareness that, 'Well if I get meat I will maybe get more copulations because the females will come running over once I get a carcass,'" Dr. Stanford said.

Female chimpanzees are sexually promiscuous, with or without meat, copulating with more than a dozen males each day. But Dr. Stanford believes the attraction of flesh, consumption of which is shown by Dr. McGrew to be linked to the survival of offspring, could give lower-ranking males a better chance at matings; or that it could be "the difference between getting lots of sex and getting lots and lots of sex."

The ruthless manner in which

chimpanzees hunt monkeys is best illustrated by a 1992 kill at Gombe, one of the largest ever recorded. Two chimpanzee parties traveling with 33 members, including two sexually receptive females, converged underneath trees in which up to 25 colobus monkeys were noisily feeding on fruit.

The colobus monkeys, weighing nearly 20 pounds, shrieked with alarm as the group of male chimpanzees (females hunt only on occasion at Gombe) made their way up to the canopy. In the frenzy of battle, some colobus monkeys were killed in the trees by the usual bite to the head. Others fell to the ground only to be flailed against the forest floor by chimpanzees weighing nearly 100 pounds.

By the time the "gruesome blood-bath" ended one hour later, Dr. Stanford said, seven monkeys were being eaten. The most prolific hunter at Gombe has killed 42 colobus monkeys in five years.

"Chimps absolutely love meat and get extremely excited about hunting," said Dr. Richard W. Wrangham, a Harvard anthropologist who said in a 1990 study that chimpanzees prey on at least 25 different species of mammals. "They will wait for an hour under a tree for just three drops of blood to fall off a leaf."

Most hunting is seasonal at Gombe, Dr. Stanford found. It takes place during the dry summer months, a time when females are generally sexually receptive and when the food supply of fruit, leaves and nuts is scarce. During the winter, however, when sex is not usually an issue and food is more plentiful, chimpanzees can go several weeks without a morsel of monkey, baboon, small antelope or baby bush pig.

But male chimpanzees sometimes hunt at Gombe when no sexually receptive females are nearby, primatologists report. This is when chimpanzee politics comes into play.

Dr. Toshisada Nichida, a Japanese zoologist, described in 1992 a primate patronage system that would be right at home in the back rooms of Capitol Hill. A male troupe leader in the Mahale Mountains of Tanzania, doled out meat portions to allies, while denying the rewards to enemies. At Gombe, Dr. Stanford observed similar politicking at meal time.

"In the chimp society as in human society, being big doesn't get you everything," Dr. Stanford said. "It's being a politician. You have to know how to network. You have to use your political abilities to get what



In one chimpanzee hunting binge in Gombe National Park, Tanzania, in 1992, 71 monkeys were killed in 68 days. A female red colobus monkey jumps from tree to tree with an infant clinging to its underside.

## Chimps' meat intake appears at times to rival that of hunter-gatherers.

you want."

It is difficult to generalize about chimpanzee society. As an example, chimpanzees at Gombe capture mainly infant colobus monkeys using a pell-mell strategy, Dr. Stanford said. By contrast, Dr. Christophe Boesch, a Swiss primatologist, says male and female chimpanzees at Tai National Park in Ivory Coast, prey mostly on adult colobus monkeys in coordinated attacks.

The difference in technique, Dr. Stanford says, could be accounted for by the local vegetation. The tall, densely packed trees of Tai provide more escape routes for the monkeys, and therefore requires more organized hunting.

"This demonstrates that chimps have behavioral plasticity," said Dr. C. Owen Lovejoy, an anatomist and anthropologist at Kent State University in Ohio. "It's very exciting news that chimpanzees are perfectly capable of enhancing their own fitness for success."

Dr. Stanford says chimpanzees are such efficient killers, successful nearly 90 percent of the time when 10 or more males are present, that he wonders whether early man was also quite skilled.

Archaeological evidence indicates that humans hunted at least 2.5 million years ago, based on stone meat-cutting tools found at Olduvai Gorge in Tanzania. But Dr. Stanford said that from what he learned from watching chimpanzees, he believed

that humans were avid hunters nearly three million years earlier than remains suggested.

"The amount of meat chimps eat suggests that early hominids, who would have presumably been more intelligent and better able to coordinate their actions and hunt together, were probably eating as much meat as chimps or more," he said.

Molecular biologists estimate that 98 percent of a chimpanzee's DNA matches that of humans. And since both humans and chimpanzees eat meat, Dr. Stanford said he thought it likely that so did their common ancestor who lived some six million years ago, when a branch in evolution created early man.

Scientists have been debating for some time when early man began hunting, believed by many to be a hallmark of human evolution linked to brain expansion. Some contend these human ancestors were mainly scavengers, too weak and slow on two legs to have hunted successfully, while others say Dr. Stanford's theory lacks evidence.

A team led by Dr. Timothy D. White, a paleontologist at the University of California at Berkeley, last year uncovered in Ethiopia a partial skeleton of the earliest hominid yet found, dating back 4.4 million years. Dr. White said that the hominid, known as *Australopithecus ramidus*, was probably capable of hunting, but that the remains provided no concrete evidence that it ever did so.

"Stanford's work is very provocative," Dr. White said. "And it's completely plausible; but it's totally unsupported by empirical evidence. That's why we're trying to find some kind of smoking gun, though I don't know what that would look like."

Dr. Stanford said it was unlikely that evidence to support his theory of early hominid hunting would ever be



Photographs by Dr. Craig B. Stanford

One 45-chimp band eats a ton of meat a year. Here, a male chimp, left, munches on red colobus while the male at the right begs for a share.

uncovered. To illustrate the point, he held the bone remains of five colobus monkeys (equal to about 60 pounds) in the palm of his hand — leftovers collected after a chimp feast.

"Chimps eat hair, skin, bones — there's nothing left," Dr. Stanford said. "Early hominids probably ate everything and you wouldn't find it in the fossil record."

## A New Path Is Dr. For S

The New York Times

## '95 Hurricane Season Seen as One of Fiercest In the Last 20 Years

Building spree near coasts offers more targets for damage.

By WILLIAM K. STEVENS

Inhabitants of the Atlantic Coast, the Gulf Coast and the Caribbean, beware: this hurricane season is shaping up as one of the most active in the last two decades, experts say.

The reason is a conjunction of atmospheric and oceanic forces that are expected to make this year's crop of tropical storms and hurricanes 40 percent more frequent and intense than they have averaged over the last 45 years, according to a combined index of frequency and intensity calculated by researchers at Colorado State University in Fort Collins.

The Colorado forecasting group's predictions have been close to the mark in most years and its methods are given high grades for scientific validity by other experts. The group is now calling for eight Atlantic or Gulf hurricanes (defined as rotating storm systems with winds of 74 miles an hour or higher) and four lesser tropical storms with winds of at least 39 miles an hour, strong enough to be given names. Three of the eight hurricanes, according to the forecast, will be severe ones, meaning that they will reach Category 3, 4 or 5 on the Saffir-Simpson scale of hurricane intensity.

Category 3 hurricanes have peak winds of 111 to 130 miles an hour, Category 4 of 131 to 155 miles an hour and Category 5 of more than 156 miles an hour. The vast majority of the damage done by hurricanes is done by the few storms

in these three groups.

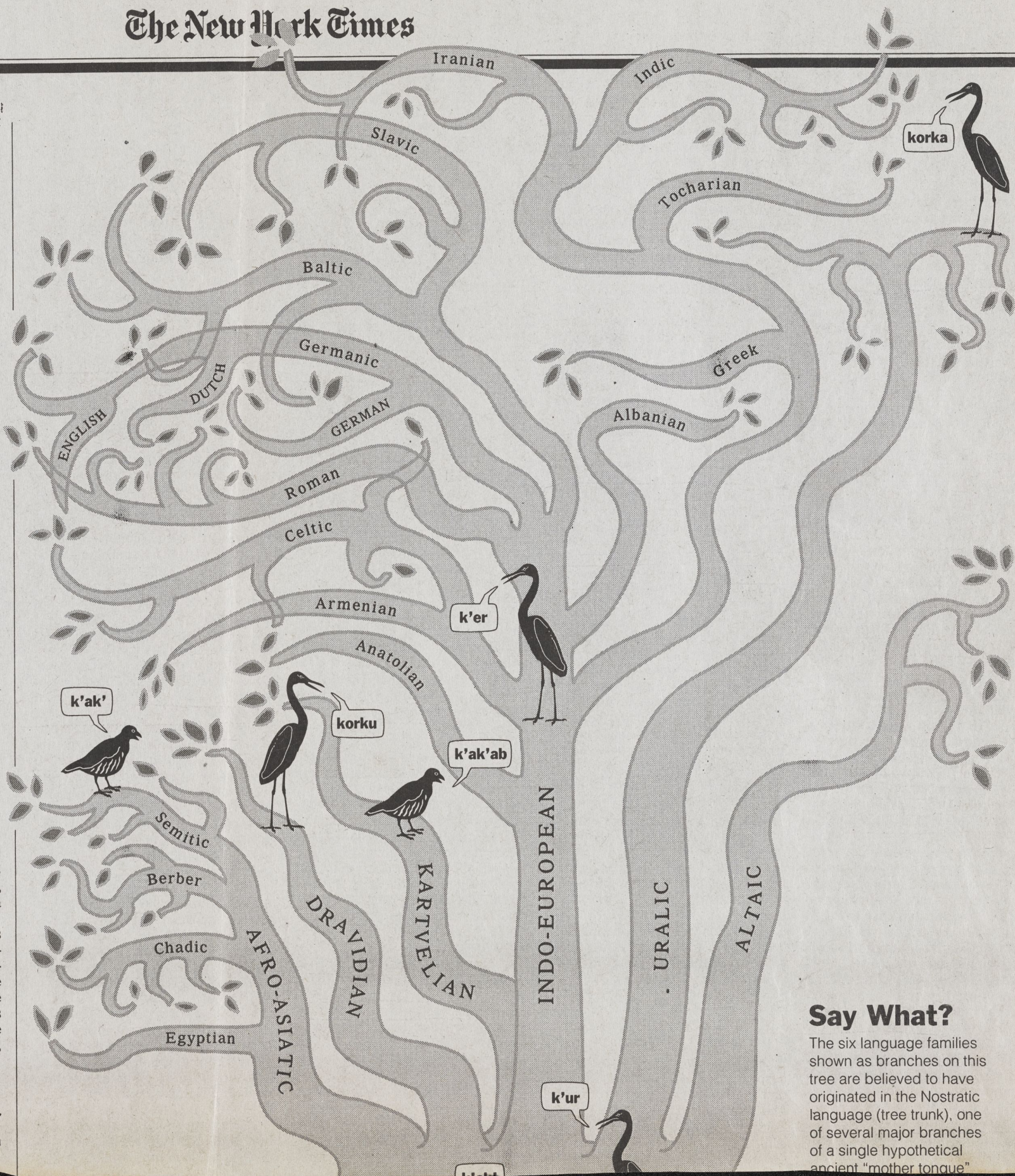
This year's forecast "is for a very active season," said Dr. Christopher W. Landsea, a researcher in the Colorado group, which is headed by Dr. William M. Gray, a professor of atmospheric science. It is, in fact, expected to be one of the two or three busiest seasons since Dr. Gray began making the forecasts in 1984. The hurricane season extends from June 1 through the end of November, with the peak of activity usually coming in August, September and October.

The Colorado forecasters are unable to predict when the storms will develop, their movements, or whether and where any might strike land. "But if you do have that many storms out there, it means there is more of a chance for the Caribbean islands or the United States to experience a couple of storms," said Dr. Landsea.

The message sent by the forecast is simple, said Jerry Jarrell, the acting director of the National Hurricane Center in Miami: this year, take the center's annual admonition to prepare for hurricanes more seriously. That means, for instance, planning in advance for a possible evacuation and stockpiling provisions and batteries before any hurricane warning is issued and demand outruns supply. "We've been telling people to do it," said Mr. Jarrell, "but many don't. This would be a good time."

The insurance industry, which has watched with growing alarm as development has exploded in vulnerable places and property losses have ballooned in recent years, is likewise urging that structures be made as hurricane resistant as possible. "We know the storms are going to come,

Continued on Page B11



### Say What?

The six language families shown as branches on this tree are believed to have originated in the Nostratic language (tree trunk), one of several major branches of a single hypothetical ancient "mother tongue"

8 pages

Mom's  
HG

"... clarity... the  
first characteristics  
of Spain. Here all is  
sol or sombra - sun  
or shade...."

"You are ~~and~~ seldom  
halfway in Spain."

## THE BIRTH OF AN IDEA

*What do great leaders have in common? What about revolutionaries? After a quarter century of research, Frank Sulloway has discovered a very simple factor that may explain history.*

BY ROBERT S. BOYNTON

*Frank Sulloway*  
 IT was the fall of 1967 when Frank Sulloway realized that the key to understanding Charles Darwin's genius lay in the fact that Darwin hadn't been one. Sulloway, a Harvard sophomore at the time, was hardly the first to be struck by how improbable it was that the theory of evolution had been discovered by so undistinguished a scholar, someone who once described himself as possessing "rather below the common standard in intellect." The historian Gertrude Himmelfarb, for example, once asked, "Why was it given to Darwin, less ambitious, less imaginative, and less learned than many of his colleagues, to discover the theory sought after by others so assiduously?" The answer that most biographies gave was simply that Darwin was a genius. To Sulloway, this sounded like a cop-out.

*Frank Sulloway*  
 "The one thing I knew as soon as I read 'The Voyage of the Beagle' and his 'Autobiography' was that Darwin was an ordinary person," Sulloway recalls. "Sure, he was smart, but he didn't start out as a genius—he was nothing like Isaac Newton, who could probably solve differential equations in his head. No, Darwin wasn't capable of anything I couldn't understand myself, and that was part of his appeal. I identified very strongly with him, because he proved that we all have a chance. I thought Darwin would make a fascinating case study of how a modest, hardworking guy with terrible spelling but lots of heart became one of the most famous scientists in five hundred years. I thought, Gee, *that* would be an interesting nut to crack."

So, over the next thirty years, as his peers traded the cerebral passions of their youth for careers in finance and law, Sulloway pursued his interests with a tenacity that would have pleased Darwin, a man whose favorite expression was "It's dogged as does it." Having rejected the academy for the life of a freelance intellectual sleuth, Sulloway retraced the Beagle's Galápagos voyage, mastered Darwin's oeuvre, won a series of

illustrious awards (a MacArthur "genius" grant among them), and wrote a much praised study of Freud and a series of brilliant monographs that changed the face of Darwin studies—all the while pondering the question of what had made his mentor tick.

Today, Sulloway believes he has finally solved the puzzle of Darwin's genius and, in the process, discovered why the great figures of history have been inspired to reject the conventional wisdom of their day. The single best predictor of revolutionary creativity, he argues, is birth order. Firstborns tend to become conservatives, and "laterborns," like Darwin, are more likely to become freethinking iconoclasts. Some people are simply "born to rebel"—a proposal that Sulloway defends in a provocative and quirky book of that title, to be published this month by Pantheon.

In short, Sulloway wants us to completely rethink standard theories of personality development and history—to cast aside modernity's Freudian and Marxist scaffolding, renounce such notions as the Oedipus complex and the class struggle, and replace them with a thoroughly Darwinian view of human behavior. The engine of history, he argues, is sibling rivalry, the Darwinian ur-conflict between firstborns and laterborns. Lest this sound like the kind of facile pop psychology one finds in supermarket self-help books, Sulloway has actually tested his claims and presented a massive trove of statistical evidence to illustrate the role of birth order in history.

"Born to Rebel" is supported by a sophisticated multivariate analysis of three thousand eight hundred and ninety scientists who took part in twenty-eight scientific revolutions; the eight hundred and ninety-three members of the National Convention that ruled France during the French Revolution; seven hundred men and women who were involved in the Protestant Reformation; and participants in sixty-one American reform movements. The result is more than a million biographical data

points, culled from five hundred years of history. In the twenty-six years Sulloway worked on the book, he read more than twenty thousand biographies. He had over a hundred professional historians evaluate his historical findings; the chairman of Harvard's statistics department and a colleague drew on their work for the United States census to create software for the enormously diverse data. Entering the data in a computer took two years, and designing the book's graphs took another year.

For all its technical complexity, however, Sulloway's birth-order theory shares the parsimonious elegance of the Darwinian principles that were its inspiration. Personality, he argues, is the repertoire of strategies that siblings use to compete with one another, secure their place in the family, and survive the ordeal of childhood. By recasting Darwin's theory of natural selection in terms of family dynamics, Sulloway highlights the adaptive tactics that siblings deploy to differentiate themselves from one another in the eyes of their all-powerful parents. "Depending on differences in birth order, gender, physical traits, and aspects of temperament, siblings create differing roles for themselves within the family system," he writes. "These differing roles in turn lead to disparate ways of currying parental favor." Parental favor increases parental investment, which, in turn, improves a child's chances of survival. "During the brief period of childhood," Sulloway says, "children use their brains to accomplish the differentiation and adaptation that species like Darwin's finches took millions of years to achieve." As Jonathan Weiner observes, "The mind is our beak."

The most basic niche is that of the firstborn. In the family, firstborns identify more strongly with power and authority than their siblings do: they employ their superior size and strength to defend their special status and frequently "minimize the costs of having siblings by dominat-

ject of a piece of nonfiction writing learns—when the article or book appears—his hard lesson.” Our relationship differed from Malcolm’s paradigm. My consenting subject was very experienced in the matters of the press. Subject and author, author and subject: each party knew how to use the other; each party was writing this story. The relevant question in my mind was not “Who’s conning whom?” but, instead, “Given the stakes dictated by Kimberlin’s proved and apparent deeds, why shouldn’t I try to beat him at his game?”

I never misled Kimberlin with an explicit assurance that I was writing hagiography; I didn’t need to, because he had convinced himself of that from the beginning. But Kimberlin also assumed that he was always a couple of steps ahead of me, and while that was true in 1992, by the end of our game I had caught up. Or, at least, I believed I had caught up. After Kimberlin reads these words—and when he reads my book—we will enter yet a new phase.

How did things ever get this far? Originally, I took the bait because the most salient elements of Kimberlin’s story seemed irrefutable—powerful evidence of political hypocrisy. But then I did what any reporter instinctively does: pulled on a piece of string, trying to discover where it would end. In this instance, it turned out that the string was grafted to a tangled mass of yarn—of a different color and texture than I’d imagined. I kept discovering too many versions of what I thought was the truth. I will offer up an example: two versions of where Kimberlin was when he learned that Julia Scyphers was killed.

The day Julia Scyphers was murdered, Kimberlin told me, he had made a trip to Martinsville, half an hour southwest of Indianapolis, to the home of a man named Rodney Fint. Fint, Kimberlin told me, was someone in the marijuana trade. “I went down there in the morning,” he said. “It had to do with some business, probably to pick up some money. I don’t remember what it was. Some routine thing.” In a subsequent conversation, he remembered the purpose of the trip after all. He

had got a new shipment of T-shirts at his health-food store, and Fint’s thirteen-year-old daughter and a friend of hers wanted one, so he drove there to deliver them. While driving back to the city, he said, he got a call from his sister on his beeper. He found a roadside pay phone, reached his sister, and she told him that Mrs. Scyphers was dead. “This was early afternoon, one o’clock. I think she was killed at 12:30 P.M.” He asked his sister if Mrs. Scyphers died in a car accident, but she didn’t know.

In fact, the police reports indicate that Julia Scyphers wasn’t shot until nearly three o’clock.

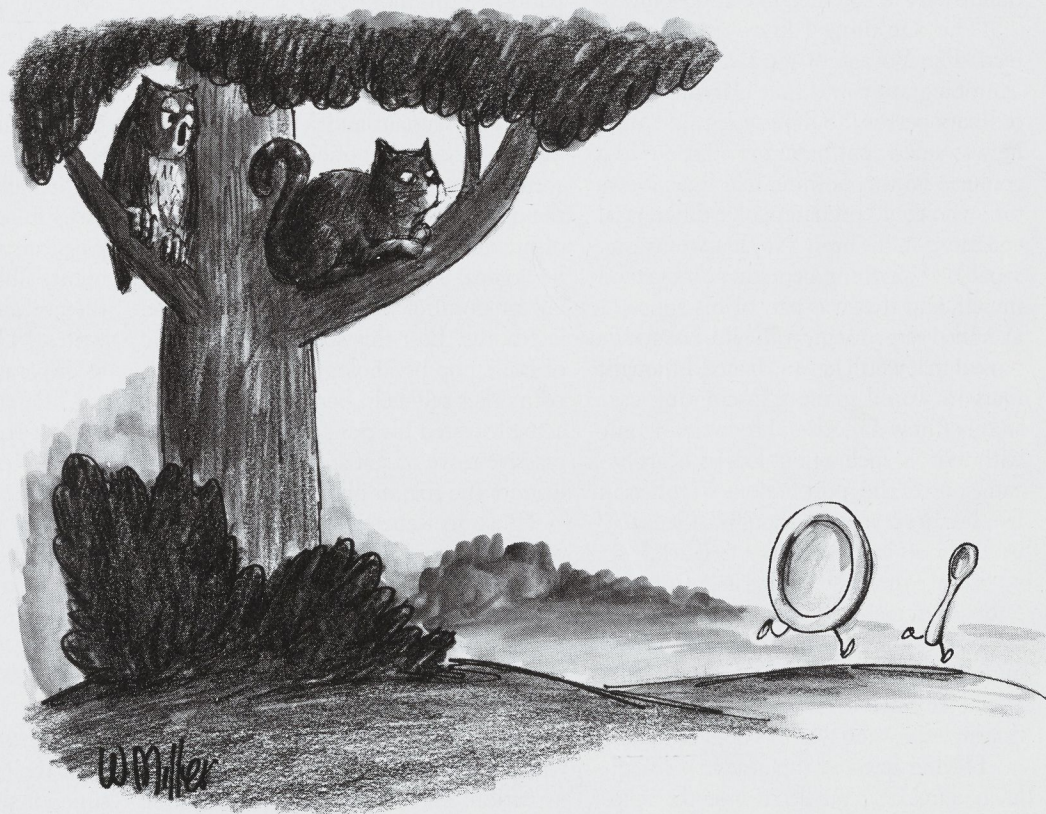
There is another version of where Kimberlin was when he heard the news: not dropping off a couple of T-shirts at Rodney Fint’s house but consummating a multi-ton marijuana deal there.

“We were in the middle of a weighing operation,” a man who says he was present told me. “And Brett said he wanted to go watch the news.” At five o’clock, the early edition of the local television news is broadcast from Indianapolis. The dope transaction hadn’t got started until late afternoon. “What was strange was that he wanted to break routine in the middle of a deal involving thousands of pounds of marijuana and go watch the news. We

had the scales and the load in the garage, and to see the TV we had to enter the house and climb a flight of stairs. The Scyphers murder was the lead story, and Brett reacted with surprise. He said, ‘My God, that’s Sandi’s mom!’ He made a phone call immediately.”

Kimberlin was asked about these two versions last week. He denied that he was doing a drug deal that day. He denied that he learned about the killing on the five-o’clock news. He denied that any of this mattered: “I got beeped within thirty minutes of Mrs. Scyphers’ being killed. Either way, I would have known about it before five.” He was in a state of some agitation.

Between these versions is the bigger story. That bigger story doesn’t negate what I wrote four years ago—which, to this day, remains largely true. But the universe of a narrative can sometimes accommodate more than one truth. My original story was an account of an individual’s civil rights abused by politicians and bureaucrats who were protecting their interests. I still stand by the essentials of that story. But the injustices it describes must stand alongside the history of injustices I kept discovering—of law, of humanity, of life: injustices that dwarfed this little man’s original complaints. And that story is true, too. ♦



*“I myself don’t see much hope for an inter-utensil relationship.”*

Phucking Land In  
ju. 7 + ~~q~~ Plavor.

Prairie

(Sept 2?)

"The pure sky loves to  
violate the land,

(See Callesso, p. 68)

See pp. 102-3 on  
the Big Sky + sharp  
light.

---

Walking in the Sky.

"instinct sports ...  
hunting, fishing &  
sawdust."

Overjoyly 12

Hunting / fishing / ~~egg~~ gathering is not the  
only way to see ~~plants~~, but it is the <sup>Nature's</sup> ~~natural~~  
way, meaning that it is the way we evolved.

We didn't go into the woods to relax, take  
them, or to enjoy ~~anything~~, ~~much less~~ nature. We  
went to get something and bring it back  
to the camp, where we would eat it and

then relax. ~~Enjoying~~ we did enjoy ourselves,  
it just wasn't our purpose.  
though. a (Margaret then on hunting, from  
wilderness at dawn).

(Jimmy on the grouse hunt: "I've never  
done anything in the woods with a purpose before."  
~~there with ~~the~~ purpose~~)

You don't ~~not~~ have a good time by setting  
out to do so. You decide to play baseball  
& have a better time than you would just  
hanging out. H/F/G is ~~the~~ Baseball is  
modernized H/F/G.

Chris Roberts: never has the same problem  
+ thinking.

(The Jackrabbit Syndrome)

## Shooting + Hunting

Hunting is much more demanding physically —  
as near as we come to our extraordinary part.  
(Travelling on walking + pheasants.) You  
walk as far as you can + then ~~keep going~~.  
Drink a cup of tea + walk some more.

Swig of water

Shooting is very much easier physically — and amazingly  
~~so~~ so, it goes, grew up believing that rewards  
only come w/ work. But the physical act of  
shooting overhead birds can be difficult, if you  
aren't accustomed to it.

The point about hunting is that it is  
not measured by the shooting skill. That's where  
the folk go wrong when they ~~see~~ are so gung  
guns for good. The small game may be  
right & pretty, but there is nothing spending  
about tripping birds.

~~The shoot~~

There is no kind of ~~shoot~~ explanation I. I.  
that I cannot move frequently, so degrees  
of difficulty become meaning less. My average  
over the season is certainly less than many  
shooters achieve on targets at clay or flush.

Confess I don't like to use live birds for targets.

Sept / Oct

About 2000 words with optional sidebar

Datus C. Proper  
1085 Hamilton Road  
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### MIDDLE OF NOWHERE

Sharptailed grouse still thrive  
on the high plains.

Right in the middle of nowhere, my pup whined and pressed his nose into an air-stream from the truck's window. I pulled over and let him out. He ran ten yards and lifted his hind leg, which was what I expected -- and then he stood there with leg up and nose stretched out, which was not what I expected. That dog was pointing.

I reached for my shotgun, then put it back out of temptation's way. I had no permission to hunt and wanted to get along with the folks who owned all this prairie grass rolling back into sagebrush hills. Anyhow, I wanted some pictures. Thought I'd snap a photo of Huckleberry on point, and then some more as he stood there (statuesque is the word) with sharptailed

grouse flushing. What I had forgotten is that they conduct psychological warfare. Four of them flew past me, sassing: "tut-tut-tut," they said, but what they meant was "your eyes are bugging out."

The pup lost his composure too. He bounded after the flying sharptails until he hit the scent of another that was still sitting and decided to point it -- while he was in midair. Bad timing. He hit the ground on his side, hard enough to raise dust. The sitting bird flushed. The dog chased it, and for a few seconds the race was close. By then, another dozen grouse were in the air. They wanted to be somewhere far from us. We watched them flapping and gliding, smaller and smaller in a bright sky, coasting over a distant ridge and merging with the blue of the Snowy Range.

Well, it was good to know that the breeding season had produced so many young birds. I rushed into town for reinforcements and found them in the person of John Bietenduefel. John knows the secret of happiness: living exactly in the center of Montana with a bird-dog. He also knew where to get permission to hunt the sharptails.

The landowner said that we might find them anywhere at all, "standing around looking goofy." And then again we might never run into them. That's sharptails for you. They are innocent, sometimes, because they have had little time to adapt to humans. On the other hand, their harsh habitat has given them a range of behavior that is -- to put it mildly -- extreme. They are as wary

as pheasants and as casual as spruce grouse, as fast as mallards and as slow as coots, as skittish as snipe and as tight-sitting as woodcock, as tender as teal and as tough as old ganders. You can learn quickly where to look for the compact covers of ruffed grouse or bobwhites, but sharptails live in what looks like the whole world, or at least the best remaining piece of it.

You hunt other birds in places. You hunt prairie grouse in spaces. You grasp the difference in your hand when you sit on the tailgate dressing a sharptail. It looks tighter-feathered than a ruffed grouse but little bigger. In fact it is half-again heavier. The flesh of its breast is dark, weighty, dense with blood-filled muscles. The blood is driven by a pump much larger than a pheasant's. The sharptail is built to fly high in the prairie falcon's clear blue sky. It takes heart.

In eastern America, heath hens have long been extinct. The western pinnated grouse -- prairie chickens -- are scarce over much of their original range, relics from the time when their eggs came up broken and dripping on iron-rimmed wooden wheels. But if you want to know what prairie grouse used to be like, sharptails are doing fine on the high plains.

John Bietenduefel and I bounced down the farm road, truck slow as a Conestoga wagon. The grass looked as it did when buffalo grazed it, bunches reaching to the tops of our wheels. Maybe the covey I had flushed would have landed in a place like this. Our dogs would find out.

John's pup Jake was a half-brother to Huckleberry. They

were from big-running field-trial stock, and they hunted with demonic happiness. Human legs could not keep up but our eyes did. A herd of pronghorns spooked and flushed a small bunch of sharptails, which our crazy pups chased. At long range, dogs and antelope and grouse all seemed to fly. I was flying too and John's laugh sounded like wing-beats. We loosened our muscles and swung our legs from the hip and smiled.

You don't need big-running dogs to hunt sharptails. They also like brushy draws, especially those climbing from grain fields to prairies lightly grazed. In such cover, you can push birds out of the same spots every year, and hunters who know where to look get their grouse with no dogs at all. Visitors do well with spaniels or retrievers to explore the thick stuff. It is a good game. Sometimes, though, you want the Oregon Trail -- the feeling of skimming the prairies toward the horizon.

Jake followed Huck to find out what we were all looking for. This was Jake's first season, and he was a gonna-be: going to be good, with experience. It came fast. Huck pointed, tail sticking up quivering above the grass, and Jake moved in to see what the excitement was about, pushing out a single sharptail. Jake graduated from the gonna-be class right then. For the next hour he was (as John said) a historian, pointing at places where sharptails had been but were no longer. That's progress.

John was starting a new pup because he had lost the two dogs he was counting on. Sharptail country has hazards that you should know about before you pile your dogs in the car and head for the

plains. There are porcupines and some rattlesnakes. There are too many skunks. There are prickly pears that fill a pup's pads and barbed-wire fences that rip his skin. There are hungry coyotes and mountain lions. There are sheep-farmers who have a right to shoot. And there is that most ferocious of all predators, the jackrabbit, which lures dogs off on long chases and gets them lost. Pointer-pups are at special risk because they are fast and wild. Fear is something they have to learn.

Huck pointed a cow that had been dead since the spring thaw. I told him that he ought to know better. He rolled his eyes at me without moving, and a sharptail flushed. I adjusted my assumptions just in time to shoot it, and Huck retrieved with a told-you-so twist to his head. I believe he was suggesting that I could have maggoty beef if I wanted it, but as for himself, he preferred to hunt grouse.

I commended his taste. He worked scent for fifty yards (though how he could smell anything but ripe cow puzzled me) and pointed another sharptail. It went off saying tut-tut-tut and John took the shot. I managed to collar Huck in time to let his apprentice make the retrieve. Jake picked up the grouse, put it down, cogitated, picked it up, and brought it to John. Then Jake frisked around to celebrate his discovery of the meaning of life. He and Huck are German shorthaired pointers, from one point of view. They are also from Missouri. I mean, they tolerate training because it beats lying around the house chewing on furniture, but they don't see much point to the exercise. When they meet real

birds, however, they wrinkle up their brows and think deep thoughts.

One thing they have not learned, unfortunately, is reading. They point pheasants as happily as sharptails, even if the regulations say that pheasant season is closed for another month. The two species inhabit much of the same range, and when young they can be hard to tell apart. The sure way to avoid expensive early-season mistakes is to shoot only birds that make a low, gentle cluck. Sharptails usually do that. Pheasants either say nothing or make a raucous cackle.

We hunted toward a tiny alfalfa field on the horizon. It grew and grew until, when we got there, it had some three hundred and twenty acres. John worked the bottom side and I trotted to the fringe of sagebrush on top. I was in a hurry because every mile had made me ten years younger and I was about sixteen at that point. We discovered why we had not found many grouse in the grass. They were all dining on an evening salad of greens with little blue flowers. Huck found a covey hiding in alfalfa that did not look high enough to cover a mouse. I walked in, flushed the birds, and fired both barrels coolly. Or perhaps lukewarmly. A dozen sharptails flew off discussing the incident. We watched for two of them to discover that they were dead, but they didn't. I excused my gun for firing crookedly. It had not been in the midst of a flock of big clucking birds for a year.

Huck found the next sharptails as singles. These were older, wiser grouse. They ran downwind, which made trailing tricky, and

they flushed wild when the pup pushed his luck. But he held some of them and I shot two. Never mind how many I didn't shoot.

Sharptails do have one semi-predictable cycle: in late season, they bunch up and flush at impossible distances. In early season, they may sit so close that you feel obliged to lift your gun and let them go. You tell yourself that you are just dog-training. But there is a point in the cycle when prairie grouse are neither impossible nor too easy. They are learning. Pheasants and partridges had a few centuries' head start, but sharptails are catching up, and in that alfalfa they were the real thing.

John Bietenduefel was a distant speck on the green field. In between us was another speck: Jake. He was standing still. John was running to the point. I could not see the grouse flush but John's gun went off twice and Jake made two retrieves. John had played college football a few years back and still had coordination to spare.

My three birds were all I wanted to pluck, so Huck and I wandered back to the truck. The low sun played tricks. Each bunch of grass had a shadow long as a tree. Prairie that had been smooth at noon took on texture. I saw what looked like a sharptail standing on a mound several hundred yards away, called my pup to heel, and tried to see how close we could get. As we got closer, the bird got smaller. When we got close enough to hear it, it sang like a meadowlark, which it was. Crickets joined in for their last concert before frost. I took off my sunglasses because the light was no longer yellow or bright. It was the

color of the pocket-watch my grandfather left me, gold that had not been polished for a long time.

### Sidebar

There are only a few places with serious upland hunting in early September, and Central Montana is near the top of the list. It has been discovered, however, and access is difficult. If you are on a tight budget, you might look for sharptails in eastern Montana, parts of the Dakotas, or Canada's prairie provinces. Alternatively, there are outfitters in Central Montana with experienced western dogs and access to good land.

I have hunted with the first of the following and talked, but not hunted, with the others.

- + Dennis Kavanagh. (406) 587-5923. Uses English setters and German shorthaired pointers.
- + Roy Olson. (406) 428-2195. Uses vizslas and shorthairs.
- + Richard Cox. (406) 538-7821. Uses English pointers and Labradors.

# MORE snipe NEXT season!

*The Shooting Gazette 5/95*

Over most of Britain and Ireland the 1994-95 season was a rather good one for snipe, and certainly above average in most areas. The general wetness of the season from late October onwards was further helped by negligible frost over most of the country until almost the very end of January.

Snipe are so waywardly elusive, that of all our quarry species there are few, if any, that can match them for agility and unpredictability. They come and go in the fascinating and erratic way that's typical of so many migrant birds. And it is a humbling experience to consider how many pounds of shot must be expended to put just a few ounces of deliciously tender white snipe flesh on the supper table - or even for breakfast, which is a special delight.

"What can we do to encourage more snipe next season?" That was the urgent question that was repeatedly asked on several of my local shoots last season. Nothing succeeds like success, and there is nothing like a good snipe drive or a productive walk-up across boggy meadows to wet the appetite for more of the same next year.

The easy answer - but too easy to be realistic and practicable - is to 'turn the clock back'. Snipe would respond superbly to a return to the old ways of grazing and livestock

husbandry, with seasonally flooded water meadows, old style sewage farms and the grazing of cattle and horses on the well-dried marshes of late spring and summer.

Perhaps the best system of all was practised in many of the western counties, in Scotland and in Ireland, where animals were tethered on the open marshlands in summer, grazing down the herbage in circular patterns and enriching the organic content of the soil with their manure. The result was a mosaic of long and short vegetation, giving wintering snipe open feeding areas rich in the earthworms and invertebrates that manure promotes, and adjacent sheltered resting zones in the longer reeds and rank grasses.

From the first falls of migrant snipe around the time of the full moon in late September or early October, sportsmen could look to such marshes and bogs for dependable sport throughout the rest of the season. The only likely setback might be a spell in early autumn, leaving the bogs unattractively dry until steady rain had done its saturating work. This, it seems, was the pattern over much of northern and western Britain in 1994.

*The elusive snipe has always been a fine addition to the bag at the end of a day's walked-up shooting. COLIN MCKELVIE offers a few suggestions with a view to improving the habitat of this venerable species.*

(Continued from page 67)

francolin and the heavier helmeted guinea fowl, that may weigh up to three pounds, prefer to run, but they can get up and go like rockets. There is a break for a relaxed lunch, and time for a well-earned siesta.

Later, an organised drive will certainly test your readiness! Singles, pairs, or small coveys of different francolin and sometimes large flocks of guinea fowl may come over, flying deceptively fast, while your attention is caught for a breathtaking moment by graceful impala effortlessly leaping, zigzagging their way through the line. Luckily, you have a pair of sharp eyes beside you, in the form of your picker-up, who, seeing the birds early, hisses in your ear, marking your birds and picking them at the end of the drive.

One of the most exciting game birds is the sand grouse, of which there are four kinds in Botswana - burchell's (or spotted), namaqua, yellow-throated, and the double-banded. The first three may be flighted in the morning over waterholes, to which they may fly 30 miles or more from the desert, or to water provided by boreholes in the kalahari itself. An hour or two at these is most exhilarating. Fast, powerful fliers with pointed wings, they can change course with amazing alacrity as they appear from any direction to swoop in to drink. Although permitted, responsible safari operators discourage sand grouse shooting during the breeding season, June to August.

The double-banded flight to water in the evening, just as the sun goes down. As there is not twilight, you have perhaps 20 minutes of daylight left to keep your eyes peeled and ears open for their distinctive silhouettes against a darkening sky and the whirr of wings as they come in.

## SAFARIS

Apart from bird shooting and big game hunting safaris, it is possible to take an Adventure Safari over ten days, combining up to four days' bird shooting with a couple of days' hunting plains' game. The remainder of the safari is spent game viewing or exploring the waterways of the Delta in a mokoro, with the opportunity to fish for bream or tiger fish.

Most visitors to Botswana, however, settle for a safari based at discreet permanent tented camps or lodges in the Okavango Delta, reached by light aircraft. From these camps, which usually take a maximum of 12-16 people each, guests enjoy wildlife in its natural habitat in part of the world's great unspoilt wilderness.

All sorts of expeditions can be arranged; walking in private concessions, "mokoro" (dug-out canoe) trails, riding safaris of five or more days duration, game and bird viewing of remarkable diversity, and even elephant back safaris using African elephants. The Okavango Delta is easily combined with a stay in the Kalahari Desert, a fascinating area, at Jack's Camp perhaps, the epitome of a traditional tented safari camp by the Makgadikgadi Pans.

Approximate costs per person.

● 10 day Bird Shooting Safari, based on a party of 4-8 people, including return international flights from London, full board with drinks on safari, professional hunter per 4 clients, bird & fishing licenses. £4,250

● 12 day Adventure Safari, on the same basis as above. £4,600

● 14 day Fly-in Desert & Delta Safari, with a night at Victoria Falls, including return international flights from London, tented camps or lodges in Okavango Delta & Kalahari with full board & activities. £2,450 ■

Return to camp, have a hot shower, dine well, chat round the camp fire under a starry African sky, turn in and sleep like a log.

On a day's shooting you might expect to shoot 40 to 50 birds to your own gun, but you might wish to keep quiet about the number of cartridges you use during the first day or two!

Unfortunately the dry conditions that have prevailed throughout Botswana in the last few years have greatly reduced the opportunities for wildfowl shooting, although numbers increase as the Delta expands annually with

the flood waters from the north. Varieties of duck and geese that may be shot are red-billed and hottentot teal, white-faced, knob-billed and yellow-billed duck, cape shoveller, pochard, egyptian and spur-winged goose.

Linyanti is an area in the north where there is potentially excellent shooting. At present, one can get an occasional day's francolin and guinea fowl shooting, which is fun as a change while on a photographic or walking safari, and next year, further opportunities will be developed, which may include duck and geese.

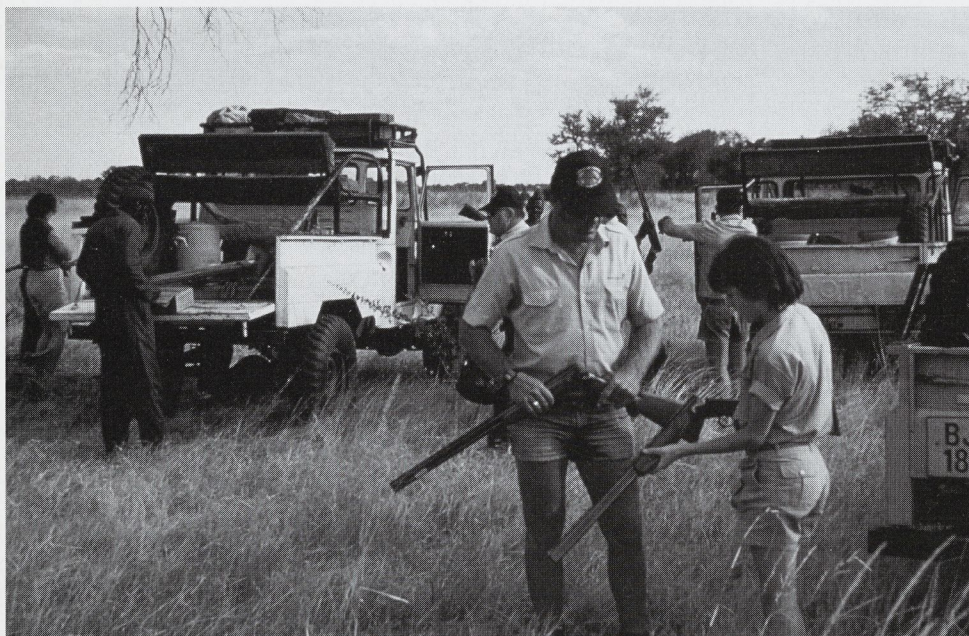
## Big game hunting

The Big Game hunting season is from April to September, with a diverse selection of species that may be hunted; buffalo, lion, crocodile, and various antelope. Strictly regulated, depending on the status of each species in each designated hunting concession, there is a government quota set annually for every animal that may be shot. This is in line with the policy of wildlife being a renewable resource, if properly managed.

It has just been officially announced that next year, for the first time for many years, elephant hunting will be allowed again under licence ■

*Full details of all the shooting described, from Tim Best Travel, 68 Old Brompton Road SW7 3LQ, who specialize in safaris to east and southern Africa. Colour brochure available.*

*Tel: 0171 591 0300 Fax: 0171 591 0301.*



A word about safety. The shoot is about to commence and in the midst of the sheer volume of driven birds it is not difficult to become carried away.

About 800 words

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### Passion

Passion is what matters. You get it without effort when you are a teen-ager, assuming that you run at 98.6° degrees, but later your blood cools and you may have to chase passion instead of waiting for it to pounce on you. Only a few poets have a surplus of flame life-long -- or life-short as the case may be. You and I have to hunt harder. Ten miles is enough, if it is through tall grass and up draws and out in stubble and maybe, with luck, into snowy foothills where an old cock pheasant thought he could wait out the season. It's better than anything climate-controlled.

I assume that your passion happens in nature, if you are reading this, but it is not the only possible place. Michelangelo chased passion to the ceiling of the Sistine Chapel, and you might even get waves of it riding a keyboard. But nature is where it happened first and where passion still catches up with you most often.

Mind you, nature is obsolete, these days, for supply-side

close September?

economists and politically correct scholars and most of rest of the population, for that matter, but she's still out there, nature hot and cold, scratchy and wet, kind and brutal. Might as well make love to her while you have the chance, because this won't go on forever.

Fact is that we're already obsolete, you and I, doing the same thing we've been doing for a million years or so. But passion is about extremes, so if I hate the brave new world of cities surrounded by malls, I might as well love the brave old world of villages surrounded by wilderness. I'll run the buffalo while my pony's wind holds out. Do you know how retrograde we are, culture-wise? Walk into any bookstore, ask to see their selection on hunting, and see what happens.

We're what's known as a niche market. A niche is a recess in a wall, as for holding a statue. We're in there looking out while the crowd rushes by to the mall. But we're not cast in marble, not quite yet.

When I was a young man, I knew that I had been born a little too late. My father and grandfather got the best of both nature and technology. They could hop into a Model A Ford, or in Grandpa's case a Cadillac heated by lifting a flap in the firewall. [] They could drive to Minnesota, row into Woman Lake in a lapstrake boat, lower a minnow, and catch as many walleyes as they cared to eat. Or they could drive the Ford [] over Bozeman pass in the mud, hopping out when they needed a grouse for dinner. They could visit the Firehole River, tie a size 16

Quill Gordon on a 4X gut leader, and show a four-pound brown trout his first dry fly.

It could not last. The tip of technology is followed by a wide, wedging base, and we need a lot of rules these days to save a little of nature. Fenced fields must hem her in, and short little rivers with people doing polite things. We need rules, mind you. We mustn't just run around with our atlatls throwing spears at mastodons, [] not anymore. Damn it.

On the other hand, passion is boundless, by definition, and she's pretty as ever, where you find her. Nature does not get old, like a human. She is young, ever young, and then dead. You don't mourn. You want to <sup>amazingly well</sup> shoot somebody, but the poor guy driving the bulldozer is just making a living. It's the only way he knows.

I'm lucky, then. I've got a bottle of 1889 Port that a friend gave me to baptize a book I wrote. Wine and book are both about nature. The Port tastes better now than it would have a hundred years ago, even if I'd been there. Wine is not something that I know much about, or intend to learn, and anyhow Port does not taste like blackberries or hazelnuts or anything so simple. It tastes like the end of the last century. We've made it to the next, anyhow.

Tomorrow Pup and I will start up a creek-bottom where the blue grouse may still be, but probably are not, and follow their life-cycle a thousand feet up to a ridge of very old firs, and shoot a bird for dinner if I can, and if not watch one fly all

the way to the bottom. We will return home, Pup and I and possibly bird, with several sore legs and all passion spent. [] We will have burned it to good purpose on one more day and one last century.

-----

Passion = logs on the fire. There are more flames as long as there are more logs.

About 2500 words

September -

Use this to end.

Revise

Good.

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## SPACE AND TIME

It is biggest space we have.

Nobody wants it but a man,

a 500-year-old dog, and

the original game bird.

This kind of hunting is an act of creation. We drive to the stubble fields when the east is red and shadows still give the land texture, but by the time we have checked at the farmhouse and bounced our truck down a dirt track, the light is coming from everywhere. The sky has no clouds to hold it together and it stretches so high that it makes you dizzy when you look up. Yellow fields are bare too. At their far edge is a gray line of sagebrush hills, and beyond those are mountains with a little early snow. They are distant but sharp-edged, like the cardboard background of a stage setting. You like all of this or none of it. It makes you want to leave, if you need things to clutch. It fills your lungs, if you like your geometry and your air uncluttered. Either way it wants life.

Let us populate this space.

Last night we stepped out of the motel to guess at the weather. We wished for birds as abundant as the stars because there were more of those than we had seen for awhile. Having

wished, we shivered a little, and not from the wind. The stars hid in the black around them. We knew that we had work to do before our shivers turned to sweat.

We will not name our creation till we have made it a perfect game bird. We will make it fast-growing so that the season can begin with the first week of September. We will make the bird fertile enough to raise families of two dozen in the space people do not want and native birds cannot exploit. The new bird must prosper on overgrazed grasslands with the antelope, back under ponderosa pines with the deer, and in tall sage with the rabbits. Let's put coveys around the lonely farmhouses and behind the retirement home at the edge of town. Above all, though, let us design a bird that will thrive in the grain stubble that stretches from northern New York to the Cascades, from southern Iowa to far north of the border. We grow a lot of grain in North America, and other game birds use only the margins.

A bird able to thrive in so many habitats would become one of the most abundant on the continent. We had better give it a smell that a dog can catch from afar, so that he can range wide; but let's bring out his best work by making the new bird as fast on its feet as a pheasant and as quick to flush as a ruffed grouse. Then let's be sure that each bird is big enough to feed a hunter.

The hardest thing is to surround a new bird with tradition. Let us, therefore, call our bird partridge. And let us now confess that our ancestors were using that name back in the fourteenth century: the bird we want turns out to have been invented some time before we got around to it. The first pointing

dogs were developed to hunt the partridge -- same bird I hunt in Montana today and its close relatives. This was before English pointers or Llewellyn setters, before our ancestors learned to knock grouse from limbs with rocks, before the first covey of bobwhites was ground-sluiced by a pilgrim's musket.

It is an odd quirk of history that today most Americans think of the partridge as a decoration for a pear tree. This bird is as thoroughly naturalized as the pheasant and the brown trout. Our continent has had more generations of partridges than of Smiths and Kennedys. We are the partridge capital of the world. Nobody knows it.

Landowners prize pheasants but dismiss partridges as "quail," "little chickens," or "redbirds." (The red-brown comes from the back feathers used for trout flies.) The old-timers I grew up with talked of "Hungarian partridges," because Hungary is one of the places from which the birds were imported a long time ago. Hunters often call them "huns," as in Attila the Hun. Perhaps we like ferocious quarry. You will also hear of the English, European, and Bohemian partridge: same bird. It has an identity problem. Only trout fishermen consistently say just "partridge"; centuries of fly patterns enforce continuity. Scientists call the bird Perdix perdix -- Partridge partridge -- the type form, most partridgey of partridges. Hunting regulations specify "gray partridges" to distinguish them from chukars, which are also true partridges. From now on I will use several of these names interchangeably in order to keep the competition confused. It is nice to hunt where there are many birds and few people carrying shotguns.

I have, nevertheless, acquired a stake in the great tradition. It happened when a friend gave me a book with the first known drawing of a pointing dog. The picture was by an artist who died forty-six years before Columbus discovered America. You might guess that a fifteenth-century partridge dog would be a primitive drooler, perhaps a bloodhound type. Not this one. It had a wide skull, short muzzle, tight jowls, high ears, fine bones, and alert eyes under deep brow. I read further in the book, turned back, stared at the picture again. Then I looked at the pup who was piling hunting boots beneath my desk, trying to give me a hint. Yes. ~~Young Huckleberry~~ is the original partridge dog reincarnated, or anyhow its brother. Egyptian pharoahs have reincarnated themselves as movie stars on less evidence. I used to think that Huck was one of those German shorthaired pointers, cute but modern. Partridges too seemed new, exotic, scarce. When the pup and I hike out on frosty stubble now, I am grateful that a dog would travel five centuries to help me find the birds he was bred for.

It is true that Huckleberry misplaced a memory or two during his flight through time. On opening day, he had not hunted partridges for a few hundred years and was expecting -- who knows? -- maybe mallards or meadowlarks or moose or some such familiar bird. Whatever he sought, he did it at subsonic speed and before long, by process of elimination, he bumped a covey of huns. Huck likes drama and this was a dramatic bump. Imagine yourself as one of a score of birds sneaking through short, bleached grass, congratulating yourselves on eluding a hunter.

Over the horizon comes a cruise missile. It reaches the middle of your band and explodes. Your buddies fly. You fly. You do not all fly off in the same direction, as you would prefer. It is every partridge for himself.

I have a different view of the process. Huck does not actually explode; he just catches scent in the middle of a bound, tries to stop in mid-air, and turns a somersault into the birds. No wonder they fly in all directions. One of them swings my way and falls at the shot. Huck pounces on it and brings it to me.

The next flush is also informal. We follow some of the birds from the covey and find half a dozen bunched where wild oats thicken the edge of the stubble. Huckleberry again overruns the huns, and again one swings close enough to shoot. The pup is right under the falling bird, having discovered something that tastes better than boots. There are readers who will reckon that I have ruined my pup by shooting before he points. The smell of partridge, however, has jolted the time capsule between Huck's ears. He moves off now at a different pace -- sort of a taxi instead of a take-off -- and his nose is extra-high. The good thing about having lots of birds around is that he finds what he wants before anything distracts him. He angles off to get the wind right, quarters slowly into it, and points. I move in fast from the side. These birds are not as easy to hold as pheasants or bobwhites, but sometimes even gray partridges wait a little too long.

Now that Huck has the idea, he shows me how to populate space. He puts birds out in the stubble and birds in the draws, but mostly he puts birds near the edge between the two. Perhaps

it is just that I feel comfortable with that border to hang to. I did not see the draws from my truck but they appear every half-mile or so, all of a sudden, as if the fields had cracked in the heat. On the south-facing slopes, yuccas rattle out their seeds when I brush them. In the bottoms there are seeps of water that have leaked down from the mountains in the distance. Around the pools and on the north slopes are snowberry bushes, box elders with old magpie nests, even willows. We travel from Sonora to the arctic every time we cross a draw.

Eventually we reach the hills, too, and the pup disappears over the top of one. I don't want to climb it. I whistle, grumble, hike part way, blow my whistle again, screech Huck's name. He does not appear. I keep climbing. When I crest the rise, Huck is right there, pointing a covey. <sup>on</sup> ~~It is drama~~ for a stark stage. Floodlighting is by September sun. My contribution has been the comic relief.

I should not have been surprised. Back in the 1400s, during Huck's earlier incarnation, he learned something about staunchness on point. He would hold partridges then while two fowlers unfurled a long net, spread out, and dropped the meshes over both dog and covey. I hope they got more birds than I hit after puffing up the hill.

By the end of the morning, though, Huck has had a chance to pick up as many birds as the law allows. <sup>David</sup> Sam Radan is back at the truck before me, but then Sam shoots doubles. I am happy to get one at a time. Limit bags are not what any hunting is about -- much less partridge hunting. I mention the number because a biologist's survey reports that hunters seldom get more than

three percent of the partridge population. My eight were roughly three percent of the birds I saw. I don't remember flushing that many upland birds in one morning before, anywhere.

Do not expect to get close to so many partridges often. Dennis Kavanagh, who guides bird hunters, reports that many of them arrive from the cities convinced that they have the world's best dogs. With this as a given, it becomes apparent that huns are defective. Alternatively, dogs trained on bobwhites need attitude adjustment. The two birds form coveys and look much alike, but they are not. The gray partridge is about twice as heavy. It is also tougher, hardier, faster-running, wider-flushing, and stronger in flight. When your first covey gets up, you may wonder if you will ever hit such a bird. The partridge does, however, give you one advantage: open shots. There aren't many trees out there. Huns feel good running around all day in straw they can see over. They see you; you do not see them -- not even in a field where, with the right varmint rifle, you could shoot a grasshopper in the next county.

All things run in cycles and the Partridge partridge is moving up. At least, I'm running into more hunters who rank this sport at the very top. The dogs out in front of them are hotbloods, better bred than any human. Both men and dogs are likely to be exiles from some big town, but in a few days they look as if they belong in spare, silent country.

It takes a certain attitude. One newcomer stepped from the truck with a group of friends, all of them making the happy noises that hunters emit before they walk off the first thousand calories. The sun was rising red over the Crazy Mountains. Miles

of cover stretched in between, though it did not cover much. Maybe nothing but a partridge or antelope or jack rabbit would consider it cover at all.

The new man quieted down right away. "Sssh," he said. "Listen. Isn't that great?"

Everybody listened. Nobody else could hear anything.

"I can't either," said the newcomer. "Nothing."

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FOREWORD

(to Ortega y Gasset)

A philosopher would have been superfluous, when I was growing up. Ancestors living and dead had already informed me that wild was best and that hunting was the way to go wild. Nature, meanwhile, had filled the woods with good things. A child did not need to understand what was happening -- not unless it hit below the belt.

When it hit first, I was eleven years old and Mom was waking me early. A furbearer worth three dollars was poking around the barn, she said, so I ran barefoot onto frosty grass, carrying a .22 rifle. As I tried to aim, however, an outrageous thing happened: My knees began to tremble so violently that pajama pants dropped around skinny shanks. My shot missed, of course, but Mom did not laugh. She recognized my emotion as the real thing -- what philosopher Ortega y Gasset calls "mystical agitation." Dad called it buck fever. I had heard about the disease but didn't know you could get it from a skunk.

Falling  
from the  
tree

That was not many years back, as history goes, but the world today groans under twice as many people, few of whom know much about skunks or mystical agitation. Urban children are raised in virtual reality, believing that animals speak English. Those young people are hunters still, all of them, but they shoot with joysticks and develop what Ortega calls "a funny snobbery toward anything wild, man or animal."

We need guidance in this "rather stupid time," and Ortega's essays are the obvious source. He is the philosopher who has looked most deeply into the hunting instinct, of which the fishing instinct is part. Further, he writes with the clarity you would expect from an heir of Socrates and Plato (both of whom hunted, as he points out).

Mind you, philosophic simplicity is not what we are accustomed to in this age of hype. Where we are reticent and convoluted, Ortega is direct and elegant. He looks through our foliage with falcon eyes, and we squirm.

An American reader should be aware, moreover, that Ortega is not in the tradition of Thoreau and Leopold -- the natural philosophers with whom I (and perhaps you) grew up.

Henry David Thoreau gave up hunting and fishing to pursue bigger game. He wanted a wife too, but gave up marriage, and read the world's great books but "travelled a good deal in Concord" -- on foot. And yet the abstemious New Englander and the cosmopolitan Spaniard agreed on what hunting is about. As you read Ortega's essay on "Vacations from the Human Condition," keep

in mind this passage from Thoreau's Walden:

"As I came home through the woods with my string of fish, trailing my pole, it being now quite dark, I caught a glimpse of a woodchuck stealing across my path, and felt a strange thrill of savage delight, and was strongly tempted to seize and devour him raw; not that I was hungry then, except for that wildness which he represented. Once or twice, however, while I lived at the pond, I found myself ranging the woods like a half-starved hound, with a strange abandonment, seeking some kind of venison which I might devour, and no morsel could have been too savage for me."

Aldo Leopold was the conservationist, naturalist, and ecologist who gave us "the land ethic." Leopold hunted "meat from God," and this is how he found it:

"The dog, when he approaches the briars, looks around to make sure I am within gunshot. Reassured, he advances ... wet nose screening a hundred scents for that one scent, the potential presence of which gives life and meaning to the whole landscape."

Ortega stands in contrast. He is a student of human nature, not Mother Nature, and of the universal, not the local. His landscape is a stage on which hunters play the lead. He does not

look into the dispersion of seeds, like Thoreau, or give animals a habitat like Leopold. What we get from Ortega is a hunter's ethic, which governs relations between two individuals -- human and prey -- and is older than the land ethic by thousands of years.

What seems remarkable is not that Ortega, Leopold, and Thoreau came into the landscape from such different directions. Their starting points were fixed by the cultures in which they grew up, and cultures change. What does not change is nature -- human nature and Mother Nature. We can be sure of this because, when the classical philosopher and the two natural philosophers go hunting, they find themselves on exactly the same trail. You and I can therefore follow it in confidence.

The measure of a philosopher, I suppose, is his ability to be right over time, and one of life's coincidences gave me a chance to measure Ortega. He had published his Meditations on Hunting in Lisbon in 1942. My work took me there years later. One autumn weekend, after beating a good deal of Portuguese brush, I picked up these essays and found a prescient passage:

"In all revolutions, the first thing that the 'people' have done was to jump over the fences of preserves or to tear them down, and in the name of social justice pursue the hare and the partridge. And this after the revolutionary newspapers, in their editorials, had for years and years been abusing the aristocrats for being so frivolous as to ... spend their time

hunting."

And that was exactly what happened in Portugal after the revolution of 1974. While Communist leaders were still trying to tell the workers what their struggle was about, they stuffed themselves, four at a time plus dogs, into very small cars. There were traffic jams on the way to the fields and lines of Fiats and Citroëns headed back to Lisbon after dark, bearing hares and partridges and exhausted hunters. They were not experienced and not yet governed by a tight code of ethics, but they had made a start at what they had always dreamed of doing.

It was what Ortega y Gasset had predicted three decades earlier. The old regime might have diminished revolutionary fervor if it had listened to the philosopher when he explained that hunting is not a "reasoned pursuit." On the contrary, he wrote, it is "however strangely, a deep and permanent yearning in the human condition."

And besides, no one who hunts all day has enough energy left to start a revolution.

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