

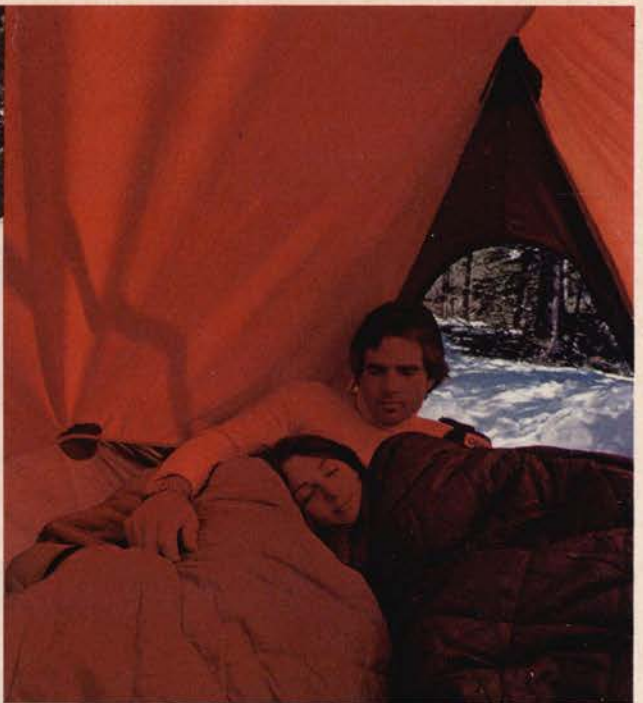
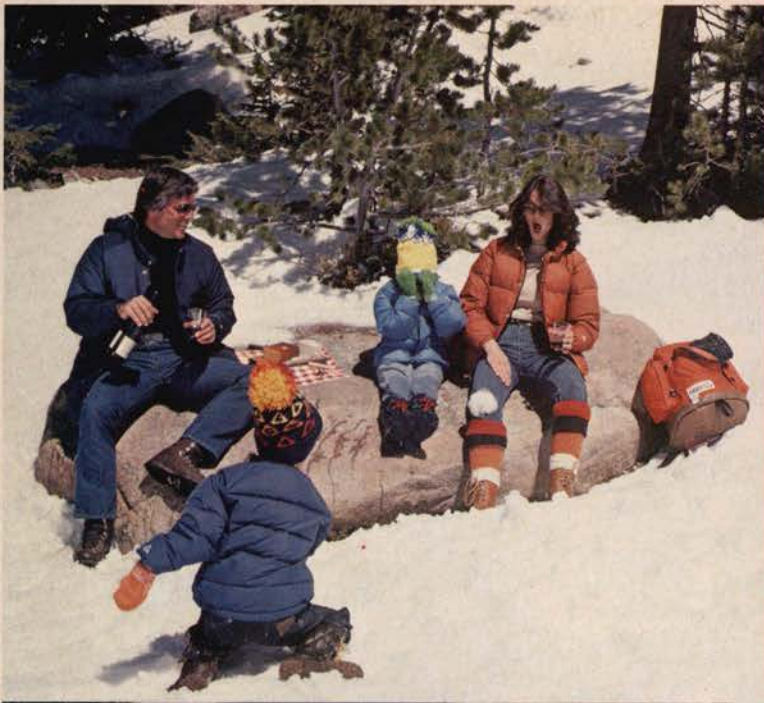
SIERRA

THE SIERRA CLUB BULLETIN

November/December 1977 \$1.00

Southeast Alaska

Sierra Club History: Part Two



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Telephone Troubles

The telephone system at the Sierra Club National Headquarters (415-981-8634) has been plagued by technical difficulty since mid-September. If you have had difficulty phoning the office or have been cut off during a call, we apologize for the inconvenience. The communication company involved has been attempting to correct the problem, but with little success so far. Please bear with us.



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Giant Errors

On page 28 of your September issue, Redwood National Park was somehow invested with a grove of Giant Sequoias called the Wawona Grove. That is a shame, since the advocates of the timber interests would like to convince the world that you folks intentionally misrepresent the facts in order to accomplish devious organizational ends.

The Wawona Grove is in Yosemite National Park in the Sierra Nevada, not in Redwood National Park in Northern California.

Please help us help ourselves by making sure that your photos are current and properly identified.

Steve Veirs

Crescent City, California

The Editor responds:

Yes, we made several major errors with the redwoods article illustration in September. Not only did we print the wrong picture, we compounded the error by printing an even worse caption. Our apologies.

On Solar Energy

In the June/July/August issue of the *Sierra Club Bulletin*, the article "Solar Energy: Dawn of an Era" by Denis Hayes contains the following statement: "The use of nuclear reactors operating at a million degrees C to make electricity to run residential water heaters to provide bath water at 30° C is surely the height of thermodynamic foolishness."

Actually, this statement is thermodynamic nonsense because the conversion of thermal energy to electrical energy and the reconversion of the electrical energy to thermal energy are separate physical processes. Energy has no memory, and a unit of electrical energy will produce the same effect whether it comes from a nuclear plant or a solar plant.

In fact, it is environmentally desirable to operate thermal power plants at high temperatures because power plants are heat engines, and certain inflexible physical

laws dictate that the efficiency of heat engines is proportional to the operating temperatures. Paradoxically, a power plant operating at a high temperature will produce less waste heat or thermal pollution than a unit of equal capacity operating at a lower temperature.

In addition, contrary to the opinion of Mr. Hayes, nuclear plants do not operate at high temperatures; the operating temperature is about one-half that of fossil fueled plants. This is precisely why nuclear plants produce so much waste heat.

Low operating temperatures are also responsible for the poor economic performance of heat engines that utilize solar energy. Even though the energy is free and occasionally abundant, the low operating temperatures necessitate extreme capital outlays to offset the woeful conversion efficiencies.

People often tend to perceive a movement in terms of its most extreme or radical statements. For this reason, I believe *Sierra* should refrain from publishing opinions that appear ridiculous to technically competent people.

Thomas D. Munsch

Monroeville, Pennsylvania

Denis Hayes responds:

I am afraid Mr. Munsch has misunderstood my argument that the use of electricity (from any source) to provide low-temperature heat is thermodynamically wasteful. The point of view Munsch attributes to me—that electricity for low-temperature uses should be derived from low-temperature sources—is, of course, indefensible. It flies in the face of common sense and Carnot's Law, and I do not fly in such faces. Mr. Munsch's interpretation of my argument becomes plausible only if (1) the reader reads only the excerpted sentence and not the surrounding paragraphs; or (2) the reader assumes that domestic hot water can be heated only by electricity, not by a direct source of heat.

Thirty-four percent of our national energy budget is spent providing heat at temperatures below the boiling point of water. On-site solar collectors can provide this heat less expensively and with fewer adverse environmental consequences than are entailed by the use of electricity from any new source. My recommendation was *not* that the reader heat his bathwater with electricity from solar power plants instead of electricity from nuclear power plants. A successful solar strategy demands more than the simple-minded substitution of sunbeams for uranium. We should use electricity for computers and televisions, and direct solar heating (not electricity) for our bathwater.



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What the Public Thinks

AS THE INTERPLAY LENGTHENS between issues of energy and the environment, many wonder whether support for the environmental cause is holding up. An opinion survey this summer by *The New York Times* and CBS produced paradoxical answers. On one hand, by a 5 to 3 margin those polled thought it was more important to protect the environment than to produce more energy. On the other hand, they were willing to accept more strip mining (55% to 26%) and laxer air pollution laws (48% to 14%) to produce more coal. Polls like these may elicit paradoxical responses because the questions are too specific. The results may be misleading because the questions assume too much understanding about presumed tradeoffs.

A better picture of the interplay between the issues comes from examining the trends in a series of surveys since 1969 which asked people whether programs to improve the environment received too little support from the government or too much. This series by different pollsters was pulled together by Kathryn Utrup, who is now a researcher with Resources for the Future.* It shows that environmental support (those who believe too little support is given to the environment) in 1976 was about where it was in 1971, with 55% of the public feeling supportive. However, that support did dip for a while to 53% following the oil embargo, down from a high of 61% in 1973 (it may have also dipped last winter during gas interruptions caused by cold weather). Two other things stand out in this series: the number of those who are hostile is not really significant, though their number has almost doubled (from 5% to 9%); and few people are without opinions anymore, with 31% of the public feeling attention to the environment is now about right. While this series shows some erosion in environmental support during a period of growing preoccupation with energy problems, it also shows strong, continuing national support for the cause.

A rebound of support shows up when comparing Harris polls in 1975 and 1976 on air and water pollution. In those two years, those who felt that air pollution poses a "very serious problem" rose from 46% to 66% of the population, while those who felt that way with respect to water pollution rose from 51% to 67%. A similar poll in 1976 by Potomac Associates, which tested degrees of concern, found 88% of the public quite concerned about.

Other surveys show that environmental improvement continues to hold its own compared to other public concerns. In other surveys conducted in 1974 and 1976 by Potomac Associates, about as many people continue to be concerned with reducing air and water pollution as are concerned with reducing foreign oil dependence and combating poverty and unemployment. On a scale, environmental issues may not always come out on top because many people (more than 60%) believe that government abatement programs are having some effect. However, in a Harris poll before last year's Presidential election, more than two-thirds of the public believed the next President should make air and water pollution control a major concern of his Administration (the

top concerns were inflation and peace). And in a Harris survey that year asking which issues relating to the quality of life were "most important to you personally," more people named air pollution than any other issue (over such issues as education and unemployment).

Some significant shifts in the makeup of those with such opinions have occurred over the years, though. In Kathryn Utrup's series, the key shifts between 1969 and 1976 in growing support for the environmental cause came among those who were under 35, those with only high school educations, and those with incomes of less than \$5,000. While one might assume that these figures mainly reflect the overwhelming support for environmentalism found among those who are still in school, one piece of data suggests something more profound has happened. It shows that there has been a radical shift in opinion among Black Americans. In 1969, only 33% of Black Americans felt there was too little support for the environment; by 1976, 58% of them felt that way. In fact, a greater percentage of blacks than whites (58% versus 54%) is worried about the environment. Clearly Black Americans, especially in the inner city, have begun to worry about the quality of the air they breathe.

These figures also refute the charge of elitism. They show that a majority of both the working class and middle class support environmentalism. Support does drop off both among the richest and the poorest, though the figures suggest support among the poor has risen dramatically. There are also some data to suggest a softening in support among those with incomes in the range of \$5,000-\$10,000, though a survey of Michigan residents this year suggests there is a great deal of sympathy among this group.

It is not entirely clear how environmental groups are viewed in the context of shifting opinion. The recent Michigan survey found that 12% of the public thought of themselves as active environmentalists, but only 2-3% of the population appear to be affiliated with some environmental organization. Many environmental organizations have continued to grow since the oil embargo, with the Sierra Club's growth rate now at about 8% a year. However, a series of polls in California by Mervin Field show that public confidence in environmental groups declined from 31% to 23% following the oil embargo, though it has risen slightly since. That series of polls shows environmental groups drawing more public confidence than Congress, the media, utilities and labor unions, but less than ministers, doctors, the police and consumer groups. However, in 1976 a national Harris poll found 57% of the public giving environmental groups a good rating on helping to curb air and water pollution, in contrast to about 38% for the federal and state governments.

The environmental movement no longer enjoys the drama of finding many undiscovered issues. Most of the first-generation reforms have been made, and indeed we are working our way through second- and third-generation processes of refining the original reforms. And we are having to defend these programs against the competing claims of other issues, such as energy. But our basic support has consolidated with a commitment by the majority to environmental protection as an enduring American value. —Michael McCloskey

*Ms. Utrup's data were drawn from six national opinion polls of representative cross-sections of the adult population in the United States, between 1969 and 1976. This material appears in her 1976 master's thesis, University of New Mexico. Most of the data here were developed through research by Dr. Robert Mitchell at Resources for the Future.

The Tongass & The Chugach

EDGAR WAYBURN

AMERICA'S LARGEST national forest is the Tongass of Southeast Alaska—sixteen million acres, about twice the size of Maryland. The Tongass is a wet land (parts of it get about 200 inches of rain a year) and, despite its northern latitude, it is warmer than Boston in winter because of the warm Japan current. The Tongass covers the panhandle that runs south from the St. Elias Mountains and British Columbia; part of the Tongass is on a narrow strip of the mainland where mountains rise to 10,000 feet, and part consists of thousands of islands—some huge, most tiny—that hug the shore of the Inside Passage. Southeast Alaska is not all Tongass Forest, of course. In fact, Juneau—Alaska's capital—is here, as is Ketchikan.

But what makes the Tongass unique is its wilderness resources, long gone from most of our national forests. There are trees in the virgin rain forest more than 200 feet tall, fourteen feet in diameter and 800 years old. Two-thirds of America's federally owned shorelines are in the Tongass, and its undisturbed coastal beaches and cliffs are unequalled by anything in the national forests of the lower forty-eight. The rich estuaries are part-time homes to millions of waterfowl that pass through annually. One-third of the recent total United States salmon harvest was landed in Southeast Alaska. And the wildlife there includes species no longer common elsewhere: the wolf, bald eagle, pine marten, brown bear, Sitka deer, trumpeter swan and humpback whale.

The Tongass boasts, in many ways, the finest wilderness resources in the entire National Forest System, yet the government's record of wilderness preservation here has been one of the sorriest in the nation. Unlike other western forests, no primitive areas have been designated within the Tongass since its founding in 1902. Not one acre has received wilderness area protection. The recent Roadless Area Review Evaluation (RARE II) mapped only those areas with roads and ignored, ironically, the roadless areas of the forest. The parcels desig-

nated for wilderness study (that is, for possible protection as Wilderness Areas) contain little of the rich lowland forest; too many of the study areas lie within the inaccessible glaciated and mountainous regions of the Tongass.

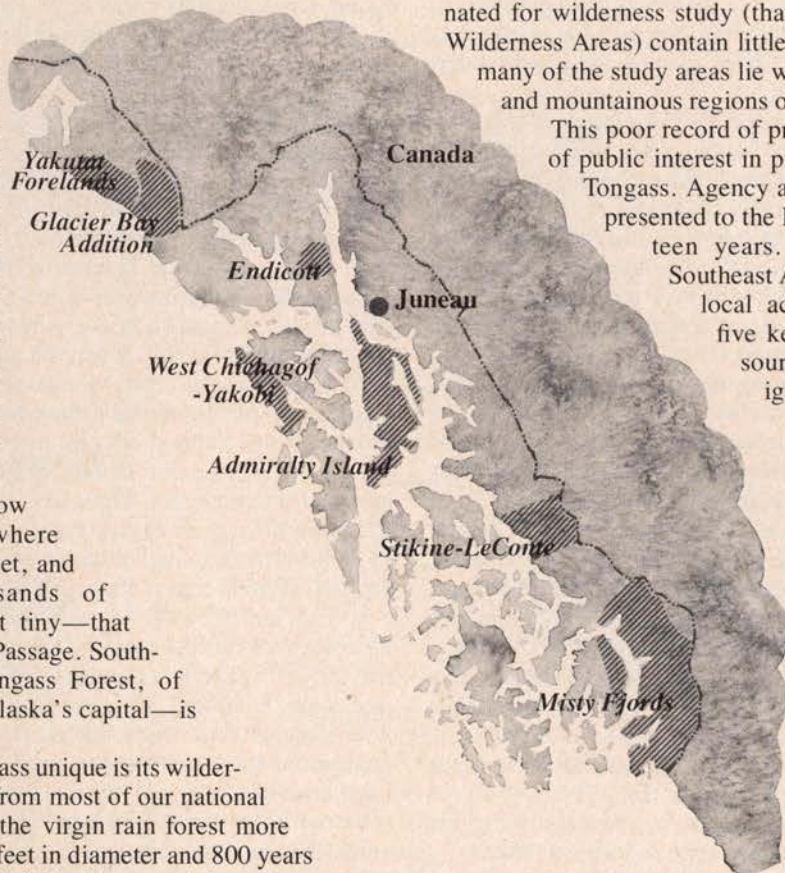
This poor record of protection does not reflect a lack of public interest in preserving the wilderness of the Tongass. Agency and citizen proposals have been presented to the Forest Service over the past fifteen years. After careful research, the Southeast Alaska Conservation Council, a local activist group, identified forty-five key areas rich in wilderness resources. But the Forest Service has ignored wilderness proposals for areas that have commercial logging potential.

At long last Congress has taken steps to remedy this situation.

The bills introduced by Congressman Morris Udall (H.R. 39), Senator Lee Metcalf (S. 1500, the Alaska National Interest Lands Conservation Act) and Congressman John Seiberling (H.R. 5605, the Admiralty Island National Preserve Act) are monumental steps in reversing Forest Service neglect of the wilderness resources in Alaska's national forests. The Tongass Forest wilderness proposals in these bills would preserve ecologically coherent areas of "National Interest Lands" caliber.

But in the Tongass, much more "de facto wilderness" must be protected. We cannot indefinitely defer preserving these areas. Of the forty-five potential wilderness areas identified by the Southeast Alaska Conservation Council, thirty will be marred by clearcut logging and road building within the next nine years. In fact, sixteen areas will be lost within two years unless Congress acts now. Eight of the finest watersheds proposed for protection have already been affected by logging activities.

The crisis in the Tongass is the result of fifty-year Alaskan timber contracts and the Forest Service planning process. Until



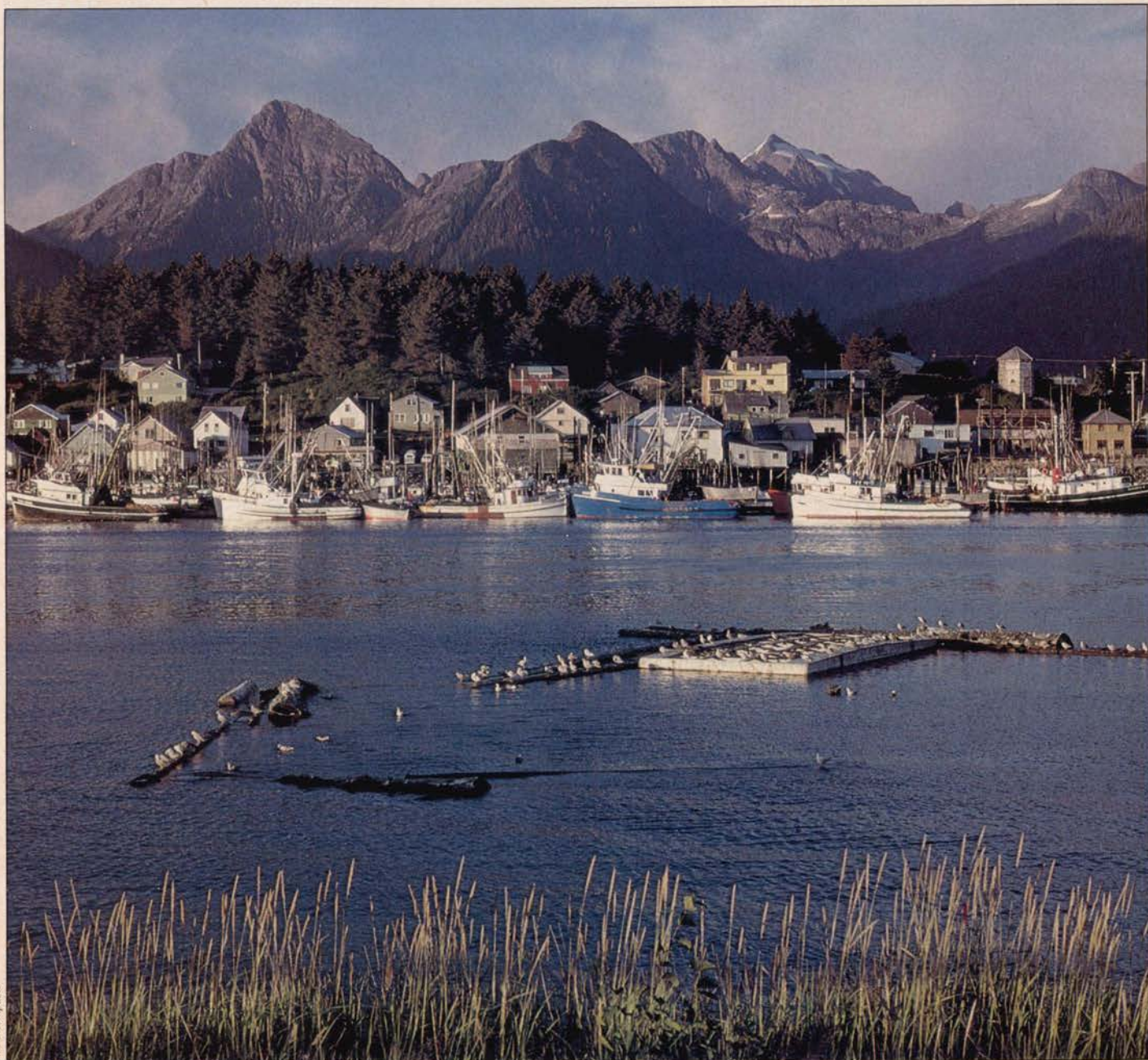
Chuck Beucher

*Proposed Wilderness
in Alaska's National Forests*

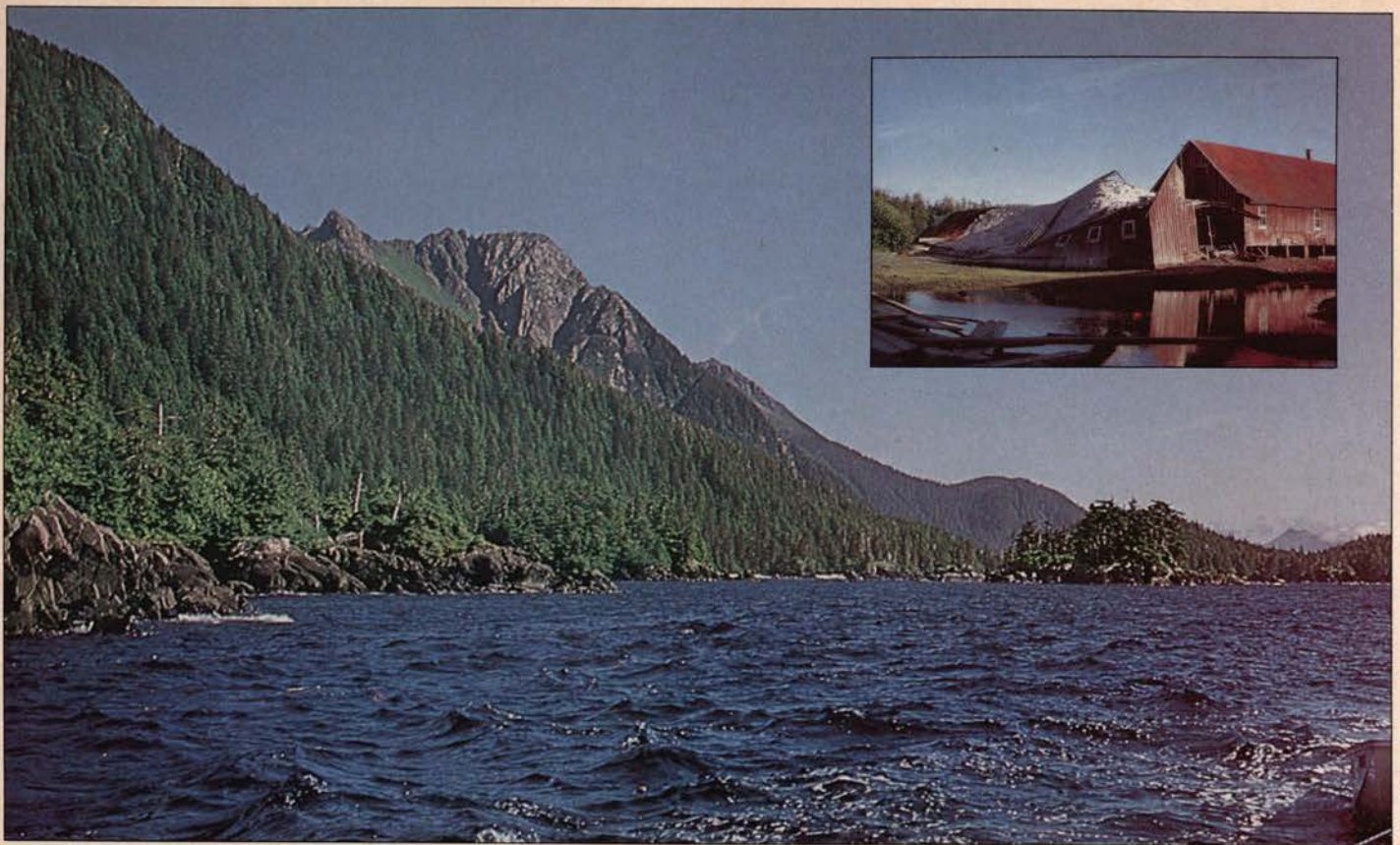


C. Wallen

Left: Even on a grey and cloud-covered day, one can sense the power of the mighty Stikine as it flows at the base of 3,000-foot cliffs.
Below: The small boat harbor at Sitka with the mountains of Baranof Island rising steeply in the background.



Tim Thompson



Edgar Wayburn

The headlands of West Chichagof Island rise abruptly from the Pacific Ocean. The recreation potential of this comparatively small area is one of the greatest in Alaska, with opportunity for hiking, climbing, fishing and, above all, the opportunity for travel by small boat. The disintegrating buildings of the West Chichagof Mine are a picturesque reminder of the many failed mining ventures.

only a year ago, most of the Tongass was blanketed under long-term logging contracts. Fortunately, the contract for the largest sale of timber ever made—8.75 billion board feet over a fifty-year period to Champion International—was cancelled in 1976 before cutting began, thanks to a prolonged legal battle waged by the Sierra Club. This cancellation, however, did not affect other existing contracts, which do not expire until well into the twenty-first century. Nearly all the wood cut under these contracts is exported, chiefly to Japan.

Forest Service planning for the Tongass has not allowed wilderness designation for timbered areas within the contract boundaries. Decisions were made long ago to cut areas that are rich in wildlife, fisheries, recreation and scenic resources. Congressional review of the inflexibility of these long-term contracts is desperately needed, along with a study of the most endangered potential wilderness areas.

Herewith, then, a brief account of the areas being considered in H.R. 39 for immediate designation as wilderness (“instant wilderness”) by the House Interior Committee.

Misty Fjords—2,340,000 acres

The smooth granite cliffs of a dozen Yosemite-like valleys enclose wolf-traveled valleys in Southeast Alaska’s largest expanse of wilderness. Misty Fjords extends from a Southeast Alaskan river with its headwaters in Canada, south to the U.S.-Canadian border along Portland Canal. It straddles the scenic East Behm Canal from which surpassingly beautiful canyons, with their quiet waterways, stretch from tidewater to the mountains. Waterfalls abound. The area provides habitat for all wildlife species common in Southeast Alaska and some—the moose, for

example—rare in the Southeast. Misty Fjords is a major spawning ground for all five species of Pacific salmon and is especially important for king salmon, since it contains one-fourth of all the king streams in the Southeast—the Unuk, Chickamin, Wilson, Blossom and Keta Rivers.

All this is threatened by a proposed U.S. Borax molybdenum mine that would devastate the area between Boca de Quadra and Smeaton Bay and would eliminate 20,000 acres from the heart of the wilderness proposal.

Admiralty Island—1,040,000 acres

Admiralty is the last large island in Southeast Alaska without major logging or other commercial activity. More than ninety-five miles long and twenty-five miles wide, it is a diverse system of rain forest, muskeg, beach grasses, meadows, brush and alpine tundra, interspersed with streams and lakes. Admiralty is home to more than 1,000 brown bears, whose survival depends on the preservation of large tracts of their natural habitat. The greatest concentration of American bald-eagle nests in the world is along Admiralty’s shoreline—a total of 900 nests, an average of one per mile. The eagle population is estimated to be around 5,000. The potential production of the sixty-seven classified streams is around two million fish annually; salmon spawn in almost 200 streams. The bays of Admiralty are favored by the migrating humpback whale.

For more than fifty years, citizens and groups have lobbied the Forest Service for protection for Admiralty, but time and time again the Forest Service has failed to classify this unique island ecosystem for protection.

Admiralty Island must be preserved as wilderness. H.R. 39

would accomplish this. H.R. 5605, a desirable alternative, is a proposal by the Klingit Natives of Angoon (the island's only village) to make Admiralty a National Wilderness Preserve administered by the National Park Service.

Yakutat Forelands—420,000 acres
Glacier Bay additions—590,000 acres

Dark, dense forests of Sitka spruce and western hemlock alternating with rich muskeg flats characterize the Yakutat Forelands. To the north and east contrasting sharply with the forelands, is the Brabazon Range, with numerous glaciers, alpine lakes, waterfalls, cirques and hanging valleys. In the Brabazon Range proposed additions to Glacier Bay National Monument include the magnificent Alsek River. The Alsek cuts between the Fairweather and St. Elias Mountains, providing one of the few passages for migrating birds and mammals from Canada to the Pacific Ocean. Marshes and estuaries abound with geese and cranes. Here, too, are the habitats of the moose and the threatened glacier- or blue-bear (believed to be a black bear that underwent evolutionary changes during the last glacial period, 8,000-10,000 years ago).

Another addition proposed for Glacier Bay wilderness is 100,000 acres in the Endicott River drainage, connecting the Monument to the Lynn Canal. This mature rain forest provides key winter habitat for goat and moose and a contrast to the post-glacial succession forests within Glacier Bay.

Stikine-LeConte—490,000 acres

The mighty silt-laden Stikine River originates far to the northeast in British Columbia and rushes through a spectacular glacier-carved valley—described by John Muir as “a Yosemite 100 miles long”—with a speed greater than any other river in North America. Near the mouth of the river, peaks of the Pacific Coast range tower 9,000 feet above lush riverside cottonwoods. The wilderness proposal extends north to the cliff-lined fjord into which the LeConte glacier, the southernmost saltwater glacier in North America, calves its enormous icebergs. The Stikine tidal flats comprise the largest such estuarine ecosystem in Southeast Alaska.

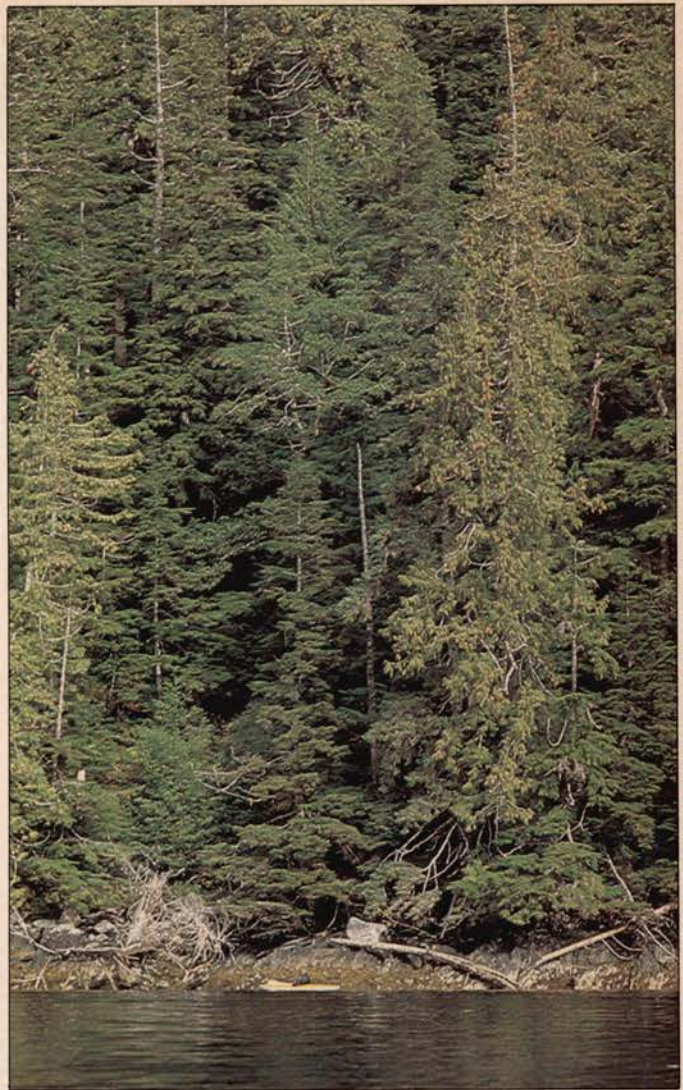
West Chichagof-Yakobi—405,000 acres

West Chichagof (and nearby Yakobi Island) contains a mixture of land forms suggestive of a much greater geographic range. In one compact unit it embraces nearly as broad a spectrum of natural ecosystems as is found throughout all Southeast Alaska. In the heart of West Chichagof, mountains rise as high as 6,000 feet and show evidence of extensive glaciation in the not-too-distant past. Behind a sixty-five mile stretch of rocky headlands, reef-protected inlets and myriad offshore islets directly exposed to the Pacific Ocean are inland passages of quiet protected waters into which flow streams from clusters of upland lakes, making the area a paradise for small boats.

* * *

In the other Alaska national forest, the five-million-acre Chugach, the Nellie Juan area of 1,050,000 acres on Prince William Sound is under consideration for immediate wilderness designation. The Nellie Juan is a region of islands and scattered spruce forests. It is remarkable not only for the Sargent Icefield and the Columbia Glacier but also for the tremendous abundance and variety of its wildlife: humpback, sperm, minke and killer whales, porpoises and sea otters are all common, as is an impressive variety of birds fish and shellfish.

A number of areas are also being proposed for wilderness



Gary Brausch

Above: Once you notice the man in the small boat at the shoreline, you realize the scale of the great trees in the rain forest around Boca de Quadra in the Misty Fjords.

Below: Alaska's capital city, Juneau, in the middle of the Tongass Forest, is outlined against Mount Juneau on a snowy winter day.

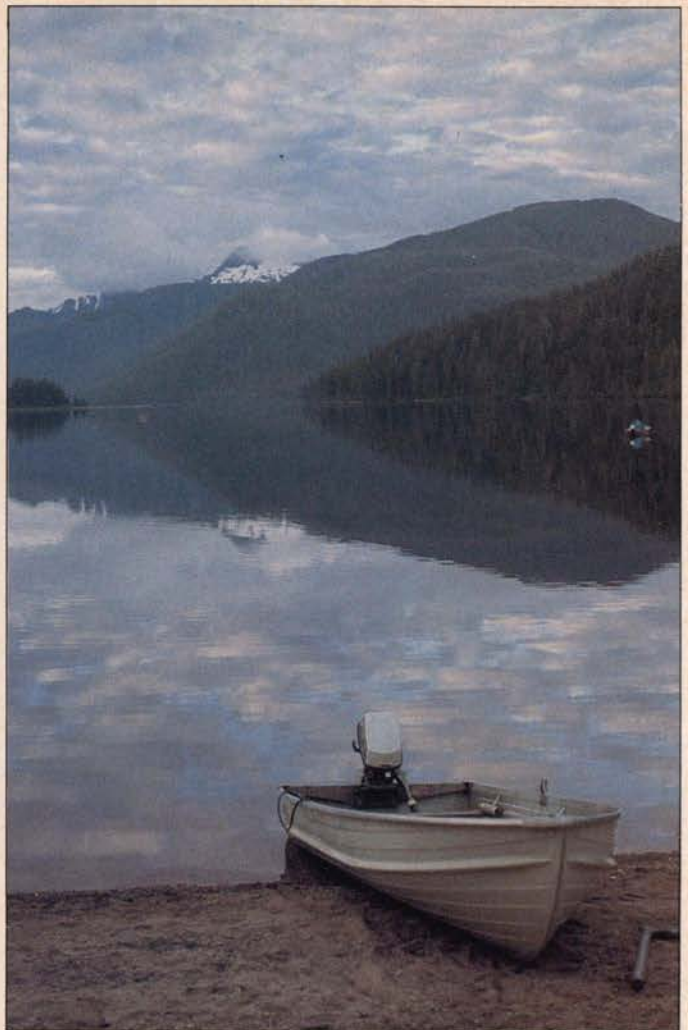


Peggy Waybarn

study. In the Chugach National Forest, the Copper River Delta area of 1,537,815 acres is up for study. In the Tongass National Forest, four areas are being considered: Etolin Island—235,000 acres, Duncan Canal—120,000 acres, Tebenkof—68,000 acres, and Karta—47,000 acres.

The clock is running. Congress has given itself only until December 1978 to determine for all time how much of Alaska shall be preserved as national interest lands, as a legacy that enriches all Americans. □

Right: In Admiralty Island's diverse ecosystems are many quiet lakes, surmounted by snow-clad peaks. Shown here is Thayer Lake and some of its surroundings. Below: Here, too, are some of the finest examples of muskeg, a characteristic groundcover.



Edgar Wayburn

Edgar Wayburn

Does wilderness classification lock up natural resources we need from Southeast Alaska?

Don't we need to log the forest?

Of the sixteen-million-acre Tongass National Forest, five million acres have been proposed for protection as wilderness in H.R. 39. The remainder would still be open to logging and mining. According to the 1977 *Southeast Alaska Guide* of the U.S. Forest Service, up to seven million acres could be set aside for values other than timber, and the remainder would still maintain the timber industry. Most of the timber from Southeast Alaska is not used for our nation's needs. It is exported, chiefly to Japan.

Don't we need the minerals?

Tongass minerals represent a very small fragment of the total United States mineral supply. Geologists estimate that the mineral endowment of Alaska is typical of that elsewhere in the U.S. Since the entire state of Alaska comprises one-fifth of the U.S., and the Tongass National Forest makes up less than five percent of the state, its minerals would add much less than one

percent to the nation's mineral supply. In Southeast Alaska the lands have been open to mineral development for a hundred years. Except for the Juneau goldmine there has been very little commercial mining. The known wilderness values should have clear priority over unknown mineral values.

Won't wilderness status hurt the economy and create unemployment?

The three leading basic sources of the economy in Southeast Alaska are fishing, tourism and logging. Protection as wilderness would enhance the fishing industry. The tourists who come through the Inside Passage are dismayed by the sight of clearcut logging. Recreationists avoid logged-over areas. Wilderness status would protect the waterways from damage that may last for more than fifteen years after logging. It would prevent damage resulting from mineral development. The Alaska Regional Forester testified before Congress that "there would be no significant negative impact on employment or income" if

the Southeast areas in H.R. 39 were designated as wilderness.

Isn't the Tongass already protected?

The Tongass is a National Forest. Clearcut logging, roads and mining are permitted. These activities often conflict with wilderness and wildlife values. Although the Forest Service has plans for designating wilderness areas, no proposals have yet been made. Wilderness designation is long overdue. The National Interest Lands legislation furnishes the best opportunity for protecting these top-quality areas in Southeast Alaska.

What would be the impact of wilderness proposals on the native way of life?

Wilderness proposals are consistent with traditional native subsistence. The native villagers of Angoon were responsible for the introduction of H.R. 5605, the proposal to make Admiralty Island a National Preserve within the National Park System—a proposal which would protect the villagers' way of life.

Schistosomiasis:

The Curious Bond Between Snails, People and Disease

KATHLEEN COURRIER and ERIK ECKHOLM

We are accustomed to thinking of irrigation as an unmixed blessing: deserts into gardens, the wretched poor into happy farmers. But there is more to irrigation than pouring concrete and digging ditches. The environmental effects of irrigation can be far-reaching indeed, affecting huge numbers of people across whole continents, bringing debilitating disease.

— Editor

WHEN THE PHARAOH'S DAUGHTER waded into the bulrushes to retrieve Moses, she risked exposure to more than her father's ire. In the river reeds with the little Hebrew refugee may well have lurked parasitic invaders whose ingenious vehicles put the Trojan Horse to shame.

Burrowed neatly into some of nature's staunchest introverts—snails—the schistosomiasis blood fluke held a peril that would have sent a better-informed maiden shinnying up the Nile's bank without a second thought for the baby in the basket. Luckily for the captive Israelites who would someday follow Moses out of bondage, the girl apparently did not know even the rudiments of parasitology. Unluckily for the Egyptians, the strange snail-borne disease about which little was understood and nothing was done may have wreaked more damage in Egypt than any plague recorded in Exodus.

Unlike the scourges of locusts, boils, frogs and gnats, the plague of schistosomiasis was visited upon more than one generation. When Napoleon led expeditionary forces into Egypt three thousand years after Moses' time, cases of schistosomiasis among both the Egyptians and the French soldiers were recorded in the emperor's journal. By 1851, when Theodor Bilharz identified one species of the blood fluke that causes schistosomiasis and lent his name to the disease (which many still know as Bilharziasis), the schistosomiasis fluke had outlasted the record run of the Pharaohs.

Today, Egypt is not schistosomiasis' only home; nor do the flukes rely solely upon the proverbially poky host snails for transportation. Some 200 million people in at least 71 African, Asian and Latin American countries now suffer from schistosomiasis, and the debilitating disease annexes new turf almost as fast as irrigated agriculture expands.

Though the snails that carry schistosomiasis prefer still waters, they thrive on human "progress." The reservoirs and irrigation canals that turn lifeless lands into hospitable human habitats often create ideal environments for the parasite-infested snails. Governments without the resources or the will to control schistosomiasis respond to mounting demands for food and hy-

droelectric power by constructing new reservoirs and canals—knowing full well that the disease will spread. They also know that the rural poor, the only people who frequent infected lakes or canals, will pay the most serious cost of development.

Early in this century, for example, the prevalence of schistosomiasis in the densely populated Nile Delta grew as the irrigation system extended new tentacles. Later, when Egypt poured its resources into the Aswan High Dam in the 1960s, the nation's attack on the parasite-infested snails was inadequate. Along with year-round irrigation, the dam brought schistosomiasis to several million people in Upper Egypt, and as many as two-fifths of Egypt's forty million people now harbor the parasite.

In Africa, both small-scale irrigation projects and large dams serve as so many nurseries for the schistosomiasis parasite. Every major man-made lake on the continent is infested with the flukes, and the disease has spread to nearly every country in Africa. Many of Africa's major recent water developments including Lake Nasser in Egypt, Lake Volta in Ghana and the Gezira irrigation scheme in the Sudan and flood-rice projects in West Africa have been called public health disasters. Yet, in Africa and elsewhere, more such "seas of troubles" are being created every year.

Schistosomiasis traveled to the Americas in the bodies of slaves during the sixteenth, seventeenth and eighteenth centuries. Although the urinary type of the fluke (*Schistosoma haematobium*) failed to sustain itself anywhere in the Western Hemisphere, the parasite *Schistosoma mansoni* (which invades the human intestines) caught hold in Brazil, Surinam, Venezuela and several Caribbean islands. The rest of the New World was spared only because snails of the right sort were not indigenous.

Infected people, of course, still carry the parasite across borders and oceans. About ten percent of the hundreds of thousands of Puerto Ricans who have migrated to New York City have brought the infection north with them. But the parasites cannot reproduce where sewage systems are adequate and snails are not to be found, and the blood-flukes inhabiting infected New Yorkers will die off gradually over a five- to thirty-year period.

Though all flukes need snail hosts, some schistosomiasis parasites are more formidable than others. The intestinal variety found in East and Southeast Asia (*Schistosoma japonicum*) causes far more harm and resists available treatments far more successfully than its African, Latin American and Middle Eastern counterparts. This fierce strain of schistosomiasis is already

*Like the poor themselves,
the diseases from which they suffer
are all too often overlooked.*

entrenched in China, Japan, the Philippines, Thailand, Laos, Cambodia and the Indonesian island of Sulawesi. Naturally enough, the possibility that susceptible snails might further invade Southeast Asia's vast irrigation systems and the likelihood that new river-basin developments (such as those contemplated for the Mekong River) will spread schistosomiasis are the stuff of which the nightmares of the region's public health officials are made.

China, like Egypt, holds a prominent spot in the annals of schistosomiasis. During the first half of this century, the most virulent form of the disease afflicted more than ten million Chinese and probably cost more lives in China than in any other country before or since. Whole villages were besieged by liver, spleen and intestinal problems and by early death. Since 1950, however, China has stood out among the handful of countries and territories—also including Israel, Japan, Venezuela and Puerto Rico—that have slowed the advance of the disease. Indeed, Chairman Mao was moved by the progress made against schistosomiasis in one Chinese area to write a poem called "Farewell to the God of Plague."

Among the earth's less developed regions, only the Indian subcontinent, upon which one-fifth of all humanity lives, has escaped schistosomiasis. Urinary schistosomiasis does persist mysteriously in the western Indian state of Maharashtra, but India, Pakistan and Bangladesh are otherwise virtually free of the parasite.

During their extraordinary life cycles, the schistosomiasis flukes must travel what Dr. Kenneth Warren has dubbed a "precarious odyssey," relying on the unearned hospitality of two animal species and on plain good luck for survival. With their mates in tow, each mature female lays from hundreds to thousands of eggs per day in the blood vessels of either the human intestines or bladder. Some of the eggs stay put, but others wriggle into the bladder or intestines and are expelled in the victims' urine or feces. If an egg soon finds fresh water, it hatches a tiny larva called a miracidium. The miracidium swims—at about two millimeters a second—for its life. It has just twenty-four hours to find the right kind of snail; and though the snail hosts evidently exude "perfumes" that attract larvae, the vast majority of the microscopic swimmers perish before making contact.

A larva that does manage to hook a snail undergoes a remarkable metamorphosis once inside the snail's body. It becomes a sac-like asexual creature that gives birth to hundreds of thousands of fork-tailed cercariae in a three- to four-week period (this sometimes proves too much for the snail). Then the cercariae, each about one millimeter long, take to the water. Theirs, too, is a do-or-die situation: they have at most two days to attach themselves to a human being or, in some cases, certain other mammals.

Once in contact with human skin, the cercariae tunnel through the outer layer within minutes. While doing so they drop their tails and look more like worms as they forsake fresh water for the salty medium of blood. Within a day or two, the tiny creatures burrow through the subcutaneous tissue to blood vessels,

which carry them to the heart and lungs. Pausing in these organs to mature, they then either float or dig to the liver. There, the schistosomes become sexually differentiated, and each female worm enters a cleft in a male's body to mate—a position the pair holds for life. Finally, the adults move in twos to their ultimate hideaways—the veins of the bladder for the species *S. haematobium*, the veins of the large intestine for *S. mansoni*, and the veins of the small intestine for *S. japonicum*. So ensconced, the paired schistosomes begin producing the eggs that perpetuate the parasite's life cycle.

Schistosomiasis parasites bite the hands that feed them, but they seldom kill their humans outright. (The price of immoderation is extinction, since the never-ending return of huge numbers of eggs into the water is critical to the survival of the species.) But human fluke-carriers feel the pinch. They must cope with a hell's platoon of internal complications, and they may lose years off their lives.

The parasite's initial penetration of the skin may cause a prickly sensation and, weeks later, when the schistosome pairs begin producing eggs, some people with heavy infections experience a temporary severe fever, weakness, malaise and other symptoms. Following these stages, many victims exhibit no outward signs for years except telltale blood in their urine and intermittent diarrhea.

But whether or not the parasite declares its presence, a heavy schistosomiasis infection may cause irreversible damage that can eventually kill the human host. The flukes themselves are less harmful than their eggs, many millions of which may be cumulatively deposited in various organs. The eggs provoke an intense immunological reaction that destroys and scars tissues; the eggs also spur the formation of new fibrous tissue that may choke the flow of urine through the bladder and ureters, or the flow of blood through the liver. Intense pressure on the kidneys may destroy them. Similarly, the abdominal blood vessels around the liver may eventually burst. Urinary schistosomiasis also seems to promote bladder cancer—in Egypt and some other African regions a third of all cancers among males involve the bladder.

So little information has been collected on the costs of schistosomiasis that those concerned about the disease cannot compete for limited public resources with champions of new electric-power capacity or increased food production. Moreover, the health effects of largely invisible chronic diseases are nearly always underestimated—witness the modern epidemic of high blood pressure among the affluent as well as schistosomiasis among the poor. Mortality data record fatal crises—the heart attacks and the kidney failures and the bladder cancers—not the underlying debilities that make crises inevitable.

Like the poor themselves, the diseases from which they suffer are all too often overlooked. Small wonder that schistosomiasis is without its Jonas Salks and Albert Sabins; only about \$8 million was devoted to schistosomiasis research around the world in 1975—less than a hundredth of the world's cancer research budget.

*Snailspotters periodically cruise the waterways
in canoes, removing any snails they find with chopsticks
and destroying them.*

While several new drugs can kill most of the flukes inhabiting most infected individuals most of the time, none works on all people or all species of the parasite; and all pose serious risks for some users. Hycathone and niridazole, two new and generally effective drugs, have shown signs of possible carcinogenic or mutagenic properties in some animal tests. Still, stacking up the risks against the benefits, the World Health Organization and most doctors in the field contend that these drugs ought to be used until better ones are developed. As one doctor working in Egypt puts it, "Schistosomiasis not only debilitates and sometimes kills people, but also promotes cancer. Under the circumstances, using the drug is certainly the lesser of the two evils." Yet, neither doctors nor patients can relish making this sort of choice.

Preventing schistosomiasis costs less money and life in the long run than treating the sick with even the most miraculous drugs. It is in the struggle to halt the constant infection and reinfection of populations that an understanding of the parasite's life cycle becomes so important. If any stage in this cycle can be disrupted, the parasite will be unable to reproduce.

Most attempts to control schistosomiasis have aimed at eliminating the snails with chemical molluscicides so that newly hatched schistosome larvae will die before locating a snail host. Control programs have relied heavily on snail-killing chemicals because molluscicides are relatively simple to apply, not so much because snails are the weak link in the parasitic cycle. Unlike many other possible control measures, the use of molluscicides does not require people to change their habits. Nor does it require planners and engineers to alter their priorities and methods. With molluscicides, a small group of technicians acting alone has a fighting chance of subduing schistosomiasis.

Chemical snail-control programs sometimes work, but they have inherent limitations. Hardy and mobile snails have persevered for many millennia; they put up a handy fight. Even when most of the snails in an area are wiped out, the survivors can engineer a species recovery. And other snails can be washed into the control area or brought in by animals or travelers. If even a few people continue to pass eggs into the water, the parasite will re-establish itself after a temporary setback. Hence, one campaign is not enough. Chemical eradication of snails has to be an ongoing process, and its high costs have to be borne continuously unless schistosomiasis is somehow completely extinguished over a large area—an unrealistic prospect at present in most afflicted countries.

Even if molluscicides were not expensive, there would be drawbacks to their use—their ecological side-effects. As agriculture's experience with pesticides proves, no chemical's effects can be absolutely controlled. Some molluscicides kill fish as well as infected snails; benign snail species, natural competitors and snail predators can also be unintentionally poisoned. Just how chemical molluscicides affect wildlife and people over time remains an unsettling unknown.

Few control experts rule out the use of molluscicides categorically. But some now look to various non-chemical means of

snail control as potentially useful weapons against unwelcome snails. Fish and snail species that prey upon the target snails can be introduced into infected zones. Irrigation systems can be designed and maintained to frustrate snail life; for example, closed pipes can be used instead of open ditches. Biological and engineering measures such as these have so far inspired all too little research. It seems, after all, that it is not the snails who are putting all their eggs into one basket; as the United Nations Environment Programme has observed, the tremendous emphasis on chemical means of controlling snails has been at the expense of adequate attention to other pest-control methods.

In many regions, ecologists argue, nonchemical methods of snail control may prove cheaper and more environmentally sound than molluscicides. In parts of Puerto Rico, for example, noninfective snails that squeezed out the dangerous species were introduced at an annual cost of only eleven cents per hundred cubic meters of water treated. Chemical molluscicide programs in Puerto Rico cost \$7.50 for each comparable unit of water cleared of snails—sixty-eight times more than the cost of pitting snail against snail. Replacing a harmful species with a benign one without altering the ecological structure makes good environmental sense.

Where human labor is abundant and well organized, snails can sometimes be plucked from the mud by hand. Together with mass drug therapy and the careful collection and treatment of human wastes, the mobilization of millions of people to kill snails has contributed measurably to China's progress against schistosomiasis. The canals in infected areas are drained, and then the snail-infested mud is dug out and buried in dry land, a practice that kills the snail species prevalent in China. Following concentrated campaigns of this type, snailspotters periodically cruise the waterways in canoes, removing any snails they find with chopsticks and destroying them.

Snails have been the target of humanity's attacks on schistosomiasis. But humans, not snails, are the primary hosts and carriers of the parasite. Thus, blocking the cyclical return of eggs from people to water will defeat the disease. Curing infected individuals by killing the flukes they carry with antischistosomal drugs, for example, can halt the excretion of eggs. But, apart from any medical complications it might entail, mass drug therapy is beyond the financial and organizational means of many afflicted countries.

The ideal way to prevent infection is to provide reasonably pure water supplies and adequate sanitary facilities to people in areas susceptible to schistosomiasis. Though installing faucets and building latrines for the majority of rural people will carry a stiff price, such construction—unlike costly molluscicides and drugs—also protects against other social and physical ills. Pure water and sanitary facilities would cut the crippling burden of infectious disease borne by the rural poor of Africa, Asia and Latin America. Moreover, raw sewage can be transformed in biogas plants or other conversion facilities into usable energy and rich fertilizer, even as the schistosomal eggs it contains are destroyed. Here again, the Chinese have already proven the practicality of such an alchemical approach, in which a menace

is turned into an asset. Such an approach maximizes both public health and environmental soundness simultaneously.

Sanitation facilities alone, however, probably cannot flush schistosomiasis from a typical infected region. Safe water and latrines are not completely effective against schistosomiasis unless they are used all the time by all the people, and the universal use of sanitary facilities by rural people has repeatedly proven to be only a pipe-dream of public health officials. Teenage boys, who generally have the highest infection rates, are bound to swim in canals or lakes when the sun scorches. Fishermen, as well as men and women tending irrigated fields, have no choice but to work in potentially infected waters and may well balk at the idea of a long hike to distant toilets. Nor is any amount of health education, by itself, likely to overcome the sheer inconvenience of scrupulous sanitation in poor rural areas. "In easy-going Egypt," writes Richard Critchfield, a journalist who has lived in rural Egypt, "it has proved easier to build the pyramids, feed the Roman Empire, and rule over medieval Islam than to keep the kids out of the water."

Obviously, no single control method offers the perfect answer to the threat of schistosomiasis. However, experience in China, Puerto Rico and other countries has proven that appropriate combinations of available measures can make headway against this scourge. In Egypt, molluscicides used in tandem with drug therapy in the oasis region of Fayoum have reduced the prevalence of infection among the area's one million people from forty-seven percent in 1969 to eight percent in 1975—providing the country's first major success against its special curse. Snail control poses fewer problems in Fayoum than it does in the labyrinthine canal networks in the Nile Delta, but Egyptian officials nonetheless hope to repeat their success elsewhere in the country.

Whatever the limits of available control measures, a technology gap is not what prevents the control of schistosomiasis. Engineers and humanitarians alike have devised defenses against its invasion of new tropical water developments. New villages for reservoir refugees can be settled far from the water's edge or next to steep snail-free banks. Irrigation canals can be lined or covered. Water can be gushed through established channels to unhinge and drown offending snails. Irrigation systems can be built with pipes instead of canals. And the regular use of potable water and sanitary facilities can break the schistosomes' life cycle. Where money and manpower are provided—a matter of politics, not technology—skilled and well-equipped teams can often beat schistosomiasis.

Still, the current spread of irrigated agriculture throughout the Middle East, Southeast Asia, Africa and Latin America poses monumental economic and public health challenges. In lands where the national budget for *all* medical care is less than a dollar per person, snail-control programs cost from forty cents to twelve dollars per person each year. Moreover, the record of the past few decades of water resource development in these countries looks dismal. For every major mishap, such as the outbreak of schistosomiasis around the Aswan High Dam, there are a dozen smaller blunders. In one African water project, latrines were placed directly over irrigation canals; such mistakes are common—but by no means inevitable. Whether there is reason to be hopeful defers to the question of whether we will fight schistosomiasis at the snail's pace, or with due haste. □

Kathleen Courrier is editor of Development Communication Report. Erik Eckholm writes about environmental issues for Worldwatch Institute and is author of the new book The Picture of Health: Environmental Sources of Disease (W.W. Norton, 1977).



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| <input type="checkbox"/> Colombia | <input type="checkbox"/> Indian (U.S.) | <input type="checkbox"/> Lebanon |
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THE SIERRA CLUB ~

DOUGLAS H. STRONG

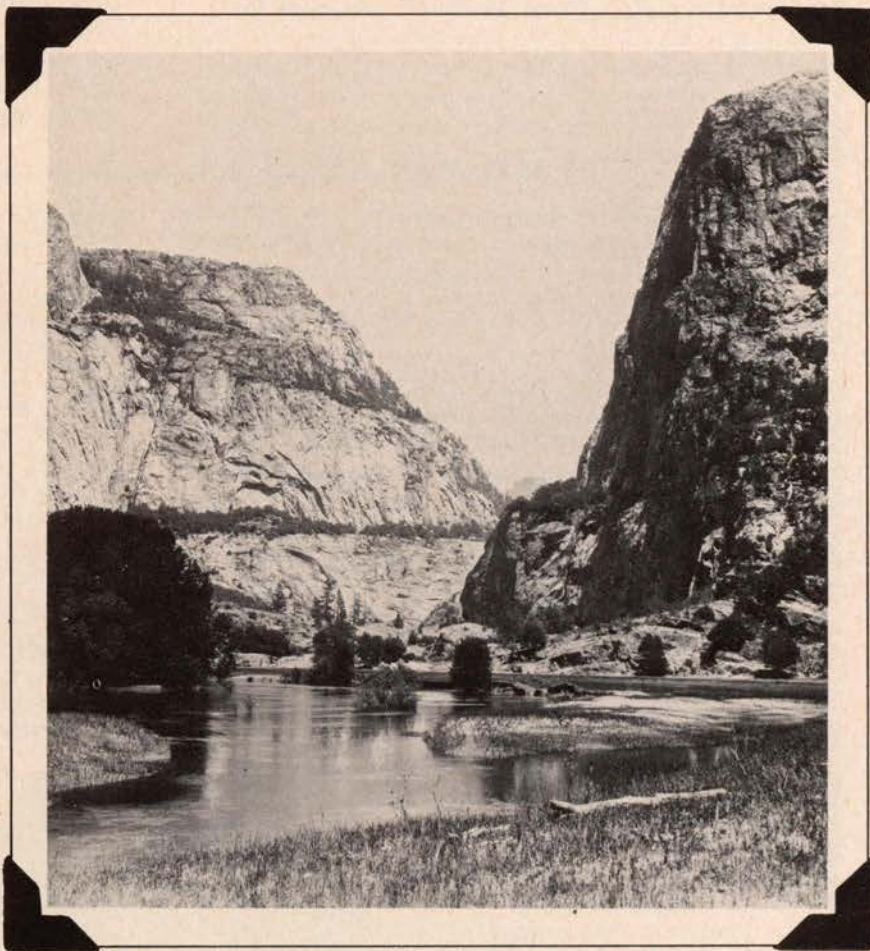
FROM ITS BEGINNINGS IN 1892, the Sierra Club and its directors worked actively to preserve the forests and mountain wilderness of the western United States, particularly in the Sierra Nevada. Largely because of the success of the early High Trips in the Sierra, membership grew steadily. Nevertheless, the Club remained a relatively small, California-based conservation and outing association until well after the second world war. Then, following its participation in the campaign to preserve Dinosaur National Monument, the Club emerged among the leaders of American environmental associations.

On the evening of October 14, 1892, when several hundred persons gathered in San Francisco to hear John Wesley Powell lecture on his famous boat trip through the Grand Canyon, Professor J. Henry Senger seized the opportunity to warn the Club's membership about the Caminetti bill, then pending in Congress. If passed, it would reduce the boundaries of the newly established Yosemite National Park. Many citizens in the counties from which land had been withdrawn for the park complained about the loss of tax revenue, while others—stockmen, lumbermen and miners—objected to federal restrictions on resources that had formerly been available to them for use and profit. Members of the Sierra Club, on the other hand, believed that areas of outstanding scenic and recreational value, such as Yosemite National Park, should be preserved for the enjoyment of the general population. At a subsequent Club meeting, a resolution was passed asking the Club's directors to send a statement to Congress protesting the Caminetti bill and to take all steps necessary to ensure its defeat. The bill died in committee. The Sierra Club's conservation activities had begun.

Concern for conservation among Club members increased so rapidly that the entire annual meeting in November 1895 was devoted to a discussion of national parks and forest reservations. John Muir addressed the members at length, and Professor William Dudley of Stanford University urged the establishment of several redwood parks on the northern California coast. The Club created a "parks and reservations committee" which came to the defense of newly established national forest reserves (forerunners of today's national forests) whose existence was threatened by lumbering, grazing and mining interests, and aided efforts to establish new reserves. As part of these efforts, Muir accompanied the National Academy of Science's Forestry Commission on its tour of western forest reserves and urged creation of an effective national forest policy.

During these early years, the Sierra Club printed articles on conservation problems in the *Sierra Club Bulletin* and also published occasional pamphlets. The Club held well-attended public meetings in San Francisco and made its views known increas-

ingly at the state and national levels. The major battles, however, lay ahead. For the next forty years the Club concentrated on issues that affected the Sierra Nevada, particularly: (1) "recession" of Yosemite Valley and the Mariposa Grove of Big Trees to the federal government, (2) use of Hetch Hetchy Valley



Hetch Hetchy before; the name is from a Miwok word meaning "grass-seed valley."

for a dam site, (3) enlargement of Sequoia National Park and (4) creation of Kings Canyon National Park.

The recession issue proved a valuable learning experience for Club leaders. Initially they were undecided whether it was better for the state of California and its Board of Commissioners to retain control over Yosemite Valley or for Yosemite Valley to become part of the federally controlled Yosemite National Park surrounding it. An educational campaign carried on patiently by the Club over several years, together with the Board's own mismanagement of the valley, helped to swing public opinion in favor of recession. Muir objected particularly to the Board's policy of allowing meadows in the valley to be fenced with barbed wire and plowed to grow hay for tourists' horses. When President Theodore Roosevelt visited the park in 1903, Muir took the opportunity to discuss the matter with him and to urge recession. And in the following year, William Colby sent state

Photos from the Sierra Club archives

A HISTORY

Part 2: Conservation

legislators a leaflet on behalf of the Sierra Club in which he criticized the state's inadequate appropriations and its poor administration of Yosemite Valley. He pointed out the conflict of jurisdiction between state and federal governments and argued that federal control would result in the construction of better

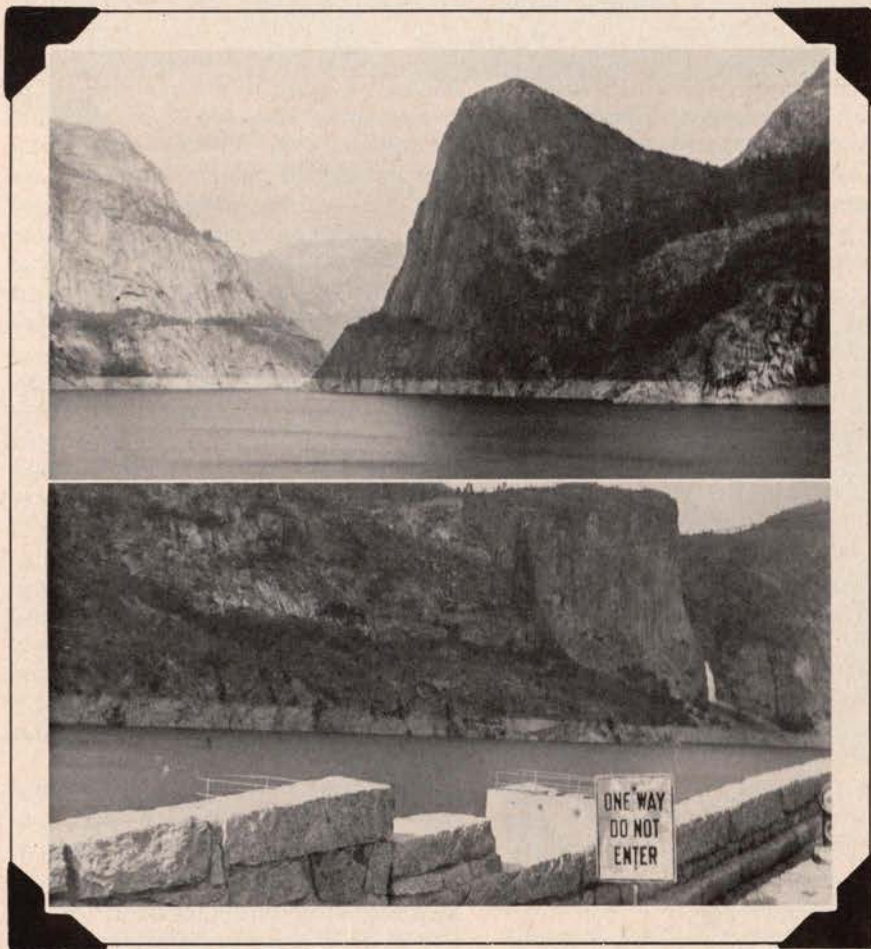
vation philosophy versus the utilitarian philosophy of conservation, is well known. The Sierra Club became aware of the problem in 1905 and actively entered the fray two years later.

Initially the Club labored under serious handicaps in its efforts to save the Hetch Hetchy Valley. Muir, Colby and several others had to dip into their own pockets for funds to finance the fight, and the Club had no representative in the East during a congressional hearing on the matter in 1909. Also, Club leaders themselves were divided on the question. Muir threatened to resign both as president and as a member unless the Club opposed the dam. Colby dissuaded him from taking this stand, and when the issue was presented to the entire Sierra Club membership by ballot, a large majority (589 to 161) voted to uphold the action of the Club's directors in opposing the proposed dam and reservoir.

Despite these difficulties the Club joined with the American Civic Association and other organizations in a national campaign of letter writing and lobbying in Washington in opposition to the dam. The High Trip of 1909 and subsequent Club visits to Yosemite and Hetch Hetchy with distinguished guests helped to bring the area's beauty and special qualities to public attention. Muir and others argued prophetically that Hetch Hetchy was comparable to Yosemite Valley in beauty and would be of most value as a natural scenic and recreational area in the future as increasing crowds of tourists invaded Yosemite National Park. Despite the Club's stubborn battle, however, time proved to be on the side of the city of San Francisco. The city's cause was greatly advanced when the dam gained the support of such men as Gifford Pinchot, former chief forester of the United States, and Franklin K. Lane, former city attorney of San Francisco. Lane became secretary of the interior in the new Democratic administration of President Woodrow Wilson while the struggle was still going on.

In 1913, Congress authorized the dam, and in time Hetch Hetchy Valley became an unattractive reservoir ignored by all but a few park visitors. Although defeated in its efforts, the Sierra Club gained nationwide recognition for its leadership in the cause of preservation in California. John Muir, 75 years old and worn out by the struggle, died shortly thereafter, but the Club continued his work and joined successfully with other citizen groups in persuading Congress to establish a bureau of national parks to preclude the possibility of another loss similar to that of Hetch Hetchy.

For many years the Club benefited from close contacts with both state and national conservation agencies. For example, two of the original members of the board of directors had worked for the U.S. Geological Survey; Stephen Mather, first director of the National Park Service, had joined the Club in 1904, and the early chiefs of the Forest Service had been made honorary Club mem-



Hetch Hetchy after. The battle over Hetch Hetchy, some say, broke John Muir's heart. He died soon after Hetch Hetchy was lost.

roads and trails and in increased numbers of visitors.

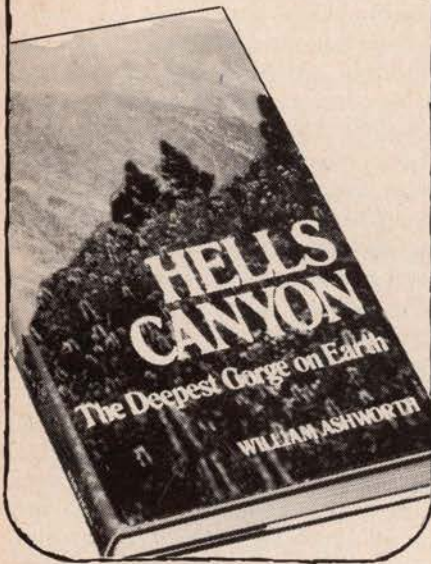
Colby himself drafted a recession bill, and Muir enlisted the support of Edward Harriman, president of the Southern Pacific Railroad, whose expedition to Alaska Muir had joined in 1899. Thanks to active lobbying by Muir and Colby in Sacramento and quiet pressures by the Southern Pacific—the dominant political force in the California legislature, happily fostering its own interest in tourist travel—the recession bill was finally passed in Sacramento in 1905, and Congress agreed to accept jurisdiction of Yosemite Valley.

The recession issue afforded political training for another struggle already under way—the fight to prevent the construction of a dam in the Hetch Hetchy Valley, fifteen miles northwest of Yosemite Valley within Yosemite National Park. The purpose of the dam was to provide water for the city of San Francisco. The struggle over Hetch Hetchy, a classic example of the preser-

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bers. Since most of the land in the Sierra Nevada that the Club wished to protect from commercial development was already under federal control, the Club looked upon the government agencies with general favor and attempted to influence their policies through friendly persuasion. A cooperative relationship between the Sierra Club and the National Park Service, established in 1916, proved most valuable to the Club in its efforts to enlarge Sequoia National Park and to create a park in the Kings River country.

Club members knew this High Sierra country well, having explored and mapped much of it. As early as 1891 Muir had proposed a large forest reserve in the southern Sierra. This proposal led ultimately to the creation of the Sierra Forest Reserve in 1893, a vast area of more than four million acres stretching from Yosemite National Park on the north to a point well south of Sequoia National Park. Included in the reserve were the Kings and Kern river watersheds, which the Club hoped would eventually be preserved by inclusion in national parks.

Following High Trips to the Kings River in 1902 and 1906, Colby wrote to President Roosevelt and others in Washington calling their attention to the area and urging that the federal government protect it and make it more accessible for public enjoyment. By 1912 the Club had proposed that the Kings and Kern river country be made a national park in order to open the area, which later did become Sequoia and Kings Canyon National Parks. The Club contended that the Forest Service simply did not have the funds to build and maintain the necessary trails.

Colby and Joseph N. LeConte, the son of Joseph LeConte, helped draft a bill adding these areas to Sequoia National Park. Although Congress took no action, the bill itself became a model for later proposals. As in previous conservation battles, a handful of Club leaders devoted their time, energy and personal finances to the campaign. In the 1920s, Francis Farquhar went to Washington as the Club's representative to lobby for a park enlargement bill, cooperating closely with Stephen Mather of the National Park Service.

Opposition to the bill came from many quarters. The Forest Service, which still had jurisdiction over the lands in question, objected because it would lose control of areas with commercial timber. Stockmen, hunters and prospectors all feared curtailment of their activities. Even more serious opposition to the park came from irrigators in the San Joaquin Valley and from hydroelectric power interests in Los Angeles

who objected to having dam sites in the Kings River watershed included in a national park. In the face of this strenuous opposition, the Sierra Club in 1926 accepted a compromise—Mount Whitney and the upper Kern River country would be added to Sequoia National Park, but areas in the Kings River country would be deleted from the park enlargement bill.

The Club's strategy was practical—accept what could be gained at the time and renew the fight for a Kings River park when conditions improved. In the 1930s, however, when the Kings Canyon park proposal was revived, the Club directors initially withheld their support. The Forest Service was currently managing the region as a wilderness area, and it was feared that the National Park Service, which would take jurisdiction, might overdevelop the area. This problem was resolved in 1938 when Secretary of the Interior Harold Ickes met with Club leaders at the Bohemian Club in San Francisco and pledged that Kings Canyon would be kept as wilderness.

Thereafter the Club worked actively for a Kings Canyon park, and the Club president, Joel Hildebrand, cooperated with the National Park Service to delineate the boundaries; after all, who knew the Sierra Nevada better than the Sierra Club? In 1939 the Club published an attractive, well-illustrated pamphlet, "The Kings River Should Be a National Park," which argued that the area, like all Forest Service land areas, might be used for commercial purposes, and the only way to protect it completely was to make it a wilderness park.

But once again the Club had to accept a compromise. Yielding to pressure from Ickes, local water associations agreed to withdraw their opposition to the park bill, but only on the condition that a bill be passed providing for construction of the Pine Flat Reservoir in the foothills to the west of the proposed park, and that the proposed park not include the Cedar Grove and Tehipite Valley reservoir sites on the Kings River. Although the Club's willingness to compromise was criticized by many preservationists, the Club believed that "half a loaf is better than none" and that the *entire* area could be lost to power developers unless some action were taken immediately. In time the Club's policy was vindicated; Congress established Kings Canyon National Park in 1940, and later Cedar Grove and Tehipite Valley were added to the park.

During these first five decades (1892-1940) of the Club's existence, it had remained essentially a California association



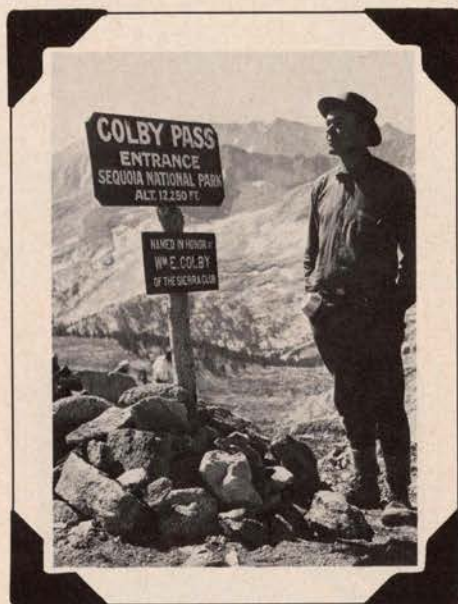
Four Club leaders at Hutchinson Meadow in the High Sierra near Mono Divide on a 1939 High Trip. From left to right: Oliver Kehrlein, William E. Colby, Dick Leonard and Dave Brower.

with a limited range of conservation activities. Although Club membership now surpassed 3,500, its leaders continued to focus on only one or two major conservation campaigns per year. Club members who cooperated in letter-writing campaigns normally followed the policies of the Club's directors.

Nevertheless, change was in the air, and the Club faced increasing disagreements over policy. For example, William Colby, who had served as a director for nearly half a century, resigned from the board in 1949 when Richard Leonard, David Brower and several other directors blocked a proposal for a road into the upper Kings River country in the Sierra. Colby shared Muir's philosophy that everyone should have an opportunity to see as much of the mountains as possible. Accordingly the Sierra Club had proposed roads across Kearsarge and many other Sierra passes. But now, a new generation of Club leaders balked at the idea of opening the mountains to more people; at their suggestion the by-law instructing members to render the mountains "accessible" was deleted.

Although Colby was in favor of the proposed road, he recognized that the number of visitors to the mountains should be restricted—especially visitors to Yosemite Valley, where annual attendance had passed half a million. He foresaw the day when visitors to Yosemite would have to find accommodations outside the park and forecast that "at frequent intervals noiseless trains of rubber-tired sightseeing cars will enter the valley, passing up one side and down the other, making frequent stops so that visitors will have freedom in walking about on the valley floor on designated paths and trails." Personally, Colby was glad that that day had not yet arrived.

Conservation issues increased in



William E. Colby, long-time Secretary of the Club, on the John Muir Trail at Colby Pass, in the High Sierra.

number and complexity; there were no easy answers, and it was obvious that the Club's fifteen directors had more work than they could handle. So, when Club members returning from World War II expressed alarm at the threats to wilderness by proposed developments, the Club established a conservation committee, headed by Weldon Heald, with sections in northern and southern California. The committee served as a watchdog on pressing issues and encouraged cooperation between chapters and the head office in San Francisco.

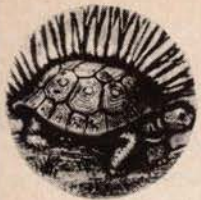
There were indeed pressing issues. They included, to name a few, a threat to state park lands in the Adirondacks, a proposal to abolish Jackson Hole Monument in Wyoming, a question about flood con-

trol and power production on the Potomac River, another question about a wildlife refuge in the Florida Everglades, and a dispute about the acquisition of lands to increase the size of Mount Rainier National Park. In the next few years the Club worked to protect Kings Canyon against dams, to stop the building of a tramway into Mount San Jacinto State Park in southern California, to prevent logging in the rain forest of Olympic National Park in Washington and to preserve the boundaries of Oregon's Three Sisters Primitive Area and New Mexico's Gila Primitive Area. Clearly the Sierra Club was stepping beyond the state borders of California.

With the creation of the east coast Atlantic Chapter (1950) and the Pacific Northwest Chapter (1954), the Sierra Club was rapidly becoming a national organization. For sixty years the Club had been a relatively small outing and conservation association, its work carried on by volunteers. In fact Muir and Colby, who directed the Club for most of these years, had donated their services. It was evident that the Club needed more administrative help. The office of executive director was set up, and in 1952 David Brower was first to be appointed to the post. His appointment was well timed.

In 1953 the Club launched an all-out campaign to block construction of an Echo Park dam in Dinosaur National Monument on the Colorado-Utah border. The proposed dam was part of the multibillion-dollar Upper Colorado Project. Not only would the waters behind the dam flood unique natural, geological, paleontological and archaeological features of the Monument, but the precedent of building such a dam would endanger any site desired for water storage or hydroelectric power development. To the Sierra Club, Dinosaur was Hetch Hetchy all over again.

The campaign was on a scale never before undertaken by the Club. Special raft trips down the Yampa River introduced Club members, as well as nonmembers, to the beauties of Echo Park. Bulletins were issued to alert chapters of the latest developments and to enlist their support; a color film was made showing the dangers to the area; Wallace Stegner, the noted novelist, edited a book, *This is Dinosaur*, that described the beauty and distinctive qualities of the region. Articles appeared in national magazines; ads were placed in major newspapers; letters flooded the desks of congressmen. David Brower skillfully coordinated the Club's campaign with the activities of citizen groups across the nation, particularly The Wilderness Society. He appeared before congressional com-



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mittees to expose faulty data provided by the Bureau of Reclamation and to show that other sites for dams were available. Furthermore, he argued convincingly that construction of the expensive Echo Park dam might never be necessary and that water desperately needed downstream would be wasted by evaporation.

The success of the entire Colorado River Project rested on the resolution of the Echo Park controversy. Because of the way the legislation was written, no dam, including Glen Canyon downstream, could be authorized until Congress decided whether the national monument could be violated in this way. In the end, the Bureau of Reclamation met defeat and accepted a compromise—the Colorado River Project with a Glen Canyon dam was approved, but Dinosaur National Monument lay untouched. This was, of course, one more compromise for the Sierra Club—Glen Canyon ("the place no one knew") was lost, while Echo Park was saved.

Fortunately the Club had laid the groundwork for opposition to future dam proposals either within or affecting national parks and monuments. Changes in technology also helped the Club's efforts by providing practicable alternatives to hydroelectric power to pump water to the lower Colorado River states for irrigation and other uses. And statistics on evaporation and siltation rates made large, costly dams increasingly unattractive.

By 1960 the Sierra Club had come of age. The membership, which had passed 10,000 in 1956, included people from nearly every state as well as from fifteen foreign nations. The Club was poised for explosive growth in the following decade. Its annual conservation budget had grown from \$5,000 to \$30,000 within six years. Its new directions were indicated by the range of environmental issues with which the Club was concerned: sonic booms from airplanes, urban sprawl, excessive use of pesticides, protection of coastal areas, a national wilderness bill, overuse and misuse of recreational facilities, as well as such familiar topics as a proposed trans-Sierra road and dams in national parks. Its activities and membership no longer limited to northern California, the Sierra Club had indeed entered a new era. □

This second article on Sierra Club history brings the Club only into the 1960s. From time to time, in future issues, we will present further such articles on the Club's history and its activists. — The Editor.

Douglas H. Strong has written extensively on environmental history; he teaches history at San Diego State University, and is a long-time member of the Club.

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1978 Sierra Club Outings



Joan R. Challinor

Spring Trips

AS USUAL, the Spring Outings will be concentrated in the desert and canyons of the Southwest and Mexico. But don't forget the other trips: a wilderness outing by canoe in the Okefenokee Swamp, camping on Hawaiian beaches, ski-touring in Colorado or the Adirondacks, and leisurely boat trips off the Mexican coast.

Sierra Club trips average from 12 to 30 members and are generally organized on a cooperative basis: trip members help with the camp chores including food preparation and cleanup under the direction of a staff member. First-timers are often surprised at the satisfaction derived from this participation. To determine which outing best fits your needs, read the following trip descriptions carefully and see "For More Details on Spring Outings." Reservation requests are being accepted now for all spring trips. See "Reservations for Sierra Club Trips."

(22) Okefenokee Canoe Trip, Georgia—March 13-18. Leader, Peter Bengtson, 19315 Frenchton Pl., Gaithersburg, MD 20760. Cost: \$185.

Canoe with a small group through this wildlife refuge at the headwaters of the Suwannee River. Six leisure-to-moderate days. Minimum age 16 with sponsor. Canoes are not

provided but rentals are available. Leader approval is required.

(23) Kauai's Beaches and Mountains—March 17-26. Leaders, Lynne and Ray Simpson, 1300 Carter Rd., Sacramento, CA 95825. Cost: \$315.

Celebrate winter's end on this outing to tropical Kauai, camping in public beach parks and cooking with menus drawn from various island cultures. Day activities will include special hikes led by local chapter representatives, snorkeling and swimming, and one overnight hike to a remote valley once occupied by ancient Hawaiians.

(24) Big Bend Region Education Highlight, Texas—March 18-25. Instructor, Pierre C. Fischer. Leader, John Colburn, 11109 Shoreline Dr., El Paso, TX 79936. Cost: \$300.

Under the direction of a qualified professional naturalist, we will explore the unique Lower Chihuahuan desert environment of the Big Bend Ranch and Big Bend National Park. Moving days will be leisurely, and many alternative activities allowing full enjoyment of the desert in springtime can be arranged. Four-wheel drive vehicles will move equipment and supplies between campsites. University credit may be available at extra cost.

(25) Natural History of the Anza-Borrego Desert, Base Camp, California—March 19-25. Instructor, Will Neely. Leader, Serge Puchert, 37 Southridge Ct., San Mateo, CA 94402. Cost: \$175.

Camp will be located near Borrego Springs, 90 miles NE of San Diego. The outing is designed for those who would like to study the natural wonders of the living desert. Hiking will be very easy.

(26) Panamint Mountains, Death Valley, California Burro Trek—March 26-April 1. Leader, Jack McClure, 75 Castlewood Dr., Pleasanton, CA 94566. Cost: \$220.

The Panamint Mountains, just west of Death Valley, are an area where extensive silver mining was carried on late in the 19th century. Our rugged route through the high desert will take us by several abandoned mines and adjacent buildings. This is cactus, sagebrush, and piñon pine country. As in the mining days, hardy burros will carry our food, equipment, and water as we travel from spring to spring.

(27) Rio Grande River Through Big Bend Park, Texas—April 15-22. Leader, Bernie Millett, 708 Mercedes, Fort Worth, TX 76126. Cost: \$235.

This is a remote, 100-mile, scenic sightseeing trip through the high, sheer-walled canyons of the park. We will canoe through Santa Elena Canyon, 1,400 feet deep, and Mariscal Canyon, 1,900 feet deep. The river flows through a vast, rugged, lonely desert wilderness that few people visit. The trip starts and ends at Midland/Odessa, Texas airport. Canoes and transportation to Big Bend will be furnished. Leader approval required.

(28) Salt River, Arizona—April 16-22. Leader, Lester Olin, 2244 Ave. A, Yuma, AZ 85364. Cost: \$165.

The Salt River traverses the deep canyons of eastern Arizona for about 50 miles before entering Roosevelt Lake. During the spring snow melt this section is runnable with small rafts. We will provide oar-powered rafts and paddle boats for the trip. In addition to floating the river we will have time to explore some of the adjacent canyons and ridges. This area is being

considered for protection under the Wild and Scenic Rivers Act.

(29) Illinois River, Southwest Oregon—May 1-5. Martin Friedman, 353 Montford Ave., Mill Valley, CA 94941

A tributary of the Rogue River, the Illinois drops 30-50 feet a mile through a completely isolated canyon area, making this outing a true wilderness experience. The springtime water level assures exciting river running, and this trip, offered for the first time, is for experienced river runners. Leader approval required.

(30) Klamath River, Northern California—May 21-25. Tris Coffin, 500 Tamalpais Ave., Mill Valley, CA 94941

Springtime in northern California offers pleasant surprises for even the experienced river runner. Tree-lined banks and broad sand beaches provide fine campsites with good hiking and swimming available. River otters, bear, osprey and other wildlife are often seen, and fish are abundant. With rapids of medium difficulty, this Klamath trip is excellent for novice river runners.

(31) Owyhee River, Oregon—May 29-June 2. Leader, Russell Snook, 730 W. Edmondson Ave., Morgan Hill, CA 95037. Cost: \$285.

The Owyhee River of eastern Oregon takes us through one of the most rugged and colorful river canyons in the Northwest. Prolific and varied bird populations and other forms of wildlife make this an outstanding trip for nature lovers. Unusual geologic formations, hot springs, cool side streams, old homestead sites and good rapids add interest to this little-known corner of the West. Minimum age 8. Car shuttle available at additional cost.

Knapsack Trips

KNAPSACK TRIPS offer the most freedom for exploring wilderness because everything you need is on your back. Young and old are today showing an eagerness for the adventure, solitude and personal challenge of knapsacking. Sierra Club trips provide all these rewards as well as the example of how to knapsack knowledgeably and comfortably. Knapsacking is strenuous activity, however. For a trip of a week, the starting load may weigh from 35 to 40 pounds, but the exhilaration and extra physical effort make you feel more a part of the wilderness. With today's new designs in backpacking equipment, almost anyone in good health and physical condition can enjoy knapsacking.

All trips require members to help with the cooking and camp chores, although the leaders provide commissary equipment and food. Trip members bring their own packs, sleeping bags, shelter and clothing.

Trips are rated as leisure, moderate and strenuous by the individual leader. The ratings are made as accurately as possible on the basis of total trip miles, cross-country



Merle W. Berry

miles, the aggregate climb, terrain difficulty and elevation.

Strenuousness is measured also in less obvious ways. On desert trips members are often required to carry liquids which significantly increase their pack loads. Canyon trips obviously entail steep descents and climbs and quite variable temperatures from top to bottom.

The demands of knapsacking require that the leader approve each trip member based on responses to questions about previous knapsacking experience and equipment. If you lack experience or have never knapsacked at high elevations for any length of time, you may qualify for one of the less strenuous trips by going on weekend knapsacking outings prior to the trip. Unless otherwise stated, minimum age on knapsack trips is 16, although qualified youngsters of 15 are welcome if accompanied by a parent.

(34) Superstition Wilderness, Tonto Forest, Arizona—March 19-25. Leader, Rod Ricker, P.O. Box 807, Cottonwood, AZ 86326. Cost: \$55.

Knapsack-oriented trail maintenance trip in the less-used eastern portion of the Superstition Mountains. We will move our base camp and have time for several side trips. Expect warm days with desert flowers in the lower elevations and a slight chance of snow in the higher elevations.

(35) Grand Canyon, Arizona—March 19-25. Leader, Tom Pillsbury, 1735 Tenth St., Berkeley, CA 94710. Cost: \$185.

This will be a strenuous backpack trip over non-maintained trails and cross-country in Grand Canyon National Park and nearby regions. There will be no layover days. Some use of climbing ropes will be necessary.

(36) North Rim, Grand Canyon, Arizona—April 30-May 6. Leader, Bill Wahl, 325 Oro Valley Dr., Tucson, AZ 85704. Cost: \$135.

During the 5,000-foot descent, the route includes little-hiked areas through the Redwall Formation into seldom-visited upper Tapeats Creek. The country varies from the pine covered Powell Plateau to piñon and juniper belts, narrow canyons, desert valleys, cascading creeks and the Colorado River. Moderate.

(37) Paria Canyon Photography, Arizona-Utah—April 30-May 6. Instructor, Bruce Barnbaum. Leader, Tim Ryan, P.O. Box 16051, Phoenix, AZ 85001. Cost: \$185.

In the primitive plateau country of northern Arizona and southern Utah, the Paria River has carved a spectacular canyon through Navajo sandstone. Canyon walls often reach to 1,200 feet, while passage thoroughfares sometimes narrow to eight feet. The leisurely pace of this trip and the dramatic scenery are ideally suited to photography buffs of all levels.

(38) Appalachian Trail, Nantahala Forest, North Carolina—May 7-13. Leader, Dave Bennie, 2405 Churchill Dr., Wilmington, NC 28401. Cost: \$145.

Hiking off-season from Deep Gap to Tellico Gap south of the Great Smoky Mountains, we will pass over 5,000-foot peaks and 4,000-foot gaps on 40 miles of well-maintained trail in a remote, lesser known section of this area. Elementary backpacking experience is acceptable; under 18 must have experience. Moderate.

(39) Guadalupe Mountains, West Texas—May 14-20. Leader, Steve Hanson, 14734 Hornsby Hill Rd., Austin, TX 78734. Cost: \$140.

Thirty miles southwest of Carlsbad Caverns, the hills which contain the cave rise to form the highest mountains in Texas. The park contains the southernmost extension of Canadian life zones, with plants and animals unique to Texas. The terrain is moderately rugged with a few steep climbs. We will range from 5,500 to 8,000 feet, with two layover days. There will be day hikes into the Bowl and McKittrick Canyon and a climb of Bush Mountain to view the salt flats 3,000 feet below. Moderate, with heavy packs.

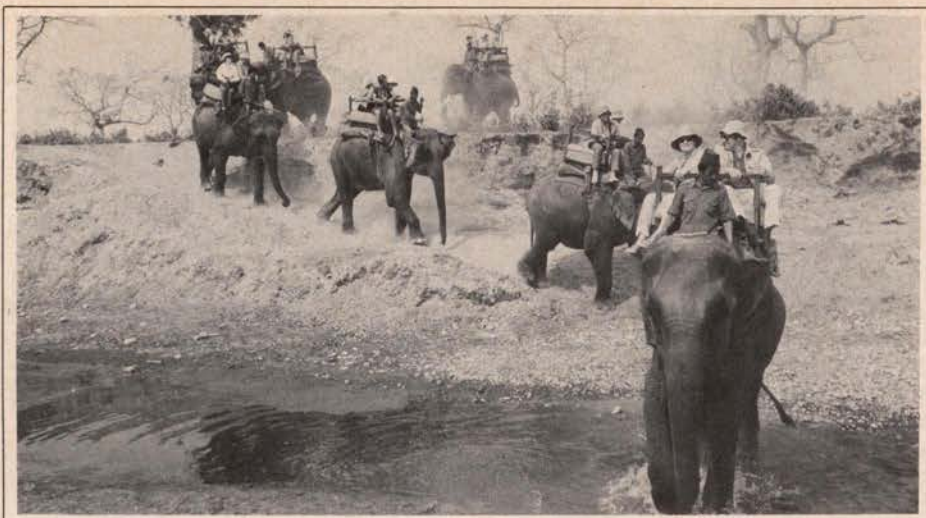
Foreign Trips

SIERRA CLUB FOREIGN OUTINGS visit almost every part of the world, staying as close to the land and people as possible. Trip size is usually from 15 to 25. Prices are approximations and do not include air fare. Final trip costs will be published in the January 1978 *Sierra*.

(722) Baja Driving-Hiking Adventure—January 9-20. Leader, Monroe Agee, 13750 Rivulet Rd., San Jose, CA 95124.

Our loop trip in 4-wheel-drive vehicles will include camping and exploring the coastal areas of both the Sea of Cortez and the Pacific Ocean, with side excursions into the central mountains—probably as far south as Bahia de Los Angeles. We will visit Scammon's Lagoon, whale breeding grounds, Spanish missions and ruins of old Russian and English settlements, and enjoy unique botanical sights. Moderate hiking is optional. Swimming and snorkeling are good. Experienced guides will accompany us. Approximate cost: \$660.

(730) Venezuela/Surinam: By Foot and Paddle—February 10-March 5. Leader, Betty Olds, 131 Bret Harte, Berkeley, CA 94708.



Explore the unexplored as we become the first Sierra Club group to navigate the Rio Cuyuni, Chicanan and Carroa. Under guided direction we paddle both native dugouts and inflatable rafts 300 Km. through forests overflowing with rare orchids and exotic birds; fine freshwater swimming, fishing, day hikes and hammock sleeping. Surinam's two major reserves are Raleigh Falls—boating, camping and walking in undisturbed tropical rain forest; and Wia Wia—observing nesting sea turtles plus many coastal birds. Requirements: stamina and flexibility. Leader approval required. Approximate cost: \$1955.

(735) East Africa: Cross-Country Horseback Safari, Kenya—January 30-February 22. Leader, Monroe Agee, 13750 Rivulet Rd., San Jose, CA 95124.

This cross-country adventure on horseback from Nairobi to visit Lake Naivasha and the Samburu Game Refuge will allow everyone a unique opportunity to observe, study and photograph at close range the multitude of wild game, especially the bird life; also to enjoy the beauty and peacefulness of the great Rift Valley. We will overnight at tented camps and lodges. Approximate cost: \$1840.

(740) Winter Walking in Norway—March 3-17. Leader, Betty Osborn, 515 Shasta Way, Mill Valley, CA 94941.

This second ski touring trip in Norway will be an adventure for the experienced and the novice. We will be guided on daily excursions and overnight tours, weather permitting, by members of the Norwegian hiking club, who will teach us Norwegian touring techniques. We will base camp at DNT huts or lodges in at least three areas: Finse (Hardangervidda) on the Oslo-Bergen railroad, known for its winter beauty and excellent ski touring; Gjendesheim in the famous Jotunheimen mountains; Rondvassbu in the rolling Rondana National Park—all beautiful areas. Leader approval required. Approximate cost: \$695.

(745) Spring Trek into the Foothills of the Nepal Himalaya—March 10-April 2. Leader, Al Schmitz, 2901 Holyrood Dr., Oakland, CA 94611.

This two-week trek into the foothills of the Annapurna range is during the height of the rhododendron blooming season. The highest al-

titude does not exceed 10,000 feet, and daily hiking distances do not exceed 10 miles. A three-day river raft trip to Tiger Tops in the Terai is included. Leader approval required. Approximate cost: \$1175.

(755) Wales, England, Scotland—June. Leaders, Lori and Chris Loosley, 22 Westbury Rd., New Malden, Surrey KT3 5BE, U.K. and Doug McClellan, 88 Ridge Rd., Fairfax, CA 94930.

Some of Britain's best mountain scenery, countless historic sites, a wildlife refuge, and the problems of their preservation will be explored on our 3-week trip in Wales, England's Lake District, Scotland and the western Isle of Skye. Variable weather, simple accommodations and hiking of up to 12 miles a day can be expected. Leader approval required. Approximate cost: \$960.

(760) Japan—from the Inland Sea to Northern Honshu. June 24-July 23. Leaders, Tony and Mildred Look, 411 Los Ninos Way, Los Altos, CA 94022.

Island-studded Inland Sea National Park is best seen from our steamer trip through the waterway prior to visiting Shikoku Island and Mt. Ishizuchi. Awaji Island next, then the historic art center—Kyoto. An airlift to Northern Honshu begins a cross-island trip to a mountain spa and a samurai village before visiting Rikochu Coast National Park and Matushima Bay. Meet and hike with Nature Conservation and Wildbird Protection groups and the Japan Alpine Club for visits to unusual places in Japan. Approximate cost: \$1500.

(765) Spain: Central Pyrenees—June 25-July 15. Leader, Lewis Clark, 1349 Bay St., Alameda, CA 94501.

Twenty-one days combining walking and riding charter buses in the scenic *Pyrenees Central* with a short swing into *les Pyrenees de France*. Stay in village *hostales* and mountain *refugios*. Walking mostly moderate to easy, with some travel over snowfields and a glacier. Leader approval is required. Approximate cost: \$785.

(770) Canal Casiquiare, Venezuela-Brazil—Summer, 1978. Leader, Ted Snyder, Rt. #1, Box 261, Walhalla, SC 29621.

The bifurcation of the Orinoco gives rise to

the Casiquiare, a tributary of the Rio Negro. We boat 1,300 miles through practically unsettled rain forest, little-explored since Humboldt and Wallace. Unscouted; an expedition subject to unexpected difficulties. Begin at Caracas; end in Manaus. 3-4 weeks. Leader approval required. Approximate cost: \$2450.

(785) Hiking in Iceland—July 10-23. Leader, Brad Hogue, 3750 Long Ave., Beaumont, TX 77706.

Hiking through volcanic deposits ranging in size from granular to massive, across lush meadows and icy streams. We will sleep in huts or tents and have layover days that may be spent hiking or at leisure. Some bus travel to geysers, waterfalls, a museum. Children accompanied by parents encouraged. Minimum age, 12. Leader approval required. Approximate cost: \$600.

(775) Kenya: Northern Frontier, East Africa—July 12-August 7. Leader, Ross Miles, 350 Sharon Park Dr., #B-21, Menlo Park, CA 94025.

On this magnificent outing we travel from the Tanzania border to Lake Turkana. Among the areas covered will be the Masai Mara Game Reserve, Lake Nakuru, Samburu-Isiolo Game Reserve, Marsabit, Lake Turkana and Mt. Kenya. We will visit the Masai, the Samburu, the Turkana, the very primitive El Molo and the nomadic camel people of the Matthews Range. Travel will be by Landrover, and we will hike when regulations permit. The outing requires a spirit of adventure and is suitable for anyone in good physical condition. Approximate cost: \$1865.

(790) Hiking and Canoeing in Sweden—July 20-August 10. Leaders, Blaine Le Cheminant, 1857 Via Barrett, San Lorenzo, CA 94580 and Mary Miles, 18 Farm Rd., Los Altos, CA 94022.

For eight days we canoe a lovely chain of forest-rimmed lakes, visit picturesque villages, camp in lakeside forests, explore rocky islands as well as fish and swim. An overnight train carries us above the Arctic Circle to Kiruna where we start eight days of hiking in Swedish Lapland. We stay in mountain huts and lodges along the way. The trail takes us through wide glacial valleys in Europe's last wilderness and the birch forests of Abesko National Park. Approximate cost: \$1015.

(780) Kashmir-Ladakh Leisure Trek, India—August 6-September 5. Leader, Tris Coffin, 500 Tamalpais Ave., Mill Valley, CA 94941.

The Vale of Kashmir, with its reputation for exotic beauty, is surrounded by Himalayan mountains with views of the nearby Karakoram. We will trek in a seldom-visited wilderness seeing Gujar nomads, glaciers and flowers for 16 days and 100 miles. We then visit Leh in Ladakh seeing its Tibetan terrain and Buddhist culture. Then we will enjoy the leisure of houseboat living near Srinagar, crossing lotus-covered Lake Dal by shikara to Shalimar. Return through India allows side visits to Taj Majal, etc. Approximate cost: \$1325.

(800) Mont Blanc and the Vanoise, France—mid-August (17 days). Leaders, Pat Hopson, 907 6th St., SW, Apt. 504C, Washing-

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For More Details on Spring Outings

For more information on any of these trips, write the Sierra Club Outing Department for the specific supplement on that outing. Trips vary in size and cost, in the physical stamina and experience required. New members may have difficulty judging from these brief write-ups which trip is best suited to their own abilities or interests. Don't be lured onto the wrong one! Ask for the trip supplement before you make your reservation, saving yourself the cost and inconvenience of changing or cancelling a reservation. The first five supplements are free. Please enclose 50 cents apiece for extras. Write or phone the trip leader if any further questions remain.

Be sure to see the January 1978 Sierra for information on the full 1978 Outing Program.

Clip coupon and mail to: 11/77

SIERRA CLUB OUTING DEPARTMENT

530 Bush Street, San Francisco, CA 94108

Sierra Club Member Yes No

Send Supplements:

___ # ___ # ___ # ___ # ___

Name _____

Address _____

Enclosed is \$ _____ for supplements requested over 5 at 50¢ each.

ton, DC 20024 and Dick Williams, 2111 North Scott St., #64, Arlington, VA 22209.

This outing combines the circuit of Mt. Blanc (Europe's highest peak), a classic alpine walk through France, Italy and Switzerland, with a traverse of a nearby and less-visited French national park. Both walks feature spectacular mountain scenery, varied wildlife, and close approaches to large glaciers, but no glacier walking; seventeen days beginning mid-to-late August. Hiking is moderate to strenuous; minimum age, 16; leader approval required. Approximate cost: \$880.

(805) Walking, Camping in Kenya and Botswana; Optional Trip in Zambia—August 7-September 2. Leader, Betty Osborn, 515 Shasta Way, Mill Valley, CA 94941.

On this safari we will walk and camp in some of the finest game-viewing and scenic areas in each country. We will visit Kenya's game-rich Masai Mara, the wild and primitive Loita Hills where tourists seldom go, and Botswana's Chobe National Park and the uninhabited Okavango Delta, a patchwork of waterways and islands with excellent fishing. Hiking distances will be moderate, and this trip is suitable for anyone in good physical condition. An optional week's trip in Zambia is planned after the end of our visit to Botswana. Approximate cost: \$1815.

(810) Nepal, Jumla to Pokhara—September 30-November 2. Leaders, Emily and Gordon Benner, 155 Tamalpais Rd., Berkeley, CA 94708.

This lengthy, but moderate trek offers a splendid variety of Nepalese terrain, people and architecture. Walking east from Jumla, you'll be among the Bhote, the group to which the Sherpas belong, and the Pahari, the "people of the mountains." At the midway point, Dhorpatan, you pass through a large Tibetan center, and as you reach the park-like country before Pokhara you'll meet members of the Gurung and Magar tribes. The highest pass used is Jangla Bhanjyang at 14,600 feet. The use of aircraft to begin the trek furnishes magnificent views of the western giants, Manaslu, Machhapuchhare, Annapurna Himal and Dhaulagiri. There will be time for sightseeing in the Kathmandu Valley and post-trek visits to the sacred Hindu city of Varanasi and to Agra, site of the Taj Mahal. Leader approval is required. Approximate cost: \$2070.

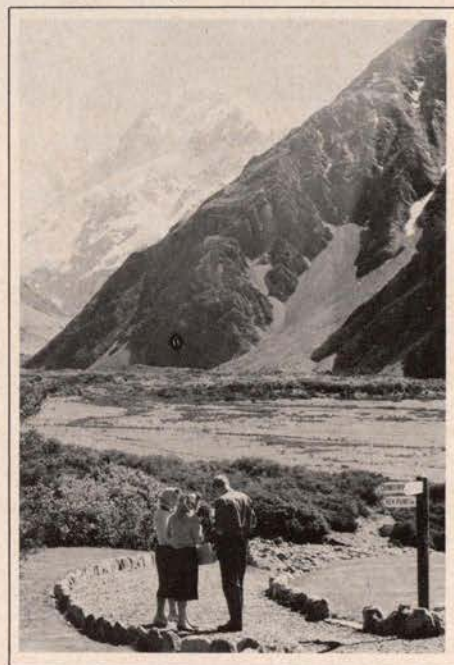
(812) Everest Base Camp, Nepal—November 13-December 8. Leader, Peter Owens, 117 E. Santa Inez, San Mateo, CA 94401.

This moderate 4-week trip will feature a 20-day round-trip trek from the Lukla airstrip to the Everest base camp at the foot of the great Khumbu Icefall. To aid in acclimatization, days have been scheduled for side trips to the Sherpa villages of Solo Khumbu and Thame and the famous Tibetan monastery of Thangbouche. Our highest camp will be at 17,100 feet. This economy-priced trip will do without some of the traditional luxuries normally found on Nepal treks. Leader approval required. This trip may be combined with the Annapurna trek. Approximate cost: \$785.

(820) Hoggar Mountains Camel Caravan,

Southern Algeria—November 29-December 16. Leader, Lynne Simpson, 1300 Carter Rd., Sacramento, CA 95825.

Solitude, clean air, enormous expanses, vivid sunrises and sunsets, and a quiet that builds in you as the trip progresses . . . these are some of the qualities to be found on this camel caravan in the desert region of the Sahara. Members of the native nomadic Tuareg tribe will be the camel drivers and cooks under the guidance of a French mountaineer who himself has adopted the Tuareg way of life. You will probably both ride your camel and walk up to 30 km daily. Water is scarce; food is both native and imported. Approximate cost: \$1515.



Sierra Club

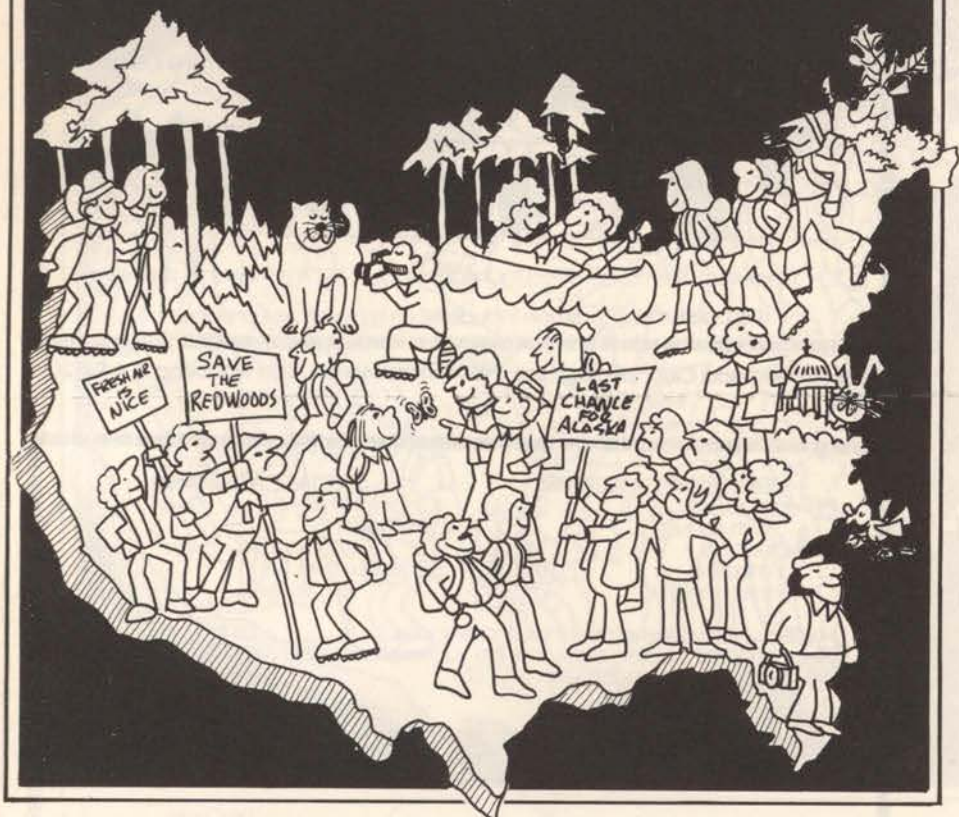
(822) Christmas at Annapurna, Nepal—December 18-January 6, 1979. Leader, Peter Owens, 117 E. Santa Inez, San Mateo, CA 94401.

We will go by truck from Kathmandu to Pokhara where we will begin our moderate 15-day trek to the heart of the Annapurna Massif. We will be trekking through Gurung villages as we make our way to our highest camp at about 13,000 feet in the Annapurna Sanctuary. On our way out we will hike the Ghorapani ridge with its splendid views of the Dhaulagiri range and the Kali Gandaki Gorge. This economy-priced trip is designed to fit into the 3-week school holiday vacation. Children over 12 are welcome if accompanied by an adult. Leader approval required. Approximate cost: \$715.

(825) South Sea Islands—December 30-January 21, 1979. Leader, Ann Dwyer, P.O. Box 468, Geyserville, CA 95441.

In December and January, it is summer in Fiji, Tonga and Samoa with large, brilliant flowers and ripe mangoes. When staying in remote villages, we will be able to experience the life and culture of these three island groups and take part in the local activities. We will also swim and snorkel in warm, sheltered waters and hike in the tropical forests. Approximate cost: \$605.

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| <input type="checkbox"/> Contributing | 100.00 |
| <input type="checkbox"/> Life (per person) | 750.00 |

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| <input type="checkbox"/> Junior (thru 14) | \$10.00 |
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| with spouse | 15.00 |
| <input type="checkbox"/> Senior (over 60) | 10.00 |
| with spouse | 15.00 |

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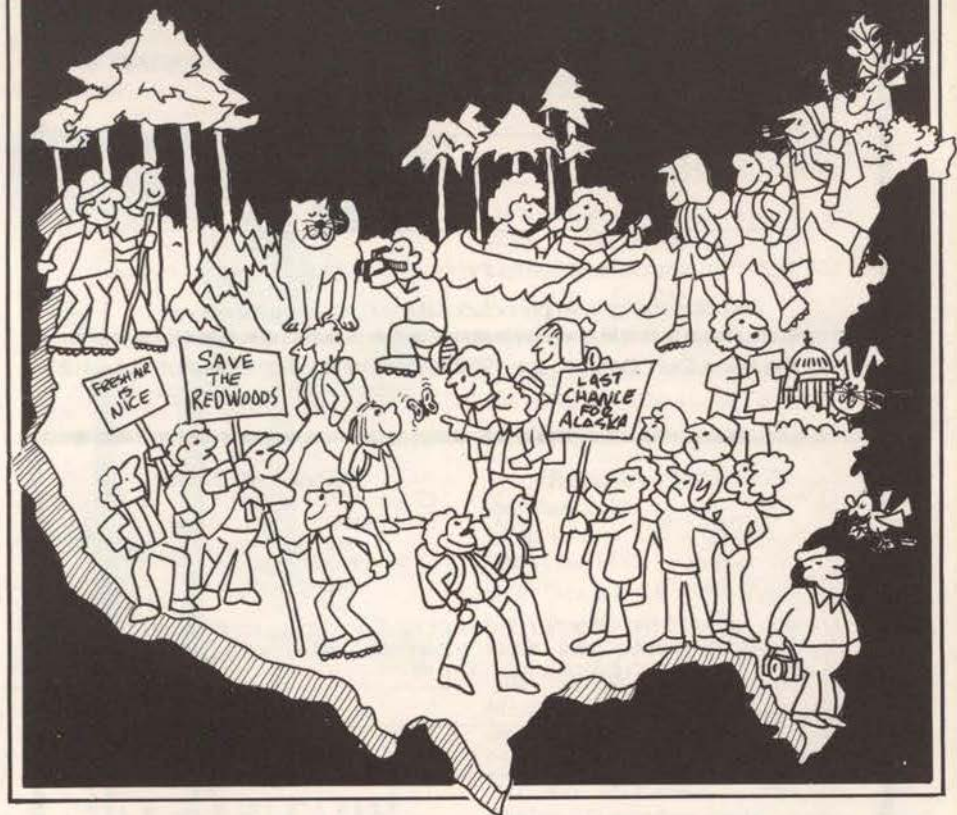
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Mail to: The Sierra Club, Dept. 11, Box 7959 Rincon Annex San Francisco, CA 94120

(915) Hiking in New Zealand—February 10-March 10, 1979. Leader, Ann Dwyer, P.O. Box 468, Geyserville, CA 95441.

The island country of New Zealand features high mountains, waterfalls, fjords, glow-worm grottos, miles of coastline and sheep by the millions. Our hiking will start at Stewart Island in the far south, then up to the Milford Track for a view of Sutherland Falls and Milford Sound. On to Mt. Cook for a hike or two, then over to the west coast to see the Fox and Franz Joseph Glaciers before several days of hiking east to Lakes National Park. Ferry and train will take us north to Wellington and Auckland. Approximate cost: \$1260.



Carol L. Dienger

Spring Ski Touring

(271) Ski Touring Clinic, Steamboat Springs, Colorado—January 8-13, 1978. Leader, Sven Wiik, Box #5040, Steamboat Village, CO 80499. Cost: \$80.

Here is an opportunity for five days of excellent skiing with all levels of touring instruction. Your instructors will all be certified. The trip leader is a former Olympic Nordic coach. Included in the program are selection and care of equipment, ski-touring technique, half- and full-day tours. Arrangements must be made directly with the Scandinavian Lodge for room and board, which are not included in the trip cost.

(273) Adirondack Ski Touring, New York—January 29-February 4. Leader, Walter Blank, Omi Rd., W. Ghent, NY 12075. Cost: \$200.

Trips run daily for all levels of skiers. A chance to upgrade the level of your skiing and visit remote areas of the Adirondack Park in mid-winter. The first five nights will be spent at a delightful farmhouse with homecooked meals. Lunches will be on the trail. The sixth night we will ski into two remote cabins heated by wood stoves. Packs and sleeping bags are required for the last night. Skis may be rented. Leader approval required.

(272) Superior-Quetico Ski and Snowshoe, Minnesota / Ontario — February 19-25. Leader, Stu Duncanson, 1754 Ryan Ave. West, Roseville, MN 55113. Cost: \$190.

Cross-country ski or snowshoe, listen to the wolves, photograph, sketch, or take in the beauty of the frozen north. Our base camp will be on the Gunflint Trail, 30 miles from Grand Marais, one mile from the Boundary Waters Canoe Area and about three miles from the Canadian border. We will be taking day trips from our cabin-based camp, with overnight trips if desired. No experience necessary; minimum age 15.

Boat Trips

(407) Whale-Watching, Leisure Boat Trip, West Coast of Baja, Mexico—January 22-28, 1978. Leader, Monroe Agee, 13750 Rivulet Rd., San Jose, CA 95124.

Seven days round trip, San Diego to Magdalena Bay (via La Paz), birthplace of the California gray whales. It is in this land-locked bay that these magnificent gray whales make their winter homes. Here in small skiffs and with the help of Mexican boatmen, we will be able to observe, at close range, these great beasts court and mate, calve and nurse. The bay is also the winter home of Canada's game birds. Approximate cost: \$495.

(408) Sea of Cortez Leisure Boat Trip, Mexico—March 11-18. Leader, Wheaton Smith, 243 Ely Place, Palo Alto, CA 94306.

(409) Sea of Cortez Leisure Boat Trip, Mexico—March 18-25. Leader, Grace Hansen, 20990 Valley Green #717, Cupertino, CA 95014.

(411) Sea of Cortez Leisure Boat Trip, Mexico—November 18-25. Leader, Steve Anderson, 1082 Lucot Way, Campbell, CA 95008.

These cruises are adventures in sea life, designed to meet the requirements of both the physically active and the more sedentary. These coastal trips along the east coast of Baja California go between La Paz and San Felipe. We will visit exotic islands and observe the abundant sea life of whales, dolphins, sea lions, frigate birds, boobies and pelicans as they go about their undisturbed way. Approximate cost: \$595.

(410) River of Ruins by Raft, Guatemala and Mexico—March 25-April 7. Leader, Frank Hoover, 30184 Arline St., Canyon Country, CA 91351.

Rafting down the River of Ruins (Rio Usumacinta), visiting Maya ruins of Yaxchilan and Piedras Negras, exploring tropical jungles and having fun in the back country of Guatemala and Mexico make this an irresistible trip. We'll swim in the beautiful pools near the Rio Budsilja waterfall, see colorful tropical birds and butterflies, and hear the calls of the small howler monkeys. Trip members should be in excellent health to visit this remote area, although the trip is not particularly arduous. Approximate cost: \$870.

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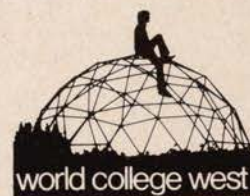
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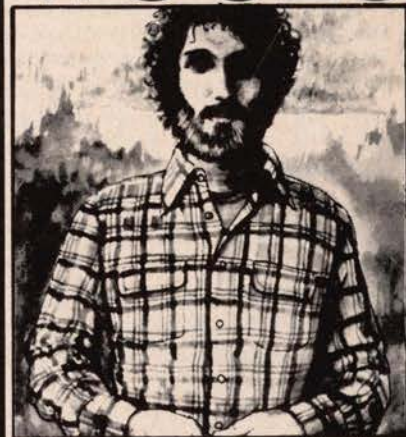
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Reservations for Sierra Club Trips

Changes have been made in deposit/cancellation/refund policies. Please read this page carefully.

Eligibility

Our trips are open to Sierra Club members, applicants for membership and members of organizations granting reciprocal privileges. You may include your membership application and fee with your reservation request. Children under 12 need not be members.

Unless otherwise specified, a person under 18 years of age, unless accompanied by a parent or sponsored by a responsible adult, may join an outing only with the consent of the leader. If you lack a sponsor, write the trip leader for assistance.

Applications

One reservation form should be filled out for each trip by each individual. However, spouses and families (parents and children under 21) may also use a single form. Mail your reservation together with the required deposit to the address below.

Reservations are generally confirmed on a first come, first served basis. However, when acceptance by the leader is required (based on applicant's experience, physical condition, etc.), reservations will be confirmed upon acceptance; such conditions will be noted in *Sierra* or the trip supplement. When a trip's capacity is reached, later applicants are put on a waiting list. The Sierra Club reserves the right to conduct a lottery to determine priority for acceptance in the event that a trip is substantially oversubscribed shortly after publication of *Sierra*.

Reservations are accepted subject to these general rules and to any specific conditions announced in the individual trip supplements.

Deposits

Trips priced up to \$499 per person: \$35 per individual or family (parents and children under 21) application

Trips priced \$500 and over per person: \$70 per person; no "family" deposit rate (except trips listed as "FOREIGN")

All trips listed under "FOREIGN" section: \$100 per person; no "family" deposit rate

The deposit is applied to the total trip price and is *non-refundable* unless 1) a vacancy does not occur or you cancel from a waiting list; 2) you are not accepted by the leader; 3) the Sierra Club must cancel a trip.

Payments

Full payment of trip fees is due 90 days prior to trip departure. In addition, most foreign trips require a payment of \$200 per person 6 months before departure. Payments for trips requiring the leader's acceptance are also due at the above times, regardless of your status. If payment is not received on time by any

trip applicant except those waitlisted, the reservation may be cancelled and the deposit forfeited. You will be billed before the due date.

Refunds

The following policy is effective for all trips departing on or after January 1, 1978. Refunds following cancellation of a confirmed reservation (*less the non-refundable deposit*) are made as follows, based on the date notice of cancellation is received by the Outing Department:

- 1) 60 days or more prior to trip: full amount of remaining balance.
- 2) 14-59 days prior to trip: 90% of remaining balance.
- 3) 4-13 days prior to trip: 90% of remaining balance if replacement is available from a waiting list.
75% of remaining balance if no replacement is available from a waiting list.
- 4) 0-3 days prior to trip: No refund.
- 5) No refund will be made if you are a "no show" at the roadhead or if you leave during a trip.

Transfer of a confirmed reservation from a trip priced up to \$499 incurs a \$35 transfer fee. Transfer of a confirmed reservation from a trip priced \$500 and over per person is treated as a cancellation. See Refund Schedule above. A transfer 0-3 days prior to trip departure is treated as a cancellation.

Your Kind of Trip

Give thought to your real preferences. Some trips are moderate, some strenuous, a few are only for highly qualified participants. Be realistic about your physical condition and the degree of challenge you enjoy.

Emergency Care

In case of accident, illness or a missing trip member, the Sierra Club, through its leaders, will attempt to provide aid and arrange search and evacuation assistance when the leader determines it is necessary or desirable. Cost of specialized means of evacuation or search (helicopter, etc.) and of medical care beyond first aid are the financial responsibility of the ill or injured person. Medical and evacuation insurance is advised, as the Club does not provide this coverage. Professional medical assistance is not ordinarily available on trips.

Additional Conditions

Reservations are subject to additional conditions regarding transportation and conduct during a trip. A complete statement accompanies each reservation acknowledgment and is available upon request.

MAIL TO: SIERRA CLUB OUTING DEPT.—P.O. BOX 7959 RINCON ANNEX, SAN FRANCISCO, CA 94120

MEMBERSHIP NO. (CHECK SIERRA LABEL)		11/77	Trip number	Trip name	Departure date
Print Name Mr. Mrs. Ms.	FIRST	LAST	DEPOSIT ENCLOSED \$	(Leave blank)	No. of reservations requested
Mailing Address			If you have already received the trip supplement, please check. <input type="checkbox"/>		
City	State	Zip Code	Residence telephone (area code)	Business telephone (area code)	
PLEASE PRINT YOUR NAME AND THE NAMES OF ALL FAMILY MEMBERS GOING ON THIS OUTING			Age	Relationship	Membership No.
					How many trips have you gone on? Chapter National



In this early work, *Niagara Falls (1869)*, Bierstadt evokes the power and size of the American landscape.

Albert Bierstadt: The Civilizing Eye

KEVIN STARR

NO LANDSCAPE, no environment, is perceived save through prisms of myth and metaphor—especially if that perception is part of an act of art. Artists create out of internal vision as much as out of what is externally seen. In many cases, what they see merely serves to stimulate a preexistent imaginative response.

Right from the start, the American landscape yielded a harvest of metaphors, because right from the start Euro-Americans imposed psychological states on the landscape or saw there corroborations of previous imaginative tastes, instincts, expectations. We had to learn to see America. This education depended, in part, on developments in contemporary European aesthetics. For instance, just as Americans began to push West in great numbers in the middle nineteenth century, the Barbizon school of painters—Corot, Rousseau, Millet, Daubigny and others—was in the ascendancy in Europe. The Barbizon school, a variation of European romanticism, responded directly to nature as something lavish, even rich and heavy, animated by the moral sublime—and so it is not too surprising that through the influential work of the great American painter of the West, Albert Bierstadt (1830-1902), trained in Europe under strong Bar-

bizon influence, that we Americans, too, should first perceive the Far West through Barbizon-colored glasses. Thanks to the superb scholarship of Gordon Hendricks, author of *Albert Bierstadt, Painter of the American West* (Harry N. Abrams, Inc. New York, 1975), we can enjoy anew the grandeur of Bierstadt's vision.

To appreciate Bierstadt's work is to realize, once again, just how European our nineteenth-century art is—especially the art that attempted to come to terms with the awesome presence of the continent itself. Painters of the Hudson River School of the early part of the nineteenth century, for instance—Cole, Durand, Doughty, whose depictions of Hudson River scenery now afford us such pleasure in the museum of the New York Historical Society in New York City—were doing visually what contemporaries James Fenimore Cooper and Washington Irving were doing in prose: seeing the upstate New York wilderness as though they were European Romantics, which, in part, they were. When General Lewis Cass, who had known the blood-and-thunder frontier of early Michigan, reviewed Washington Irving's *A Tour on the Prairies* in 1835 for *The North American Review*, he thanked Irving for bringing "classical dignity" to

America's "poor barbarous steppes"—by which he meant that Irving had imposed a metaphor of civilization upon parts of Arkansas and Oklahoma by endowing them with landscape metaphors borrowed from European art. Mark Twain aside (it is part of Twain's greatness that in *Roughing It* he saw the West in a totally new, totally American way), most artists who saw the West in the nineteenth century derived their vision from European antecedents. Cooper saw the West partly through the eyes of Sir Walter Scott. Clarence King saw it through the eyes of John Ruskin. Even Bret Harte had a Dickensian view of the West. Albert Bierstadt saw the West, at least at the outset of his career, through the eyes of the Barbizon school.

Bierstadt was, after all, more than partly European. Born in 1830 in a small town near Düsseldorf, Germany, he came at the age of two to New Bedford, Massachusetts, where his father found work as a cooper. Although Bierstadt spent his boyhood and young adulthood in a New England whaling town, living in a typical two-story frame house, little of the New England ethos clung to his character and personality. He was lavish, high-living, bohemian, loving the externalities of experience and possessing none of the angular, introspective prudence of the New England temperament.

A local worthy, Captain William G. Blackier, who himself had traveled and knew the great world, sponsored Bierstadt's study in Europe between 1853 and 1857. (Bierstadt, haphazardly tutored, had been painting seriously since 1850.) Bierstadt returned to his native Düsseldorf, then traveled about Germany, Switzerland and Italy. We find him in Rome on Easter Sunday, 1857, enjoying the papal ceremonies in Saint Peter's. We find him in Naples that May, enjoying a production of *I Puritani* at the San Carlos Opera. Bierstadt was to return to Europe for an extended stay between 1867 and 1871, and again we find him in his accustomed high bohemian circumstances in Rome, Paris, Munich, Dresden, Berlin, Vienna: enjoying a concert by the *Abbé* Liszt in his Roman studio, giving a dinner at the Hotel Langhorn in London for Henry Wadsworth Longfellow, in England to receive an honorary doctorate from Cambridge University.

No—Albert Bierstadt was no homespun American, no citizen of the wilderness, no painter in buckskins. His early work—*The Ruins of Carthage* (1851), *Westphalia* (1855), *Olevano* (1856), *The Portico of Octavia, Rome* (1858), *Bernese Alps as Seen Near Kusnach* (1859), *Italian Village Scene* (1860)—is European in subject matter and tone. *The Portico of Octavia*, in fact, a crowded cityscape filled with realized portraiture, shows a direction Bierstadt might have taken—and taken superbly—had he not adopted Barbizon tastes and then modified them, introducing a distinctly American heroic scale to the Barbizon romantic but tame landscapes. Yet it is the European scenery of these early paintings that foreshadows Bierstadt as painter *par excellence* of the Far West. Bierstadt's trees and mountains play against his subdued, contained villages in a way that is suggestive of wilderness remaining amidst European settlement. The transition from these paintings to Bierstadt's early Western paintings is quite easily made, for there exists a continuity of perception. "The color of the mountains," Bierstadt wrote home in 1859, as he rested in sight of Wyoming's Wind River Mountains on his first trip West, "the color of the mountains and of the plains, and, indeed, that of the entire country, reminds one of the color of Italy; in fact, we have here the Italy of America in a primitive condition." It is no exaggeration to detect an Italian feel to the paintings Bierstadt completed after this journey. The Indians, for instance, of *The Wolf River, Kan-*

sas (1859) or *Indian Encampment, Shoshone Village* (1860) move lazily through a mellow, time-drenched forest, like Italian peasants in the Apennines. The light is soft, serene, Virgilian; the colors run to rich browns, greens and yellows. Nowhere is there the harsh, direct light of the prairies, much less the squalor and the refuse of such an encampment under actual conditions.

We must remember that Albert Bierstadt belonged to, and painted for, the Eastern establishment and its European connections. They wanted to see the West as he saw it: through analogy to historicized European landscapes. They wanted to dispel the terror of the unknown regions by imposing on them a haze of romance. Better that the West be something like the Campagna, Bierstadt's clients subconsciously reasoned, than like the barbarous steppes of Russia—remote, hostile, inhabited by the semi-civilized. For if the West were such, then, as in Russia, barbarous tribes might amalgamate—Indians, halfcastes, escaped slaves, white trash—and, Tartar-like, sweep down upon the peaceable kingdom of the East.

Bierstadt belonged to the upper crust of the Gilded Age. His social life was continuous: giving a luncheon for one hundred, catered by Delmonico's, in his lavish Tenth Street studio in New York in honor of his English friends Lord Dunraven and D'Arcy Osborn, son of the Duke of Leeds; traveling around British Columbia with Princess Louise, Queen Victoria's daughter; visiting the Queen herself on the Isle of Wight; hunting buffalo with the Grand Duke Alexis of Russia; being decorated by the Sultan of Turkey, who collected his paintings; sojourning in California with the likes of Collis P. Huntington, D.O. Mills, Leland Stanford and William Chapman Ralston. Bierstadt offered this clientele a West devoid of the disturbing, disruptive human factor.

When humans do occur, they are dwarfed by trees, mountains and sky; and—to subdue them further—they are most often depicted in states of languid, poised ease: observers of the landscape, not protagonists in it, not settlers or hunters or Indians on the warpath. The very scale of the paintings and the size of the canvases, however, suggest something of the American frontier. In Bierstadt's landscapes one sees for miles and miles, an eagle's domain. And Bierstadt's canvases were, by European standards of the day, huge, dwarfing those of his European contemporaries.

Yet Albert Bierstadt knew another West, one he never painted. Instead, he photographed it, as if photography were the medium of realism, and painting the medium of romance. He heard the poet Bayard Taylor lecture on the West in 1859 at New Bedford and was so excited by what he heard that, at age 29, he got himself assigned to an Army detachment patrolling the Oregon Trail. He made his second trip West in 1863 in the company of Fitz Hugh Ludlow, the brilliant, eccentric, hasheesh-eating essayist whose divorced wife, the beautiful Rosalie Osborne, Bierstadt later married. In both his first and second western journeys, Bierstadt roughed it, in Mark Twain's sense of the term. The stereographs (double photographs viewed through the stereopticon for a three-dimensional effect) taken by Bierstadt in Kansas and Nebraska on that first journey westward give us some feeling for what his "biological" eyes (as opposed to his painterly vision) must have beheld: the simple unromanticized human West. In one, a wagon train of Pikes Peak emigrants set out from Saint Joseph, Missouri, the women in bonnets, the men wearing nonpicturesque green eyeshades as protection against the sun. In another, slatternly frontier children laze against a dilapidated wagon as an emigrant party pauses in the noonday heat. A group of Shoshone children, haphazardly attired in the cast-off clothing of the whites, stands in bewilderment before the camera. A Shoshone warrior, however, mounted atop a



A pastoral, tamed vision of the frontier in Sacramento Valley in the Spring (1875). The California landscape resembles a classical French landscape, complete with lowing kine.



The Rocky Mountains, Longs Peak (1887), is permeated by a soft, almost mysterious air that reflects Bierstadt's European orientation. But the dominant vast scope of the mountains is a specifically American note.



Courtesy the de Young Museum

The strong colors of the Farallone Islands (1872) accentuate the harsh, unsettled environment of the far reaches of the continent.

handsome black horse, shows some of those elements of staged nobility with which Bierstadt endowed his canvas Indians. Photography, however, was as yet an unromantic medium, and so Bierstadt did not stay with it for long. He made friends with the great Eadweard Muybridge. During his residence in San Francisco in the early 70s, he used Muybridge's photographs to refresh his memory on points of landscape; ultimately, however, Bierstadt did not respond fully to the camera's challenge to his romantic eye.

We cannot complain, however, for what Bierstadt chose to do—romanticize the western landscape—he did magnificently. *The Rocky Mountains* (1863), which sold for \$25,000 to an American living in London (how appropriate!) and which now hangs in the Metropolitan Museum of Art in New York City, is perhaps Bierstadt's most fully representational painting, the one most paradigmatic, that is, of Bierstadt's Western vision. Bierstadt's Rockies sweep triumphantly across the upper reaches of his canvas, their snowy peaks blending almost imperceptibly with the clouds. From somewhere in the alpine vastness a river winds its way down rocky slopes, then cascades over a waterfall into a silent lake. An Indian encampment in the darkened lower-right foreground barely intrudes upon the effect of montane dominance. Sunlight and shadow play through the stand of trees opposite the encampment, offering a suggestion of European mystery, as if this forest were not the forest of the raw American West, but some story-soaked wood of the Old World. James McHenry, the American Londoner who bought *The Rocky Mountains* for the highest price hitherto paid for an

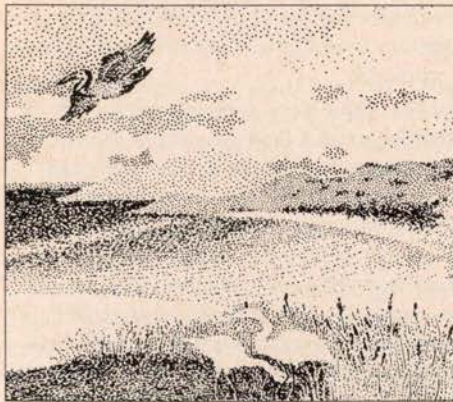
American painting, got his money's worth: a Western landscape that was wild—but not inhospitable—touched by the comforting suggestion of human history and soaked through with a feeling of moral grandeur. Viewing this canvas of Bierstadt's, or others like it, a non-Westerner might feel very, very good about the American West, seeing there but another instance of the European sublime.

In a way, Bierstadt can be said to have humanized the West, to have lessened its terrors. His vision was supremely civilized, and he brought this essential quality to his perception of the West. When in the late 1880s a jury of younger American artists refused to recommend that his *The Last of the Buffalo* (1888) be sent to Paris as an official entry to an exhibition, Bierstadt remarked that he was not surprised—he had, he said, always had a more favorable critical reception in Europe than in his own country. With Impressionism all the rage in Europe and America, Bierstadt himself was something of a solitary surviving buffalo—the last of that earlier generation that had gone West to paint. In doing so, Bierstadt accomplished something of value that would outlast shifts in aesthetic taste. He helped convince a westering nation that it had come into a landscape, an environment, more than merely pretty. It expressed the moral sublime. As such, the West—Bierstadt's and our own—demanded that we Americans be a people worthy of such a superb continent. □

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RARE II: The Sierra Club's View

JOHN McCOMB and DOUGLAS SCOTT



Bob MacDonaid



In October, *Sierra* presented "RARE II: The Administration's View," by Rupert Cutler, Assistant Secretary of Agriculture. Dr. Cutler is the initiator of RARE II. Doug Scott, of the Club's Northwest office, and John McComb, of the Club's Washington office, respond here to Dr. Cutler.—Editor

THE UNITED STATES still has, in its national forests in the lower 48 and in Southeast Alaska, some seventy million acres of "de facto wilderness," roadless land that could be preserved as wilderness.

The Forest Service, directed by Assistant Secretary of Agriculture M. Rupert Cutler, is now proceeding with RARE II (Roadless Area Review and Evaluation), a second try at deciding which of these roadless lands in the national forests should be preserved as wilderness and which should be developed. RARE II has concentrated national attention on wilderness issues—and has also increased the heat of controversy.

The timber industry, complaining that too much commercial timberland is tied up in roadless areas, is pressing for quick decisions on wilderness designation. Conservationists, on the other hand, are concerned about the poor quality of the processes involved in making decisions about roadless areas. They want the procedures and quality of Forest Service decision-making improved and will challenge unfair or premature "final" decisions.

In his guest opinion in October's *Sierra*, Dr. Cutler appealed to members of the Sierra Club to make RARE II work, asking for "a little of your time, a lot of your advice, and even more of your understanding."

We respond with some praise and some concerns.

As Dr. Cutler points out, the Department of Agriculture has tried to solve the problem of roadless areas for more than a decade. It has not succeeded, so RARE II is a rescue mission, seeking to reform unworkable agency procedures in an attempt to resolve the fate of remaining "de facto wilderness."

Dr. Cutler's first reform, even before RARE II got under way, has resolved much of the controversy needlessly engendered by the Forest Service's "purity policy." For more than a decade, the Forest Service has set strict criteria for wilderness designation in an effort to minimize the amount of qualifying land. Conservationists have long protested this policy, pointing out that the definition of wilderness in the Wilderness Act itself provides for flexible and less-than-pure criteria. Until Congress passed the Eastern Wilderness area legislation in 1974, the Forest Service had held that no lands in the East could qualify as wilderness. And in the West, from Montana's Mission Mountains Wilderness to the Agua Tibia Wilderness in southern California, Congress has repudiated the Forest Service's purity-based objections to key wilderness additions.

Dr. Cutler generously credits Congress with the reform of wilderness criteria.

"Congress," he asserts, "has indicated that it is now willing to use somewhat different criteria for classification, particularly in the East." There has been no such change in the views of Congress. The same leaders who enacted the original Wilderness Act have overruled the Forest Service purity policy time and time again in virtually every wilderness bill passed during the last dozen years.

Dr. Cutler's reform of the Forest Service's purity policy has been welcomed by Congress. The House Interior Committee staff wrote that it is "pleased to receive the new Administration's less stringent interpretation of the Wilderness Act and agrees that this new direction is in order." The committee pointed out that "the RARE II program would more fully comply with the spirit of the definition of wilderness in section 2(c) of the Wilderness Act as an area where 'the imprint of man's work is substantially unnoticeable' . . ."

Making Decisions

Prompt decisions are possible and highly desirable for the most obvious candidates for wilderness designation. Much to the dismay of conservationists, Dr. Cutler, in several appearances before congressional committees, has asked for delays pending more study, in decisions on several wilderness proposals in this class—West Chichagof-Yakobi Island Wilderness, the Misty Fjords Wilderness, the Stikine-LeConte Wilderness, the Yakutat Forelands Wilderness, all in Alaska, and

the Gospel Hump Wilderness in Idaho. But Congress is ready to decide on these proposals, even if the Forest Service is not. In our view, there is an inconsistency between Dr. Cutler's rationale for RARE II and the position he has taken on these worthy areas. For other areas, more information is needed; it is here that RARE II offers the most promise.

Unfortunately, RARE II got off to a bad start with the 200-plus workshops held last July and August around the country. In its haste to begin work on RARE II and to comply with the accelerated timetable for the program specified by Dr. Cutler, the Forest Service scheduled the workshops without knowing what they were to accomplish. Instructions for what to do at the workshops were not approved until July 5, only six days before the workshops began. The instructions for completing the inventory of roadless and undeveloped areas were not sent out until June 27.

The resulting confusion, in Forest Service offices and among the public, generated both conflict and controversy. In many areas, the Forest Service did an admirable job of doing an inventory on such short notice. But in other areas, especially in the East and the South, the agency either did an incomplete job or simply abandoned the effort entirely. A few examples:

- The national forests of Mississippi (there are several, but they are administered as a single entity) conducted no inventory at all.
- The Kisatchie National Forest in Louisiana did not do an inventory—except to include the Kisatchie Hills, a long-standing citizen-proposed wilderness.
- The Huron-Manistee National Forests in Michigan did not follow the correct procedures (they had not yet received the chief's instructions), and as a result no roadless areas were listed. When the forest planners *did* receive specific instructions as to which criteria were to be applied to the inventory, no new inventory was attempted.
- The White Mountain National Forest in New Hampshire ignored the Forest Service criteria for conducting the inventory.
- The Green Mountain National Forest in Vermont invented its own supplemental—and more restrictive—criteria for the inventory.
- The Carson National Forest in New Mexico told the Sierra Club that the criteria were only guidelines, and therefore forest planners were not obliged to adhere to them.

By the time this issue of *Sierra* reaches its readers, the final inventory will have

been announced by the chief of the Forest Service. But if the inventory is taken in such arbitrary ways, what can we expect from the remainder of the RARE II program?

When an adequate inventory of roadless and undeveloped lands is finally completed, the Forest Service will attempt trade-offs between wilderness and non-wilderness uses of the areas in the inventory. If it is generally agreed that a particular roadless area is technically qualified to be designated wilderness, a judgment must then be made whether wilderness is the wisest use of that land. RARE II is designed to highlight such trade-off issues. As this is being written, the Forest Service is deciding what resource data must be compiled about each roadless area in order to make trade-off decisions.



If the basic data are biased or full of gaps or too general (as were the data used in 1973 in RARE I), RARE II will not work. If the public cannot have confidence that the data used to justify trade-offs are sound, accurate and balanced, the whole exercise will simply precipitate yet another round of controversy. For example, it is deemed essential to compile data about the volume and value of timber within each roadless area. But these data are incomplete without information about the costs of road construction and logging that would be necessary to harvest the timber. And we must know how both sets of figures compare with similar information for nonwilderness lands. Without this kind of guidance, rational choices of which areas to log cannot be made.

A Loophole

There is a major escape hatch in Forest Service procedures that might result in important roadless areas being dropped from the RARE II inventory before it is even completed.

This loophole is in the normal land-use planning process used by the Forest Service. As a result of a 1972 Sierra Club lawsuit, no roadless area may be developed by

the Forest Service until an environmental impact statement (EIS) has been prepared. The EIS must include "further evaluation" of a specific wilderness alternative for each roadless area. This EIS generally applies to a Forest Service "unit" land-use plan, which may include several roadless areas. Herein lies the loophole. As individual Forest Service land-use plans are completed, roadless areas within these plans are removed from the RARE II inventory. They disappear from the RARE II process before they can be inventoried or evaluated for further consideration as wilderness by the procedure we hope will be improved.

This situation would not make much difference if the land-use plans themselves were consistently good. But after reading and analyzing hundreds of these plans, conservationists have objected that the land-use plans involving roadless areas have been of uneven quality, often shallow in analysis. They have been especially superficial in evaluating the relative costs and benefits of preserving roadless areas as wilderness compared to opening them up for development. No uniform system has been established for considering wilderness alternatives. Indeed, this failure of land-use planning provided much of the impetus for RARE II.

Another problem with the Forest Service land-use plans involves the question of where the decisions are made. Roadless areas to be considered for wilderness status through RARE II will be judged by the highest authorities of the Forest Service and by Dr. Cutler and other policy-making officials of the Carter Administration, if not by the President himself. But decisions made according to Forest Service land-use plans are made at a much lower bureaucratic level, without the benefit of RARE II's national perspective.

Dr. Cutler has brought us welcome reform of wilderness classification criteria. He has initiated a RARE II program that provides a national perspective. This breadth of vision should improve the quality of decisions. But Dr. Cutler has yet to focus his attention on the serious deficiencies in the present generation of Forest Service land-use plans. RARE II cannot meet his objective of reducing controversy unless the RARE II inventory includes substantially all areas in question and unless the resource data on these areas are sound. As long as Forest Service land-use planning continues to delete important areas from RARE II and allows their fate to be decided according to inadequate decision-making processes, the job of saving wilderness remains unfinished. □

*We now have White House press accreditation,
but we haven't gotten our questions asked.*

Sierra at the White House

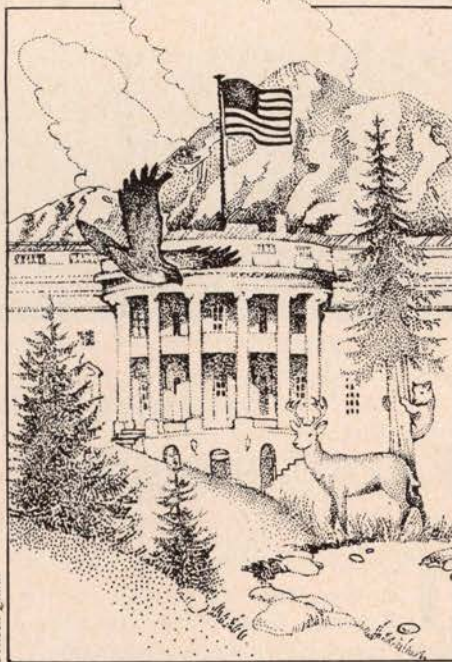
GAIL CHAPMAN

IT MAY COME AS A SHOCK to learn that *Sierra* is the first—and only—environmental magazine to be accredited by the White House. Our press pass, which enables *Sierra* to cover White House press conferences and briefings regularly, was issued only after Frances Gendlin, *Sierra*'s editor, spent hours this summer persuading Carter's press office that the Sierra Club's magazine represented a national concern most often neglected by the popular media. But the President himself is plainly interested in addressing the environmental issues important both to his Administration and to many Americans. Accordingly, we were granted "temporary" accreditation (pending a three-month review) and were instructed to begin work in the middle of August.

My first official presidential news conference for *Sierra* was exciting and confusing. I had come well armed with an environmental question prepared by the Sierra Club's Washington office. It was to remain unasked.

The room, an auditorium on the fourth floor of the Executive Office Building, was too small to hold the crowd. All the familiar figures of the evening news were there, lounging about the front rows of the auditorium in their shirt sleeves, joking with their colleagues. The men and women of the world news services—the *London Times*, *France Soir*, Radio Monte Carlo—grey-suited and polished, silently awaited the President's appearance. Television cameras and cameramen filled the rear aisles; the photographers, carrying bags bursting with Nikons and spare lenses, took up all the remaining floor space. I squeezed into one of the back seats reserved for visitors and visiting media. A Carter family friend from Plains sat on my right and a graduate student from Indiana on my left. This room, ablaze with spotlights, was the hottest show in town at 2:30 that Tuesday.

At 2:25 voices hushed. Ed Bradley and Frank Reynolds put on their jackets. At



2:30 exactly, the door at the side of the stage opened, and the President walked to the podium. He was impeccably groomed and so tan I wondered if he had been made up for the TV cameras. He seemed so small to carry so much responsibility.

Questions began. The first two were from the members of the wire services. At the end of the second question dozens of reporters jumped to their feet shouting, "Mr. President!" in unison. Time would permit only six or seven questions. Reporters returned to the same topics again and again, pressing the President for answers that were newsworthy. Signs of impatience began to appear in Mr. Carter's voice. Suddenly, too soon it seemed, he smiled, said thank you, and left the room. It was 3:00 exactly.

I left feeling disappointed. The range of issues mentioned seemed narrow; not a single word had been said relating to environmental policy. It was clear *Sierra* had work to do.

Jody Powell's press briefing two days later was more relaxed. The same people

were there, moving casually about the press room of the White House. This time, though, there were no jackets, and no one bothered to sit up straight as Jody Powell came in. He answered questions for more than an hour. Some reporters dozed, as Helen Thomas and Sam Donaldson sparred with Powell, determined to make him admit that the President was disappointed in Bert Lance. (This was weeks before Mr. Lance finally resigned.)

I'd come to the briefing with a question that Chuck Clusen of our Washington office had prepared on the Alaska wilderness lands. I raised my hand. One of the reporters nudged me and said I'd have to interrupt if I wanted to ask a question. Eventually Powell nodded at me.

"Will the President include any of southeastern Alaska in the Wilderness areas he recommends for that state?" I asked. A modest question, perhaps, but in its way unique. For the first time, an accredited environmental magazine had asked a question at a White House press briefing. Perhaps this is why Jody Powell, obviously geared up for hot questions on the Lance controversy, seemed surprised. There was a short silence; Jody Powell peered out at the crowd trying to see me. I asked again, "The Associated Press reported that the President would make his recommendations on the D-2 lands this week. Will he recommend that any land in southeastern Alaska be included for designation as Wilderness?"

Powell seemed a little embarrassed: "I really don't know anything about that," he admitted. "You'll have to talk to the Interior Department." The discussion returned to the possible financial peccadilloes of Bert Lance.

With an Administration so actively involved in environmental legislation, it is surprising that the press has not reported more on environmental policy. At briefing after briefing, major environmental issues—the Alaska lands, the Clinch River breeder reactor appropriations bill,

wilderness—go unmentioned. This is why *Sierra* is needed.

The President's own environmental attitude may be innovative, but the Carter team's press policy is only just beginning to change the way previous administrations have run press affairs. Some change has begun: after all, *Sierra* was granted press accreditation, a welcome first step. But today, as in the past, the best seats for news conferences are assigned to the most powerful media figures. The foreign press and local American papers sit in the middle of the auditorium. Visitors—including the nontraditional media—sit in the back. The President, facing the glare of television spotlights, can rarely invite questions from reporters sitting beyond the fourth row. The result: ABC, NBC and CBS pick the subjects covered through the questions their reporters ask.

Of course, many topics of immediate national interest are ignored as reporters interrogate the President. As has often been noted, the major TV news programs focus on the "hot" issues of the day. Items of national importance, such as environmental issues, are often neglected in favor of currently sensational stories. But this situation preserves an ironic (if not vicious) circle: an issue becomes important if a question about the issue is asked at a press conference. Yet, a question is not asked at a press conference unless the issue is already important. Some reporters have discussed a possible remedy: change the inequitable seating arrangements. If reporters from a wider variety of media, with a broader focus on important issues, were permitted to ask questions, the public would be exposed to more comprehensive information on issues of importance. News reporters with varied interests and backgrounds would reflect more accurately the spectrum of concerns of all Americans. How about a first-come, first-served seating arrangement for presidential press conferences?

Sierra is a newcomer trying to raise important issues. We come to the White House with timely questions, questions that need asking (as most White House reporters will readily acknowledge). With hard work and determination, and with the cooperation of a President who knows what it's like to be an outsider in Washington, it may be possible for *Sierra* to bring environmental policy into the arena of the Administration's public discussions.

Thank you, Mr. President. □

Gail Chapman is Sierra's White House correspondent.

Northern Great Plains:



Big sky country in eastern Wyoming is also coal country. The issue is, how clean should that big sky be?

Lynn Bama

Indians, Ranchers and Environmentalists Fight for Clean Air

BRUCE HAMILTON

THE BATTLE TO PROTECT CLEAN AIR in the "big sky country" of the Northern Great Plains has shifted from Capitol Hill in Washington, D.C., to the states and Indian reservations.

The Northern Cheyenne Indians in Montana have already won protective clean-air designation for their reservation. A group of ranchers, farmers and environmentalists in North Dakota is seeking similar protection for their county. These actions could have a major impact on plans by utility companies to build a series of huge, polluting, coal-fired power plants and coal gasification plants in the region.

The recently passed amendments to the Clean Air Act of 1970 protect national parks (greater than 6,000 acres) and wilderness areas (greater than 5,000 acres) by designating them as mandatory Class I areas. Class I designation allows only a small amount of increased air pollution from industrial sources and protects pristine areas from "significant deterioration" of air quality. Regions where the air has not been significantly degraded are designated Class II, a less stringent designation that allows moderate increases in air pollution. The amendments allow states and Indian tribes to redesignate most Class II

areas in their jurisdiction either Class I or Class III. Class III would allow significant increases in air pollution where there is heavy industrialization. Certain federal lands, such as wildlife refuges and national recreation areas, cannot be redesignated Class III by the states.

Indian Initiative

The Northern Cheyenne tribal council was the first government entity to formally seek clean-air protection when it voted unanimously in May 1977 to have its reservation redesignated Class I. The request went to the Environmental Protection Agency (EPA) and was backed by a comprehensive study done by the Northern Cheyenne Research Project on the environmental, economic and social impacts of redesignation. In early August EPA approved the redesignation.

Repercussions of the redesignation are being felt beyond the reservation boundary because Class I designation may hamper polluting industrial development both in and around the reservation. The reservation and surrounding land are underlain by vast coal deposits. Several major coal-fired power plants were planned for the

area, but Northern Cheyenne Tribal Chairman Allen Rowland predicts the redesignation "spells bad news for the power companies."

The redesignation may have its most immediate impact twenty miles north of the reservation at Colstrip, Montana, where two coal-fired power plant units have already been built, two are under construction, and at least two more are planned. The Northern Cheyenne, EPA, and a rancher-environmentalist group called the Northern Plains Resource Council have been fighting the construction of Colstrip units three and four, arguing that the builders must first guarantee that the new units will meet federal standards prohibiting significant deterioration of air quality. The utilities building the power plants—Montana Power Company, Pacific Power and Light Company, Puget Sound Power and Light, Portland General Electric and Washington Water Power Company—deny that they must meet the Class I standards. The utilities argue that they had already commenced construction before the significant deterioration regulations went into effect on June 1, 1975, since they had signed binding contracts prior to that date. EPA ruled that construction had not commenced, since before June 1 there was no on-site construction, and no state permits had been granted to allow construction.

In response, the utilities sued EPA in U.S. District Court in Billings and won. The Northern Cheyenne and the Northern Plains Resource Council plan to appeal the case. If the district court decision is upheld, the Northern Cheyenne reservation may become seriously polluted despite its recently won Class I designation. EPA officials have said that units three and four could not meet Class I standards. There is some question whether they could even meet Class II standards. Whatever the outcome of the case, the Northern Cheyenne expect that neither Colstrip units five and six nor other proposed power plants will be built.

Another group disturbed by the redesignation was a faction of the neighboring Crow tribe. Former Crow Tribal Chairman Patrick Stands Over Bull had been given two thirty-day extensions on EPA's redesignation decision. He argued that having a Class I area right next to the Crow reservation could jeopardize future development of Crow coal resources. Generally the Crow have been much more eager to open their reservation to coal development than have the Northern Cheyenne.

Under the original Clean Air Act, coal strip mines weren't considered major

sources of air pollution to be limited by Class I redesignation. This was the understanding when the EPA approved the Northern Cheyenne request. However, the 1977 amendments to the Act called for the review of "any source with the potential to emit 250 tons per year or more of any air pollutant." This provision could include major strip mine operations. As a result, in October several major coal miners in the vicinity of the Northern Cheyenne reservation have protested the Class I redesignation through the Ninth Circuit Court of Appeals. The protesters include the Crow Tribe, a non-Indian rancher and several major energy companies.

Northern Cheyenne Tribal Chairman Allen Rowland says the redesignation was a move to "maintain our clean air and a good environment for our people" and was not an attempt to stop progress on or off the reservation. "Our tribe has been struggling for progress and self-determination for years," he says. "For us, progress means developing our environmental resources in renewable and compatible manners, such as timber and agricultural projects. Not only are such activities our livelihood, they are the core of our value systems as a people."

Northern Cheyenne Tribal Councilman Herman Bear Comes Out told the *Billings Gazette*, "Now we stand a better chance to continue living on land where you can still see the sky and smell the sage and pine."

Clean Air Petition

The Clean Air Act amendments allowed only Indian tribes and states to redesignate lands as Class I or Class III. In North Dakota, however, a unique situation exists in which the state has allowed citizens to petition for such reclassification.

A group of ranchers, farmers and environmentalists known as the Dunn County Committee for Clean Air has already gathered the necessary signatures and requested the state to consider redesignating their county Class I. There was a sense of urgency in their petition drive, since two large coal-fired power plants and a coal gasification plant are proposed for neighboring Mercer County.

The state health department responded to the filed petitions by temporarily stopping action on all state permits connected with construction of the coal plants. The department also required the petitioners to prepare an environmental, economic and social impact statement on the air-reclassification request. The citizens were originally given six months to prepare the report, but they say they can't afford to fund such a professional study, and the

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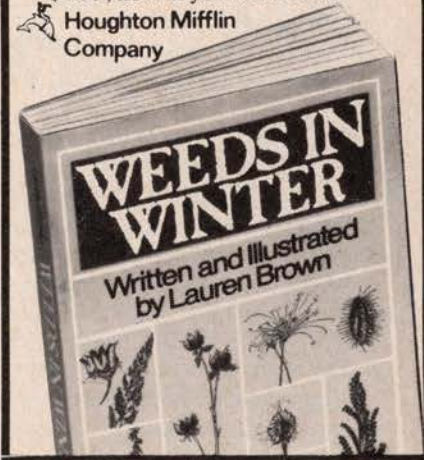
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rigid timetable has been dropped. A similar study done by the Northern Cheyenne Research Project cost \$200,000, according to *High Country News*.

The people now face an unpleasant dilemma. They don't want to drop their drive for clean air, but they don't believe they can pay for the impact study. And even if they could pay for the study, they feel such an action would set a bad precedent and discourage others in the state from seeking Class I redesignation because of the expense. They also wonder if they should be the ones to pay when they aren't proposing to change anything—they just want to maintain the present air quality in their county.

The state health department claims it doesn't have the money to do the impact study either and points out that a bill in the state legislature to require state funding of air-reclassification studies was defeated in the last session.

In negotiations, both the citizens and the state have made major concessions. The citizens have now agreed to allow the state to continue processing applications for coal plants in Mercer County. The state, in turn, has agreed not to require the citizens to produce an impact statement. But the tougher questions remain unresolved, and the two parties have reached an impasse.

Gene Christianson of the health department told *High Country News*, "We've gone farther than any other state even thought of" by allowing citizen petitions for clean air. "We think of it as a positive step."

In a letter accompanying their clean-air petition, the citizens wrote: "We are not against industrialization, but against massive industrialization which would pollute our air, water, and land. Coal development, which is our prime concern, is here today and gone tomorrow, a one-time harvest. Agriculture is here to stay. It is a more permanently based lifestyle. . . . Being close to the land and the Maker. Some may say a simple way of life. Simple in that we are not crowded; we have a blue sky that we can see; a sun that is not obscured by clouds of dust and pollution; and air that we cannot see. But most important we have people that love the land, their farms, and their neighbors."

The Clean Air Committee's attorney, Irv Nodland, told the press that if the Class I redesignation is not approved the citizens will take their cause to the courts. "If we lose in Dunn County," he said, "the Clean Air Act is a piece of congressional fodder. The country couldn't live with that." □

Bruce Hamilton is the Club's Northern Great Plains Representative.

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News

■ Carter's First Veto

On November 5, one day after a meeting with environmentalist leaders, President Carter announced his veto of the Clinch River Demonstration Breeder project. By vetoing the Department of Energy Authorization Act of 1978, Carter rejected a two-billion-dollar package of non-military energy research and development, \$80 million of which was earmarked for the Clinch River project. Anti-nuclear activists should not regard this as an overwhelming victory. Carter's veto will not stop development of the breeder reactor; \$450 million has already been appropriated for other parts of the breeder program, and there is some doubt whether Carter's veto can even halt the Clinch River project itself because of other pending legislation on the same subject.

■ Supreme Court Rules for Clean Air

The United States Supreme Court has upheld lower court decisions requiring New York City to reduce auto traffic in Manhattan in order to protect air quality. The suit, brought by Friends of the Earth, the Sierra Club, NRDC and other groups, countered the city's argument that the requirement constituted undue federal interference in municipal affairs. An adverse Supreme Court ruling would have undercut efforts all over the country to reduce air pollution by developing transportation systems less dependent on the automobile. Conservation groups have been working with the city to develop a new plan to reduce traffic in New York.

■ U.S.-Canadian Panel Nixes Garrison Diversion Project

An international panel has advised against building eighty percent of the Garrison Diversion project in North Dakota. The International Joint Commission (IJC), a panel that deals with U.S.-Canada boundary questions, has concluded that operation of the controversial irrigation system "as envisaged would cause injury to health and property in Canada as a result of adverse impacts on water quality and biological resources in Manitoba."

The Garrison Diversion (one of the projects on Carter's "hit list") would pump water from the Missouri River to farmland in eastern North Dakota. Return flows carrying salts, fertilizer, pesticides and undesirable fish species could enter Canada by the Souris River. The project would also destroy wetlands in North Dakota. Despite Carter's rejection of the project, Congress continued the funding. But a suit by the National Audubon Society has stalled most of the project pending revision of the final EIS by the Bureau of Reclamation.

■ Two Highways Through City Parks Stopped

Secretary of Transportation Brock Adams has rejected the state of Tennessee's plans to build a proposed segment of Interstate Highway 40 through Overton Park in Memphis. The rejection of the plan is a victory for Tennessee environmentalists who have fought to save the park for more than twenty years. A U.S. Court of Appeals ruled in 1974 that the proposed I-40 segment violated section 4(f) of the Department of Transportation Act, which forbids federal funds from being used for highways through parks unless there is no feasible alternative. Adams' decision will not, however, end the battle to save Overton Park. Highway proponents are reportedly preparing federal legislation to exempt the park from 4(f).

Such a move could set a terrible precedent for similar issues, such as Wilderness Park in Lincoln, Nebraska. Lincoln citizens were prepared to go to court to prevent a highway from being built through this wooded city park. At the last minute the federal government recognized the merits of their case, however, and agreed to look for an alternative route.

■ Court Upholds Clean Water Standards

Eight steel plants in Ohio's Mahoning River Valley will not be exempt from water pollution control standards, the U.S. Court of Appeals has ruled. The Environmental Protection Agency (EPA) had attempted to exempt the plants from water pollution standards because it felt that severe economic and employment disruptions would result if the steel facilities were forced to meet federal standards. The Federal Water Pollution Control Act required all "point sources" of discharge to achieve effluent limitations by July 1977, but EPA regulations published in March 1976 said that the plants in question would not be required to clean up their discharges until at least 1983. This exemption was unprecedented in the history of the Clean Water Act — eighty-three percent of major industrial dischargers are in compliance with abatement schedules.

The Sierra Club and the state of Pennsylvania challenged the exemption before the Court of Appeals for the Third District, arguing that similar exemptions might be granted in other areas. Pennsylvania was concerned about communities in its state that use the Mahoning River as a public water supply. The pollution from the Ohio plants is serious; they dump oil, grease, heavy metals and other pollutants into the river. Cancer mortality among males in Mahoning County is among the nation's highest, according to the U.S. Department of Health, Education and Welfare. News continues ■

NEWS

■ Club Sues to Change Colorado Rafting

The problem: environmental damage in the Grand Canyon caused by commercial river running on the Colorado. A National Park Service study last year documented such problems as trampled vegetation; erosion where river runners hike above the river from their camps; use of noisy motorized rafts; problems with human waste disposal; and damage from heavy use near the twenty or thirty prime campsites along the river. "The issue is not stopping river running," said Ed Hawkins, Chairperson of the Club's Grand Canyon Chapter. "Rather, it is what kind of river and environment we will have to enjoy." A Sierra Club lawsuit calls for immediate changes in activities permitted on the river.

The suit, filed against the National Park Service's director (and a handful of other defendants), seeks to modify contracts and permits renewed by the Park Service in order to include additional controls.

■ Strip Mine Regulations Draw Fire

Now that a strong strip mine law is on the books, opponents of controls (chiefly mining industry representatives) have attacked the regulations established under the new law. Coal industry officials have been highly critical of the proposed regulations at regional public hearings, arguing that placing strict regulations on the coal industry would restrict coal development at the same time that the Carter Administration is calling for an expansion of coal production.

Environmentalists have generally approved of the proposed regulations, which will be finalized by next August. States with coal deposits will be required to adopt their own regulations, which must be at least as strict as the federal standards. If a state doesn't adopt adequate standards, federal regulations will apply.

■ Nuclear Update: CEQ Says "Slow Down"

The Council on Environmental Quality (CEQ) has recommended that the United States postpone further development of nuclear power until safe methods for storing radioactive waste can be devised. CEQ member J. Gustav Speth (formerly with the Natural Resources Defense Council) told a law conference that the CEQ favors "a national decision which would make the expanded use of nuclear power contingent on a clear and convincing showing, after consideration of both technical and institutional factors, that nuclear power's deadly by-products can be safely contained for geological periods."

In a related move, President Carter unveiled a plan for the federal government to take over responsibility for the storage and disposal of spent fuel from both U.S. and other nations' nuclear

reactors. At present, spent fuel is stored in many foreign countries (under widely varying conditions), at three private storage facilities or at many U.S. reactor sites. The Administration argues that federal centralization of nuclear waste storage could improve the safety of such storage and help maintain clear accounting of the whereabouts of nuclear materials. Under Carter's proposal, the U.S. would build a single temporary storage site for spent fuel — a huge, swimming-pool-like facility that could cost as much as \$100 million.

Carter also proposed an international uranium fuel bank that would provide other countries with U.S. enriched uranium to help meet temporary energy needs. But at the same time, Carter cautioned an International Fuel Cycle Evaluation conference that "The need for atomic power for peaceful purposes has been greatly exaggerated."

■ Rocky Road Ahead for Mining Law Reform

The House Interior Subcommittee on Mines and Mining has held hearings on reform of the 1872 Mining Law. This antiquated give-away law governs the mining of such hardrock minerals as uranium, copper, lead, nickel and gold. Environmentalists are very interested in changing this law, which, at present, does not require miners to develop mining claims or to reclaim land after mining it.

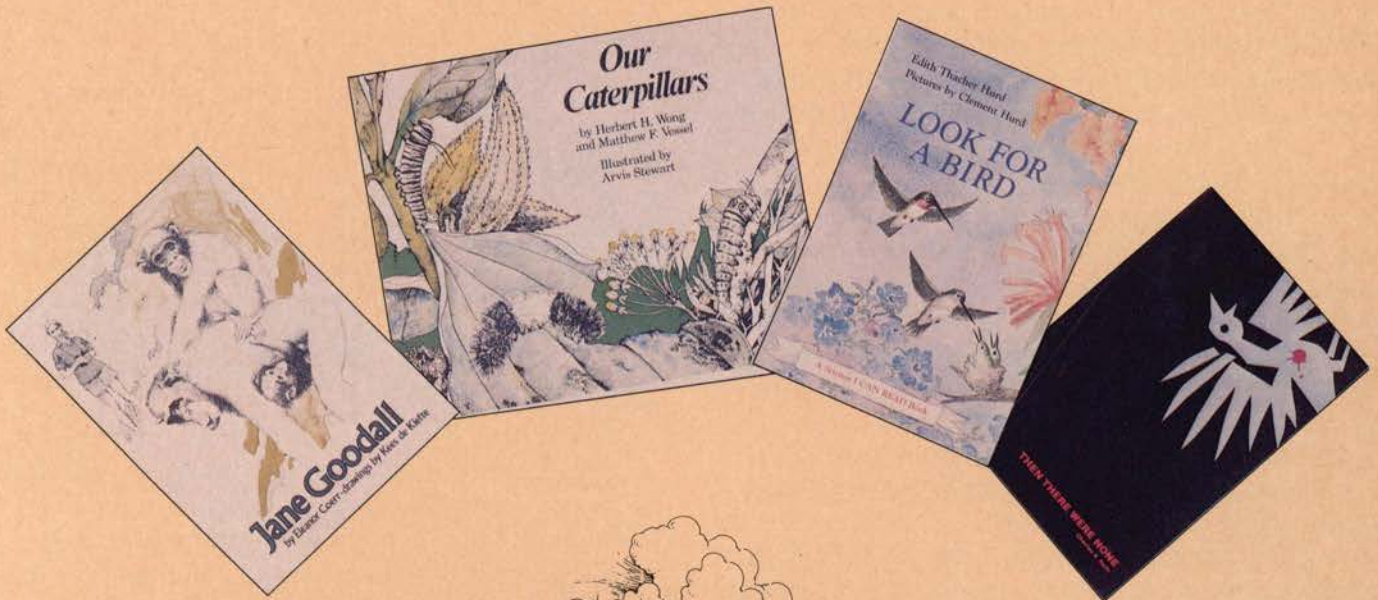
Two competing bills are being considered: an Administration version, H.R. 9292, introduced by Representative Phillip Burton (D-California), requires a leasing system; federal authority over mineral exploration and development; approval of operation and reclamation plans prior to mining; royalties for the use of public lands and mineral resources; and the inclusion of mining in land-use plans developed for public lands. The second bill, H.R. 5831, drafted by the American Mining Congress and introduced by Representative Philip Ruppe (R-Michigan), would make only minimal changes in the existing law. Expect a hard-fought battle on this vital issue in coming months.

■ Good News for Montana Wilderness

The House has passed the "Montana Wilderness Study Act," S. 393, by a vote of 315 to 103. The bill provides for the study of 973,000 acres within the West Pioneer, Taylor-Hilgard, Bluejoint, Sapphire, Ten Lakes, Middle Fork Judith, Big Snowies, Hyalite-Porcupine and Mount Henry roadless areas. This study will, we hope, result in the designation of at least some of these areas as Wilderness Areas. The passage of S. 393, sponsored by Senator Lee Metcalf (D-Montana) and championed in the House by Representative Max Baucus (D-Montana), can be credited to their extensive efforts.

Books About Bugs, Birds and Beasts

LINDA SPARROWE



Jane Goodall, by Eleanor Coerr; a "See and Read Biography" by G. P. Putnam's Sons, New York, 1976. Cloth, \$4.29. Ages 6 to 10.

SITTING IN A CLASSROOM on a beautiful sunny day is sometimes hard to do, isn't it? How easy it is for your mind to wander, as you long to be on the beach with your favorite dog, or to ride a horse up a mountain trail! Sometimes you might even dream of living in the jungles of Africa, surrounded by and caring for lots of wild animals. If these are some of your favorite daydreams, you are not alone. Not long ago there was a little girl who also found it very hard to stay indoors: she much preferred to be outside, exploring and learning about nature. Her name was Jane Goodall, and this is a true story. Today Jane is a famous ethologist: a person who studies how animals act.

Eleanor Coerr has written a biography of Jane Goodall. This book, called *Jane Goodall*, tells us all about how Jane grew up and describes her adventures in the jungle with chimpanzees. When Jane was growing up, she wanted more than anything to become a scientist and work in the jungle. Often, it seemed her wishes would never come true. Even though she studied very hard in school, she knew that to become a scientist, she would have to go to the university. But her

mother did not have enough money to send her to such an expensive school. So Jane became a secretary, and then a waitress, at last saving enough money to visit a friend in Africa. As a result of that visit, Jane was able to meet people who helped her realize her dream.

She studied a group of chimpanzees in Tanzania, Africa. She knew them so well, she even had names for them! Mr. MacGregor, Flo and her baby Fifi, David Graybeard and big, strong Goliath. Jane did go back to school, learned more about science and became a scientist. Today she still works in the jungle, and she also teaches at two different universities to help others learn about animals and how they live.

Reading biographies is a good way to learn about other people. It is a good way to discover that even famous people have experienced the same desires and the same daydreams we have. We also find out that people like Jane Goodall have worked very hard to make their daydreams come true, and continue to work hard to learn more and to teach others. The book, *Jane Goodall*, is one that beginning readers can read by themselves; or, it can be a good "read-aloud" story, too. The pictures by Kees de Kieft are very nice, especially the ones of the different chimpanzees at work and at play. It's a wonderful book!

Then There Were None, by Charles E. Roth; Addison-Wesley Press, Boston, 1977. Cloth, \$6.95. Ages 11 and up.

ALL OF US, during our stay in elementary school or in junior high, learn the history of the United States, beginning with the European settlers. We learn about the hardships they suffered from the weather, the land and at the hands of hostile natives. If we are lucky, some of us learn what effect such colonization had on the American natives, the Indians; then we are able to see two sides to the story. But how many of us have ever realized what the settling of America did to other natives of this land: the passenger pigeon, the bison, the prairie dog and the condor—a few of many examples? How many of us ever studied the effects of what humans call “progress” to discover that while we were helping humankind become better and better, we were speeding up the process of extinction for many other species?

Charles E. Roth has written a very exciting book called *Then There Were None* that talks about these questions. At the beginning of the book, he teaches us about the natural process of selection. He says that many animals die because they cannot adjust to changes in the weather or the land; they cannot adapt to a new environment. They die while other stronger, more adaptable animals are able to keep living and increase in numbers. So, through this natural process, as Roth says, “extinction [comes] about as new forms of life appear to compete with an existing species for the same resources. As a result the Earth [gains] an increasingly varied and complex set of living things.”

Roth shows us that as people began to demand more of the earth’s resources for their own use, they caused the extinction of many animals long before this would have happened naturally. Thus, humans have decreased the variety of animals that exist on earth. For example, just a little more than one hundred years ago, the passenger pigeon was “the most abundant bird species that the North American continent had seen in a million years,” and yet by 1914, there were *none* left. Not one! It doesn’t seem possible, does it, that a species numbering between three and five billion when the European settlers first came to North America could be completely wiped out in such a short time? The cause—people. Not only were these birds hunted for food and sport, but as civilization increased, they were deprived of their feeding grounds—the dense forests. The settlers chopped down forest after forest to clear land for farming; the pigeons then turned to the farmers’

crops for their food, and they were shot. The species could not survive its newest predator—people—and so when the last one died in captivity in 1914, the end came to an entire species.

There are many other examples of our thoughtless destruction of entire species. By the time you reach the end of this book, you are likely to ask yourself, “What can I do to help?” Roth offers a list of projects to work on either at school or at home. One class project might be to help improve the habitat of wildlife near your school, or to help raise funds for groups who try to protect wildlife all over the world. Roth also asks us not to capture wild animals for pets. We all like collecting different kinds of insects and animals, but it is important to remember that by doing so, we are upsetting the balance of nature and possibly hurrying along the process of extinction, too.

Then There Were None is a wonderful book for school. It can be used either as a textbook in science or history, or presented to your class as a special book report. No matter how it is introduced into your studies, it is bound to make you think about the effect people have on the rest of the animal kingdom.



From *Then There Were None*

Look for a Bird, by Edith Thacher Hurd; a “Science I CAN READ” book by Harper & Row, New York, 1977. Cloth, \$4.95. Ages 4 to 8.

DO YOU KNOW which bird “can croak like a frog, chirp like a chicken, or whistle like a policeman”? Have you ever wondered which bird has a nest “so deep you could stand up in it” or even “so big you could lie down in it”? Or, have you ever wished, as you were walking in the woods, that you could identify some of the birds you see and hear all around you? Edith Thatcher Hurd’s book, *Look for a Bird*, not only tells you all about fourteen different kinds of birds, but it shows what they look like and gives certain clues to help you recognize them. Clement Hurd’s pictures look so real that they can be a big help to you as you try to identify birds; in fact, the book is small enough and light enough to take with you as a bird-watching guide on your next walk. *Look for a Bird* is written simply, so you can use it on your own—as your own guide to the outdoors.

Our Caterpillars, by Herbert H. Wong and Matthew F. Vessel; a "Science Series for the Young" book by Addison-Wesley, Boston, 1977. Cloth, \$5.95. Ages 5 to 7.

HERBERT WONG and Matthew Vessel have written a book that helps us to learn more about animals in their natural habitats—the places where they live. This book is called *Our Caterpillars*, and it talks about two different types of caterpillars—one called the "woolly bear" because it's brown and furry, and the other is just called a "green" caterpillar because—you guessed it—it's green!

In this story, Kenny and Woody each bring a caterpillar they have found in their own backyards to school to show the other students. Everyone notices that the caterpillars aren't the same, but they aren't sure why. The teacher suggests that the whole class go on a field trip to find out where each of the caterpillars lives, what it eats and how it grows. The children first discover that Kenny's caterpillar—the woolly bear—not only eats different leaves than Woody's green caterpillar, but something quite different happens to it also, *after* it stops eating. The woolly bear spins a tent-like cocoon while the green caterpillar changes into a chrysalis. What does that

mean? What do the caterpillars change into—a moth or a butterfly? How long does it take? The children come back with lots of new questions. Luckily they are able to find some books in their school library that can help them understand more about what they have just seen.

In their book, *Our Caterpillars*, Wong and Vessel show us how important it is to be able to experience what we are learning. It's much more exciting to watch an animal or an insect in its home than it is to read about it. But they also show us that sometimes watching something is not enough. Often, it brings even more questions to our minds, questions we can find answers for in books or in films. This book is helpful because the pictures Arvis Stewart drew are big and colorful and clear so we can really see the difference between the woolly bear and the green caterpillar. (It is a little hard, though, to tell the difference between the leaves each one eats.) The book is also helpful because it proves that you don't have to know how to read hard books to learn about science and ecology. It is a book for beginning readers interested in learning more about the world around them. □

Linda Sparrowe has worked with children for many years as a recreational counselor and a resident camp administrator.

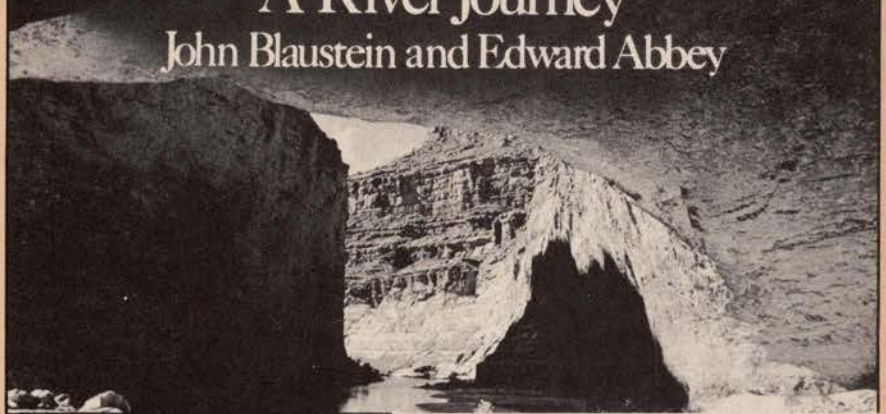


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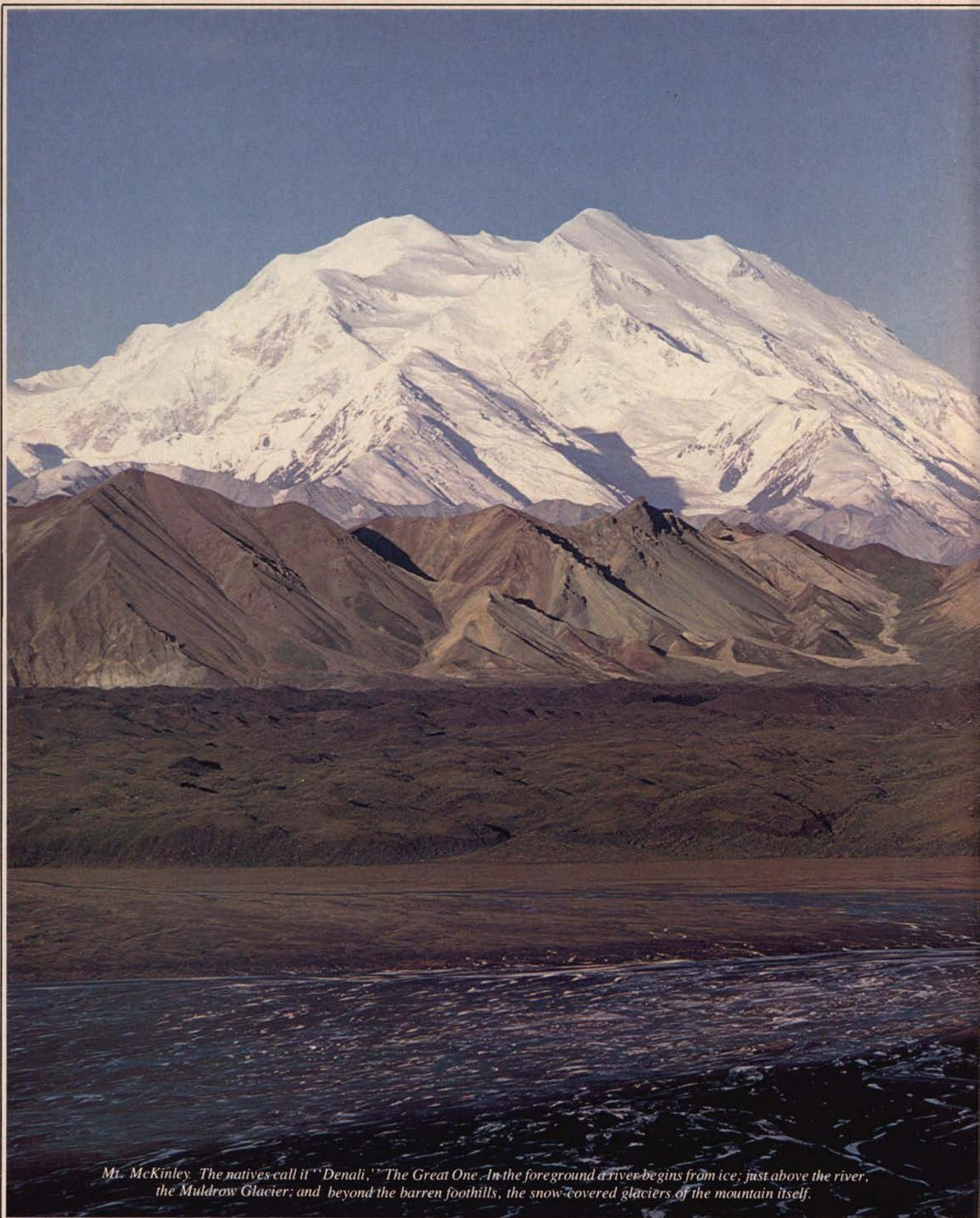
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Mt. McKinley. The natives call it "Denali," The Great One. In the foreground a river begins from ice; just above the river, the Muldrow Glacier; and beyond the barren foothills, the snow-covered glaciers of the mountain itself.

On Safety and Wilderness

GALEN A. ROWELL

Galen Rowell is a veteran rock and mountain climber. He is the author of The Vertical World of Yosemite and the Sierra Club's In the Throne Room of the Mountain Gods.

THROUGHOUT THE NATIONAL PARK SYSTEM, today's visitors include ever-increasing numbers who voluntarily place themselves in high-risk situations. And when injuries or deaths occur in wild areas, today's judges and juries grant ever-increasing awards for what used to be called acts of God. A man wins a settlement for damage from the Forest Service because a tree blew down in a campground during a windstorm. Relatives collect from the National Park Service (NPS) because a man was killed by a bear in Yellowstone. A girl with a permanent spinal injury caused by misuse of mountain climbing equipment collects from the retailer. The same legal climate that has made medical malpractice insurance rates skyrocket threatens to affect everybody's wilderness experience. Nowhere is this more evident than in Alaska's Mount McKinley National Park.

McKinley Park has been the scene of the most expensive and most publicized air rescues of any American wild area. Imagine the dilemma of NPS administrators. Court decisions have forced them to consider visitors as *invitees*. By legal definition, the NPS invites hundreds of people a year to a place that is unquestionably hazardous to one's health and safety: the subzero-degree, 20,320-foot summit of Mount McKinley. For every hundred climbers who reach the top of McKinley or neighboring 17,400-foot Mount Foraker, three die. In 1976 there were ten fatalities, eighteen frostbite victims involving five amputations, and nine cases of serious high-altitude pulmonary or cerebral edema—an often fatal altitude-caused disorder in which fluid builds up in the lungs or the brain.

In 1975 there were no emergency air evacuations from the mountain although hundreds attempted the peak. In 1976 a sudden change took place: there were twenty-one air rescue missions involving thirty-three climbers at a cost of \$79,168 to the taxpayers. The striking difference between these two years has no obvious cause. People in 1975 were merely lucky; those in 1976, less fortunate. So far in 1977 no new regulations have been instituted, but the NPS is seriously studying ways to reduce "incident numbers." Invariably, such reduction involves denying access to certain categories of visitors on the assumption that some will get into trouble.

Present controls on McKinley climbing are threefold: an application with a medical certificate must be submitted two months in advance; a two-way radio must be taken along; the party must check in and out with park headquarters. NPS studies for future regulations include a chart of hypothetical controls as applied to 1976 data. For instance, one category denies climbing permission to all parties below an NPS-determined level of party strength unless the group is led by an Alaskan guide; this measure would have saved more than \$37,000 and 52.8 percent of the evacuations. But on the negative side, 163 climbers who had no health or accident problems would have been denied

access to the peak. Each category arbitrarily denies access to a broad group because a few might get in trouble. Some other suggestions were to require a special type of boot, to set a maximum rate of ascent in order to reduce altitude illness, and to close current ski-plane landing sites (if the park boundaries are extended) to make the ascent more gradual and less attractive to those who merely want to bag the highest summit on the continent by the fastest and easiest route.

At stake is the most basic of wilderness values: the right to risk life and limb in the wilds. It is central to skiing, river running and mountain climbing—to name a few. It is less obvious, but just as important in educational outdoor programs that put new twinkles in childrens' eyes by removing them from a dull routine of rote learning and placing them instead in situations where they must actively question their surroundings and seek answers for themselves. This very process—of questioning, of learning—makes activities such as climbing defy statistical analysis. Outlaw leather boots on McKinley because a high number of climbers were frostbitten last year and along comes someone who wants to try an improved leather boot this year. Set a maximum rate of climb to avoid altitude illness, and along comes someone acclimatized to 14,000 feet who wants to ascend fast.

These two situations are more than hypothetical. During a McKinley expedition in 1976 I descended to the base to evacuate an ailing climber who had started down alone across crevassed glaciers. The alternative was to use the radio to call a helicopter from the NPS at a cost of several thousand dollars to the taxpayers. Had I been forced to follow the hypothetical new rulings on rate of ascent and boots, I would have stayed in one place and called the chopper. Instead, I roped in with the party's other guide, left four clients waiting at 14,000 feet, and skied down the mountain. Several factors operated here. The warmest rubber-and-air-chamber boots just don't work properly in skis; our leather boots had a recently developed top cover called a supergaiter that made them very warm, yet still usable in ski bindings. The result? We skied 7,000 feet to the base in an hour and fifty minutes; got our ailing climber flown out from the glacier by ski plane (\$100 versus possibly \$5,000 for chopper evacuation from the heights); reascended to 14,000 the next day; and reached the summit with clients only two days and seventeen hours after leaving the base. We suffered no altitude sickness and had no hint of frostbite. Another group, unacclimatized and without the gaiter combination, might well have suffered frostbite and pulmonary edema attempting the same itinerary, but each group should have the right to decide for itself.

As we went up and down McKinley over a period of three weeks, we met nearly a hundred other climbers. Statistically, each of these might represent an increase in potential rescue cost. Practically, these same climbers could have handled most of the rescue missions without increasing the severity of the casualties. Only a very few of the 1976 casualties really required immediate air evacuation. I watched a man who had been com-

atose with cerebral edema regain consciousness and rationality two hours after he was lowered 3,000 feet by other climbers. Had he gone down another 3,000 feet he almost certainly would have recovered and might well have been able to climb the mountain. Instead, a noisy chopper evacuated the man at a cost of \$3,144 and filled six campsites at 14,000 feet with blowing snow.

So many people were on the mountain that we joked about the not-too-distant-future when Gideon Bibles would appear in each campsite. Jokes sometimes have their very serious sides, and one that comes too near the truth leaves a sting: very soon Mount McKinley would no longer be true wilderness. Of course, the elements would still be harsh. There would still be, as one expedition reported, "nights when the hushed earth glowed under the fire of a midnight dawn, and days when death rode the wind." But how would people think? Would they feel the need to be totally self-sufficient, to adapt as completely as possible to that harsh environment? Or would they, like most modern McKinley climbers, have a helicopter buzzing in the back of their consciousness at the first inkling of trouble? Wilderness survival is more a question of attitude than of any combination of tangibles such as temperature, equipment and strength.


A larger question loomed out of our McKinley experience. Should the mountain be managed as pure wilderness? Is it worth trying to preserve the *appearance* of wilderness—absence of permanent artifacts—while destroying the mental state necessary for a true wilderness experience?

A wilderness experience involves a state of trust in oneself and one's abilities. It is diametrically opposed to a state of dependence, where trust is transferred either to other people or to technology. The level of this trust determines just how far the

wilderness traveler will push. In mountain climbing this is especially true. Each individual is regulated by self trust. Mountain climbing, unlike tennis or baseball, has no set rules or regulations because it is dependent on trust. In most ways, this trust escapes definition. Like love or religion, it grows in one's heart over a period of time; many shortcuts to happiness are advertised for those unwilling to expend the necessary effort or commitment to gain this trusting state.

In the past, only those with sufficient trust in themselves ventured onto Mount McKinley's slopes. Half of today's climbers, however, pay for their place in a guided group, and all have access to a chopper ride only a radio call away.

After much soul searching, I personally believe that it is better to sacrifice some of the appearance of wilderness in order to regain self-sufficiency. Except for McKinley, every frequently climbed mountain in the world has some sort of living or rescue facilities at closer hand. I would rather see a modest cache of a stretcher, a rescue winch and a few oxygen bottles in the rocks at 17,000 feet so that expeditions could quietly evacuate their sick, rather than depend on a radio call to bring noisy chase planes and helicopters into the mountain fastness. I would rather see an ugly portable toilet at the busy 7,000-foot landing site than look out the tent door (as three of the seven members of our expedition did) at unbroken splendor while recovering from diarrhea caused by drinking melted polluted snow. And if I were sick or injured on the mountain, I would rather be brought down by others who were on the mountain by choice, than by a noisy machine that intruded into everyone's experience. Only in the highly unusual situation where hours would make the difference between life and death would I want an air rescue. □



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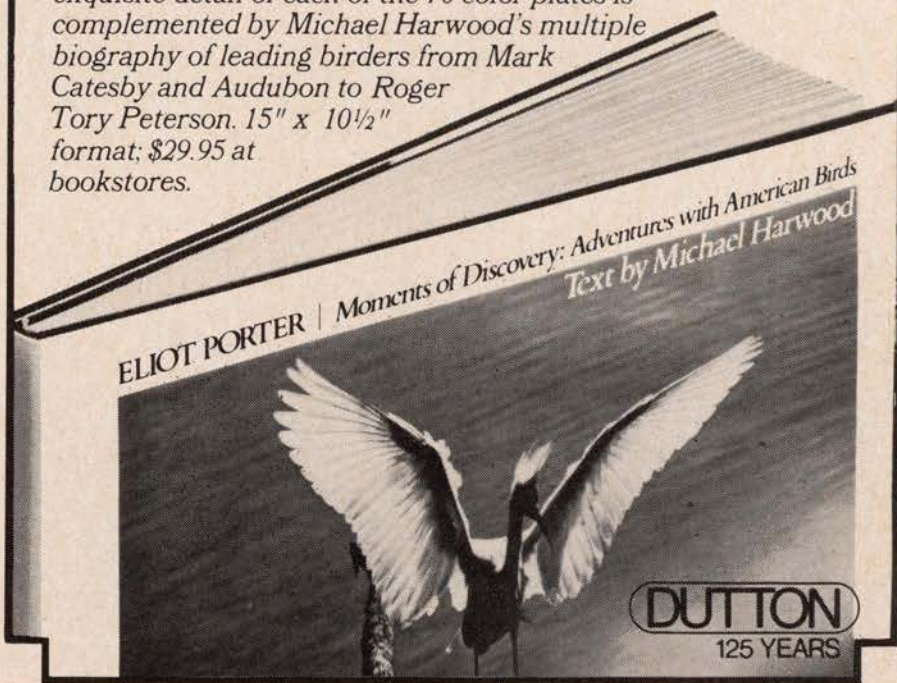
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