NATIONAL PARKS *Magazine*

Staghorn cholla in bloom:
Organ Pipe Cactus National Monument, Arizona

April 1965

The Editorial Page

Hydropower and the Hudson Highlands

CONSERVATIONISTS HAVE EXPRESSED KEEN disappointment over the recent decision of the Federal Power Commission granting a license to the Consolidated Edison Company for construction of a pumped-storage hydroelectric plant at Storm King Mountain in the Highlands of the Hudson River. Construction of the plant would involve the blasting of an immense hole in the face of the mountain, a hole large enough to accommodate the third largest power plant of its kind in the world. Also blown from the face of the mountain would be vertical gashes for penstocks leading to a 12-billion-gallon reservoir atop the Highlands. Power developed at the plant would be carried south over high towers centered in a cleared swathe 250 feet wide, to the dismay of many living in the counties between Storm King and New York City.

No one would argue that man has treated the majestic lower valley of the Hudson with particular regard for its natural beauties, nor insist that the Highlands are in virgin or wholly pristine condition. And yet the Highlands, through which the Hudson breaks some miles north of New York City, still retain a considerable measure of their original charm and grandeur, and still offer the millions of the city and its satellite cities a scenic and recreational refuge.

In addition to the impairment of esthetic and recreational qualities, biologists have indicated that the huge power plant would have an adverse, though as yet not thoroughly assessed, effect on the important commercial and sport fishing industry of the area; for the Hudson is one of the spawning-grounds of the shad and the striped bass.

Conservationists have not challenged the company's stated need for additional sources of power, especially peaking power. They have, however, questioned the manner in which suggested alternatives seem to have been discarded. Among these alternatives were inter-ties with power sources in adjacent regions, and in Canada. To the south, for example, are power companies which are using, or are planning to use, mine-mouth generating plants in poverty-stricken Appalachia; to the north, Canadians already are looking to the New York and New England areas as outlets for the tremendous hydropower output of the projected Hamilton Falls plant in northern Canada. Also advanced, by the former chief engineer of New York City's Bureau of Gas and Electricity, was a detailed proposal for a highly efficient gas-turbine generating plant that would use surplus natural gas. Such plants are already in operation all over the country.

In the light of the President's recent message to the Congress on natural beauty, the FPC's decision seems quite untimely. It also seems rather hasty in view of requests by a number of Congressmen, the New York State Legislature's Joint Committee on Natural Resources, and many interested conservation organizations and individuals, for a delay in authorization pending considerable further study of the entire project.

The decision of the Commission in the Storm King power plant application was not unanimous. Commissioner Charles R. Ross dissented to the granting of a license until the issue had been heard further. In the text of the Commissioner's dissent was this remark: "Let this be a lesson to the nation. The Potomacs and the Hudson can't wait. They will be saved only by the ever increasing interests of those who seek to maintain our quality of life."

—P.M.T.

Shape of a Forest

IN TIMES PAST SOME OF THE NATION'S State parks and other reservations have had their ups and downs and, as of this writing, Savage River State Forest in Maryland's far-western Garrett County seems to have narrowly escaped a serious "down."

Under a plan which had been approved by the Maryland Department of Public Works, nine hundred acres of the reserve, it appears, would have been strip-mined for coal. The Board said that the operation would not be visible from any paved road; the company that was to do the stripping said that it would return the land to the State "in better shape than it is now."

We were a little puzzled at the time over the point of visibility from a paved road, since in many State parks and forests the terrain behind roadside trees is considered to possess some merit also; readers of the Magazine who are familiar with strip-mined terrain will doubtless wonder what shape the reservation is in now if it were to be returned in "better shape."

Would there have been an accumulation of acid water, one of the several curses of the Appalachian coalfields? Yes, admittedly so; but NPA was told that this water "will become neutralized after a while in the soil," nature of the neutralizing agent unspecified. Item: the Fish and Wildlife Service has just reported that nationwide there are nearly 6000 miles of streams in which fish cannot exist because of acid-water pollution. Quotation: "Strip or surface mining as generally practiced today leaves a festering scar on our scenery. It breeds nothing but barrenness, not only in the land but also in the people on that land . . . It is to be hoped that our improving conservation laws will tend to aid [areas like impoverished Garrett County] until enough public sentiment is generated to completely stop such destructive mining methods." Thus spoke Thomas J. Nelson at a recent Roanoke, Virginia, conference on strip-mining. Mr. Nelson is director of planning for Kentucky's Department of Parks.

The Savage River Forest conservation and biologic disaster was averted, for the present at least, by the unanimous dissent of the Maryland Commission of Forests and Parks, led by Commission Director Spencer P. Ellis, who had received the support of many Maryland and other conservationists. This Association feels that Director Ellis and his commission are to be congratulated on their decision.

The short-term gain which would have been derived from the stripping of this State reservation would have been, in our opinion, far outweighed by the long-term loss in timber and outdoor recreational values upon which the future economy of this scenic mountain country will very likely depend. Economic, ecologic and esthetic considerations all seem to indicate that both the Savage River State Forest and the inhabitants of Garret County would be served better by an intelligent program of ecological forestry. Such a program would provide future income from both forest products and outdoor recreation; stripping a sizable portion of the reservation for coal will produce, for the present, total biologic and scenic ruin; for the future, only deeper poverty. *—P.M.T.*

NATIONAL PARKS *Magazine*

OFFICIAL PUBLICATION OF THE NATIONAL PARKS ASSOCIATION

VOLUME 39 APRIL 1965 NUMBER 211

Front cover photograph by Josef Muench

Reaching north from the Gulf of California into southern Arizona and southeastern California is the Sonoran Desert, sub-tropical domain of plants and animals which, over the ages, have adapted themselves to conditions of extreme summer heat and a bare minimum of moisture. "Its horizons appear held apart by sky, its mountains look flatly two-dimensional, and its spectacular vegetation seems borrowed from another planet," says a Southwestern naturalist; yet, with sufficient winter moisture, the warm days of spring bring this harsh and desolate segment of America into a bright glow of pastel colors—the strange inharmony of the desert in bloom.

The Association and the Magazine

The National Parks Association is a completely independent, private, non-profit, public-service organization, educational and scientific in character, with over 28,000 members throughout the United States and abroad. It was established in 1919 by Stephen T. Mather, the first Director of the National Park Service. It publishes the monthly *National Parks Magazine*, received by all members.

The responsibilities of the Association relate primarily to the protection of the great national parks and monuments of America, in which it endeavors to cooperate with the Service, while functioning also as a constructive critic; and secondarily to the protection and restoration of the natural environment generally.

Dues are $6.50 annual, $10.50 supporting, $20 sustaining, $35 contributing, $200 life with no further dues, and $1000 patron with no further dues. Contributions and bequests are also needed. Dues in excess of $6.50 and contributions are deductible for Federal taxable income, and gifts and bequests are deductible for Federal gift and estate tax purposes. As an organization receiving such gifts, the Association is precluded by law and regulations from advocating or opposing legislation to any substantial extent; insofar as our authors may touch on legislation, they write as individuals.

Membership in the Association carries with it subscription to *National Parks Magazine*. School and library subscriptions are $5 a year; individual copies 50 cents. Letters and contributed manuscripts and photographs should be addressed to the Editor at Association headquarters. The Association is not responsible for loss or injury to manuscripts and photographs in transit. Return postage should accompany contributions. Title Registered U.S. Patent Office. Indexed in the *Reader's Guide to Periodical Literature*. Printed in the U.S.A. Second-class postage paid at Washington, D. C.

NATIONAL PARKS ASSOCIATION, 1300 NEW HAMPSHIRE AVENUE, N. W., WASHINGTON, D. C. 20036

Let's Outgrow the Growth Mania

By Darwin Lambert

Illustrations by Garnet Jex

SIGNS ABOUND IN AMERICA TODAY that the pursuit of happiness is no longer to be identified with the pursuit of perpetual growth; that production of material wealth should move over for creation and practice of the art of living; that conquest and alteration of the earth should give way to harmonizing the nature inside ourselves with the nature around us.

Despite vast adventures in space, we are seeing ever more clearly that earth is where we live and will continue to live. It should be dedicated not to an endless production drive that subordinates all to economic multiplication but instead to establishment and maintenance of the best possible home for humanity. Odds against ever finding another planet as well suited for humanity are not worth the gamble. We must take care of this one.

California recently became the nation's most populous State, but its words of self-congratulation failed to subdue a deep surge of regret among Californians and many other Americans for the wonderful State that is being eaten away—Pacific beaches where all who come might find a place in the sun; majestic Yosemite Valley without a parking problem; marvelously tall, irreplaceable redwoods safe from the saw; picnic spots and fishing streams not always crowded beyond capacity. Someone always publishes a boast in the fastest-growing States — Florida, Arizona, Nevada and the others—when the census figures come out, but such boasts usually have a forced sound, as someone whistling in the dark.

Population growth is now less often seen as a blessing, and more often as a threat; a threat to the good life, to the very goal civilization has worked toward. America has passed an invisible line on the path of history and all of the world is at least within sight of that line. Civilization has worked out ways to fill the material wants of any reasonable number of human beings, and has gone on to put the production load on machines, more and more of them automated, leaving for people vast vacuums of time to fulfill desires only now emerging into consciousness. Many of us now seek reorientation instead of stubbornly clinging to a momentum that has lost its meaning, if not its speed; continuing to hack through the forest in a mad drive to extract more material from a nature which is already flooding American with food and goods. This perpetual-growth mania, now misplaced in time, seems sparked by the spirit which killed the goose that laid golden eggs.

Diminishing Labor Need

An article from *Life*, condensed in the August, 1964, *Reader's Digest* under the title "Leisure, the Great New Challenge," foresees that within twenty-five years two percent of our population will be able to produce all the goods and food the other ninety-eight percent could possibly consume. A wise civilization would hardly keep pushing toward ever more complete utilization of natural resources for material gain, eating us out of house and home, since these resources are actually part of our home, needed to keep the planet in condition for our health and enjoyment. We have already had increasing difficulty "making ourselves at home" in this century of frenzied industrialization during which the planet has seemed more and more alien to the sons and daughters of the earth, the human family, as though an infection were spreading over the land, an infection pouring pollution at increasing rates into our waters and our air.

In the rare moments when we have been able to hear, in all the confusion, our inner voices, we have begun to perceive that we do not actually thrive as complete human beings in surroundings constantly overcrowded, mechanically noisy, pressing in upon us with demands to produce, to move ahead in a "rat race" toward artificially imposed goals. Like lemmings which, suffering from overpopulation, migrate to mass suicide, we have been driven into terribly destructive wars, wars described by some who have led them as wars for more room. We have all felt a vague but powerful demand for more living space, a habitat of natural beauty, a continuing association with plants and animals, mountains and streams, the world of nature to which mankind was born, corresponding to the largely unconscious world that lives within us.

Looking through magazines and papers, we find innumerable examples of emerging realization that human happiness requires not just material wealth but breathing space and continuing communication between our-

selves and nature. "A child needs time to wonder about a bug, a bush or a baby bird," declares a newspaper headline, "to run knee-deep in acres of browning leaves."

Yet our thinking is often separated in thought-tight compartments, and most Americans still seem, consciously, to consider conquest of nature for economic advancement the number one virtue of our system. We feel driven to expand our economy, to "outdistance the Communists" industrially and materially, as though this were a genuine proof of the superiority of our way of life.

Our citizens are seldom so bold as to balk economic growth, yet many do feel that what advancing civilization really should do for us now is to create —actually more to recreate and maintain—an over-all home, a habitat where mankind can live in glorious health instead of wandering through a noisy, crowded and confused labyrinth that fails to reflect the inner pattern of life. Hope lives in the possibility of awakening and channeling this feeling.

We Americans are, almost to a man, split personalities. Even as perpetual economic growth seems paramount in our conscious minds, we intuitively sense within overselves these urgings to bring other values from obscurity to lead us beyond material wealth. The perpetual-growth concept (more and more population, ever bigger material achievements) which has dominated the United States perhaps even more completely than it has other countries, may be near the end of its reign, as it is already near the end of its real usefulness.

A Durable Concept

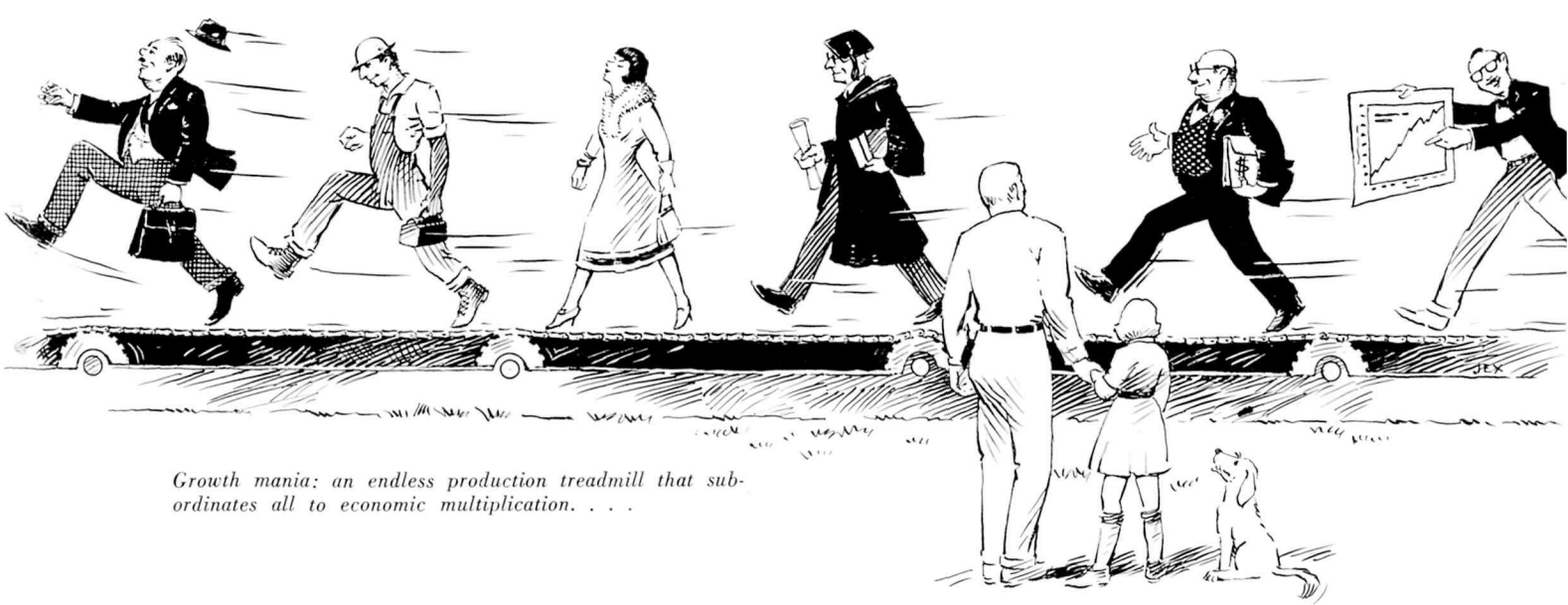
The perpetual-growth concept is almost certain to die hard, however, if it dies at all in our time. The *Life* article points out, "We spring from a long line of compulsive go-getters. . . . It is probably inevitable that the opportunity for leisure, which our giant industrial accomplishments have spawned, will catch us less prepared than anybody else to welcome it." And since we believe we must be go-getters to fulfill the American destiny, we still pursue headlong a goal we have already won, continuing to work to surpass again and yet again the production and wealth of former years, even though we must stimulate consumption artificially through model changes that are no more than skin deep, through intentional obsolescence of the items we make. Our lives are lashed to an economic juggernaut gone wild, advancing to maintain its own momentum, no longer to serve real needs, destroying wide swaths of the American earth as it goes.

Yet diversity is also a mark of our time and place, and hope for saving humanity's home from the destructive infection is bolstered by the fact that many Americans, having conferred with their inner beings, are spending their primary efforts for the satisfaction of serving mankind, achieving goals of new meaning to the world, rather than for maximum material gain. And though most of us want, partly because of our long background in pioneering a continent, to continue economic development by enslaving still more of nature, we also naively expect our heritage of natural beauty and abundant space to last forever. We suffer shock when we find a factory replacing a favorite natural retreat, or a residential subdivision springing up where we once walked to see the wildflowers and the birds.

The shock comes because we somehow are not yet fully conscious that feverish economic development—perpetual growth — long considered so worthy, is often in acute conflict with natural beauty and space for pleasant living; that the concept of perpetual growth, which supports increases of population, industry and material wealth as the greatest value, has ceased to be a universal good, and in some situations actually destroys hope for the good life.

* * *

As a long-time leader in certain phases of growth-promotion, I became aware, although gradually, of the conservation drive deep within myself. The first significant psychotherapy to attack my typically American personality-split came in a conference with a former mayor of a New York town. I was manager of a Chamber of Com-



Growth mania: an endless production treadmill that subordinates all to economic multiplication. . . .

merce at the junction of U.S. Highways 6, 50 and 93 in Nevada, and was organizing national (or international) associations to promote travel on these routes. I had counted heavily on backing in the East by Mayor Wendell Phillips, who had been a leader in pushing Highway 6 toward completion across the continent.

Tour of the Town

The mayor listened to my plans for nationwide travel-promotion and then invited me to tour his town. Within minutes we were tied up in a multilane traffic jam on Highway 6. No parking space was at hand, and we could not move forward except at an occasional snails'-pace. "Highway 6 is a menace to our town," Mayor Phillips said. "It has almost ruined our business district, and it threatens the lives of our children."

"What you need," I said, "is off-street parking, probably a by-pass route."

He did not answer directly. We watched pedestrians squeezing between stopped cars whose drivers waited nervously to rush ahead. When we escaped he drove to the edge of town and up a beautifully forested hill to a viewpoint. "This has been a pleasant and peaceful town," he said. "People have enjoyed living here."

The view of river and hills, of town and surrounding settlement, showed crowding everywhere except where we sat, and the crowding was not ramshackle but solid, permanent construction. "There's no room for adequate off-street parking, and there's only one place for a by-pass—here." He looked at me and added gently but firmly, "If your proposed National Highway 6 Association can work out a way to cut traffic on the route in this town to one-third its present level, I'll support it. Otherwise ——"

The promotion went ahead without Mayor Phillips, but his point of view gnawed inside me, and I have avoided going back to his town for fear I would find that beautiful hill denuded, developed by a roaring throughway.

My next psychotherapy came from Lucius Beebe, noted writer and *bon vivant*. A member of the Nevada Board of Economic Development when I was chairman, Beebe supported tourist promotion with verve and originality, but balked at industrial promotion. Whenever the drive for new industry came up, he quietly walked out. Once I recessed the session and cornered him at the end of a bar. Over drinks he told me what he thought, and why.

"Nevada's foolish to go after industry," he said. "What could we gain? We already have the highest per capita income in the United States. Any group of industrial employees would cut that average. We have half a square mile of land per person—uncrowded fishing streams and hunting areas, historic places still unspoiled, highways that don't even need speed limits. Any industry would cut the space per person and start crowding the recreation grounds." He took a swallow of his drink.

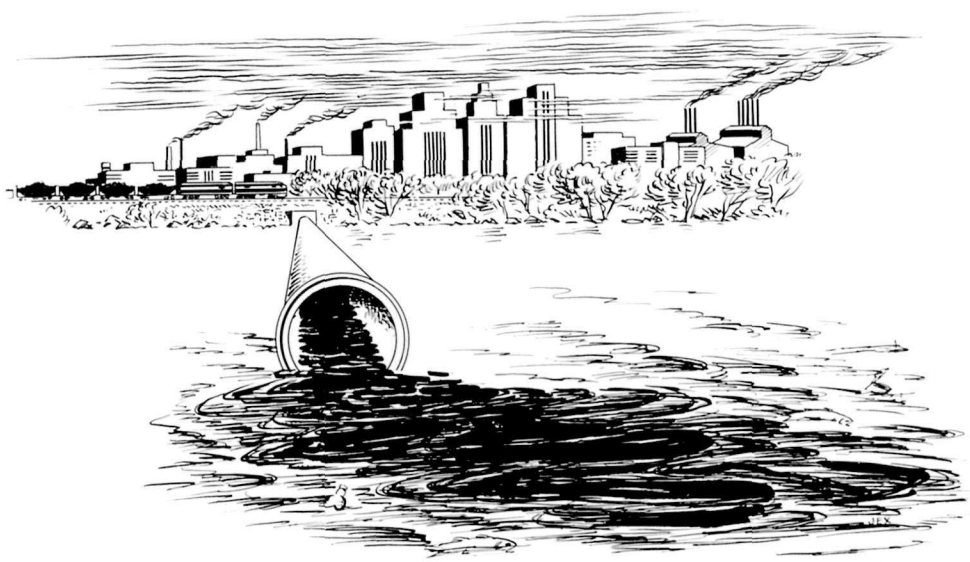
Price of Development

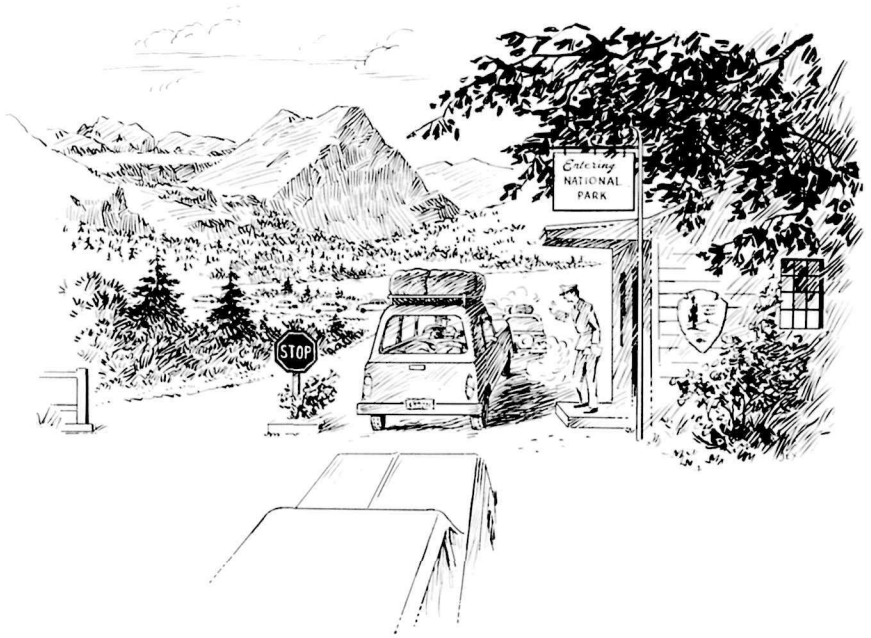
"We'd have larger costs for education, welfare, police protection, all kinds of services. Taxes would go up and be harder to pay because our average income would be down. Who, actually, could gain? A few landowners, perhaps, whose properties are bought for the factories or for stores to serve the workers and their families. Even the typical businessman couldn't gain. He'd have new competition as fast as total business increased.

"No, I can't go for it. We're as near paradise on earth right now as we can come . . ."

Nevada went on promoting industry, and I helped, believing, as I still do, that some isolated places need more development than they now have so as to support the best health services, adequate shopping and transportation facilities, cultural programs, and other rewarding aspects of modern living which only a concentration of cooperating citizens can afford. Parts of Nevada, Alaska, and a few other States might still, I think, have more to gain than to lose.

A century of frenzied industrialization has polluted our streams and waterways.





Are we to lose what we have already saved because we cannot apply the brakes?

But I became increasingly aware that overdevelopment does, in fact, damage conditions for human happiness. All right, I decided, let us promote economic growth where such growth will truly help, and then let us put on the brake when the ideal conditions are reached.

I have been seeking a way to apply the brake. Setting aside natural areas for the use and enjoyment of this and future generations, as in national parks, wilderness areas, and sometimes State and city parks and recreation grounds, is part of a method. Birth control is obviously another part, but how can birth control really do its job when a majority of Americans still see perpetual growth as the way to salvation or, at least, expect other communities to halt the population explosion while they go on developing their own home territories? In the face of a population explosion backed by belief in perpetual growth, it is hard even to protect already dedicated parks or wildernesses, much less pursue a complete program of creating an ideal habitat for human living.

I believe the needed brake is built into humanity, however, and this article is part of an effort to pinpoint the pedal in the American mind so it can be pressed when necessary. Few Americans have not deplored the pollution of some river, the destruction of some well-loved scene, the loss of some great tree or grove or forest. Many even connect such losses with the population explosion and join campaigns (usually remote) for birth control; yet far too few have yet connected the accelerating losses with the typically American drive to grow economically, to pioneer, to conquer nature. Few yet understand that economic exploitation, when affecting nearly one hundred percent of our resources, destroys the very promised land to which it has brought us.

Development vs. Preservation

A continuing battle is being fought, for example, between advocates of an extensive water and power development plan in the American Southwest and those who see how that plan threatens world-renowned Grand Canyon, part of which was long ago set aside in a national park and monument for enjoyment by the people forever. Are we to lose what we have already saved because we cannot apply the brake, because most Americans will not yet act to halt inroads into recreationally and inspirationally important resources because we have been brainwashed to believe that there is no alternative to perpetual economic growth?

The tendency, even of those who oppose the Pacific Southwest Water Plan, is to admit the urgent water needs of the arid lands, not only for people who live there now but for the tremendous increases in population that are being promoted. Yet if Arizona and southern California get what water they "need" now to continue their growth, they will "need" still more in a few years, and again more after that, and so on and on.

Another battle, with aggression backed by the historically sacred right to perpetual growth, threatens natural life in Everglades National Park, another great preservation for the deeper enrichment of humanity. Such battles are being fought on many parts of the American earth, and sometime soon—in Arizona, in California, in Florida, and elsewhere—we must press the brake and hold it down. We must stop obeisance to the growth concept and see clearly the need for keeping our home planet in condition for maximum health and happiness.

If Arizona gets no more water from any source whatever, it will stop growing short of human saturation. Organized businessman-landowners, developer-speculators and their

"We suffer shock when we find a factory replacing a favorite natural retreat. . . ."

echoes will howl, but most Arizonans, whether or not fully conscious of what has happened, and why, will render thanks. If southern California gets no more water, it will stop growing—and what could be more in keeping with the deeper desires of almost all southern Californians? Many, maybe most, in that overcrowded section are ready now to confess their desire for a halt to the horrible growth that has destroyed so many opportunities for good living.

Race with "the Communists"

The perpetual-growth concept is powerful. Originally based on solid American ground, embodying most of what has made our nation great, it is sometimes solid now, but more often based on hollow desperation; on the nebulous fear that if we do not keep expanding our economy faster than that of Russia or China, we will be engulfed by Communism; or on another fear that if our economy does not grow even faster than our population we will be overwhelmed by unemployment. Communism and unemployment do need answers, but these are no longer to be found in perpetual growth. We must look elsewhere. We must find a way of life without any such excuses for desperation, and without a mania for more production when America does not even know what to do with all the production it has now.

The problem is not one of introducing and arguing a new philosophy. The home-protection, earth-protection philosophy is strong within us. The conservation movement, gaining strength rapidly in recent years, can help "psychoanalyze" our civilization, expose the exploitation-conservation schizophrenia, and bring into full consciousness the real wishes of our people. This movement can provide the psychiatrist's couch for talking out the hidden feelings for the earth, can help reveal the perpetual-growth mania for what it is, and bring American action into agreement with American desires. These desires now turn less and less toward ever-increasing material wealth, toward ever-increasing consumption, or toward ever-more-total conquest of nature; but more and more toward increasing harmony with people and with the earth; toward preservation of the planet's natural variety, its pure air and water and green land. They are turning against the crowding pressures of conformity and the dead-end streets of communistic ants compressed in dense and dead standardization, blind even in memory to the greatness of life, liberty, and singing happiness.

The major drive of civilization up to this point in history has been toward control over nature with increasingly efficient tools and methods for production from an increasing proportion of the earth's resources to satisfy material needs. But that job is done here, and is well on the way toward completion in the rest of the world. The human situation has changed fundamentally. Continued clinging to a perpetual-growth momentum after it has passed the point of usefulness will lead, not to greater security as so many vainly hope, but, as with the now-famous Kaibab deer and other creatures which have gone through population bursts, to destruction of habitat, of the very resources that provide sustenance. Civilization must now dedicate itself to a new task: that of working out methods and conditions for the art of living.

Tapping Earth's Resources

The bulk of natural resources is already devoted to the material needs and wishes of mankind. Even more resources, far more of the oceans perhaps, more of the earth's underground, might still be properly appropriated for material production to supply a mushrooming population that certainly cannot be stabilized overnight. And we can hardly quarrel with continuing growth based on scientific advancement involving more efficient use of resources properly devoted to material production.

But wisdom dictates firm dedication of ample resources to establish and maintain human habitat for emotional and spiritual as well as physical health. What profit a glut of goods if we have destroyed the requisites for living serenely in freedom on a beautiful, unpoisoned and unpolluted planet?

We simply cannot afford to leave the juggernaut of population-economy growth without firm brakes. Times and places where that juggernaut must be halted for the good of humanity are becoming more and more numerous. Were we to grant continuing priority to the perpetual-growth concept, we would be admitting defeat for the good life, the maximum happiness of mankind on earth, our home. ■

Darwin Lambert, author of several books and many articles, has an extensive background in economic development work in the West. He is also a veteran newspaperman, having most recently been editor of the *Daily Alaska Empire* in Juneau. Mr. Lambert currently makes his home in the Blue Ridge Mountains near Luray, Virginia.

Preserved in southern Arizona is a representative sample of the plants, animals and scenery of the Sonoran Desert.

Organ Pipe Cactus National Monument

By Weldon F. Heald

IF THE PAPAGO INDIANS HAD A CREtion story similar to that in *The Bible*, their Garden of Eden might be easy to locate. It probably would have been where Arizona's Organ Pipe Cactus National Monument now preserves a portion of the so-called Sonoran Desert. This stark and arid part of the American Southwest has been the Papago's home for centuries, and the national monument is indeed a microcosm of all its beauties and wonders.

The Sonoran Desert is one of the most unusual and distinctive biotic provinces on the North American continent. It stretches northward from near Guaymas, in the Mexican State of Sonora, 500 miles to beyond Phoenix, Arizona, and is 200 miles across at its widest point. Extremely dry, the region throughout is searing hot in summer; but it enjoys one of the world's pleasantest climates from November to April. Annual precipitation averages from two to ten inches, and a brilliant sun shines, the year around, eighty percent of all possible daylight hours. Although there are barren wastelands of sand and naked rock here and there, in general the country supports a surprising wealth of varied vegetation and wildlife. In fact, it exhibits a complex ecological balance that has pro-

The Sonoran Desert of southern Arizona seems desolate and inhospitable, yet it supports a wide variety of plant and animal life. A monument view from the Bull Pasture Trail.

National Park Service photograph

duced an individual environment different from any other on earth.

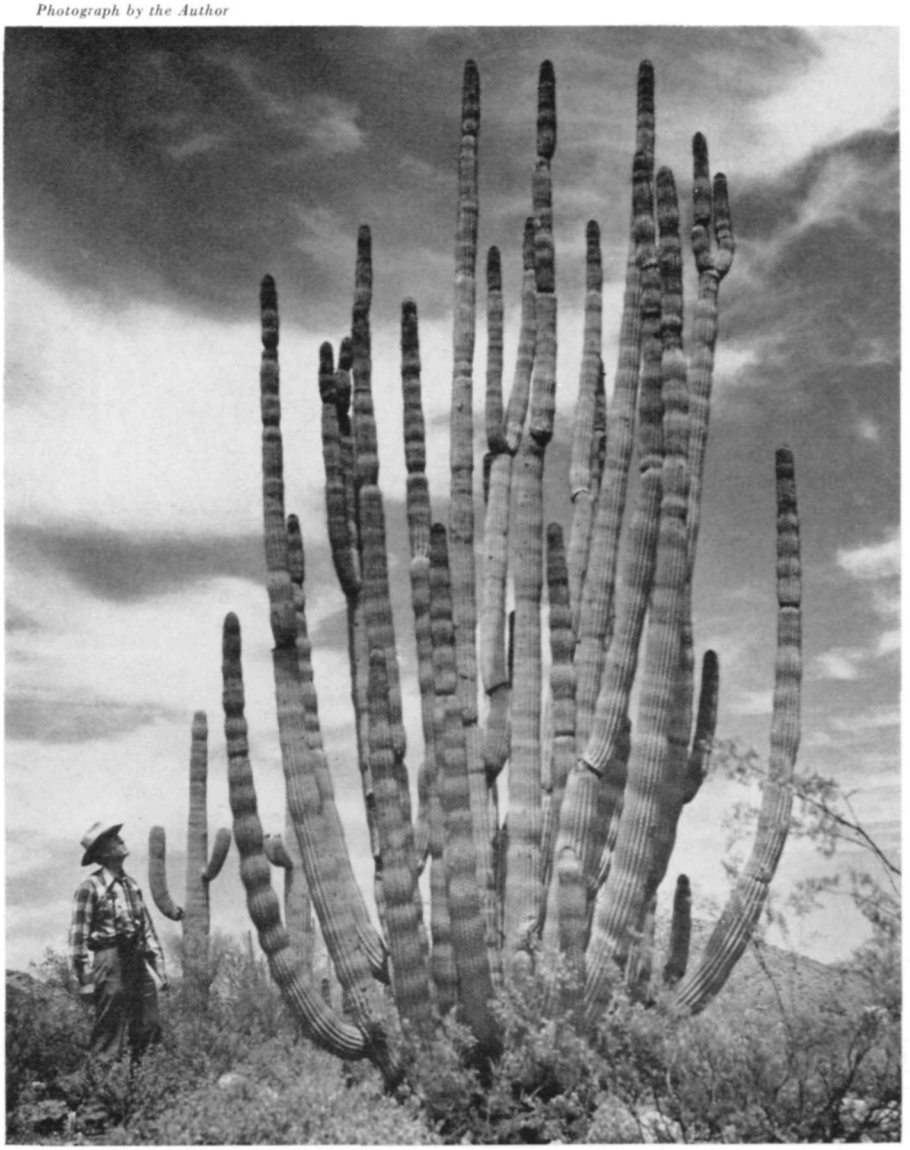
Special symbol of the Sonoran Desert is the saguaro; it grows naturally nowhere else. Pronounced *sah-wahr-o*, this gigantic single-stemmed cactus, standing ten to fifty feet high, forms strange "forests" of gaunt, fluted, olive-green columns, with fantastically waving arms. Over hill, valley, and mountainside march the saguaros in groups, ranks and clusters, making as uncanny a landscape as can be seen anywhere.

But perhaps the most remarkable characteristic of the saguaros is that they dominate a little world of their own, which has a particular kind of animal, bird and plant life. The Indian culture, too, is based upon the saguaro, and the primitive Papago way of life still persists little changed with religion, customs, and well-being directly influenced by this giant cactus. The Indians make the fruit into food and drink; use the ribs for their huts and ramadas; and weave saguaro-fiber baskets and drinking vessels. So important is the saguaro to the Papagos that they celebrate their new year with an elaborate festival when the fruit ripens.

However, the entire Sonoran Desert is preeminently a land of cactuses, and scattered among the saguaros are dozens of other species as well as an amazing variety of desert plants, mostly bristling, spiny or spiked. Two other outstanding cactuses are the organ-pipe and senita. Belonging to the genus *Cereus*, as does the saguaro, they are fairly widespread in Mexico, but extremely rare north of the Mexican border. The former is represented by a dozen or so isolated stands in south-central Arizona, while not more than fifty individual senitas are now native to the United States. Probably the number never exceeded a hundred. The organ-pipe has upright, ridged branches that rise in candelabra-like clusters from the ground to heights of five to twenty-five feet. The senita, almost as large, is called "old man" or "whisker" cactus because of the hairy white bristles at the ends of its branches.

In the photograph below appears a splendid specimen of the cactus for which Organ Pipe Cactus Monument was named. Just to the left of the specimen plant is another Sonoran Desert cactus, the saguaro.

Photograph by the Author



Organ Pipe Cactus National Monument was created by Presidential proclamation in 1937 primarily to protect and preserve these two stragglers from the south in their original environment. But it also includes a comprehensive biotic cross-section of the whole region. Covering 514 square miles adjacent to the Mexican line, the monument constitutes an unsurpassed desert botanical garden and zoo. It is an area of barren, craggy mountain ranges, of 3000 to 4500 feet elevation, separated by broad, sweeping valleys in which grow strange, picturesque and rare plants.

Monument Plant Life

The vegetation is surprisingly profuse. Besides the saguaro, organ-pipe and senita, there are the barbed barrel cactus and night-blooming cereus, the spiny, many-branched tree cholla and fuzzy teddy bear; prickly pear, rainbow, fishhook, and a host of ground-hugging cactuses. Also numerous are trees and shrubs such as the green-trunked palo verde; the whip-like ocotillo; the leafless crucifixion thorn; creosote bush, ironwood, mesquite, cat-claw acacia, bur-sage, smoke tree, desert willow, and several varieties of yucca.

The cactuses are noted for their showy flowers which bloom for a few hours or days, then die. The exquisite coloring and wax-like delicacy of the blossoms are unrivalled and many of them are floral masterpieces, six inches

to a foot across. Long after the early spring wildflowers have spread their multi-colored carpet over the desert and disappeared, the monument's cactuses put on an annual show. In late May and early June the saguaros bear clusters of creamy white blossoms at the tips of their columns and branches. So striking are these that Arizonans have chosen them as their State flower. All the other cactuses burst forth at about the same time with spectacular blooms of crimson, orange, yellow, pink, lavender, purple and pale green.

Not to be completely outclassed by the cactuses, the desert trees and shrubs burst into bloom. The palo verde becomes a misty golden cloud; the ocotillo flames with red blossoms at its tips; and the tough old ironwood blushes a bashful light pink. Then, if summer thundershowers are plentiful, the desert comes to vigorous life with a second wildflower exhibit and scattered patches of green grass, in places lush as that of the Vermont hills. Especially prominent spring and summer flowers are the Mexican gold-poppy, magenta, owlclover, blue lupine and bright orange mallow.

The Sonoran Desert also teems with animal life, from earth-bound insects, mammals and reptiles to soaring eagles, hawks, and buzzards high in the sky. Many species are unique to the Sonoran Desert. For instance, the ranges of the elf-owl, white-winged dove and gilded flicker are almost identical to that of the saguaro. Cactus wrens, gila woodpeckers and road-runners are also characteristic of the region. Among the larger mammals are

Weldon F. Heald, widely known southwestern writer, photographer and outdoorsman, is a member of the Park Service field study team which recently made a detailed investigation of Organ Pipe Cactus Monument and surrounding lands.

A number of plants typical of Sonoran Desert vegetation appear in the photograph below, taken in Organ Pipe Cactus Monument. These include, from left to right, the ironwood; organ-pipe cactus; cholla cactus; saguaro cactus; palo verde tree; and the creosote bush.

Photograph by the Author

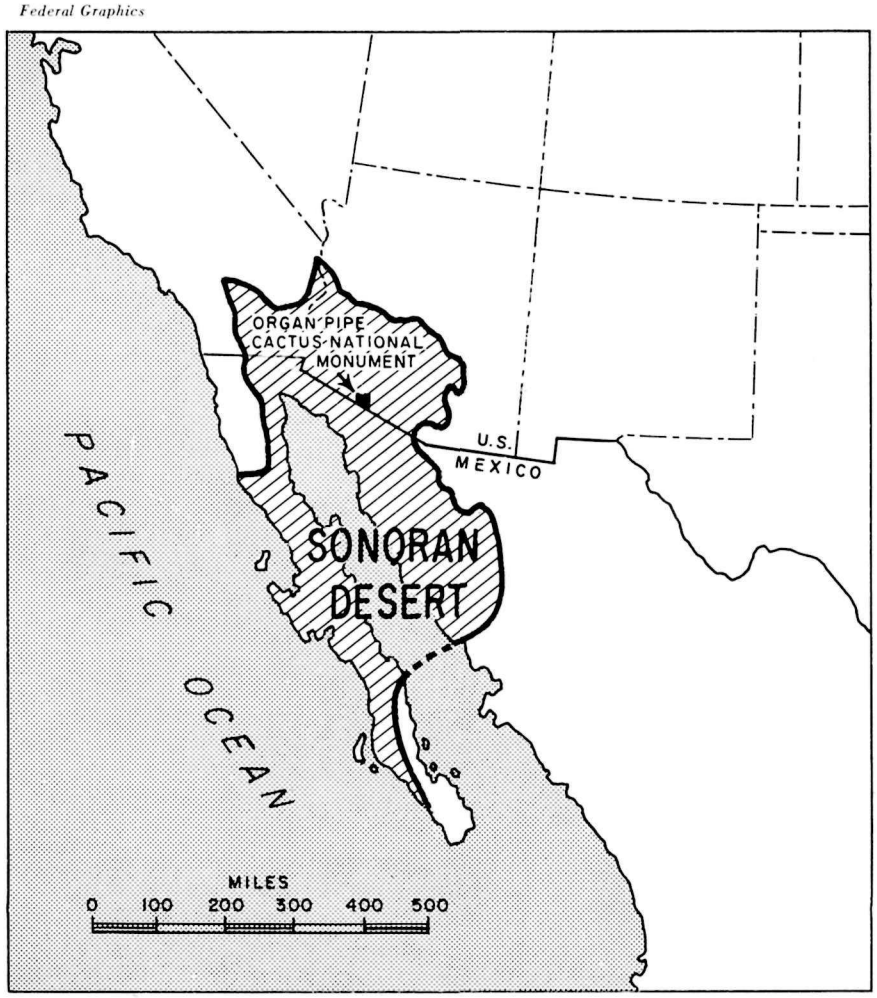
the ubiquitous coyotes, as well as mountain lions, bobcats, foxes and mule deer. Swift-running pronghorn antelope roam the valleys in the western part of the monument, and a few bands of bighorn sheep inhabit the rugged mountaintops. The area is at the northwestern limit of the peccary, or wild pig, and the strange, long-tailed coatimundi; but these two are occasionally seen. A surprise in this desert Eden is the inch-long, shiny blue Percy minnow or pupfish, which inhabits the pond at Quitobaquito Springs in the southern part of the monument.

Most fascinating, perhaps, is the busy life of the smaller creatures who run, hop, crawl, burrow and climb in well-adjusted association with the desert vegetation. Nowhere can there be found better examples of adaptation to an austere environment of extreme aridity. Every living thing is provided with special ways and means of survival, and this almost waterless community of plants and animals induces a feeling of reverence for nature's infinite capacity.

Although situated in an out-of-the-way, sparsely inhabited region, Organ Pipe Cactus National Monument is easily accessible by paved highways. State route 85 enters from the north and traverses the monument for 23 miles to the Mexican line. From the paved highway two scenic self-guiding loop drives of 18 and 40 miles may be taken, and short spur roads lead to various points of interest. Although dirt, all of these are graded and maintained. Monument headquarters is 17 miles from the north entrance. Here are visitor center, museum and ranger-naturalist service, with a commodious nearby improved campground with trailer spaces. At Lukeville, on the border, are restaurant, service station and general store providing limited supplies. Motel and hotel accommodations are available in the copper-mining city of Ajo, 35 miles north of monument headquarters.

The Sonoran Desert of Mexico and the United States, and Organ Pipe Cactus National Monument in southern Arizona. The map has been adapted from an illustration in "Organ Pipe Cactus National Monument," by Natt N. Dodge, Natural History Handbook No. 6 of the National Park Service, available from the Superintendent of Documents, Washington, D.C., and priced at 45 cents.

Federal Graphics



Highways in Mexico

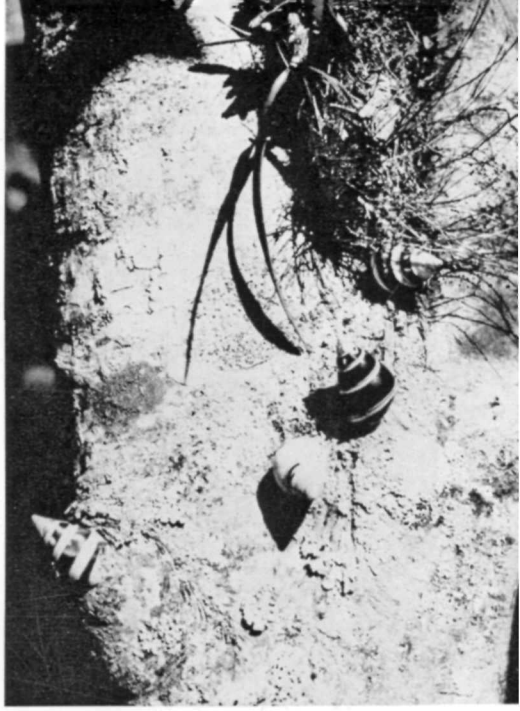
From the little adobe town of Sonoyta, over the line in Mexico, a 65-mile paved road goes southwest to Puerto Peñasco, a deep-sea fishing resort on the Gulf of California. Also a paved Mexican highway, completed in 1960, follows the border through a barren, uninhabited desert to the Colorado River, 127 miles. This connects with routes through to California. The road parallels the historic *Camino del Diablo*, Devil's Highway, on which many early Western travelers perished of hunger, thirst, and fatigue.

Ranging from tawny mountains through far-reaching valleys, down to the blue waters of the Gulf of California, there are few desert areas which offer more of variety and interest than does the Sonoran. Not only is the monument itself outstanding, but the surroundings contain the largest undeveloped area of this desert remaining in the United States. Bounded on the south by Mexico, the monument is adjoined to the east by the 2,775,000-acre Papago Indian Reservation, second largest in the country, while on the west is the huge Cabeza Prieta Game Range, managed by the United States Fish and Wildlife Service.

At present this vast area of Sonoran Desert has been barely touched by human development. Protection is fully adequate today, but rapid changes in the future could threaten its unique values. Aware of this possibility, the National Park Service is conducting a field study of the region's ecology and scenic assets. As yet no recommendations have been made. However, the important consideration is that Organ Pipe Cactus National Monument and its surroundings are a priceless legacy from our original natural heritage. It should be of nationwide importance that as much as possible be preserved intact for the enjoyment, education and inspiration of the crowded generations to come. ■

Liguus, the Florida Tree Snail

By Gale Koschmann Zimmer



A beautiful animal of the tropics is the Florida tree snail, shell of which occurs in a seemingly endless variety of colors. Its numbers have been severely reduced by over-collecting and Everglades fires.

National Park Service photograph

Although Everglades National Park, on the southernmost tip of Florida, is a subtropical region and is populated largely with tropical plants, most of its animal life consists of species known throughout the United States. Raccoon, bobcat, panther, snapping turtle, garter snake, cardinal, meadowlark, eagle—these hardly constitute a tropical fauna. With the exception of a few airborne creatures which can soar in during migration, tropical animals at Everglades are quite rare. The reason, of course, is that large animals have found it impossible to cross the many miles of salt water that separate Florida from truly tropical America.

One of the few animals which have successfully made the crossing to become established in south Florida is *Liguus*, a tree snail. It is a remarkable animal and a beautiful one, with a colorful, porcelain-like shell.

Naturalists agree that the *Liguus* snails originally came from Cuba, and that there may have been many importations over a long period of time. Means of transportation was probably floating debris carried north from Cuba by strong currents and hurricanes. The snails were securely "glued" to their impromptu rafts, and when these washed ashore along the Florida Keys or the Atlantic coastal ridge, the animals moved off into a new world.

Since few of the Floridian color-forms are now found in Cuba, it may be assumed that our "Ligs" have evolved considerably from the ancestral forms which first came ashore. More than fifty color varieties of the snail are known, ranging from almost pure white to black; but mottled and striped forms are the most common. Yellow, pink, green, and orange are some of the colors which decorate the inch to inch-and-a-half-long shells of *Liguus*, while its body is a gray-tan.

These snails are, of course, mollusks; their structure and physiology is similar to that of the other snails. They are hermaphroditic (each snail is of both sexes) and mate in spring and early summer at the onset of the Florida rainy season. Eggs are laid in humus at the base of a tree and, after hatching, the tiny snails can be seen migrating upward. They reach adult size in two seasons or less.

Liguus is a hammock-dweller, and is not found in the other landscapes of Everglades Park. It is most frequently seen on smooth-barked trees, estivating—the summer equivalent of hibernating—tightly glued to the bark during dry periods, slowly scouring the surface for lichens on which to feed during wetter times.

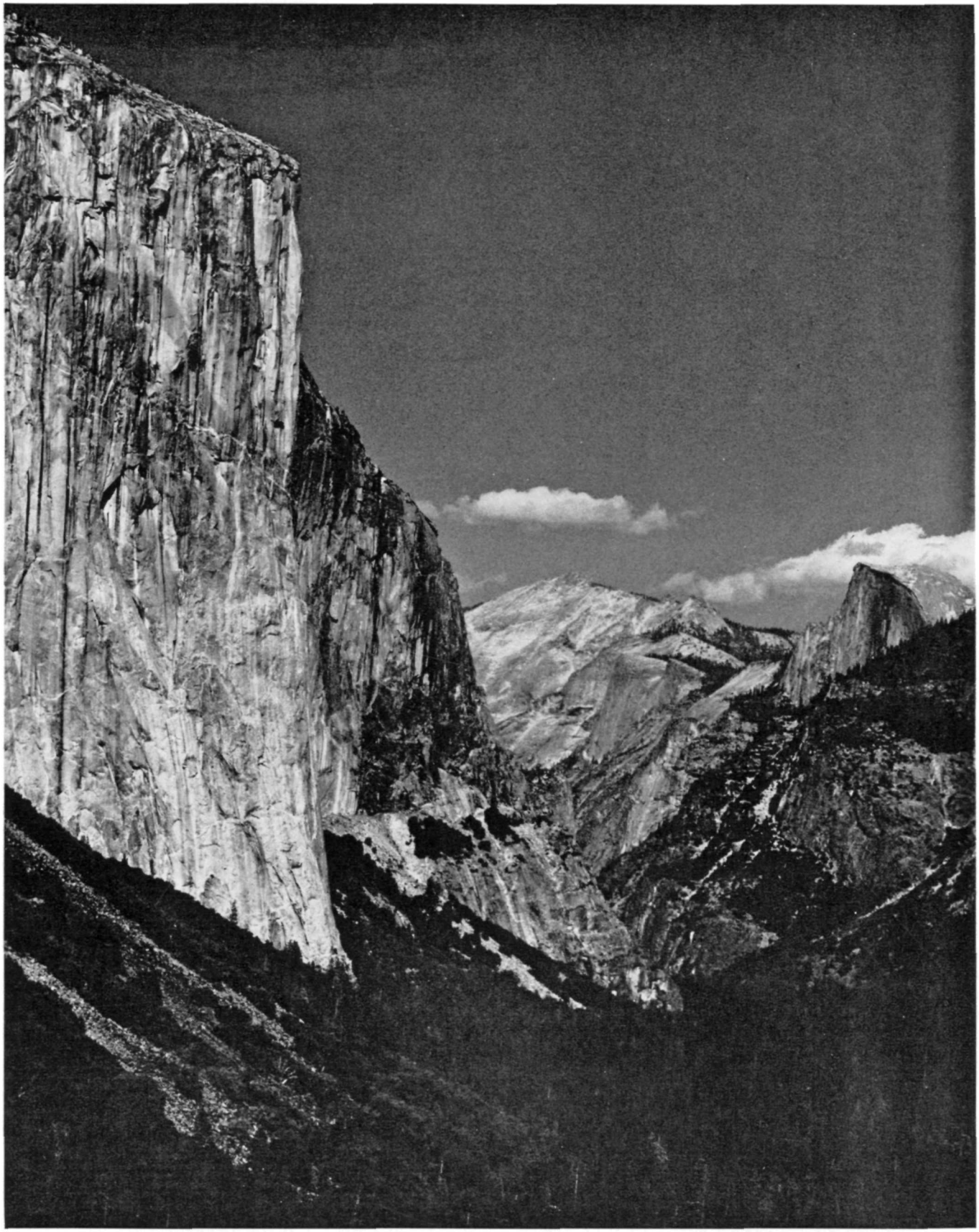
Since the South Florida country first underwent exploration, *Liguus* shells have been collectors' prizes. Stories are told of the early days on the Keys when collectors, finding hammocks (slight elevations in the expanses of the Everglades which support trees) containing isolated populations of color forms, took as many shells as they desired and then set fire to the hammock to destroy the remaining snails. This to insure the value of their own specimens.

Because of unscrupulous collecting, fire, and the steady advance of the bulldozer, several varieties of *Liguus* are now extinct, and several other varieties so rare that few living specimens exist today. There is no protection for the snails outside Everglades National Park; collectors still make sorties into the wilds for handfuls of the shells.

Fortunately for this tree snail some of the early collectors realized the threat to disappearing color-forms and began to propagate them privately in "nursery hammocks." Then they transplanted the snails into hammocks which bore no colonies of their own and which provided suitable food and tree cover.

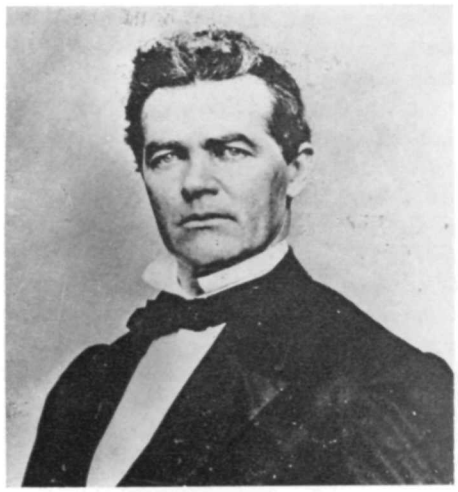
Realizing, however, that *Liguus* was still not safe outside the park, a "snail project" was begun with the approval and cooperation of the National Park Service. So far the "project" has fared very well, and those working with the snails are encouraged by the revival of some forms once nearly extinct.

It is hoped that, given some measure of protection, these small but colorful creatures will always be a part of the Everglades wildlife scene. ■



Photograph by H. S. Becker

The Yosemite Valley: a scenic scar in the west flank of the Sierra Nevada granite, engraved and polished by the slow tools of an ice-sheet. The vertical walls of El Capitan are on the left; Half Dome is farther up the valley to the right.



Senator John Conness, above, and Frederick Law Olmsted, at right, architects of the Yosemite preservation idea. Both photographs are from the archives of the National Park Service.

Yosemite's Hundredth Birthday

By William R. Jones

WITHIN THE RING OF ROCKS A tiny flame curled, then vanished into a wisp of gray-blue smoke. Its warmth wafted it into the cold night air above the unoccupied semicircular rows of log seats. An hour earlier stragglers had been unable to find a place to sit, but now only one person remained in the bowl-shaped amphitheater, his green uniform barely visible in the dim light. He sat on the largest of the rocks around the firepit, absorbing the heat the granite had stored earlier when his fire blazed and licked against it. Now his eyes were directed at the pulsing red light of the flameless embers, his only motion the slow oscillation of his right forearm to the rhythmic accompaniment of puffs of white tobacco smoke.

"Did anyone hear me?" he wondered, as he had often wondered after other talks, "Or did they just like my songs and funny stories?"

Tonight the questions seemed more important, for the day so nearly done was June 30, 1964, the beginning of Yosemite's centennial year. As a way of celebrating the anniversary, he had talked of Yosemite's history to the visitors who had come to his program, as had most of the other naturalists in the park, each at his own campfire circle. The audience had not appeared or behaved much different from those who were there the night before, nor did it seem likely that the one to come the following night would deviate from the norm. And yet tonight's story had seemed so much more important than the standard talks about flowers and animals and birds and waterfalls and big trees.

"People don't appreciate their parks," he had thought at the start of the evening. But just a few minutes later, he was telling the folks that one and a half million visitors were now coming to Yosemite every year, and that attitudes toward the park had changed greatly over the years and would probably change even more in the future.

"No one knows where it all began," he said after the more enthusiastic youngsters quieted down after the songfest. "Certainly it didn't come from Major Savage, who for all practical purposes discovered Yosemite Valley. He thought the Valley was a 'hell of a place.' Probably the idea came from Boston and New York.

"Back in the colonies there had been some public reserves where people could go to march or pasture cattle or play ball games, and Penn laid out some parks, too. But the idea didn't begin to crystallize until Boston established a scenic cemetery, only to find that its citizens used it more for picnics than for paying their respects to the dead. Soon someone got the idea that maybe New York should have a park right in the heart of the city, but without the graves. Today we call it Central

Park and its designer the 'father of landscape architecture.'

"But Frederick Law Olmsted was an idealistic individual and on several occasions he resigned his post rather than compromise his principles. During one of these interludes he accepted a job in California as mine superintendent for the Fremont Estate. Some of you folks around the fire here probably passed through the Estate if you came to the park by way of Mariposa. You can appreciate that the horseback ride to Yosemite in those days was not an easy trip, but Olmsted made it many times. His first was just after he arrived in the State, in the fall of 1863, and even though the waterfalls in the Valley had run dry, he was impressed and soon began his efforts to get it preserved. Influential visitors to California and its famous Yosemite Valley often stopped at the Olmsted home during the brief two years he was here, and it may have been an unrecorded discussion around the fireplace or campfire, like ours here tonight, that started the wheels rolling.

"At any rate, the next spring, California's Senator John Conness brought the idea before Congress in a bill that was to reserve Yosemite Valley and the Mariposa Grove of Big Trees from the land that was being given away to homesteaders. There was some discussion by the Congressmen of the ideas Conness proposed, for, as one Senator remarked, they seemed unprecedented. To help his colleagues decide, Conness told them the sorry tale of how the bark had been stripped from one of the largest of the sequoias in the nearby grove so it could be sent to the East Coast and then to London to lure tourists to California, and he told how the American public bitterly denounced the project, with one disgusted editor writing that he hoped no one would conceive of purchasing Niagara Falls and shipping it off for a shilling-show. The bill soon passed both the Senate and the House, and with no delay President Abraham Lincoln signed it into law right in the middle of the Civil War."

Lag in Communications

"Communications then were not as speedy as they are today, so it was several months before Californians found out they had a park, but everyone seemed in favor of the act when they heard about it. Olmsted was apparently not surprised to learn that he had been appointed chairman of the commissioners to manage the grant and soon began to organize the machinery needed to accomplish its worthy aims. He had a survey made of the boundaries and prepared a report telling of the scenic features and the character of the country. To him the act was more an expression of the esthetical and cultural than the practical. The young nation, torn in civil war, was acting to insure that a place of serenity would remain to give a measure of peace to the souls of the mothers, fathers, wives, and children of dead young soldiers. Too, American painters had not yet evolved their art to the abstraction of today, but instead painted natural-looking landscapes, often of Yosemite. Their framed scenes are still found on American mantels, having played their role well over the years in creating a popular appreciation for the raw material portrayed.

"The United States now has more than 30 national parks," the naturalist had told the audience after pausing to shift another log into the heat, to increase the flame so there would be less smoke in his face and more light and heat for the audience, "and there are another 170 areas administered by the National Park Service for similar purposes. Other nations got the idea for national parks, too, including the Mother Country. England doesn't have a great deal of wild land left, but still has set aside some national parks. Japan has them, too. Actually, Japan has more than we do, for she set aside four percent of her land in national parks, while we have set aside only one percent. The countries of South America, New Zealand, and many of the new African nations all have national parks."

Just beginning to warm to his subject, the naturalist wanted to tell of the struggles and battles that were constantly challenging the park system. and how the nation was increasingly being torn between its desires to utilize all its physical resources for increased material wealth and its wish to save a few spots where the resource of quietness would be kept for the increased population of coming generations, when the youngsters now around the fire would be making the decisions. But in the flickering light, he saw that the world's future leaders were becoming more captivated with their neighbors' shoelaces than with his story, and that most of the parents were now staring glassy-eyed into the fire.

So in closing he told them how John Muir had enjoyed Yosemite, and how in later life had fought for its proper management, "so that 'thousands of tired, nervous, over-civilized people' would be able to find out for themselves 'that going to the mountains was going home'."

Because he had stopped on time, there was a good round of applause, the last unified action of the group he had begun to mold an hour earlier; and then the unity fell apart at the aisles, and flashlights broke the blackness beyond the firelit circle. Several of the individuals just released from the coherent mass of minutes before suddenly became members of a smaller mass standing around the flaming red-black charcoal that had so recently been yellow wood. "Where will the fishing be best?" one wanted to know. "That was a fine talk, ranger," another interrupted before the first questioner could be satisfied with the necessarily nebulous answer. A little boy pressing backward against his mother's camping-jeans wanted to know if he could see the bears. He would not feed them, he said. Others asked about the deer, and a slim, gray-haired couple laughed again about the grimy little six-year-old girl in braids, but without front teeth, who sang "Little Tommy Tinker" so well, but couldn't handle "Sweetly Sings the Donkey" at all. One man even asked if there were books for him to pursue Yosemite's history further, and the stories of the old days brought out more stories of the old days from three old men.

To See An Idea

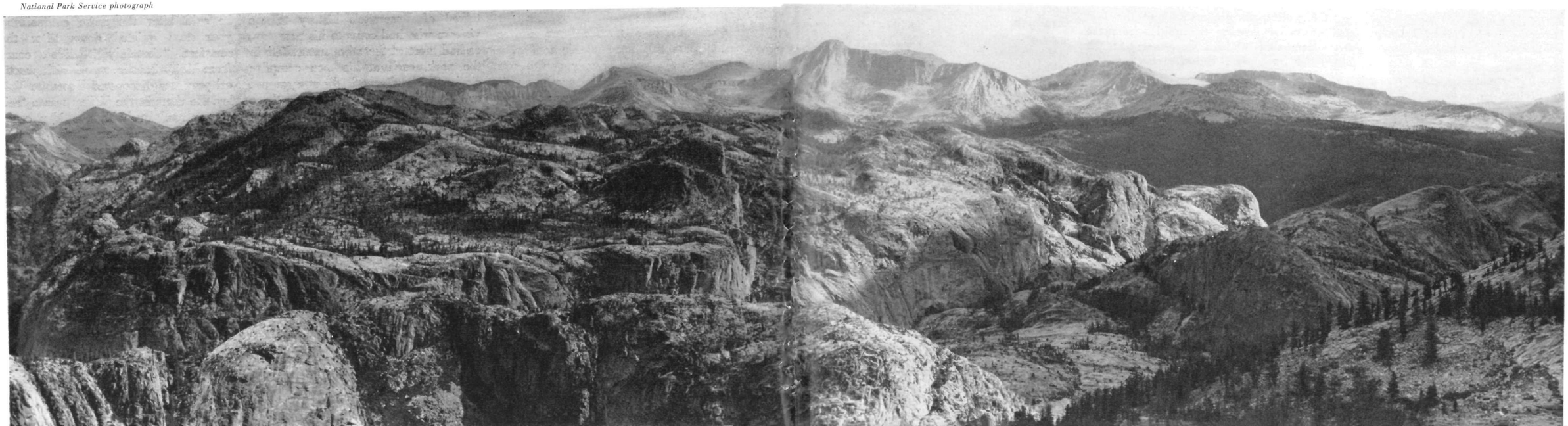
The last family had wanted advice on places to hike on overnight trips. They did not seem to know just how to say it, but what they apparently hoped to do was to get away from the road to see the country as it was when it inspired Muir, and Conness, and Olmsted. It happened that the best trip for them seemed to be to a series of lakes not far to the north. "You can keep your directions in that country by watching for the bold face of Mount Conness, right above the lakes," the naturalist had told them, without thinking of the senator of an earlier day who had introduced the Yosemite preservation bill.

They left, and he sat down on the rock by the fire. A tiny yellow flame licked up inside the barely burning pine knot and then disappeared into smoke which rose into the white-specked blackness above. Naturalist talks did not require the energy of chopping wood or hiking trails, but they did take adrenalin, and he was now more content to sit in the warmth than haul the water needed to douse the fire.

Did the fire represent some kind of continuity, lost or soon to be lost with his audience? With Yosemite's centennial, his subject of the evening? Or with his own past? As a boy he had chopped a lot of wood to keep a fire going for his mother, and he was fond of telling his own boy about filling the woodbox. His father had told him how he, too, had to do chopping chores. "Talks around a hearth fire must be a tradition as old as man himself," he thought.

"And isn't it wonderful—but terrible at the same time—that the tradition is being continued in the national parks if not in the home. At least," he thought, "we can still find ourselves in the national parks . . ." ■

National Park Service photograph



North of Tioga Pass in Yosemite National Park a vast expanse of sculptured granite, thinly clad with red fir and several species of pines, bulges upward toward the highest ridges of the Sierra Nevada. High peak on skyline directly below this caption is Mount Conness, named for Senator John Conness.

News and Commentary

Wild Rivers Bill

In early March Interior Secretary Stewart L. Udall sent to Congress the Administration's draft bill to establish a national wild rivers system to preserve conservation, scenic, fish, wildlife and outdoor recreation values. The legislation proposes immediate wild river status for all or part of six rivers: the Salmon, in Idaho; Middle Fork of the Clearwater, in Idaho; the Rogue, in Oregon; the Rio Grande, in New Mexico; the Green, in Wyoming; and the Suwanee, in Georgia and Florida. Nine other rivers were listed for joint Federal-State consideration as additions to the system.

The nine were: the Buffalo in Tennessee and the Cacapon in West Virginia, in their entirety; and segments of the Eleven Point in Missouri, the Hudson in New York, the Missouri in Montana, the Niobrara in Nebraska, the Skagit in Washington, the Susquehanna in New York and Pennsylvania, and the Wolf in Wisconsin. The bill provides that the six rivers proposed for immediate wild river status be administered by the Secretaries of Interior or Agriculture, depending on their locations.

Historic Building Tour

A certain sign of spring on the Eastern seaboard is the annual house and garden pilgrimage of the Federated Garden Clubs of Maryland, several State historical preservation societies, and the Baltimore Museum of Art. This year the 28th pilgrimage will be held April 29th through May 9th, and will consist of historic Maryland house tours and Chesapeake Bay cruises from Baltimore to St. Michael's, Maryland. During the pilgrimage many of the State's most venerable mansions, with their splendid architecture and interior decoration and beautiful gardens, will be open, some for the first time. Pilgrimage proceeds go toward restoration and renovation of landmark buildings throughout the State, and also contribute to the maintenance of the 18th-century Hammond-Harwood House in Annapolis, which is now listed in the National Park Service's Register of Historic Landmarks.

Detailed information may be secured from Maryland House and Garden Pilgrimage, Room 223, Sheraton-Belvedere Hotel, Baltimore, Maryland 21202.

One of the majestic old homes to be visited during the Maryland historic building tour for 1965 is Ratcliffe Manor on the Eastern Shore.

Jack Engeman Studio

Hudson Highlands Resolution

A bipartisan joint resolution was recently introduced into the New York State Legislature that would request the Federal Power Commission to withhold its decision on the application of the Consolidated Edison Company for authority to construct a pumped-storage hydroelectric plant on Storm King Mountain in the Hudson River Valley. The resolution asks that the decision be withheld until "all matters requiring further study and determination have been resolved." Among these matters were: effect of the plant on availability of water supply in the area for municipal, agricultural, commercial and industrial growth; effect on fish spawning and fish life in the river; possibility of protecting communities from unrestricted invasion by high-power electric lines; determination of the needs for electrical production and the best ways of meeting the needs, from the standpoints of both the power company and consumers; and the effect on the historic beauty of the Hudson River Gorge and Highlands.

[Just before presstime NPA learned that the FPC has granted the power company a license for the project. See editorial, page 2].

A Conservation Film

Conservation organizations and civic groups often have the chance to present young audiences with films on good outdoor behavior, which really consists of an attitude of respect and affection for the natural environment and for fellow humans; most conservationists would agree that the most fruitful territory for lessons in good conservation lies among the nation's young people. A film which has recently become available, dealing in particular with good camping practices and good attitudes toward wildlife on the part of youngsters, is *Camping—A Key to Conservation*, a 23-minute sound film available in either color or black and white, and produced jointly by the American Camping Association and the Indiana University Audio-Visual Center. The film stresses the importance of preserving the beauty of our campsites through good camping practices, and details the techniques for leaving the sites in good condition for others to enjoy; it points out also how camping experiences can teach the youngster appreciation for wildlife. The film may be purchased outright for $200 in color, or $100 in black and white, from the Audio-Visual Center, Indiana University, Bloomington, Indiana 47405; it may also be rented from the Center, or from usual sources.

Let's Discard It

In the high mountain country of the West there are many areas in the national forests where nature prevails pretty much undisturbed; places that have so far been bypassed by artificiality and "improvement." But Western high-forest and timberline country may be in for some landscaping in the name of water conservation, if current Forest Service experiments are adopted as standard practice. The Service has been experimenting with snow-fence installation, selective cutting of trees and shrubs and the production of artificial avalanches in the high country, the general idea being, apparently, that these operations would keep the snow from blowing around so much; that where there are no trees and shrubs, the snow cannot lodge to produce a Christmasy but uneconomical effect; that artificial avalanches would produce "stockpiles" of water for later use. Belts of trees would, however, be left on the mountains to provide shade for the bare windrows, that the snow-pack might last longer.

We can only comment that the scenic and ecological effects of such a program ought to be startling, at the very least; conservationists will probably agree that the idea ought to be discarded without further ado.

Pilot Conversion Plant

The Interior Department's Office of Saline Water has announced that a New York City concern has been awarded a contract for construction of a freezing process pilot plant at OSW's Research and Development Test Station at Wrights-

ville Beach, North Carolina. Under the contract the firm will move a pilot plant it has been operating at Beloit, Wisconsin, since 1960, to Wrightsville Beach; the plant has a design capacity of 60,000 gallons of fresh water daily and utilizes the vacuum freezing vapor-compression process.

In the vacuum freezing vapor-compression process, cold sea water is introduced into a freezer where a low pressure is maintained. At this low pressure the sea water boils, and the heat removed causes ice crystals to form. The crystals are pumped to a brine separation device where residual brine is removed by washing. The washed ice is pumped to the melter where compressed water vapor is condensed, giving up heat to melt the ice to fresh water. Thus, notes the Office of Saline Water, heat abstracted from sea water in the freezing step is recovered and pumped back into the system in the melting step. The economic advantages of the freezing process depend on recycling and reuse of the energy; also, say OSW officials, the process eliminates the scaling problem encountered in distillation processes. Under phase two of the contract, the firm will provide OSW with cost estimates of plants capable of producing one to five million gallons of fresh water per day by this process.

Antarctic No Refuge

So thoroughly has the pesticide DDT contaminated the earth's surface that there is probably no longer any escape from its presence. Such a conclusion was reached by the members of the President's Science Advisory Committee in 1963; and recent findings of Bureau of Sports Fisheries and Wildlife chemists seem to confirm the conclusion. Bureau personnel have recently reported finding DDT in the bodies of two animals native to the Antarctic, the Adelie penguin and the crab-eating seal, specimens of which were collected in early 1964 in isolated areas of the Antarctic by Dr. William J. Sladen of Johns Hopkins University under a grant from the National Science Foundation. Preliminary positive readings were made at the Wisconsin Alumni Research Foundation in Madison, and were confirmed later by analyses conducted by scientists at Fish and Wildlife's Patuxent, Maryland, Wildlife Research Center.

Interior Appointment

Last month the Magazine carried a notice of the retirement of Frank P. Briggs, Assistant Secretary of the Interior for Fish and Wildlife, from the Federal service. President Johnson has recently announced that the vacant position will be filled by Dr. Stanley A. Cain, professor of conservation at the University of Michigan and for the past 11 years chairman of the University's School of Natural Resources. Dr. Cain's distinguished career in the field of conservation has included his recent service with Interior Secretary Stewart L. Udall's Advisory Board on Wildlife Management—the Leopold Commission, so-called—which brought forth two landmark conservation reports: those on wildlife management, and predator and rodent control in the United States. Dr. Cain has also served recently as an assistant to Secretary Udall in the formulation and evaluation of National Park Service natural history study programs.

Individuals Can Help

Conservation is by no means a matter for professionals alone, and many people,

(*Continued on next page*)

An Ill-Advised Program

In the April, 1964, issue of this Magazine we reported that the government of Southern Rhodesia was considering the partial elimination of its ungulate wildlife population in a radical attempt to control the tsetse fly, which causes disease among domestic livestock and some humans in several parts of Africa. Game elimination has been tried before as a method of fly control; it has accomplished nothing but a temporary reduction in tsetse-fly populations and resulted in a serious drain on the already depleted wildlife resources of Southern Rhodesia. Conservationists both in Africa and other countries were therefore dismayed to learn that the Southern Rhodesian government ". . . has agreed in principle to the controlled shooting of game where this is necessary for the preservation of the [cattle] industry and to keep tsetse-fly from encroaching on the cattle areas." The International Union for Conservation of Nature and Natural Resources, which has its headquarters at 1110 Morges, Switzerland, has already voiced fears that similar wildlife destruction programs might be adopted by several other African nations.

Government officials in Southern Rhodesia claim that no shooting will take place within established wildlife reserves, with the exception of the Gona-re-zhou Reserve on the southern border of the country. Shooting operations would intrude some 25 miles into parts of this reserve, effectively reducing its size by 50 percent or more. According to the Southern Rhodesian government, such intrusion is justified because the reserve has never been fully developed for scientific or tourist use, and because important cattle areas exist close to its borders.

Elimination of wild ungulate mammals to protect cattle in Africa seems self-destructive; over-large cattle herds already have stripped vegetative cover from vast tracts of African lands. Native wildlife is, however, beneficial to the land; requires little or no care; and is of the greatest economic importance both as a source of income from tourism and as a supplemental source of meat for protein-hungry Africans.

The wildlife-elimination method of tsetse-fly control has also been proved scientifically unsound. Dr. E. P. Glover, who worked with the Kenya Veterinary Department, has studied evidence from all parts of Africa relating to the game-elimination method, and has concluded that "there is no valid justification for game destruction as a practical or lasting means of tsetse control, particularly in new and future projects." A number of the so-called emerging African nations, realizing the importance of wildlife as an abundant and renewable natural resource, have already rejected the game-elimination method of tsetse control and have substituted vaccination and other methods in holding down the fly populations. Conservationists will hope that the Southern Rhodesian government will follow the good example already set.

You Can Help Save African Wildlife

Association members wishing to express their views in the matter of tsetse-fly control through elimination of big-game animal populations in Southern Rhodesia may write to the Honorable James Angus Graham, Minister for Agriculture, Lands, and Natural Resources, P.O. Box 8045, Causeway, Salisbury, Southern Rhodesia. Postage required is 11¢ by regular mail, 15¢ by airmail.

aware of the need for renewal of their own local surroundings, often ask: "What can I do to help in my own vicinity?" Answers to questions concerning community action for conservation may be found in a 52-page guidebook issued by the Citizens Committee for the Outdoor Recreation Resources Review Report, 1001 Connecticut Avenue, Washington, D.C. Single copies of this booklet are free; for ten or more copies the price is 15¢ each.

Learning in the Field

High school, college and graduate men and women interested in conservation and wishing to spend this summer working and learning in the national parks may extend their education by applying to the Student Conservation Association, Inc. The Association is a non-profit corporation; for 9 years it has operated a student conservation program in cooperation with the National Park Service. This year, students—including one or more young married couples—will be able to carry out various conservation projects, act as park assistants, project assistants, or group workers in Grand Teton, Acadia, Zion, Olympic, or Great Smoky Mountains National Parks and Cedar Breaks National Monument. A variety of conservation education opportunities, as well as on-the-job training under the supervision of National Park Service personnel, will be made available to qualified students; board and lodging will be provided by the Association for all volunteers. Information and application forms are available from the Student Conservation Association, Inc., Sagamore Hill National Historic Site, Mtd. Rt., Box 304, Oyster Bay, New York 11771. Applications will be processed beginning April 5 until all available openings have been suitably filled.

The Bounty System

A recent sag in South Dakota's population of ring-necked pheasants has furnished ammunition for bounty hunters in that State, who have fixed their sights on the red fox as the villain of the piece. Biologists have shown that predation by foxes is not a factor in the pheasant's decline in South Dakota, but the bounty hunters insist that the State restore its old bounty payment of $7.50 or more per fox; the bounty on foxes was cut to $2 after biologists proved that lack of suitable habitat and unseasonable temperatures, and not foxes, were responsible for the pheasant decline. Scientists in Michigan, New York, Pennsylvania, Wisconsin, and Minnesota have studied the general fox-pheasant relationship also, and have concluded that the role of the fox in reducing pheasant numbers is negligible. This year several States plan to use the money ordinarily wasted on bounty payments for acquisition and development of wildlife habitat and for other investments in wildlife enhancement. Many wildlife biologists have concluded that bounty payments on predators, real or alleged, are uneconomical, unscientific, and often fraudulent; some State fish and game commissions are inclining toward this position also.

Decline of the Whale

For some years conservationists and scientists have been warning various nations which indulge in concerted whaling that fin, sei, and blue whales were being killed faster than they could reproduce, and that unless some method of conserving the whales was initiated, the giants of the sea might be exterminated. At a recent meeting of the International Whaling Convention—whose members seem generally unsympathetic toward protection for the huge mammals—it was at least agreed that although the fin and sei whales were to be hunted without restriction during the current Antarctic whaling season, the blue whale would receive full protection. It has recently been learned, however, that Japan, a member of the Convention, has objected to protection of the blue whale and supposedly intends to hunt it until the species is depleted. According to officials of the World Wildlife Fund, Japan, Russia, and Norway are primarily responsible for the growing rarity of the three large Antarctic whales. The Fund noted that "This is the first time in history that Governments have deliberately set out on a course of action which they know is likely to result in the extermination of a wild animal."

The establishment of the Great Basin National Park in eastern Nevada—a proposal which has stirred extensive field hearings to satisfactorily adjust conflicting views of conservationists and commercial interests—was brought before the Senate as *S. 499* by Nevada Senators Bible and Cannon. The bill would bring 123,000 acres of rugged terrain, with important geologic and scenic features, under the jurisdiction of the Park Service. Mining and grazing within the proposed park area would be permitted with certain restrictions. The bill was referred to the Senate Committee on Interior and Insular Affairs.

The mountainous Sawtooth Wilderness Area in Idaho, presently under jurisdiction of the Forest Service, has been proposed by Senator Church as a Sawtooth Wilderness National Park. Senator Church's bill, *S. 913*, would include the present primitive area in the proposed park, as well as additional forest and lake areas at the base of the mountains where the Salmon, Boise, and Payette Rivers rise. The bill provides for the continuance of established grazing, and development of public accommodations on lands other than the original primitive areas. It was referred to the Senate Committee on Interior and Insular Affairs.

Congressmen Pool and White of Texas have introduced identical bills in the House to establish a Guadalupe Mountains National Park in Hudspeth and Culberson Counties, Texas. *H.R. 517* (Pool) and *H.R. 698* (White) call for a slightly larger area than that seen by Texas Senator Yarborough in his Senate bill introduced during the 88th Congressional session. The new bills were both referred to the House Committe on Interior and Insular Affairs.

Representative B. F. Sisk of California has introduced *H.R. 903*, to add Tehipite Valley and Cedar Grove to Kings Canyon National Park, California. Tehipite Valley is presently part of the Sierra National Forest; Cedar Grove is within the Sequoia National Forest. Passage of the bill, which was referred to the House Committtee on Interior and Insular Affairs, would transfer the land in question—which has been specially preserved by the Forest Service in anticipation of possible inclusion in the national park—from the Department of Agriculture to the Department of the Interior for administration by the Park Service. A bill, *S. 917*, to revise the boundaries of another national park, has been introduced by Senator Byrd. The bill would straighten the boundaries of Shenandoah National Park in Virginia so that it would encompass no more than 212,000 acres, and would enable the Secretary of the Interior to acquire inholdings in the park. An identical bill has been introduced in the House by Representative John O. Marsh. Both bills were referred to respective Committees on Interior and Insular Affairs.

A bill establishing a national policy to protect predatory mammals has been introduced into the House by Representative Dingell of Michigan. The bill, *H.R. 4159*, notes that predatory mammals "are among the wildlife resources of interest and value to the people of the United States," and directs the Secretary of the Interior to reduce the number of predator control agents employed by the Bureau of Sport Fisheries and Wildlife and engage in the conservation—and, when necessary, control—of predatory mammals. The bill was referred to the House Committee on Merchant Marine and Fisheries.

Protection for the Alibates Flint Quarries in Texas may be accomplished through *H.R. 881*, a bill introduced by Representative Rogers of Texas. Both the Quarries and the Texas Panhandle Pueblo Culture area would be preserved as a national monument. The bill passed quickly through the House Committee on Interior and Insular Affairs; hearings began March 1. A bill to establish a Fossil Butte National Monument in Wyoming, *H.R. 4417*, has been introduced by Representative Teno Roncalio, and was referred to the House Committee on Interior and Insular Affairs. Nebraska Representative David Martin introduced *H.R. 500* to establish an Agate Fossil Beds National Monument in his State; the bill specifies that not more than 3150 acres of land be included in the monument. The House Committee on Interior and Insular Affairs has commenced hearings on *H.R. 500*.

In the last session of Congress, preliminary hearings were held on a Senate bill to establish an Assateague Island National Seashore after Maryland Senators Brewster and Tydings, along with Representative Morton, requested early consideration by the Senate Committee on Interior and Insular Affairs. In this session Representative Downing of Virginia has introduced *H.R. 4426*, to establish such a seashore. The bill differs from previous proposals by giving special protection to the wild Chincoteague ponies inhabiting Assateague Island, and by providing for a road on the island to connect the Chincoteague and Assateague Bridges. The bill is in the House Committee on Interior and Insular Affairs.

Establishment of the much-debated Indiana Dunes National Lakeshore, which would comprise 11,700-acres of lakeshore between Gary and Michigan City, Indiana, has been proposed in *H.R. 3833*, by Arizona's Representative Udall. The bill would establish the lakeshore as proposed by the National Park Service; *S. 360*, the Senate version of the bill, is at this writing (March 1) receiving hearings in the Senate Committee on Interior and Insular Affairs. At the same time Illinois Representative Pucinski introduced *H.R. 4412*, which differs from the Udall proposal in restricting the lakeshore to 9000 acres in three separate units. The bill is before the House Committee on Interior and Insular Affairs.

Proposals to establish a Cape Lookout National Seashore in North Carolina are presently being considered in both the House and Senate Committees on Interior and Insular Affairs. North Carolina Senators Jordan and Ervin introduced *S. 251*, to create such a seashore between Ocracoke and Beaufort Inlets, on the outer banks of Carteret County. The bill specifies that hunting and fishing shall be permitted in accordance with State laws, with provisions for public safety. *H.R. 1784* is the identical House bill introduced by Representative Henderson, also of North Carolina.

Reviews

SUKI: A LITTLE TIGER. Photography by Laelia Goehr, text by Elspeth Huxley. William Morrow and Company. New York, 1964. 48 pages, with 32 photographs, in hard cover, $3.75.

The tiger as a playful, friendly, amiable creature, at least if properly brought up, and capable of living companionably with men, who are not his natural food, is the background subject of a delightful new book, with charming photographs by Laelia Goehr, and text by Elspeth Huxley. The heroine, very much in the foreground, is Suki, a little tiger born in the London Zoo.

The tiger kitten pictured and described in these large, handsome, easily readable pages is a strikingly familiar creature, very close cousin indeed to our lively, warm, purring, domestic playmate.

The tiger, it would appear, born of arctic snows, sojourner in tropic climes, is hardly happy in zoos and only a little more so in circuses; the females take too little interest in their cubs born in captivity. Yet outside captivity the great cat is rapidly vanishing; Huxley's text suggests that there may be a scant 10,000 left in the world.

The causes of the decline, of course, are the familiar ones, destruction of living space, and the mushrooming growth of human population which threatens the non-human life-forms everywhere, and grimly menaces the human race itself.

One is deeply impressed, in going through this book—whose pages can be turned, and turned again in leisurely fashion in half an hour—with the rich possibilities of human companionship with animals which will be lost forever unless civilization finds some way of enclosing the wild creatures protectively within itself before too late.

Let us, then, make use of the zoos, the circuses, the refuges, the parks, the substitute habitats, in a determined holding effort until we can bring the surging tides of human population under control, restoring a world spacious enough for men and animals to live together; only such a world will be large enough for mankind as it truly is, deep down inside itself.

Well, Suki's story should help to hasten that fine day, and animal lovers should pass the gift copies around with generosity. —*A.W.S.*

OUR NATIONAL PARKS IN COLOR. By Devereux Butcher. Clarkson N. Potter, Inc., 23 East 67th Street, New York City 21. 1965. vi+190 pages, illustrated in color and black and white. Clothbound, $5.95.

For many years the author of this handsome volume has been a staunch and sometimes stern advocate of maximum protection for the great natural parks and monuments with which he is very familiar. And so it is that the framework of his latest national parks book is a plea for maximum park protection and understanding of the park idea, while the bricks and mortar are the brief but adequate descriptions of the parks and monuments themselves. From Devereux Butcher's vast library of national park transparencies comes a large selection of color pictures, plus a short section of black and white illustrations; combined, photographs and text cannot fail to impress the reader with the magnificent character of America's few preserved remnants of natural landscape. Perhaps he will be impressed, too, with the growing need for a national decision which is, essentially, a simple one: whether the parks and monuments are to be molded to all the outdoor recreational needs of a flooding tide of humanity, or forever retained with a minimum of development as representative bits of the American scene which first presented itself to those white intruders of many years ago.—*P.M.T.*

THE LOON IN MY BATHTUB. By Ronald Rood. Stephen Greene Press, 120 Main St., Brattleboro, Vermont. 176 pages, illustrated. Hard cover, $4.50.

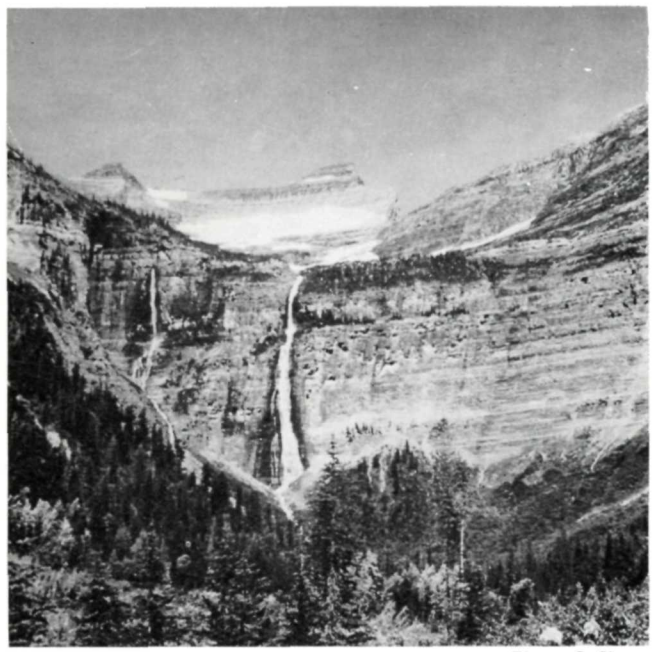
Constant admiration for wild animals is a trait relatively few humans possess. Now and then, however, we are treated to the delightful spectacle of an adult who has managed to preserve the wide-eyed appreciation of wild creatures with which children seem to be born, but somehow lose in the process of carving out a place for themselves in human society. Mr. Rood, a lifelong naturalist, shares an intimacy with animals which sets him apart from the mere scientist-observer. "Ever since I buried a squashed caterpillar with full honors when I was four years old, I've been in the wildlife business," he confesses.

The everyday adventures of Mr. Rood's "wildlife business" include housing a loon in his bathtub; salamanders in his refrigerator; a muskrat behind the washing-machine; and a toad in his piano. Mr. Rood recounts these adventures with the same casual, free-flowing style he employs in his "conversations" with wild animals. An interesting set of photographs, fast-moving text, tips on how to find and care for small wild animals, and the charm of an author who obviously enjoys his subject-matter combine to make this book attractive to both children and adults, and bring across Mr. Rood's essential message: ". . . that everything wild is wonderful, once you get to know it."

COMMON TREES OF PUERTO RICO AND THE VIRGIN ISLANDS. By Elbert L. Little, Jr., and Frank H. Wadsworth, U. S. Department of Agriculture Handbook 249. U. S. Government Printing Office, Washington, D.C. 1964. 548 pages, illustrated. Bound in cloth, $4.25.

E. L. Little, Jr., and F. H. Wadsworth are dendrologist with the Forest Service and director of the Institute of Tropical Forestry, respectively; here they have collaborated to describe 380 of the native and exotic species of trees that the serious visitor to these islands may hope to identify. Two hundred fifty of the species are not only described but are pictured as to leaves, flowers and fruit; ranges are given for all species. The full-page drawings are excellent and helpful; indeed, very likely crucial for the layman. Although this work is modestly titled "handbook," it is probably in the nature of a major contribution to the non-technical literature on the botany of Puerto Rico and the Virgin Islands.

The authors make the interesting point that more than 125 of the species selected for the work are also either native or naturalized in southern Florida; also, many are found in other West Indian islands, and in Mexico and Central and South America.



Thomas S. Choate

The "Hole-in-the-Wall," Glacier National Park

TUCKED AWAY IN THE back country of our great natural parks and monuments are myriad scenes of quiet beauty, like Glacier Park's "Hole-in-the-Wall" above, waiting for the eye and camera of the visitor equipped also with time and patience. The National Parks Association has always been in the forefront of those organizations dedicated to keeping these park delights, simple and small, vast and awe-inspiring, in an unspoiled condition.

YOU CAN HELP YOUR Association in its park protection work in any of several ways: by contribution to the general funds of the Association over and above regular dues; by renewing membership promptly; by remembering the Association in your will; or by helping secure new members. All gifts and bequests are deductible for Federal income, gift and estate tax purposes.

National Parks Association

1300 New Hampshire Avenue, N.W. Washington, D.C. 20036