

# Sierra Club Bulletin

\$1.00

July/August 1976

**1977 Sierra Club Calendars**  
and the new Calendar and Almanac for Children

# Watch out!

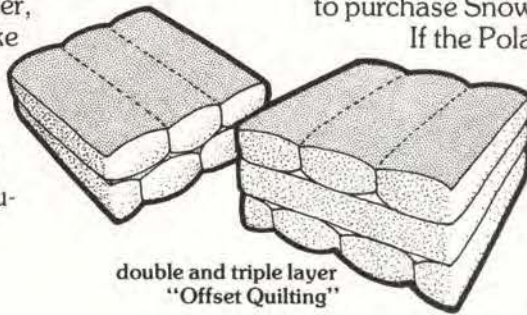
## The Snow Lion Polarguard® Revolution is contagious!

On barren peaks, in wooded valleys, on icy slopes or beside quiet streams, Snow Lion Polarguard bags are spreading across the country like wildfire. Serious backpackers everywhere are coming to realize what professional mountaineers already know—that Snow Lion Polarguard is tougher, lighter, more compressible, easier to take care of, warmer when wet, and longer lasting than other insulators.

Snow Lion's sophisticated Polarguard products have revolu-

tionized modern day thinking about lightweight insulating systems. Advanced construction methods such as our unique double and triple layer "Offset Quilting" have set new standards in sleeping bag design. Over forty major worldwide expeditions have decided to purchase Snow Lion Polarguard during 1975/76.

If the Polarguard bug hasn't got you yet, and you'd like to find out more about Snow Lion sleeping bags, parkas, vests, pants, booties and mitts, write for a free catalog and the name of your nearest dealer.



double and triple layer  
"Offset Quilting"



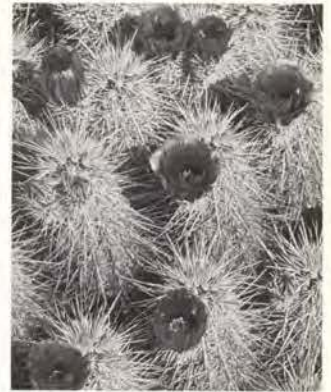
**Snow Lion**

P.O. Box 9056, Berkeley, Ca. 94701



# Sierra Club Bulletin

JULY/AUGUST 1976 / VOLUME 61 / NUMBER 7



Cover: Our deserts have become a playground for dune buggies, trail bikes and four wheel drive vehicles. They destroy fragile natural areas and the scars they leave may persist for decades. For a report on current damage in California, see "Off-Road Menace," page 33. Cover photograph, a hedge-bog cactus in bloom in California's Anza-Borrego Desert State Park, is by Chuck Williams.

## Contents

Climate and Survival	4	James Spaulding
Overton Park— Conservation's Urban Battleground	7	Sara N. Hines
1977 Sierra Club Calendars Are Ready!	17	
Alaska: Glacier Bay National Monument and mining	32	Jack Hession
Off-Road Menace	33	Robert C. Stebbins and Nathan W. Cohen

### COMMENTARY

Oregon's Bottle Bill Works, Nancie Fadeley	9
From the Editor: The <i>Sierra Club</i> <i>Bulletin</i> —A Progress Report to Its Readers, Frances Gendlin	11
Washington Report: Good Intentions, Bad Results: Common Cause and the Public Interest, Brock Evans	12
<i>Regional Representatives' Reports</i>	
Midwest: The Boundary Waters Canoe Area (and Winterized Motorboat Waterway), Patricia S. Record	13
Southern California: Proposition 15— Losing a battle but winning the war, Mary Ann Eriksen	14

### DEPARTMENTS

Books: Copper, Coal and Cattle: <i>The Rape</i> of the Great Plains: Northwest America Cattle and Coal, Laney Hicks	25
THE OBSERVER: Robert A. Irwin	27
LETTERS: Population Growth, John T. Buck and Judith Kunofsky	28
ENERGY BRIEFS	29
NEWS: Clean Water Act; "Endangered American Wilderness" bill; Stripmining; Locks and Dam 26; Clean Air Amendments; NRC plutonium recycling; Forestry legislation; New River; Land and Water Conservation Fund	30

### Directors

BRANT CALKIN	President
WILLIAM FUTRELL	Vice President
RICHARD A. CELLARIUS	Secretary
LOWELL SMITH	Treasurer
KENT GILL	Fifth Officer
PHILLIP S. BERRY	JOHN H. RICKER
KATHLEEN BROWN BJERKE	THEODORE SNYDER
JOSEPH FONTAINE	JUNE VIAVANT
MARK G. HICKOK	EDGAR WAYBURN
LESLIE V. REID	ELLEN WINCHESTER

### Regional Vice Presidents

EARL BAILEY	CARL HOLCOMB
MARVIN BAKER	ROBERT RUTEMOELLER
ELIZABETH BARNETT	SAMUEL SAGE
ROBERT BROWN	THADDEUS C. TRZYNA
RICHARD FIDDLER	JOHN H. WILLIAMS

Founded in 1892, the Sierra Club works in the United States and other countries to restore the quality of the natural environment and to maintain the integrity of ecosystems. Educating the public to understand and support these objectives is a basic part of the club's program. All are invited to participate in its activities, which include programs to "... study, explore, and enjoy wildlands."

MICHAEL McCLOSKEY Executive Director  
*Bulletin Staff*

FRANCES GENDLIN Editor

Stephen Whitney, *Manuscript Editor*;  
Madeleine Fabris, *Production Manager*;  
Carey Charlesworth, *Editorial Assistant*;  
Juanita Alvarez, *News Editor*; John Beyer,  
*Design*

*Editorial correspondence should be addressed to Sierra Club Bulletin, 530 Bush St., San Francisco, CA 94108. Manuscripts must be submitted in duplicate and accompanied by a stamped, self-addressed envelope.*

The *Sierra Club Bulletin*, published monthly, with combined issues for July-August and November-December, is the official magazine of the Sierra Club, 530 Bush St., San Francisco, California 94108, (415) 981-8634. Annual dues are \$20 of which \$3.00 is for subscription to the *Bulletin*. (Non-member subscriptions: one year \$8.00; three years \$20; foreign \$10; single copy \$1.00) Second class postage paid at San Francisco, California and additional mailing offices. Copyright © 1976 by the Sierra Club. No part of the contents of this magazine may be reproduced by any means without the written consent of *Sierra Club Bulletin*.

Other Sierra Club offices: Alaska: 545 E. 4th Ave., #5, Anchorage, Alaska 99501 / New York: 50 West 40th St., New York, N.Y. 10018 / International: 777 United Nations Plaza, New York, N.Y. 10017 / Legal Defense Fund: 311 California Street, San Francisco, California 94104 / Midwest: 444 West Main, Madison, Wisconsin 53703 / Northwest: 4534 1/2 University Way NE, Seattle, Washington 98105 / Sierra Club Books: 530 Bush St., San Francisco, California 94108 / Southern California: 2410 Beverly Boulevard, Los Angeles, California 90057 / Southwest: 2014 E. Broadway, Tucson, Arizona 85719 / Washington, D.C.: 324 C Street, SE, Washington, D.C. 20003 / Wyoming and Northern Great Plains: P.O. Box 721, Dubois, Wyoming 82513.

Advertising representatives: (West) Susan Church, Environmedia, 875 30th Ave., San Francisco, California 94121 (415) 387-2576; (East and Midwest) William H. Fields III, 22 Montgomery St., Boston, Massachusetts 02116 (617) 262-7532; (Book Publishers) Erwin H. Baker, 20 Evergreen Place, East Orange, New Jersey 07018 (201) 673-3950.



Grant Heilman

*Dust storm in a drought-stricken area of Wyoming.*

# CLIMATE AND SURVIVAL

JAMES SPAULDING

**T**HINKING people these days are worrying about climate. Will man's reckless exploitation of technology pollute the earth's atmosphere with so much dust, heat and gases that the earth's climate will change for the worse? Is it already being changed for the worse? Climatologists concede that such questions are realistic and that they know too little to answer. But many of the experts who spend their lives studying climate say that a more pressing worry right now than man's effect on climate is climate's effect on man.

Man's technological exuberance has already led to such local, and even regional, weather changes as increased temperatures in cities and more rainfall downwind from cities. If present

population and energy-increase trends continue, man-made changes in the global climate seem nearly certain. Climatologists regard this not as they do the recurring scare stories of glacial ice sheets creeping down from the north, but as so possible that they are intensifying their research into the potential effects of human activity on climates.

What seems even closer at hand, however, is the specter of worldwide famine—and perhaps nuclear war—brought about because of man's ignorance about climate and his failure to hedge against climatic uncertainties. Millions could die of starvation alone.

The reasons for such apprehension are these: The earth's population has

doubled in the last thirty years, and now exceeds four billion. Food production has barely kept pace, even aided by the more productive strains of new grain hybrids, enormous amounts of fertilizer and a period of remarkably benevolent climate.

But climatologists say that weather so favorable for crops simply cannot be expected to continue. Some are contending that a cooling trend already has set in, at least in the Northern Hemisphere, bringing with it the increasing likelihood of climatic variability—droughts one year, floods the next—and a rising incidence of crop failure. They point to the continuing drought in the African Sahel, the wheat-crop failures of 1972 and 1974 in the Soviet Union and partial failure

of the 1974 corn crop in the Midwest, as evidence of this variability. And even if a cooling trend is not certain, other climatic experts say the climate of the past indicates that stable, favorable weather cannot be expected to continue.

From the standpoint of food production, the carrying capacity of the earth is being strained. A reduction in that capacity of only one percent could mean the death by starvation of forty million people, and climatologists contend that the risk of unfavorable climatic changes causing such an effect is real. The risk is increased by the virtual disappearance in the last decade of worldwide grain reserves that would protect against famine in the event of major crop failures. Some government officials, judging from statements by the United States Department of Agriculture, seem to have concluded that the so-called Green Revolution has made world food production safe from the vagaries of climate. Agricultural scientists and climatologists say this is a dangerous fallacy.

For several years, these experts have been speaking out at major conventions of scientists in the United States, saying that the outlook arising from the food-population-climate situation appears increasingly perilous. International meetings have been held to bring scientists from around the world into the discussions.

One such group, meeting at Bonn under the auspices of the International Federation of Institutes for Advanced Study, said that climatological evidence indicated a cooling trend had set in and would persist for at least several decades. The global climate would become more variable.

"We believe," the climate study group said, "that this climatic change poses a threat to the people of the world. The direction of the climatic change indicates major crop failures almost certainly within the decade (beginning in 1974). This, coinciding with a period of almost nonexistent grain reserves, can be ignored only at the risk of great suffering and mass starvation."

The International Federation group urged the world's leaders to "heed the lessons of climatic history" and prepare to ward off such a disaster.

Fifty scientists had already formed a United States Committee for a Global Atmospheric Research Pro-

gram under the auspices of the National Research Council and National Academy of Sciences. In 1975, this committee issued a 250-page report calling for a national commitment to climatic research because of the urgency of the human problems involved. Spending for climatic research was projected to rise from \$18 million annually to \$67 million by 1980.

The report reiterated the warnings of climatologists: Man is increasingly vulnerable to climatic changes because nearly all of the earth's present arable land is in production; population is threatening to exceed the earth's capacity to feed it; food reserves are slight; and food production depends heavily on favorable climate. Further, said the report, today's so-called normal climate is not normal at all, and man needs to lay away reserves and to plan so he can survive when climatic fluctuations cause crop failures.

It is not primarily the advance of a major ice sheet over our farms and cities that we must fear, devastating as this would be, the Academy of Sciences report said, for such changes take thousands of years to evolve. Rather, it is persistent changes of temperature and rainfall in areas committed to agricultural use, changes in the frost content of Canadian and Siberian soils, and changes of ocean temperature in the areas of high nutrient production, for example, that are of more immediate concern.

We know from experience that the world's food production is highly dependent on the occurrence of favorable weather conditions in the "breadbasket" areas during the growing seasons. Because world grain reserves are but a few percent of annual consumption, an unfavorable crop year, such as occurred in the Ukraine in 1972, has immediate international consequences. The current drought in parts of Asia and in central Africa is producing severe hardship and has already caused the migration of millions of people.

Despite the report's note of urgency and the excellent scientific credentials of those who prepared it, the Academy of Sciences proposal for a national program of climatic research so far has come to little. Hearings will begin soon on a National Climate Research Act, but the act represents more a statement of intent than a program expected to attract support of the administration in Washington. A report in *Science*, the journal of the American Association for the Advancement of Science, said the research proposal had "died aborning." The report said that because it seems unlikely at the moment that the government will act to prevent a catastrophe arising from the uncertainties of climate, some climatologists are beginning to tell their story directly to the public.

One of the most articulate and persuasive of them is Stephen H. Schneider, whose book, *The Genesis Strategy—Climate and Global Survival* (Ple-

Cement mill in California.



Tom Myers

num Press), has just been published. Schneider is deputy head of the Climate Project at the National Center for Atmospheric Research (NCAR) at Boulder, Colorado, and editor of the journal, *Climatic Change*.

The title, *The Genesis Strategy*, refers to the story in the Book of Genesis in which Joseph interprets one of the pharaoh's dreams to mean that seven years of famine would follow seven years of plenty in the land of Egypt. The pharaoh heeded Joseph's advice to store up food for the lean years—as Schneider intends governments in the world to heed the warning of climatologists to establish a world food bank to hedge against climate-induced crop failures.

But Schneider's Genesis strategy is more than a scheme to buy time until world population and food production approach equilibrium. It applies, as well, to such explosive issues as the growing demand in developing countries for a greater share of the earth's finite energy resources to improve their way of life. Schneider would apply the strategy here by developing a variety of energy systems, instead of concentrating on one, such as nuclear power. The economies to be gained by great size in a single system are attractive, says Schneider, but as in planting large acreages to a single

crop, the risk of disaster from failure is great. The climatic aspects of providing energy for an increasingly populous and more technological world create a dilemma, Schneider says, related to man's effects on climate.

Schneider is not one of the harbingers of a new Ice Age, nor does he even express certainty that a new climatic trend is under way. Instead, he bases his plea for prudence and precautions on the ignorance and uncertainty that shroud the whole phenomenon of climate.

Perhaps today's most outspoken climatologist on the hazards of climatic variability is Reid Bryson, professor of meteorology and geography at the University of Wisconsin, Madison, and director of the Institute for Environmental Studies. Bryson says the history of climate on earth indicates that the cooling of the Northern Hemisphere, which has been going on since the 1940s, is likely to mean an increase in climate variability, bringing more droughts to the earth's great grain-producing regions.

According to Bryson, since the 1940s the average temperature of the Northern Hemisphere already has declined nearly as much as it rose after the Little Ice Age of 1550 to 1850. The growing season in England has shrunk by two weeks; droughts have

begun to increase in northwestern India; monsoon rains have retreated gradually toward the Equator in West Africa; and midsummer frosts have returned to the upper Midwest.

Bryson says the cooling trend, as expected, is more pronounced in the northern latitudes. A study of climatic history indicates a correlation between colder climate and failure of the monsoons, apparently because as the mass of Arctic cold air—called the circumpolar vortex—enlarges, it prevents the moist monsoon air of the tropics from advancing as far north, keeping the rains from lands where rainfall is vital for growing rice. Such a withdrawal of the monsoon has been reported in Japan recently.

Bryson and his colleagues say their studies show that the rise and fall of great civilizations as far back as 1900 B.C. can be traced to the advances and retreats of the monsoons in response to changes in the earth's temperature, particularly at the poles. Evidence comes not only from historical accounts, but from so-called proxy data of fossil pollen, Arctic ice cores, tree rings, and the sediments on ocean and lake bottoms.

Bryson says that an expansion of the circumpolar vortex some time around 1200 A.D. should have brought cool, dry weather to the area that is now the grain belt of the Midwest, and archaeological evidence indicates that such a drought drastically changed the culture of the Mill Creek people, who then lived there, driving them from their farms in search of other food. The drought lasted two hundred years, Bryson says, "so clearly two hundred years of drought in the 'breadbasket' of North America is possible."

The variability that climatologists associate with a cooling trend is attributed to disruption of wind patterns in the upper atmosphere. Instead of a few centers of high pressure and low pressure, many smaller high- and low-pressure systems arise. Stagnation is then more likely, with droughts and floods, unseasonal warmth and periods of increased cold. Year-to-year variations are likely to increase. This is what climatologists fear is in store in coming decades.

In general, they agree on the broad picture of the earth's climatic past that emerges from historical writings and proxy data. For most of that past, the climate was warmer and there

*Continued on page 23*

*Wildebeest dying due to drought. Nairobi Park, Kenya, 1974.*



Norman Myers



Arlo Smith

# OVERTON PARK— CONSERVATION'S URBAN BATTLEGROUND

SARA N. HINES

“IT IS hereby declared to be the national policy declared to be the national policy that special effort should be made to preserve the natural beauty of the countryside and public parks and recreation lands . . .” (Section 4[f], 1966 Department of Transportation Act)—everywhere, that is, except for Brackenridge Park in San Antonio, Texas; maybe Overton Park in Memphis, Tennessee; and if Overton, then whose park is next?

Park defenders in San Antonio took their case to court and won a judgment preventing a federal interstate connector road from going through Brackenridge Park. However, Texas Senators John G. Tower and Lloyd M. Bentsen, over the vigorous objections of conservationists, wrote a provision in the Federal Aid Highway Act of 1973 exempting Brackenridge from all environmental laws, and the state of Texas is now building through the park. To their credit, both Tennessee Senators Howard H. Baker, Jr. and Bill Brock voted against the Brackenridge exemption, Senator Baker pointing out that he had a somewhat similar situation with respect to Over-

ton Park in Memphis, and saying, “I cannot help but express my concern for the precedent being set here.”

In Memphis, a twenty-year battle has raged over putting federal Interstate 40 through Overton Park. Ever since the public was given its first glimpse of highway plans through the park at an April 18, 1957, public hearing, there has been a great outcry against them.

And why have people objected so? Why is Overton so special, so worth fighting twenty years for? Because it

is a family playground for the mid-South and for visitors for miles around. It is beloved and greatly used. It is a green respite from the asphalt and concrete. It is Nature. It is a park for all people and all seasons, with a diversification of activities. It was bought for the citizens of Memphis seventy-five years ago, a 335-acre tract. It is said to contain one of the finest urban forests in the world—an oak-hickory climax forest which contains forty-nine varieties of trees, eighty-four varieties of wild flowers, and as many as 147 species of birds have been noted there as permanent residents or transients.

The trails through the woods are heavily used, and it is the one place in the inner city where one can get away from the urban noises. It is cool in the summer, with its heavy shade, colorful in the fall, with its many trees, a winter wonderland when there's snow and ice, and in the spring, redbud and dogwood transform the woods into a fairyland of blossoms.

There is a lake, too, a favorite spot for visitors and residents alike, bordering an athletic field where young people romp with their dogs, throw

A scene at Overton Park Zoo.



Jack Corn

Frisbees, play baseball, fly kites or just loll under the trees. There's a playground for the younger set. Adding to the park's attractions are a golf course, the Memphis Academy of Arts, and Brooks Art Gallery.

One of the most popular attractions is the zoo, which in 1912 boasted 405 animals and now has 2,000. It is well known for animal breeding; and baby polar bears, bonteboks, douc langurs, llamas, hippos, and many others are successfully raised there to the delight of the public. There are more than a half-million visitors to the zoo annually, including school children from a seven-state area: 100,000 visitors are

anticipated this year. The park offers a family type experience within the price range of all. As many as twenty-two out-of-state car licenses have been noted at the zoo gates on a January 1st day.

When citizens of Memphis fought to prevent the construction of the federal interstate across the park, dividing it and bringing all the attendant disruption and noise and air pollution, groups from all over joined in. Finally, when there seemed no way to persuade the levels of government not to construct the highway, in 1969 a group called Citizens to Preserve Overton Park, Inc., together with the

Sierra Club and the National Audubon Society, went into court. This action resulted in a landmark Supreme Court decision, making it clear that the Parkland Statutes, a combination of Section 4(f) of the 1966 DOT Act and Section 138 of the Federal Aid Highway Act of 1968, were "obviously passed to protect our public parks from forays by road builders except in the most extraordinary and imperative circumstances."

In 1973, then Secretary of Transportation John A. Volpe advised that he could *not* approve the highway and suggested several alternatives the State of Tennessee might wish to adopt. The Sixth Circuit Court of Appeals upheld his decision, but the state has obstinately refused to consider any route except the one through the park.

Former Secretary Claude S. Brinegar also supported Secretary Volpe's decision. However, present Transportation Secretary William T. Coleman, Jr. is now requesting an environmental impact statement (EIS) on tunneling a highway through the park. The EIS is due for circulation in mid-June, with a public hearing in August, and a decision forty-five days later.

The state's special counsel seems to realize that this EIS hearing cannot change the court decisions that still stand preventing an interstate from going through the park, as he says that "special legislation appears to be the only hope on the horizon," and he refers to the Parkland Statutes as a "legal monstrosity." He points out the tactic successfully used to exempt Brackenridge, as well as the Alaska pipeline. He suggests that, notwithstanding any other laws or regulations, Congress might pass special legislation to exempt Overton Park from all federal environmental protection. It remains to be seen how Senators Baker and Brock and other Tennessee Congressmen will view this idea.

If it has been accomplished in San Antonio, and could be in Memphis—whose park might be next? How many cracks in the dam before the flood? If Congress moves to exempt Overton Park, we will need your help, just as you will need ours if your park is the next one threatened. Each loss is a loss to us all.

---

*Sara N. Hines, a Sierra Club member, helped found, and serves on the board of, the Environmental Action Council of Memphis.*

*A pleasant walk through Overton Park in the rain. This is the proposed route of Interstate 40 that has been so controversial.*



*Robb Mitchell*





## Oregon's Bottle Bill Works!

NANCIE FADELEY

**C**ONTRARY to widely circulated rumors, we still drink beer and pop in Oregon, having found that they are just as refreshing in returnable containers as they were in the nonreturnables that used to litter the state.

Consumption of these beverages has continued to increase since October 1972, when the Oregon "bottle bill," which requires a deposit on all beer and soft-drink containers sold in the state, became law. The only pattern the Oregon Liquor Control Commission can find in the fluctuation of beverage sales relates not to the availability of returnable or nonreturnable containers, but to weekend weather: the hotter the weekends, the higher the sales.

Only once since the initiation of the bottle bill have sales dropped below the pre-nonreturnable era. That was in De-

cember 1972, a time distinguished by distinctly non-beer-drinking weather. Beer sales in Oregon dropped almost thirteen percent that cold December; at the same time, the neighboring state of Washington—which has no bottle bill—experienced a twenty-percent drop in beer consumption.

Sales figures for soft drinks are harder to obtain because the Oregon Liquor Control Commission doesn't keep track of them, but available information suggests that consumption of carbonated beverages in Oregon continues to follow national trends.

Consumers benefit when they don't have to pay for nonreturnable containers. Gloomy forecasts that the bottle bill would cause prices to soar have proved to be incorrect. A bottle of pop does cost more in Oregon today than in

pre-bottle-bill days—it also costs more in Washington, Idaho and California. Prices in Oregon are comparable to, or lower than, prices across state lines. Contrary to the insistence of the anti-bottle-bill lobby, which spends an estimated twenty million dollars annually to fight the spread of the bottle-bill idea, inflation and the soaring costs of sugar, not the bottle bill, have caused beverage prices to rise.

Forecasts that the bottle bill would hurt Oregon's economy also were wrong. In a study of the economic impact of the legislation, Charles Gudger and Jack Bailes, professors of business administration at Oregon State University, found that although some jobs were lost, twice as many were created. The emphasis has been switched from manufacturing new containers to handling, recycling and

refilling old ones—a turn from energy-intensive to labor-intensive activities.

The Oregon AFL-CIO, which opposed the bottle bill when it was introduced in 1971, no longer fights it. There have been no attempts at repeal. Instead, there is considerable talk about expanding the bottle-bill idea to other containers.

Bill Wessinger, who heads Oregon's major brewery, Blitz-Weinhard, has become one of the bottle bill's most enthusiastic supporters. "We haven't bought a new bottle since the bottle bill began," he said. Blitz refills returned bottles—ninety-six million a year—and passes some of the savings on to retailers to cover increased handling costs. Blitz isn't the only brewery to find that new beer is fine in old bottles. Others in the Northwest immediately discovered the savings resulting from reuse. Recently, Budweiser—bottled in Los Angeles—has begun paying a premium price for returnables, trucking them a thousand miles south for refilling.

In spite of inflation, litter pick-up costs in Oregon have not increased since pre-bottle-bill days; roadsides and recreation areas, while not immaculate, no longer look littered. Vacationing Oregonians return with reports that they are startled to see litter along roadsides in other states. Tourists vacationing in Oregon seem just as startled by the lack

of litter and frequently write the governor to ask what secret method the state has for keeping its roadsides so clean.

Opponents of bottle bills in other states have played with Oregon's litter-count figures in an attempt to discredit such legislation as a way of reducing litter. They have been unwittingly assisted by the poor way in which the state's litter surveys were done. For example, some crews counted even twigs as litter; others did not distinguish between milk containers, which have no deposit, and beer bottles, which do. Another factor complicating before-and-after counts was the publication of which sections of highways were being monitored. Later, other sections had to be selected in order to avoid possible tampering which would affect results. Worst of all, it was only after the litter surveys were under way that those in charge realized that the total volume of litter was a more significant measure than the number of pieces. (A cigarette butt, for example, should not count the same as a beer bottle.) Other complications involved construction activities, snow cover, delayed pick-up dates, and discrepancies between counts in the field and those conducted at headquarters.

Nevertheless, analysis of reliable data shows significant decreases in beverage-container litter (by far the most conspic-

uous kind of roadside litter). Indeed, Oregon's roadsides look cleaner than those of other states. Comparisons of Oregon litter counts with those of neighboring states further confirm the value of the bottle bill in reducing litter.

Oregonians have also begun to realize that the bottle bill is energy legislation of the best sort: it takes less energy to recycle or reuse a container, even when it is shipped to Los Angeles for refilling, than it does to make a new one. At a time of increasing world shortages of various resources and commodities, the bottle bill provides a model for the kind of constructive legislation we can enact today. Last year, when home-canning jars were in short supply, America produced—and threw away—8.5 billion disposable soft-drink bottles, plus billions more for beer. At the same time, industries are threatened with shortages of aluminum, as well as the energy necessary to produce aluminum products, even as throw-away cans continue to fill up America's landfills—another limited resource.

Ask any Oregonian and you'll learn that the Oregon bottle bill is the most popular piece of legislation ever enacted in the state. Young and old, indoor and outdoor types, liberals and conservatives—all know about and like to talk about the bottle bill. So much citizen awareness about a piece of legislation is truly unusual.

Recently, a survey was taken of 601 Oregonians to discover consumer attitudes about the bottle bill. Even though this survey began by pointing out objectionable features, such as the bother of returning containers and of paying deposits, ninety-one percent of those responding were in favor of the law. Only five percent of those questioned had any unfavorable reactions at all, and only two percent expressed outright opposition. Other public-opinion surveys reveal similar support.

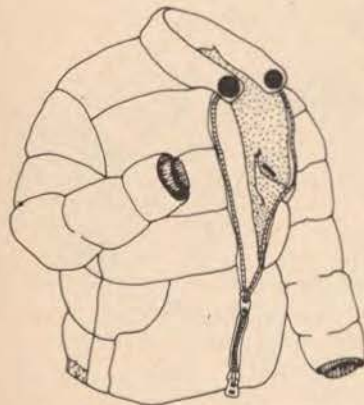
Oregonians' enthusiastic endorsement of the bottle bill is a clear refutation of industry's insistence that Americans demand throw-away packaging. The returns from Oregon indicate that perhaps Americans have embraced the throw-away ethic largely because industry has not offered opportunities for return and reuse.

There is not a single Oregon politician who doesn't boast of his or her support for the bottle bill. Former Governor Tom McCall (a Republican) calls it "a rip-roaring success." Governor Robert W. Straub (a Democrat) has said, "Most Oregonians just wish it went further."

Nancie Fadeley chairs the Environment/Energy Committee of the Oregon House of Representatives.

## Waterproof Down Gear that Breathes

Featuring the revolutionary new fabric  
**GORE-TEX**



**Marmot Down Shirt**...Gore-Tex backing on ripstop nylon, filled with 6 oz. white Polish goose down. Wear it in the rain. It stays dry. Navy or Royal Blue, XS, S, M, L, XL. \$73.00 plus \$2.00 shipping.

**Marmot Down Sweater**...all the features of the Shirt with 8.5 oz. of down. Navy or Royal Blue, XS, S, M, L, XL. \$82.50 plus \$2.00 shipping.

**OUR NOTHING-TO-LOSE GUARANTEE**

If your Marmot product does not meet your expectations, please return it and you'll get your money back.

Colorado residents add 3% sales tax.

Send \$1 for our new catalog, to be credited on first purchase.

**Marmot Mountain Works**

P.O. Box 2433-Q, Grand Junction, Colorado 81501

5% of the retail purchase price will be donated by Marmot Mountain Works to the conservation group of your choice.

**COLORADO**

**ROCKY MOUNTAIN SCHOOL**

Co-educational, college preparatory, grades ten through twelve. Academic challenges are complemented by experiential learning in the mountains and canyons, in individualized apprenticeships, in project workshops. Students participate in work, sports, and arts-crafts. CRMS is open to applicants of all races, creeds, and nationalities who seek the challenges of becoming totally involved in their own education. Carbondale, CO 81623 303-963-2562

**Central Mexico by Canoe**

- White Water Canoeing
- Jungle Covered Canyons
- Friendly Natives

All Trips Include: Transportation, Food & Equipment

Texas Canoe Trails, Inc.  
8566 Katy Freeway  
127 W. Memorial Park  
Houston, Texas 77024  
(713) 467-8764



**LEEK & SAVAGE**

NORTH AMERICA'S  
WEASEL FAMILY  
by Delphine Haley

Beautiful and deadly--all about the furbearing mink, skunk, marten, wolverine, fisher, badger, otter and rare black-footed ferret. Extraordinary color photos. 128 pp.

At bookstores or from publisher:  
**PACIFIC SEARCH BOOKS**  
715 Harrison Street, Seattle, WA 98109

Send \_\_\_\_\_ copies @ \$5.50  
(WA state residents add 5.3% sales tax.)  
Add 75¢ for mailing. Free PS Catalog with order.  
Catalog only, send 50¢

Name \_\_\_\_\_  
Address \_\_\_\_\_  
SJ

PACIFIC **Search** BOOKS



**Yosemite Trails**

by Lew and Ginny Clark

A new, complete guide to The Yosemite High Sierra. \$3.95. Fits pocket or knapsack.

Illustrated profusely throughout with some 200 maps, drawings, trail profiles, and photos covering nearly 1,000 miles of trails and the country they traverse.

\*Non-Dealer Orders Please Add \$2.25 Shipping Costs.  
California Orders Add 6% Sales Tax. Dealers and Bookstores Receive usual discounts.

Check your local bookstore or order direct from:

Western Trails Publications  
Box 401  
Escondido, CA 92025



**From the Editor**

**The Sierra Club Bulletin —  
A Progress Report to Its Readers**

It's hard to believe a year has passed since I first wrote an editorial announcing some of our new plans for the *Bulletin*. It's gone by so quickly for me! Yet during this time I hope you've noticed some of those plans already put into effect.

The most obvious change is that we've increased the number of pages in almost every issue. I hope you like what we've been able to do with those extra pages. The more articles we print, especially at carefully selected times, the greater the chances of your responsive actions being successful.

So we are trying very hard to make sure our information is timely. We now work more closely with the Conservation Department and, as a result, we are able to time some of our articles to ensure their effectiveness. That is, we've managed to have some of our stories appear just at the most opportune times for our readers to take action, or for copies to be sent to Congress in time for committee hearings or floor votes. This has happened recently, for example, with our articles on the Alpine Lakes Wilderness and on Seafarer/Sanguine. We don't *always* know, however, what issues are coming up, regionally, and I hope we'll continue to hear from you when you know an especially important battle is approaching—one that has wide implications. Let us know as soon as you do, giving us enough time, if we decide to do so, to get an article written and reviewed.

We've started to present occasional "special" issues, like the March issue on the Southeast and our June issue, which was devoted to concerns of an international scope. Our forthcoming October issue will be devoted solely to an overview of this country's wilderness. We appreciate very much the Club's Wilderness Committee, which is working hard with us on this effort.

One of the nicest things about our increase in pages is that we're doing it without taking additional funds from the Club. We managed to avoid this by increasing our advertising revenue. This increase not only allows us to improve the quality of the magazine, but also to move in the direction of becoming more self-supporting. Thus, we hope to free some of the Club's money for other high-priority conservation efforts.

I am aware that a few of our members don't approve of advertising in the *Bulletin*. This is a subject that has been much discussed by the board, which decided last year to liberalize its policy to include all advertisements except those which oppose policies of the Club. In addition, we accept ads only if they meet our publication standards of aesthetics and truth. We must not let the Club's message be diluted by questionable ads. But we do want some advertising. The *Bulletin* is one of the few programs in the Club that has the direct capability of attracting revenue, and we must take this responsibility seriously.

Along this line, I'd like to mention that advertisers continue to spend money in a publication only when they receive evidence that its readers are interested in their products. So, for instance, if you see a free catalogue offered, and if you are interested in the product, you might send for it. And if you decide to purchase a product we've advertised, mention that you saw it in the *Bulletin*. Helping to bring in this additional outside revenue to the Club might be considered as just one more way we can take action.

Another change in the magazine I hope you've noticed concerns the tone of what we print. We're trying to convey much more hope and encouragement than gloom. It's true that we often report on crisis situations and urgent needs, but we want to communicate our successes, as well. After all, if we didn't think we could affect troublesome situations, we wouldn't be so involved.

In this direction, we're going to publish more stories about environmental activists, like the article in March about Ann Taylor of Raleigh, or the excerpt we printed from Sierra Club Books' *The Grass Roots Primer*. We keep talking about the many precious places we have to save from destruction, and of course we'll continue to do

so, but we also have to remember that it's interesting and able people who are doing the job. We can learn from these people.

Our new "Letters" section is thriving, and I invite you once again to share your thoughts with us, to react with additional or differing information to articles you've read in the *Bulletin*. I've been surprised and pleased by the diversity of opinion among our members. Some people write to tell us how much they liked and agreed with a particular article—take Philip Appleman's article on Malthus in the February *Bulletin*, for example—and others write to disagree. I suppose with more than 160,000 members, we may often disagree on specific issues, but our goals, at least, seem to coincide fairly well. I hope you'll write us. We try to print as many of your thoughtful letters as we can.

The book-review column is also new this year. We have picked books we'd like you to know about and hope you'll read. Not all of them have been published recently, but even the older ones, like *Do Trees Have Standing?* or *Small Is Beautiful* are worth mentioning, even now, to those who haven't seen them.

What else? Well, we've expanded the regular news section, we've added occasional "guest opinion" columns, and Robert Irwin is bringing us more reports of chapter and general Club activities.

So, I'm pleased with what we've done in this year and I hope you are too. I thank those of you who write me for your encouragement and suggestions. In last year's editorial I also said how pleased I was to be working for the Sierra Club. I am now, more than ever, and I'm looking forward very much to my second year.

Frances Gendlin

## WASHINGTON REPORT

Brock Evans

# Good Intentions, Bad Results: Common Cause and the Public Interest

**W**HY DON'T we make more of an effort to work in coalition with other organizations?" As I travel around the country meeting our leadership, I probably encounter this question more than any other.

It's a good question. The answer is that we do—all the time. Since the Sierra Club's resources are small, considering the amount of work to be done, and the money and political power of the organizations we often are up against, it is only logical that we should seek out allies wherever we can. Very few issues, environmental or otherwise, are ever the sole province of only one group. This is especially true for hard-pressed public-interest groups, among whom pooling resources, knowledge and manpower is the name of the game. Sometimes, we organize formal coalitions, such as the "Coalition to Save Our National Forests"; more often, we simply form loose working groups, which, as an issue develops, meet to discuss strategy, tactics and allocation of resources.

This is not to say that all public-interest groups, or even all environmental groups, completely agree on every issue before Congress. Sometimes, deep divi-

sions occur among us, but when this happens, one side will usually stay out of the issue, at least in an active way, to let the other side go ahead. It is rather rare for public-interest organizations to oppose each other actively.

Unfortunately, such general harmony and commonality of purpose are not always the rule. The most recent example is this year's controversy over Congress' proposed enactment of the so-called "Lobbying Disclosure Act," in which Common Cause, the political-reform organization, finds itself at odds with almost every other public-interest group in Washington. Although the legislation, on the surface, seems like a good idea (what, in this post-Watergate era, could be more desirable than "lobbying reform?"), the specific provisions of the bill could have such crippling implications for all public-interest groups that we have been forced to oppose it. In fact, at hearings conducted last year, when the bill first surfaced, only Common Cause supported it. Not only did business and labor groups object to the bill but so did virtually every public-interest group, from the Ralph Nader organization to the American Civil Liberties Union, consumer

groups and environmental groups.

About two years ago, word started circulating in the "public-interest community" that Common Cause was preparing a "lobbying reform" bill. Yet there had been very little effort to inform environmental groups or other affected parties about the bill, and certainly no effort to consult with them. Not until the bill was prepared, when the opinions of Common Cause's chief leaders had solidified, were we even granted an audience to discuss the bill. In that first meeting we pointed out to them that if the draft bill became law, some of the smaller groups would probably have to go out of business entirely, and the larger organizations would be financially crippled by the extremely burdensome provisions of "disclosure," which primarily meant preparing and filing endless reports. Although the session was polite and friendly, we all left knowing there would be no effort made to accommodate our concerns.

Public-interest groups generally agree with Common Cause about the need to reform lobbying practices, but the Common Cause bill will not meaningfully curb the most objectionable abuses—bribery, payoffs and the like. It simplistically supposes that "sunshine is the best disinfectant." In other words, the bill assumes that the more paper and reports that are filed, and the more a lobbyist explains what he or she is doing and how much it costs, the more lobbyists will be prevented from illicit activities.

Such a disclosure provision, however, will do very little, for it is no secret on Capitol Hill who is lobbying for what, and what they are saying. Anyone working on an issue usually knows this quickly, and the press can find out simply by asking the affected members of Congress. Indeed, many have suggested that only organizations such as Common Cause, which do not work on most consumer or environmental issues, will benefit from the kind of superficial knowledge that could be gained from an elaborate reporting system. For if the bill were to pass, they would be able to wade through the voluminous reports and files to find out what is going on, rather than by directly working on the issue.

Our worst fears were realized last year, when the first Common Cause lobbying bill appeared; it was a disaster. As Sierra Club controller Allen Smith pointed out during hearings held last fall, if the bill had passed intact, it would have cost the Club at least one-quarter million dollars to comply. This additional expense would have resulted from the bill's expanded definition of "lobbyist" or "lobbyist solicitation," which included not only contacts with government officials made by paid staff, but also

virtually all contacts made by Sierra Club groups and chapters. For example, newsletters that solicit members to contact congressmen or federal officials would also have been included in this definition. Thus, the bill would have required the Sierra Club and other organizations to centralize their operations in order to keep close track of the diverse activities and efforts of far-flung chapters and groups.

Many witnesses testified at last fall's hearings, most of whom opposed the bill. Some witnesses pointed out that one of its most chilling features was the provision requiring not only that lobbying groups report every contact made with federal officials (whether by telephone or otherwise), but that the officials themselves also keep a similar record. It was felt that most officials, rather than spend additional time on such paperwork, would simply throw up their hands and not bother talking to us.

Many members of Congress at the hearings were surprised by the virtually unanimous opposition to the bill, which Common Cause had sold to them as a good "reform." They began to realize that perhaps the real abuses could not be corrected simply by requiring more paperwork. But at the same time, they all wanted to be on record as being "for reform." The result was a hybrid bill, S. 2477, which was reported out in May of this year by the Senate Government Operations Committee. This bill requires only paid officials or "operating officers" of groups such as the Sierra Club to register as lobbyists subject to all the

requirements of the act. Ordinary Club members who might come to Washington to talk to various members of Congress would be exempted—if they restricted their contacts to less than twelve persons per quarter.

But the bill's worst feature remains its very broad definition of what constitutes "lobbying solicitations." For example, according to a member of the Nader organization, the bill as now written would require the Archdiocese of New York to register as a lobby if the clergy in its employ contacted members of Congress more than twelve times per quarter. And having once registered, if the archbishop were then to deliver a sermon urging the congregation to take action on a particular piece of legislation, this sermon would have to be accounted for to the federal government. Similarly, every Sierra Club chapter and group newsletter, or any other communications reaching more than 500 people, would also fall under the burdensome requirements of the act.

This unfortunate piece of legislation shows how one group, with the best of intentions, but with little desire to consult or consider other groups, can unwittingly do great damage. As of this writing, the fate of the lobbying-disclosure bill is uncertain, though it seems likely that Congress will pass some form of lobbying-reform legislation. It is our hope, and that of nearly every other group in town, that the Common Cause proposal can be modified so as to deal with real lobbying abuses, without crippling legitimate efforts at the same time.

SCB

## REGIONAL REPRESENTATIVES' REPORTS

### Midwest: The Boundary Waters Canoe Area (and Winterized Motorboat Waterway)

THE one-million-acre Boundary Waters Canoe Area (BWCA), located in the Superior National Forest of north-eastern Minnesota, is a vast wilderness of interconnecting waterways winding through virgin conifer forest. The waterways offer some of the finest wilderness canoeing in the United States, and the forest, sixty percent of which has never been cut, is all that remains of the great primeval conifer forest that once extended from northwestern Minnesota to the coast of Maine. Today, the Canoe Area is threatened with logging, while motorboats and snowmobiles shatter the quiet of the waterways and woodlands.

When the National Wilderness Act

was passed in 1964, special language was included which specified that "... the management of the Boundary Waters Canoe Area ... shall be in accordance with the general purpose of maintaining, without unnecessary restrictions on other uses, including that of timber, the primitive character of the area ... provided, that nothing in this act shall preclude the continuance within the area of any already established use of motorboats." In managing the BWCA during the intervening years, the Forest Service has emphasized logging and motorboats at the expense of maintaining the primitive character of the area.

The Forest Service established two

"zones" in the BWCA: the Outer, or Portal, Zone is supposed to act as a buffer between the primitive Interior Zone and the rest of Superior National Forest. Logging is allowed in the Portal Zone, but prohibited in the Interior. Unfortunately, 150,000 acres of virgin timber are included in the Portal Zone, and thus are subject to logging. To prevent this from happening, the Sierra Club sued the Forest Service, and in August 1975, the district court imposed a permanent ban on cutting the BWCA's virgin timber. This decision has been appealed by the Forest Service and affected logging companies; the Eighth Circuit Court of Appeals heard oral arguments in April.

The Forest Service also designated about one-half the canoe routes in the BWCA for year-round motorized travel, taking the position that the language of the Wilderness Act did not allow more severe restrictions. That same language, however, did not require the Forest Service to define snowmobiles as a form of winterized motorboats, which it proceeded to do in an excessively creative fit of administrative interpretation. The Club, disputing this definition, filed an administrative appeal with the Forest Service. It won the first round when the Forest Service reversed its position on snowmobiles, deciding that their use was not permitted under the motorboat clause of the Wilderness Act. The service imposed an immediate ban and admitted that it also could legally reduce motorboat usage to below 1964 levels. The reaction from local snowmobilers and motorboaters, however, was predictably quick and raucous. They initiated a massive letter-writing campaign to the Minnesota congressional delegation. Last Memorial Day, they blocked highways near the BWCA, asking people to sign petitions protesting the ban.

Their voices were heard. John McGuire, chief of the Forest Service, postponed the ban for the 1975-1976 winter season to allow time for the snowmobilers to appeal the agency's ruling. A hearing on snowmobile use and motorboat regulation in the BWCA was held last April 22, in Duluth, Minnesota. Originally scheduled for the Minneapolis



Les Blacklock

area, the meeting was relocated because of pressures from local interests, who turned out in large numbers to testify (and to hang the Sierra Club in effigy in a nearby parking lot).

As this is being written, the final results of the Club's appeal on snowmobile use and motorboat regulation, and of our lawsuit over the logging, are unknown. However, legislation has been introduced in Congress that, if passed, could render both of these actions moot. The bill, introduced in the House by Congressman James Oberstar (D-Minnesota), is an attempt to resolve some of the controversy over the timber and motorized-recreation issues. The BWCA wilderness now covers one million acres; the Oberstar bill proposes to establish a 526,000 acre National Recreation Area and a 626,000 acre Wilderness Area. Although this would expand the total size of the BWCA by some 138,000 acres, the area receiving wilderness protection would be smaller than the current wilderness.

Environmentalists have generally recognized Congressman Oberstar's bill as a constructive attempt to resolve the current conflict, but as now drafted, the bill is unacceptable. Areas we contend are protected by existing laws from logging and intensive motorized use would not be so protected under Oberstar's bill. For example, it would allow logging in several important stands of beautiful old red and white pines, including those at Lac Lacroix, the Saganaga-Seagull area and the Caribou Unit east of the Gunflint Trail. In addition, restrictions on snowmobile use would be totally removed from those areas deleted from the Wilderness. Finally, and perhaps most important, this legislation could establish an extremely bad precedent for future treatment of already designated Wilderness Areas, inviting their opponents to legislatively nibble away at them.

What you can do to help:

- (1) Join the developing national coalition of individuals and organizations concerned about the BWCA. For further information, write to: North Star Chapter, Sierra Club, 807 Midland Bank Building, Minneapolis, Minnesota 55401;
- (2) Write to your congressman. Tell him that the BWCA deserves and needs full Wilderness protection. Let him know that Congressman Oberstar's bill must be modified to provide this full protection.

Patricia S. Record



Where students explore, test and create environmental options for the future. Undergraduate. Independent. Residential. Since 1973. Box 3060, San Rafael, CA 94902. (415) 456-7665.

## Southern California: Proposition 15— Losing a battle but winning the war

**D**ESPITE the defeat of "Proposition 15," California's nuclear-safeguards initiative, in the June 8 primary, environmentalists realized several important gains in the campaign to submit decisions about nuclear power to public scrutiny and control. Chief among these are three nuclear bills passed by the state legislature and signed by the governor only days before the election. Though the bills are by no means as far-reaching as the initiative, their enactment is an unmistakable acknowledgement that concerns about nuclear safety are well founded.

Unlike the initiative, the bills do not apply to nuclear power plants now in place or under construction, and do not address the questions of testing plant safety systems and liability in case of an accident. But they do begin to exercise

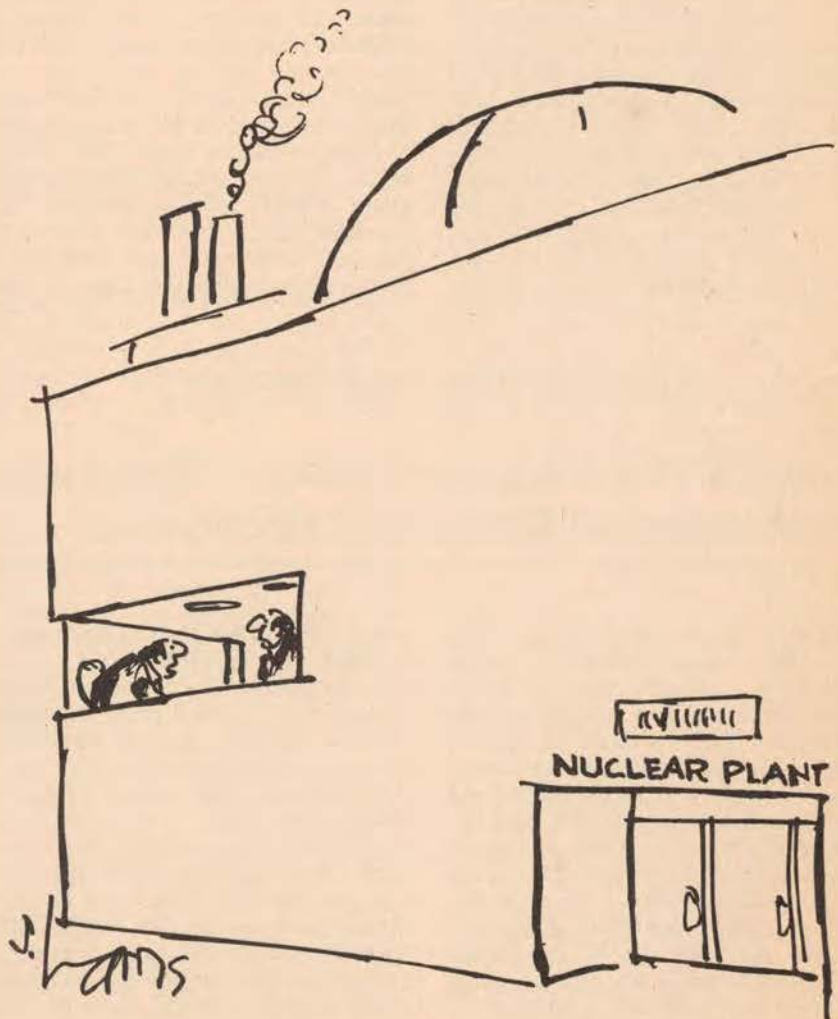
public control over the future development of nuclear power plants in the state.

Assembly Bill (AB) 2820 prohibits the California Energy Commission from certifying any nuclear-fission power plant until the federal government's "authorized agency has identified and approved" fuel-reprocessing plants. (No reprocessing plant is now in operation.)

AB 2822 prohibits the commission's certification of new plants until there exists, and the federal government has approved, a demonstrated technology or means for disposing of high-level radioactive wastes.

Both bills provide that the state legislature, by a simple majority in either house, can overturn an action of the Energy Commission within 100 days of the time it is taken.

The third bill, AB 2821, requires the



"A leak? Information, water, or radiation?"

Energy Commission to study "the necessity for, the effectiveness and economic feasibility of, undergrounding and berm containment of nuclear reactors," and imposes a one-year moratorium on the certification of new power plants. However, this bill exempts the Wasco (near Bakersfield) and Sun Valley (near Blythe) plants, which are now in the planning stage.

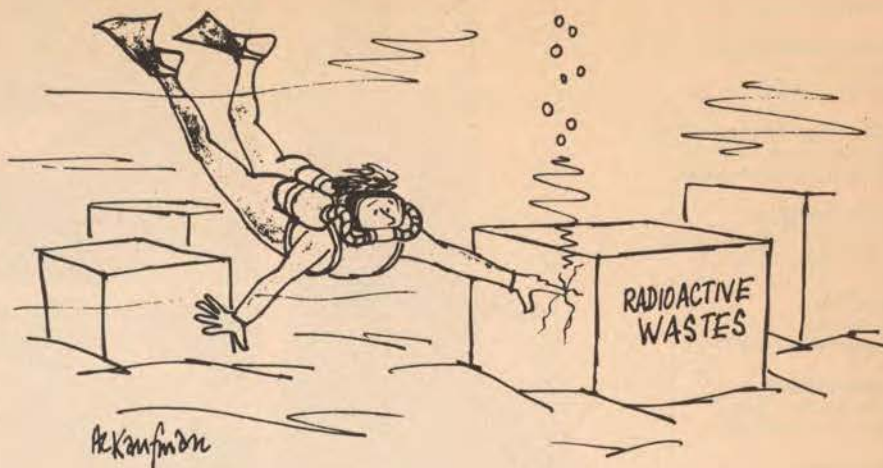
Beyond these bills, environmentalists have achieved other important gains as a result of the Proposition 15 campaign. First, we have focused the world's attention on the problems of nuclear power and have strengthened the power of nuclear critics in this country and abroad. During the campaign, we were interviewed by reporters from British, Swedish and Italian television, and Japanese radio; the international news media have continued to request interviews. Now, some of those who worked on Proposition 15 are advising and assisting volunteers from Colorado and Oregon, where similar initiatives will appear on the November ballots. In a number of other states where initiative petitions are now being circulated, our experience and organizational force will lend moral support as well as practical assistance.

Second, we convinced two million voters in California that concerns about nuclear safety were legitimate, this in the face of the opposition's depiction of the initiative as a shutdown measure—which it was not.

The initiative was a red flag waving in the faces of the corporate media and political establishments in the country. Never have environmentalists encountered such overwhelming opposition. Money, media endorsements and political support flowed into the "No on 15" campaign, flooding the coffers with cash and the air waves with propaganda. Early in the campaign, our opponents went to court and succeeded in getting the campaign spending limit lifted. We won't know until final reports are filed in August exactly how much they spent, but probably near five or six million dollars—especially if a true accounting is made. (We have charged that "No on 15" forces were concealing campaign funds under various committees and not reporting in-kind donations such as mailings to shareholders and employees donating to the campaign.)

Ninety-nine percent of the "No on 15" money came from corporate donors, of which more than 200 were from out of state:

- sixteen international oil companies, which happen to control eighty percent of the uranium used to fuel nuclear reactors;
- thirty out-of-state utilities;
- fourteen corporations that made ille-



gal contributions to the Nixon campaign;

- California utilities, which anted at least a half-million dollars; and

- companies like Allied Chemical, which has been indicted for criminal conspiracy to violate federal pollution laws and for more than a thousand specific violations in connection with the discharge of the highly toxic pesticide, kepone.

So far, at least one state, Kansas, has announced it will prosecute two of its corporations—one, a utility—for violating state law in making contributions to the "No on 15" campaign.

In addition to the millions provided by opponents to Proposition 15—or maybe because of them—editorial endorsements of the "No on 15" campaign came easily and early. (One television station in Los Angeles publicly announced it opposed the initiative nine months before the election.) The federal government also helped to defeat the proposition, with the Energy Resources and Development Administration (ERDA), offspring of the old Atomic Energy Commission, distributing in California thousands of slick, colorful, religious-like tracts promoting nuclear energy. Some ERDA officials campaigned against the initiative in California. So did energy chief Frank Zarb, who dismissed the University of Texas report commissioned by his own Federal Energy Administration in which it was concluded that Proposition 15 was not a shutdown and would not cause economic hardship in California.

Unfortunately, one group of California state officials also campaigned against the initiative by using the ballot itself to carry their message. The attorney general, secretary of state and legislative analyst wrote a financial impact statement for the ballot that estimated the cost of implementing the measure to be more than \$800,000 and warned that taxes and utility rates might go up as a result. Environmentalists challenged this

statement in court as prejudicial, but without success.

In contrast to the money and power behind the "No on 15" campaign, donations to the "Yes on 15" campaign averaged twenty-five dollars each. Early on, we had to spend money to raise money, and when we finally did get enough to advertise in the last weeks of the campaign, some television and radio stations refused to sell us time, while those who did sometimes ran our television spots at unscheduled times.

Yet, in spite of these obstacles, clearly we convinced more than a third of the voters in California that strong measures are needed to cope with the problems of nuclear safety. The number of people who come to agree can only grow with time because the problems of nuclear-power generation are not going to disappear. The election was the beginning, not the end, and we are now much better organized to continue our challenge to the nuclear establishment. Our volunteers did a tremendous job, and because their convictions on this issue run deep, they will continue to assist the growing number of nuclear critics.

Summing up the campaign, Susan Steigerwalt, co-leader of the Sierra Club's Committee, "Yes on 15," said: "We regard this initiative campaign as merely a beginning of our efforts to educate the public concerning problems of nuclear power, to counteract the propaganda of the nuclear industry and to continue our effort to see that these problems are addressed and adequately resolved through legislation, regulation and litigation."

Mary Ann Eriksen

**"WIND ENERGY...AND YOU"**

Find out if you are a candidate for wind generated electricity. This wind power manual gives you basic information on wind rotor dynamics, including a complete listing of manufacturers and distributors. \$3.00 postpaid. DYNAPOWER ASSOCIATES, RD 3, Dept. R, Litchfield, Ct. 06759

**Sierra Club Offices:**

**Sierra Club Headquarters**  
530 Bush Street  
San Francisco, California 94108

**Sierra Club Foundation**  
530 Bush Street  
San Francisco, California 94108

**Sierra Club Legal Defense Fund**  
311 California Street, Suite 311  
San Francisco, California 94104

**International Office**  
777 United Nations Plaza, 10th Floor  
New York, New York 10017

**Alaska Office**  
545 E. 4th Ave.  
Anchorage, Alaska 99501

**Los Angeles Office**  
2410 Beverly Blvd., Suite 2  
Los Angeles, California 90057

**Midwest Office**  
444 West Main, Room 10  
Madison, Wisconsin 53703

**New York Office**  
50 West 40th Street  
New York, New York 10018

**Northern Plains Office**  
P.O. Box 721  
Dubois, Wyoming 82513

**Northwest Office**  
4534 1/2 University Way, N.E.  
Seattle, Washington 98105

**Sacramento Office**  
927 Tenth Street  
Sacramento, California 95814

**Southwest Office**  
2014 E. Broadway, Room 212  
Tucson, Arizona 85719

**Washington D.C. Office**  
324 "C" Street, S.E.  
Washington, D.C. 20003

**Canadian Offices:**

**Ontario Office**  
47 Colborne Street  
Toronto, Canada M5E 1E3

**Western Canada Office**  
P.O. Box 35520 Postal Station E  
Vancouver BC Canada V6M 4G8

**Application For Membership**

	Admission fee*	Dues	Total
<input type="checkbox"/> Life	*	\$400.00	\$400.00
<input type="checkbox"/> Contributing	\$5.00	50.00	55.00
<input type="checkbox"/> Supporting	5.00	25.00	30.00
<input type="checkbox"/> Regular	5.00	15.00	20.00
<input type="checkbox"/> with spouse	5.00	23.00	28.00
<input type="checkbox"/> Junior (thru 14)	*	8.00	8.00
<input type="checkbox"/> Student	*	8.00	8.00
<input type="checkbox"/> with spouse	*	13.00	13.00
<input type="checkbox"/> Senior (60 & over)	5.00	8.00	13.00
<input type="checkbox"/> with spouse	5.00	13.00	18.00

\* Admission fee waived

(Includes BULLETIN, \$3.00; Chapter newsletter, \$1.00.)

Please enter a membership at the rate checked above for:

Name \_\_\_\_\_  
Address \_\_\_\_\_  
Zip \_\_\_\_\_

SIERRA CLUB  
Membership Dept. 7  
P.O. Box 7959 Rincon Annex  
San Francisco, Calif. 94120



American Bald Eagle: Tupper A. Blake; Trail Maintenance: Catherine Cullinane; & Sierra Club Photo Library.

FOR 83 YEARS the Sierra Club has defended wilderness and the integrity of nature. To protect and conserve the natural resources of this planet; to preserve the quality of our environment; to restore what has already been needlessly spoiled: these are the ends toward which the Sierra Club applies its strength.

**INFORMATION/EDUCATION.** Through its books and periodicals, films and exhibits, the Club points out the challenge we dare not fail to meet: to formulate a sane and tenable relationship between the human race and the fragile world that sustains us. Sierra Club outings have taken on new meaning as lessons in "walking lightly" on our vulnerable land. Rock climbing, winter camping, ski touring, kayaking, scuba diving, mountaineering: Sierra Club classes, formal and informal, teach these and other skills. The themes are safety and respect for the land.

**SERVICE TRIPS.** Wilderness survey trips to endangered areas gather the data the Club must have to lobby for preservation. Trail maintenance trips and clean-up trips combine fun and service. "Inner City Outings" conducts first-time wilderness trips for the urban young. For some participants, these experiences may be the start of lifelong friendships with the land. We hope that all will come away with at least a little more awareness of what a gift the natural world is—and how greatly it deserves our care.

**RESEARCH.** The Club's office of environmental research surveys the work of experts in many countries and carries out its investigations in such fields as geology and forestry. This scientific back-up helps the Club define its policies and state its case to the public, to legislators, and to courts.

**SIERRA CLUB LEGAL.** In recent years the Club has found it increasingly necessary to turn to the courts to force compliance with environmental protection laws. This is the task of the Sierra Club Legal Defense Fund. Without this legal pressure, many of our best statutes would be empty pronouncements of good intent.

**LOBBYING.** The Club's essential work is to promote sound laws and policies and, more fundamentally, the climate of opinion that allows these laws and policies to succeed. The Club's small hired staff spends most of its time in this field. The real momentum, however, comes from thousands of active Club members offering uncountable thousands of hours of volunteer service, backed by the dues and contributions of the entire membership.

There is everything to be done, most of it at chapter and group levels: complex issues to study and understand, policy to debate, meetings and hearings to attend, news to spread, letters to compose.

In the search for solutions that are long-lasting, the Club must constantly communicate: with legislators, leaders in business, labor, minority groups, and many others. The lack of such contact could be crippling.

**CONTRIBUTIONS TO THE SIERRA CLUB.** The effort we make is costly, but the stakes are huge. Gifts made directly to the Club are applied largely toward lobbying efforts, and can no longer be deducted from the donor's taxes. If a deduction is important to you, we invite you to consider a gift to the Sierra Club Foundation, which funds educational, legal, scientific and literary projects. Consider also a bequest to the Sierra Club: such a gift is a strong personal statement, and a legacy that will live.

**Sierra Club**

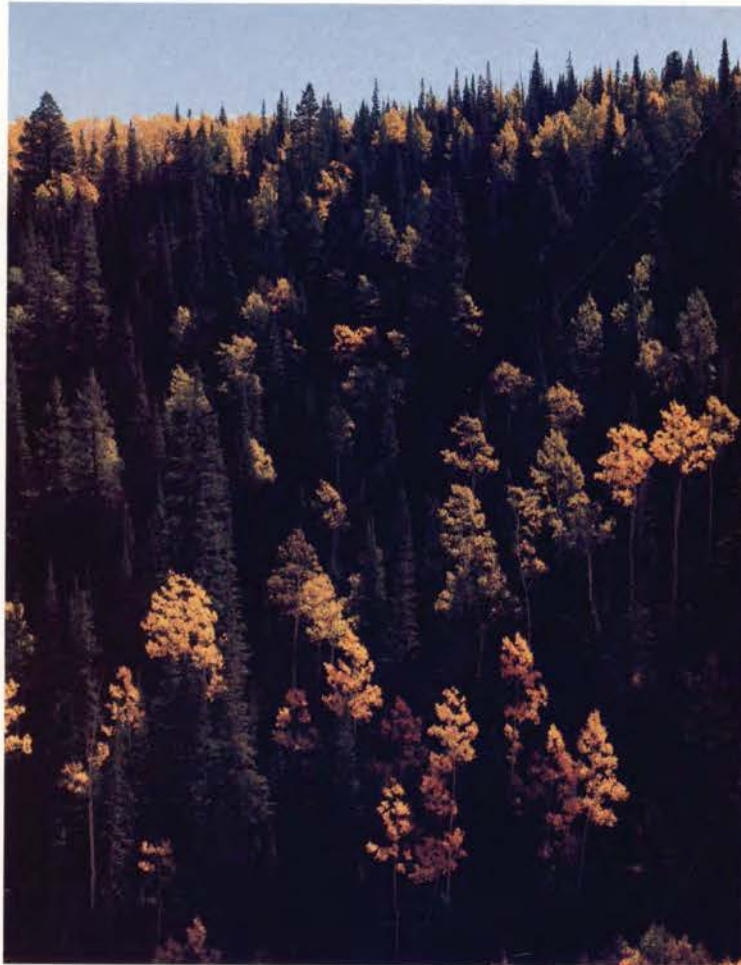




# 1977 Sierra Club Calendars are ready!

(...order now by using the handy order form on page 22.)

## Wilderness 1977 Sierra Club Engagement Calendar

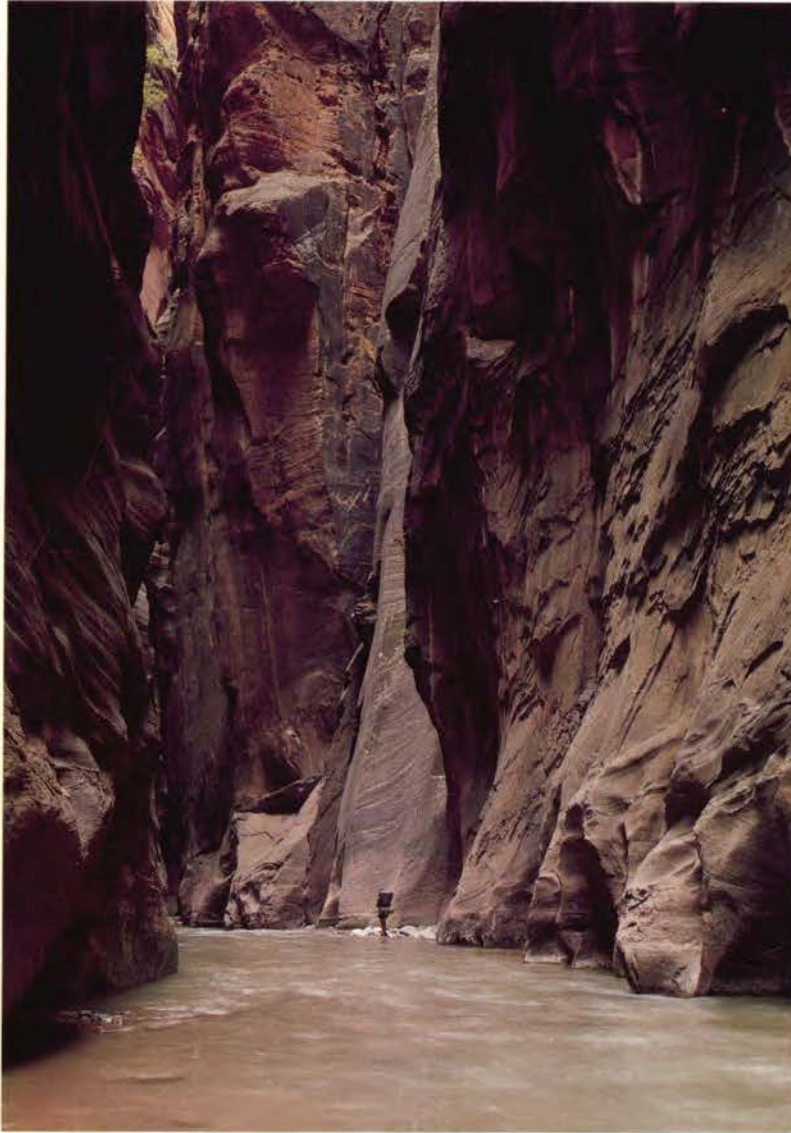


This week-by-week tribute in full color to the natural glory of our continent, and the wild creatures who find in it a home, comes in a practical desk format, designed for appointment and note-keeping. The Introduction is by Michael McCloskey, Executive Director of the Sierra Club. The

photographs are by such eminent photographers as Ed Cooper, Steve Crouch, Philip Hyde, Stephen J. Krasemann, David Muench, Boyd Norton, Galen Rowell, Bob Waterman, and many others. Spiral-bound at the side and individually packed in a self-shipping carton. 6½ x 9½.

See following five pages ►

# 1977 Sierra Club Calendars



## Sierra Club Trail Calendar 1977

Mountaineering, wilderness skiing, rock climbing, kayaking, scuba diving, backpacking, or just a wildlands ramble—this calendar celebrates all of these activities; from California's High Sierra to the camp of the 1975 American K2 Expedition team; from the rapids of the rivers of Washington to the coral reefs of the British West Indies. Photographs by Steve Crouch, Kent and Donna Dannen,

Keith Gunnar, Dan Jones, Dewitt Jones, Boyd Norton, James Randklev, Galen Rowell, Kent Schellinger, Tom Tracy, with line illustrations and selections from the literature of the trail. Introduction on the art and experience of walking by Edward Abbey. Spiral-bound at the top, hole-punched for hanging, individually packed in a self-shipping carton. 10¼ x 10¼.



## Wilderness Calendar 1977      Sierra Club

The natural beauty of North America through each season, depicted in full-color by photographers Dennis Brokaw, Ken Carlson, Robert Carr, Peter Kresan, Wendell Metzen, David Muench, Robert Ketchum, Boyd Norton, Galen Rowell, Art Twomey, and Hans Wendler. Quotes drawn from the literature of natural America by such authors as

Burroughs, Whitman, Emerson, and Thoreau, accompany each month. Introduction by novelist, critic and photographer Wright Morris. Spiral-bound at the top, hole-punched for hanging, individually packed in a self-shipping carton. 10½ x 13¾.

# 1977 Sierra Club Calendars



## Sierra Club Wildlife Calendar 1977

The golden eagle, the coyote, the killer whale, the jaguarundi and the moose are among the 14 full-color subjects — depicted in their natural habitats ranging from the Okefenokee Swamp of Georgia to Mount McKinley National Park — of this year's Wildlife Calendar. Photographs by Fred J. Alsop, Ken Carlson, Stephen J. Krasemann, Wendell

Metzen, C. Allan Morgan, Tom Myers, Leonard Lee Rue III, Bob Waterman and Gus Wolfe. Introduction by the eminent field biologist and author, George B. Schaller, of the New York Zoological Society. Spiral-bound at the top, hole-punched for hanging, individually packed in a self-shipping carton. 10¼ x 8½.

**MARCH 27  
SUNDAY**  
First quarter moon, 14:27



**MARCH 28  
MONDAY**

But it is not only for their beauty that I have an affection for some of the weeds, but, speaking as a gardener, I am sure they are often very useful. We may see how in a hedge-row the most delicate plants nestle themselves close to and under those of the coarsest growth, and seem all the better for it; and I have seen many instances in which delicate seeds and young cuttings have been saved when protected by weeds, when those not so protected have perished. . . . I will, however, quote another American writer, Hawthorne, who is quite enthusiastic in his praise of weeds. "There is," he says, "a sort of sacredness about them. Perhaps if we could penetrate Nature's secrets we should find that what we call weeds are more essential to the well-being of the world than the most precious fruit or grain." This is perhaps somewhat exaggerated, but there is a good truth in it.  
(Henry N. Ellacombe, 1895)

BACK FROM THE FIELDS  
Until nightfall my son ran in the fields,  
Looking for God knows what  
Flowers, perhaps. Odd birds on the wing  
Something to fill an empty spot.  
Maybe a luminous angel  
or country girl with a secret dark.  
He came back empty-handed,  
or so I thought.  
Now I find them:  
thistles, goatheads  
the barbed weeds  
all those with hooks or horns  
the snaggle-toothed, the grinning ones  
those wearing lantern jaws  
old ones in beads  
lepers in silk leggings  
the multiple pocket moons  
and spiny satellites, all those  
with juices and saps  
like the fingers of thieves  
nation after nation of grasses  
that dig in, that burrow, that hug winds  
and grab handholds  
in nature.



**APRIL 1  
FRIDAY**  
April Fool's Day

**MARCH 30  
WEDNESDAY**

APRIL  
Moon of the wild geese moon of  
the breaking up of ice (Mandan)  
The seal brings forth her young  
(Netchilli)  
With the stars by eye



**APRIL 3  
SUNDAY**  
Full Moon, 20:09  
Phase of the moon

THE ANGLIST-CONE  
The earliest and most successful of seed plants to have survived to the present is the conifer - the pine and spruce family. This plant is named after the pine cone, through which it reproduces. A cone is made up of a number of spore-bearing scales concentrated into a tight bunch. On each scale one or two large spores are formed, which, when fertilized, produce seed. When the cone ripens, the scales separate. The wind carries the male spore, or pollen through the air in thick clouds. The pollen must then reach the female spore or egg produced by the large spore of other cones, where the process begins over again.

## What the Forest Tells Me 1977 Sierra Club Calendar for Children



**APRIL 6  
WEDNESDAY**

ON LOGGING  
edgepole  
cone/seed use  
And then thin forests o  
in the void  
a pine cone  
Pursued by squirrels  
What a mad pursuit!  
(Gary Snyder)

### ...and introducing the Sierra Club Calendar and Almanac for Children

New from Sierra Club Books, this calendar-almanac for young people draws on the endless wealth of stories our earth has to tell. Every page is a visual delight, covering one week of the year. The space for each day is illustrated by drawings, descriptions of earthly and celestial events, and facts of natural history - nature explored through human cultures, animal behavior and

husbandry, botany and gardening, nature lore and crafts. The calendar-almanac includes a section of nature-oriented activities for children and 13 color photographs of North American wildlife. Spiral-bound at the side and individually packed in a self-shipping envelope. 88 pages. 13 pages of color photos. 10 1/4 x 10 1/4.

Use handy order form on following page ▶

**SIERRA CLUB BOOKS**  
**Box 7959, Rincon Annex**  
**San Francisco, CA 94120**

Please send me the titles I've indicated below. I enclose my check or money order payable to Sierra Club. (Do not send cash). Prices indicated are to members only and include a 10% discount on regular retail price. (Sierra Club pays for postage and handling.) PLEASE PRINT

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

QUANTITY	1977 SIERRA CLUB CALENDARS	AMOUNT
_____	175-1 1977 Engagement Calendar \$4.45	_____
_____	178-6 1977 Trail Calendar \$4.45	_____
_____	179-4 What The Forest Tells Me (1977 Calendar for Children) \$4.45	_____
_____	176-X 1977 Wilderness Wall Calendar \$4.45	_____
_____	177-8 1977 Wildlife Calendar \$4.45	_____

QUANTITY	NEW PUBLICATIONS	AMOUNT
_____	189-1 <b>Ascent</b> Roper, et al., eds. (paper), Available in September \$9.00	_____
_____	147-6 <b>The Climber's Guide to the High Sierra</b> Roper, (Totebook®), \$7.15	_____
_____	148-4 <b>The Electric War</b> Novick, (cloth), Available in September \$9.00	_____
_____	146-8 <b>Simple Foods for the Pack</b> Kinmont & Axcell, (paper), \$4.45	_____

QUANTITY	TOTEBOOKS®	AMOUNT
_____	099-2 <b>Best About Backpacking</b> Van Lear, \$6.25	_____
_____	048-8 <b>Climber's Guide to Yosemite Valley</b> Roper, \$7.15	_____
_____	066-6 <b>Cooking for Camp and Trail</b> Bunnelle & Sarvis, \$3.55	_____
_____	085-2 <b>Fieldbook of Nature Photography</b> Maye, ed., \$6.25	_____
_____	049-6 <b>Food for Knapsackers</b> Bunnelle, \$3.55	_____
_____	102-6 <b>Foot-loose in the Swiss Alps</b> Reifsnnyder, \$7.15	_____
_____	068-2 <b>Hiker's Guide to the Smokies</b> Murlless & Stallings, \$7.15	_____
_____	095-X <b>Smokies Map</b> replacement (paper), \$1.75	_____
_____	095-Y <b>Smokies Map</b> also separately (plastic), \$2.65	_____
_____	127-1 <b>Hiking the Bigfoot Country</b> Hart, \$7.15	_____
_____	092-5 <b>Hiking the Teton Backcountry</b> Lawrence, \$4.45	_____
_____	078-X <b>Hiking the Yellowstone Backcountry</b> Bach, \$5.35	_____
_____	081-X <b>Hut Hopping in the Austrian Alps</b> Reifsnnyder, \$4.45	_____
_____	100-X <b>Huts &amp; Hikes in the Dolomites</b> Rudner, \$4.45	_____
_____	103-4 <b>Reading the Rocks</b> Rahm, \$7.15	_____
_____	172-7 <b>Starr's Guide to the John Muir Trail</b> Robinson, ed., \$3.55	_____
_____	125-5 <b>To Walk With a Quiet Mind</b> Olmsted, \$5.35	_____
_____	069-0 <b>Wilderness Skiing</b> Tejada-Flores & Steck, \$6.25	_____

QUANTITY	EXHIBIT FORMAT SERIES	AMOUNT
_____	045-3 <b>Everglades</b> Caulfield, \$24.75	_____
_____	006-2 <b>Gentle Wilderness</b> Kauffman & Muir, \$27.00	_____
_____	000-3 <b>In Wilderness is the Preservation of the World</b> , Porter, \$29.25	_____

**FOR OFFICE USE ONLY**

**MAIL ORDER FORM**  
**TOS: 2**

SP IN: _____			

**Important Notice to Members:**

This order form replaces all previous order forms. To facilitate order processing, it is imperative that members discontinue using all order forms issued prior to this one. 7/76

QUANTITY	EXHIBIT FORMAT SERIES	AMOUNT
_____	007-0 <b>Not Man Apart</b> Jeffers & Brower, \$29.25	_____
_____	051-8 <b>Slickrock</b> Abbey & Hyde, \$24.75	_____
_____	001-1 <b>This is the American Earth</b> Adams & Newhall, \$13.50	_____
_____	140-9 <b>Thoreau Country</b> Gleason, \$29.25	_____
_____	002-X <b>Words of the Earth</b> Wright, \$13.50	_____

QUANTITY	BACK LIST PUBLICATIONS	AMOUNT
_____	062-3 <b>Action for Wilderness</b> Gillette, ed. (paper), \$2.05	_____
_____	110-7 <b>Alaska: The Great Land</b> Miller & Wayburn (cloth), \$22.50	_____
_____	113-X <b>Alaska: The Great Land</b> Miller & Wayburn (paper), \$7.15	_____
_____	016-X <b>Almost Ancestors</b> Kroeber & Heizer (cloth), \$13.50	_____
_____	104-2 <b>Brother Sun</b> Stock (cloth), \$13.45	_____
_____	105-0 <b>Brother Sun</b> Stock (paper), \$5.35	_____
_____	143-3 <b>A Closer Look</b> Godfrey (cloth), \$13.45	_____
_____	233-3 <b>Ecotactics</b> Mitchell & Stallings (paper), \$8.85	_____
_____	055-0 <b>Energy</b> Holdren & Herrera (paper), \$2.50	_____
_____	142-5 <b>The Grass Roots Primer</b> Robertson & Lewallen (paper), \$7.15	_____
_____	096-8 <b>Island in Time</b> Hyde & Gilliam (paper), \$4.45	_____
_____	026-7 <b>John Muir and the Sierra Club</b> Jones (cloth), \$9.00	_____
_____	130-1 <b>The Lands No One Knows</b> Watkins & Watson (cloth), \$8.95	_____
_____	128-X <b>Loosing Ground</b> Mitchell (cloth), \$8.05	_____
_____	170-0 <b>Mind in the Waters</b> McIntyre (cloth), \$13.45	_____
_____	174-3 <b>Mind in the Waters</b> McIntyre (paper), \$6.25	_____
_____	018-6 <b>On the Loose</b> T. & R. Russell (cloth), \$7.15	_____
_____	141-7 <b>Other Homes and Garbage</b> Leckie, et al. (paper), \$8.95	_____
_____	109-3 <b>A Separate Place</b> Jones & Friedman (cloth), \$13.45	_____
_____	097-6 <b>Slickrock</b> Abbey & Hyde (paper), \$4.45	_____
_____	144-1 <b>Thoreau Country</b> Gleason (paper), \$8.95	_____

QUANTITY	SPECIALS	AMOUNT
_____	555-3 <b>Ascent</b> (1973) \$6.00	_____
_____	555-4 <b>Ascent</b> (1974) \$6.00	_____

Total Quantity ordered Total Amount of order \$ \_\_\_\_\_

Sales tax rates for deliveries to the following areas: California—add 6% (Alameda, Contra Costa, & San Francisco Counties—add 6½%) + Sales Tax (if any) \$ \_\_\_\_\_  
 New Jersey—add 5% (No New Jersey tax on ASCENT) Total Amount enclosed \$ \_\_\_\_\_

## CLIMATE AND SURVIVAL

(Continued from page 6)

were no ice caps as there are today. Skipping much of the geologically distant past, evidence indicates that ten million years ago there were mountain glaciers, and an Antarctic ice sheet was growing. Five million years ago, the Antarctic ice sheets exceeded their present size; three million years ago continental ice sheets appeared for the first time in the Northern Hemisphere, and during at least the last one million years, the ice cover on the Arctic Ocean was never much less than it is today.

Only yesterday (geologically speaking), there were two periods of glaciation—one about 135,000 years ago, the other 14,000 to 22,000 years ago, both ending in warmer interglacial periods that lasted 10,000 to 12,000 years. It was warmer 7,000 to 5,000 years ago than today, but in many parts of the world colder intervals occurred about every 2,500 years, the most recent of which was the Little Ice Age, which ended 125 years ago. Knowledge of the earth's climatic history may help us to understand today's climate, but seems unlikely to be of much help in predicting tomorrow's. The whole process is far too intricate to be analyzed usefully from a historical viewpoint.

Climate represents a long-term average of such weather factors as temperature, precipitation, wind and clouds, and of their variability, not only within a particular season, but from year to year. Weather and climate are manifestations of a huge heat machine, powered by the sun, with relatively few parts, but with processes so interlinked and intricately interacting that scientists sometimes seem to despair of understanding the machine clearly. The parts are the land, the oceans, ice and snow, plants and animals, and the atmosphere, and each part is related to all the others. The climate engine behaves according to how heat from the sun is absorbed, reflected, and transferred from one part of the engine to another.

Insolation is concentrated near the Equator. About seventy percent of this energy—amounting to about eighty million billion watts—is absorbed by the earth, more than half of it in the oceans. Some is reflected into space by clouds, ice and snow, as well as by land surfaces, dust and other



*Drought-stricken corn, South Dakota.*

atmospheric particles, called aerosols. The earth maintains its balance of heat by radiating the excess in infrared wavelengths, some of which is trapped by the so-called greenhouse effect of carbon dioxide in the atmosphere.

The migration of warm tropical air from the Equator to the poles is one of the major movements of heat in the climate engine. Because the earth spins faster at the Equator than at higher latitudes, air rising from the equatorial regions, as it moves north and south, has a greater eastward momentum than the surface of the planet and is experienced as westerly winds—southwesterlies in the Northern Hemisphere and northwesterlies in the Southern Hemisphere. The greater the temperature differential between the tropics and polar regions, the faster the flow of warm air toward the poles. The high-altitude jet stream moves fastest in winter, when the differential is greatest, which is why San Francisco to New York flights take less time than in summer.

Within the oceans are analogous circulation systems that also are driven

by heat, but are much less understood than the systems of the atmosphere. The oceans constitute a huge reservoir of heat that on a global basis responds to changes in climate over periods as long as 1,000 years. By contrast, the atmosphere adjusts over a period of months.

Water dominates climate, not only absorbing more than half the heat reaching the earth from the sun, but serving as the largest source of heat for the atmosphere, giving up this heat when vapor condenses to form rain. Clouds capture two-thirds of the solar radiation reflected from the earth.

Within both the atmosphere and the oceans, for instance, are energy-feedback circuits that may increase a weather effect or modify it. There are also feedbacks *between* the atmosphere and the oceans, and between the other parts of the climate engine, as well. An ocean current may transfer heat to the atmosphere, producing a cloud, but the cloud modifies this effect by shading the ocean, reducing the heat it absorbs from the sun. A fall of snow increases the reflection of

sunlight from the earth's surface, producing cooling, which may lead in turn to more snow. If such a positive feedback were not countered by other factors, the climate would run away with itself.

Climatologists say they have only sketchy knowledge of the heat-transfer processes that occur in the oceans, involving interactions between its surface-layer and the atmosphere, its waves, its eddies, its currents, and its upwellings. These movements are thought to play such an important part in the making of climate that man's present ignorance of them is considered a major barrier to understanding climate.

#### *Questions to be asked*

To predict climate—as scientists would like to do before long—will require a much better understanding not only of the oceans, but of all climatic heat-transfer systems. These must then be expressed in the kind of mathematical models that computers can process fast enough to provide useful predictions. But the recent National Academy of Sciences report on climate research indicates that the fundamental questions about climatic change have hardly been asked. For instance, what are the most important causes of climatic variation? Are they external to the earth's climatic system, like the sun? Or are they internal, stemming perhaps from the oceans? (Recent research reports raise the possibility that fluctuations in the energy radiating from the sun—the solar constant, as it is called—might account for cyclic climatic changes such as the Little Ice Age. This remains unproved.) Which are the more sensitive and important processes in the climate engine's heat-transfer system, where leverage might be applied to change climate or prevent change? How can true changes be distinguished from random fluctuations?

An ability to predict climate might do much to prevent the kind of food catastrophe climatologists are talking about these days. Such knowledge could do much, as well, to avoid the longer-term peril that man might accidentally produce a disastrous change in the global climate.

Some climatologists, Bryson among them, speculate that dust and other aerosols thrust into the atmosphere by man may account for the cooling trend observed in the Northern Hemi-

sphere over the last three decades.

Whether man-made aerosols cause cooling remains uncertain. Dust particles might cause cooling by reflecting solar radiation, just as clouds, snow, and ice reflect it. But darker particles might cause warming of the atmosphere by absorbing radiation, and the net effect might be more heat, particularly if these particles were in the atmosphere above an earth surface that was lighter colored than the particles themselves. The consensus of climatologists for the moment seems to be that the net effect of man-made aerosols probably is to cool the earth, but consensus (as one climatologist has commented) is a poor way to do science.

Less doubt surrounds the climatic effect of the increase in carbon dioxide in the atmosphere from man's activities, mainly the burning of fossil fuels. Records indicate that carbon dioxide in the atmosphere has risen from about 295 parts per million (ppm) before the Industrial Revolution to 320 ppm today. By the end of the century—less than twenty-five years from now—the carbon-dioxide figure is expected to reach 400 ppm.

Climatologist Schneider calculates that the current increase might have caused a global rise in temperature averaging a few tenths of a degree, owing to more trapping of the earth's infrared radiation by carbon dioxide. But the rise expected in the remaining decades of the century could raise the earth's average temperature about one degree Fahrenheit, which would be as large as any global change in the recent past. The rise at the poles and high latitudes would be three to seven degrees, judging from experience, and the effects on climate could be extensive and irreversible, Schneider says. This might include melting of the Arctic ice pack, with worldwide climatic changes that cannot be predicted. Ocean levels would not rise, however, any more than water in a glass rises when ice cubes melt; only if the polar ice caps should melt would such a rise occur, and this is considered unlikely as a result of human activity.

The waste heat of man's activities, mainly in the industrial nations, adds little to the heat burden of the earth today. It has been calculated as only one ten-thousandth of the heat from the sun, and as such is insignificant. But if the earth's population continues to grow, and the less developed

countries demand to use energy at the rate developed countries do, the waste heat added to the earth could begin to affect the global climate—as it already affects it in and about some large cities.

Some social scientists have projected a future steady-state in which a population of twenty billion would expend twenty kilowatts per capita annually, about double the current expenditure in the United States. Schneider has calculated that this would add so much heat to the earth that, together with the increase from additional carbon dioxide, the global average temperature would rise nearly two degrees Fahrenheit by the year 2000, a change larger than any documented natural change on earth since the last ice age.

#### *Intolerable climate*

Obviously, he says, the climate could impose restraints on long-term energy growth. He advocates as part of his Genesis strategy that developed countries slow their use of energy while developing countries catch up, and that developing countries limit their population growth. Otherwise the result could be an intolerable climate.

Climatologists are not necessarily pessimistic about the climate, man's effects notwithstanding. William W. Kellogg, a colleague of Schneider's at the Atmospheric Research Center, says the environmental ethic is so strong today that the idea of manipulating the forces that control ice ages is an explosive one. Kellogg said his best guess is that seventy-five to one hundred years from now climatic changes arising from man's activities will be "very evident, especially at high latitudes, unless some natural forces come into play in the opposite direction."

It could mean another ice age, he said, but it also could mean opening up the Arctic to agriculture because of a climate far more favorable than now. Such man-made climatic changes could change people's lives without necessarily being a disaster for mankind, Kellogg said. After all, an ice-free planet, with no permanent ice at the poles, was normal on earth for ninety percent of the last 500 million years.

---

*James Spaulding, a science reporter for more than twenty years, now teaches at the University of California School of Journalism in Berkeley.*



# COPPER, COAL AND CATTLE

*The Rape of the Great Plains: Northwest America Cattle and Coal*, by K. Ross Toole; Little, Brown and Company, Boston, 1976. \$8.95

TODAY, few discussions on energy take place without someone referring to Northern Plains coal, whether the speaker be from the White House, a federal agency, a utility or an oil company. In *The Rape of the Great Plains*, K. Ross Toole, a fourth-generation Montanan and history professor at the University of Montana, looks at the region's proposed and incipient coal development from a Montanan's point of view. Drawing on accounts by early explorers and the experiences of later settlers in the state's era of homesteads, open range and early mining, Toole relates people, government and history to the force of impending coal development. Though the title would lead one to believe the book covers the entire Great Plains region, Toole admits in the introduction that it has a strong one-state bias. Unfortunately, this focus leads him to make chauvinistic and inaccurate statements about the efforts of neighboring states and to ignore the work of environmental groups.

In the context of Montana's history and present-day activities, however, the book is useful as a tool for understanding what coal development means to the state. The outstanding and overriding theme of the text is its historical setting, and the state's early and often unfortunate experiences with mining and agriculture are described with the obvious lesson for today that "A people that forgets its history is doomed to repeat it." The main character is the land itself, which Toole describes as an uncompromising, implacable force:

One of the notable things about the plains is that they have rarely been what people thought they were—neither as bad nor as good, as rich nor as poor, as beautiful nor as ugly, as wet nor as dry, as cold nor as hot. The region has almost always been underestimated or overestimated. It is, and always has been, man's misunderstanding of what the plains were, or were not, that has resulted in periodic tragedies. This is not to say that no one understands the plains or that no one ever has. Those who have and who do understand them have adapted to

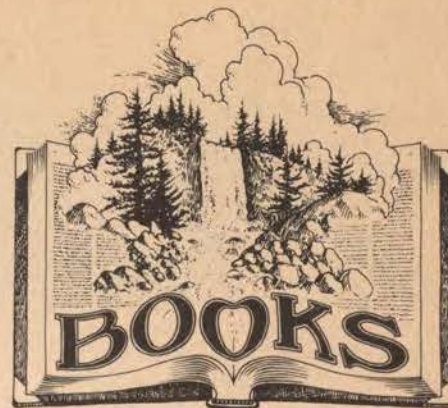
them. It has never been the plains that adapted to man.

Reviewing the reports of early explorers such as Meriwether Lewis, Zebulon Montgomery Pike, John Wesley Powell and others, Toole draws a picture of the plains that shows, despite a variety of interpretations and observations, a few basic themes emerging—water scarcity, drought cycles, valuable highly nutritious forage and a semiarid environment.

Montana's first era of modern economic development was dominated by open-range cattle, homestead farmers and copper mines. The cattle industry, in both its early rise and later decline, offers for Toole a paradigm by which to understand the land's capabilities, the people who depend on it and the means by which they adapted to the plains environment. The state's relatively short history has followed a pattern we see repeated today, when local resources are subject to "exploitation by eastern capital and corporations." The important point that emerged from the rise and fall of the cattle industry was the concept of the land as a limited resource. The range was overstocked when the disastrous storm of January, 1887 struck, and the combination nearly destroyed the industry. According to Toole:

It took an enormous toll in human and animal suffering to bring about an adaptation. The years between 1887 and 1930 were extraordinarily hard ones for the rancher. Herds were reduced from twenty or thirty thousand to two or three thousand. The cowboy became a fencer, a planter and reaper of hay, a builder of sheds and corrals. And only the tough ones remained to adapt.

The second phase of the early range era was the homestead land rush at the turn of the century. A lack of understanding of the land and water resources in the high plains led the federal government to sponsor new farming settlements, promoting farming techniques of the more humid climates of Kansas and Nebraska as suitable for arid western states. Tens of thousands of homesteaders invaded eastern Montana be-



tween 1909 and 1917; towns had barely sprouted when the drought of 1920 struck. "Eleven thousand Montana farms blew away eastward on the edge of the blast-furnace winds of the 1920s." Again, only the tough and more experienced remained, surviving through diversification.

They had dug incredibly deep wells. They had gardens, chickens, milk cows, goats, a few head of meat cattle. They raised alfalfa, beans, potatoes.

When the open range cattle industry collapsed before the turn of the century and when the hard winter of 1886-1887 was over, the cattle that were left were skin and bone. But they were incredibly tough. Call it "natural selection" or what you will, but when the survivors were crossed with the survivors an enormously hardy breed resulted.

It was no different, really, with the people who survived, except that the toughness was not merely dependent on genes but on tradition as well. It will not do to write off this view of the rancher as "romantic." It is too palpably evident to anyone who knew them or knows them. There are few Americans as "traditionalist" as the rancher. There are few so intimately and irrevocably tied to the land.

... Whatever the final revenue Montana may gain from the mining of coal, the process is ephemeral. Agriculture is self-renewing. Far and away it is Montana's leading industry. It is a billion-dollar-per-year industry—and unless we destroy it, it will not be gone in thirty years.

Toole approaches the early history of mining in Montana primarily by discussing the Anaconda Copper Mining Company's influence on the state's legislature and the company's meager economic contribution to the state. Until the last few years, mining companies have had a very favorable tax situation. For example, in 1916, mines grossed \$141 million, but paid only 8.79 percent of the state's taxes. Livestock and farming grossed more than \$135 million in 1916, but paid 42.87 percent of the taxes. Several attempts were made to change this inequity, but they were not successful until 1972, when the Anaconda Com-



Paul S. Conklin

pany's financial position and political influence had plunged to a record low.

In the past, the mineral tax was largely a means of increasing revenues, but today, according to Toole, the state regards taxation as a necessary and legitimate method for controlling mineral developments. Whereas the copper mines are privately owned and have operated with little interference, coal development is and will be promoted and subsidized by the federal government, which owns most of the reserves (federal government, fifty-five percent; Indian tribes, thirty percent; state and private interests, fifteen percent). It seems that regardless of who owns the minerals, the interests of the state of Montana are the last to be considered. In response, the last two state legislatures have passed a Clean Air Act, a Utility Siting Act, a Strip Mine and Reclamation Act, and a coal severance tax. Although Toole considers these actions progress, he warns that "the intensity of the war is undiminished." The stage appears set for a repeat of boom-bust history, but with far graver consequences. Coal strip mining, power plants and gasification plants, as far as we know, are not capable of adapting as the ranchers did to the high-plains environment. Toole explains three key factors that support this conclusion: community impact, water use and/or pollution, and reclamation potential.

The community impacts are spread over numerous areas. Most of the towns are small and any new industrial development can double the population, which would have tremendous financial impact. Agriculture is the mainstay of Montana's rural communities, and a shift to industrial services would damage ranch and farm economies, which could scarcely survive the resulting inflation of prices for goods and labor.

"Ranchers and farmers near Colstrip find 'trespass' more than annoying," Toole writes. "They deeply resent the incursions from the rootless community, teenagers chasing calves with motorcycles, gates left open, strangers wandering around near the houses, cars racing through their meadows."

The sense of community of an established ranch town is also damaged as land speculators play one rancher against another. Surveyors trespass on

private property. Many local merchants and banks, seeing a new and greater source of personal income, are easily "persuaded" of the benefits of coal development, separating them from previous friends. Coal developers deny that large local population increases will occur as a result of their activities, but this pitch is largely public relations and is not based on accurate information.

Coal development also poses many conflicts between various current and potential users of the region's scarce water resources. Just as water has been a limiting factor on agricultural development, it also will be unavailable to the energy industry at the coal fields—without, that is, construction of new reservoirs and aqueducts, and enormous transfers of water from agricultural to industrial use. Otherwise the whole idea of power plants and coal gasification is just one more promotional pipe dream. Toole touches on the legal complications of water use—history of water use, river compacts, Indian water rights, ground water. Though figures can be moved around to show surplus water, few Montanans are convinced—it goes contrary to history.

The debate over whether mined areas can be reclaimed boils down to a simple historical observation: plowing the plains in the homestead era was a flop; reestablishing anything green or usable on a spoil pile will probably be a worse flop. No one knows exactly what will happen, but experience makes the prospect of reclamation look bleak.

Eastern Montana has two Indian tribes, the Crow and Northern Cheyenne. Toole briefly discusses their very different tribal histories and customs and provides an interesting account of their recent experiences with energy companies and the federal government with respect to the coal beneath their lands. Even if one is charitable, the Bureau of Indian Affairs (BIA) and the Department of the Interior come off looking callous and negligent. Agency correspondence reveals both a neglect of duty and misrepresentation of events.

Coming after his thorough and perceptive analysis of the factors bearing on Montana coal development, Toole's final four chapters are disappointing. Although his critical look at the rationale

for western coal development will be useful to those unfamiliar with the region, his discussion of Montana's role in current efforts to control coal development in the region is biased and uncharitable. The chapter entitled "Montanans Fight Back" should have been left out altogether, for it hurts the credibility of the book to the point of making me hesitate to recommend it. In this chapter, for whatever reasons, Toole strays from his previous objective reporting to cast unjust aspersion on the neighboring state of Wyoming and environmental groups.

With all due respect to Montana, which, after eighty years, has enacted a new constitution and many environmental laws, Wyoming, in the space of five years, has superior air-quality standards, a good Industrial Siting Act, many progressive legislators, better water-rights inventories and a greater degree of participation by agricultural organizations. It does lag behind Montana with respect to a coal severance tax and leasing and reclamation laws, but this scarcely seems reason enough for Toole's feisty criticism.

His attack on environmental groups is equally unwarranted. There is no mention of the Sierra Club's suit against the Interior Department over its coal-development program, nor of the Environmental Defense Fund's work on federal water sales or the Natural Resource Defense Council's work on federal coal leasing. All these intense and sophisticated activities strike at the heart of the coal-development issue, federal management of the coal resource. Nothing has strengthened the role of the states as have these legal actions, and this is contrary to Toole's statement that Montana "is essentially going it alone." The Northern Great Plains Resource Program is also passed over without recognizing its significance, as are the Wyoming environmental groups who can claim credit for initiating this federal-state study of coal development. It is important to set these facts down, for otherwise the reader of Toole's book will be badly misinformed about who's doing what about Northern Plains coal development.

The last two chapters are essentially an argument to keep the rural high plains as part of our national heritage. This region has retained values lost by other areas and has a life style and tradition closely associated with the land. Toole says "... that for the much greater part of the two-hundred-year existence of our nation, the most compelling and influential conditioner of our values, our stability, and our national direction was our intimate relationship with and discovery of the meaning of the land."

Laney Hicks is the Sierra Club's Northern Plains Representative.



Robert A. Irwin

### Outings—with a Difference

SUMMER is the season of the Club's wilderness outings, when members have a chance to enjoy the environment they have spent the rest of the year defending. Conducted by local chapters and groups, as well as by the national organization, Club outings not only provide fun and adventure, but help to remind many members of the values that first made them environmentalists. An increasingly large number of outings, however, go further by demonstrating those same values to the community at large. These are outings with an educational, scientific or service-oriented purpose. The national outings have for several years included a variety of specialized trips, many of them devoted to such activities as trail maintenance and wilderness cleanup. A perusal of recent Club newsletters indicates that many chapters and groups are conducting such service trips and other kinds of innovative outings as well. Here are a few examples:

- **Hawaii Chapter**—On August 1-14 about two dozen volunteers, sixteen years and older, will be working on the slopes of Kauai's Mt. Waialeale to restore old trails and control fire brush, a plant pest. In addition to contributing their labor, members will pay a \$45 fee, plus transportation costs. This is just one of the several similar projects of the chapter's Hawaii Service Trip Program. The chapter also runs two year-round special hiking programs: one for high schoolers, the other for students at the University of Hawaii;

- **Sacramento Valley-Sierra Group, Mother Lode Chapter**—An archaeological outing to the Pyramid Lake area in western Nevada was scheduled over the Memorial Day weekend and included visits to ancient Paiute Indian sites;

- **Klamath Group, Pacific Northwest Chapter**—An Earth Day cleanup of the Link River Nature Trail in southern Oregon netted four truckloads of assorted junk, including a kitchen sink and the chassis of a Model T. Repeating a September, 1975, field trip, the chapter has scheduled for early fall a second outing to observe agricultural and range practices;

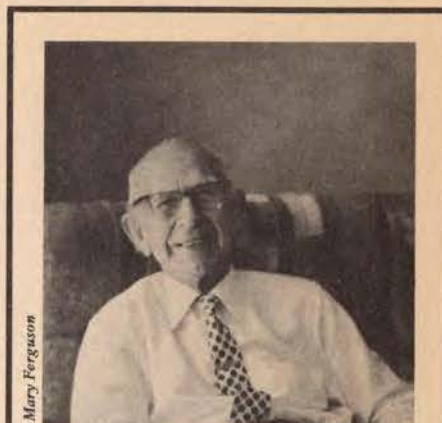
- **Hi-Desert Group, Angeles Chapter**—Shovels, picks and rakes were put to good use over May Day weekend by a work party repairing and maintaining the Manzanita Trail near the South Fork campground in Angeles National Forest;

- **Ventana Chapter**—Work parties are scheduled almost every weekend during the spring and early summer to maintain trails in rugged areas of the Los Padres National Forest. Eighty-five volunteers helped construct one mile of new trail in the Forest of Nisene Marks near Santa Cruz, California on one April weekend;

- **Lunz Group, Joseph LeConte Chap-**

ter—The mountain of trash cleaned off Folly Beach, South Carolina, one Saturday morning by a twenty-five-person anti-litter force provided a telling argument for the bottle bill pending before the state legislature: of the heap of discarded bottles collected, only seven were returnable;

- **San Diego Chapter**—Recently, the chapter hosted a combined conservation conference/trail work party/campfire program in Hawk Canyon in California's Colorado Desert. Members of the Club



Mary Ferguson

### Former Club President, Philip Bernays, Dies at 90

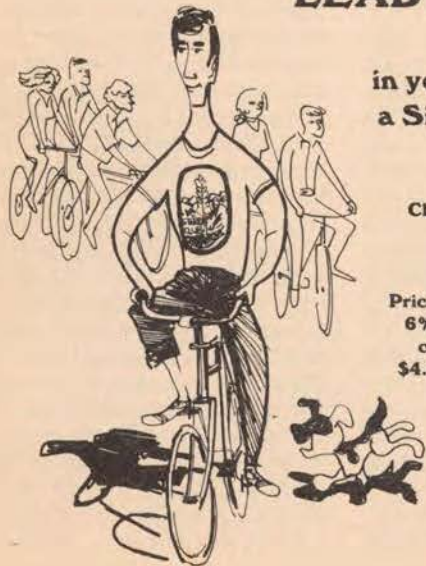
THE number of Club members who knew John Muir was reduced by one on April 24, 1976, with the death of Honorary Vice President Philip S. Bernays, at the age of 90, in Laguna Hills, California. Word of his "running down," as his niece put it, was received at Club headquarters just a few days before he was to be nominated as the Club's sixth Honorary President.

Bernays, a Club member for seventy-one years, helped to found its first chapter, the Southern California Chapter, in 1911, just six years after he had joined the organization. The activist orientation of the present Angeles Chapter is in part the heritage of Bernays' dedication to conserving, as well as appreciating and understanding, the natural world.

A Club director from 1919 to 1953, Bernays served as vice president twice and as president from 1931 to 1933. In an interview in 1968, Bernays said, "I like to think of the Club as a going organization, . . . progressing along the lines of its inception, namely conservation of our natural resources." His contribution to that progress will be remembered.

## LEAD THE PACK

. . . be the first  
in your group to wear  
a Sierra Club T-Shirt



Available from Angeles Chapter, 2410 Beverly Blvd., Los Angeles, CA 90057.  
Sizes: S, M, L, XL.  
Child's size: 8-10 years.  
Price: California only: \$4.00 + 6% sales tax, \$1.00 shipping charge per order. All other: \$4.00, add \$1.00 shipping, no sales tax.

Bulk rates for  
Sierra Club Chapters  
and Groups.

met with officials from the Bureau of Land Management and Anza Borrego State Park (to the west of Hawk Canyon) to discuss mutual problems such as off-road vehicles, mineral rights, utility-line corridors, archaeological sites and user impacts. One possible spinoff of the meeting: formation of an Imperial County Desert Group of the chapter;

• Rochester Group, Atlantic Chapter—An "outings bureau" is being organized to offer various community groups a chance to explore their environment under the leadership of knowledgeable Sierra Club members. The group is lining up leaders to run this special hiking/lecture outing program this summer;

• Pikes Peak Group, Rocky Mountain Chapter—An ambitious Youth Environmental Service Project, which will give each of thirty teenagers ten days of wilderness experience and work during the month of July, is under way. Three crews of ten each will take turns working on various trail, cleanup, and wildlife projects in the Pikes Peak Ranger District of the Pike-San Isabel National Forest, Colorado. The initiators of the project, John Stansfield, group chairman, and Mike Frederick, executive committee member, estimated they would need \$2,500 to do the job. Somehow Frederick was able to round up the money, and then some. **SCB**

ber of women aged 20-29 (the most common childbearing years) will increase ten percent by 1980. This will tend to increase the number of births and the birth rates in future years even if average family size remains constant. The changing factor is the age-structure of the population, that is, the relative number of people in each age category. Similarly, one can estimate deaths by knowing the mortality rates at each age and the age structure.

In the absence of legislative action to change the situation, we can assume that in the future net immigration (the number of legal immigrants, minus the number of emigrants) will continue at its usual level of 400,000 per year. (The 1975 figure of 494,000 resulted from the admission of Vietnamese refugees.)

The item in the *Bulletin* used the Census Bureau's medium projection, which assumes the following: a slight reduction in mortality in the next decades; 400,000 net immigration per year; and a family size equal to the average number of children young women today say they expect to have—2.1. These are the "current trends" used in making projections of population levels and growth rates. Using these assumptions, the Census Bureau predicts 262 million Americans in the year 2000, 300 million in 2025, and a constantly growing population. The corresponding growth rates are .8 percent this year, rising to one percent annually between 1985 and 1990, then gradually declining and reaching .4 percent by 2025. As can be plainly observed from this projection, the U.S. population is nowhere near ending its growth.

Other projections have been prepared with differing average family size and immigration assumptions. The rising number of potential parents, however, a result of the post-World War II baby boom, is an American fact of life and makes achieving the Sierra Club's goal of a rapid end to population growth more difficult. Mr. Buck's question of how we can reduce growth rates further is an important one, and we welcome his participation and that of others in our population program, as we seek to find and implement answers.

One final note: the estimated growth in 1975, based on evaluation of the full year's data, was approximately 1.7 million rather than the 1.8 million originally reported. One should be wary of subtracting a rounded-off estimate of growth from an estimate of population taken to nine places, as Mr. Buck does in the chart accompanying his letter (unstarred numbers). The census taken in 1970, the most accurate count we have of how many Americans there really were, missed several million people; population estimates should always be taken with a grain of salt. **SCB**



## Population Growth

### To the Editor:

On page 34 of the April 1975 issue, you have a relatively short article by Judith Kunofsky about the U.S. population increase for 1975 and a few preceding years. Using the figures you presented, it appears that either our 2025 population will be much greater than the 300 million predicted, or our growth rate will have to change radically.

My population growth chart is presented below, for your information. (Asterisk indicates "info" from the *Bulletin*.)

Year	January 1 population	Growth during year	% Growth during year
1976	215,005,859*	—	—
1975	213,205,859	1.8 million*	0.844
1974	211,605,859	1.6 million*	0.756
1973	210,105,859	1.5 million*	0.714

The chart shows that not only has the population been increasing during these years, but the rate of growth has also been increasing. The increase in rate of growth from 1973 to 1975 is approximately 5.73 percent per year. This would make the 1976 growth rate approximately .892 percent—or just over 1.9 million people.

Assuming a constant annual (com-

pounded) growth rate, our growth rate must drop to 0.682 percent if we are to have only 300 million people by 2025. At 0.8 percent per year, we will reach 300 million in 2017, and 317.7 million by 2025.

I could go on, of course, generating more numbers, but I won't. I agree with the stand of the Sierra Club and others that our fascination with increasing populations should end, and that we should strive for a steady-state population. Right now, it's that unmentioned increase in growth rate that has me concerned—along with a wonder as to how we can turn it around (especially to decrease it to 0.682 percent).

John T. Buck  
Cupertino, California

### Judith Kunofsky responds:

Mr. Buck's questioning of the population figures and projections presented in the April *Bulletin* is quite understandable because space limitations prohibited a full explanation of how a projection is made and what "current trends" are assumed to continue. One cannot validly project future population merely by extrapolating the increase in the annual rate of growth, as he does. Perhaps the following will clarify the situation.

Population growth in a particular year is determined by four factors: births, deaths, immigrants and emigrants. Births are estimated by using two types of information: age-specific fertility rates (i.e. the probability of giving birth in that year if you are a certain age) and the number of women of each age in the year in question. A projection of births is made by assuming a particular value of average family size, apportioning that number of children throughout the reproductive life of any "cohort" (group of women of the same age), then estimating the number of births for a particular year by adding up the births expected for women of different ages. The actual number of births is therefore sensitive to the number of "potential mothers" in the population. In the United States, the num-

# Energy Briefs

## HUD to build solar houses

Five demonstration houses heated and cooled by the sun will be built in California's Central Valley with funds provided by the Department of Housing and Urban Development. Intended for low-income farm workers, the houses will employ an economical system designed by free-lance inventor Harold Hay. His system employs a water-filled "solar pond" on a flat metal roof. Even on partly cloudy days, the sun will heat the water to eighty-five degrees. The collected heat is transferred to the interior through the ceiling and walls. The pond can be covered or exposed by means of a sliding insulation panel, thus allowing regulation of heat absorption and loss. During the winter, the pond is exposed by day to permit solar heating, and covered at night to prevent heat loss. During the summer, the pond is covered by day to prevent heating and allow interior heat to be drawn off by the rooftop water; at night, the pond is exposed to allow collected heat to radiate into the cool night air.

## "Total Power System" in the works

The Harvard University Medical Center in Boston is starting to build one of the nation's first "total energy plants," a facility that will break the local utility company's monopoly on production of electrical energy. The \$54-million plant will generate enough electricity to serve a medical community whose needs are equal to a city of 35,000. It will be designed to recapture virtually all of its "waste" heat and transform it into hot water, central steam heating and chilled water for air conditioning. Meanwhile, in Pasadena, California, a downtown redevelopment area is being studied intensively as a site for a similar system.

## Federal spending on solar research remains uncertain

In mid-May, the House of Representatives voted by an overwhelming margin to increase the budget authorization for solar-energy research programs. The 321-to-68 vote came on an amendment by Representative George Brown (D-California) to the 1974 act authorizing the Energy Research and Development Administration. The amendment increases federal support from the \$229.2 million recommended by the Science and Technology Committee to \$345.4 million, with the money to be equally divided between research on solar-electric conversion and solar heating and cooling. Whether the Appropriations Committee will actually provide the funds authorized by the entire House remains uncertain.

## ERDA to promote energy conservation

The effort to conserve energy is not catching on the way environmentalists had hoped. As the recession has eased, sales of large cars have increased; current gasoline consumption is seven percent above 1975 levels. Although the administration's top energy-conservation specialist, Roger Sant, left the Federal Energy Administration in May because of the resistance he encountered at the White House, there are signs that the government may be ready to commit itself more seriously to conservation measures. In what environmentalists hope will prove to be a significant shift of emphasis, the Energy Research and Development Administration claims it now plans to give "the highest priority" to finding more efficient ways to use energy, though it will continue to promote development of new domestic energy supplies. The agency's shift is attributed to pressures from Congress and various public organizations, while the well-lubricated oil lobby argues that enormous federal subsidies for energy-resource development are necessary to meet growing demand.

## U.S. compares unfavorably with West Germany in energy use

A report prepared by the Stanford Research Institute for the Federal Energy Administration says that the United States consumes twice as much energy per capita as West Germany. The report attributes this difference only partly to higher per-capita income in the United States. For example, Americans use twice as much energy in their homes. The average West German heats only forty-five percent of his home, and the report suggests that new homes in this country be designed to permit greater temperature control for individual rooms. Another factor cited in the report is that about twenty-nine percent of West Germany's electricity is generated by organizations for their own use, compared to six percent for the United States.

## Sweden abandons nuclear power

Sweden recently announced that it intends to abandon further development of nuclear power and will work to achieve zero growth in energy use by 1990. This decision, a radical departure from Sweden's former policy, offers a powerful example for other nations. Just a year ago, Sweden's nuclear-power program was one of the most intensive in the world. Under the new policy, nuclear reactors now under construction will be completed, but no new ones will be built. The country's annual rate of growth in energy consumption is expected to fall to two percent in a few years. During the transition period, there will be a moderate increase in hydroelectric development and greater state intervention in the oil business. A range of measures to stimulate energy conservation, including an increased energy tax, will be implemented.

## Discover how 15,000 American places got their names

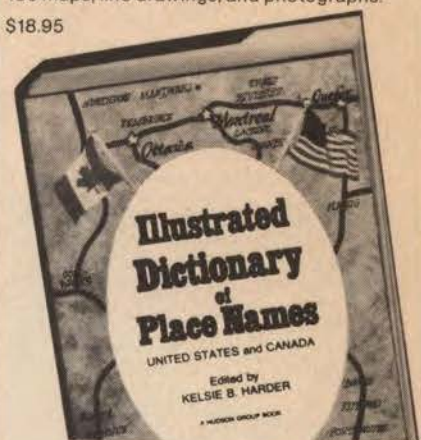
Here is the most detailed reference source of its kind ever published! It clearly defines 15,000 place names in North America—villages, towns, cities, counties, states and provinces.

You'll also find parks, historic sites and major land and coastal features—bays, capes, gulfs, islands, lakes, rivers, forests, mountains, and valleys.

To turn the pages of this volume is to embark upon an historic and linguistic journey across our continent.

Over 600 pages, profusely illustrated with 186 maps, line drawings, and photographs.

\$18.95



At your bookstore, or write:  
**Van Nostrand Reinhold**

450 West 33rd Street New York, N.Y. 10001

## The Gentleman's Jean by the Chesapeake Bay Trading Co.



Unconditional Money-back Guarantee

Now, you too can own a pair of jeans with the look and the styling that's become so popular today. Our jeans are specifically designed for the adult figure and you will find them comfortable the instant you put them on. They are made of very soft pre-shrunk polyester and cotton denim. They are machine wash 'n dry and

never need ironing. From the golf course to the movies to a back yard barbecue, you will be at home in your new gentleman's jeans. \$16<sup>95</sup> pp.

**Special Offer:** Buy two pair and save. Simply deduct \$1.00 for each additional pair you order.

## Chesapeake Bay Trading Co.

P.O. Box 5879, Pikesville, Md. 21208

**Colors:** Denim blue, faded blue, camel, white, natural, brown

**Sizes:** 30, 31, 32, 33, 34, 36, 38, 40, 42 Color \_\_\_\_\_

Prs. \_\_\_\_\_ Size \_\_\_\_\_ Length \_\_\_\_\_ Color \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Check  or Charge: Mastercharge  BankAmericard

Card # \_\_\_\_\_

InterBank# \_\_\_\_\_

Exp. Date \_\_\_\_\_

Signature \_\_\_\_\_

Send me free brochure.

SC 81

**Wilderness river trips  
in late summer  
and in autumn.**



Solitude returns to the wild rivers, with waters at their clearest, rapids at their most exciting, beaches big and empty, days calm and golden, wildlife emboldened and active. We run the Salmon, and Hell's Canyon of the Snake, in September, Green River in October, Rio Grande in November. Send for our free brochure.

Martin Litton's  
**GRAND CANYON DORIES**  
R.O. Box 5585, Stanford, California 94305

It was close—  
Now it's Ideal!

The  
**Danner**

6490



**BACKPACKER 4 called  
it "close to ideal,"**

superior to 22 other brands of hiking shoes they tested. So we made it ideal. We use double riveted lacing hooks and new, larger D rings with special washers. All rivets are covered with the soft, full leather lining. Tongue and ankle are padded. One-piece upper, leather insole, and Vibram® Yellow Label Montagna sole and heel.

**Our Finest Lightweight  
Trail Boot... Now it's Ideal!**

Write for  
Free Catalog  
and Dealer's  
Name

**DANNER Shoe Mfg. Co.**  
P.O. Box 22204 Dept. S  
Portland, OR. 97222

# News

## House washes out Clean Water Act

A bill which disastrously amends the Clean Water Act passed the full House of Representatives 339 to 5 early last month. As passed, the bill amends Section 404 of the Act by severely limiting Corps of Engineer jurisdiction for dredge and fill permits, leaving 85 percent of the nation's wetlands unprotected. Further, the bill delegates to state governments authority to construct sewage-treatment plants, without also providing adequate environmental and fiscal safeguards. Termed a "floating disaster" by Sierra Club Washington Representative Rhea Cohen, the House bill will go to conference with a Senate bill that, as it stands now, merely extends funding for the Clean Water Act's programs for another year. Although the Senate Public Works Committee contemplates amending their bill on the Senate floor by adding an allocation formula for the funds, no other Senate amendments are presently anticipated. Sierra Club members are urged to write their senators (Senate Office Building, Washington, D.C. 20010) asking them to reject the House amendments and support only funding extension for the Clean Water Act.

## "Endangered American Wilderness" bill introduced

Preservation of de facto wilderness in western National Forests was given a tremendous boost recently with the introduction of the "Endangered American Wilderness Act of 1976." This omnibus bill, introduced by Senator Frank Church and Representative Morris Udall, brings into one package key de facto wilderness proposals, each involving National Forest areas seriously threatened by development. The new bill will provide wilderness protection for eighteen areas in nine western states, encompassing more than 1.5 million acres. Among the well known areas are the West Chichagof-Yakobi Wilderness in the Tongass National Forest, Alaska; French Pete in Oregon; the "Golden Trout Wilderness," California; and the "Lone Peak Wilderness," Utah. The bill also proposes a number of wilderness study areas for additional boundary review, including Holy Cross Wilderness Study Area in Colorado, and the McGregor-Thompson Area in Montana. Citizen discontent with Forest Service planning procedures and decisions was cited by both Church and Udall as a key factor leading to their development of the joint proposal. Sierra Club members are urged to write their Senators and Representatives asking that they take this opportunity to demonstrate their support for American wilderness by signing on as cosponsors of this legislation.

## Interior Department unveils strip-mine regulations

Secretary Thomas Kleppe recently unveiled new Interior Department regulations on strip mining. He claimed they compare favorably with provisions of the stalled strip-mine bill, H.R. 9725. The regulations are designed to pave the way for additional federal coal leasing in the Northern Great Plains and are "woefully inadequate" according to environmentalists and other proponents of the legislation. The most glaring weaknesses are: (1) strip mining of federal coal would be allowed to proceed without the consent of private land owners; (2) no steep-slope limitations for mining or reclamation are provided; (3) no provision exists for the designation of areas unsuitable for surface mining; (4) public participation in the approval of mining plans is highly restrictive; (5) provisions to protect groundwater quality are unduly lax and, in fact, can be waived entirely; (6) the variance procedures carry the potential for capricious administration; (7) the protection of deep mines from impinging strip mining is wholly inadequate; and (8) the potential for off-site damage (beyond the bonded permit area) is not sufficiently addressed. Meanwhile, in Congress, a new strip-mine bill (H.R. 13950) was introduced by Representative John Melcher (D-Montana) and twenty other members of the House Interior Committee. The new bill is a slightly revised version of H.R. 9725, now deadlocked in the House Rules Committee.

## A Corps "compromise" for Locks and Dam 26

The U.S. Army Corps of Engineers has announced a we'll-get-our-half-now, you'll-lose-your-half-later "compromise" that conservationists feel will mean the end of the Mississippi River as a multiple-use resource. The Corps is proposing to quadruple the amount of barge traffic on the river at a taxpayer-supported cost that would ultimately be over five billion dollars. The first step of this scheme is the proposed replacement and expansion of Locks and Dam 26 at Alton, Illinois. Blocked by a Sierra Club lawsuit and mounting citizen opposition in its original intent to build two new "superlocks," the Corps' "compromise" proposal would allow for the building of one lock now and a second one later when it becomes "necessary." The Senate Public Works Committee will hold hearings on whether or not to authorize the Corps' proposal. At the same time, it probably will also consider legislation proposed by Senator Gaylord Nelson (D-Wisconsin), S. 3425, requiring additional independent study before any commitment to greatly expanded barge traffic can be made. The Sierra Club strongly supports the Nelson bill because it is convinced that expansion of Locks and Dam 26 is environmentally unacceptable, would be detrimental to our national transportation system, and represents an unwise investment of public dollars. Club members are urged to write their senators in support of S. 3425.

# News

## More attempts to weaken 1975 Clean Air Amendments

Environmentalists are preparing to combat a major lobbying effort to weaken further the already unsatisfactory Clean Air Amendments of 1975. Both the House and Senate versions seriously compromise current clean-air standards, but at least they contain explicit statutory protection for National Parks and Wilderness Areas from air-quality deterioration. The Ford Administration, U.S. Chamber of Commerce, public utilities and several industries will attempt to eliminate this provision when the amendments come before the House in late July. The Senate may act on the amendments before then.

Senator Frank Moss (D-Utah) has proposed to strike the provision altogether; a similar attempt is expected in the House. If successful, National Parks and Wilderness Areas would be covered only by current regulations set by the Environmental Protection Agency, under which the air quality of even the most pristine regions would be allowed to deteriorate to the level of the national ambient air quality standards set for urban areas.

Another weakening amendment expected to be introduced in the House would eliminate the requirement that all new "stationary sources" use the Best Available Control Technology (BACT) to reduce emissions. If eliminated, states attempting to enforce strong anti-pollution regulations would be vulnerable to threats from industries to locate in states whose standards are less restrictive.

Environmentalists also oppose an amendment by Representative John Dingell (D-Michigan) to eliminate standards for nitrogen oxides and freeze those for hydrocarbons and carbon monoxide at current levels for five years. Instead, they support an amendment by Henry Waxman (D-California) to require that national standards for 1978 and 1979 be those already met in California by 1976 vehicles. Waxman's amendment would also require that even stricter standards go into effect in 1980.

Environmentalists also support Representative Andrew Maguire's (D-New Jersey) amendment to provide greater protection for National Monuments and Recreation Areas and to eliminate a provision that would allow significant deterioration in current clear-air regions.

It is important that congressmen continue to receive letters opposing attempts to weaken further the 1975 Clean Air Amendments, and supporting the amendments offered by representatives Waxman and Maguire. Because consideration of this legislation has been often delayed, please continue to communicate with your congressmen until action is finally taken.

## Court denies NRC's plutonium recycling plans

The Nuclear Regulatory Commission (NRC) cannot proceed to license the use of plutonium fuel in the United States until it completes legally required reviews, a district court of appeals ruled recently. In response to a suit brought by six public interest groups including the Sierra Club, the ruling reversed the NRC's original decision made last November to grant "interim licenses" to the nuclear-power industry to reprocess and use plutonium. The court's decision applies to the licensing of plutonium use in both reprocessing plants and reactors that use reprocessed fuel.

## Protecting the New River once and for all!

The battle to save the New River in North Carolina is moving toward a climax in Congress. If successful, H.R. 13372 and S. 158 would protect the New River once and for all from the threat of dams, reservoirs and power-generating facilities. Legislation to place the New in the national Wild and Scenic Rivers System would override an appeals court decision to allow American Electric Company to construct a dam that, according to environmentalists, is unnecessary and would destroy the river and surrounding valley forever. The appeals court decision overruled Secretary of the Interior Kleppe's administrative action of only weeks earlier that protected the river. In the Senate, S. 158 is awaiting floor action after a favorable Interior Committee vote of seven to four. The House Bill sailed through the Interior Committee 15-2, and at press time was awaiting action from the Rules Committee. In 1974, this committee killed a similar bill by denying it a "rule," without which a bill requires a two-thirds vote of the full House to pass. Thus, the 1974 bill lost despite a majority vote of 196-181.

## Forestry legislation delayed

At press time, the full Senate had taken no action on the forestry legislation reported out of the Senate Interior Committee in mid-May. Conservation amendments to S.3091 will be offered on the floor, possibly as late as early this month, by Senator Jennings Randolph (D-West Virginia), author of original Club-supported legislation, and Dale Bumpers (D-Arkansas). There may still be time to influence your Senators. For an update, contact your local Sierra Club office, or the Coalition to Save Our National Forests, 1425 H Street, N.W., Room 714, Washington, D.C. 20005, 202-638-1424. No action will take place in the House until after the final Senate vote.

## House-Senate Conference on Land and Water Conservation Fund

The final round of action on one of the most important bills before Congress this year is now taking place. Differences between the House (H.R. 12234) and Senate (S. 327) versions of the Amendments to the Land and Water Conservation Fund (LWCF) are presently being ironed out by a Conference Committee. Conservationists are urging conferees to: (1) support an annual authorization level of \$1 billion; (2) not allow LWCF money to be used for indoor facilities; (3) increase matching ratio to encourage certain kinds of land acquisition; (4) increase funding for national forest wildlife habitat and refuges; and (5) support funding of \$150 million for historic preservation.

## DESERT NOTES

Reflections in the Eye of a Raven

by  
Barry Holstun Lopez

A contemplative journey into deserts  
— real and imagined — where life  
unexpectedly blooms.

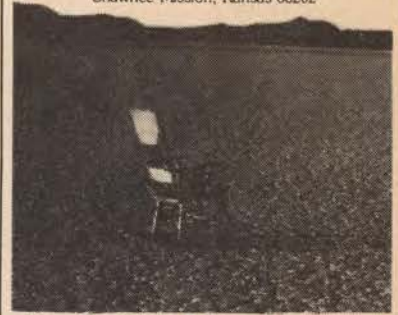
"an elegant statement" —Audubon

"A magic evocation, Castaneda purged  
of chemistry and trappings"

—Publishers Weekly

\$5.95

Sheed Andrews and McMeel, Inc.  
6700 Squibb Road  
Shawnee Mission, Kansas 66202



Now Available At Your Bookstore

## REI's versatile Rotondo

\$52 postpaid

Raichle



A tough hiking and light climbing boot for men and women. Fully lined and flexible at the ankle with Vibram® soles. Made of reverse leather for better waterproofing. Average height 6½". Men's sizes 6-13; N, M, W. Women's sizes 3-9; XN, N, M. (Our full-color catalog included with this purchase.) Annual money-back dividend to Co-op members.

Shop REI in Seattle and Berkeley. Use coupon below or call toll free (800) 426-0351.

Enclosed is my check or money order for \_\_\_\_\_ pair(s) of Raichle Rotondo boots at \$52.00 postpaid.

Men's size(s) \_\_\_\_\_  
Women's size(s) \_\_\_\_\_

Send tracing of foot in sock.  
Offer expires March 15, 1977.  
Add sales tax for California and Washington deliveries only.

I want to be a MEMBER, enclosed is \$2.00.  
 Please send me FREE color catalog only.

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_  
STATE \_\_\_\_\_ ZIP \_\_\_\_\_



SB-7-RB

Recreational Equipment Inc.  
"The Original Outdoor Co-op—Est. 1938"  
P. O. Box 22090, Seattle, WA 98122

# ALASKA:

## Glacier Bay National Monument and mining

JACK HESSION

On June 8, the full House Interior Committee voted 22-19 to leave approximately 530,000 acres of Glacier Bay National Monument open to the mining laws.

The committee's action came as part of its vote on a bill to prevent new mining entry in six existing National Park System units. In Alaska, Mt. McKinley National Park and Glacier Bay National Monument are open to the mining law of 1872. Under the committee's bill as reported to the entire House, McKinley would be completely closed to new entry, as would all but the outer coast of Glacier Bay.

This outer coast, however, contains an estimated twenty-three percent of the monument's wildlife habitat. It has, for example, the densest concentration of Alaska brown bear in the monument. Wolves and peregrine falcons are present, as well as numerous marine mammals.

Scenically, the outer coast is one of the most spectacular areas in a monument internationally famous for its stupendous scenery. The Fairweather Range rises abruptly from the forested coastal plain and beaches to culminate in 15,300' Mt. Fairweather.

Currently, the coastal plain and beaches are vulnerable to placer- and dredge-mining for gold (claims already are on file) and possibly for large-scale nickel-copper mining.

Earlier this season, the Senate, led by Senator Lee Metcalf (D-Montana), turned aside (52-33) an amendment by Alaska Senators Ted Stevens (R) and Mike Gravel (D) to leave the western watershed open to new mining. But in the House Interior Committee, Representative Don Young of Alaska was able to muster enough support from such opponents of conservation efforts as Representative James Santini (D-Nevada), Steven Symms (R-Idaho) and Sam Steiger (R-Arizona), plus enough proxies to carry the day.

But because of the close committee vote, an amendment on the floor to close all of Glacier Bay stands a good chance of passing, if conservationists let their representatives know that they want the monument to have full protection. Please write to your representative and ask for support of the Seiberling amendment to delete the exemption for the outer coast. A vote on the House bill is expected during the last week of July or first week of August.



*Mt. Fairweather and the Fairweather Glacier, with the Pacific Ocean in the foreground.*

*The coastline northwest of Cape Spencer is typical of the shore in the monument's southwest corner.*



Photos by C. V. Janda, National Park Service



# OFF-ROAD MENACE



Robert Berry

"Hare and Hound" race run illegally through the Mojave Desert reserve that is set aside for the protection of the Desert Tortoise, a threatened species.

ROBERT C. STEBBINS and NATHAN W. COHEN

*"The grass is rich and matted, you cannot see the soil. It holds the rain and the mist, and they seep into the ground, feeding the streams in every kloof. It is well-tended, and not too many cattle feed upon it; not too many fires burn it, laying bare the soil. Stand unshod upon it, for the ground is holy, being even as it came from the Creator. Keep it, guard it, care for it, for it keeps men, guards men, cares for men. Destroy it and man is destroyed."*

Alan Paton, 1948  
*Cry the Beloved Country*

UNDER the growing pressure of people and expanding technology the wildlands of the earth are steadily disappearing. We appear to be headed for complete domestication of the planet with all the grave responsibilities and risks that entails. What chance is there that we can change our course? How much concern is

there for the myriad life forms, tested and tried over millions of years of evolution, whose fate is now in our hands? How well do we understand that our future lies closely bound to theirs?

The growth of widespread ecological concern in this country over the past two decades is cause for optimism. Concurrent trends, however, such as the rapid increase in the use of off-road vehicles (ORVs) in recent years, clearly indicate that we still have a long way to go before environmental consciousness permeates all strata of society. The favored arena for ORVs is the natural countryside, the abode of wild creatures large and small, and this form of recreation is now found in virtually all affluent societies.

Whatever one may feel about the callous disregard for the wildlands of the earth by faceless enemies such as

careless government, big business or industry, with the ORV we find ourselves at the citizen level—a face-to-face encounter between the individual and the wild countryside. The way the ORV is used is a measure of the understanding and degree of concern for the land and its wildlife that exists in the mind and heart of the individual rider. He is presently little helped by the media. Television commercials, billboards and other forms of advertisement tell him what he is doing is all right: a subtle process of conditioning is taking place.

How serious is the ORV problem? My colleagues and I, who have studied it extensively, regard it as very great. The large number of vehicles (more than seven million in the United States), the rapidity with which they can cause damage, and a growing atti-

## Californians Favor Protecting the Desert

A recent survey in California indicates that state residents are concerned about protecting California deserts. The Field Research Corporation, which conducted the survey for the Bureau of Land Management, found that:

(1) A surprisingly high 31.6 percent of Californians eighteen and over visited the deserts at least once in the past year and spent, on the average, about seven and a half days there;

(2) The most popular recreational activities were sightseeing and camping, followed by picnicking, fishing, photography and hiking. Less than seventeen percent were interested in motorcycle "riding or play" and less than ten percent in motorcycle racing;

(3) From a list of twelve priorities for the desert, respondents chose as most important *more protection for wildlife, ecology and historic sites* and *more control over recreational and other public uses*. More motels and restaurants and more ORV areas were given lowest priority.

tude that ORV driving is a legitimate form of recreation are cause for major concern. In recent years, we have personally witnessed ORV damage in Australia, Canada, Panama and the United States. Over the past three years, we have given increasing attention to the problem in California, and we present here some recent observations made in this state.

In the past decade, motorcycle trails in natural environments along Cali-

fornia roadways have increased manyfold, and the rate of scarring continues to accelerate. The state's Department of Parks and Recreation estimates there may now be as many as 1.5 million ORVs in the state. The ORV trail network on the grass-covered hills southwest of Gorman in Los Angeles County (see map) is now so extensive it can be seen from an altitude of over 30,000 feet. Disruption of the hard, nearly barren stony "pavements" of

the desert can leave marks that persist for hundreds, perhaps thousands, of years. ORVs are damaging the natural pavements of our deserts. How long will the marks last and the soil, laid bare, blow in the wind?

Even if ORVs are eventually more effectively controlled, some of the present marks may last for decades because of compaction and erosion. Damage to soil structure in some soils severely impairs plant growth. Parker and Jenny (1945, *Soil Science*, 60) found that near Riverside, California, soil with a good stand of herbs lost its structure when it was disced and traversed by a tractor for several hours. The soil became flour-like and blew in the wind; the tractor tracks caused severe compaction. In both tractor portions and disced portions, water would not penetrate and seeded mustard plants failed to grow. It took seven years of seeding mustard and irrigating annually until water infiltration improved and plant growth was restored. Compaction, even as little as ten percent, can destroy the life and "architecture" of soils. The "bearing strength" of soils, a measure of compaction, has commonly reached levels of 2,000 pounds per square inch and greater on heavily used motorcycle tracks, yet a strength of only 300 pounds is sufficient to interfere greatly with some plant-root growth. The soils and vegetation of arid lands are especially vulnerable to ORVs.

On annual trips from Berkeley, California, to Yuma, Arizona (April 24-30, 1975 and May 1-8, 1976), we plotted the location of ORV scars seen from our moving vehicle and we classified them as slight, moderate or

*Continued on page 36*

# Living Trophies

## A Shocking Look at the Conditions in America's Zoos.

**Peter Batten**

former director of the San Jose Zoological Gardens

What goes on in America's zoos shouldn't happen to a dog.

"Eye-opening and dismaying... descriptions of many creatures penned in too-small quarters, others living in filth or improperly fed." — *Publishers Weekly*

"Recommended for all communities with zoos." — *Library Journal*

"Strikingly important"

— Margaret Millar and Ross MacDonald

68 photos \$9.95

**T. Y. CROWELL**

666 Fifth Avenue, New York, New York 10019



### Club to Publish *ORV Monitor*

The Sierra Club has been offered the opportunity to take over publication of the excellent bimonthly newsletter, *The ORV Monitor*, from The Environmental Defense Fund, which established it. Interim funding has been found to resume publication for a few issues; however, a long-term, stable base of support needs to be identified and secured before continued publication of the *Monitor* can be assured. Readers of the *Bulletin* who are concerned about ORVs should write to the Sierra Club Conservation Department, 530 Bush St., San Francisco, CA 94108.

# You can help save Maria Pastora for \$16 a month. Or you can turn the page.

Maria Pastora smiled for the camera. But her smile does not come easily. Because she lives in poverty, as does the rest of her tribe. Once this proud Indian civilization roamed the foothills of the Andes. Now, they are a few thousand forgotten people. Maria Pastora's home is one room. A hut of thatch, mud, and board. Seven people once lived there. But Maria's father died. And two infants couldn't hold on to life. Maria's mother farms a muddy half-acre alone now. Some corn, some beans. Never enough. Yet Maria Pastora smiled for the camera.

For \$16 a month, through Save the Children Federation, you can sponsor a child like Maria Pastora. And give her the things she must have to keep her body, mind, and spirit alive. Combined with money from other sponsors, your \$16 will help the people of Maria's valley. To reclaim land for desperately needed food. Provide health, nutrition, and education programs. And stop the physical and cultural disintegration of her tribe. In short, help her people help themselves. With a hand up, not a handout. For this is what Save the Children has been all about since 1932.

For you—educated, involved, and in touch with your own heart—there are many rewards. Correspond with a child. Receive a photo and progress reports. Reach out to another human being. That's how Save the Children works. But without you it can't work. So please: Clip this coupon and mail it today. Now you can turn the page.

Save the Children Federation is indeed proud of the handling of its funds. An annual report and audit statement are available upon request. Member of the International Union for Child Welfare and the American Council of Voluntary Agencies for Foreign Service. Contributions are income tax deductible.

I wish to contribute \$16 a month to sponsor a  boy  girl  either

**Where the need is most urgent**

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Appalachia (U.S.)  | <input type="checkbox"/> Indian (Latin America) | <input type="checkbox"/> Korea              |
| <input type="checkbox"/> Bangladesh         | <input type="checkbox"/> Colombia               | <input type="checkbox"/> Lebanon            |
| <input type="checkbox"/> Colombia           | <input type="checkbox"/> Indian (U.S.)          | <input type="checkbox"/> Mexico             |
| <input type="checkbox"/> Dominican Republic | <input type="checkbox"/> Inner Cities (U.S.)    | <input type="checkbox"/> Rural South (U.S.) |
| <input type="checkbox"/> Honduras           | <input type="checkbox"/> Israel                 |   |

Enclosed is my first payment:

- |   |   |
|---|---|
| <input type="checkbox"/> \$48 quarterly | <input type="checkbox"/> \$96 semi-annually |
| <input type="checkbox"/> \$16 monthly   | <input type="checkbox"/> \$192 annually     |

Instead of becoming a sponsor, I am enclosing a contribution of \$ \_\_\_\_\_

Please send me more information.

NAME \_\_\_\_\_ TEL. NO. \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

David L. Guyer, Executive Director

**SAVE THE CHILDREN FEDERATION**

Westport, Connecticut 06880

SCB 7-8/6



Robert Stebbins



Robert Stebbins

Creosote bush habitat in the Desert Tortoise Reserve before and after one ORV race involving some 700 motorcycles. This track, extending some six miles, will probably remain for decades.

#### ORVs (Continued from page 34)

severe. Most of the scarring has occurred in the last six years. Since these observations were made while traveling (see map for route) and were incidental to other objectives, some marks may have been overlooked. Only those readily seen from the road were included. Our results, then, do not indicate possible maximum damage.

We find the growing incidence of ORV damage truly alarming, and on future trips intend to monitor further changes along this route. We urge others to record damage elsewhere so that the extent of scarring, its rate of increase, and the recovery capacity of the countryside can be determined. Many roadsides throughout the United States now bear the marks of ORVs. One wonders how many more ugly scars lie beyond, less readily seen, in the hinterlands of America?

General Patton's training area near Vidal Junction, in the eastern Mojave Desert, California. Jeep and tank tracks were made in the 1940's.



Howard Wilshire

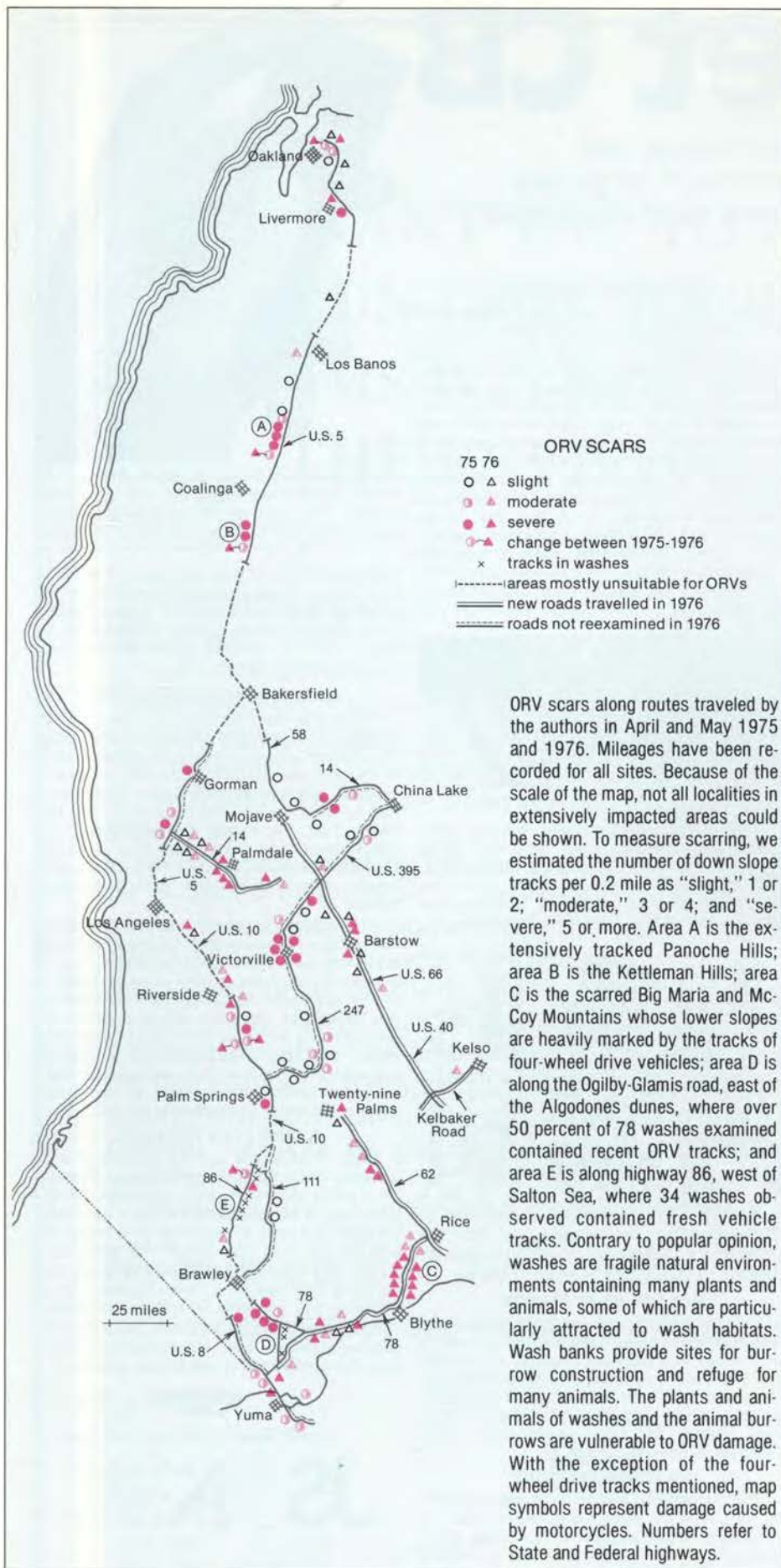
Unfortunately, the damage goes beyond marring the scenic beauty of the landscapes. Many of the compacted and eroded soils will require many years for recovery. Weeds intrude along vehicle routes, and resident animals are killed or driven away. Most wild animals die when forced into unfamiliar terrain.

Even assuming some limited capacity for an ORV area to recover, there is little prospect that this will happen because when an area is penetrated by ORVs, use tends to increase. If an area is "rested" and some plant growth returns, resumption of ORV use soon eliminates replacement vegetation, and soil degradation continues. The formation of an inch of topsoil requires decades to hundreds of years. In the desert, a once-damaged, now-protected, area will take centuries to recover, if it can ever do so. Indian trails and wagon tracks of the last century can still be seen.

It is often argued that although ORVs unquestionably damage the natural environment they affect only a small percentage of the total, and the recreational values derived are worth the loss. Unfortunately, ORV drivers are often drawn to areas that are biologically rich, scenic and of great appeal to the non-ORV public. Archaeological sites, fossils and rare isolated populations of wild plants and animals—some of them classed officially as "endangered"; others not yet found and described—are threatened. In the desert, ORVs are steadily

destroying (essentially for the foreseeable future) some of the most attractive and fragile natural areas. They unintentionally drive away other users who are afraid to walk where they are, who are disturbed by ORV sights and sounds or who agonize over the environmental destruction. Near homes in suburban areas, ORVs are disturbing the small patches of native flora and fauna found in the remaining wild sections of the surrounding countryside. Such wild remnants are the only direct contact some people have with the natural world and should be protected against destructive use. They enrich the suburban environment with bird and other animal life, provide areas for nature study and nonvehicular recreation and offer a refreshing break in the monotony of an increasingly artificial and mechanized world. They promote the growth of the conservation ethic and the development of future biologists and environmentally concerned laymen. Must they now be lost, by default, to ORVs? Are ORVs to be allowed to ride roughshod over the hard-won gains in ecological awareness that have been made over the last decades? As we destroy the land, we destroy ourselves.

Robert C. Stebbins is professor of zoology and curator of herpetology at the Museum of Vertebrate Zoology of the University of California, Berkeley. Nathan W. Cohen is a research associate in herpetology at the Museum of Vertebrate Zoology.



ORV scars along routes traveled by the authors in April and May 1975 and 1976. Mileages have been recorded for all sites. Because of the scale of the map, not all localities in extensively impacted areas could be shown. To measure scarring, we estimated the number of down slope tracks per 0.2 mile as "slight," 1 or 2; "moderate," 3 or 4; and "severe," 5 or more. Area A is the extensively tracked Panoche Hills; area B is the Kettleman Hills; area C is the scarred Big Maria and McCoy Mountains whose lower slopes are heavily marked by the tracks of four-wheel drive vehicles; area D is along the Ogilby-Glamis road, east of the Algodones dunes, where over 50 percent of 78 washes examined contained recent ORV tracks; and area E is along highway 86, west of Salton Sea, where 34 washes observed contained fresh vehicle tracks. Contrary to popular opinion, washes are fragile natural environments containing many plants and animals, some of which are particularly attracted to wash habitats. Wash banks provide sites for burrow construction and refuge for many animals. The plants and animals of washes and the animal burrows are vulnerable to ORV damage. With the exception of the four-wheel drive tracks mentioned, map symbols represent damage caused by motorcycles. Numbers refer to State and Federal highways.

# CAMP 7

**The Arete**  
 ... is a slim, highly compact, lightweight down bag designed for those who are extremely weight and size conscious. It has the high quality of design and construction you should expect in every Camp 7 bag. Total weight ... 2 lbs. 5 ozs. Stuff sack size ... 5' x 18". Outershell ... 1.5 oz. ripstop nylon (Ken Down®FR and Du Pont ZE PEL® treated for flame retardency and water repellency). Insulation ... 20 ozs. prime duck down. Lifetime guarantee ... you bet! Catalog ... free on request.

Dept. SC, 802 S. Sherman, Longmont, Colorado 80501

**This man lives your wildest dreams**

# A WORLD OF MY OWN

**Adventure and Personal Renewal in the Wilderness by Mike Tomkies**

A writer leaves the urban trap for a challenging outdoor odyssey. \$9.95

**READER'S DIGEST PRESS**  
 Distributed by T. Y. Crowell  
 666 Fifth Avenue, New York, N.Y. 10019

# Pocket CB

*New integrated circuit technology and a major electronic breakthrough brings you the world's smallest citizens band transceiver.*



*The PocketCom measures approximately 3/4" x 1 1/2" x 5/8" and easily fits into your shirt pocket. The unit can be used as a personal communications link for business or pleasure.*

## SMALL ENOUGH FOR YOUR POCKET

Scientists have produced a personal communications system so small that it can easily fit in your pocket. It's called the PocketCom and it replaces larger units that cost considerably more.

## MANY PERSONAL USES

An executive can now talk anywhere with anybody in his office, his factory or job site. The housewife can find her children at a busy shopping center. The motorist can signal for help in an emergency. The salesman, the construction foreman, the traveler, the sportsman, the hobbyist—everybody can use the PocketCom—as a pager, an intercom, a telephone or even a security device.

## LONG RANGE COMMUNICATIONS

The PocketCom's range is limited only by its 100 milliwatt power and the number of metal objects between units or from a few blocks in the city to several miles on a lake. Its receiver is so sensitive, that signals several miles away can be picked up from stronger citizens band base or mobile stations.

## VERY SIMPLE OPERATION

To use the PocketCom simply turn it on, extend the antenna, press a button to transmit, and release it to listen. And no FCC license is required to operate it. The PocketCom has two Channels—channel 14 and an optional second channel. To use the second channel, plug in one of the 22 other citizens band crystals and slide the channel selector to the second position. Crystals for the second channel cost \$7.95 and can only be ordered after receipt of your unit.



*The PocketCom components are equivalent to 112 transistors whereas most comparable units contain only twelve.*

## A MAJOR BREAKTHROUGH

The PocketCom's small size results from a breakthrough in the solid state device that made the pocket calculator a reality. Mega scientists took 112 transistors, integrated them on a micro silicon wafer and produced the world's first transceiver linear integrated circuit. This major breakthrough not only reduced the size of radio components but improved their dependability and performance. A large and expensive walkie talkie costing several hundred dollars might have only 12 transistors compared to 112 in the Mega PocketCom.

## BEEP-TONE PAGING SYSTEM

You can page another PocketCom user, within close range, by simply pressing the PocketCom's call button which produces a beep tone on the other unit if it has been left in the standby mode. In the standby mode the unit is silent and can be kept on for weeks without draining the batteries.

## SUPERIOR FEATURES

Just check the advanced PocketCom features now possible through this new circuit breakthrough: 1) Incoming signals are amplified several million times compared to only 100,000 times on comparable conventional systems. 2) Even with a 60 decibel difference in signal strength, the unit's automatic gain control will bring up each incoming signal to a maximum uniform level. 3) A high squelch sensitivity (0.7 microvolts) permits noiseless operation without squelching weak signals. 4) Harmonic distortion is so low that it far exceeds EIA (Electronic Industries Association) standards whereas most comparable systems don't even meet EIA specification. 5) The receiver has better than one microvolt sensitivity.



## EXTRA LONG BATTERY LIFE

The PocketCom has a light-emitting diode low-battery indicator that tells you when your 'N' cell batteries require replacement. The integrated circuit requires such low power that the two batteries, with average use, will last weeks without running down.



*The PocketCom can be used as a pager, an intercom, a telephone or even a security device.*

## MULTIPLEX INTERCOM

Many businesses can use the PocketCom as a multiplex intercom. Each employee carries a unit tuned to a different channel. A stronger citizens band base station with 23 channels is used to page each PocketCom. The results: an inexpensive and flexible multiplex intercom system for large construction sites, factories, offices, or farms.

## NATIONAL SERVICE

The PocketCom is manufactured exclusively for JS&A by Mega Corporation. JS&A is America's largest supplier of space-age products and Mega Corporation is a leading manufacturer of innovative personal communication systems—further assurance that your modest investment is well protected. The

PocketCom should give you years of trouble-free service, however, should service ever be required, simply slip your 5 ounce PocketCom into its handy mailer and send it to Mega's prompt national service-by-mail center. It is just that easy.

## GIVE IT A REAL WORKOUT

Remember the first time you saw a pocket calculator? It probably seemed unbelievable. The PocketCom may also seem unbelievable so we give you the opportunity to personally examine one without obligation. Order only two units on a trial basis. Then really test them. Test the range, the sensitivity, the convenience. Test them under your everyday conditions and compare the PocketCom with larger units that sell for several hundred dollars.

After you are absolutely convinced that the PocketCom is indeed that advanced product breakthrough, order your additional units, crystals or accessories on a priority basis as one of our established customers. If, however, the PocketCom does not suit your particular requirements perfectly, then return your units within ten days after receipt for a prompt and courteous refund. You cannot lose. Here is your opportunity to test an advanced space-age product at absolutely no risk.

## A COMPLETE PACKAGE

Each PocketCom comes complete with mercury batteries, high performance Channel 14 crystals for one channel, complete instructions, and a 90 day parts and labor warranty. To order by mail, simply mail your check for \$39.95 per unit (or \$79.90 for two) plus \$2.50 per order for postage, insurance and handling to the address shown below. (Illinois residents add 5% sales tax). But don't delay.

Personal communications is the future of communications. Join the revolution. Order your PocketComs at no obligation today.

**\$39.95** NATIONAL INTRODUCTORY PRICE

Credit Card Buyers Call Toll Free

**JS&A** NATIONAL SALES GROUP

DEPT. SC JS&A Plaza

Northbrook, Illinois 60062

CALL TOLL-FREE . . . 800 325-6400

In Missouri call . . . 800 323-6400

©JS&A Group, Inc., 1976

# WE WANT YOU TO BE ABLE TO CONTROL YOUR INSECT PROBLEMS WITHOUT DAMAGING THE ENVIRONMENT

**F**OR THIS REASON, in our line of RAID flying insect control products, we adopted only the safest of all known insecticides, the Pyrethrins, plus such non-persistent synthetics as Neopynamin and d-trans-Allethrin, as active ingredients.

To control crawling insects such as roaches effectively, a product must have some residual effect. We make such products for those who have need of them. But we make them with carbamate and organophosphorous active ingredients, all of which degrade rapidly enough to pose minimal environmental hazards to plant, animal and bird life.

Further, we recommend that



our products be used only for in-home and near-home situations, such as private yards and gardens.

Finally, not one of our 14 products sold in the entire U.S.A. uses any DDT, Lindane, Dieldrin, or other "hard" chlorinated hydrocarbons.

*We want you to be able to control your insect problems.  
But not at the expense of our environment.*



S. C. Johnson & Son, Inc., Makers of Raid Insecticides



## “Gerry Sleeping Bags are the coziest” – Hans Down

Okay. So we've gone bananas. We took our best selling sleeping bag and completely redesigned it. Went all out. Now it has everything. We're proud to say it's Gerry-built.

Let's take a look at it.

Start with the 1.9 oz. ripstop nylon inside and out. Catch the Gerry-style lock-stitch seams, nine of 'em to the inch. Stitch on a #7 YKK Ziplon air-tight zipper

that runs in any weather and corners like a Porsche. Then bury it behind a down-filled no-draft tube. We really bug ourselves with details. The Gerry-rigged special slant-box, contour baffled, three piece construction banishes cold spots forever. And the unique Gerry baffle collar keeps you up to your neck in warmth. Finally take a lot of Gerry down and stuff it. A full 30 ounces of prime

goose, with 6" of uniform loft. It's Gerry-built-big...large size garages a chassis up to 6'6," yet weighs but 3 lbs. 15 oz.

It's Gerry-built-strong, so that it stays together through repeated washings and hard use.

The redesigned Camper Mummy Bag. Still think it's Gerry-built? Damn right.

# Gerry Built.