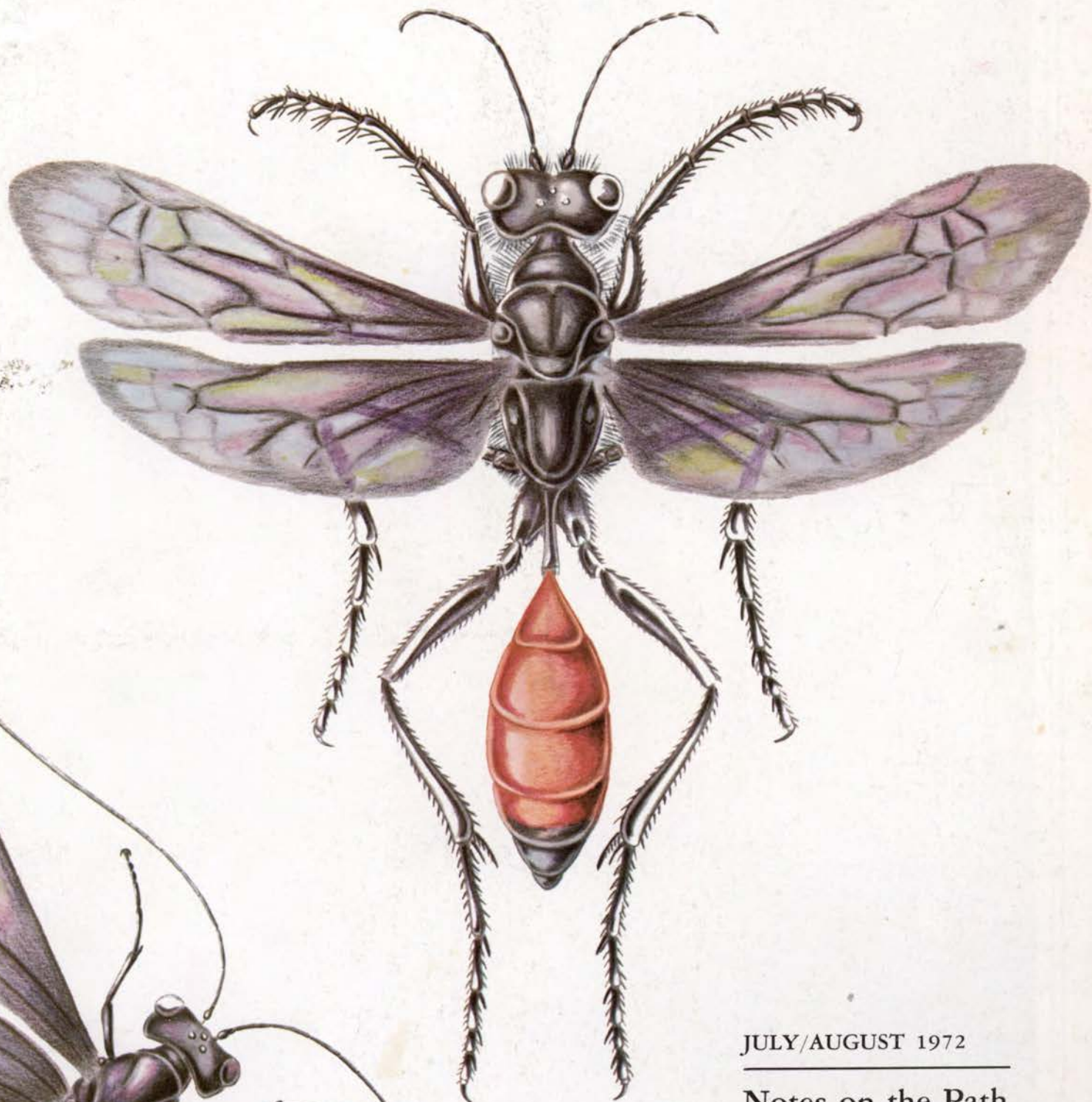
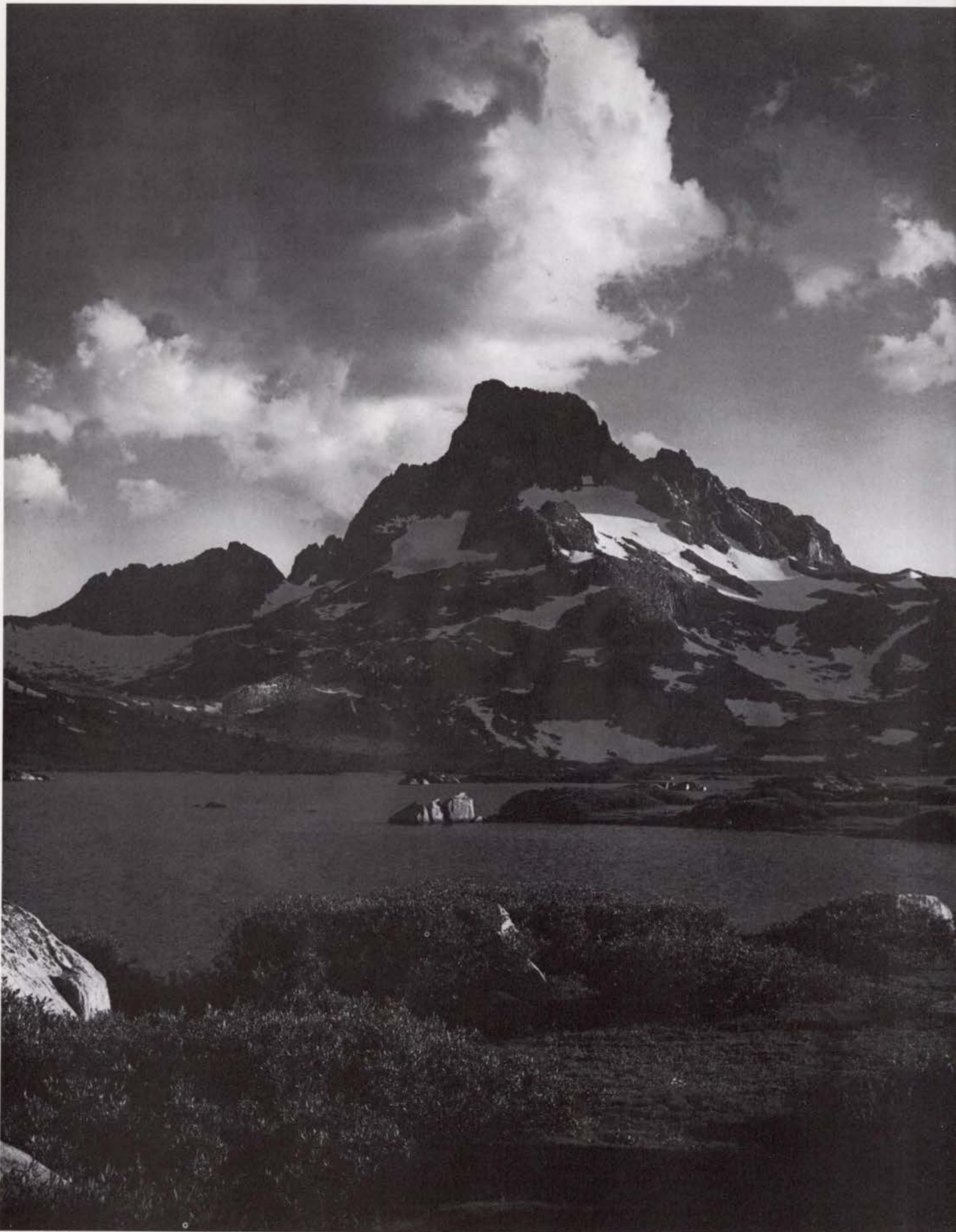


Sierra Club Bulletin



JULY/AUGUST 1972

Notes on the Path
to Survival



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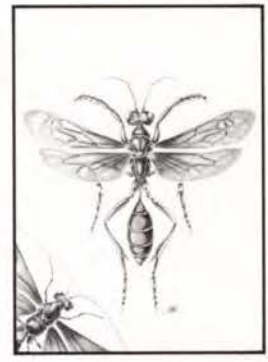
JULY-AUGUST 1972 / VOLUME 57 / NUMBER 7

Notes on the Path to Survival	4	Roger Olmsted
The Tocks Island Dam Fight	12	Pete du Pont
Report from Stockholm	19	Patricia Rambach
The Club Looks at Itself	35	Don Coombs
Porkies, Prairie Dogs and Other Useful Varmints	42	David Plowden

COMMENTARY

<i>News View</i>	23
<i>Editorial</i>	24
<i>Regional Rep's Report</i>	26
<i>Washington Report</i>	27

Cover: This beautiful drawing of a *Podalonia occidentalis* was done by Norman Appleton. The insect is one of several natural predators or parasites of the Rocky Mountain tent caterpillar discovered by Mr. Appleton during his pioneering research in biological pest controls. This story is part of Roger Olmsted's article "Notes on the Path to Survival" beginning on the following page.



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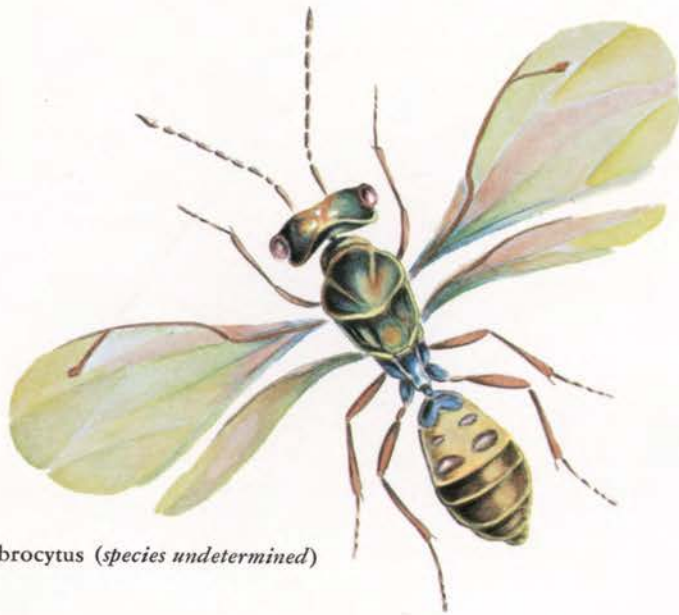


Theronia atalantoe fulvescens

Notes on the

"The road we have long been traveling is deceptively easy . . . but at its end lies disaster. The other fork of the road—the one 'less traveled by'—offers our last, our only chance to reach a destination that assures the preservation of our earth."

Rachel Carson,
Silent Spring



Habrocytus (species undetermined)



Tetrastichus malacosoma

All four of these drawings, like those on the cover, were executed by Norman Appleton during his search for biological controls to stop a devastating tent caterpillar infestation in the aspen forest near Santa Fe, New Mexico, prior to World War II.

Path to Survival

ROGER OLMSTED

IT IS TEN YEARS since Rachel Carson took on the American pesticide industry single-handed and showed us that careless assaults on the environment in the name of pest control must certainly lead to ecological disaster. The impact of *Silent Spring* is a classic example of the influence that one thoughtful and dedicated person can have on public sensitivity to complex and little understood problems that are really very close to us.

The battle begun by Miss Carson against indiscriminate use of persistent chemical toxins has been taken up by others with growing success. Yet while most of us have heard that DDT is on the way out, few have much knowledge of the obvious alternative to chemical pesticides—biological control. Biological control of native pests is not an entirely new concept, but work in a field that does not lend itself well to packaging, marketing, and advertising has not been well publicized and has often been as lonely as Miss Carson's efforts.

Development of effective biological control of native pests has been painfully slow—although in the last two or three years many applications of what would have seemed novel techniques a decade ago have proved successful. The big-time poison industry was born, grew to grotesque proportions, and now may be on the verge of dying of its own excesses in the thirty-year interval between two exciting biological control experiments that can give us special insight into the state of the art: the first an imaginative one-man campaign against a tent caterpillar infestation in the aspen forests of New Mexico during the 1930's; the second, a successful replacement of chemical sprays in control of the red-humped caterpillar by the *bête noire* of a generation of environmentalists, the California Division of Highways. These stories are told in the following pages.



Cryptus sanguinipes

Blazing a Trail in New Mexico



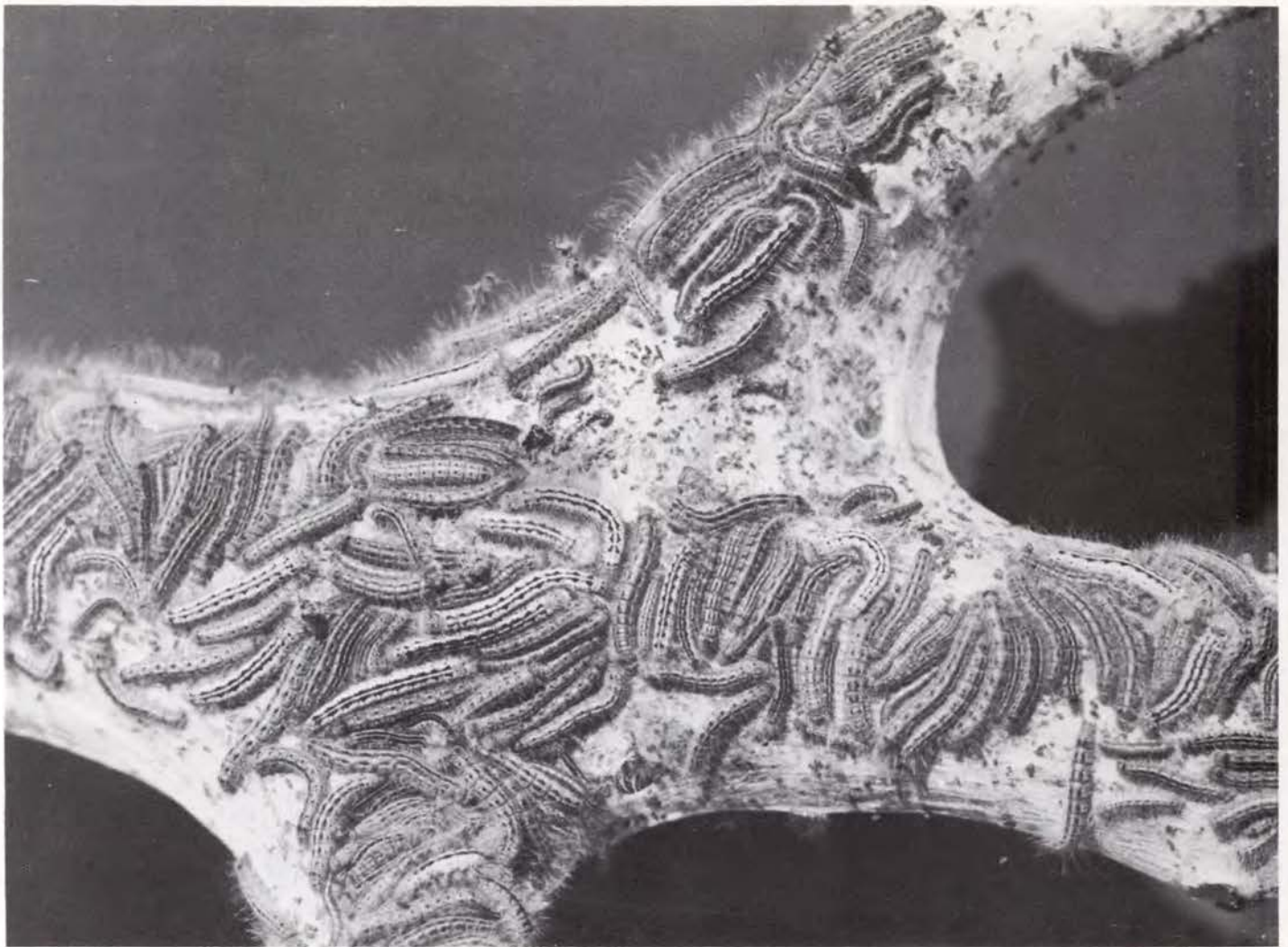
“THE ENTIRE region was made unfit for recreation, fishing, riding, or hiking. Streams were clogged with the dead bodies, polluting drinking water supplies. The ugly, furry things dropped from the trees as one walked beneath. Trout streams were dammed up every ten or 20 feet with caterpillar bodies. A pervasive stench filled the air for miles.”

This was the scene in the aspen forests around Santa Fe that confronted Norman Appleton at the height of a devastating tent caterpillar invasion in the 1930's. Appleton, trained as a biologist, but known to the Santa Fe community for his activity in art and music and for his Aspen Ranch School, decided to try to do something about the infestation which had defoliated some 1,200 square miles of the most scenic mountain areas of New Mexico, including his own beloved Aspen Ranch. The outcome of seven years of almost single-handed study and experimentation was then and still is today a novel and promising approach to the use of beneficial insects in the control of native pests.

In the last 25 years the quick answer to the problem would have been aerial spraying of pesticides, and this was also the initial idea of Norman Appleton. But he found the fish and game department opposed to potential poisoning of wildlife, and airplane pilots

A typical section of the aspen forest near Santa Fe before and after a devouring infestation of the Rocky Mountain tent caterpillar swept through in the mid-1930's.





Full-grown tent caterpillars on the branch of a tree they have killed.

averse to navigating the mountain gorges where the aspen clustered thickest.

In desperation, Appleton went back to first principles—he started collecting and opening tent caterpillar cocoons. To his surprise, he found in a large number of cases tiny parasites feeding on the pupae. From his graduate studies at the University of Pennsylvania, Appleton was aware that almost no work had been done in the area of using native parasites to control native pests. Until then, the spectacular successes of biological control had been restricted to identifying and introducing *foreign* insect parasites or predators to control accidentally introduced foreign pests who had arrived on a scene where they had no native enemies. The first really dramatic use of biological control in America was in such a case, when

the Australian cottony-cushion scale, which was destroying the orange groves of Southern California, was suppressed in the years following 1888 by the introduction of the Australian vedalia beetle.

But if foreign pests could be controlled by insects from their native environment, why couldn't native predator or parasite populations also be manipulated to control native pests? Of course, nature would eventually provide the control insects, but often only after a substantial time lag (up to six years in the case of the Rocky Mountain tent caterpillar, Appleton concluded), during which time astonishing damage might be wrought. Appleton reasoned that outbreaks of tent caterpillars resulted from their being reintroduced to areas that had been free of them for some time, areas in which the population of their

natural enemies would therefore also be low. If predators and parasites could be reared in the laboratory and introduced at the first sign of infestations in new areas, perhaps man could thus significantly cut down the time it would take natural forces to limit the pest.

In order to put his theory to any kind of test, Appleton first had to learn all he could about the tent caterpillar and the predator and parasite insects that attacked it. At the outset, he found scant entomological information about tent caterpillar species other than those of the Eastern states. The species that was eating up the aspen groves of New Mexico and Southern Colorado he found lived always above 6,500 feet, and for this reason he settled on the name "Rocky Mountain tent caterpillar." When he started his work, Appleton found only

five species of parasites recorded for what appeared to be this caterpillar. During his study, however, he identified 28 kinds of insects that affected the life cycle of the Rocky Mountain tent caterpillar and was able to work out the life histories of many of them and use them in control operations.

For two years Appleton collected, observed, and classified entirely on his own initiative and without any outside support. This situation was soon to change, however, when the newly created state WPA office in Santa Fe invited him to put his artistic talents to work illustrating a study of beneficial hawks of New Mexico. One day, the state director, Gordon Herkenhoff, dropped into Appleton's office, where he saw drawings of tent caterpillars and of some of their wasp parasites. He became highly interested in Appleton's work and when some time later he was asked by a party of visiting officials what could be done about a devastated aspen forest they were driving through, Herkenhoff replied that he knew somebody who had a promising approach. The result was that Appleton soon found himself with a laboratory and dark room, a lab assistant, and labor to help in field projects—the means to collect and rear parasites and to attempt control operations in the field.

The natural control on the Rocky Mountain tent caterpillar begins in midsummer as soon as the female moth lays her eggs. Appleton found four kinds of minute wasp-like insects of the order Hymenoptera that deposit their eggs in those of the tent caterpillar. At various subsequent stages of its development the pest is subject to the attack of other Hymenoptera (four-winged insects characterized by bees, ants, and wasps) or by Diptera (two-winged insects typified by flies, gnats, and mosquitoes). One of the most effective insect enemies of the Rocky Mountain tent caterpillar found by Appleton was a new species of solitary wasp (named *Podalonia occidentalis* from specimens supplied by him) which is akin to the digger wasps. This wasp attacks the full-grown caterpillar, stinging it into insensibility and transporting it to a burrow which she has prepared. She deposits a tiny white egg on the side of the caterpillar, then fills and conceals the hole in which she has buried it. Like the other parasites of the tent caterpillar, the wasp does not itself feed off

caterpillars, but uses the paralysed host as a future food supply for her carnivorous young. The tiny maggot that hatches from the wasp's egg enters the body of the caterpillar and gradually consumes it. Another important parasite of the caterpillar studied by Appleton is the *Sarcophaga aldrichi*. These extremely beneficial Diptera attack the full-grown caterpillar and insert their maggots beneath the skin of the host, who usually lives long enough to spin its cocoon and transforms to the pupa before it succumbs.

If the tent caterpillar is not attacked by one of these parasites at this stage, there are others that assault it when it shuts itself up in its cocoon. Seven species of the ichneumon flies (wasp-like Hymenoptera) were observed to parasitize tent caterpillar cocoons in New Mexico. There are some 16,000 species of ichneumons, all of them parasites, and many of them prey on what we would consider pests.

In addition to the many parasites of the tent caterpillar, Appleton found three insect predators. Minute, colorless mites attack the baby caterpillars as they emerge from their egg shells. A large fly, popularly known as the "assassin" or "robber" fly, was seen frequently to attack half-grown larvae. Finally, a large ground beetle, *Calosoma calidum*, was observed to eat many caterpillars in a single day.

Disease also plays a large role in controlling many pest infestations, and Appleton observed a viral disease of the tent caterpillar that was destroying up to 25 percent of the population in some cases. He concluded that *Sarcophaga* flies might materially assist in spreading this disease, as both male and female flies were found crawling all over the pests and flitting from one caterpillar to another as they lapped up the exudations from the mouth and cuticle.

From the outset of the study Appleton had assumed that deliberate introduction of some of the most important parasites at the time an outbreak was first observed might avert a serious infestation. The opportunity to test this theory came soon after the identification of beneficial insects was in hand, and methods of collecting them had been established. On July 14, 1937, the Supervisor of Carson National Forest called from Taos to report a small but heavy infestation of tent caterpillars in some 50 acres of

aspen just north of a division of the Santa Fe National Forest that had been heavily infested for some years. The challenge was to see whether or not timely introduction of parasites might not save the Taos forests from the scourge that had devastated the Santa Fe forest.

No digger wasps were found at the site of the new infestation, and only two percent of the 500 caterpillar cocoons that were examined produced ichneumon parasites. However, 39 percent of the cocoons produced *Sarcophaga*, which, as the strongest flyers among the common parasites, had apparently been blown in by the unusually strong southeast wind of the preceding summer. Because the tent caterpillars would soon become moths, mate, and produce eggs, an estimated half-million *Tetrastichid* egg parasites were rushed in. These wasps had been gathered the winter before by the simple expedient of collecting tent caterpillar egg masses from an area where the incidence of *Tetrastichid* parasites was very high. The eggs were kept in storage at a commercial ice house. Taken out of cold storage and placed on a bare cement floor, the eggs soon hatched out their caterpillar crop—which died of starvation in a couple of days. The rest of the eggs were now either infertile or contained parasites. These eggs were then taken to the threatened area and the parasites allowed to emerge in their own time.

In the spring of 1938, Appleton's team caught 3,000 big female digger wasps and introduced them to the infested site. In Appleton's words, "It was thrilling to watch these allies of man pounce upon their prey as soon as they were liberated from their cages." In addition to the ichneumons and the diggers, 45,000 *Sarcophaga* flies were brought in. These had been hatched out in the laboratory by stacking mesh-bottomed trays of caterpillar cocoons known to have a high incidence of *Sarcophaga* over a base filled with moist sawdust. When the *Sarcophaga* maggot emerged from the caterpillar cocoon, it dropped to the ground and burrowed; thus, Appleton wound up with sawdust trays of *Sarcophaga* puparia that could be kept dormant in the refrigerator until needed. When they were allowed to complete their metamorphosis and mate, they were introduced to trays of diseased caterpillars. Released at the infested

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A parasitic wasp, Hyposoter, implanting eggs in a red-bumped caterpillar. The caterpillar is one of a number of pests the California Division of Highways is attempting to manage by application of biological controls. The story of this program is told in Part Two: Choosing the Less Traveled Road in California. (Photo by Dudley Pinmock)



Itopectis laying eggs in a caterpillar cocoon.

site, they presumably not only added their numbers to the present parasite population, but helped to spread infection to the caterpillars.

Egg-gathering in the winter of 1937-38 produced 1.5 million more *Tetrastichids*, and a like number the following season. In the summer of 1939, some 60,000 more *Sarcophaga* were also introduced. Close examination of the infested area in 1940 could not turn up a single tent caterpillar. This single field trial does not prove beyond doubt the efficacy of the method; more extensive trials with adequate control populations for purposes of comparison would have been necessary for systematic development of the idea.

Unfortunately, the possibilities inherent in this imaginative control attempt were not followed up. Norman Appleton's low budget program disappeared beneath the gathering clouds

of war. The obvious next step of setting up a well equipped state program that could engage in precisely controlled experiments was never taken. Incredibly, his idea of manipulating native parasite populations to mitigate the cycles of native pest explosions is still considered novel—and this first published report of his work is as timely now as it could have been thirty years ago.

With World War II came the "breakthrough" to DDT and ultimately a whole spectrum of environmental poisons that must stand as one of the more dubious boons ever conferred on the human race. Yet there is hope that we may survive our perverse ingenuity; and to see what has finally come of some of the basic ideas that Norman Appleton wrestled with, we can now turn to the case of the red-humped caterpillar in the California highway landscape.



Adult Sarcophaga fly.



Sarcophaga maggots, above, and puparia, left.



Puparia packed in sawdust in preparation for refrigeration which will hold them in a dormant stage for later use.



Adult flies batched from puparia are transported to location of caterpillar infestation.

Part Two:

Choosing the Less Traveled Road in California

IT COMES as a bit of a shock to reflect that the Division of Highways, with its thousands of acres of plantings, may be the biggest gardener in California. As such, it has to contend with a variety of pests, one of the most destructive of which is the red-humped caterpillar. This pest attacks a wide variety of trees and shrubs, but particularly favors the *Liquidambar*, an ornamental tree resembling a maple, whose leaves (if there are any left uneaten) turn a brilliant crimson, yellow, or purple in the fall.

Needless to say, the Division of Highways was a user of the latest chemical pesticides during the 1960's. Toward the end of the decade the division had to face the prospect of growing restrictions on the use of chemical agents and a growing popular sentiment against large-scale and repeated spraying. For instance, in 1969 *Sunset* (a magazine of tremendous influence among Western homeowners and gardeners) came out against the use of dangerous chlorinated hydrocarbons, thus giving something like the Good Housekeeping Seal of Approval to Rachel Carson's charges. It was also coming to be more generally understood that the most powerful, persistent, and popular pesticides sometimes produced dismayingly negative results by killing off natural parasites and predators along with the pests, leaving the field clear for a devastating resurgence of the pest population or an unexpected substitution of a new pest for the old one.

The Division of Highways turned to the University of California at Berkeley for help. Dudley E. Pinnock, a young entomologist from England by way of Australia, had just completed an effective trial of the use of microbial control of the California oakworm, and in 1970 he undertook the state-sponsored project of developing a suitable method of biological control of the red-humped caterpillar.

Pinnock's main weapon in attacking the red-humped caterpillar was to be

Bacillus thuringiensis, an insect pathogenic bacterium deadly only to caterpillars. Norman Appleton had noticed in his study of the Rocky Mountain tent caterpillar that a disease of the caterpillar might be one of the most effective controllers of the pest; by 1970 biological control workers saw this as the most promising approach. Commercial preparations of *Bacillus thuringiensis* have been used to control caterpillars in lettuce, cabbage, and other crops for a decade. They can be diluted and sprayed with the usual equipment. Like the most powerful pesticides, the agent could approach 100 percent effectiveness. This idea, oddly enough, was one of the older ones in the field of biological control; fifty years ago French peasants were observed to collect a few dead (*i.e.* diseased) caterpillars, throw them in a bucket of water, let them steep for a while, then spray their cabbage patches. Soon most of the other caterpillars would become diseased and die.

A second weapon in Pinnock's armory was to be manipulation of the parasite population, but unlike Appleton, he did not seek to introduce his parasitic wasps directly. Study showed him that a major factor in limiting parasitic wasp populations was probably the availability of adequate nectar supplies. Wasps deprived of nectar died quickly, while those given nectar or honey-water could survive for weeks. In the highway plantings he found that there appeared to be a serious shortage of plants that the parasites of the red-humped caterpillar could feed on in late season. Thus, a long-range goal in control of the caterpillar is to introduce plantings which create a favorable environment for its parasites. This program is underway now.

Controlled experiments with *Bacillus thuringiensis* application to *Liquidambar* leaves in the laboratory and trees in the field indicated that complete control of the red-humped caterpillar might be achieved. Not only

would beneficial insects not be harmed, but there would be no health hazard to highway personnel handling the biological agents, to the general public, to livestock, or to the general environment. Finally, the tests indicated that the direct savings in cost of treatment might be as high as 40 percent, compared to the costs of using chemical controls.

The program of biological control was accepted and instituted by the Division of Highways. Now, two years later, the Division of Highways can report that it has been able to suspend completely the use of pesticides in the control of the red-humped caterpillar. As the program to create a more attractive environment for natural parasites develops, there is every reason to believe costs and labor effort will continue to decline.

The red-humped caterpillar story could be matched by other successes in biological control achieved in the last few years. Yet it is still true that biological control by and large lives on shoestring budgets when outlays are compared to the immense expenditures involved in the development and application of chemical poisons. The fascinating possibilities of Norman Appleton's experiments have never been followed up, though his project cost very little; the successful Division of Highways program was launched on the basis of control experiments conducted by Dudley Pinnock and two technicians with modest equipment in a short period of time.

A nation as notable as ours for such things as its war machine, its freeways and stagnant auto traffic, and its burgeoning suburbs may not easily be convinced of the desirability of spending money on something that is not self-defeating—but we are offered the clear possibility of controlling our insect pests without poisoning ourselves.

A crucial element in the development of biological controls is going to be the development of balanced systems that do not have the disruptive effects on the environment that have marked the widespread use of pesticides. Even biological control could be abused by fastening onto single-track "miracle" agents. We are coming to understand that we must live in and with our world, and that we must respect our environment instead of over-manipulating it in the interest of short-term and often illusory gains.



The Tocks Island Dam Fight

PETE du PONT

HAD I BEEN approached on the day of my swearing-in in January, 1971, and told that six months later I would be on my feet on the floor of the House of Representatives, opposing the powerful House Appropriations Committee, not to mention many of my colleagues in neighboring states, over an environmental dispute involving Tocks Island Dam and the National Environmental Policy Act, I would have returned an incredulous stare. After all, I had come to Congress intent on sinking my teeth into such knotty issues as drug abuse, foreign policy, the economy, and congressional reform. Such acronyms as NEPA were as new to my lexicon as I was to Capitol Hill. And though I cherished the beauty and heritage of the Delaware River Valley, I knew nothing about a certain tiny sliver of land lying north of the famed Delaware Water Gap known as Tocks Island.

This was all to change within a few months in a process which I can best describe as the "greening" of Pete du Pont. I would soon find myself girding for a solo attack, Don Quixote style, against some of the institutions which the elders in Congress revere the most—the Appropriations Committee, public works projects, and silent freshmen congressmen.

But my motive was more than a penchant for masochism. I sought to sharpen the teeth of NEPA and focus the concentration of the Congress on the need to stand firm in our national environmental policy. And, too, there was something truly worth saving—the Delaware Water Gap and the Delaware River itself.

From above Milford, Pennsylvania, to the famed Water Gap, the Delaware flows through one of the most beautiful river valleys in the country. To the east, in New Jersey, looms the forested ridge of Kittatinny Mountain, along which runs the Appalachian Trail. On the west, in Pennsylvania, swift streams and waterfalls splash over the rim of the Pocono upland and cut steep gorges filled with dark hemlock trees and rhododendron. Farm fields and woodlands quilt the valley itself along broad river bottoms and across rolling lands veined by brooks spangled here and there with ponds. Central to all is the majestic silver ribbon of the Delaware. Whether riffing or serenely pooled, this central reach of the river's overall Z-shaped course flows straight to Wallpack Bend, writhes back upon itself in a great double curve and then heads onward, smoothing its tones, to a dramatic thrust through the great gap near Stroudsburg, Pennsylvania.

"...a few young voices said 'Aye' and the 'Noes' rolled across that chamber like thunder. The lions had won, of course. And some miles upriver, the yellow bulldozers of the Corps of Engineers were fueled and ready to begin corrective surgery on the earth."

Pete du Pont serves as Congressman at Large from the State of Delaware.

Site of the proposed US Army Corps of Engineers Tocks Island Dam just north of Shawnee-on-the-Delaware, Pennsylvania. If constructed, the resulting reservoir would back up 37 miles into the State of New York and in the process destroy an immense section of many of the loveliest rural countryside in the eastern states.



Photos by H. Scott Heist



This is historic country, with memories of Indian times. Dutchmen settled here before William Penn founded his colony. Wars came, and the valley linked George Washington's revolutionary forces in upper New York with those near Philadelphia. Today, the valley still retains that same peaceful, rural charm. And it is just "over the mountain" from the sprawling megalopolis, 62 miles from the heart of New York City, and 75 miles from the center of Philadelphia.

But late in 1962 much of this bucolic landscape with its historic sites and setting was threatened by congressional authorization for construction of the Tocks Island Dam. The area would be flooded by construction of a 3,200-foot-long dam upstream from the Delaware Water Gap, 100 feet downstream from Tocks Island. The result would be a 37-mile-long lake extending as far north as Port Jervis, New York.

The dam was authorized by the Flood Control Act of 1962 primarily to prevent flooding, but also to provide supplies of water, hydroelectric power, and recreation opportunities. In 1955 there was an unusual convergence of two hurricanes along the eastern seaboard that caused severe flooding, resulting in extensive property damage and 99 deaths. The deaths caused by the flood, however, occurred along tributaries where a series of minor impoundments have since been constructed, not on the Delaware itself. The Army Corps of Engineers nevertheless insisted the project was necessary. Corps economists tried sweetening the pork barrel by attributing all sorts of fringe benefits to the project: fishing, swimming, boating—and badly needed hydroelectric power for the hungry megalopolis to the east. But opposition to the project was growing: conservationists, independent scientists and, more recently, elected officials and government agencies began to question whether the construction of a dam was the best or even an appropriate means of satisfying any of these needs. By 1971, the emphasis had changed, and the fringe benefits outweighed all others. Furthermore, costs had soared to more than \$300 million with more than half of that expenditure justified as an investment in creation. The plan now called for the National Park Service to administer a 72,000-acre Delaware Water Gap National Recreation Area.

A Park Service sign at Dingman's Ferry, Pennsylvania, a few miles south of the water gap, proclaims:

"In a land already rich in historic and natural resources, man is shaping a recreation area full of opportunities for the refreshment of body, mind and spirit."

A few miles away another road sign constructed by local skeptics reads:

"Eat an engineer for lunch. Nix on Tocks."

The graffiti war was heating up, but the wheels of the Corps grind slowly, and construction on the dam was delayed for almost ten years for lack of available funds.

The passage of the National Environmental Policy Act of 1970 saw the Tocks Island Dam enter its second decade of controversy. NEPA, in effect, declared a whole new ball game in water resource development; for beyond the elaborate review procedures set out in the statute (which mean very little by themselves) lay the first major step towards development of comprehensive national resource planning. NEPA's application to Tocks did little to alter the build-now-study-later attitude within the Corps of Engineers. It has created, however, a stalemate which has allowed a period of review by many public officials and scientists, calling into question the corps' entire dam-building philosophy and permitting the Congress to begin the long task of putting teeth into our environmental policy.

The corps' first gambit was to ignore the intent of NEPA. There were enough available studies on Tocks Island to "line the bottom of the reservoir" claimed one Corps official. The Tocks Island library was indeed voluminous, but the major environmental issues still remained undisclosed and unstudied. Prior to the Appropriations Committee deliberations in May of 1971, the corps made a *pro forma* attempt to comply with NEPA by submitting an eight-page statement on the projected environmental impact of the project. An eight-page report on the environmental impact of a \$300 million dam! The supporters of the project were ready to begin construction.

In conjunction with my general objections to the Corps' build-now-study-later attitude, which seemed to violate the spirit of the National Environmental Policy Act, there were numerous questions concerning the



While much of the countryside threatened by the proposed dam is forested, many small, well-manicured farms lend a pastoral charm to the region.



impact of the dam on upper Delaware Bay. Meetings with local scientists convinced me that a serious ecological imbalance might occur with the impoundment. Biologists predicted that by shutting off annual spring flows, the lower part of the river would be robbed of nutrients, and certain areas of the upper bay would not be flushed out with fresh water. Many forms of fishlife—oysters in particular—could be adversely affected.

On the basis of this local environmental concern and in the belief that the National Environmental Policy Act would be meaningless if we simply used the impact statements as post-scripts to construction, I decided to seek deletion of construction funds from the annual public works appropriation bill.

This decision marked the beginning of what was to be an initiation into the intricacies of the power structure on the Hill and of the frustration of trying to convince half of my 434 colleagues that a dam that had been under study for ten years needed further study. My first attempt at persuasion was with the House Public Works Appropriations Subcommittee. Delighted in having secured one half hour to present my views, I went to the hearings armed with voluminous memoranda and two experts from the University of Delaware. After receiving a gracious southern welcome from Chairman Joe Evins of Tennessee, I was quickly informed that I had only five minutes to present my testimony. Even that was divided three ways. My expert witnesses had just enough time to identify themselves before we were politely informed that the pressing business of the committee unfortunately prevented further testimony. In the eyes of the committee, it seemed to me, I was as unwelcome as the many concerned and articulate citizens who also came to plead with it.

Upon leaving the hearing room, I thought the prospects of convincing the rest of the House to be remote indeed. This feeling proved to be an underestimate of the difficulties that lay ahead.

As expected, the House Appropriations Committee reported out the annual Public Works Appropriation bill with some \$3.7 million dollars designated for the construction of Tocks Island Dam. Only two days lay between the day the bill was reported out and its consideration on the floor.

Engaging the enthusiasm—or even the attention—of harried Members of Congress for the amendment I was going to offer was a monumental task. We churned out “Dear Colleague” letters, called the offices of members who had good environmental records, and began the unfamiliar task of cornering members on the floor to request their assistance. Most were skeptical, some sympathetic, and none could understand why I insisted on this form of self-immolation. Most incredulous of all was our local newspaper reporter, seasoned by years of log rolling and pork barreling. “The Appropriations Committee? Joe Evins? Do they let Christians in too, or just the lions?” I did, however, receive able support from three colleagues: Hamilton Fish of New York, Guy Vander Jagt of Michigan, and Pete McClosky of California. Each promised to give floor speeches supporting my amendment.

“Let there be no mistake about the real issue in this case,” I doggedly continued to a disinterested audience of tired colleagues. “It is not the Tocks Island Dam, it is not the Delaware River. The real issue here is whether we are going to have any teeth in our environmental laws.” It was a hot July night, the kind Washington is famous for, and Congress wanted a vacation. For hours I waited for the reading of the bill to progress as one issue after another sapped the patience of the world’s greatest deliberative body. Then came the perennial dogfight over the Dickey-Lincoln hydroelectric project in Maine. As usual, a debate on the merits of public power vs. private power ensued. But even politicians become bored listening to politicians. Determined that this phoenix-like project was not going to be resurrected, the leadership terminated debate amid shouts of “Vote! Vote!” Dickey-Lincoln was reduced to dust.

Tired from the rigors of defending or abusing public power projects, members drained out of the hot chamber as my remarks concluded. Interrupted by groans of boredom, pleas to vote the amendment down, and the clap of the Speaker’s gavel attempting to keep the House in order, I argued against build-now-study-later, and my time had expired.

Now the proponents of the project were recognized. A series of memorable oratories followed—the most ascerbic of which exist only in my mind, since their authors later used

their right to “revise or extend” their remarks to expunge them from the record. Representative Frank Thompson of New Jersey suggested that the gentleman from Delaware was to be commended for his zeal despite his lack of information, but that if he were *really* concerned about the environment he would concentrate his efforts on those many polluting factories (bearing what name, I wonder) in his own district. Mr. Thompson then concluded with a since-expunged quote worth remembering. The ecologists had gone so far, he suggested, that “everytime we want to erect a seesaw, someone objects that it will hurt the bunny rabbits.”

Not to be outdone, Representative Jim Wright of Texas relied on Kipling to make his point:

“It is suggested that we have further study. This reminds me of Kipling’s description of old men. He said:

‘They peck out, dissect, and extrude to the mind

The flaccid tissues of long-dead issues

Offensive to God and mankind
Like vultures over an ox

That the army has left behind.’”

In a final burst of Biblical zeal, he concluded:

“We cannot keep people from intruding upon the earth. And the interests of people must come first. Nature sometimes, as in this case, needs the corrective surgery of intelligent man, under the injunction given to us in the Book of Genesis, to subdue the earth and husband its resources.”

The marathon continued. The House grew impatient. And the end came swiftly. The record shows only that the motion offered by the gentleman from Delaware was rejected. In fact, a few young voices said “Aye,” and the “Noes” rolled across that chamber like thunder. The lions had won, of course. And some miles upriver, the yellow bulldozers of the Corps of Engineers were fueled and ready to begin corrective surgery on the earth.

Despite the fact that the battle had been lost in one house of Congress the war continued elsewhere. In the course of the controversy over the Corps’ draft of the environmental impact statement, Senator Clifford Case of New Jersey led a forceful and effective one-man crusade to have the project thoroughly reviewed by an impartial and independent body of experts. He called upon the Council on Envi-

ronmental Quality, which oversees the NEPA process, to appoint the National Academy of Science or some such group to the task. Eventually CEQ arranged a compromise involving an interagency federal review of the Corps' final impact statement. The key finding of the review was contained in a 100-page report prepared by the Corps of Engineers' own consultants. The report, which confirmed the fears of conservationists, concluded that because of the high level of agricultural run-off and wastes from poultry farms along the Delaware, any impoundment would result in rapid eutrophication, jeopardizing the quality of the water supply and recreational aspects of the project.

CEQ immediately ordered a moratorium on the project until the pollution sources could be identified and controlled. Controlling this kind of pollution is not easy. The very least requirement would be a complicated and expensive regional sewage system. Such a system would still not adequately treat the nutrients that drain from the agricultural fields. And in all likelihood, the cost of the regional treatment system would far outweigh the cost of the project itself. Several legislators including Senators Buckley and Case and Congressman Dow, quickly qualified or withdrew their initial support. Since then, the Governors of New Jersey, New York, and Delaware have all publicly expressed the kind of doubts that politically signal the kiss of death.

The House and Senate Appropriations Committees have also responded in unprecedented fashion by deleting construction funds until these environmental problems are resolved. In the meantime, they have earmarked more than \$15 million for land acquisition. This action suggests what may be the only rational alternative to the Tocks Island Dam, one long advocated by conservationists and most recently by the Park Service itself—a national recreational area utilizing all of the land intended for the original project plus 10,000 "extra" acres of scenic riverside lands that would otherwise be inundated. In other words, a park without a dam.

This revised plan would in effect represent the first and major step necessary toward protecting the river and riverscape from the urbanization of New York, New Jersey, and Pennsylvania. Complementing the park

would be the proposed Delaware National Scenic River along the upper reaches of what is probably the East's most widely enjoyed canoeing stream.

The emergence of such a proposal at this time gives a glimmer of hope that water resource planning may be given new direction. The debate has at least reached Congress. Cherished concepts of water resource planning and accounting criteria are now being seriously challenged. And at long last, Congress has begun to question the very function of the Army Corps of Engineers in this field. Senator Clifford Case has, for example, introduced a bill (S. 3471) that would curtail many of the Corps' traditional functions while at the same time encouraging it to assume added responsibilities to protect the environment. The bill would not only encourage the Corps to take an active part in sewage treatment and solid-waste projects but would also halt any Corps project eight years old or older that has not received funds for construction. By eliminating older and no longer justified projects, such action would have the effect of turning NEPA into the mechanism for advance planning that Congress intended it should be.

The future of Tocks is still uncer-

tain, but it appears that one major step has been taken. After years of subsidizing inefficient water management projects, the Congress is beginning to scrutinize the value of these investments, not only from a fiscal, but from an environmental standpoint. The National Environmental Policy Act is not popular with some members of Congress. For many it has spelled obstructionism, but the action taken by the House this year on Tocks is a reaffirmation of the spirit of NEPA. In a rejection of the build-now-study-later attitude, the Congress appears to have matured in its understanding of environmental problems associated with these large public works projects. The problems are not the creation of wild-eyed environmentalists, nor are they to be resolved through conventional wisdom. To strike a balance between efficient water resource management and minimal environmental damage, the government must embrace new, flexible alternatives to the big dam: the use of minor structures, flood plain zoning, water recycling, flood plain insurance, or high flow-skimming. This year Congress took its first step toward accepting the new science of water resource management. I hope it continues to go forward.

The valley of the Delaware is rich in history as well as in beauty. Among many historic structures, the bridge and St. John's Episcopal Church at Dingman's Ferry, Pennsylvania, will be covered by the huge Tocks Island reservoir.



Report from Stockholm



"We must revalue the fundamentals in which our respective civic societies are based and ideals by which they are sustained."—Prime Minister Indira Gandhi.

THIS IS the end of the beginning." These words were repeated in many ways and many times during the last few hours of the first world conference on the human environment, held in Stockholm in June, 1972. In a sense they reflect the mood of the conference throughout the two weeks of meetings, many of which lasted late into the night. They sum up the atmosphere of optimism and compromise at the end of the conference. There were some anxious moments when it seemed that the conference would bog down in counter blasts over political ideology, but fortunately the widely shared concern for man's future survival in an environmentally balanced world was not submerged in political rhetoric or nationalistic maneuvering. Political differences were evident, of course, but the 114 nations represented at the conference nevertheless produced a Declaration on the Human Environment and a set of environmental recommendations to guide national governments and international institutions. These recommendations included more than 100 specific items. Many were accepted by consensus vote, but others were subject to tedious hours of wrangling debate before a roll-call vote could be taken. At the core of the recommendations is the action plan, "a blueprint for international cooperation to protect and enhance the present and future quality of the environment for human life and well-being." The concluding phrase provides a key to understanding the decisions arrived at during the conference.

It became apparent more than two years ago, when Sweden proposed holding a world environment conference, that not all countries defined

environmental quality in the same way. To the countries just beginning to develop, pollution meant factories, transportation, better living conditions. If more pollution was the result of more industry, they welcomed pollution. To these countries, a bad environment meant one characterized by poverty, disease, and hunger. They also feared that the efforts of industrialized countries to reduce pollution might affect expansion of their exports and slow down their development. Industrialized countries, on the other hand, expressed urgent concern over depletion of the earth's natural resources, pollution of the air and water, and the need to preserve natural and man-made areas for posterity.

Thanks to the strong leadership of a remarkable Canadian, Maurice Strong, Secretary-General of the Stockholm conference, these two viewpoints were accommodated in one program that expressed the shared goal of all nations to enhance the environment "for human life and well-being."

The development/environment issue therefore became a dialogue rather than a major political battle separating the industrially rich nations from the economically poor. A representative of one of the African nations said that developed countries had finally displayed a direct concern for the economic needs of underdeveloped nations, and a United States delegate remarked with satisfaction that developing countries in turn were showing a genuine awareness of environmental problems. Priorities between development goals and environmental concerns will still be debated and compromises will still have to be made, but the Stockholm conference clearly marks the beginning of a new world-

wide understanding of environmental protection as a key concern of mankind.

In the first week of meetings, one happy rallying point centered on a recommendation to declare a ten-year moratorium on commercial whaling. Conservation organizations such as the Sierra Club, attending the conference as observers, concentrated their efforts on securing support for this recommendation. Colorful street demonstrations attracted attention to the issue. There were marches, and a bus dressed up as a black plastic whale wove through Stockholm streets. Although Japan, Portugal and South Africa voted against the recommendation in committee, when it came before the plenary session only Japan requested a formal vote instead of adoption by consensus. When the vote came, however, Japan was one of 12 nations to abstain. The vote of 53-0 placed strong pressure on the International Whaling Commission, meeting in London shortly after the conference, though it subsequently rejected that recommendation.

Although passage of the anti-whaling recommendation was a victory for conservationists, it was a relatively minor point in the conference compared to the continuing debate between developed and underdeveloped nations over the two principles of compensation and additionality. The principle of compensation provides that underdeveloped countries be compensated for any loss of export revenue resulting from new environmental standards in developed nations that might adversely affect existing trade

Patricia Rambach is the Sierra Club's United Nations Representative.

arrangements. The underdeveloped countries passed a recommendation endorsing this principle despite strong opposition by the US and other industrial nations. Under this proposal, for example, the US could not stop importing high sulfur-content oil from Venezuela until it paid Venezuela for the prospective loss of income. The US, in opposing this recommendation, argued that environmental programs in developed nations could not be made contingent on compensation arrangements. It further stated that it was willing to consider some compensation, but only by negotiation in given cases. Thus for the present, the developing countries achieved a rather hollow victory, perhaps at the expense of obtaining more realistic, viable concessions.

The principle of additionality provides that underdeveloped nations be

“Governments were asked to set aside biological preserves in all major ecological regions as baselines to aid in research on the ecological effects on pollution.”

reimbursed for the costs of protecting the environment *in addition* to whatever economic aid they receive for development purposes. They wish to thereby ensure that such economic aid will not be diverted from its basic purpose.

For the first time at these meetings there was recognition openly expressed by the United Kingdom that developed countries will have to assume additional costs if they want to ensure that industrial growth is to be environmentally sound. The Sierra Club has strongly supported the need for additional funds and will continue to work on new ways to make this principle more acceptable.

It is significant that the developing nations, so long deprived of using their own natural resources and so conscious of their newly won national sovereignty, also recognize the limits of these resources and the importance of preserving certain ecosystems. Thus, in a mood of mutual understanding, the conference recommended that there be an exchange of information on mining practices, including in-

formation on restrictions which should be imposed on mining in certain locations and on “the environmental conditions of mine sites.”

The importance of natural reserves of various sorts was stressed in a number of resolutions. Governments were encouraged to enter into treaties to protect representative ecosystems of international significance. In addition, governments were asked to set aside biological reserves in all major ecological regions as baselines to aid in research on the ecological effects of pollution. The urgency of protecting these and other areas to conserve wild stocks of genetic material—gene pools—was stressed in a surprisingly full set of resolutions.

In related resolutions, the conference recognized that declines in the numbers and varieties of wildlife may have an ultimate effect on human life as a result of pollution and loss of genetic diversity. In a turnabout from the initial drafts emphasizing economics, Japan successfully amended the provisions dealing with worldwide forestry to underline the importance of forests in conserving soil, watersheds, wildlife, and recreational values, and it called for research to provide better understanding of the relationship between the forest biomass and the well-being of the earth’s biosphere.

The conference also called for a shift from chemicals to control agricultural pests to an integrated approach emphasizing biological controls. In addition, the conference called for recycling of crop and animal wastes, including use of soils for sewage waste disposal.

In a number of resolutions, the conference pointed to the need for more research to identify environmental problems, particularly in the less developed countries. It asked for pilot studies to demonstrate how alternative approaches to resource development would work in representative ecosystems; for improved systems of economic and social cost-benefit analyses to evaluate these alternatives; and for economic and technical aid in adopting them. International assistance agencies were instructed to incorporate environmental impact considerations in their processes for determining where and when to make grants, and the Secretary-General was directed to seek out international aid projects affecting ecosystems of in-

“The conference also called for a shift from chemicals to an integrated approach emphasizing biological controls.”

ternational significance to work out methods of conducting post-audits of their impact and, wherever feasible, advance assessments of this sort. These two recommendations could be the bases for what could grow into the UN equivalent of the US’s NEPA procedure. Underdeveloped countries also perceived that environmentalism might bring them some immediate economic benefits and asked for emphasis in world trade on the use of natural, instead of synthetic, products and labor-intensive modes of production which minimize the drain on energy resources.

Another recommendation provided for monitoring the effects of energy use and production, especially the emission of air pollutants, oil spills, and radioactivity. The conference also adopted recommendations on pollution calling for new monitoring systems, research, and higher standards. One program which will get under way quickly is the so-called “Earthwatch,” which will monitor changes in the environment that are international in scope and serve as a warning system. This includes measuring the amounts of pollution in the oceans and air, the paths traveled by pollutants, and so on.

The conference rejected efforts to weaken language calling for accelerated family planning programs to stem the population explosion, and adopted a recommendation, which sharply divided the industrialized countries from the poorer nations, to establish a voluntary fund to improve housing and remove slums. On this issue, the representatives of China evoked gasps from the other delegates by leaving the conference hall before the vote on the new fund was taken. Having pushed to become the spokesman for the Third World, China instead began to assume the gadfly role

“China’s walk-out left it in a strange and isolated position.”

that Brazil had assumed. China's walk-out left it in a strange and isolated position.

Much protest activity, inside and outside the conference, focused on the impending nuclear test planned by France for the end of June in the South Pacific on Mururoa atoll. The countries that could be affected by the blast, especially Peru and New Zealand, led the debate calling for the abandonment of all further nuclear tests, whether in the atmosphere or not. France and China however remained adamant in their determination to continue testing for national security reasons. Debate on this issue carried over into the private working group meetings where it resulted in a Declaration on the Human Environ-

"States have accepted the responsibility to ensure that their activities do not damage the environment of other states."

ment. Conference planners had hoped to avoid extensive debate at the world meeting, but China had not taken part in the advance negotiations, and other countries were not fully satisfied with the draft prepared for the conference. Therefore, the weary delegates were forced to establish a special working committee, which met through the weekend and often late into the night to redraft the declaration. In addition to Peru's efforts to strengthen the principle that called for the cessation of all nuclear testing, African states also introduced the apartheid issue into the declaration discussions. In a cliff-hanging series of meetings, with the outcome an uncertainty until the last hours of the conference, a compromise declaration was finally produced.

Many environmental organizations had been disappointed with the original draft declaration because, among other things, it was not specific enough in its concern for preserving a balance between nature and human developments. The declaration, passed by acclamation, is even less acceptable in this respect, but in the long negotiating sessions the environmental viewpoint was frequently supported over delegate objections that were more often than not based on political mo-

tives. This resulted in a number of forward steps.

The declaration lists 25 principles on which future action should be based. One principle stands out as a major breakthrough in international cooperation. States have accepted the responsibility to ensure that their activities do not damage the environment of other states. This principle of state responsibility opens the way for industrialized countries to take a leading role in advancing environmental goals by accepting not only responsibility, but also by developing procedures for the settlement of environmental disputes, for example, by mediation or third-party negotiation. The Sierra Club intends to work for this approach and will also encourage the practice of issuing annual reports on the state of the nation's environment.

Other principles call on governments to protect and improve the human environment, assert that "the natural growth of population continuously presents problems for the preservation of the environment, . . . and urge that the discharge of toxic substances be halted to prevent irreversible damage to ecosystems."

The declaration also recommended the establishment of ongoing international machinery, including a governing council of 54 member states which would set policy for international environmental cooperation and a small professional secretariat to

"Much protest activity inside and outside the conference focused on the impending nuclear test planned by France. . . ."

carry out programs and coordinate environmental activities within the United Nations system. The executive director who would head this secretariat would be responsible for long-range planning of UN programs in the environmental field. He will also administer the new environment fund established, on the initiative of the United States, to provide for financing of international environmental programs. The amount of the fund has been set at \$100 million for five years, woefully inadequate at the outset to

"One program . . . is 'Earthwatch,' which will monitor changes in the environment that are international in scope and serve as a warning system."

cover all of the projects recommended in the action plan. The conference secretariat estimates that these would require at least \$167 million. The United States has pledged a contribution of \$40 million over a five-year period. Other countries, including Australia, Canada, Japan, the Netherlands and the United Kingdom, have pledged amounts that bring the total to more than \$60 million. An environmental coordinating board will be set up to help ensure coordination of UN activities.

An essential ingredient in international environment protection is the acceptance of strong international conventions to set standards and control haphazard use of the world's resources. There was disappointment that a number of such conventions could not be completed in time to be announced at the conference. Only the Convention on the Conservation of Wetlands of International Importance will soon be ready for signing. The Convention to Ban Dumping of Poisonous Substances into the Oceans was mentioned in debate but is not yet ready for signing and will be negotiated further at a meeting in London this fall. The United States opened up a new issue at the conference by suggesting exemption of the military from proposed dumping regulations—a dangerous precedent if accepted. The Danish Minister for Environmental Protection stressed the importance of curbing ocean dumping at the conference. He announced that 12 European states have agreed to a regional convention on dumping and urged that there be a global agreement to protect what is the "common property" of all mankind. The World Heritage Trust convention, still a draft, has been broadened to protect both natural and man-made areas and might be ready for signature in November, 1972. The Convention to Protect Endangered Species will be discussed again in the meeting to be

called by the United States in the fall. Negotiations for a Convention to Set Aside Certain Islands for Science have slowed down to await further UN study.

At the height of conference negotiations, interest was diverted one afternoon by an unofficial proposal, pre-

"The outcome of this conference makes clear that organizations like the Sierra Club have a new warrant to use in building greater environmental awareness throughout the world."

sented to Maurice Strong by members of an American commune, the Hog Farm, which called for a ten-year moratorium on the "hunting, killing, and environmental poisoning" of the most endangered species of all—*Homo sapiens*. Their cry was one of many in the meetings held in other forums surrounding the conference that protested against ecocidal warfare, in particular the war in Indo-China. Except for China, however, there were only sporadic efforts within the conference itself to discuss war and disarmament issues. These had been carefully set aside for debate in other international forums.

Although population issues were not dealt with by the conference except in terms of human settlement problems, they were forcefully debated in the neighboring Environmental Forum where nongovernmental organizations, individuals and some government spokesmen met in workshop sessions on these issues and other politically controversial subjects. It was at the Environmental Forum that Barry Commoner and Paul Ehrlich held angry exchanges on population growth and Third World development problems. Nationalistic Swedish groups dominated another forum where they sponsored speeches condemning the capitalistic system as the cause of environmental decay. They also provided poetry readings and other entertainments for the thousands of people from Sweden and elsewhere who had come to the conference city.

Perhaps if the Soviet Union and most of the East European states had

been present, the diatribes against western political systems and the insistence on maintaining national sovereignty would have been stronger. This may happen of course, when environmental planning begins to take shape within the UN. The Eastern bloc countries did not attend the conference in protest against the exclusion of East Germany, which had not qualified for representation under the technical ruling approved by the UN general assembly.

The outcome of this conference makes it clear that organizations like the Sierra Club have a new warrant to use in building greater environmental awareness throughout the world. The Sierra Club, and citizen groups that formerly had little concern with environmental matters, but that have supported United Nation activities, were encouraged by Maurice Strong to reshape their present activities to become a vital adjunct to future international environmental cooperation.

HIGHLIGHTS OF THE STOCKHOLM CONFERENCE

Recommended a permanent high-level environmental unit to coordinate UN activities and a UN Environmental Fund of \$100 million over the first five years.

Urged the signing of an International Convention to Restrict Ocean Dumping.

Recommended steps to cut down on the release of dangerous pollutants into the environment.

Recommended a global "Earthwatch" program to monitor environment trends in the air, oceans, on the land, and for human health.

Urged completion of other conservation conventions.

Called for international efforts to collect and preserve the world's genetic resources.

Urged a ten-year moratorium on commercial whaling.

Recommended the creation of an Environmental Referral Service to help exchange environmental know-how among all countries.

Sought to prevent national environmental actions from creating un-

The conference opened doors to stronger citizen involvement. It is up to the Sierra Club and others to seize this special opportunity.

Prime Minister Indira Gandhi of India, in her speech before the plenary conference, pointed to perhaps the most significant factor that has begun to emerge from the conference and from all the debate of the past few years. She said: "We must revalue the fundamentals on which our respective civic societies are based and ideals by which they are sustained. If there is to be a change of heart, a change of direction and methods of functioning, it is not an organization or a country—no matter how well intentioned—which can achieve it. While each country must deal with that aspect of the problem which is most relevant to it, it is obvious that all countries must unite in an overall endeavor. There is no alternative to a cooperative approach on a global scale to the entire spectrum of our problems."

fair trade barriers against exports of developing countries.

Urged higher priorities for environmental values in international aid programs.

Urged more emphasis on population policy and aid for family planning in areas with environmentally harmful population growth.

Asked governments to establish biological reserves in major ecological regions to aid research on the ecological effects of pollution.

Called for research on the role of forests in the earth's biosphere.

Urged a shift from chemical control of agricultural pests to a more integrated approach emphasizing biological controls.

Instructed international assistance agencies to use environmental impact statements as tools for determining how and where to allocate assistance funds.

Instructed the Secretary-General to conduct post-audits on the environmental impact of significant international assistance projects.

Agreed on the Declaration of Human Environment containing new principles to guide future international environmental action, including the principle that states are responsible for damage to the environment of other states or international areas.

Sierra Club COMMENTARY

News View

Club wins restraining order in wilderness suit; is countersued

A federal district judge in Washington, D.C., has issued a temporary restraining order halting issuance of any new contracts for logging or other development in wilderness inventory areas throughout the country. The order, affecting over 50 million acres, will remain in effect pending a hearing for preliminary injunction.

The Sierra Club, Natural Resources Defense Council, North Cascades Conservation Council and Colorado Open Space Council filed suit June 16th against Secretary of Agriculture Earl Butz and Forest Service Chief John McGuire seeking to halt any incursions into the last remaining large units of undeveloped national forest land until the areas are studied for possible inclusion in the wilderness system.

The Forest Service has been conducting a mammoth, nationwide study to determine which of these last "de facto wilderness areas" in the national forests will be preserved and which will be developed. Those areas which had not been recommended for further wilderness study by June 30th would have been subject to immediate development, including logging, road-building and other activities which would permanently destroy their wilderness character. The Club contends the review has been grossly deficient, with insufficient opportunity for public participation, too little time to conduct the studies, and failure by the Forest Service to consider many known wilderness areas for possible preservation.

The day after the restraining order was issued, the Western Timber Association and seven timber companies slapped a \$20 million countersuit on the Club, charging that its suit would cost the lumber companies \$10 million. They added another \$10 million in punitive damages. Sierra Club President Raymond J. Sherwin called the timber association's action a "ploy to muddy the issues" and a "frivolous suit," and pointed out that the restraining order does not interfere with any existing contracts, but applies only to future ones. Further, it affects only those areas of de facto wilderness of 5,000 acres or more that were inventoried by the service and on which sales are scheduled.

"This appears to be an effort on the part of the timber industry to intimidate us in order to prevent our talking to the Forest Service about what industry does to public lands," Sherwin said. "Do they think the only people entitled to talk about the use of public lands are those in the timber industry?" He also noted that if the Club wins its case, the court, not the Sierra Club, will be stopping future timber sales. "And if we lose, then there is only the slight delay imposed by the restraining order."

Coast initiative wins spot on California ballot

The initiative to protect California's coast has won a spot on the November ballot. The 325,000-signature requirement was surpassed by a substantial margin, thereby permitting the people to determine the



fate of their shrinking coastline. "In one month, and without any money, the conservation movement in California has gathered itself together to win the first step in the battle," stated Sierra Club Sacramento Representative John Zierold. "These volunteers did not hire a professional firm to collect their signatures, as did some initiative sponsors. They worked evenings and weekends, and deserve to be commended."

The initiative would create a state board and six regional commissions which would institute permit controls over coastal development, and would require preparation of a state master plan.

Club, scientists protest weather modification as weapon of war

The Sierra Club and the Federation of American Scientists have asked President Nixon to immediately halt the use of weather modification as a weapon of war. The two organizations requested that such geophysical and environmental research be devoted solely to peaceful uses.

"We call on you to announce that the United States will seek international agreement on the principle of providing for the complete cessation of any research, experimentation, or use of any environ-

mental or geophysical modification activity as a weapon of war," states a letter signed by Club President Raymond J. Sherwin and Federation Chairman Marvin L. Goldberger.

The request came in response to recent reports that the United States has been seeding clouds over North and South Vietnam and Laos to increase and control rain for military purposes.

The groups' concern about the use of weather modification is based on two grounds: first, it violates the Declaration of the United Nations Conference on the Human Environment adopted last month in Stockholm which declares that "states . . . have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states;" and secondly, the effects of weather modification are almost totally unknown but could have serious consequences.

Dr. Goldberger, former chairman of the Strategic Weapons Panel of the President's Science Advisory Committee under President Johnson, has long been involved at the highest level in advising the government on weaponry matters.

The federation is a 26-year-old public service organization of scientists and engineers, including more than 20 Nobel Prize winners and former officials from all major government agencies. Its goal is to make science serve society.

Club granted standing to sue in Mineral King case

A federal district judge in San Francisco has granted the Sierra Club's motion to amend its complaint in the suit to halt Disney Productions' planned resort complex in Mineral King.

The motion to amend was filed in response to the Supreme Court's ruling that the Club's original complaint alleged insufficient facts upon which to base standing to sue. The Club examined its interests in and historic use of the area, and now has reworded its complaint to point out that its chapters and members regularly conduct outings in Mineral King, and that its "esthetic, recreational and environmental interests"

Editorial

"CONGRESS will only pass our bills when there are enough people in Congress who believe in our cause." This is a truism which has long been accepted by most groups advancing legislation, but for varied reasons environmentalists have been slow to absorb its meaning. Like most truisms, it somewhat overstates the case. Sufficiently aroused public opinion can sway fence-sitters. But the reverse is certainly the case: we can get nowhere with a hostile Congress. Our troubles with the House of Representatives in the 92nd Congress show how true this is.

Congress, of course, has wanted to keep citizen groups who influence legislation from also trying to influence elections as well. To be exempted from paying taxes on income they receive, Congress has required that non-profit groups such as the Sierra Club must agree to stay completely out of the elective process. This requirement, however, should not induce a blind spot in our perception of the real world in which decisions affecting the environment are made.

Much of the success of our legislative program rides on the outcome of each election, and this is particularly true this fall. Because the Club has to stay out of the election, each club member individually must bear an even greater responsibility. Each member should find his or her own way to make our environmental beliefs felt in elections.

First, examine the record of the candidates. The *Bulletin* reports votes on some pivotal issues. The League of Conservation Voters (324 C Street S.E., Washington, D.C. 20003) provides a good record of key votes by members of Congress. Comparable groups exist in many states to evaluate the record of legislators. Read books such as *Nixon and the Environment* (New York: Village Voice Books, 1972). From such sources, find out who our friends are and who is consistently against us. Be sure to base your evaluation on a representative group of votes over a number of years so that exceptions do not distort the pattern.

Second, find a way to help the candidates with good records. If you are a constituent, do all the things that count most: contribute financially, help with canvassing, offer to do research, and to write and make speeches if you are able. In doing this, make sure the candidate and his staff know you are doing it because of your candidate's environmental stands. If you are not a constituent, you may still be able to do these things for a nearby candidate; in any event, don't fail to make a campaign contribution (within limits they are deductible).

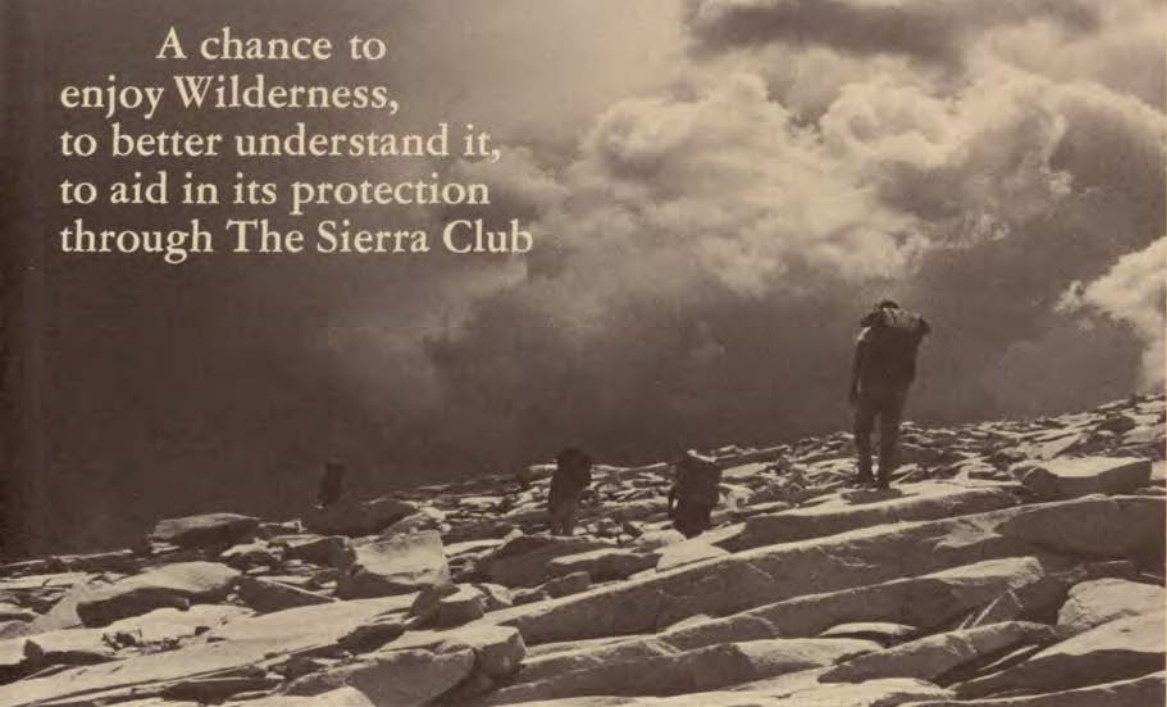
Where an incumbent with a bad record has no really outstanding challengers, it may still be important to become involved. Because such incumbents often have seniority, they are chairmen of committees handling environmental legislation. If they are not re-elected, someone else will become chairman who may not be such a bottleneck on the committee, even though the newly elected Congressman may be no great improvement. It is important also to soften up incumbents with poor environmental records by criticizing them at election time when they are vulnerable and more inclined to listen. Ask them challenging questions at public meetings; write letters to editors for publication; encourage their critics.

Finally, become involved in the political process in a permanent way. Electoral patterns are not going to change overnight. It takes a sustained effort. Start participating locally in the political party of your choice. Lobby it to improve its environmental stance. Stay with the effort so that you can grow to have influence in it.

Though the Club is handcuffed as far as elections are concerned, the point is that you are not. 140,000 aroused members could have a profound impact in November.

Michael McCloskey, *Executive Director*

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	Admission fee	Dues	Total		Admission fee	Dues	Total
<input type="checkbox"/> Life	*	\$400.00	\$400.00	<input type="checkbox"/> Junior (thru 14)	*	\$ 5.00	\$ 5.00
<input type="checkbox"/> Contributing	\$5.00	50.00	55.00	<input type="checkbox"/> Student (thru 23)	*	8.00	8.00
<input type="checkbox"/> Supporting	5.00	25.00	30.00	<input type="checkbox"/> with spouse	*	13.00	13.00
<input type="checkbox"/> Regular	5.00	15.00	20.00	<input type="checkbox"/> Senior (60 and over)	\$5.00	10.00	15.00
<input type="checkbox"/> with spouse	5.00	22.50	27.50	<input type="checkbox"/> with spouse	5.00	15.00	20.00

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would be injured by conversion of the area into a ski development. The Club also alleges that over the years it has conducted conservation campaigns to have Mineral King included in Sequoia National Park. These "allegations fall well within what we interpret to be the meaning of the Supreme Court opinion on this subject of standing requirements," Judge William T. Sweigert wrote in his order.

In addition, the amended complaint adds nine individuals and the Mineral King District Association, an organization of local cabin owners, as plaintiffs. It also adds a new cause of action under the National Environment Policy Act by alleging the defendants have failed to prepare an environmental impact statement, a study of alternatives or a cost-benefit analysis of the project.

Century Freeway work halted

The U.S. District Court in Los Angeles has ordered the state of California to halt work on the proposed 17-mile Century Freeway, running between the Los Angeles Airport and Norwalk. The court issued a preliminary injunction July 7th and ordered the state to prepare an environmental impact statement, to hold new hearings on air and noise pollution, and to prepare additional studies on relocation procedures.

The suit was filed by the Sierra Club, Environmental Defense Fund, the NAACP and others last February against officials of the Department of Transportation, the Federal Highway Administration, the California Highway Commission and the state Department of Public Works. Attorneys in the case hailed the order as a "complete victory," and said, "This may mark the end of the freeway era in the Los Angeles metropolitan region." Added Sierra Club Southern California Representative Larry Moss, "This is the most resounding decision involving a freeway anywhere."

Despite the injunction, the judge said the state could buy right-of-way property from the individuals and businesses who "freely and voluntarily" decide to leave the

route's path. He emphasized his order would not determine the future of the freeway, but left its fate in the hands of federal and state agencies. As proposed, the freeway would run through eight communities, including Watts, would cost some \$530 million and would displace 21,000 people.

Canada rejects Village Lake Louise

The Canadian government has rejected a \$30-million project that would have created a huge recreational resort in the heart of Banff National Park. (See "Downhill at Lake Louise," *Sierra Club Bulletin*, April, 1972.) Minister of Northern Development Jean Chrétien called the proposed development "too large," and said, "It would result in undue concentration of visitors and residents in the area." Village Lake Louise, Ltd., a private company owned in part by Standard Oil of New Jersey, had proposed to build a luxurious tourist town capable of accommodating 8,500 skiers, and new overnight accommodations for at least 3,500.

The proposal had sparked the ire of Canadian conservationists, who argued that Banff's celebrated mountain scenery should not be spoiled by ski runs and other modern tourist facilities.

Supreme Court denies appeal to block Storm King

By a vote of eight to one, the Supreme Court struck down conservationists' appeal to block construction of the Storm King pumped water storage plant in New York. The Scenic Hudson Preservation Conference, the Sierra Club, and four other petitioners had asked the court to review a Court of Appeals ruling which upheld issuance of a construction license by the Federal Power Commission. With Justice William O. Douglas dissenting, the court declined to review that decision.

However, the seven-year battle is far from finished, since a second suit challenging a state-issued water quality standards certificate is

pending in the New York Appellate Court. The suit brought before the Supreme Court asserted that the plant would despoil the scenic beauty of the Hudson River highlands.

Cro-Con Canal followup

In the June issue of the *Bulletin* we published Jonathan Ela's delightful poke at the US Army Corps of Engineers, "From Sea to Shining Sea or Through the Rockies at 31 Knots." The story described an alleged corps plan to build a cross-continental barge canal wide and deep enough to carry our biggest aircraft carriers from Boston to San Diego or Seattle.

Response to the piece was mixed. In a wire service article which appeared in major dailies across the country the story was described as "a piece of satire in the best tradition of Mark Twain." One reader, Dean McLaughlin of Ann Arbor, Michigan, wrote to say that the proposal was "ill considered" and offered a number of amendments to it including:

"... no consideration has been given to the unmistakable benefits that would obtain from alternative routings. For example, nowhere do I find mention of flooding Death Valley, or tunneling through the Sierra in the vicinity of Mt. Whitney, both of which would yield tremendous economic return through the improvement of conditions among Owens Valley tobacco growers.

"I would also urge to your attention the advantages of a causeway to Hawaii, for the purpose of improving rail service, and the installation of a subway between Tierra del Fuego and Tristan de Cunha, to facilitate evacuation of that island should it again become necessary.

"Finally, I propose that Mt. Vesuvius should be plugged and a valve installed, so that future eruptions can be scheduled more conveniently for the benefit of tourists."

The response of the corps itself was good natured, even though the satire may well come back to haunt them. A spokesman put it this way: "I'm sure we could build a cross-continental canal, but I don't think the country is ready for it."

Regional Reps' Reports

MIDWEST

It may seem odd that controversies should be mounting in regard to as venerable an institution as the Mississippi River, but the fact is that decisions are being made right now that will determine whether Old Man River will be increasingly exploited and degraded for commercial profit, or whether it will be revived and saved.

The diversity of approaches toward management of the Upper Mississippi—upstream from about St. Louis—can be seen in the list of studies either recently completed or currently being conducted by various governmental entities:

- Upper Mississippi Basin Comprehensive Study.
- Upper Iowa Wild and Scenic River Study.
- Lower St. Croix Scenic River Study
- Northwest Illinois-Northeast Iowa National Recreation Area Study.
- Year-Around Navigation Study.
- Mississippi River-Lake Superior Connection Study.
- Twelve-Foot Channel Study.
- Upper Mississippi River National Recreation Area Study.

Several of these deserve comment. The Upper Mississippi Basin Comprehensive Study is river basin planning at its bulkiest, having resulted in a multi-volume report outlining the various present and projected uses of the entire watershed, and all of the water resources required to sustain those uses. An Upper Mississippi River Basin Commission has just been established to further the work of the task force that prepared the report, and this commission may in the future represent a dangerous developmental thrust that will destroy the natural values that remain in the Upper Mississippi.

Two of these studies are being conducted by the Corps of Engineers, and represent the interests of the

dominant exploiting use of the river, barge navigation. These are the studies for extending the navigation season (analogous to a parallel study being conducted on the Great Lakes), and the proposal to deepen the navigation channel from nine to 12 feet. Both of these projects contain the potential to ruin non-commercial resources, and both represent an unfortunate intensification of the exploiters' drive to convert the river to a single use.

The most exciting proposal concerning the Upper Mississippi is the concept of an Upper Mississippi River National Recreation Area. Originally spelled out in legislative form in H.R. 5468, the concept has a grandeur that matches that of the river itself. The recreation area would stretch from Minneapolis to St. Louis, a distance of 660 miles, and consist of the following components:

214,000 acres currently under public ownership
 +300,800 acres to be acquired in fee title
 =514,800 acres total fee ownership
 + 73,700 acres to be placed under easement
 =588,500 acres land in fee and easement
 +390,000 acres water
 =978,500 acres land and water in fee and easement.

This proposal would protect the magnificent Upper Mississippi bottomlands—sandbars, islands, sloughs, inlets, and other interesting features—while at the same time give visual protection to the towering bluffs that rim the valley in the northern section.

Unfortunately this proposal has barely seen the light of day, as the bill's author, Congressman John Kyl of Iowa, has repudiated the concept by introducing H.R. 10529, a substantially altered version of the NRA. The scale of the proposal was greatly reduced: fee acquisition dropped from 300,800 acres to 55,300, and the 73,700 acres of easement were virtually eliminated, with only 3,500

acres remaining. The bulk of what is left in H.R. 10529 is water, and the 214,000 acres currently in state parks, Corps of Engineers management, and two national wildlife refuges. In terms of acreage, it is clear that the only legislation currently before Congress, the Kyl Bill, is woefully inadequate.

There is a further problem that may be of even greater importance. Under the provisions of H.R. 10529, the Corps of Engineers essentially retains its supremacy in the management of the river. Cynics even point out that much of the acreage specified in the Kyl Bill consists of islands that would have to be acquired anyway in order to construct the 12-foot channel referred to above. The corps can hardly be ousted from the Mississippi Valley at this time, but any national recreation area proposal must truly protect the river and must modify in a significant way the mandate under which it has been managed to date.

The reasons for these modifications are money, and the political power of the corps. The original NRA proposal would be enormously expensive, requiring as much as half a billion dollars for acquisition and development. When the amount of visitor use is considered, however, it begins to look like a bargain, as it has been estimated that as many as 100 million visitor days might be recorded annually by the year 2000. Stacking the deck in favor of the corps is an old tradition in Mississippi Valley politics, and is one of the major obstacles to any kind of river preservation.

The Nixon Administration has evidently come down solidly for the *status quo ante*. At hearings held in June on H.R. 10529, administration witnesses recommended no action "for the present time" and disingenuously suggested that pending land-use legislation could do the job just as well. Even half a loaf is evidently too much for the White House, the Office of Management and Budget, and the related political cronies of each to swallow. On the other hand, James Curtis of the Iowa Chapter of the Sierra Club strongly urged that the recreation area concept be expanded to something more similar to the original proposal.

Washington Report

W. Lloyd Tupling

CONSERVATIONISTS have long held that the multiple uses for which national forests exist are pretty well limited to timber, forage, recreation, wildlife habitat and watershed protection. But a recent report from the joint economic committee spotlights another major use of national forests—enhancement of profits for a few large, integrated timber corporations.

The revelation is contained in a July 15, 1972, compendium of papers for the committee, entitled "The Economics of Federal Subsidy Programs." A section on the federal tax subsidy of the timber industry, authored by Emil M. Sunley, Jr., an economist with the Office of Tax Analysis of the Treasury Department, shows that capital gains from timber cut on federal land are a significant factor in the \$130-million to \$140-million tax subsidy enjoyed annually by the timber industry.

Sunley points out that virtually all income from growing timber is eligible for taxation at the preferential capital gains rates, rather than ordinary income. "Tax data indicate that large integrated corporations with significant amounts of income from logging, lumber, plywood, pulp and various paper products are able to shift nearly all their income into the lightly taxed capital-gains category," Sunley reported. This means that the income is taxed at a 30 percent rate, rather than the ordinary corporate levy of 48 percent.

The fact that timber companies get long-term capital gains benefits from national forest timber, as well as their own timber, is not widely known. So long as the timber contract with the Forest Service has been in effect for at least six months, capital gains benefits are available to the purchaser. "The typical purchaser does nothing until he has owned the timber or held the right to cut the timber for the six month period necessary to qualify for capital gains treatment," Sunley reported.

This helps to explain why the volume of federal timber under contract for cutting is more than double the annual allowable cut. Purchasers delay cutting to maintain a flow of capital gains benefits.

Sunley points out that the indirect subsidy to the timber industry has three main components: (1) the capital gains treatment of income derived from the increase in the value of standing timber; (2) mismatching of income and expense; and (3) the conversion of ordinary income into capital gains.

"Though Congress intended to extend capital gains treatment to the income from growing timber, Congress did much more than that," Sunley declared. "A major portion of the costs necessary to grow and carry timber may be deducted currently even though the income is recognized for tax purposes only when the timber is sold. The current deduction reduces income from logging or manufacturing which otherwise would be taxed at ordinary rates and increases the gain on the later sale of timber which is taxed at capital gains rates. In short, the tax law permits mismatching of income and expense which results in a conversion of ordinary income into capital gains.

"There is no compelling evidence that the timber tax subsidy is effective in increasing the supplies of timber or in encouraging conservation," he said, "extending capital gains treatment to public timber has no relationship to conservation or good forest management."

"The timber subsidy," he added, "may encourage the cutting of new timber rather than the recycling of paper and other wood products."

For nearly 30 years, the timber industry has escaped all efforts to reform its tax subsidy program. This may be because the matter is not well understood by the public. Perhaps the report of the Joint Economic Committee will start a trend toward illumination of this tax bonanza.

And so the battle just keeps rolling along. The fate of the Mississippi River is important not only to the bald eagles and great blue herons that reside there, and not only to the densely populated upper Midwest, but to all people who dream of rafts and river rats, and who feel that our nation's mightiest and most historic stream should be a source of national pride, and not just another cause for remorse and regret.

Jonathan Ela

NORTHWEST

The continuing battle between Oregon conservationists and the U.S. Forest Service over the proper use of French Pete Valley in Oregon's central Cascades has now become a campaign issue in this year's U.S. Senate race between incumbent Senator Mark Hatfield and former Senator Wayne Morse. Hatfield apparently favors the Forest Service's plan to permit clear-cut logging in the valley while Morse clearly opposes the plan.

The first skirmish over French Pete Valley occurred in 1957 when, by administrative action, the Secretary of Agriculture reclassified the Three Sisters Primitive Area as the Three Sisters Wilderness. In doing so, he omitted French Pete Valley, which had been part of the former primitive area. Speaking for most of the Oregon Congressional delegation, Sen. Wayne Morse then urged that French Pete Valley be included in the newly designated wilderness and decried the "reactionary economic interests" in his state who out of greed would wreck "this cathedral of natural beauty."

The second skirmish over French Pete Valley occurred in the fall of 1969 when students from the University of Oregon led almost 1,000 people in a peaceful march to protest the Forest Service's imminent plan to open the valley to loggers. In response to the march, the Forest Service agreed to postpone proposed timber sales and to restudy its plans for the valley.

The Forest Service completed this new study last summer and released its results in October, 1971. This new management plan, which recommended road-building and

commercial logging as the major uses of French Pete Valley, provided little change from the service's previous plans. Coming at the height of public concern over the Forest Service's emphasis on timber production to the exclusion of other natural values, this new plan sparked a second rally at the University of Oregon on November 18, 1971.

Addressing the rally, Sierra Club Executive Director Mike McCloskey called the fight for French Pete a conservation issue of historic importance.

"If we can beat the timber industry here on their own ground, we can beat them anywhere," McCloskey said.

Willi Unsoeld, the famed Mt. Everest climber, echoed McCloskey's remarks and later led the marchers in "We Shall Overcome" on his harmonica. Senator George McGovern sent a telegram, which commended the students for their "valiant" efforts on behalf of French Pete Valley.

The rally received good press coverage and provided more publicity for the bill introduced two and one-half years ago by Oregon's junior Senator, Bob Packwood, which would establish the French Pete Creek Intermediate Recreation Area. Conservationists charge that Senator Mark Hatfield had, until last May, kept this bill (S.866) bottled up in the Senate Interior Committee, on which he sits, and that he finally permitted a hearing on the bill only as a means of winning support from conservationists in his upcoming election contest with Wayne Morse.

The hearing on S.866 was scheduled for May 25, 1972, in Washington, D.C. Knowing, however, that few Oregon citizens would be able to attend, conservationists formed the "Oregon Citizens' Committee on Interior and Insular Affairs" and scheduled their own French Pete hearing for May 16, 1972, in the Eugene City Council chambers. The committee unanimously elected as its chairman Frank Barry, University of Oregon law professor and national vice-president of The Wilderness Society. Barry gathered three panels of citizens to act as "Senators" for the hearing and hired a court reporter to prepare an accurate transcript of the proceedings. In advance publicity releases, the committee

stated that all views regarding the future of French Pete would be welcomed and considered.

Sen. Packwood telegraphed the hearing sponsors his congratulations on their "splendid idea" and said that "while it seems impossible to move Washington, D.C. to Oregon in response to these issues so close to the hearts of Oregonians, it is now proven that citizen participation can overcome even that obstacle."

The result of the all-day hearing was nearly unanimous support for Sen. Packwood's bill to designate French Pete Valley an "Intermediate Recreation Area." The vote: 123 for; two against.

Sen. Hatfield telegraphed his promise to include the citizens' committee's 336-page transcript in the official hearing record, but it now seems that this record has gone to the printer without the statements of the Eugene witnesses. Sen. Hatfield has pledged to visit French Pete Valley this summer and reconsider his position. Conservationists are urging him to include this valley in the omnibus *de facto* wilderness bill he promised over a year ago to introduce.

Meanwhile, it will be interesting to watch Oregon's Senatorial race in November. It may not be the last skirmish in the battle over French Pete Valley, but many Oregon conservationists think it will be the last important one.

Roger Mellem
(substituting for Brock Evans)

ALASKA

Three special study teams from Interior and one from Agriculture are in Alaska this summer to look over the 80 million acres in "national interest" lands and 47 million acres in "public interest" lands withdrawn by Secretary Rogers Morton last March as part of his land withdrawals under the Alaska Native Claims Settlement Act. "National interest" or Section 17 d-2 lands are those that will be considered by Congress for possible inclusion in the national park, wild and scenic rivers, forest, and wildlife refuge systems. "Public interest" or Section 17 d-1 lands are less valuable for "four

systems" purposes, but contain other important public values. In September the secretary's 80 million acre withdrawal authority under the Act expires, and the study teams are reviewing the two categories prior to mid-July, when they will recommend to the secretary any boundary adjustments they feel are necessary. Following the secretary's September decision, the study teams will begin detailed field studies and preparation of their legislative proposals.

With 32 members, the Park Service's study team qualifies as the best-equipped to follow through on detailed recommendations to Congress. Team members are on four- to six-month assignment, and return for another stint next year. A five-member team from the Bureau of Outdoor Recreation has established a permanent office here. Team members are focusing on potential wild and scenic rivers. A seven-man Fish and Wildlife Service team will later be assisted by six-member teams on the legislative proposals. The Forest Service's four-man team, in the curious position of making recommendations to another department—Interior—is awaiting Morton's September decisions before proceeding with detailed national forest proposals. In addition, the Bureau of Land Management, U.S. Geological Survey, and the Bureau of Mines will be advising the secretary on the boundary adjustments.

Although the study teams' recommendations are confined to which public interest lands should be changed to national interest lands, without regard to ultimate agency jurisdiction, the shifts that will be made—or not made—will determine in large measure which agency will ultimately have jurisdiction. The Forest Service, for example, has identified several existing d-2 areas and is asking that additional d-2 acreage be added to them. This ad-

*The hotly contested
Wrangells: Kotsina
River with Mt. Blackburn
in the background.*



ditional d-2 acreage, however, can only come from existing d-2 lands identified for park or wildlife refuge purposes by the Park Service and the Fish and Wildlife Service. In the Wrangell Mountains, presently a "public interest" area, the multiple-use agencies within Interior are arguing that the Wrangells should remain a d-1 area, while the other "four systems" agencies have recommended d-2 status. If the secretary does not change the area to a d-2 area, the Bureau of Land Management will continue its jurisdiction over the area.

More advice to the secretary on the "four systems" areas may be expected from the recently formed Joint Federal-State Land Use Planning Commission. An initial meeting here with Secretary Morton is scheduled for late July or early August. As expected, Governor Egan's appointees include three cabinet members noted for their pro-development attitudes, and the other two will probably concur much of the time. On the federal side, the secretary's appointments were more balanced, with two members, Celia Hunter of the Alaska Conservation Society, and Richard Cooley of the University of California, Santa Cruz, expected to defend the national interest.

Because of the state's suit against the secretary's March land withdrawals, the question of ultimate ownership of some key "four systems" land is unresolved. State members of the commission may be expected to recommend state ownership, and the commission will probably not play an important role in the disposition of the 80 million acres until the lawsuit is settled and the study teams submit their legislative proposals.

Conservationists will also be submitting their recommendations on the boundary adjustments to the secretary. The major disagreement between conservationists and the secretary is over the ultimate withdrawal status for the Wrangell Mountains, perhaps the foremost wilderness and scenic area in the state. In January, the state administration laid claim to the area to prevent any future "four systems" jurisdiction. In March, Secretary Morton backed the state out of the area and withdrew it for Native selection

purposes and for "public interest" or d-1 purposes. His choice of d-1 was a disappointment to conservationists and the Park Service because of their decades-long interest in the area and the clear intent by the congressional supporters of the national interest provisions that the Wrangell Mountains be given d-2 status. (Apparently Morton was overruled at the White House level at the last moment following pressure from the mining lobby and its multiple-use supporters in Interior and Congress.) d-1 status for the Wrangells meant that mining claim locations could continue, and eventual multiple-use classification. State land selection could also be allowed.

Also complicating the national park effort is a million-and-three-quarter acre Native deficiency area east of the Copper River from which the Native regional corporation will select one-third of the total. This land is all of unquestioned national park quality. What is not selected by the Natives should be given the maximum degree of protection until Congress can complete action on a Wrangell Mountains national park proposal. Under the present secondary withdrawal covering Native deficiency lands not selected by the Natives, multiple use classifications and state selections could follow, thereby stopping the eventual inclusion of these ex-deficiency lands in what could be the most spectacular unit of the national park system. A stronger secondary withdrawal is in order.

Thus for the Wrangells to be considered by Congress as one of the "four systems" areas in the next few years, the Secretary must change the approximately four million acres of "public interest" lands to "national interest" lands, give the unselected Native deficiency lands interim protection pending congressional action, and work with the Copper River Native corporation in order that the national interest in the remaining unselected deficiency lands be protected. Opposition to the change to d-2 will be intense, and the present state administration can be expected to join this chorus because "public interest" status for the Wrangells could ultimately open the way for state selection.

Jack Hession



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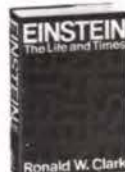
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The *News*, a literary magazine published by the Club 15 or 16 times a year and sent to you approximately every 23 days, describes the regular Book-of-the-Month Club Selection and scores of other books, most of which are available at substantial discounts—up to 40% on more expensive volumes. All these books are identical to the publishers' editions in format, size and quality. If you wish to purchase the regular Selection, do nothing and it will be shipped to you automatically. However, there is no obligation to purchase any particular volume. If you do not want the Selection (or any other book)—or if you want one of the Quality of Life titles or one of the Alternates offered in the *News*—simply indicate your decision on the convenient form provided and mail the form so the Club receives it by the date specified on it.

If you continue after this experimental membership, you will earn, for every Club Selection or Alternate or Quality of Life title you buy, a Book-of-the-Month Club Book-Dividend Credit. Each Credit, upon payment of a nominal sum, often only \$1.00 or \$1.50—somewhat more for unusually expensive volumes or sets—will entitle you to a Book Dividend® which you may choose from over 100 fine library volumes available over the year. This unique library-building system enables members to save 70% or more of what they would otherwise have to pay.

565. NANTUCKET by PATRICIA COFFIN (Pub price \$8.95)

559. THE FRAIL OCEAN by WESLEY MARX (Pub price \$6.95)

421. A HAPPY DEATH by ALBERT CAMUS (Pub price \$5.95)

354. THE BOYS OF SUMMER by ROGER KAHN Photos. (Pub price \$8.95)

335. THE ASSASSINS by ELIA KAZAN (Pub price \$7.95)

113. GENTLE WILDERNESS Edited by DAVID BROWER Photos. (Pub price \$7.50)

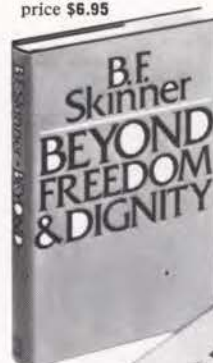
568. ON THE LOOSE by TERRY and RENNY RUSSELL. Illustrated (Pub price \$7.50)

419. THE GERMAN LESSON by SIEGFRIED LENZ (Pub price \$8.95)

567. THE LAST REDWOODS text by FRANÇOIS LEYDET. Photos (Pub price \$7.50)

551. "IN WILDERNESS IS THE PRESERVATION OF THE WORLD" THOREAU SELECTIONS with Photos by ELIOT PORTER (Pub price \$7.50)

226. Pub price \$6.95



379. Pub price \$6.95



555. Pub price \$10

418. Pub price \$8.95



553. Pub price \$8.95



564. Pub price \$8.95

BOOK-OF-THE-MONTH CLUB, INC.

Quality of Life Division
280 Park Ave., N.Y.C., N.Y. 10017 2-A437-7

Please enroll me as a member of the Book-of-the-Month Club, Quality of Life Division, and send me the four volumes whose numbers I have indicated in the boxes below, billing me \$1.00 for all four volumes. I agree to purchase at least four additional Selections, Alternates or Quality of Life titles during the first year I am a member, paying special members' prices. My membership is cancellable any time after I buy these four books. A shipping charge is added to all shipments.

INDICATE BY NUMBER
THE FOUR BOOKS YOU WANT

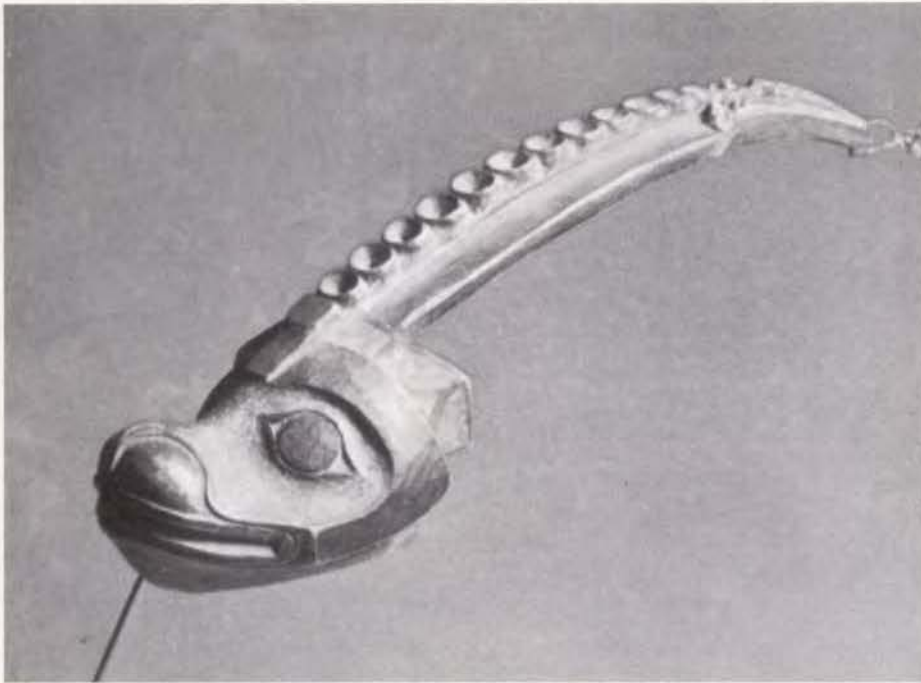
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MR. _____
MRS. _____
MISS _____
(Please print plainly)

Address.....42

City & State..... Zip.....

IMPORTANT GUARANTEE: The *News* announcing each regular Club Selection is mailed in time to allow members at least 10 days to decide if they want the Selection. If you, because of late delivery of the *News*, should ever receive a Selection without having had the 10-day consideration period, that Selection may be returned at Club expense.



1 Pomo Feathered Basket

This fine coiled basket decorated with feathers and abalone shell pendants comes from the Pomo people of Northern California. They were highly prized treasures and were given as gifts, sometimes to a shaman in reward for his performance on a ceremonial occasion or for a successful healing. Abalone ornaments are extremely old among Pacific Coast cultures.

2 Abalone Shell Necklaces

These two necklaces are typical of those used widely among Pacific Coast Indians as dance ornaments. Archeological findings indicate an exceedingly long tradition of abalone shell ornaments. These necklaces were made by a member of the Pomo Indians of Northern California.

3 Alaskan Eskimo Mask

Masks like this were used among the Eskimo in dances and religious rites. This one appears to represent the spirit of an unidentified sea mammal or the Shaman who possessed that spirit. Masks were frequently worn throughout the Indian world by the men who acted out religious rites and in dances that symbolized the spiritual and historical traditions of their culture.

4 San Ildefonso Black Ware Pot

This pot from the San Ildefonso Pueblo in New Mexico is believed to be one of the first signed pots made by Maria Martinez and decorated by her husband, Julian, who invented the technique for making this now famous style of pottery. This pot was purchased from Maria in 1923 or 1924.

The National American Indian Council offers you a unique assortment of greeting cards...which you'll be proud to use at Christmas and throughout the year.

For the first time, authentic American Indian artifacts and objets d'art, faithfully reproduced in full color on high gloss stock, can now grace your Christmas greetings or personal notes. They are offered in an economical assortment, specially packaged and priced, by the National American Indian Council. Authenticated by the Lowie Museum of the University of California, these cards are selected to illustrate the scope and intensity of previously overlooked native art forms.

All proceeds from the sale of these cards go to help the American Indian, in a variety of projects sponsored by NAIC. The council, composed of more than a thousand Indian organizations, was recognized by the White House in May 1972 as the official national organization for the non-reservation Indian. The Council is self-

supporting, and this is its first effort at raising its own funding.

This special assortment of 48 cards and matching envelopes is attractively priced to introduce you to our full line.

Rarely could you expect to receive such a value . . . or to do so much for a worthy cause. Please send the coupon today, and allow 45 days for delivery.

National American Indian Council
Belli Building
San Francisco, CA 94111

- I enclose \$6 for the special 48-cards and envelopes set
 I enclose \$10 for two sets, 96 cards in all
 Please enclose your illustrated list of additional cards

Name _____

Address _____

Zip _____

*I enclose 50¢ for postage and handling.
California residents add sales tax.*



1



2



3



4



"I never found the companion that was so companionable as solitude."

**DRIVE A DATSUN.
PLANT A TREE.
GET A POSTER.**

From now until October 15, when you test drive a Datsun at a participating

dealership, we'll pay the U.S. Forest Service to plant a tree in a national forest. And give you this 18" by 24" Ansel Adams poster, too.

Yes, we do have an ulterior motive: to acquaint you firsthand

with Datsun's value and engineering excellence. America needs more trees, so we thought we'd help out a little.

DATSUN
FROM NISSAN WITH PRIDE



The Club Looks at Itself

DON COOMBS

EMPHASIS on the volunteer is a tradition in the Sierra Club, and one that has produced notable conservation victories. This is reflected in the familiar statement that "The strength of the Club lies in its membership."

The Club has a number of strengths, and there is no need to try to put them in order here. What is needed is an explanation of why it is important for you and me (and others, including the Club leadership) to know things about the members—things like why they joined, what Club activities they participate in, and how they feel about specific Club policies. When you have 140,000 members, spread across the country and a little beyond, "knowing thyself" is both a desirable and a difficult thing to accomplish.

In this case the difficulty was surmounted by conducting a national membership survey in the latter half of 1971, with professional planning and lots of volunteer help. Some of the most interesting results are presented here, with the hope that they will be of value to Club leaders across the country.

It is appropriate, before turning to the findings, to express appreciation to the Loma Prieta and San Francisco Bay Chapters. There were some expenses which simply had to be met. No amount of volunteer effort, for example, could obviate the need for postage in connection with a survey conducted through the mail. The two chapters joined with the national Club in meeting those expenses.

Who belongs?

First of all, most members haven't belonged for long. About half the members had belonged for two years or less when the survey was made, while only nine percent had belonged more than 12 years. This is the natural result of the Club's great growth in the last few years.

About 46 percent of the members are less than 35 years old, with 11 per-

cent under 20. Some 62 percent are men, 38 percent women.

About 19 percent of members are students, with 18 percent teachers, 12 percent homemakers and 11 percent managers and executives. As shown in Figure 1, the next largest categories of occupation are lawyers, doctors, dentists etc. (8 percent), other professionals (7 percent), and clerical and blue collar workers (7 percent).

Looking at the occupation of the household's main wage-earner may be more useful than looking at the occu-

pation of each individual member, if you want to form a picture of the kinds of families members come from. As shown in Figure 2, more families (17 percent) were supported by managers and executives than by individuals in other occupations, with the categories of lawyers, doctors, dentists (12 percent) and other professionals (11 percent) being the next largest.

More than half the members have completed at least some graduate work, with 18 percent holding a Ph.D., law or medical degree, and another

OCCUPATIONS OF CLUB MEMBERS

11%	Managers and Executives
8%	Lawyers, Doctors, Dentists
10%	Other
7%	Other Professionals
11%	Other Teachers
7%	College Teachers
7%	Clerical and Blue Collar Workers
3%	Engineers
5%	Technicians
19%	Students
12%	Homemakers

OCCUPATIONS OF MAIN WAGE-EARNERS OF THE HOUSEHOLDS FROM WHICH MEMBERS COME

17%	Managers and Executives
12%	Lawyers, Doctors, Dentists
12%	Other
11%	Other Professionals
10%	Other Teachers
9%	College Teachers
9%	Clerical and Blue Collar Workers
7%	Engineers
7%	Technicians
6%	Students
1%	Homemakers

(Total does not equal 100 because of rounding error)

21 percent holding a masters degree. This is even more impressive when you remember that some members aren't yet old enough to enroll in college.

□ Why did members join?

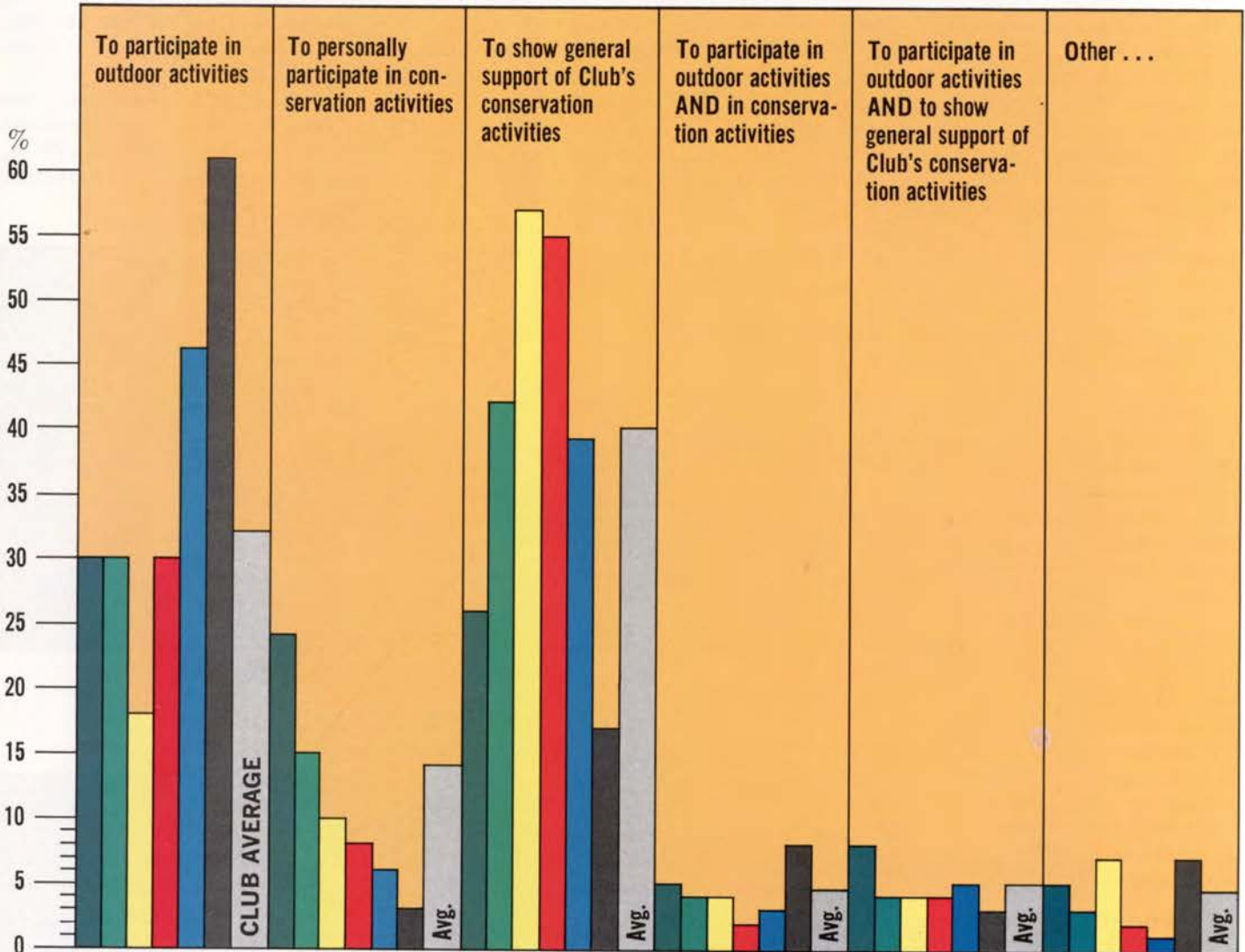
About 45 percent joined to show general support of the Club's conservation activities, but not to participate in them personally. About 41 percent joined in order to participate per-

sonally in Club outdoor activities, and 18 percent joined in order to be able to participate personally in conservation activities. (A few people gave more than one reason for joining, so the total here is more than 100 percent.) Combining the "support conservation" categories produces roughly a 60 percent conservation, 40 percent outdoor activities split in reasons for joining.

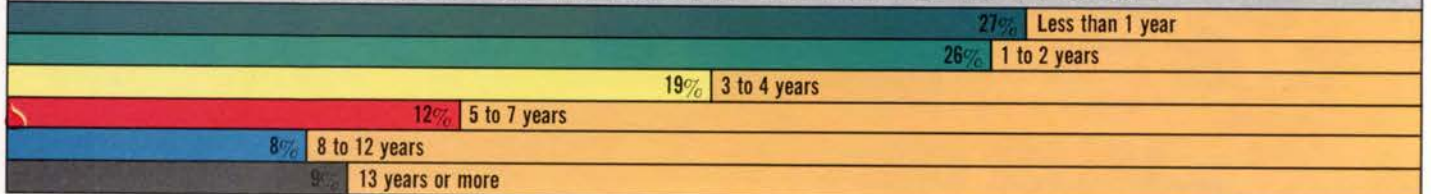
A definite trend exists here, as can be seen below. Most of the Club's long-term members originally joined

to participate in outdoor activities, while most of the more recent members joined to support or participate in conservation activities. Of those who have belonged 13 or more years, 61 percent joined for the outdoor activities, whereas only 30 percent of those joining in the past year joined for that reason. Of those who joined 13 or more years ago, only 3 percent joined to personally participate in conservation work, in comparison with 24 percent of those joining in the past year.

REASONS FOR JOINING THE SIERRA CLUB (by length of membership)



LENGTH OF MEMBERSHIP IN THE SIERRA CLUB



Is the Club an elitist group?

At this point we should consider whether the Sierra Club is an elitist group, in the bad sense of the word. The average member has much more education and a "more professional" job than the average U.S. citizen. But two big points should be made:

1) Nobody attends conservation meetings or goes on outings or sends in his dues who is an "average member"; averages are statistical, but members are real and individual, and the Club does have members of all descriptions and backgrounds.

2) If the Club doesn't seek special and selfish privileges for its members, and if it actively attempts to broaden its membership base, being called elite isn't exactly a stinging criticism.

A 1969 study of Sierra Club membership by Bill Devall deals specifically with the charge of elitism, and makes the point that Club members favor a simpler—and indeed less expensive—style of outdoor recreation than do other segments of the general public. While power vehicles—such as snowmobiles, dune buggies and trail cycles—are turning out to be big sellers in this country, Sierra Club members eschew them for such quiet alternatives as skis, canoes and kayaks.

As demonstrated by data in the Devall study, Club members favor a go-light approach to the outdoors rather than the hit-it-with-horsepower approach. There is a great deal of challenge in planning carefully and getting by with the minimum of equipment and supplies, and this is appreciated by many Club members. The result is that they don't destroy the environment to the extent that others do, with luxury trailers, power boats and go-anywhere trail bikes. As a result, many more people can enjoy the outdoors—and at only modest investment—with the Sierra Club approach to recreation. Looked at this way, the Club is anything but "elitist."

Both the Devall study and the more recent survey which is being reported here indicate that there is a "blue ribbon" quality about Sierra Club membership, however. It's nice to be able to demonstrate this if you are trying to interest a company in running advertising in the *Bulletin* (because the readers obviously have great purchasing power) or if you wish to augment the self-satisfaction of mem-

bers over whom they've chosen to associate with. It's not so nice to be stuck with the blue ribbon tag when you need to convince government officials that there is wide support for environmental measures. Club leaders need to be able to make a strong case for there being nothing selfish about a program of preserving what's left of our natural beauty and wilderness, for everyone, and need to be able to show how this meshes with programs to limit pollution. Anyone who thinks the Club has restrictive membership policies should be signed up immediately or—if he already belongs—be involved in the Club's efforts to greatly increase its membership among the minorities.

(There are promising indications that conservation is coming to have a much wider appeal. One bit of evidence is the concern expressed by black high school seniors last year, when 54,000 were polled on what national issues they thought important. They were more interested in the federal government's controlling pollution than in its expanding any other programs, including those for school desegregation and urban renewal. About 88 percent of the students wanted to see increased federal involvement in controlling environmental pollution, with "eliminating poverty," "preventing crime" and "providing compensatory education for the disadvantaged" rated right behind. Some 76 percent wanted more done on urban renewal, and 73 percent wanted more done on achieving school desegregation. Some 47 percent favored increased federal effort to limit population growth.)

How did members get the information which led to their joining?

Personal communication is important in gaining new members; 58 percent got the information which led them to join from a friend or a relative. Next as a source of such information came publications, with 13 percent listing non-Club publications and 12 percent listing Club publications.

Fully three-fourths of the members reported discussing the possibility of joining the Club, in the course of the past year, with a potential member. Younger members talked to others about joining more than did older members, but there was no similar re-

lationship between age and number of new members actually signed up.

About 14 percent of the members claimed to have recruited one person in the past year, and 12 percent claimed two recruits. There was a busy core of 1 percent which claimed that each had recruited nine or more members. The longer-term members recruited significantly more new members than the shorter-term members did. Some 56 percent of the 13-years-or-longer members claimed to have had a hand in recruiting at least one new member in the past year, as compared to only 35 percent of the one to two-year members.

Should the Club concern itself with the conservation problems of such special groups as the urban poor and ethnic minorities?

The balance of sentiment was against the Club so involving itself. About 40 percent strongly disagreed with such a proposal, while 15 percent strongly agreed. But the younger the member, the less he opposed such involvement. Although 58 percent of all members either strongly or "somewhat" opposed such involvement, only 46 percent of those under 35 were opposed, and only 43 percent of those under 25. Members from households whose main wage earners were managers or executives tended to be more opposed to such involvement, while members from households whose main wage earners were students, clerical or blue collar workers or "other professionals" were less opposed.

What Club actions were considered most commendable? What actions were considered unwise?

Not surprisingly, far more "especially commendable" actions than unwise actions were listed on the returned questionnaire. Each of seven different commendable actions were mentioned by more than 5 percent of the members. Only one action classified as unwise—the Club's stand on various aspects of power generation—was mentioned by as many as 5 percent of the members.

Opposition to the Disney development of Mineral King was cited most as a commendable action (by 19 per-

Club actions considered "especially commendable" or "unwise"
(with proportion of respondents who listed each)

	<i>Especially commend- able %</i>	<i>Un- wise %</i>		<i>Especially commend- able %</i>	<i>Un- wise %</i>		<i>Especially commend- able %</i>	<i>Un- wise %</i>
Opposing Mineral King	19	2	Power Policy	3	5	Work on Population		
Opposing SST	17	2	Four Corners Power			Control	2	1
Alaska Pipeline	16	1	Plant Fight	2		Working for Pt. Reyes		
Saving the Redwoods	11		Saving Storm King	2		Seashore	2	
Saving the Everglades	8		Preserving Wilderness			Conservation in General	2	
Defending Grand Canyon	6		(In General)	2		Saving the Coast	1	
Forest Practices	5		Opposing California			Opposing Strip Mining	1	
Oil—Opposing Offshore			Water Plan	2		Saving Endangered Species	1	
Drilling and Spills	4	1	Opposing Alaska Nuclear			Publication Policies	1	
Saving San Francisco Bay	3		Test	2		Dissension in Leadership		1
Preserving Wild Rivers	3							

cent of the members), followed by the Club's stands on the SST, the Alaska pipeline, the Redwoods and the Everglades. Respondents were not confronted with a list of actions, but were asked to volunteer those they thought of as "especially commendable."

The Club's policies on power were the only things receiving much mention as unwise (by 5 percent of the members). Of those, half specifically objected to the Club's apparent opposition to nuclear power.

The SST, Mineral King and the Alaska pipeline campaigns each received a few mentions as unwise, but about ten times as many members listed each as especially commendable.

Most of the listings of commendable actions probably could be considered votes of confidence from members who favor firm and forthright conservation policies. Most of the listings of "perhaps unwise" actions could be considered as requests for more compromise in conservation matters, but there were a few obvious exceptions to this last: About ten percent of the policies or actions called unwise clearly were classified that way because the members considered them not forceful or ambitious enough. A different question was directly asked about the Club's stands in general, and this produced about the same results. These are reported next.

- Does the Club suffer from "always being against things?"

Most members did not feel that the Club suffers from such a negative

image, but about 30 percent did. Clerical and blue collar workers and teachers tended to feel the Club did not have the "against everything" image, while managers and executives, technicians, "other professionals," engineers, and doctors, dentists, and lawyers tended to feel it did.

- Are the Club's stands too weak?

Only ten percent thought that the Club's stands on conservation were too weak and its willingness to compromise too great. About 79 percent disagreed with the statement that such was the case. There was no question to measure directly the opposite point of view (that Club stands are too strong and the Club too unwilling to compromise), but the fact that about 40 percent *strongly* disagreed with the given statement suggests that there may be some sentiment that way.

- Are lawsuits and lobbying appropriate Club activities?

Both lawsuits and lobbying were strongly endorsed as appropriate methods to use in seeking conservation goals. More than two-thirds of the members, in each case, *strongly* agreed that they were appropriate. Only five percent disagreed.

- Should outings be emphasized more by the Club?

The idea of emphasizing outings and recreation more, and conservation less, received little support. More than

half the members *strongly* disagreed, and about 75 percent to some extent. Only four percent agreed strongly, and another four percent agreed somewhat. The older the member, the more tendency for him to want more emphasis on outings. Some 23 percent of those 65 years or older favored such emphasis, compared to only five percent of those under 25. But the majority of all age categories were against more emphasis on outings.

- Should the format of the *Bulletin* be changed?

There was little support for changing the format of the *Bulletin*, either to a more frequent, less formal publication or to a less frequent, larger publication. A third suggestion, to divert funds spent for color photographs in the *Bulletin* to use in conservation work, was not favored either. Of the three suggestions, the least popular was to make the *Bulletin* larger and less frequent; only 14 percent agreed with that. On the proposal to publish a more informal, more frequent *Bulletin*, 26 percent agreed. And 30 percent approved of diverting funds from color pictures to conservation activity.

- Should descriptions of the national outings continue to be furnished to all members?

The descriptions and details of national outings proved to be extremely popular items. Even excluding those who went on a national outing in the previous year, the overwhelming majority (82 percent) of members agreed

with this statement: "Even though I may not go on nationally announced Sierra Club outings, the descriptions and details in the published listings are interesting and potentially valuable to me."

What content is most desirable in the *Bulletin*?

Short items on conservation activity received top ratings, while illustrative art and news about the Club's internal affairs received the lowest ratings. Even the "least desirable" content was rated quite desirable, however; only 14 percent of the members considered illustrative art to be flatly undesirable. The other 86 percent rated it either "quite important or desirable" or "in-between."

Where is reliable conservation information available?

It probably is not surprising that members rated national Sierra Club leaders as the most reliable source of conservation information, with leaders of other conservation organizations and of local Sierra Club chapters following. At the other end of the ratings were the Administration in Washington and—at the very bottom—spokesmen for industry.

What chapter activities are of most interest to members?

"Walks and trails" achieved the highest "participation-interest" ranking, with peak climbing and scuba diving being ranked lowest. (At that time the Club's first scuba diving section had just been formed, in the Loma Prieta chapter.) The different activities listed were ranked from interesting-to-the-most-members to interesting-to-the-least.

How active in conservation are Sierra Club members?

Half belong to two or more conservation organizations, counting the Sierra Club as one. About 20 percent belong to three, and 13 percent to four. About one percent reported membership in ten or more.

Half contributed money (not just membership dues) to one or more conservation-oriented organizations or campaigns in the last year, and almost half attended one or more conservation-oriented meetings in the past year. Some ten percent reported attending nine or more such meetings.

About 60 percent sent their views on conservation matters to government officials at least once in the past year, with 15 percent reporting nine or more such communications. Long-term members tended to communicate more with elected or appointed government officials than did new members. The only exceptions were the members who had belonged for 13 or more years; they communicated little more than the new members did.

Some 42 percent reported devoting time to working for a conservation cause at least once in the last year, with 12 percent reporting nine or more such occasions.

How politically active are members?

In comparison with the general public, they are quite active. Excluding activities which were primarily conservation oriented, 40 percent of the members attended one or more political meetings or rallies in the last year, and 27 percent reported devoting time to one or more political causes. Some 45 percent reported donating money to one or more political causes.

Knowledge of the Club—who is best informed?

Indices were formed from a number of items on the questionnaire so that each respondent had a rating on knowledge of Club actions and situations. Male members scored significantly higher than did female members, but this probably is nothing for Women's Lib to get excited about. A lot of women members play a less active role in the Club than do their husbands, and active involvement leads to knowledge of the Club. Longer-term members scored significantly higher on knowledge of the Club than did shorter-term members. This is worthy of note because no "historical items" were included in the questions; only knowledge of Club-related events occurring in the last year or so was tested. The relationship was still there even when new members—who might not yet be familiar with the Club—were excluded.

How was the survey conducted?

Full information on the methodology of the survey and copies of the questionnaire are available from the author, but a brief summary of methodology is appropriate here:

A random systematic sample of all members was obtained from the Sierra Club mailing list, and questionnaires were sent out with a cover letter from Club President Ray Sherwin, asking cooperation. A total of 859 questionnaires were sent back, for an acceptable—but less than ideal—return rate of 56 percent. With that number of questionnaires returned, the odds are 19 to 1 that no proportions in the survey will be more than four percent from the true value in the national Club membership. For proportions around ten percent or 90 percent, the odds are 19 to 1 that the true value is no more than 2.5 percent away from the reported value.

Activities in Order of Interest to Members

Walks and trails	1.63	Camera section	2.24
Nature study	1.85	Social activities	2.33
Knapsacking	1.87	Rock climbing	2.37
River touring	1.96	Car camping	2.37
Bicycle touring	2.03	Peak climbing	2.40
Family hiking	2.16	Scuba diving	2.56

Numbers are pseudo-means, based on scoring each activity:

- 1 if member participated or would like to,
- 2 if member would just be interested in news of activity, or
- 3 if member had no interest at all.

Don H. Coombs is chairman of the Club's Loma Prieta chapter. Most of his detailed findings are not presented in this short article, and members with further interest in the results may contact the author at the Institute for Communication Research, Stanford University, Stanford, California 94305. Chapter Chairmen who wish complete copies of the report should contact Executive Director Michael McCloskey, at Mills Tower.



<i>Quantity</i>		<i>Amount</i>
_____	1973 Sierra Club Wilderness (wall) Calendar(s) @ \$3.25 each	_____
_____	1973 Sierra Club Engagement Calendar(s) @ \$3.25 each	_____
Quantity discount: Ten or more of either:	_____ Wilderness calendars @ \$3.00 each	_____
	_____ Engagement calendars @ \$3.00 each	_____
<i>State tax rates</i>		
California add 5%; in Alameda, Contra Costa and San Francisco counties 5½%; New Jersey 5%; New York 7%.	Total amount of order	_____
	+ state tax, if any	_____
	Total amount enclosed	_____

Please print or type

NAME _____

STREET ADDRESS _____

CITY _____ STATE _____ ZIP _____

Note: Price includes postage and handling. This offer good through 30 September 1972 only.

return address:

PLACE
STAMP
HERE

Sierra Club/Calendars

1050 Mills Tower
San Francisco
California 94104

Last year, the Sierra Club calendar was a collector's item before Thanksgiving. This year, give thanks. We're warning you before Labor Day that it could happen again.

CALENDARS by definition have a short life expectancy. Three months into the new year and the ones unsold are dead. The leftovers, we have to give away. The resultant financial loss we have to live with. That is why we print only as many as we are sure we can sell.

And that is why we invite you now (if you'll pardon the expression) to get 'em while they last. Let us benefit from past mistakes.

The first mistake was ours. Last year we failed to foresee the increased demand for calendars by Sierra Club members. Gone by the middle of November. A sellout.*

The second mistake was yours, if you happen to be one of the hundreds who woke up last New Year's morning with a hangover on the wall. A 1971 calendar. Unplanned obsolescence. Unplanned because you may have ordered your 1972 calendar late, only to discover that the early birds had aced you out by Thanksgiving. By Christmas, long faces. By New Year's, hangovers.

Now the question is how to avoid *any*-overs and at the same time assure every member the privilege of owning or giving a 1973 Sierra Club Calendar this season.

Part of the answer is the order form/envelope bound into this issue of the *Bulletin*. As an incentive to you to join the early birds this year, we offer both the 1973 Wilderness (wall) Calendar and the 1973 Engagement Calendar at a special member's price of \$3.25 each (regular retail price: \$3.95). This offer is effective until 30 September 1972 only. Thereafter, the special member's price for each calendar will be \$3.50 (see envelope for additional quantity discounts).

In preview of what you may expect of the 1973 calendars, we present on the opposite page Dennis Stock's wall calendar cover, and Philip Hyde's cover photograph (right) from the Engagement Calendar. Among the other outstanding contributors are Eliot Porter, Boyd Norton, David Plowden, Richard Kauffman and Robert Wenkam. Also, for the first time, the Engagement Calendar includes along with its many color reproductions a selection of black and white photographs printed in gravure. The incomparable Ansel Adams is represented in this new special feature.

With a Sierra Club Calendar on your wall or desk you can make the natural environment a daily reminder. So remind yourself now to order your copies early. If they are all gone again by Thanksgiving, we'd be sorry to have to say, "We told you so."

SIERRA CLUB BOOKS



*Bristlecones, White Mountains, California
—Nevada. By Philip Hyde.*

*Have faith, friends. We're printing more calendars this year than last.

Porkies, Prairie Dogs and other Useful Varmints

DAVID PLOWDEN

FROM THE HIGHWAY, the Lasater Ranch looks the same as any other cattle operation out there on the rolling plains between Limon and Colorado Springs. Corral, barn, and ranch house are set well back from the road. There is a windmill or two. The cottonwoods spread out along the creek. The grass is short and straw colored. The bulls and heifers appear in good shape. As for Lasater himself—he fits, too. Tan and lean, he would seem the prototypical cowman going about his business in a prototypical sort of way. And yet for all the appearances of conformity, Tom Lasater is about as traditional as a Yankee *taco*. While most other cowmen are committed remorselessly to a personal war against nature, Lasater leaves nature alone. He regards his 25,000-acre ranch as a protected wildlife area, and posts it as such. Under a rigid, self-imposed no-kill policy toward predators and poisonous weeds alike, he eschews the pesticides and herbicides favored by other ranchers, and tolerates no shooting on his land. For the 1,100 head in his herd, there are a few concessions: artificial water holes, and supplemental feed in the winter. But by and large, Tom Lasater lets his cows fend

for themselves. "I like to sit back and let nature do the work," he says. "She's a hell of a lot smarter at it than we are."

Lasater was born in south Texas some 60 years ago. His frontier cattleman father had owned a 400,000-acre spread there, and when the elder Lasater died, Tom returned from Princeton University to take over the operation. He not only took it over but redirected it by developing the Beefmaster, a crossbreed of Brahman, Shorthorn, and Hereford, and one of the few new strains certified in this century by the U.S. Department of Agriculture.

Land values in south Texas began to skyrocket in the 1940's, so Lasater went north into Colorado to find a new home for his Beefmaster. Near Matheson, he found the high, dry country appealing. The ranch he selected was a ramshackle affair and the land, he recalls, "was all fenced up into little parcels." But Lasater would soon change all of that. The herd was moved north first. Then, in 1950, he brought his family to Matheson, too. "We just came up for the summer," he says, "and forgot to go back home."

Lasater's partnership with nature is no newfangled arrangement induced by Earth Day enthusiasms or soul-searching reappraisals of the order of things. Curiously, for the son of a pioneer, his understanding of ecological principles developed at an early age. In Texas, he was appalled by what he now calls the "promiscuous" poisoning of predators and weeds by cowmen. He once followed a cowman's bait line and observed the carnage wrought by the 10-40 poison. "They didn't just get the animals they were out to get with those baits," Lasater recalls. "They got everything. I vowed then I'd never get into that kind of thing if I were running things." And, with one instructive exception, he hasn't.

When Lasater first came to Matheson, he found the ranch overrun with rabbits. "There were just jillions of them everywhere," he says, with that magnificent taste for hyperbole common to so many cowboys. Lasater left the rabbits alone, though other cowmen warned him he was making a mistake. Soon, he noticed a significant increase in the number of coyotes on the ranch. "I mean there got to be just jillions of them, too," he says. "Well, you can imagine what happened. The

coyotes were here because there was plenty to eat, and by-and-by they leveled off that rabbit population. Then most of them moved on, but they sure left behind a neat maintenance crew, just to make sure those rabbits never got out of hand again. Now the rabbits and coyotes are in balance. And they're in balance because we left both alone."

Coyotes set most cowmen's teeth to grinding. Not Lasater's. In all these years of ranching, he says he has lost only two calves to coyotes, and that was in the fall of 1971 at the height of a drought which had reduced the coyote's natural food supply. Says Lasater: "Coyotes don't like beef that much anyway. Give them a choice and they'll take large insects and rodents every time."

According to Lasater, cowboys don't appreciate porcupines much more than coyotes. Once, the cottonwoods along the creek bed of the Big Sandy were infested with the animals. The porkies were out on the limbs of the cottonwoods, chewing away on the dead wood—in effect, pruning the trees. "I figured they must have known what they were doing," says Lasater. "So I left them alone, and after a while they moved on. Then I hear from some other people around here that they're losing their cottonwoods. The trees are dying all over the place. But not on *my* place. So I asked some of these people if there had been a lot of porcupines around, and they said there had been, until they shot them out of the trees. Cowboys will shoot at anything. They've been doing their best to ruin this land for a hundred years."

On one occasion, when Lasater was still new in Colorado, he allowed some local officials to dissuade him from his no-kill management policy. There was a substantial prairie-dog town on the ranch. The officials said that was bad, so Lasater baited the area with poison. Later, a foreman new to the ranch asked Lasater why it was that the grass in one particular area was richer and thicker than anywhere else. Lasater looked for himself. It was the site of the prairie-dog town. The extirpated doggies had clearly aerated the root system of the grass that grew over their tunnels. Now, Lasater imports prairie dogs. He is determined to establish them once again as a functional component of the ranch's ecosystem.

An important component, of course,

This story is taken from Floor of the Sky: the Great Plains, a Sierra Club Landform Book by David Plowden, a free-lance writer and photographer who has authored a number of books including The Hand of Man on America.



is the grass itself. And here again Lasater lets nature call the shots. No chemical fertilizers are broadcast about in an effort to squeeze from the soil what the soil cannot naturally give. No exotics are brought in. Lasater simply relies on the durability of the native grasses, the blue gramma and western wheatgrass. Over the course of a year, he tries to leave at least half of his rangeland ungrazed, so that the grass has a good chance to recover and to come in strong and well rooted the next time the herd passes through. As for locoweed and Lambert's crazyweed, largely the products of overgrazing in times before his own, Lasater leaves the control of these poisonous plants to natural succession. And slowly the native grasses

are choking them out. Lasater hasn't lost a heifer to locoweed poisoning since 1949.

The hardiness of the herd can be attributed to Lasater's leave-it-to-nature management philosophy. He has not allowed himself to forget, as others most assuredly have, that this high country was once buffalo range. Now, the Beefmaster has filled the buffalo's niche, and Lasater permits nature to make this succession a strong and lasting one, too. Much of the cross-fencing from the 1940's has been ripped out and rolled up into what Lasater calls "bone piles," so the bulls and heifers are free to range from creek bottom to hilltop. And since stocking is light, overgrazing is not a problem.

Though nature from time to time

may be hard on the herd, Lasater can be ruthless. He insists that every cow have a calf in the weaning pen each year, or off she goes to the block. Over the years, he has shown that this results not only in good economics, but sound genetics. He has been quoted as calling it a "survival of the fittest—where we define *fit*."

In the culling process, Lasater has built into his stock a high-yield capability. He does not care what the cow looks like, and he speaks with contempt of the traditional rating practices of cattle breeders who are out for blue ribbons at the county fairs. "What a cow looks like," he says, "has little to do with the taste of a T-bone steak. I'm only interested in produc-

Continued on page 46

Foreign Trips for 1973

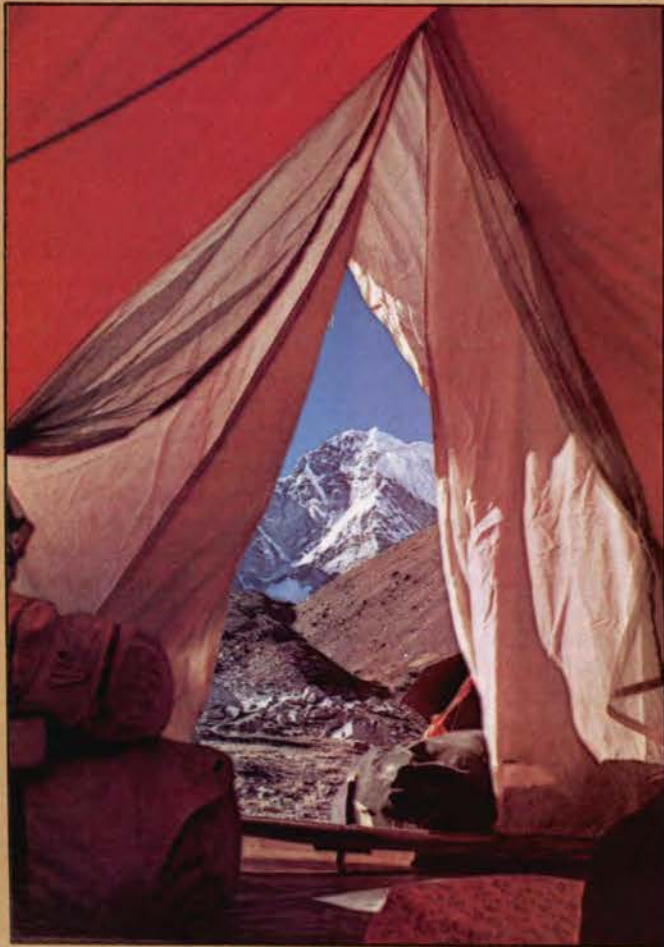
The whole earth is hard to get to know, and harder yet to save. But the United Nations is setting up machinery for world-wide conservation, and our help is needed if it is to succeed. Club members going on overseas trips get a better picture of what needs to be done, and can meet the people who will have to be involved in doing it.

Actually, we will all have to be involved. As informal roving emissaries, Club members traveling abroad can gain insights, make contacts, and develop good will that can aid the Club's new office at the United Nations in its work of helping the UN to keep the whole earth healthy.

MICHAEL McCLOSKEY
Executive Director

- **420—NEPAL, Spring Trek—Apr. 7-May 5.** Leader, Dr. Robert Fleming, Jr. of Nepal; write the Outing Office for trip details.

This springtime natural history trek will include the most fascinating biotic areas in central Nepal, ranging from a visit to the jungle Terai on the Indian border to the great hemlock and blooming rhododendron forests in the inner Himalaya, only 100 miles apart. The trip will be led by well-known Dr. Robert Fleming, Jr. of Kathmandu, pre-eminent ornithologist and outstanding authority on the natural history of the Himalayas. Travel by elephant, land rover, air and foot will include a trade route to Tibet and the seldom-visited Gatlung Valley. Cost will be \$950 plus air fare.



- **425—EAST AFRICA.** Feb.-Mar. Leader, Dr. Jim DeMartini, 2516 Regis Dr., Davis, Ca. 95616.
- **455—Summer-Fall.** Leader not yet announced.

The many and varied wonders of East Africa are all a part of these 25-day trips. From the slopes of Kilimanjaro to the depths of the Great Rift Valley, from the shores of Lake Victoria to the Indian Ocean, this is an area of startling contrasts, and home of the world's largest concentrations of game animals and birds. The Spring Trip will include moderate hiking and a few days of light knapsacking; the Fall Trip, while including walking, will be relatively easy. Included in the Spring Trip are visits to such world-famous areas as Serengeti and Ngorongoro in Tanzania, Mara Masi and Ambosli reserves in Kenya. The Summer-Fall Trip will also spend one week in Uganda. Camping out will be in beautiful natural surroundings and land transport is by landrover. Cost is not yet determined.

- **428—TASMANIA AND NEW ZEALAND—Feb. 13-Mar. 18.** Leaders, Al Schmitz, 2901 Holyrood Dr., Oakland, Ca. 94611 and Colonel Warwick Deacock of New South Wales.

Little-known Tasmania offers contrasts from splendid golden beaches to picturesque bays, grassy headlands of the East Coast, to the wild, mountainous ranges, lonely valleys, dense rain forests, sparkling lakes and tarns in the West. There will be the option of a ten-day moderate knapsack trip through Cradle Mountain-Lake St. Clair National Park or a base camp reached by charter plane, from which day hikes may be taken. The South Island of New Zealand varies from sheep-dotted green pasturelands to massive snowy crags and fjords of the Southern Alps where glaciers plunge from snowy heights into subtropical forests. Two treks of three and four days will require carrying only personal belongings and sleeping bag; we will stay in huts. Other days will include driving through New Zealand's finest country, visiting Mt. Cook National Park and viewing famous Tasman Glacier. Cost, \$1,050 plus air fare.

- **415—GALAPAGOS ISLANDS, Ecuador—Feb. 20-Mar. 17.** Coordinator, Al Schmitz, 2901 Holyrood Dr., Oakland, Ca. 94611.
- **416—Fall.** Leader, Gary James, 2701 Fairview Rd., Costa Mesa, Ca. 92626.

The Galapagos have long stirred man's imagination and remain little changed since their discovery. The wildlife has become uniquely adapted and can be observed in numerous bird and animal species. The famous marine iguanas are found on sun-beaten lava cliffs and land iguanas reside in giant cactus forests. There are cavorting baby sea lions, blue lagoons and quiet coves for swimming and snorkeling among fantastic displays of fish. There will be visits to lava formations, overnight hikes to volcanoes, excursions to the rain forests and a tour of the famous Darwin Research Station. Cost will be about \$900 plus air fare.

- **435—PUERTO VALLARTA BOAT TRIP, Mexico—May 7-19.** Leader, Jim Dodds, 2013 Skycrest Dr., Walnut Creek, Ca. 94545.
- **310—Nov.** Leader, Ellis Rother, 903 Sunset Dr., San Carlos, Ca. 94070.

This fascinating Mexican Boat Trip begins and ends in romantic, colorful Puerto Vallarta, allowing two full days to shop for native crafts. Then we embark on native fishing pangas through the surf onto the clear blue Pacific to travel along 100 miles of Mexico's West Coast. We load and unload through the breakers, camp on exciting, lonely beaches with a backdrop of tropical jungle and visit primitive villages. One can fish, dive along the reefs, and hike the beaches and jungle paths. The surf, humidity and outdoor exposure make this a trip for active people with camping experience; minimum age, 14 years. Total cost will be about \$340 from Puerto Vallarta; \$430 from San Antonio and \$470 from Los Angeles.



● **450—NORWAY RUCKSACK TRIP—July 30-Aug. 19.**
Leader, Jim Watters, 600 Caldwell Road, Oakland, Ca. 94611.

Here is an adventurous 3-week hike and glacier tour, exploring the fjords and mountains of west central Norway and the pristine wilderness of northern sub-alpine ranges. We will view the extraordinary scenery of the Jotunheimen and visit the Jostedalsbre, crossing Europe's largest glacier. Then on to the majestic, untamed slopes of the Romsdal and finally, just south of the Arctic Circle, explore Borgefjell National Park, camping out in this remote, primitive land of expansive granite, tundra, waterfalls and abundant wildlife. Combined with some touring, this will be a fairly strenuous backpacking trek, camping in all weather for about half the trip, crossing glaciers and climbing some peaks. Cost will be about \$450 plus air fare.

● **452—WALKING IN NORWAY—Aug. 10 to Sept. 1.**
Leader, Betty Osborn, 515 Shasta Way, Mill Valley, Ca. 94941.

Trails and cairned routes with comfortable huts and lodges provide access to the beauty and grandeur of Norway's vast mountain ranges for those who like to hike. The mountains of southern Norway with their abundance of fjords, waterfalls, glaciers, snow-covered peaks and picturesque villages will all be a part of this three-week visit to Finse, the Aurland Valley, the Jotunheimen and the Sunmore. There will be easy glacier crossings and peaks to climb; some sightseeing will be included while traveling between hiking areas by boat, bus and train. Cost will be about \$450 plus air fare.



● **430—GUATEMALA BICYCLE-HIKING TRIP—Jan. 26-Feb. 17.**
Leader, Linda Liscom, 80 Harrison No. 4, Sausalito, Ca. 94965.

The Guatemala Highlands, where remote biways intimately wind through fields and mountains, will be the principal touring ground. The trip will have several "jungle" experiences: by air to Tikal, largest Mayan City of the Old Empire, and several days cycling to the Atlantic where we will explore the lush environs of the Rio Dulce in dugout canoes. Village visits are planned to coincide with market and fiesta days, the terrain is mountainous and elevations range from 5,000 to 11,000 feet. Bike days will cover 30-60 miles requiring a lightweight 10-15 speed bicycle. Special side trips on layover days are possible and the local hiking association will meet us on three occasions to make three volcano ascents. Cost will be about \$660 from Guatemala.

● **437—AMERICAN AND WESTERN SAMOA—Sept. 1-16.** Leader, Wheaton Smith, 243 Ely Place, Palo Alto, Ca. 94306.

For two weeks we will visit American Samoa and the independent State of Western Samoa in the heart of Polynesia, observing and learning of a culture which retains much of old Polynesia, spending most of our time away from the usual tourist centers. There will be beaches, reefs, and rain forests, time for hiking, swimming, snorkeling and visiting with the local people. More information will be available in October. Cost will be about \$500 plus air fare.

● **440—PERU-COLOMBIA ARCHAEOLOGICAL TRAILS—Mid-June through July.**
Leader, Howard Mitchell, 65 Hillside Ave., San Anselmo, Ca. 94960.

Five weeks in Colombia and Peru afford a South American panorama ranging from tropical beaches to towering snow-capped mountains. The trip begins in Colombia with national parks, archaeological cities, beaches, deserts and jungles. Then an archaeological tour to San Augustin and Tierradentro by charter bus the second week before we continue to the fabulous lost city of Machu Picchu, to hike along Inca roads and trails to still-buried ancient cities amid magnificent mountain scenery. While our gear is carried by llamas and burros, we will hike and camp High-Light style for three or four days' duration covering up to 10 miles where the going is easy, 4-6 miles in the mountains, crossing a 13,300-foot Andean pass. Finally we spend a week each in the Puno-Lake Titicaca region then on to Arequipa and Lima with side excursions to a lost city and the Vicuna National Game Refuge. Land portion of the trip will be about \$1,185.

● **445—INDONESIA, BALI AND JAVA—Mid-July through Aug.** Leader, Ray Simpson, 3040 Smyth No. 11, Berkeley, Ca. 94720.

Featuring exotic dances, culture and language, this five-week trip will begin in fabled Bali during the commemorative ceremonies of the Balinese New Year. After five days of exploring, we continue to Java with an optional climb of Mount Bromo near Surabaya. Then on to Jogjakarta, to the coast, and to Djakarta where options are available for a five-day trip to the nature preserve of Ujung Kulon, home of the one-horned rhino; snorkeling among the 1,000 islands offshore from Djakarta, or a side trip to Jesselton (Borneo) with a chance to climb Kota Kinabalu. Cost will be approximately \$1,000 for the land portion and \$1,000 air fare.

ADDITIONAL TRIPS:

In addition, four treks to Nepal, one with mountaineering experience required, are planned for the fall of 1973: (460) KALI GANDAKI, Sept. 29-Nov. 3. Leader, John Edginton, 1508 Fernwood Dr., Oakland, Ca. 94611. A great trek over an ancient Tibetan trade route traversing through the Himalaya Range amidst spectacular mountain scenery to the beginning of the Tibetan Plateau. (462) MOUNT EVEREST BASE CAMP, Nov. 30-Dec. 31. Leader to be announced. The traditional approach to the sherpa villages of the Khumbu area and base camp at 17,500 feet, all in the vicinity of the world's highest mountain concentration. (300) MAKALU BASE CAMP, Oct. 20-Nov. 28. Leader, Al Combs, P.O. Box 3941, Portland, Or. 97208. Seldom-used except by mountaineering expeditions, this trek affords a splendid approach route through wild and isolated high mountain country. (305) ROLWALING-TESI LAPCHA MOUNTAINEERING TREK, Oct. 27-Dec. 5. Leader, Stuart Dole, 1500 Mills Tower, San Francisco, Ca. 94104. Only recently opened to permission, the Rolwaling Trek passes along the base of Gauri Shankar, one of the great unclimbed mountains on the Tibetan border, crosses a high mountain pass at over 19,000 feet, and ends with a visit to the Everest Base Camp area and the sherpa villages of Khumbu.

● **1974—NEW ZEALAND**

A trip to New Zealand and Fiji (320) is being planned for February, 1974; leader will be Mike Passovoy.

● **212—KAUAI, HAWAII**

See spectacular Kalalau Valley, on the Island of Kauai, Hawaii, September 29-October 8, 1972. Price from mainland, \$410.00. For residents joining in Lihue, Kauai, \$175.00. Write for a supplement.

Further information on most of these trips is now available; write for the individual Trip Supplement and an application form. A \$100 deposit per person is needed to reserve space.

Varmints (continued)

ing the best beef efficiently."

Left to themselves, nature, Beefmaster, and the likes of Tom Lasater might go on forever doing just that on the Colorado plains. But even the big world of sky and grass and occasional springs is hitched to the larger world around it. And the larger world is closing in fast.

Water, for instance. Two aquifers surface on the ranch at Matheson—the ubiquitous Ogallala and the Fox Hill sandstone formation. Yet Denver, 85 miles to the northwest and sprawling ever outward, is draining the former, while the level of the latter declines as irrigators mine the Ogallala to the south. "We'll see the day," says Lasater, "when water out here will be more valuable than oil."

Lasater is also less than optimistic about the future of the independent range operator. On the one hand, he sees the industry becoming increasingly centralized through the integration of everything from breeding to distribution under single management. On the other, he sees the cowman being pushed into marginal country. Or, what is even more likely, the cowman being forced to turn to recreation, to "bring in the dudes." Some ranchers in Texas, says Lasater, are already earning more money from the sale of hunting rights than from the sale of beef. Lasater himself allows as how he sometimes thinks he should become a vegetarian and take in city slickers for a living. "Trouble is," he adds, "I can't stand vegetables—and like dudes even worse."



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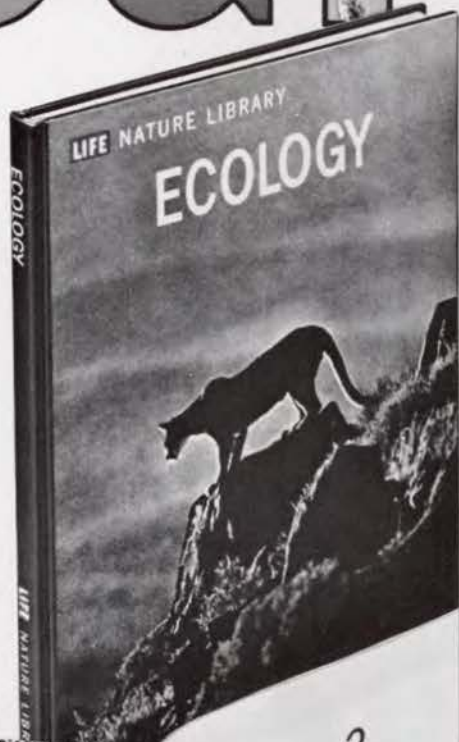
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"As we reached even higher altitudes, we began sleeping in snow caves, and of course, the bags got wet there too. But we would just hang them out to let the water freeze, and in a matter of minutes, the ice would sublimate. An added reward to the bags was that even if we couldn't get them completely dry due to bad weather, they'd keep their loft around us, and everyone slept very comfortably.



"From our final camp at 17,400 feet, we made several summit assaults. The team of seven reached the 19,500 foot summit. At that elevation, the temperature was -16°F., with winds gusting to 40 mph. Our parkas, which were also filled with Fiberfill II, kept us very warm, even though we were quite tired. In all, 10 of the 30 members reached 19,000 ft. or higher and there wasn't a single complaint of discomfort due to cold.



"The NOLS McKinley Expedition was the largest expedition in the history of the mountain, and the first to use gear filled with 'Dacron', rather than down. I would have to say that Fiberfill II made history right along with us. We couldn't have been more pleased with these items in all phases of their functioning. We plan to make a New Year's expedition to the Grand Teton, and we will most definitely take along gear filled with Fiberfill II."

**Paul Petzoldt is a Teton guide, legendary mountaineer, and Director of the National Outdoor Leadership School with headquarters in Lander, Wyo. Equipment for this expedition was produced under his direction using material given to him by Du Pont.



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