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motive

1970

special issue:
crisis
of the
environment

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FRONT COVER: We have combined the photos of Rick Smolan and James Fee to state one of the core problems in the ecological crisis: too many people inheriting and adding to environmental destruction.

BACK COVER: We have adapted this statement from an address to the Michigan Education Association by Leroy Augenstein, a biophysicist at Michigan State who died in an airplane crash last fall. His last book was *Come Let Us Play God* (New York: Harper & Row, 1969).

motive

APRIL/MAY 1970
Crisis of the Environment

ROBERT MAURER
strategy and planning

JAMES STENTZEL
substance and production

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art and design; carlisle, pa.

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culture and community

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circulation and marketing

EDITORIAL CONSULTANT for this special issse:
FRANK M. POTTER, JR. likes to take on the giants. As a lawyer, he assisted in arguing the Storm King case against New York's Con Edison Company. As an editor, he used some of that same muscle to help pull together this issue. As a concerned human being, he currently works full-time in D.C. educating and motivating Congress-humans and their staffs regarding the environmental crisis. Frank's job as an information pipeline between environmental scientists and Capitol Hill also keeps him in touch with conservationists, environmentalists and eco-freaks around the country—a mixed bag appropriate for *motive* and necessary for this issue.

Published monthly, October through March with a combined April/May special issue by the Division of Higher Education of the Board of Education of The United Methodist Church, 1001 19th Avenue, South, Nashville, Tennessee 37202.

Subscription rates: One year, $4; after July 1, 1970, $5. Optional group subscription plans are available; information on request.

Second class postage paid at Nashville, Tennessee.

Address all communications to *motive*, P.O. Box 871, Nashville, Tennessee 37202. Unsolicited manuscripts and art work are welcome, but cannot be returned unless return postage is supplied.

Transactions with the circulation department require four weeks' advance notice for processing.

National newsstand distribution by Eastern News Distributors, 155 West 15th Street, New York, New York 10011.

Microfilm copies of *motive* are available from University Microfilms, 300 N. Zeeb Rd., Ann Arbor, Michigan; photo-copies from Johnson Reprint Corp., 111 Fifth Avenue, New York, New York 10003.

Founded 1941 by the Methodist Student Movement.

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This winter a group of 21 non-aligned states at the United Nations General Assembly introduced a resolution declaring as contrary to international law as embodied in the Geneva Protocol the use in war of all toxic chemical agents directed at men, animals or plants. The sponsors made clear that the resolution applied to irritant gases and anti-plant chemicals such as those used in Vietnam. On December 16 the resolution was passed by the General Assembly by a vote of 80-3 with only Australia, Portugal and the United States voting against it. Our closest allies such as Britain abstained, a polite way of disagreeing with our position. I know that several high officials in the Administration feel that our long-range interests would best be served if the United States were able to join with other nations in the view that all chemical warfare, no matter what kind, is prohibited. However, the short-term exigencies of the Vietnam War will probably prevent us from taking this position.

My own view is that the use of gas and anti-plant chemicals in Vietnam is of only marginal utility and that it is causing a great deal of indiscriminate damage to civilians and to the civilian economy. By its nature, chemical warfare, especially when practiced on a large scale, is not a discriminating form of combat. Most Americans do not realize that we have used an enormous quantity of chemicals in Vietnam. We have sprayed with anti-plant chemicals an area equal to the entire state of Massachusetts. We have devastated in this manner approximately thirty percent of the forests in Vietnam. Whether or not the chemicals used cause damage to human health has not yet been established. There is concern that one of the anti-plant chemicals, 2,4,5-T, may cause birth defects if pregnant women are exposed to it. The anti-personnel gas we use is a very powerful form of tear gas which also blisters the skin and attacks the lungs. It is now used in routine military operations in all sorts of munitions ranging up to 155mm artillery shells and cluster bombs and bomblet dispensers with ratings up to 1,000 lbs. We have used enough of this gas, called CS, to cover all of Vietnam more than once with a field effective concentration.

The hazard in this is not only that it is likely to be causing indiscriminate suffering to non-combatants but that it opens the door to chemical warfare in the future. How will the United States be able to discourage other countries from using chemicals to attack crops and to attack the environment in their wars, and how will we be able to discourage the use of powerful irritating gases and possibly even more poisonous ones if we ourselves continue to reserve the right to do so? Beyond that, the practice of any sort of chemical warfare stimulates interest in all forms of chemical warfare

throughout the world. Military planners in other countries will ask for increased appropriations to buy chemical weapons of their own. The weapons will then go into military inventories. Once that happens, the likelihood of an outbreak of chemical warfare is very greatly increased.

MATTHEW MESELSON
Harvard Professor of Biology
cambridge, mass.

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Saint Andrew Church, which prides itself on a youthful membership and a liberal outlook, is not renewing its subscription to *motive*, and we think you ought to know specifically why.

We do not wish to register just blanket disapproval of the magazine. In fact, we heartily approve of the contemporary topics it discusses. We do wish to register some specific criticism, however, with the hope that in the future something can be done to publish a more positive, more constructive, more professionally written magazine for our college students.

We do not believe the current *motive* is worthy of the name or support of the Division of Higher Education of the United Methodist Church. We think there is a real need for our Methodist students on campus to receive a contemporary publication which discusses the issues of the day from a Christian standpoint. Frankly, we do not think *motive* meets that need. Here, briefly, is why:

1) Although the topics discussed are valid (yes, even in the controversial March-April issue) we find the values presented (or lack of values, really) extremely negative.

2) If the magazine is going to take on controversial subjects such as the role of women in society, we would wish for a more balanced presentation. We do not think the March-April issue, for example, presented both sides of the question. College students, after all, are educated enough to appreciate a fair presentation of issues. (i.e., What about women who feel they *are* respected today for their ideas and abilities? What about women who feel fortunate to live in this country—who don't think they are "victims of the capitalistic system"? What about women who find family life and the guidance of children a creative opportunity? What about women who find their sex a special privilege, an advantage, in fact?)

3) We believe the use of four-letter words is neither shocking nor effective with today's college students. Furthermore, we find their free use not only offensive but totally unrelated to the liberation of women!

4) Finally, we wonder what the staff of *motive* thinks the magazine's purpose is? We think its purpose should be to discuss the issues of the day from the viewpoint of Christian values. We think *motive* fails miserably in doing this, and we do not wish to support it financially nor with the name of our church on its inner pages. We simply don't think *motive* (in any of its recent issues) reflects the kind of values we want our college students at Saint Andrew to have!

Ad Hoc Committee
SAINT ANDREW METHODIST CHURCH
littleton, colorado

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Joe Williamson's article in the January *motive* is disturbing, not simply because he speaks as a revolutionary, but because he seems to be falling into the old moralistic fallacy of "God-is-on-our-side-ism." Granted his notions gain a bit in sophistication over the "God-mother-country" syndrome, but he seems unable to separate the relativity of his political concern from the ultimate nature of transcendence. Surely it is obvious, at least to many people, that theology can only speak out of a particular historical experience, but this does not mean that we must not try to hitch our theology to that which transcends all our experience. I agree that we have lost our sense of transcendence, but this is nowhere more obvious than in the self-righteousness of much revolutionary rhetoric. I must not mistake the "unity of unities" for my particular perception of history and my political-social judgments. God's transcendence stands over us as judgment as well as fulfillment.

Americans seem congenitally inclined to make their particular crusade God's latest cause. It leads to dubious connections between patriotism and Christian faith, revolution and Christian faith, and even political moderation and Christian faith. Americans often seem incapable of the humility which knows that one's efforts for justice may result in greater injustice, that concern for freedom may result in greater oppression, that narrow patriotism can weaken a nation at its core. I find that Dr. Williamson contributes little in the way of insight to the American religious dilemma and in fact only further obscures our rather muddy moralism. While theology dares not ignore the existence of Christian revolutionaries, it also must not go blowing off in the direction of every sectarian or political or ideological wind.

Coffin, however, was right on.

Keep the dialogue going!

JOHN GOODELL
Western Illinois University
macomb, illinois

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Right on to you and your work! We hope to find more of the same high quality, valuable stuff in the next year. We especially enjoyed the January issue and the article by Joe Williamson. Spent a lot of time thinking and talking about that because we feel caught in much the same cross-fire. But I think it's important not to evade the question "What does all of this have to do with Christian faith?" with a vague "I'm not sure."

We are here in Baltimore for a seminary internship in a parish, and our future commitment will be based on our developing some concrete answers to that kind of perhaps pietistic, but sincere—and NEEDED—question. How can we expect isolated persons to understand the very real connections if we (1) don't have faith enough to believe they are capable of seeing and acting on them and (2) put them down for asking? As the letters to the editors show, the chasm of perception is already too deep!

As a member of Baltimore Women's Liberation, I also have to add that your spring issue on women was great. I hope there will be more. Next to the war and racism, this issue measures up as one that is not going to go away no matter how much the news media tried to ridicule it. (I guess that could go for some other struggles too!) Anyway I hope you will be in there serving up more large portions of realistic coverage of the issues involved.

I'm also sending along some of my poetry, in case *motive* might find it worth using. Yours in the guerrilla Church,

JUDY CHRISTENSEN
baltimore, maryland

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Pete Young (Dec.) caught me by surprise in an unguarded moment of memory. Long threads of highway, gas station attendants and barroom colleagues. Driving from Texas to Vermont is like involving yourself in a love affair; sometimes it gets sticky, but mostly you groove.

When you think about Americans, you can easily become involved in the stereotypes. You can grasp the whole thing very easily by placing one group here and another over there. Thinking and knowing become relatively unimportant.

Pete Young reminds us of the necessity of knowing America, of experiencing what it is. And even now, even in this present dimension of anxiety, it is a beautiful country.

WICK ALLISON
Editor, Texas *Ranger*
austin, texas

Dear Sya,

Let me tell you about the latest bandwagon to come along. It's called ecology, and it carries a strong demand for the redistribution of wealth if we are to survive.

For the last decade, the "American dream" has been falling away chip by chip. As I type this letter in the *motive* building, I can smell the pollutants in the air! The dream is being chipped away again, but this time it is something more than meets the eye, ear, nose or throat. I believe the crisis of the environment is nothing less than a deathknell for the "American way of life."

Our unbridled capitalism has finally turned a corner, and it's pointed at us. We've seen the effects of capitalism by the strangulation of the ghetto; now we are feeling it at *our* throats as we go downtown to shop. All the destruction which we have meted out in the name of our democratic institutions has come home to roost. Three months ago, Allegheny county officials (Pittsburgh) had to ask the steel plants to close down during an "air emergency alert" because the pollution index had climbed to a dangerous level. When this happens, you know that the arrogance of a nation which thought it could have millions of cars and bombs is doubling back on itself.

This special *motive* issue must be seen in an historical perspective. We cannot publish this issue without, at the same time, referring back to the decade of the '60s, and what we have learned about faults in the strata of American society. Without an historical perspective, this fledgling ecology movement is headed for trouble.

You see, several contributors to this special issue point toward a "non-growth" economy as the key to control waste, population, depletion of natural resources and so forth. But Marty Gellen, in the interview which keynotes this issue, foreshadows the critical trap into which a "popularized" ecology movement could easily fall: "But, you know, you talk about a no-growth economy to somebody who is living in Watts or in the center of Oakland, and they will just chop your head off." A man having already reached for a slice of the GNP doesn't want it taken away by a steady-state economy which freezes the status quo. By "linking up" what we have learned in the last ten years with what is emerging, we can hopefully avoid partial solutions which have implicit racist implications, to choose one of many scenarios.

We have learned that we need to find formulations for a new society which do not involve increased hardships for the poor and hungry. And it is emerging that a "way of life" built upon waste and planned obsolescence, while serving certain capitalist goals of foreign and domestic policy, is becoming a way of dying—even for those in control. (The broad strokes of tragedy for all of us are filled in by the story of a steel executive dying of cancer who, twenty years ago, had dismissed a recommendation by a panel of doctors and ministers, whom he had appointed, to study the possible connections between cancer and air pollution.) I feel that the crisis of the environment will bring upon us the strong demand to redistribute the wealth as a primary way to undercut the competitive drive sustained by our system of institutions.

In this latter vein, Kenneth Watt's article on the relation between competition inherent in capitalism and its ecological effects summarizes the basis from which I move to plug for an enforced process of redistribution. In other language, we need to bolster the Christian value of sharing with effective sanctions, if man wishes to stay off the Endangered Species list. According to an Iowa State ecologist, *sharing* is the only means for avoiding a catastrophe because man does not possess the resources, either human or natural, to offset mass starvation, assuming our present rich/poor imbalances continue.

A friend, recently returned from East Africa, told of a kind of sharing which already permeates an entire society. It is based on the *ujamaa*, or "familyhood," principle put into practice by Julius Nyrere, president of Tanzania. It is a form of socialism (watch the letters and cards we get on this one, Sya) which depends upon community ownership of property and production centers. But the "community" is set within the framework of the nation and the planet. Each person lives as if he were living on behalf of everyone else, and he assesses his actions accordingly. This leads to the principle of a "fair share" of the resources available to sustain and enjoy life. This "fair share" is established in direct relation to

toward a civil future

the needs of the other communities which compose the nation. A consciousness develops in which each person realizes he/she is an organic part of an "extended family," and that no member will survive unless everyone survives. *Ujamaa,* then, means that no one exploits another, or nature, for his own benefit.

Now, I realize utopian thinkers have blazed this trail before. But we, unlike them, have the telecommunications and computers to hit ourselves smack in the face with the *need* to create such a society. Poets and seers have harangued about the coming apocalypse; we now have the capability, for the first time in man's evolution, to document its coming, chip by chip.

You must excuse this rather alarmist talk, Sya. I've been working on this ecology issue for some three months, studying some of its component parts, talking to a lot of people. And so you see, I have really convinced myself that ecology is not *just* another issue, like crime or inflation or white racism. You can't put it on the cover of every magazine and feel it'll go away in a year or two. No, I think that whenever you hear the word ecology, it is another word for the *sum total* of what we already know is wrong with the American way of living, all the cancers which surfaced during the 1960s.

I mean, if we take "ecology" to mean the correlation of the knowledge concerning the interrelationship of living things with their environment, then to talk of an "ecological crisis" is to talk about the whole shootin' match. And so we can't just do our "special issues," and think we've done our bit. I know we at *motive* will continue to work on the crisis of the environment, realizing that, for us, we've only opened the door a little on an awesome Pandora's box.

Consequently, our concepts of "what to do" have to match the dimensions of "what's wrong." That's why I'm backing the concept of the redistribution of wealth, coupled with the concept of *ujamaa,* to lead us away from the notion that contributions to our favorite "clean air" organization will do the trick.

My mind boggles a bit at the point of imagining "how it all might come about." But the redistribution of wealth is beginning to happen in small ways. Individual churches have turned over assets to the poor for their own development, or they have taken out new mortgages, like a United Methodist Church in Ravenna, Ohio, for no-strings-attached grants to assist the poor. (In this case, the church gave $40,000 to the city to build sewers in the black community.)

But this must occur in secular society in a massive way. We must not allow, for one small example, corporations to pass on pollution control costs to the consumer! We must draw that line very solidly, for we have paid enough for respiratory diseases, to name one result of pollution. The costs for pollution control must be taken out of the corporation's profits, and out of its ability to lobby, recruit, advertise and co-opt.

We also cannot afford to move in the direction in which some theologians and communal dwellers are moving—to a previous era in man's evolution, forgetting that we will be a technological society. While creditable efforts have been made to discuss man's relation to nature, or the importance of the concept of "wilderness" to man's salvation, we feel that the more important contribution lies in a post-conservation era of theological thought. We need to develop what several contributors have called an "ecological consciousness." In addition, while I would shy away from such a phrase as a theology of apocalypse, I think we need to understand the strong feeling which enervates Barry Weisberg's apocalyptic vision (p. 17) of how American society will end.

The crisis of the environment confronts us with a planetary and personal demand: to act as if we were acting for all mankind. We must organize on the local level as if our demands were on behalf of everyone. *This* is the kind of arrogance to which we are called, for parochialism at this stage of human evolution may place our survival in jeopardy.

We look toward a future in which quick action is taken against any person, or incorporated body, who is out of tune with the needs of the people around him. Anticipating such a future, I think I'll send my "no deposit-no return" cans and bottles back to the manufacturer, postage due.

—R. Maurer

ROUND

Transcript Highlights of a Round-table Rap in San Francisco, January 21, 1970.

THE PARTICIPANTS:

Todd Gitlin was involved in the origins of the SDS and the peace movement. He is now doing radical ecology in Berkeley.

Keith Lampe comes from a civil rights, Yippie background. He is the publisher of *Earth Read-Out,* the first radical underground regular newsletter about ecology.

Steve Beckwitt is a physical scientist at the University of California at Berkeley. He works on the staff of *Earth Read-Out.*

Barry Weisberg is a director of the Bay Area Institute. He comes from a student movement background and has written widely on the politics of ecology.

Marty Gellen is a director of the Bay Area Institute, working on the political economy of ecology.

Joanne Cooke is a *motive* editor in charge of culture and community.

Todd: It strikes me that a large part of the youth culture and ecology culture is the revival of a very old American tradition of individualism. That is, pre-industrial individualism, which is a different animal from the post-industrial kind. Films like "Easy Rider" pick up on the tradition of the American loner in the wilderness, carving out some authentic escape. This goes back to James Fenimore Cooper's Natty Bumpo, and Ishmael and Thoreau. Suddenly, that tradition of individualism through effort, contact, conflict with the wilderness—and also harmony with the wilderness—got interrupted in the 1860s and was not recovered until now. It got interrupted by another individualist myth—the myth of success—which is quite a different myth from the original one. This myth sees success in individual competition rather than in individual survival. Thoreau succumbs to Horatio Alger, and it has taken us this long to get back to the original myth. Everybody is looking for a frontier. The industrialists are finding it in Alaska, and some of us are finding it in the woodlands of Mendocino. I'm not trying to put it down this way. I'm just trying to put it into perspective.

Keith: I'd like to say that not everyone can leave the city, and for that reason, I don't come down on it as a mandatory thing. But I do think those who are able to should be encouraged to leave the city.

Joanne: I'm a little disturbed by Keith's notion that if we all just went back to the farm, that would take care of it. I can imagine the corporations rejoicing if we all moved back to the farm and let them go on killing the fish and poisoning the water.

AND ROUND AND ROUND WE SPIN

TO WEAVE A WALL TO HEM US IN

It won't be long . . .

It won't be long . . . .

ETCHING: MY ELIPTICAL WORLD

J. YOUNGBLOOD

—NEIL YOUNG

Keith: They wouldn't rejoice because we would stop consuming, and their thing is based on our continuing consumption.

Barry: There are other ways to put it, too. The vision of going back to the land, the frontier, is an old vision in a sense. It's really only been a vision until recently, but now I think it becomes something much more. That vision becomes a sort of historical necessity. In previous times, a person was allowed to produce relatively poison-free foods and to establish a life-cycle which maintained its own integrity. But the conditions of management of the life-support systems are now on a scale which most of us really begin to imagine only in our nightmares.

Todd: I don't know about this vision you talk about. I lived outside the city for about nine months a couple of years ago. It wasn't the wilderness, but that's where I first began to appreciate my senses. Nonetheless, I choose to live in the city for some complex dialectical reasons which have to do with the need to subject yourself to what you are trying to fight in the process of trying to fight it. You can't get close enough to the factory to occupy it unless you are willing to breathe the fumes. Another romance which is operating is the maliced romance of a retreat to a wilderness base preparatory to a general rising.

Barry: The implication of what I was saying is that there is no more wilderness. There is nothing left to nature anymore which is beyond human control and management. There is no place you can go.

Steve: You know, I think that evolution on this planet is selecting against man. In other words, man has perturbed the system and the system is about to perturb man right out of existence, unless he gets with it and scales down the level and size of his own sheer numbers and his behavior.

Todd: But it won't do us any good if we scale down and General Motors doesn't.

Keith: Well, General Motors is going to choke on itself. If we drop out of buying new cars, General Motors goes down; we don't, because we have learned to live without new cars . . .

Todd: I'm not trying to put down communes. I'm just saying we have to understand how the commune is a continuation of an old American myth. It was a myth that proved not firm or supple enough to outlast industrialism and technology.

Keith: For me the commune is not any kind of American myth and I'm not looking at it romantically. I'm really not looking forward to going out there in many respects. Like I'm doing it because for me there is no longer any alternative.
Like the alternatives would be role-playing. One of

BRUCE MISFELDT
PHOTOGRAPH

the things we can't do as revolutionaries is play roles. That's what's holding people back. They still play roles. Like they play the role of a college teacher, or something else. I can't do that anymore. I had to drop out two years ago. Now I have to drop out of this. You have to keep moving, but I'm not looking forward to it because it is going to be a very austere purification of my ego. Like I'm accustomed to being interviewed, and I have to kick that junk. I am not accustomed to doing 12 hours of physical work, seven days a week, and I have to get into that. So I am not looking forward to it, but it is something I have to do because I can't justify any alternative to it.

Barry: But is the possibility for an authentic person rooted more in the commune than here? There are romantic roles that people play in communes just as they play in the cities . . .

Steve: Let's get to some nitty-gritty discussion on where technology gets its wealth. The industrial empire gets its energy primarily from fossil fuels. Presently 85 per cent of the electricity in this country is generated by fossil fuels. Fossil fuels are increasing in cost, they are increasing in environmental costs to get to them. The costs of burning them are increasing. All fossil fuels have high sulphur content, therefore you have to pay for elaborate filtering mechanisms to get rid of the sulphur dioxide in the effluent, and it is questionable whether the profit you gain from making the electricity will pay for cleaning up the effluent. The technocrats are saying, "Well, there are nuclear sources. Nuclear sources are going to give us unlimited energy for man." Well, that's a shuck. It's a shuck of far greater magnitude than the shuck of a war. Nuclear energy is not a panacea. I believe that if our culture devotes its energies to developing nuclear energy it will be twisting the knife.

Todd: What about solar energy?

C. C. CHURCH PHOTOGRAPH

Steve: Solar energy is beautiful but it doesn't support a growing capitalist economy.

Todd: So, great. In other words, something is going to take care of itself. The only energy that works is the energy that can't support gargantuan scale.

Steve: Exactly. If the human community is going to continue on this planet, the only energies that can be legitimately used without incurring the wrath of the planet (the wrath of the homeostatic ecosystem) are going to be steady-state sources of energy. Those steady-state sources of energy are sun, gravitational, geothermal and weather sources. It's fitting. Buckminster Fuller and others have noted that to gather the raw materials that we now have available took tremendous expenditures of energy, and in fact, those energies came from fossil fuels. Now, as I said, the utilization of fossil fuels—or any capital fuel like atomic energy—is becoming self-limiting. So, at a time when we have already gotten a lot of resources out of the planet, we now have to switch to steady-state energy sources which are recycled, but don't net us any new resources. In other words, we already have enough aluminum for a steady-state human population on this planet for a long time. It can be recycled using very elegant steady-state technology.

Barry: How is this going to occur?

Steve: I think that it is going to occur, well take this example. When the city of Chicago needed more electricity, the Atomic Energy Commission engineers (I'm not entirely sure of this story, but it's close) decided to build a large nuclear power plant in downstate Illinois because it would not be sufficiently safe to build it in the city. So they went downstate, and the people said, uh, uh. You want that power, you build it in the city. What I'm saying is that the dynamic of the next 20 years —as people begin to realize how dangerous large-scale energy manipulations are—is going to reinforce regional consciousness, reinforce local people's getting involved in their own scene. You can notice this in Santa Barbara. There's a radicalization there that you can't laugh at. It's a real, honest-to-God radicalization.

Barry: I don't see that at all. They couldn't even figure out where to put their boat to block that rig, but that's another story. I think the Chicago scene is a very isolated case. New York is incredibly sold on the energy stuff. Luce can come to the people in New York and tell them that he has reduced the air pollution content . . .

Todd: Who is Luce?

Barry: Chairman of the Board of Con Edison. The people in New York don't even know that they're going to have atomic power inside their city within a couple of years. The extent to which the energy industries are able to use those media is just staggering, it seems to me. Now, I agree with you that the potential you described is certainly there, but I think the potential exists only insofar as we energize or assist it. That, I think, is the kind of focus we have to deal with. It will not simply happen by itself.

Joanne: Why don't I ask y'all something now. Where do you see possibilities for moving? Keith has been talking about moving back into the land. Where would Barry and Todd see possibilities for moving? I'd like, for one thing, to get Todd's rap about how all the movements are going to have to cooperate with each other.

Todd: Insofar as the ecological crisis affects human beings, it affects them in the same way as all the other crises of industrial civilization affect them. The less you've got, the less you can get. The more you've got, the more you can get. The Rockefellers can maintain plantations in Venezuela. They don't have to breathe the air that they are responsible for producing with their oil interests. It remains largely true that the people who produce the destruction of the environment are the same as the people who exploit labor, are the same as the people who are responsible for the war in Vietnam. The same as the people who sustain racism through the structure of their economy. Are the same as the people who have sustained the subjugation of women through consumerism, etc. The people who suffer industrial disease are the poor in the cities, generally. So that the isssue of ecology or the condition of ecology has the same enemies and the same protagonists, with the addition of nature itself, as do the rest of the issues that the movement has been concerned with.

So there is the basis for a natural alliance. It is possible both for existing movements to pick up on ecological concern when they realize their own survival is at stake, and it may be potentially possible for a movement which is primarily concerned with ecology to link up with the other movements. Now, of course, there are going to be

tensions in immediate situations. For example, the Chevron workers who produce pesticides in Richmond here have jobs at stake in the production of poison. It's going to be impossible to convince them that their jobs should be jeopardized unless everything goes down together. My image of the transformation of society is that it happens in such coordination, with such sweet logic, that nobody can tell what came first and what came afterward. Everything happens at once. It's not that any one movement is prerequisite for the others. It's that they all go up or down together.

Joanne: What does that say about the different aspects of what the movement needs to be doing—and what Keith talked about, like people pulling out and trying to start farm communes?

Todd: One thing that Keith says is absolutely right. There is no excuse for anyone who identifies with an ecologically sound future to believe in growth anymore. It's plain that the ideology of growth expansion, conquest of nature, all that, is pernicious. It led us exactly where we are now. Ideologically, there is major shuffling that movement people have to go through. They can no longer consider the planet a given. The planet is not a given. The planet has forces and reflexes and is fighting back, as Steve says. So at the ideological level, there is no excuse for ecological ignorance. That is something that took us a long, long, long time to learn.

The second thing that people have to learn is that the solutions to the ecological and other crises are unified. Just as there are food chains, there are also process chains, and each crisis generates the need for a solution in every area. For example, as long as there will be demand for oil, there will be desecration and destruction of the environment to get that oil. People will think they need that oil, and they will generate a demand for oil as long as (a) imperialist wars, which are major consumers of that oil, are necessary, and (b) people are convinced that the most important thing they can own in their lives is a car and (c) people continue to generate a demand for oil. They have to realize that there are more rational methods of transportation, ranging from walking to riding electric and vacuum tunnel trains and buses.

All those crises link up together. There is no solution to any of those problems without a solution to the others. So the second thing the movement has to do is to appreciate that fact.

The third thing that the movement has to do, having reached this new level of consciousness, is turn on other people to these exigencies. A lot of people already understand that the environment is going literally to hell. The whole ethos of the society is to produce waste both for consumption and for replenishing its supplies. A lot of people already appreciate that there is something wrong, but they have been misled into believing that it is everybody's fault. You see these ads in the paper . . . air pollution, water pollution. Boise Cascade Corp. says we're all to blame. Just like racism is everybody's. . . . The same thing. The same kind of mystification that the corporation has practiced in other areas.

In order to break that down, people must be able to prove and demonstrate and organize actions which show that the corporations are to blame for a large part of this. I suspect, Steve, if we did a little scientific scratching at a pad we would prove that an enormous quantity—the overwhelming bulk—of the desecration done to the earth is done directly by the American corporation.

Steve: No question. Doubtless true.

Todd: The corporations are the same enemy we face in every other fight. Unfortunately, the ecology movement, or parts of it, have let themselves get trapped into the same belief that Boise Cascade is trying to promote: that it's everybody's fault and if *I personally* just took a step, the situation would be cleansed. This is very reminiscent of the kind of primitive feeling that we had in the peace movement and the civil rights movement. If you could somehow just disengage yourself from the system, it would decay. Now it is true that if everybody disengaged himself/herself from the system, the system would decay. No authority system, no hierarchy system works without the acquiescence of the people who stand in various places down the line. That is logically true but socially useless to know since people get rewarded for staying in line.

Steve: They used to get rewarded.

Todd: Well, they are getting less, which is something that speaks to the possibility. . . .

Steve: 1.25 million people are going to stop getting rewarded at the end of the year because of unemployment.

Todd: That's right. And even the people in the mother country are going to breathe a little less, and are going to pay more for their goods. It's socially useless to know that we can save ourselves by everybody personally extricating himself from the system, since that doesn't reckon with all the reasons why people don't. In other words, what's rational behavior? I get up on this table and I scream to the city that everybody ought to give up their cars. I do this every day for ten years. Time goes by and six people give up their cars. I then conclude, having a limited life-span, that it is not a productive way for me to act. Instead I ought to be looking for ways to put processes in motion by which people can stop everything at once. People stop wanting cars and General Motors stops producing them all at once. That's easier to say in a neat little formulation than it is to do, and the history of the movement is not studded with success in that area, but I think that is the direction in which we have to think.

Steve: There was a headline in the San Francisco *Chronicle* recently which made me smile to the depths of my heart. It said the U.S. economy has stopped growing. I hope that it never gets started again.

Todd: No. That also means hell for the unemployed, and people are thrown out of work.

Marty: I have found in the last couple of weeks that this idea of a no-growth economy is being grabbed by everybody's uncle, such as Morris Udall.* I heard the Rockefellers talk about it.

Barry: Robert Anderson** talks about it, too.

Marty: And I think the reason they are talking about it so much is that the economy, at the moment, is heading toward something that can best be described as a legalized depression. It's always been legalized, but now it's like a more public thing.

Todd: Forward-looking.

Marty: Yeah, forward-looking. But, you know, you talk about a no-growth economy to somebody who is living in Watts or in the center of Oakland, and they will just chop your head off. This is a student thing. These people have been deprived already. I think we have to realize that our society does produce tremendous waste, but it's organized waste. It can only do this at the same time that it produces organized deprivation. These two processes hang together, so that the idea of a steady-state economy, or non-growth economy doesn't take into consideration. . . .

Steve: What would you add to it?

Marty: That's a problem. I'm not sure myself. The feeling I get is that most people in ecology are really not doing this. I also think they don't have the spirit.

Steve: What I'm worried about is that most of the ecological solutions that people have proposed involve growth industries—

Todd: You're thinking of like electrical cars?

Steve: Yeah. If we were to replace our colossal fuel-eating machines with electricity-eating machines, with the same notion that everyone had a right to his own car, we would still be in the same boat. The metal that is necessary to provide every single American with an automobile—

Marty: Would give a bigger boost to imperialism.

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* U.S. Representative from Arizona.

** Chairman of the Board, Atlantic-Richfield, a major developer of oil on the North Slope of Alaska.

Steve: Right.

Todd: That's why they may decide to do it.

Steve: No, listen, it's a fact that the metals that are available on the planet will not support the industrialization that we have so far. In other words, there's a shortage of metals.

Todd: I just saw a statistic that at the beginning of the 1950s, America exported copper, but at the end of the '50s, America was already beginning to import copper.

Marty: We import 40 per cent of the iron used in this country. It's supposed to go up, too.

Todd: I want to underscore the point that Martin made about waste. The whole ethic and mechanism of the growth of society is the production of waste. That is, the crisis of capitalism is the crisis of under-consumption. That's how they couch it. Since the system of prosperity derives from the distribution of commodities, it goes haywire when people won't buy commodities. Therefore, it is geared in its entirety to the production of the need to consume. All those billions spent on packaging is all waste; it all ends up getting thrown away and has to be carted off to fill the bay or fill something else or get dumped in the river or the ocean. All the things which have to be disposed of because people will not buy more unless they have disposed of what they already had. This year Gillette has already introduced two or three new super what-you-have-been-waiting-for-all-your-lifetime razorblades, which means you have to throw out the last ones and run out and get a new razor for them. I just reread Vance Packard's book the other day. He has everything but analysis. He saw ten years ago that the whole society was geared on its capacity to get people to throw things away. Service doesn't work. Right. New commodities make you want the new ones. New design makes you want the new ones. The cars have to get thrown away. So waste is integral to the system.

Barry: I wanted to get at something before which still sticks in my mind. I think that what we will do, I mean people in movements, is to isolate something like growth or isolate something like progress or isolate something like corporations much in the same way that Paul Ehrlich* isolates us as the reason for the population problem. There's an incredible capacity of the society to deal with every problem that way, to isolate it, to fragment it, rather than to deal with the complex interconnections. That's what Ehrlich does with population, you know, he tells us it is *our* problem because we breed too much. If we stop breeding, things are going to work out. I think that that raises certain kinds of

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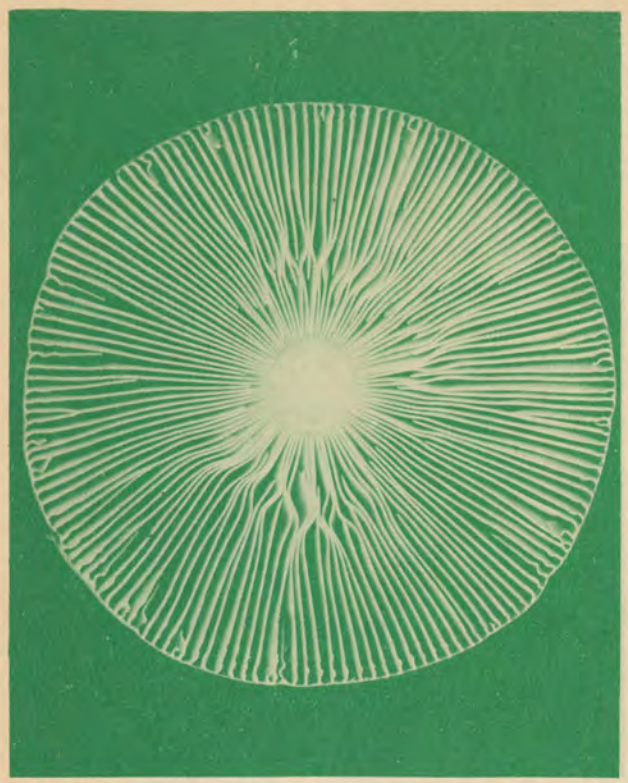
* Ecologist at Stanford University.



C. C. CHURCH PHOTOGRAPH

PHOTOGRAPH A. PIERCE BOUNDS

obligations for us. One of the obligations is to consider the whole culture of the ecology movement that is developing in terms of the ability of language to cope with it. You know, language may be a tool which has no meaning in nature any more. There's no content to anything that we say anymore.

Todd: It's not that the language is no good; it's because it has been denatured by an apparatus of institutions. It still works for us, right?

Barry: I'm not even clear about that anymore.

Todd: We try to make ourselves understood to each other.

Barry: We sure try, but, as our conversation today demonstrates, we have a hard time doing it.

Todd: Not because of the failure of language but because we disagree.

Barry: No, I think it's both. In any event, what I was going to add is that the substance of the ecology movement may well be different from the substance of the movements against the war and the movements against poverty.

Marty: I can't think of any other issue or concern in American life which has become such an object of popular attention as ecology. Nothing compares to it. And I think this will affect the future strategies and tactics which the left takes over from the right.

Todd: There's one exception, and that's the women's issue. The media are much quicker now—and they really have DEW lines. You notice how they all came out at once—*Life, Look,* CBS, NBC—they all came out with their ecology issue, their women's article.

Marty: It's reached to the top very fast, I mean even to Nixon.

Todd: They're obviously insecure.

Barry: I think they are very secure. I think those people will perpetrate that kind of thing—the commodity of the conservation crisis, in a sense. It's so secure and so organized that it makes infantile the little comprehension of how society works. The structure of popular attention has been directed toward the National Teach-In, from a major editorial in every paper in the country, to a whole thing in *Business Week,* to support generated by Henry Ford, Robert Anderson, by a whole line-up of people. It's the most organized public campaign I've ever seen in my entire life.

Keith: I think of where it was last March, though, when we first started talking about an ecology movement. We're lucky to have it this far along in just one year. Now I agree it's gotta go far past that, but if we had been sitting around a year ago,

talking about what it was going to be like in the spring of 1970, we couldn't have posited this much attention. We couldn't have posited Henry Ford going a little bit beyond just public relations talk, and actually spending some money on air pollution, or research—

Marty: Why do you think they do this?

Keith: Well, I don't agree that they feel secure. You see, they're affected. They've read that there's no longer *any* clean air any place in the U.S.; that regardless of how much money you have to spend on clean air—there's none left. And they've accrued enormous amounts of guilt in their climb to power in American society. This incredible guilt mechanism creates in their heads the possibility that they have destroyed the entire planet. In a way they may be more conscious of what's happening than the average person in the movement.

Todd: But they have to be because they have property to maintain. I wouldn't even give them that much. All they have to realize is that it's bad for business.

Barry: Which they *have* realized.

Todd: It *is* bad for business. When downtown is smoggy, people will not come in to shop. *Period.*

Marty: I think it goes even further than that. General Motors and Ford have experienced a fantastic amount of pressure from some conservationists (even the government) which I don't think they've ever felt before. People have been bringing up questions which have never really been raised for the auto industry, like annual style changes. People just never complained about them before. But now, in relation to this question of air pollution, they're talking about it to some extent. I don't know how insecure these men are, but I think they are worried. It's a question of degree.

Todd: There's another factor about all this hoohah about ecology. It diverts attention from the war.

Barry: But that's not an accident.

Todd: I'm not saying it's an accident. I'm saying exactly the opposite. That's one of the uses of the elite going on this ecology crusade. I've just realized they've done this to me, and I've been in the movement for a long time. I realized last night, reading Chomsky's latest article in the New York *Review*, that I don't think about the war. I mean, there's been an information overload which is the same as an information blackout, and all these pieces and shreds of information, which have no standing by themselves, get people tuned off. Literally. If there's too much static, you tune out—you switch to another channel and Presto! ladies and gentlemen we have for you. . . .

PHOTOGRAPH A. PIERCE BOUNDS

PHOTOGRAPH C. C. CHURCH

Barry: That channel leads straight to Asia, if anyone wants to see it. Because Henry Ford, in several of his recent statements, admits that the biggest car market for him is Asia, not the United States anymore.

Todd: It's still capitalism. The attempt of capitalism is to remake the world in the American image. It is to create markets and extract resources, and that's a matter of ecological concern. But the way in which the ruling class is generating the issue is to denature it. That is, Nixon's approach will be the cosmetic approach. Here's more junk to remedy the effects of the last junk.

Steve: Growth industries—

Todd: Exactly! The traditional pattern of capitalism, of subsidizing the criminals.

Keith: But that doesn't make any difference. Nixon may think that's how it's going to work out for him, but the issue is much larger than that, and he can't control it at the level of a cosmetic response.

Todd: Nixon doesn't want to control the issue, he wants to control the population.

Keith: Well, either way, he's got a lot more in reserve than there is in the bag.

Todd: No, he wants to control the ability of people to truly see the issue.

Steve: Well, I think they could see it out their window.

Todd: Yeah, but still, there's this Boise Cascade syndrome, that it's everybody's fault.

Keith: In terms of whose fault it is, I think you have to say it's everybody's fault, and then you've got to say that it's the fault of a few people much more than it's the fault of all the rest. Like it's my fault cuz I still drive a pig car around instead of hitchhiking—

Todd: In someone else's pig car?

Keith: —but the corporations are doing much, much, much more than that. They're doing it on a much larger scale. Like both things have to be done. You have to kick your car, you have to recycle your waste, you have to get your bottles and tin cans back, and you have to stop smoking, you know, the whole thing.

Todd: It's a dialectical process. I got the same thing when I was doing community organizing. You always ran into this problem. There's a lot of junk on the street. How are they gonna get the city to clean up the street? The approach of liberal community organizations is to get out and do it themselves. And then everyone pats them on the back and says, "My, these people really care about their neighborhood." As if the source of the trouble with the neighborhood was in the neighborhood. The source was not. The source was downtown. People should have the right to public service of cleaning up the street. And so what had to be done was a very delicate and difficult to describe process of doing something yourself which was not being done by the powers-that-be in order to place pressure on them. And the delicacy is all in the way you treat your act, and what you say it means to the people who are doing it, and what they promote it as. In other words, we know very well that people will not give up their cars. We know very well that most people will think, whether it's true or not, that they can't afford to recycle their own waste. And certainly most people cannot clean the beaches or the rivers on their own hook.

Steve: I think the best solution is the minimal perturbation solution. You live with the lightest possible hand. I think the Berkeley people's architecture group is doing that. Like they're trying to design a city plan to counter the orthodox, growth-oriented city plan that's going to minimize the impact of the Berkeley people on that local environment. And that's a very intelligent response.

Marty: What about the University of California? I mean the physical presence of the university, which creates an enormous amount of waste in Berkeley. In many ways it's responsible for an enormous amount of suffering. Does their plan take in this? [no response]

Keith: I'd like to do a brief commercial here for *Earth Read-Out,* and then we can return to our regular programming. Very soon we hope to have our first special issue which will be a regionalist issue, and the focal point will be a map of the North American sub-continent that does away with the centralized governments at Ottawa, Washington and Mexico City, and replaces them with the original eight North American Indian cultural regions. Then within that, hopefully, smaller areas that are rational in terms of watershed, airshed, and so forth.

Joanne: You all ready to quit? Or does anybody have anything else to say? Anything they'd like to know from anyone else?

Marty: Yeah. Just from a purely political side, what do you think would be an alternative in response to the Teach-In movement that's going on now? I mean some way to thwart it.

Todd: You should explain why it should be thwarted.

Marty: Well, for one reason, it's purely manipulation on the part of . . .

Todd: So is the Army, but we believe we should organize in the Army.

Marty: Well, yes, but I think that what the United States government wants to do is contain the

explosiveness of the whole issue on the one hand. On the other hand, as we mentioned before, to divert people away from other crucial issues. I think this is the reason for the tremendous emphasis upon student movements and student power. Many of the people who have been organizing for HEW, by the way, are from the Students for a Restructured Society, which started in response to the SDS movement at Columbia University. And by and large, the impression you get from the media is that government here is showing what the really "good students" are like.

Barry: Let me run it down where it's at. I guess the notion began with Gaylord Nelson six months ago, and took root in an Airlie House* conference last November in which the Student Medical Association, which is a front for government bonds essentially, held a meeting of 200 student government types from all over the country. They've had successive meetings in which Nelson put forward the Teach-In notion, and it took root with those kids. They now have an office in Washington, D.C.—the national coordinator is Denis Hayes, former student body president at Stanford who is taking a vacation from Harvard Law because this is more interesting than Harvard Law. They have a half-dozen people there who know virtually nothing about ecology, from my conversation—virtually nothing—let alone about society. They have a most extensive sort of mailing list. My estimate is they have activities going at 100 small-town campuses but not on the large-town campuses. They have a great deal of money and are very well organized. They placed a full page ad in the News in Review section of the Sunday *Times*—a full page ad. They've had editorials in the *Chronicle*, the New York *Times* . . . They have editorials in most every major newspaper in the country. *Business Week* has supported it, outwardly. Nixon will probably endorse it. You have this happening at the same time that the Department of Interior sponsors these consulting things around the country (SCOPE).

Keith: The best way to gad-fly the Teach-Ins would be to get together with the statisticians, and work out the quantities of air pollutants that will occur as a result of everyone motoring and flying to the Teach-In, and to make eco-arrests of all the speakers who have come to the Teach-In from outside their eco-region—unless they happen to be Shamans, and there are only about four or five Shamans.

Barry: It's very interesting that the people at Columbia and Yale already have put together a statement about why they will not do anything on that day, except direct guerrilla action. They are also saying why they won't have it on that day, Wednesday, the 22nd, because only students are allowed to participate because everyone else works. So that kind of a movement is very strong. It may spring out in Seattle, too. Already Madison is having things on a different date, too. Very many places are having things, but on a different date. You might wind up having a situation in which nothing happens on April 22nd, if people will fight to push it.

Keith: It also hastens the demise of the university itself because, after all, the university is just a sustained Teach-In.

Barry: Right.

Todd: No, it isn't.

Keith: Is it more than that?

Todd: I think it's less than that. Much less than that. Everybody said that when the first Teach-In happened in Michigan, "My God, this is the first educational experience I've ever had."

Keith: Oh, yeah, the first couple of times it's fresh, but—

Todd: But that was five years ago.

Barry: It would be important politically for people not to want to dig a Teach-In.

Keith: I mean that in the sense of like going past symbolic behavior. I can't encourage kids to stay in college, preparing themselves for careers that won't be there.

Todd: For somebody who's done an awful lot of good symbolic behavior, Keith, you're not the right person to say that.

Keith: I think I am. I think it would make it stronger that I've spent a lot of time at it, and now regret it, because the usual thing is to . . .

Todd: Do you really regret it, you think you . . .

Keith: Well, no, not all that, no. I guess it's just evolution—personal evolution.

Todd: But if you didn't know what you learned in the process of doing your symbolic behavior, you wouldn't have the where-with-all to move beyond it.

Keith: But I'm coming on as a cranky old man, see, telling the kids not to bother playing those career, student roles. If I'd had people 20 years older warning me about it in advance, I could have gone through it faster. But I have another thing. Right now the permissiveness of information flowing over our media is very high. I think it's going to crest very soon, and certain kinds of information will be blacked out. A kind of party line will emerge from the regime after it becomes clear that the

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*A favorite plush resort/conference center outside Washington, D.C.

response is to be cosmetic, superficial, and that certain kinds of information will be seen as threatening.

Barry: The media are already doing precisely that. I was on a program with Luce and McCarthy in New York, and one guy asked me what you should do about Con Edison. I said the first thing you could do is take the lesson of the people that did it to Pacific Gas and Electric about seven times in California, you know, the bombing thing. The next day the New York *Times* reported the session and quoted Luce and McCarthy, but didn't even mention that I was on.

Todd: Barry, I know you have some criticisms of the way that some people have gone about making an ecology movement. Maybe you'd like to talk about it. It seems simultaneously that we're short on strong ideas about what to do and we're strong on criticism of what other people are doing. Maybe that's not good, but why don't you talk about that.

Barry: I don't really know . . .

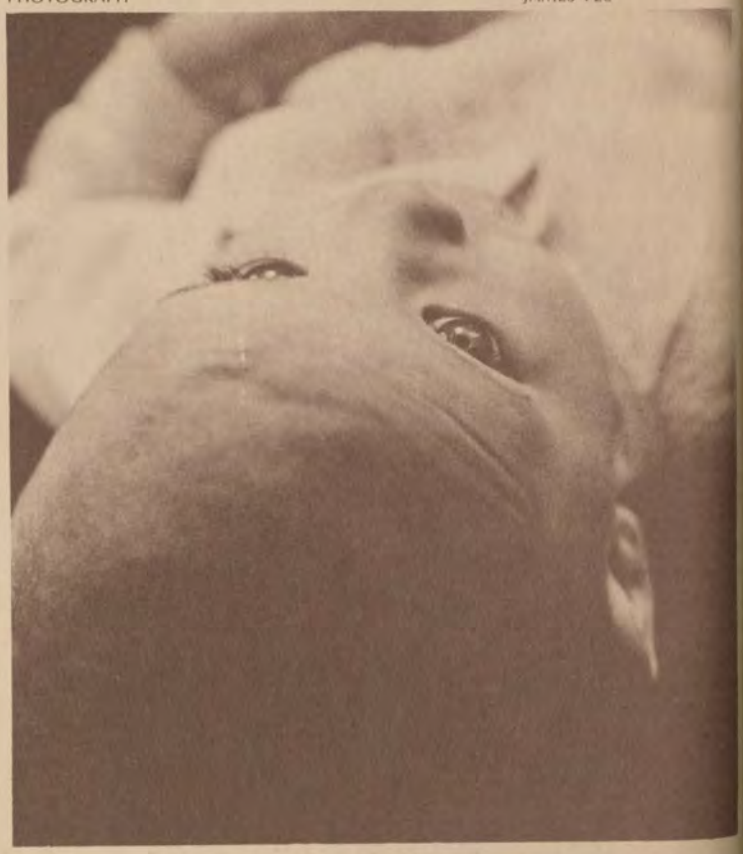
Todd: Why don't you talk about something like the Zero Population Growth march?

Keith: The ZPG thing splits me right down the middle because I agree with Ehrlich and the ZPG people that too many humans is like *the* central problem. But I don't dig their style, and I can certainly sympathize with the fears of the black people, that some of the population control talk could easily become a cover for genocide. Like I dig Ehrlich's analysis very much, I don't dig many of his suggestions for solutions.

Barry: I don't dig his analysis. The more I consider it, the more it seems to me that population is a very small part of the problem, in a sense. It's not population or pollution which is the major problem; it's the structure of American society which is the major problem on the face of the earth. And the structure of American society has much more to do with these last two or three hundred years and we can extend it back into its European origins into the Enlightenment. It has much more to do with the imbalances in people and resources today on the face of the globe, than anything about nature and a natural process, and that has to be the focus of our attention. Just to be brief about Ehrlich, the line which he shares with Bob McNamara is that if you don't do something about the population problem, all other problems are lost. And then he says the way you can do something about the population problem is for you and I to stop breeding. That's exactly what he says, as I understand it. I think the things we were saying before—about the ability of the country to isolate a problem and to fragment it—is exactly what Ehrlich is all about when he points to you and I breeding too much as the source of the problem. It's a complete failure to understand the cultural, political and economic dimensions or what has *generated* the imbalances between people and resources around the world. That's where we have to look, not to the fact that you and I breed too much. Now that isn't to say at all that there may well be too many people on the face of the earth. I'm beginning to sense that it has less to do with the ability to feed them than other sorts of considerations. If we were able to organize the resources which we had to feed those people, and if we were able to talk about consumptive levels which were in fact animal and not what we are now, which is something way beyond what an animal level consumption is . . .

Joanne: Cliff Humphrey [of Ecology Action in Berkeley] says something very similar. He says that the problem is more the middle and upper class people who have two or more children who are consuming and producing more goods than a welfare mother with ten kids. It's the amount of goods

PHOTOGRAPH JAMES FEE



that the person consumes that's the problem, and not the actual number of people.

Todd: But there *is* a population problem. There are a lot of problems that arise with masks on, and the population problem may be one of them. It may be, I don't know, but this is my radical prejudice. The population problem is not *it*, however. It's because of the inequities on the world scale, because of the fantastic rip-off of resources perpetrated by the United States. People breed because they literally don't have anything else to do. And they have the positive attraction of somebody who can't sustain himself because the land is impoverished—because the country is exploited by the United States —like Europe. Having kids because the kids will keep him going in his old age, and that's been one of the traditional motives for people having enormous families in the Third World. That motive vanishes with socialist revolution; in fact, it may well be not that the population problem initiates the need for revolution, but that in fact only revolution makes it possible to solve the population problem. Only revolution can provide the possibility of solving it.

Barry: Right on. Let me take a minute to spell out the kind of discussion I think we really need. The only thing I can see in the next few years, at least a glimmer, is a situation in which the forces of disintegration, which exist now, just expand. Phones break down entirely again, every city has its own garbage strike, every coastal area has its own Santa Barbara. I see a really complete dysfunction in even the political science terms, complete dysfunction of the social services in the country. The water pipelines break down—everything like that progresses at a staggering rate. At the same time, those are really the kind of forces which led people to the People's Park situation.

I think that those kinds of feelings in people, as the social services break down, will grow enormously. And I think that their response will be much like the People's Park response. People will take over blocks, they'll take over available space for urban development, they'll take land in the rural areas and build their communes and their tribes. They'll try to seize as much as they can. That's what blacks did a little bit. They looted, they tried to take hold of what they thought was theirs in a situation in which the space was closing off very fast to them. I think that sense will grow in the cities for white people, and particularly for young people. Those few actions will be put down initially, just like the People's Park was put down, except it'll be put down much more fiercely than the People's Park. But at the same time, their ability to put those down as they spread will diminish because the service systems will break down. The airplanes to get the pigs there won't work. The trucks to get the pigs there won't work. There'll be an oil strike so there'll be no gasoline to get the trucks to get the pigs from one place to another. Now that's a little fantasy, but let me spell it out more.

What that does is open a sort of potential consciousness for regionalization, and for neighborhood consciousness. As people do that, as they take down the back fences, dig up the sidewalks, maybe in three, four, five, a dozen places in the city at a time, that sort of consciousness builds. People then begin to pay their taxes to these sort of neighborhood organizations, whose funds are seized, of course, initially. But they may not have the ability to seize it all as the plan progresses. Then people begin to talk about their own economies, begin to talk about constructing their own budgets for income, whatever kind of income they get, and they begin to build decentralized units on the most helter-skelter sort of basis—units which move in as many ways as possible toward self-sufficiency— in terms of energy, agriculture and taking care of children. You know, the family unit dissolves in part along those lines. What that does potentially is to move toward a revolutionary situation in which the authority from the state is taken away by force. The authority from the state is taken by these neighborhoods. It's taken first from the city, as the city of New York is hardly a city any more, it'll be taken from San Francisco, it'll be taken from the regional government which they're going to establish on the Bay Area. Then you begin to talk about all the imaginative things we can think about—about decentralization and what it really means. That's one scenario.

Todd: A lot of things are breaking down. I mean the process of breakdown is much more complex than these scenarios paint them. For example, the breakdown of the economy is going to affect people in many differentiated ways. People are going to have less money to consume, less disposable income. A lot of people are going to be out of work, clamoring for jobs. The cost of living will continually increase. That's one set of pressures. Another set of pressures is that people who are dependent on state services for their livelihood, like welfare recipients, as well as people who in many different ways are dependent on the services that only the state can give them—like students—are going to begin to feel even more pinch because the state sector is being starved, bled white and I do mean white, by the corporations which are going to increase their profits. There are gonna be a lot of wildcat strikes, a lot of non-wildcat strikes. There's gonna be a lot of welfare militancy. A third thing is that the student movement is not gonna go away even though its organizational form is shifting and blurring. It's gonna continue to be insurgency directed within the university against military and corporate presence. The fourth thing is that the dissent and distress and revolt within the Army is going to increase and that institution is going to begin to doubt its own capacity to keep the peace. I can't put all those things together into a scenario, but it's plain that the order is rapidly fading. ■

THE BLUE HOLE

I

I'm down with blues.
The meadow's in a blue period
And the sky's a propane blaze.
The world's mad with blue,
Berries, buntings,
Bream like a box of new steel bolts
And a Busch Bavarian can
Buckled in the middle.
I go where an elbow of the Sugar
Holds the water in a bowl.
Oaks grow in the wrinkles
Of its limestone faces
And woodbind crawls.
Deep against its granite shelves
The river keeps.
I'm at the very edge of blueness.
I want the inside story.

II

Wading out I feel the truth
Of minnows kissing my knees.
Hold me, love, in the lilt of your arms,
Current pulling my nipples.
Oh, his mouth loves his golden girl.
Is love always a surprise
Like a bee sting?
The old Tuscans knew a thing or two
And made myth
When all Fiesole dreamed.
But you slide through my fingers.

III

A woodtick's knit
To the bronzed curve of my belly.
He won't brush off.
It'll take a swab of chlorophorm
To make him let go:
He's Job with his teeth set in God,
And I don't even feel him.

I feel water from the ends of my hair
Beading on my back,
Purling down my arms.

There's no bottom in that hole.
Deeper than blame
Like the celebrant's cup,
One could sink in a blue wine,
A foetal peace,
Veins bouyant with light,
But I tore the lovely skin of water
To get out.

I'm God's woodtick.
All I know is hanging on.

JOAN YEAGLEY

TOWARD AN ECOLOGICAL CONSCIOUSNESS

PHOTOGRAPH C. C. CHURCH

by Tony Wagner

We read or hear references to the ecological crisis almost every day. Many world leaders and citizens believe that if we can eliminate a few of the major sources of pollution, persuade people in the underdeveloped countries to have less children, and other similar actions, then the earth will be able to support us, and we can go on living just as we always have. I think this assumption, which is the basis of the major strategy for combatting environmental deterioration, is false and dangerous.

An understanding of the failure of efforts being made to solve these pollution and overpopulation problems—and a more careful consideration of the deeper causes of the ecological crisis—challenge the assumption that our way of life, with a few modifications, would be compatible with nature. It is becoming clear that if we are to survive, then we must work toward developing an ecological consciousness—an awareness of the interrelationship of all living things—and then examine our social, political, and economic institutions from that perspective.

Conservationists, both in and outside government, have provided much of the leadership for the environmental aesthetics movement. Their approach serves as a model for many governmental agencies. The Department of Interior, for example, follows the path blazed by conservation groups all over the country. It becomes important, then, to carefully analyze the failure of the conservationist approach, and to consider some of the reasons for this failure.

The recent successes of wild-life and open space preservation are rendered meaningless by the increasing pollution, chemical waste, and overpopulation problems. According to a recent article in the New York *Times*, the United States, alone, is "now hurling more than 140 million tons of contaminants into the atmosphere this year. Two years ago it was only 130 million tons." This is a rise of 10 million tons in two years, despite all of the Federal government's efforts and regulations to curb air pollution.

Federal and State Governments have spent over 5¼ billion dollars in the last four years to clean up the nation's water supply. A recently completed survey indicated that there is now more pollution in those waterways where these efforts were concentrated than there was four years ago before anything had been done.

This past fall, the Federal Government announced that it was going to prohibit all but "essential" uses of the chemical pesticide DDT by 1971. Many conservationists have claimed this to be a major victory in the battle against pollution, perhaps not realizing that the exportation of DDT will still be allowed. U. S chemical companies produce over half of all the DDT currently being used in the world—about 125 million pounds this year. Of that amount, they will export over 90 million pounds. So long as DDT is used anywhere in the world, our food will continue

to be endangered because of the complexity of the food chain and the indestructability of these chemicals.

Hundreds of millions of dollars have been spent to develop and distribute effective birth control devices and to initiate family planning programs. These efforts have been futile, according to Professor Kingsley Davis, Director of the International Population and Research Center at Berkeley. He says that current population growth figures, and various studies that have been done on the problem, indicate that the only hope we have of curbing population is in allowing free abortions and a progressive tax increase for families with more than two children. And added to this dismal report, it must be noted that birth control pills, one of the most widely used contraceptives, have recently been declared hazardous to a woman's health by the Food and Drug Administration.

While conservationists battle certain forms of pollution, new ones are being developed every day. The Supersonic Transport is an example. Nixon has announced that the United States will go ahead and develop these planes at an eventual cost of four billion dollars plus, because the French, British, and Russians have one, and we must preserve our national pride and technological superiority. This decision has been made despite the predictions by ecologists that the Supersonic Transport will leave contrails high in the stratosphere which will break up slowly or not at all—unlike the vapor trails of airplanes now in use—and thus speeding up the consequences of the air pollution blanket which rings the earth and acts as a greenhouse to heat up our planet.

I think that the reason for the failure of the conservationists' approach lies in their inability to recognize and deal with the root causes of the ecological crisis. They still talk in terms of aesthetics when the problem is the survival of the planet. Senator Gaylord Nelson recently wrote, "The institutions we have created are destroying the liveability of the whole world." I feel that conservationists have a basic conflict of interests which I shall explain in the context of my understanding of the roots of the ecological crisis.

The most fundamental ecological reality which we continue to ignore centers on our growth economy, an economy which has as its goal ever increasing production, consumption, and expansion. Our whole economic structure is based on the assumptions of the "frontier mentality": there will always be new frontiers, new sources of raw materials, more customers, etc. According to this way of thinking, the oceans will be the next frontier. After that, there's the moon and the other planets.

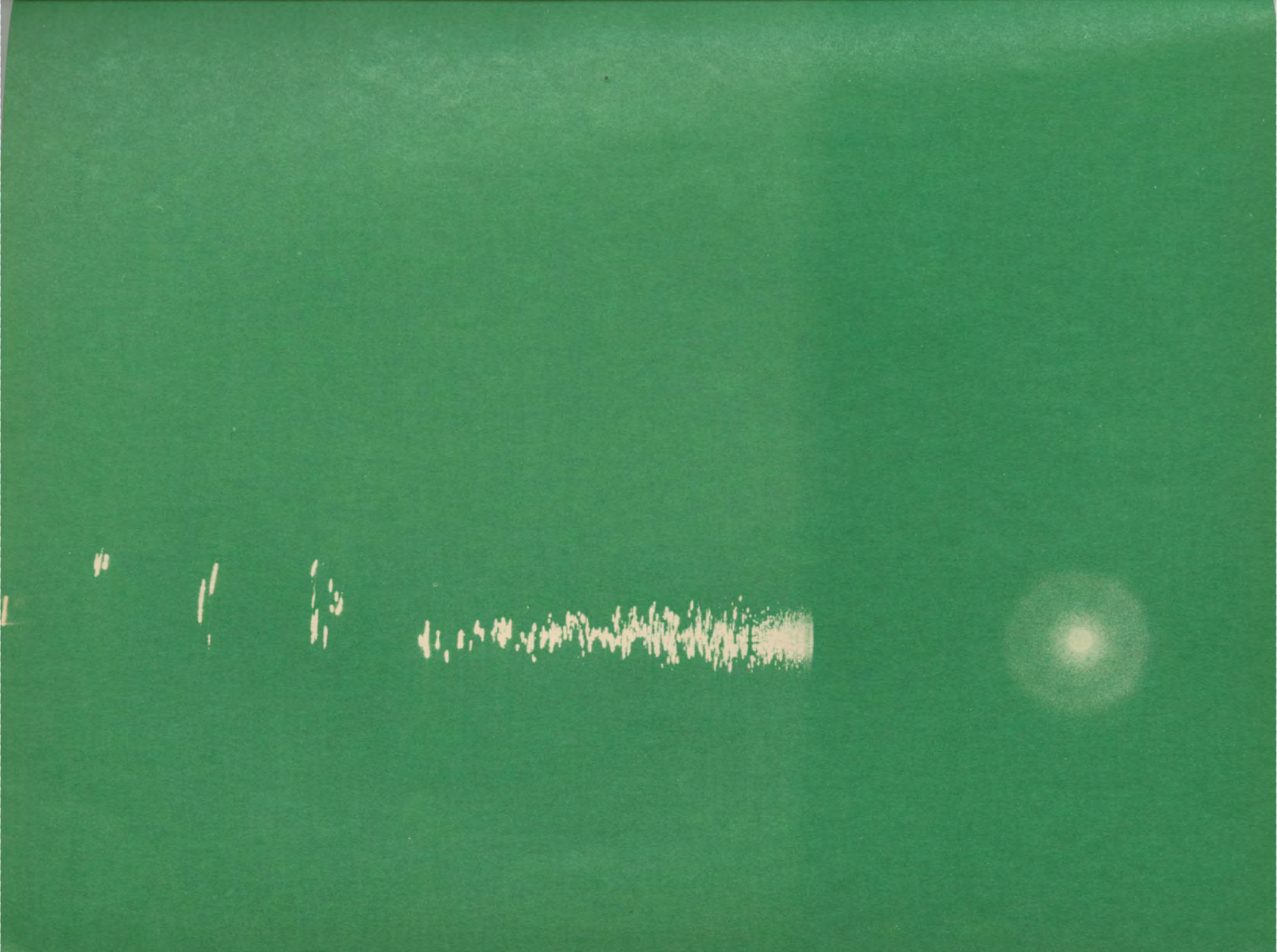
All the scientific evidence indicates that those who hold great hope for extracting food and resources from the oceans are going to be very disappointed. And I'm quite sure that there's not enough time to exploit or settle on another planet. In fact, it is likely that the capacity of the earth to support even the present human population at the current standard of living has already been exceeded. Many of the resources needed for industrial production are becoming scarce and non-renewable. Likewise, the capacity of the earth to produce food is very limited.

If we are to continue to survive, we must immediately recognize that the earth is, after all, finite and limited, and adjust our views on populations and economics accordingly. This, a simple sounding statement and empirical reality, when applied becomes quite radical in its implications:

The environment can no longer afford more "advanced" technology, more material "progress," and more people. There can be no new markets and no new goods because there aren't enough resources to go around. The United States, with six percent of the world's population, controls well over fifty percent of the resources that are produced by the world each year. American housepets are fed, each day, a diet that is nutritionally better balanced than the diet of almost half of the world's human population.

In short, the planet cannot sustain the American Way of Life as presently constituted. If we are to avert a war between the "haves" and the "have-nots," then we will have to redistribute our wealth.

Conservationists have a difficult time carrying the implications of the ecological reality this far. Most often, individuals who support conservation efforts do so because they have reached a level of affluence where they have time to pursue interests and concerns other than making a living. Many people I have met in the conservation movement started becoming concerned and active after they had purchased a beautiful piece of land, and consequently began to perceive the threats to their own peace and environmental quality. Hunters, fishermen, and hikers support conservation because they simply want the opportunity to continue enjoying their hobbies.



These people are very much of "the establishment." They have benefited greatly from our political and economic system and they believe in it. It is hard for them to see the possibility, much less the necessity, of radical change because they feel a basic allegiance to a system which has provided them with the opportunity to enjoy a privileged position. A conservationist is most often a conservative with a love of life and nature—not a person with an interest in any real change.

An example of the contradiction and conflict of interest in the conservationist approach can be readily seen in the actions of the Rockefeller family. Laurence Rockefeller has given very substantial sums of money to establish the national Conservation Foundation, and many other local conservation groups, such as The Conservation Society in Vermont where I live. The Rockefeller family has made its fortune, and still continues to make its money, through the mining and sale of petroleum products all over the world; yet the burning of these petroleum products has contributed more to the fouling of our air, and to the imbalance of the atmosphere, than any other single source of pollution. It would be an extremely radical step for the Rockefellers to stop selling their gas and oil products, yet this would contribute more to the solution of the air pollution problem than any other single action I know. At the very least, the Rockefellers might invest in businesses which make profits from cleaning up the environment, rather than polluting it as the oil industry does.

Each year, the Sierra Club, widely known as the most militant conservation group, gives

SHINY OLD MYTHS OF

A politician, when asked for his solution to the environmental crisis, usually answers, "Our American technology will cope; if we got to the moon we can clean up our air and water." When asked how a growing population can find both the space to live, work and play, and also to grow its food, he points out how ingenuity can solve this paradox. "We can have cities floating in the sea, taller buildings, more efficient agriculture, mariculture, aquiculture." How about dwindling supplies of metals, fertilizers, oil? "Technology will find a way—look how plastics have expanded."

Will technology find a way? Can we keep growing indefinitely, living in new and different ways, finding new substitutes, growing crops in test tubes? As ecologists, we say no; as thinking and feeling people interested in the quality of life, we don't want to even if we could.

The first factor is the environment. Our earth is finite. No matter how tall our buildings, how ingenious our systems of transportation, how efficient our production of food, a growing population will eventually occupy all the space on earth. If we continue to grow crops on land, the time when this crunch arrives here in the USA is not far off. Inevitably, population will be limited, but it is difficult to predict what particular limits will eventually come into play—space, food, social stress, etc.

The second factor is the population. The trouble with populations is that the bigger they are, the faster they grow. So we are accelerating toward the time of crisis. Also, it's hard to stop populations growing. They have been producing lots of children so that the "age structure" is young. And all of these young people hold a tremendous potential for further reproduction and growth. Even if we reduce the birth rates, populations have a ponderous continuing momentum because of this age distribution.

The third factor is the expanding economy, based mainly on an explosive technology. While the population has been expanding exponentially, the per capita income has been expanding exponentially, compounding the increase in the Gross National Product. Can the G.N.P. keep growing even if we could stop the population growth? The ecological answer is no. While in theory the economy can expand, through increased skills, without increasing use of resources and pollution, in practice this has not occurred and seems highly unlikely to occur. If we increase production, we increasingly reduce our resources and produce more and more garbage. For example, a citizen of an over-developed country uses resources and produces garbage at upwards of 50 times the rate of a citizen of a country with a low G.N.P.

The trouble with technological answers to technological problems such as pollution is that like a growing population, a growing technology breeds ever more technology. If we replace messy fossil fuels (oil, coal) with atomic power as a source of energy, we produce a different kind of pollution. Cooling the atomic reactors heats up rivers and lakes, causing ecological havoc; worse, all reactors produce radioactive waste, some of it with a half-life of 600 years! Can we *safely* continue to store radioactive wastes indefinitely?

Thus, all technology produces waste and requires new technology to get rid of it. Nothing is produced without waste; one mustn't forget that all sorts of energy are inevitably converted to heat. If our technology continually grows, our demand for

its John Muir Award to the one person who has made the most outstanding contribution to the conservation effort during the previous year. In the spring of 1969, the Club gave the award to a Senator who had worked quite hard for the establishment of a Redwoods National Park in California, to save the few remaining examples of these giant trees. That Senator was Henry "Scoop" Jackson, often referred to as Boeing Aircraft's representative in the Senate. He has done more than any other Senator to push for the production of the Supersonic Transports which, when in wide use, will represent a major escalation of the war against the environment. The Sierra Club applauds the efforts of a man to preserve a few redwoods, the same man who is pushing so hard for a new form of pollution.

The conservationist solution to the problem is reform. As I have tried to indicate, reformist efforts have been ineffectual. They are actually even dangerous because these efforts, always given lots of publicity, help to maintain the public illusion that the ecological crisis is being confronted when, clearly, it is not.

We have to move beyond the concept of piece by piece problem-solving and preservation, to come to a full realization of the planet as one physical body: the interrelationship, interaction, and interdependence of all living things with their environment and each other. Modifications of the existing system won't do. We have to examine the very foundations of our whole way of life, and then change our

GROWTH AND TECHNOLOGY

energy grows with it. And so more and more heat will be produced. This will eventually be dissipated to outer space, but in the process, the earth will be heated. This sounds fine; think of the heating costs we'll save every winter. But there is another ecological rule: nothing is independent, each change in the environment has repercussions in other places and at other times. And some of these effects are bound to be unpredictable, because the interactions in ecosystems are unbelievably complex. If the temperature of the earth's surface is raised, all sorts of things may happen. Polar ice may melt, raising the sea level and producing a sort of involuntary urban renewal of our largest cities along coasts. Patterns of circulation of the atmosphere and oceans may change, dislocating agriculture and fisheries and producing unpredictable shifts in the incidence of disease.

If all technology produces waste in one form or another, an increase in the Gross National Product inevitably means a *gross increase* in the national production of garbage. Not only is the space to live and grow food limited, but the capacity of the environment to accept waste is also finite. This capacity has been filled in some places: the Missouri River below the slaughterhouses has been called "Too thick to drink, too thin to plow." But, if such gross abuses are corrected by technology, more technology simply substitutes another kind of waste.

This is not to say that technology shouldn't be applied to ecological problems. To clean up existing pollution, industries will need to stop gushing out wastes, using technological devices. Resources will have to be recycled. Ecologists themselves will sometimes have to apply technology. For example, agricultural pests, now controlled mostly by chemical pesticides, can be controlled by integrated pest control. This is done by introducing enemies of the pests and manipulation of crops, with occasional small-scale use of chemical pesticides. Further technology in the form of computer modeling applied to strategies of pest control may help us design even better methods.

But we maintain that without the ecological attitude, technology will fail. The ecologist must convince the government and industry that the only solution to the problem of growth is not to grow.

This applies to the human population, and, unless the population is declining, to its standard of living. It is clear to us that "standard of living" is probably beginning to have an inverse relationship to quality of life.

We can maintain or improve the quality of life by changing from a growth system to an *equilibrium* system, in which population and technology are the appropriate size for our finite environment. A non-growth system will involve radical, in fact, revolutionary changes in attitudes and habits on the part of the entire population.

Man, like all organisms, is not independent of his physical and biotic environment. He lives in an ecosystem where all the components interact, and all actions have consequences. Like all species, he must eventually establish an equilibrium between population and the capacity of the environment to produce resources and to absorb his waste products. These are ecological axioms and must become part of every man's ecological attitude.

—J. H. CONNELL
and W. W. MURDOCH

way of life to conform to the ecological realities.

For example, we must take a closer look at our concept of ownership and how it has contributed to the destruction of the environment. If a man owns a piece of land, then he assumes that it is his right to do anything that he cares to do with that territory. Under our present understanding of the privileges of ownership, so long as a particular manufacturing plant pays the going rate for the raw materials it uses, it is under no obligation to consider peoples' future needs for those raw materials. Similarily, the same plant dumps its waste into the air and water without effective governmental regulation. I think if we take seriously the implications of the ecological crisis, we will find this concept of ownership dangerous and outdated. Ecological consciousness means that no one can own any piece of the environment and do what he pleases with it; the planet belongs to everyone, because we are all dependent upon the planet's good health and balance for our own health. Pollution and resource shortages affect all of us. We must see ourselves as custodians of the environment, rather than its owners and masters. We have an obligation to leave the environment in better condition than when we found it. The planet is not our play toy, nor something which can be exploited for profit. If we persist in "owning" the planet as we have in the past, then there will be nothing left for our children and grandchildren.

To protect our imagined "property rights," to extend, preserve and protect the "American Way of Life," we have built up a military machine which is probably the most imminent threat to the continuation of life on the planet. The military has a long history of environmental arrogance and ignorance. DDT was discovered to be an effective pesticide by a Swiss chemist in the 1930s, but was not developed until World War II by the United States Army. Nuclear tests, giving off substantial quantities of radiation, have been demanded by the military. Chemical and biological weapons, capable of creating uncontrollable disease and death over the face of the earth, have been manufactured and tested. Outdated, but still potent, weapons have been haphazardly discarded into the environment. It has been estimated that the military-industrial complex consumes over half of all the electrical energy produced in this country. To meet their increasing demands for electricity, the military is pushing hard for the construction and use of "dirty" nuclear power plants. The waste product of these plants is also a source of plutonium for atomic weapons.

Since World War II, we have spent over one trillion dollars on defense. Last year alone, the defense budget was almost eighty billion dollars. But as we are becoming aware, allocations to restore and preserve the environment are miniscule in comparison: last year the allocation was well under two billion dollars.

Control over nature has become a goal of our industrial society, and especially of the military machine. The philosophy of deterrence is based on the assumption that "it could happen." They might get us. We must eliminate all chance through control. The Army Corps of Engineers uses the same rationale to dam up every river and stream in the country; it could happen, the rivers might change course or even overflow unless we control them. And now the Weather Bureau is trying to develop means of controling the weather. But it is certain that they have no understanding of what the undesirable ecological consequences of their experimentations might be. I think what the Weather Bureau does is potentially more dangerous and more criminal than anything that the Weatherman faction of Students for a Democratic Society has ever done.

I don't mean to imply that I am in sympathy with the political style of S. D. S.; I am not. But I do think it is important to see clearly which institutions pose the greatest threat to life on the planet. The recent actions of the radical left are insignificant compared to the violence being done to people and the planet by our own government. For several years now the "New Left" has tried to communicate what a full understanding of the ecological crisis empirically proves: our political-economic institutions and priorities are destroying life.

Nor do I mean to imply that communist countries are not just as guilty of ecological stupidity as we. They are. Their system is just as environmentally ignorant and exploitative as ours and poses no alternative. But then, I am not a Russian or a Chinese citizen. My responsibility is here, in the United States. If we would observe natural laws and stop trying to control nature, it wouldn't be a threat. We need to stop defending "a way of life," and start defending Life itself.

In part, perhaps, to escape the anxiety of the uncertainty of the future, we are busy consuming our children's future. According to a recent editorial in *Life* Magazine, Americans last year spent 572.8 billion dollars on consumer goods alone! Many people in our

society seem to find passive, compulsive consumption to be the only reward of all their efforts, and the only reason for living. New gadgets, "improved" products, more "conveniences," faster cars, television and movies all serve to amuse and divert us while the planet is being crushed under the weight of our waste and pollution. As a planetary body, we are consuming our arms and legs in an effort to satisfy an artificial and insatiable hunger.

Compulsive consumption, then, and a preoccupation with mechanization, "defense" and control, are characteristics of our way of life which are strengthened by our attitudes on the desirability and necessity of economic growth, individual and international competition, and private ownership. This is a way of life that the planet will never be able to afford or maintain into the future.

How have we evolved into such a destructive pattern of living? This is a question that we must all ask ourselves, but one which I cannot even begin to answer here. However, I do think one of the major causes of our distorted values and, hence, of the ecological crisis, can be named—modern man's spiritual emptiness. Science, technology and material progress were seen in the 16th and 17th centuries as means to an end—a way of achieving freedom from scarcity and hard labor, in order to have more time for the pursuit of beauty, knowledge, and a deeper experience of the joy of life. Now it seems that science and technology, progress and profit, have overwhelmed us and become ends in themselves.

PHOTOGRAPH BRUCE MISFELDT

I think Erich Fromm best describes modern man's spiritual dilemma in his book, *Zen Buddhism and Psychoanalysis*, when he says:

> *Control by the intellect over nature, and the production of more and more things, became the paramount aims of life. In this process, man has been transformed into a thing, life has become subordinated to property, "to be" is dominated by "to have." Where the roots of Western culture, both Greek and Hebrew, considered the aim of life* the perfection of man, *modern man is concerned with the* perfection of things, *and the knowledge of how to make them. He still pays lip service to the aims of happiness, individualism, initiative—but actually he has no aim. Ask him what he is living for, what is the aim of all his strivings, and he will be embarrassed. Some may say they live for family, others, "to have fun," still others to make money, but in reality nobody knows what he is living for; he has no goal except the wish to escape insecurity and aloneness.*

It has become very popular to attribute the problems and evils of our day to the inherent nature of man. The theory is expounded that societies have always been corrupt because it is part of the nature of man to exploit, pollute and be aggressive. There is nothing we can do, then, except resign ourselves to the fate assigned to us by the process of biological evolution, and have a little fun on the side, so the theory goes. The people who promote this view are selectively interpreting history in an attempt to rationalize the status quo and their own inactivity. When one becomes aware of the consistent, varied and international tradition of humanism and religion underscored by Fromm, the theory that man's actions are guided by deep, negative instincts is not believable. Further, there are numerous anthropological examples of societies that have lived in harmony with their environment and at peace with their fellow man.

To contrast our way of life with one more peaceful, religious and harmonious, I want to quote from the biography of a Northern California Indian, *Ishi*, written by Theodora Kroeber:

> *The California Indian was, in other words, a true provincial. He was also an introvert, reserved, contemplative, and philosophical. He lived at ease with the supernatural and the mystical which were pervasive in all aspects of life. He felt no need to differentiate mystical truth from directly evidential or "material" truth, or the supernatural from the natural; one was manifest as the other within his system of values and perceptions and beliefs. The promoter, the*

boaster, the aggressor, the egoist, the innovator would have been looked at askance. The ideal was the man of restraint, dignity, rectitude, he of the Middle Way. Life proceeded within the limits of known and proper pattern from birth through death and beyond. Its repetitive rhythm was punctuated with ritual, courtship, dance, song, and feast, each established according to custom going back to the beginning of the world, an event which, along with subsequent events having to do with setting the way of life, was well known and fully recounted in the peoples' oral but elaborate and specific histories.

It was not an easy life, but it was a good one. The hunting and fishing and gathering, the endless labor of preparation of foods and hides, the making of baskets, tools, and implements and the always vexing problem of storage, required the industry and skill of both sexes and of young and old; but there was some choice and there was seasonal and ritual variety. There were lean times, but the lean like the fat times were shared with family, friends, and tribe. Life was as it had always been.

I don't cite this description as a model solution to the ecological crisis, but simply as evidence that there is another way. Man is not, by nature, a polluter and a killer.

We can decide how we want to live and what our values will be. We can change our economy and politics of death to an ecology of life. We must exercise that freedom of choice to change, now, before it is too late.

I think an understanding of how the ecological crisis differs from other political issues provides a basis for a rational hope and faith in the possibilities of change.

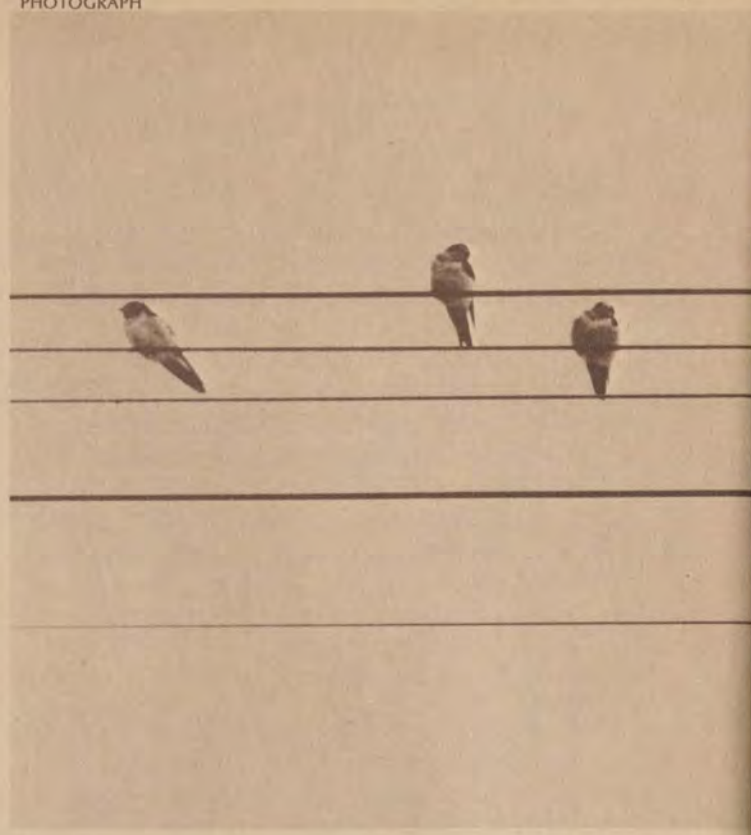
The immediate ecological issue is not a question of morality or conscience. What's at stake is survival—literally a life and death issue, and, increasingly, people are becoming aware of this.

The destruction of the environment is not something removed from our everyday reality as the war in Vietnam and other social issues tend to be. The person who drives to and from work each day sees, feels, and smells environmental deterioration all around.

The catastrophe of a dying planet affects all of us; the differences of race, class, color, politics, sex and nationality are no longer as important when we realize the possibility of the extinction of the human species. Ecology may serve as a new basis for cooperation among many peoples and nations.

Another important factor is the growing spiritual restlessness in the "developed" countries of the world. More and more people are

PHOTOGRAPH

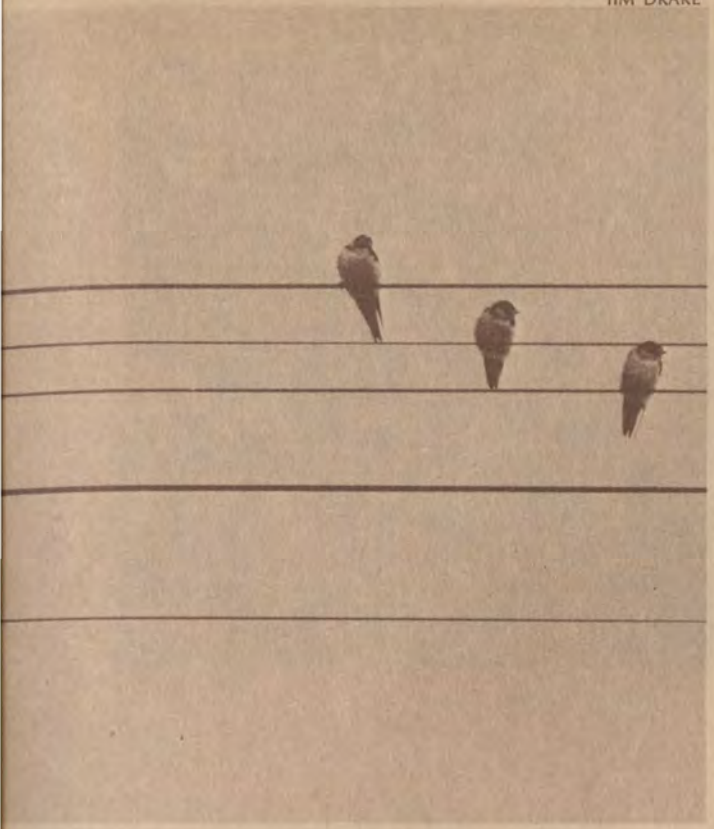


becoming aware that competition, consumption and "success" pose no solutions to the dilemma of life. Individuals are asking themselves: what is life for? And so there is more of a willingness to experiment and an openness to change than there has been for many years.

What all of this points toward is a new coalition of people from every kind of background, united in their love of life, and committed to the preservation of life. Political and economic considerations are likely to be viewed more clearly and simply now; we will determine our priorities and make our decisions on the basis of which alternative will lead toward a more secure, meaningful future for our children.

The formation of this new movement is already well under way. Hundreds of ecology action groups have been formed all over the country within the last year. People are learning about the ecological crisis very rapidly, and there have already been some very effective demonstrations. But if this movement is to be successful in assuring a future for life on our planet, then it must carry out a full and rational analysis not only of our social, political, and economic institutions, but also of our individual life styles. The question of the relationshhip between means and ends must be answered. And finally, it is vitally important to pose well-reasoned solutions which contribute to a growing vision: a sense of the future that is not frightening—but beautiful.

JIM DRAKE



We must begin to consider ecological concepts—the natural laws of life—as providing a bare outline for the kinds of change that are necessary. If we are to live in harmony with our planet, then we must obey the laws by which life has evolved on our planet.

The first law of life is that all living things are in interaction, interrelated, and interdependent. Anything that we human beings do, of necessity, affects all the other living things with whom we share the planet. Quite literally, we owe our existence to all the green things that take in carbon dioxide and give off oxygen. And so anything that we do to them, sooner or later, is going to affect us. But even more than that, we must realize that nature consists of an incredibly delicate and complex system of interrelationships which we are only beginning to understand. And so we absolutely cannot tamper with the balance of nature, unless we are completely aware of all the possible consequences. *Ecological considerations must come before economics.*

When a tree dies, all of the nutrients which it used during its lifetime are returned to the soil. Nature has a closed energy cycle, much like the life-support system of a space ship. We must recycle everything that we use—from paper and water, to metals, to human waste. We can no longer afford a technology which robs the environment and returns nothing except pollution. Instead of using fossil fuels as our source of energy, we should rely on wind, solar and water power. This will mean abandoning the internal combustion engine, as well as a drastic decrease in the amount of available energy, but these are the kinds of luxuries that we will have to forego if we are to survive.

A truly ecological society would be a radically decentralized society for several reasons. The ability to adapt and change, a prerequisite for species survival, is much more easily accomplished on a small scale where there is not a mass social and institutional inertia to overcome. The alternative forms of energy that I mentioned above can only be used on a small scale. The recycling of minerals and wastes is not such a problem when dealing with small quantities. Increasingly, we are finding that large urban concentrations are ecologically unmanageable, and so we must begin to seek new patterns of government and community.

It is being suggested that the only way to solve the ecological problems of the San Francisco Bay is to form a unified and comprehensive regional government which would have certain authority and responsibilities for the entire Bay Area. This experience suggests that the model government of the future will be regional; a kind of participatory Tennessee Valley Authority whose boundaries would be that of the particular ecosystem which is its special concern.

These are just a few examples of the application of ecological concepts to political and economic institutions. What, then, are the alternatives to our life styles which, currently, are so clearly offensive from the planet's point of view?

Obviously, this is a question that each individual must answer for himself. But I do think there may be such a thing as an ecological meaning of life which points the way. I think ecology, more than just a science, is a profoundly religious awareness of the reverence and unity of all life. We find this sense of reverence in the very root of the word ecology, *oikos*, which means home or household.

What, do you suppose, is our purpose in life? If the plants with whom we share the household could speak, they might answer: to grow into the uniqueness that is given each living thing, to grow in relatedness and interdependence with all other living things, and to create new life. But then, you know how difficult it is to keep plants alive in our homes these days. ■

PAS DE DEUX

I acknowledge all that burns,
flowers lies
in the blank stare
of its feeding:
the appetite in brocade,
the stone
bending in the wind,
the lion
asleep under a tree,
the yellow tooth of our
love.

I acknowledge each object
of your hands,
the animal hanging from memory
bleeding into time,
the single eye
staring from a rock,
the dip
quick
stutter
through the horizon
curved behind your speech.

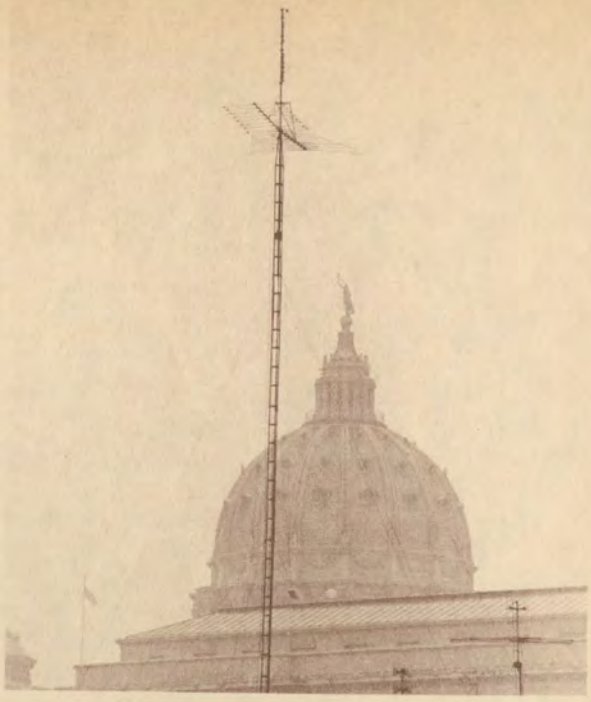
—STANLEY COOPERMAN

PHOTOGRAPH C. C. CHURCH

YOUR WORDS

Your words spout up like gullies of birds
from trees, metaphysics in poppies, and
lilacs asking how matters stand with us.
And I reply we exist!
Like the spidery finger-play in your
voice, time in clocks, and suns and bells, and some
drowned June whose memory dazzles from off your
tongue and from between our teeth.
We exist as an orgy of air or a temporary solution
your sounds that break our body with their vibrations
the death rattle in a movement.
We live simply. Cold with clear sight
seeing to much in a narrow place of the world. We look
deeply into everything for one reflection can make a well.
You smile and your mouth becomes a test-tube full of
self-service luxury for our eyes, becomes the chime of your
skeleton wrung deep as death to the bone.
You ask how matters stand with us
and I must answer you truthfully, "there are penalties
for breaking into closed worlds."

—SALLIE ADAMS



PHOTOGRAPH A. PIERCE BOUNDS

by Nicholas von Hoffman

Between the idea
And the reality
Between the motion
And the act
Falls the Shadow.
—T. S. Eliot, "The Hollow Men."

BABY BOMB GOES WHIMPER

Nine months ago the President sent a message to Congress suggesting it do something for population control. Nothing has happened except more babies have been conceived while demographers shuddered, ecologists shook their heads and scientists advanced their inquiries as to how and when the human race will expire.

There is doubt about how exactly we will do away with ourselves, although very little hesitation to predict we will. The optimists forecast universal, atomic euthanasia, but the newer and now-dominant opinion looks for the end to come miserably in the ingeniously horrible forms of science fiction. Not with a bang but a whimper.

In this lugubrious debate there is a school of thought that foresees our going the way of a country like Afghanistan, where the earth itself suffers from incurable maladies, according to Robert and Leona Rienow in the book, *Moment in the Sun* (Sierra Club, Ballantine, 1969, 95 cents): "Not only are the surface waters laden with diseases and plagues, but the lack of proper sewage disposal over the centuries has caused permeation by the pollution of the sparse soils until the deep aquifer—that vast and mystical lake of fresh water underlying Earth's surface—has become universally contaminated . . . to live in a country where the very soil in our garden and the ground water under our feet . . . are writhing with cholera, hepatitis, tuberculosis, typhus, dysentry, typhoid, diphtheria, polio, viruses and hundreds of other plagues—where to drill a well in one's backyard is to challenge death—must indeed be the ultimate horror."

A different line of inquiry speculates that we're polluting ourselves into another ice age. MIT's "Technology Review" (October/November, 1969) says, ". . . there is increasing evidence that urban and industrial pollution, perhaps aided by agricultural pollution, is in large part responsible for decreasing the surface temperature . . ." This is not yet an established fact; indeed there are few established facts; the scientists who study these things tell us the workings of the global systems we are upsetting aren't understood.

What they do agree on is that if we continue as we are, when all the facts are established it will be too late to alter them and we will die. It is also established that much of what we needlessly do has awesome repercussions in nature. The same issue of the same magazine blames the pumping of fluid wastes into the earth for three earthquakes in Denver, Colo., in 1967, while the same year a dam in India is thought to have caused a quake that killed more than 200 people.

Every publication that devotes itself to the subject repeatedly warns that these terrible consequences aren't local but affect the planet. It's not just the air over New York or Los Angeles that brings particulate death, but the air, period; all the air in Maine, in the Bahamas, the North Woods, the atmosphere of the planet. And what's our response? About $100,000 a year is being spent by the government to study what we're doing to our air.

It's natural to defer spending money to fend off future ills if you know they're far enough in the future. We don't. We know the contrary. Change is changing faster than change ever changed before. Only people as old as the Speaker of the House of Representatives can safely bet that they'll die before the deluge or the plague or the asphyxia or the consummate quake gobbles us up. The present generation of congressional committee chairmen may be the last old people to die quiet, natural, dignified deaths.

In their complacency at having been smart enough to get themselves born before 1900 they're indifferent to the rest of us who're stranded and catching at mouthfuls of air in the 20th century. For six months they've not only ignored the President's modestly inadequate birth-control proposals, they've passed a tax bill which encourages baby production.

Instead of increasing the exemption for children, what they should have done is pass a bill providing no exemption for any child born to a middle-income family ten months after the bill was signed; upper-income families should have a stiff, rising scale of negative exemptions. Under such a system people making, say, $20,000 a year, would have an extra $1,000 of taxable income to pay on if they have one child, $2,500 for two, and so on.

The reason isn't to make parents, rather than childless people, pay for schools, but because a rich child is a much greater ecological burden than a poor one. (See Wayne H. Davis in the Jan. 10 "New Republic" for a discussion of this.) On the average, one American in his lifetime will use 21,000 gallons of leaded gasoline, 56,000,000 gallons of water, 10,150 pounds of meat and 28,000 pounds of milk. That's an average so you can guess what the consumption of the rich, and even the not so rich is. Twenty-nine per cent of all families now own two cars.

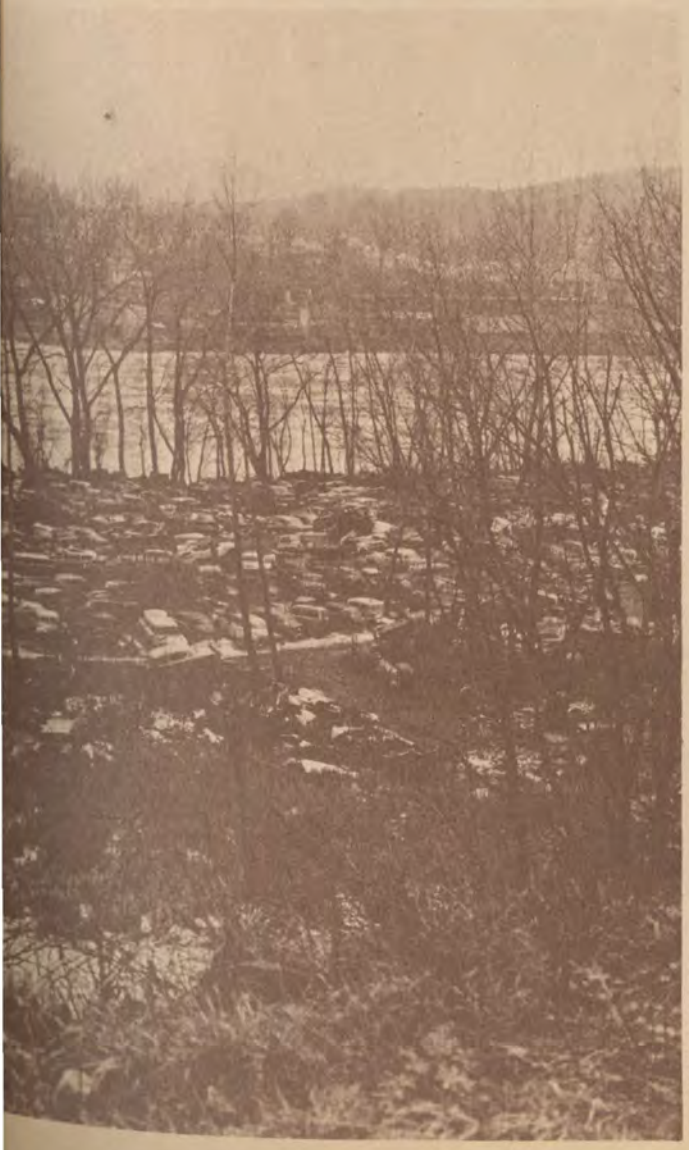
We can't go on like this. There are 70 million cars on the road now, four million more than there were last year. Either we give

PHOTOGRAPH

up our cars, our jets, our nice homes, our buying and using or we limit the number of Americans allowed to come into existence. Even so we may have to do both. It already costs $50 a year to empty each garbage can in New York City and there's no place to put the garbage after we've collected it. What are we going to do when the millions of young people now reaching family formation age strike out on their own, with their own cars, their own garbage production, their own demand for housing?

The population bomb has already been detonated. We've had Hiroshima; are we also going to get Nagasaki? If the children are afflicted with the same rabid rabbitism that took hold of their Eisenhower-era mating parents, human babies are going to become as valuable as mongrel puppies.

There's nothing new about this information or the conclusions drawn here. The only reason the words have to be said again and many times over is that the people who run things are too lethargic even to protect their own comfort or their or their children's future.



RICK SMOLAN

Every kind of opportunity is missed. Congress passes changes in the Social Security Act, but fails to provide larger pensions for childless couples marrying after the law takes effect. They do that in spite of everybody telling them that one of the reasons people have children is for social security.

The states and the courts crawl in the direction of legalizing abortions like pregnant turtles dropping fertilized eggs as they belly across the sand. Finally, we'll have legalized abortions, but how's that going to save us if our population is up over the 300 million mark?

The media, which can bang pots and ring bells for the most insignificant causes, has yet to put on its first anti-baby campaign. Where are the TV spots giving people a realistic assessment of what kind of a life that baby's going to live? Where are the billboards proclaiming fast-breeding animals are pests? Why are we still making over multi-children mothers and having Father of the Year contests?

The businessmen and economists are also going to have to find another way. Their stock solution to all problems is increasing the Gross National Product. A balanced budget, public works, higher profits, everything good is supposed to come from stepping up the volume of production, enlarging the parameters, as economists like to say. We don't even have a theoretical model of a balanced economy, that isn't expanding but is accomplishing its tasks by remaining stable. Laissez-fairists, Keynesians, Marxists, all of them rely on infinite growth of production; but this can't be. Fifty million more fast babies aren't 50 million more customers—they're a disaster. The system must be adjusted so that a way can be found to make money while holding production constant or even, God forbid, cutting back.

"This is the way the world ends," wrote the poet, "not with a bang but a whimper." Or a gasp, or a clutch or a groan or a cough or a frail exhalation. Exactly how eludes our knowing. The last moment may come before the planet can no longer sustain human life; it may come when the press of too many crazy people killing and cutting each other destroys our human communities. That's what some social scientists believe. If we allow it to happen we *are* the hollow men of the poem, the stuffed men, leaning together, headpiece filled with straw, and the last sound *shall* be rats' feet over broken glass. ■

This article first appeared as a commentary in the Washington Post, *January 16, 1970.*

TWO NEWS STORIES

PAGE TWO

A snake so thin his eyes
bulged out like nipples
was spotted crawling
down a second floor corridor
of City Hall this morning
past some of the community's
most influential doors.

The snake, smashed by a woman
with a mop,
was found to be deadly.
An assasination plot is
presumed
though no councilman would comment
and the mayor
has been curiously
absent.

—RALPH ADAMO

PAGE 7

Searchers combed the rugged foothill area west of Fort Collins, Colorado, for a "deeply religious" 20-year-old coed who may have walked into the area nude to "meet with God" . . . . UPI news release

It was the right place.

She folded her clothes
on a rock

removed her mask
and set off

concerned only with
the one great need.

Scorpions rustled over the cracks
in the long hot day.

Was there an instant
she looked back

her lithe figure
testing foot-holds in the mountain

her tongue clucking at the last
against the roof of her mouth

with the birds circling, clacking,
smelling her a long way off

and the bones shining in her skin
like marble

or like salt.

—JOHN H. STONE

PHOTOGRAPH BRUCE MISFELDT

ECOLOGY AND REVOLUTIONARY THOUGHT

by Murray Bookchin

The critical edge of ecology derives from its very subject-matter—from its very domain. The issues with which ecology deals are imperishable in the sense that they cannot be ignored without bringing into question the viability of the planet, indeed the survival of man himself. The critical edge of ecology is due not so much to the power of human reason —a power which science hallowed during its most revolutionary periods—but to a still higher power, the sovereignty of nature over man and all his activities. It may be that man is manipulable, as the owners of the mass media argue, or that elements of nature are manipulable, as the engineers demonstrate by their dazzling achievements, but ecology clearly shows that the *totality* of the natural world—nature taken in *all* its aspects, cycles, and interrelationships—cancels out all human pretensions to mastery over the planet. The great wastelands of North Africa and the eroded hills of Greece, once areas of a thriving agriculture or a rich natural flora, are historic evidence of nature's revenge against human parasitism, be it in the form of soil exploitation or deforestation.

Yet none of these historical examples compare in weight and scope with the effects of man's despoliation—and nature's revenge—since the days of the Industrial Revolution, and especially since the end of the Second World War. Ancient examples of human parasitism were essentially local in scope; they were precisely *examples* of man's potential for destruction and nothing more. Often, they were compensated by remarkable improvements in

the natural ecology of a region, as witness the European peasantry's superb reworking of the soil during centuries of cultivation and the even more superb achievements of Inca agriculturists in terracing the Andes Mountains during pre-Columbian times.

Modern man's despoliation of the environment is global in scope, like his imperialisms. It is even extra-terrestrial, as witness the disturbances of the Van Allen Belt a few years ago. Human parasitism disrupts not only the atmosphere, climate, water resources, soil, flora and fauna of a region; it upsets virtually all the basic cycles of nature and threatens to undermine the stability of the environment on a world-wide scale.

In ecology, however, the word "parasite," used in this over-simplified sense, is not an answer to a question, but comprises the question itself. Ecologists know that a destructive parasitism of this kind usually reflects a disruption of an ecological situation; indeed, many species, seemingly highly destructive under one set of conditions, are eminently useful under another set of conditions. What imparts a profoundly critical function to ecology is the fact that man's destructive activities raise the question: What are the conditions that have turned man into a destructive parasite? What produces a form of human parasitism that results not only in vast natural imbalances, but also threatens the very existence of humanity itself?

The truth is that man has produced imbalances not only in nature, but more fundamentally, in his relations with his fellow man—in the very structure of his society. To state this thought more precisely: The imbalances man has produced in the natural world are caused by the imbalances he has produced in the social world. A century ago it would have been possible to regard air pollution and water contamination as the result of greed, profit-seeking, and competition—in short, as the result of the activities of industrial barons and self-seeking bureaucrats. Today, this explanation would be a gross over-simplification. It is doubtless true that most bourgeois enterprises are still guided by a public-be-damned attitude, as witness the reactions of power utilities, automobile concerns, and steel corporations to pollution problems. But a more deep-rooted problem than the attitude of the owners is the size of the firms themselves—their enormous physical proportions, their location in a region, their density with respect to a community or a waterway, their requirements for raw materials and water, and their role in the national division of labor.

What we are seeing, today, is a crisis not only in natural ecology but, above all, in social ecology. Modern society, especially as we know it in the United States and Europe, is being organized around immense urban belts at one extreme, a highly industrialized agriculture at the other extreme, and capping both, a swollen, bureaucratized, anonymous state apparatus. If we leave all values aside, for the moment, and examine the physical structure of this society, what must necessarily impress us is the incredible logistical problems it must try to solve—problems of transportation, of density, of supply (raw materials, manufactured commodities, and foodstuffs), of economic and political organization, of industrial location, and so forth. The burden this type of urbanized and centralized society places on any continental area is enormous. If the process of urbanizing man and industrializing agriculture were to continue unabated, it would make much of the earth inhospitable for viable, healthy human beings and render vast areas utterly uninhabitable.

Ecologists are often asked, rather tauntingly, to locate with scientific exactness the ecological breaking point of nature—presumably, the point at which the natural world will cave in on man. This is equivalent to asking a psychiatrist for the precise moment when a neurotic will become a non-functional psychotic. No such answer is ever likely to be available. But the ecologist can supply a strategic insight into the directions man seems to be following as a result of his split with the natural world.

From the standpoint of ecology, man is dangerously simplifying his environment. The modern city represents a regressive encroachment of the synthetic on the natural, of the inorganic (concrete, metals and glass) on the organic, of crude, elemental stimuli on variegated, wide-ranging ones. The vast urban belts now developing in industrialized areas of the world are not only grossly offensive to eye and ear, but they are becoming chronically smog-ridden, noisy and virtually immobilized by congestion. This process of simplifying man's environment and rendering it increasingly elemental and crude has a cultural as well as a physical dimension. The need to manipulate immense urban populations—to transport, feed, employ, educate and somehow entertain millions of densely concentrated people daily—leads to a crucial decline in civic and social standards. A mass concept of human relations—totalitarian, centralistic and regimented in orientation—tends to dominate the more

individuated concepts of the past. Bureaucratic techniques of social management tend to replace humanistic approaches. All that is spontaneous, creative and individuated is circumscribed by the standardized, the regulated and the massified.

The same regressive simplification of the environment occurs in modern agriculture.[1] The manipulated people in modern cities must be fed, and to feed them involves an extension of industrial farming. Food plants must be cultivated in a manner that allows for a high degree of mechanization—not to reduce human toil but to increase productivity, efficiency, maximize investments, exploit the biosphere. Accordingly the terrain must be reduced to a flat plain—to a factory floor, if you will—and natural variations in topography must be diminished as much as possible. Plant growth must be closely regulated to meet the tight schedules of food-processing plants. Ploughing, soil fertilization, sowing and harvesting must be handled on a mass scale, often in total disregard of the natural ecology of an area. Large areas of the land must be used to cultivate a single crop, a form of plantation agriculture that not only lends itself to mechanization but also to pest infestation—a single crop being the ideal environment for the proliferation of individual pest species. Finally, chemical agents must be used lavishly to deal with the problems created by insects, weeds, plant diseases; to regulate crop production and maximize soil exploitation. The real symbol of agriculture is not the sickle or, for that matter, the tractor, but the airplane. The modern food cultivator is represented not by the peasant, yeoman, or even the agronomist —men who could be expected to have an intimate relationship with the unique qualities of the land on which they grow crops—but by the pilot and chemist, for whom soil is a mere resource, an inorganic raw material.

The simplification process is carried still further by an exaggerated regional, indeed a national division of labor. Immense areas of the planet are increasingly reserved for specific industrial tasks or reduced to depots of raw materials. Others are turned into centers of urban population, largely occupied with commerce and trade. Cities and regions, in fact countries and continents, are specifically identified with special products—Pittsburgh, Cleveland and Youngstown with steel, New York with finance, Bolivia with tin, Arabia with oil, Europe and America with industrial goods and the rest of the world with raw materials of one kind or another. The complex ecosystems which make up the regions of a continent are submerged, in effect, by an organization of entire nations into economically rationalized entities, each a way-station in a vast industrial belt system, global in its dimensions. By the same token, it is only a matter of time before the most attractive areas of the countryside will succumb to the concrete mixer, just as most of the Eastern seashore areas of the United States have already succumbed to subdividers and bungalows. What will remain in the way of natural beauty will be debased by trailer lots, canvas slums, "scenic" highways, motels, food stalls and the oil slicks of motor boats.

The point is that man is literally undoing the work of organic evolution. By creating vast urban agglomerations of concrete, metal and glass, by overriding and undermining the complex, often subtly organized ecosystems that constitute local differences in the natural world —in short, by replacing a highly complex, organic environment by a simplified, inorganic one—man is disassembling the biotic pyramid that supported humanity for countless millennia. In the course of replacing the complex ecological relationships, on which all advanced living things depend, with more elementary relationships, man is steadily restoring the biosphere to a stage which will be able to support only simpler forms of life. If this great reversal of the evolutionary process continues, it is by no means fanciful to suppose that the preconditions for higher forms of life will be irreparably destroyed and the earth will be incapable of supporting human beings.

Ecology derives its critical edge not only from the fact that it alone, among all the sciences, presents this awesome message to humanity, but because it also presents this message in a new social dimension. From an ecological viewpoint, the reversal of organic evolution is the result of appalling contradictions between town and country, state and community, industry and husbandry, mass manufacture and craftsmanship, centralism and regionalism, the bureaucratic scale and the human scale.

Until recently, attempts to resolve the contradictions created by urbanization, centralization, bureaucratic growth and statification were viewed as a vain counterdrift to "progress"—a counterdrift that, at best, could be dismissed as chimerical and, at worst, as reactionary. The anarchist was regarded as a forlorn visionary, a social outcast, filled with nostalgia for the peasant village or the medieval

commune. His yearnings for a decentralized society, for a humanistic community at one with nature and the needs of the individual—spontaneous and unfettered by authority—were viewed as the reactions of a romantic, of a declassed craftsman or an intellectual "misfit." His protest against centralization and statification seemed all the less persuasive because it was supported primarily by ethical considerations, by utopian, ostensibly "unrealistic" notions of what man could be, not what he was. To this protest, opponents of anarchist thought—liberals, rightists and authoritarian "leftists"—argued that they were the voices of historic reality, that their statist, centralist and political notions were rooted in the objective, practical world.

)TOGRAPH DERLI BARROSO

Time is not very kind to the conflict of ideas. Whatever may have been the validity of libertarian and non-libertarian views a few generations ago, historical development has rendered virtually all objections to anarchist thought meaningless today. The modern city and state, the massive coal-steel technology of the Industrial Revolution, the later, more rationalized systems of mass production and assembly-line systems of labor organization, the centralized nation, the state and its bureaucratic apparatus—all, have reached their limits. Whatever progressive or liberatory role they may have possessed has clearly become entirely regressive and oppressive. They are regressive not only because they erode the human spirit and drain the community of all its solidarity and ethico-cultural standards; they are regressive from an objective standpoint, from an ecological standpoint. For they undermine not only the human spirit and the human community but also the viability of the planet and all living things on it.

What I am trying to say—and it cannot be emphasized too strongly—is that the anarchist concept of a balanced community, a face-to-face democracy, a humanistic technology and a decentralized society—these rich libertarian concepts are not only desirable but necessary. They belong not only to the great visions of man's future but they now constitute the preconditions for human survival.

The rejection of the prevailing state of affairs accounts for the explosive growth of intuitive anarchism among young people today. Their love of nature is a reaction against the highly synthetic qualities of our urban environment and its shabby products. Their informality of dress and manners is a reaction against the formalized, standardized nature of modern institutionalized living. Their predisposition for direct action is a reaction against the bureaucratization and centralization of society. Their tendency to drop out, to avoid toil and the rat race reflects a growing anger towards the mindless industrial routine bred by modern mass manufacture, be it in the factory, office or university. Their intense individualism is, in its own elemental way, a *de facto* decentralization of social life—a personal abdication from the demands of a mass society.

What is most significant about ecology is its ability to convert this rejection of the *status quo,* often nihilistic in character, into an emphatic affirmation of life—indeed, into a reconstructive credo for a humanistic society. The essence of ecology's reconstructive message can be summed up in the word "diversity." From an ecological viewpoint, balance and harmony in nature, in society and by inference, in behavior, is achieved not by mechanical standardization but precisely by its opposite: organic differentiation. This message can be understood clearly only by examining its practical meaning on several levels of experience.

Let us consider the ecological principle of diversity as it applies to biology and specifically to agriculture. A number of studies—Lotka's and Volterra's mathematical models, Gause's experiments with protozoa and mites in controlled environments, and extensive field research—clearly demonstrate that fluctuations in populations, ranging from mild to pest-like proportions, depend heavily upon the number of species in an ecosystem and the degree of variety in the environment. The greater the variety of prey and predators, the more stable

the population; the more diversified the environment in terms of flora and fauna, the less likely is there to be ecological instability. Complexity, variety and diversity—choose whatever term you will—are a function of stability. If the environment is simplified and the variety of animal and plant species is reduced, fluctuations in population become marked and tend to get out of control. They tend to reach pest proportions.

In the case of pest control, many ecologists now conclude that we can avoid the repetitive use of toxic chemicals such as insecticides and herbicides by allowing for a greater interplay between living things. We must accord more room for natural spontaneity, for the diverse biological forces that make up an ecological situation.

The situation demands a far-reaching decentralization of agriculture. Wherever feasible, industrial agriculture must give way to soil and agricultural husbandry; the factory floor must yield to gardening and horticulture. I do not wish to imply that we must surrender the gains acquired by large-scale agriculture and mechanization. What I *do* contend, however, is that the land must be cultivated as though it were a garden—its flora diversified and carefully tended, balanced by a fauna and tree shelter appropriate to the region. Decentralization is important, moreover, not only for the development of the agricultural situation, but also for the development of the agriculturist. Food cultivation, practiced in a truly ecological sense, presupposes that the agriculturist is familiar with all the features and subtleties of the terrain on which the crops are grown. By this I mean that he must have a thorough knowledge of the physiography of the land, its variegated soils—crop land, forest land, pasture land; mineral and organic content —its microclimate, and he must be engaged in a continuing study of the effects produced by new flora and fauna. He must acquire a sensitivity to its possibilities and needs to a point where he becomes an organic part of the agricultural situation. We can hardly hope to achieve this high degree of sensitivity and integration in the food cultivator without reducing agriculture to a human scale, without bringing agriculture within the scope of the individual. To meet the demands of an ecological approach to food cultivation, agriculture must be rescaled from huge industrial farms to moderate-sized units.

The same reasoning applies to a rational development of energy resources. The Industrial Revolution increased the *quantity* of energy available to industry, but it diminished the *variety* of energy resources used by man. Although it is certainly true that pre-industrial societies relied primarily on animal power and human muscles, complex energy patterns developed in many regions of Europe, involving a subtle integration of resources (such as wind and water power) and a variety of fuels (wood, peat, coal, vegetable starches and animal fats).

The Industrial Revolution overwhelmed and largely destroyed these regional energy patterns, initially replacing them by a single energy system (coal) and later by a dual system (coal and petroleum). Regions disappeared as models of integrated energy patterns—indeed, the very concept of *integration through diversity* was obliterated. As I indicated earlier, many regions became predominantly mining areas, devoted to the extraction of a single resource, while others were turned into immense industrial areas, often devoted to the production of a few commodities. We need not review the role this breakdown in true regionalism has played in producing air and water pollution, the damage it has inflicted on large areas of the countryside, and the prospect we face in the depletion of our precious hydrocarbon fuels.

We can, of course, turn to nuclear fuels. But it is chilling to think of the lethal radioactive wastes that would require disposal as power reactors replace conventional fuel systems. Eventually, an energy system based on radioactive materials would lead to the widespread contamination of the environment—at first in a subtle form, but later on in a massive and palpably destructive scale.

Or we could apply ecological principles to the solution of our energy problems. We could try to re-establish earlier regional energy patterns—a combined system of energy provided by wind, water and solar power. But today we would be aided by more sophisticated devices than any known in the past. We have now designed wind turbines that could supply electricity in a number of mountainous areas to meet the electric power needs of a community of 50,000 people. We have perfected solar-energy devices that yield temperatures high enough in our warmer latitudes to deal with most metallurgical problems. Used in conjunction with heat pumps, many solar devices could provide as much as three-quarters—if not all—of the heat required to comfortably maintain a small family house.

Solar devices, wind turbines and hydro-electric resources—each, taken singly, does not provide a solution for our energy problems and the ecological disruption created by conventional fuels. Pieced together as a mosaic, more precisely as an organic energy pattern *developed from the potentialities of a region,* they could amply meet the needs of a decentralized society. In warm, sunny latitudes, we could rely more heavily on solar energy than on combustible fuels. In areas marked by atmospheric turbulence, we could rely more heavily on wind devices, and in suitable coastal areas or inland regions with a good network of rivers, the greater part of our energy would come from hydro-electric installations. In all cases, we would use a *mosaic* of non-combustible energy resources, filling whatever gaps develop by combustible and nuclear fuels. The point I wish to make is that by diversifying our use of energy resources, by organizing them into an ecologically balanced pattern, we could combine wind, solar, and water power in a given region to meet all the industrial and domestic needs of a community with only a minimal use of hazardous fuels. And eventually, we would sophisticate all our non-combustion energy devices to a point where all harmful sources of energy could be eliminated from the pattern.

As in the case of agriculture, however, the application of ecological principles to energy resources presupposes a far-reaching decentralization of society and a truly regional concept of social organization. To maintain a large city requires immense packages of fuel—"mountains of coal and veritable oceans of petroleum. By contrast, solar, wind and tidal energy can reach us mainly in small packets; except for spectacular tidal dams, the new devices seldom provide more than a few thousand kilowatt-hours of electricity. It is difficult to believe that we will ever be able to design solar collectors that can furnish us with immense blocks of electric power produced by a giant steam plant; it is equally difficult to conceive of a battery of wind turbines that will provide us with enough electricity to illuminate Manhattan Island. If homes and factories are heavily concentrated, devices for using clean sources of energy will probably remain mere playthings, but if urban communities are reduced in size and widely dispersed over the land, there is no reason why these devices cannot be combined to provide us with all the amenities of an industrialized civilization. To use solar, wind and tidal power effectively, the megalopolis must be decentralized. A new type of community, carefully tailored to the characteristics and resources of a region, must replace the sprawling urban belts that are emerging today." [2]

An objective case for decentralization, to be sure, does not end with a discussion of agriculture and the problems created by combustible energy resources. The validity of the decentralist case can be demonstrated for nearly all the "logistical" problems of our time. At the risk of being cursory, let me cite an example from a problematical area such as transportation. A great deal has been written quite recently about the harmful effects of petrol-driven motor vehicles—their wastefulness, their role in urban air pollution, the noise they contribute to the city environment, the enormous death toll they claim annually in the large cities of the world and on highways. In a highly urbanized civilization, it would be meaningless to replace these noxious vehicles by clean, efficient, virtually noiseless and certainly safer battery-powered vehicles. The best of our electric cars must be recharged about every hundred miles—a feature which limits their usefulness for transportation in large cities. In a small, decentralized community, however, it becomes eminently feasible to use these electric vehicles for intra-urban or regional transportation and establish monorail networks for long-distance transportation.

It is fairly well known, today, that petrol-powered vehicles contribute enormously to urban air pollution, and there is a strong sentiment to "engineer" the more noxious features of the automobile into oblivion. Our age characteristically tries to solve all its irrationalities with a gimmick—blow-by devices and after-burners for toxic petrol fumes, antibiotics for ill-health, tranquillizers for psychic disturbances. The problem of urban air pollution is more intractable than we care to believe. Basically, air pollution is caused by high population densities, by an excessive concentration of people in a small area.

The fact is that millions of people, densely concentrated in a large city, necessarily produce serious *local* air pollution merely by their day-to-day activities. They must burn fuels for domestic and industrial reasons; they must construct or tear down buildings (the aerial debris produced by these activities is a major source of urban air pollution); they must dispose of immense quantities of rubbish; they must travel on roads with rubber tires (again, the particles produced by the erosion of tires

and roadway materials adds significantly to air pollution). Quite aside from the pollution-control devices we add to automobiles and power plants, it should be fairly clear that whatever improvements these devices will produce in the quality of urban air will be more than cancelled out by future megalopolitan growth.

The social possibilities opened by decentralization could be discussed indefinitely and, in any case, there is more to anarchism than decentralized communities. If I have examined these possibilities in some detail, it has been to demonstrate that an anarchist society, far from being a remote ideal, has become a precondition for the practice of ecological principles. To sum up the critical message of ecology: If we diminish variety in the natural world, we debase its unity and wholeness. We destroy the forces making for natural harmony and stability, for a lasting equilibrium, and what is even more significant, we introduce an absolute retrogression in the development of the natural world, eventually rendering the environment unfit for advanced forms of life. To sum up the reconstructive message of ecology: If we wish to advance the unity and stability of the natural world, if we wish to harmonize it on ever higher levels of development, we must conserve and promote variety. To be sure, mere variety for its own sake is a vacuous goal. In nature, variety emerges spontaneously. The capacities of a new species are tested by the rigours of climate, by its ability to deal with predators, by its capacity to establish and enlarge its niche. *Yet the species that succeeds in enlarging its niche in the environment also enlarges the ecological situation as a whole.*

PHOTOGRAPH RICK SMOLAN

Just as the ecologist seeks to elaborate the range of an ecosystem and promote a freer interplay between species, so the anarchist seeks to elaborate the range of social experience and remove all fetters to its development. To state my point more concretely: Anarchism is not only a stateless society but also a harmonized society which exposes man to the stimuli provided by both agrarian and urban life, physical activity and mental activity, unrepressed sensuality and self-directed spirituality, communal solidarity and individual development, regional uniqueness and worldwide brotherhood, spontaneity and self-discipline, the elimination of toil and the promotion of craftsmanship.

In our schizoid society, these goals are regarded as mutually exclusive dualities, sharply opposed to each other. To a large extent, they appear as dualities because of the very logistics of present-day society—the separation of town and country, the specialization of labor, the atomization of man—and it would be preposterous, I think, to believe that these dualities could be resolved without a general idea of the *physical* structure of an anarchist society. We can gain some idea of what such a society would be like by reading William Morris's *News From Nowhere* and the writings of Peter Kropotkin. But these are mere glimpses. They do not take into account the post-war developments of technology and the contributions made by the development of ecology. This is not the place to embark on "utopian writings," but certain guide lines can be presented even in a general discussion. And in presenting these guide lines, I am eager to emphasize not only the more obvious ecological premises that support them, but also the humanistic ones.

An anarchist society should be a decentralized society, not only to establish a lasting basis for the harmonization of man and nature, *but also to add new dimensions to the harmonization of man and man.* The Greeks, we are often reminded, would have been horrified by a city whose size and population precluded a personal, often familiar, relationship between citizens. However true this precept may have been in practice two thousand years ago, it is singularly applicable today. There is plainly a need to reduce the dimensions of the human community—partly to solve our pollution and transportation problems, partly also to create *real* communities.[3] In a sense, we must *humanize* humanity. There should be a minimum of electronic devices—telephones, telegraphs, radios,

television receivers and computers—to mediate the relations between people. In making collective decisions—and the ancient Athenian ecclesia was, in some ways, a model for making social decisions during the classical period—all members of the community should have an opportunity to acquire in full the measure of anyone who addresses the assembly. They should be in a position to absorb his attitudes, study his expressions, weigh his motives as well as his ideas in a direct personal encounter and through full debate, face-to-face discussion and inquiry.

Our small communities should be economically balanced and well rounded, partly so that they can make full use of local raw materials and energy resources, partly also to enlarge the agricultural and industrial stimuli to which individuals are exposed. The member of a community who has a predilection for engineering, for instance, should be encouraged to steep his hands in humus; the man of

LITHOGRAPH: IN THE LOVELY SUMMERTIME RITA DIBERT MESSENGER

ideas should be encouraged to employ his musculature; the "inborn" farmer should gain a familiarity with the workings of a rolling mill. To separate the engineer from the soil, the thinker from the spade, and the farmer from the industrial plant may well promote a degree of vocational over-specialization that would lead to a dangerous measure of social control by specialists. What is equally important, professional and vocational specialization would prevent society from achieving a vital goal: the humanization of nature by the technician and the naturalization of society by the biologist.

I submit that an anarchist community, in effect, would approximate a clearly definable ecosystem—diversified, balanced and harmonious. It is arguable whether such an ecosystem would acquire the configuration of an urban entity with a distinct center, such as we find in the Greek *polis* or the medieval commune, or whether society would consist of widely dispersed communities without a distinct center. In either case, the ecological scale for any of these communities would be the smallest biome capable of supporting a moderate-sized population.

A relatively self-sufficient community, visibly dependent on its environment for the means of life, would gain a new respect for the organic inter-relationships that sustain it. In the long run, the attempt to approximate self-sufficiency would, I think, prove more efficient than the prevailing system of a national division of labor. Although there would doubtless be many duplications of small industrial facilities from community to community, the familiarity of each group with its local environment and its rootedness in the area would make for a more intelligent and more loving use of its environment. I submit that far from producing provincialism, relative self-sufficiency would create a new matrix for individual and communal development—a oneness with the surroundings that would vitalize the community.

The rotation of civic, vocational, and professional responsibilities would awaken all the senses in the being of the individual, stimulating and rounding out new dimensions in self-development. In a complete society we could hope again to create complete men; in a rounded community, rounded men. In the Western world, the Athenians, for all their shortcomings and limitations, were the first to give us a notion of this completeness. "The *polis* was made for the amateur," Kitto tells us.

> "Its ideal was that every citizen (more or less, according as the *polis* was democratic or oligarchic) should play his part in all of its many activities—an ideal that is recognizably descended from the generous Homeric conception of *arete* as an all-round excellence and an all-round activity. It implies a respect for the wholeness or the oneness of life, and a consequent dislike of specialization. It implies a contempt for efficiency—or rather a much higher ideal of efficiency; an efficiency which exists not in one department of life, but in life itself." [4]

An anarchist society, although it would aspire for more, could hardly hope to achieve less than this state of mind. ■

NOTES:

[1] For an insight into this problem, I urge the reader to consult *The Ecology of Invasions* by Charles S. Elton (John Wiley & Sons, New York, 1958), *Soul and Civilization* by Edward Hyams (Thames & Hudson, London, 1952), *Our Synthetic Environment* by Lewis Herber (Knopf, New York, 1962), and to re-read Rachel Carson's *Silent Spring*—the last to be read not so much as a diatribe against pesticides as a plea for ecological diversification.

[2] Lewis Herber (Murray Bookchin), *Crisis in Our Cities* (Prentice-Hall, Inc., Englewood Cliffs, N.J., 1965; p. 194).

[3] A community reduced to the human scale is not foredoomed to the cultural sterility that smothers small-town America. Florence, during the high Renaissance, probably had only 60,000 inhabitants. Many large cities, in turn, are as culturally sterile today as the most parochial villages. The future decentralization of populations should be conceived as a vital element in a *general* advance of humanity, a *broad* awakening of all features of life, reinforced by the intimacy and comprehension provided by the human scale.

[4] H. D. F. Kitto, *The Greeks* (Aldine Publishing Co., Chicago; p. 161).

GOING BERSERK

is an exit not often open to most of us,
an out, an instrument of relief, a relaxing into
quicksand, a pineapple to be eaten when marooned
on the desert island of last resort, an oasis,
a spore whose hard crust seals in its flavors
for decades, resistant to heat and pressure,
ready to secrete its flavors under the right
climatic conditions, a mixed metaphor,
catachresis of extremity: "Stop me before I kill
others"—or some such words, body language,
fruit cocktail whose sap is kerosene,
whose seeds are fire. Look how it breaks
open, like a Japanese paper flower,
after crowding increases among us to wipe out
the distance between your body, your thoughts,
and mine, until we no longer groom each other
or observe the hierarchical arrangements
of our cage, until even maternal concern
(the last isotope to start signaling
the half-life of extinction) becomes
heartless, hopeless, helpless,
and sex is fanged and clawed to bite
deep enough to feel, insensation
a protection, but our will to break
free of the advancing numbness
intenser then as well.

Noise crowds close on greasy air and fear
stands in lakes under the arms and crotch.
Someone, then, will take pistol, blade, fist
to shoot, hack, bludgeon someone else, not
necessarily anyone pertinent because
we don't know yet that we're butchering our planet
and all the planet has to say is
"All right, it's time now to open
the bright seeds of death in your veins
and reduce your numbers by any means necessary."
Count on our getting uglier as we go along,
no nobility in our maddened, thrashing
convulsions of hallucinatory hatred.
When cormorants flocked on Peruvian islands
decide it's time to go, they wheel away,
leaving behind those who've aged too much
during the visit ever to feel air again
breathing between their wing feathers.

Notice how differently from us these abandoned
birds accept the bargain. The camera shows
one of them—dignified, sitting as though
it could easily join the others if it
wished to, but has decided to linger on,
instead, (the island also its birthplace)
puffing up its feathers, rocking a little,
pretending not to notice a weariness
that begins to inhabit its posture, the long-beaked
head drawing back, back into its neck feathers
to assume the perfect image of cormorant pride,
confronting the fact to the very last second,
unruffled, until death itself
is graceless enough to claim the body
and bungle the posture with a sudden
slipping sideways of the neck in a limp
forgetfulness. But it was death who
betrayed the poise, not the cormorant,
the body a thing now possessed by somebody else.

"Man was given dominion over the earth
and its animals"—the very words of a rancher
who wants the wild horses of Wyoming
killed off for glue and replaced
with big-horned sheep, the tourist
hunter's delight. Unaware of
man's congested madness, the horses will
gallop free until caught and hacked to pieces,
their manes with witchnuts in them and
tails so long they sweep the ground,
there, and there, high on the mountains.
We've already killed the deer that caused
a nuisance in Minnesota by crossing
the highway that led to an army base
and thus had to be kept uncluttered.
And women wear proudly the skin
of the vanishing cheetah. Why not?
We'll take as many beautiful
wild things with us as we can,
unlike the wiser lemming
who destroys only himself when the same
ennui of numbers affects him.

Wild dogs on the veldt at sunrise and sundown
tear to pieces the logiest wildebeest
who can't keep up with the herd.
The photograph shows the patience of
the cornered animal—who says animals
don't know about death, man's dirty
little secret?—standing as long as he can,
though the dogs are mercifully quick
and not infected by an instant of pity
or concern except for their own bellies
and the yelping puppies at home—clean in its way.
Some of our young understand in their gut
the need to take to the mountains again,
find tribes or packs to live in—
why is it only man who kills his youngest
and not his oldest numbers? Couldn't
candidate X or Y volunteer like the cormorant
for some noble death instead of
writing murder over our skies
to pinch the life of those to come,
bloat the bellies of children, hack
the limbs of first manhood?

Animals contrive their own governments
and live well except for man. Selective
destruction of the emptiest, most senile,
greediest, richest seems a cry that the earth
itself asks of us now, though as yet only
so-called sociopaths obey the call, seizing
towers, dormitories, any vantage from which
to kill (until captured) their unselective
targets—though anyone will do at first
for those who live too dangerously close
to forgo murder, earth's only instrument
of relief, our quicksand sleep, ridged fruit
like a cocktail exploding at will
into thousands of showering spores
that will mix the metaphors of our
lives completely: "Stop me before I kill
others, before I forget how to die
like the cormorant, live like Wyoming
mustang or the Minnesota deer, before
I remember how to roam in packs
like the African dog and tear you
to pieces with my exultant nails."

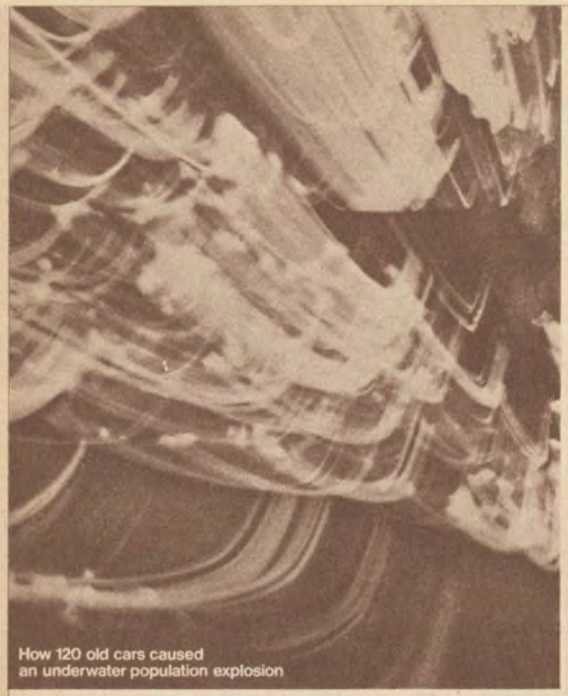
—KENNETH PITCHFORD

PHOTOGRAPHS BY A. PIERCE BOUNDS

Telling It Like It Isn't:

We enter this world on our way out. The first breath we take marks the time of our last. For some five billion years, the management of this mysterious process was impenetrably sheltered in the laws of nature. No longer.

Today, the very conditions of life and death on this planet are now the subject of political management by man on a scale beyond our normal comprehension. A critical agency of our present-day culture designed specifically to obscure this distinction is advertisement.



Off the coast of California, near our oil wells, there's an artificial reef built of discarded automobile bodies. One so compatible to local sports fish that it has become a veritable deep sea apartment house.

Atlantic Richfield created the reef as an experiment in improving the environment for fish colonies. Algae began to grow on the cars. As did kelp, mollusks and lots of other very tasty undersea delicacies. So the fish moved in, and reversed a dwindling birth-trend. It's the kind of population explosion we like to see. And just one of many steps ARCO is taking to make the world we live in just a little better than when we started.

the new AtlanticRichfieldCompany ARCO

"Clean air and economical electricity are two good reasons to celebrate Nuclear Week. Here are four more."

William J. Cahill, Jr., in charge of Nuclear Engineering for Con Edison.

May 18 to May 26 has been designated Nuclear Week by Governor Nelson A. Rockefeller and Mayor John V. Lindsay. This week commemorates thirty years of peaceful usage of nuclear energy. It's an important week to us—and to you.

Not surprisingly, clean air and economy are the two reasons we're most interested in.

Clean air from clean energy.

We spend more for air-pollution control (for instance, burning premium fuels with minimal sulfur content) than any other utility. To date, Con Edison has spent $126 million fighting air pollution in New York.

It's expensive—but worth every penny.

Nuclear energy, of course, is the cleanest energy of all. Modern nuclear plants are totally self-contained, so there is no air pollution produced—no matter how much electricity is produced.

That in itself is a good reason to celebrate Nuclear Week.

Con Edison's first nuclear plant in Intrepid. Behind it, one started in steaming completion.

Economical energy, too.

Nuclear plants represent the most economical method of generating New York's electricity. That's why Con Edison has proposed a system of the most efficient nuclear plants that can be built.

But nuclear energy offers other economies, too.

By turning to nuclear power, we'll be able to retire older, less efficient plants. This will reduce basic operating costs, as well as the cost of combating air pollution.

Clean air and economical electricity make Con Edison's Clean Energy program more of a reality than ever.

Nuclear-powered egg poacher.

Con Edison's first nuclear facility at Indian Point is already producing 4 percent of New York's electricity. (A third reason to celebrate Nuclear Week.)

It means the poached eggs you had this morning and the air conditioner that cooled you this afternoon could well have been examples of Clean Energy in action.

But the 4 percent from Indian Point No. 1, while it is a start, is only the beginning.

Electricity from a nuclear plant may have cooled your breakfast.

Suddenly it's 1980.

Within another decade, Indian Point plants No. 2 and No. 3, plus two other nuclear facilities as yet undetermined sites, should be producing a full 75 percent of New York's electricity. This will be more than double the national average, based on Atomic Energy Commission predictions.

It is our hope that by leading the way in electricity generated by nuclear energy, we can also make progress in holding down your electric bill. (A fourth reason to celebrate Nuclear Week.)

Nuclear crime detection—a fifth reason.

The fascinating uses of nuclear energy don't stop at economical, clean electricity. They include things like being able to determine if an accused criminal fired a gun, which hand he fired it from, and what brand of ammunition he used. Nuclear energy can make wood hard as steel, kill worms inside apples without harming the apples, and keep track of a million mosquitoes at the same time. It can even tell us what plants are eating and see through walls.

Why not use this week to learn more about nuclear energy?

Nuclear Week for your kids—three more ways to celebrate.

Take your family to the informative nuclear exhibit Con Edison operates at the Hall of Science in Flushing Meadow. Or, take them to the Nuclear Week exhibit at the Union Carbide Building where Con

How to get to Con Edison's Indian Point plant. Tear this map out for future reference.

Edison has an animated display of the operation of a nuclear plant.

Best yet, take them to see a real nuclear plant, up at our Indian Point facility. It's open to visitors from 1 to 5 p.m. Wednesday through Sunday, and all holidays except Thanksgiving, Christmas and New Year's Day.

Our Exhibit and Observation Building has, among many features, an animated model tracing the fascinating sequence of making electricity from nuclear energy. From the commanding view of the entire Indian Point plant, you can actually get a glimpse of the future.

What better time for that glimpse than Nuclear Week?

Con Edison clean energy

The Anti-Pollution team

From Phillips 66.

Phillips 66 loves clean air. So we've developed something to help keep it clean: an anti-pollution team—Phillips 66 gasolines and Trop-Artic® motor oils. Our team helps keep the air clean by helping keep your engine—and an important anti-smog device clean. This team contains detergent additives that keep the PCV valve—that's the anti-pollution device in your car—from getting clogged. They work on the carburetor and pistons to keep them cleaner. So, your whole engine stays cleaner, runs smoother and as a result gives you better gasoline mileage. Maybe clean air is all the reason you need to use the Phillips 66 anti-pollution team. But isn't it nice to get a better-running engine in the bargain?

At Phillips 66 it's performance that counts. PHILLIPS 66

Advertising and The Environment

by Barry Weisberg

For a very long time, the media of this nation have been doing to our minds what American industry has done to the landscape of this continent. Nothing characterizes this process better than the recent upsurge of advertisements which depict everything from the Union Oil Company, Dow Chemical and the American Rifle Association as "environmental" folk.

Perhaps best noted of the flurry of paid advertisements for the ecology of American industry were the Union and Sun Oil ads placed throughout numerous national magazines directly following the American oil industry's chemical warfare on the Santa Barbara coast. No less insidious, of course, have been the classical "green field" ads of the cigarette companies and the Avery Island ad of Humble Oil (which, in smashing color, depicts the "harmony" Humble Oil has created between oil development and "wildlife preservation"). Ads such as these, and of companies such as Atlantic-Richfield, serve to manage our understanding of the companies' vast worldwide operations, which potentially affect the

health of billions of people, the military fate of nations and continental weather patterns. Such are the consequences of Atlantic-Richfield's current oil explorations on the Arctic north slope of Alaska.

These are only the beginning. Today we are confronted by literally hundreds of advertisements in numerous national magazines and newspapers describing industry's massive cosmetic campaign to "clean up" the environment. Such ads depict the "progress" of "beautiful garbage," dozens of different containers for the same product, the necessity of increasing mobility and the security in knowing that you have "two cars in your garage" and much more food in your refrigerator than you can possibly consume. As an example of this gluttonous behavior, American agriculture daily produces the equivalent of 11,000 calories per person when roughly only 2,500 are required for adequate nutrition.

There is another class of advertisements besides those in the service of the consumer culture. These have made a commodity out of the ecological crisis. These are the

advertisements for pollution-control technology, a growth industry which currently boasts 20 per cent profit margins. Zurn Industries, a major producer of pollution control technology, notes with pride the ability of Zurn to "make money out of water." Put briefly, such companies as Dow Chemical, General Motors, Monsanto and more than 1,000 others—the same corporations responsible for the destruction of our life-support systems all along—are today entering the profitable market of pollution-control technology by government incentive and consumer subsidy.

Up front in the ideological battle to "clean up America" is advertisement. As such, pollution control by government and industry is merely another means of social control. George Bernard Shaw understood this in 1905, when a character in *Major Barbara* explained, "When I want anything to keep my dividends up, you will discover that my want is a national need." ■

(The above is from a book in preparation by Barry Weisberg entitled *Adding It Up, The Arithmetic of Death.* It will explore in depth the issues raised here about media as a means of social control in the war on pollution.)

This article was prepared by a committee of the Scientists' Institute for Public Information. Members of the committee and their titles are: **Michael McClintock** (committee chairman), Senior Scientist, Space Science and Engineering Center, University of Wisconsin; **E. W. Pfeiffer,** Professor of Zoology, University of Montana; **Warner Wells,** Associate Professor of Surgery, University of North Carolina; **Robert Williams,** Physicist, Environmental Sciences Services Administration, Boulder, Colorado; and **Susan Zolla,** Assistant Professor of Pathology, New York University Medical Center.

ENVIRONMENTAL EFFECTS OF WEAPONS TECHNOLOGY

War is not healthy for children and other living things." [1]

It has never been especially healthy for the combatants either, of course. But even when a major battle was little more than the sum of many hand-to-hand gladiatorial conflicts, the conquered region often incurred despoliation at the hands of the victors also—as did areas of the South during Sherman's march to the sea. In an important sense, war has always been an environmental problem to the noncombatant population.

But the case can be made that modern weapons technology has created a new series of environmental problems—a series of problems that exists regardless of whether the devices are ever used in war. The mere existence of some weapons of modern design poses a threat of major proportion to the very population they were designed to protect.

One of the most graphic examples of this

RITA DIBERT MESSENGER

LITHOGRAPH: AND IT STILL WORSENS

unexpected result of weapons technology was provided in the 1950s in this country when the U.S. was testing nuclear weapons in the atmosphere.[2] At the onset of the testing program, governmental assurances were made that the release of radioactive materials to the atmosphere in large quantities was of no serious consequence. The nation was told that the testing merely increased the radiations to which the population was subjected by a fraction of the already existing natural background of radioactivity. Since life functioned acceptably in the existing environment, the logic went, the slight increase could be of little consequence.

But one of the important radionuclides released in the atmospheric tests was strontium 90, and fallout of this element has particular significance to the human organism by a unique chain of circumstances. Strontium 90 has chemical properties similar to calcium and is therefore, like calcium, incorporated into the bones of growing children when it is present in their food, whereas most natural background radiation is *external* to the body. The presence of strontium 90 in the food chain was directly assured by the atmospheric test program, because the strontium 90 fallout is deposited on vegetation—wheat and other human foods, as well as vegetation consumed by cows. Cows concentrated the radioactive element in milk just as they concentrated calcium. The nuclei of strontium 90 are unstable and therefore decay spontaneously, emitting energetic radiations which can have harmful effects on the organisms they strike.

Thus, since the atmospheric testing years of the 1950s, children have been taking into their bodies a radioactive isotope that did not exist on earth before World War II. In some "hot spots" where strontium 90 fallout in food and milk was particularly high, children may have received a radiation dose higher than that from natural background.[3]

Furthermore, this material is selectively deposited by the body in one of the places where it can do the most damage—in the bone structure, surrounding the bone marrow, where blood cells are manufactured. As a result, the energetic radiations emitted by the decaying strontium 90 can produce mutations in the blood cells which may lead to various forms of cancer, such as leukemia.

Iodine 131, another fission product that came down in fallout from weapons testing, reached the bodies of children by the same fallout-grass-cow-milk pathway. Once in the body, iodine 131 concentrates in the thyroid, where it may cause thyroid cancer. Because iodine 131 is short-lived, experts first assumed that it presented *no* hazard; it is now known that the radiation dose to the thyroids of children in some parts of the country has at times been far in excess of the dose from natural background radiation. It is estimated that close to 300,000 children may have received radiation doses of 20-50 rads to their thyroids between 1952 and 1955, while an additional 130,000 may have received 50 rads or more.[4] The St. Louis Committee for Environmental Information has estimated the number of cancers (that might be expected as a result) in a range between a low of 59 and a high of 596.[5]

The range from low to high estimates is great because most of our knowledge of radiation-induced thyroid cancer comes from ex-irradiation, and it is not known whether the effect of iodine 131 is equal to that of X rays. The low estimate assumes that it is ten times less effective.

In their own way, carbon 14, cesium 137 and other radioactive by-products of nuclear testing in the atmosphere can also cause biological damage, including effects on future generations.[6] Carbon 14 has a half-life of 5,600 years (the half-life is the time it takes for half of its nuclei to emit their radiation).

Thus, even though nuclear weapons have been used in war only twice, at Hiroshima and Nagasaki, they have been responsible for radioactive contamination of the environment on a large scale. Because the fetus and the newborn infant are particularly susceptible to radiation damage, it has been suggested that many infant and fetal deaths may have been caused by fallout from nuclear tests.[7, 8]

Furthermore, although the testing of weapons in the atmosphere by the major world powers was stopped in 1963, the strontium 90 problem is still with us to some degree because the half-life of this radioactive element is 28 years, and its rate of fallout from the stratosphere is extremely slow. Children born since the test ban went into effect are getting strontium 90 in their milk and other foods today.[9-11]

Radioactive contamination of the environment serves as an example of one way in which weapons can degrade the environment through their side effects. There are many other examples.

In January, 1966, the U. S. Air Force inadvertently dropped four nuclear bombs off the coast of Palomares, Spain, and although no nuclear detonation took place, radioactive contamination of a large area occurred to the extent that crops had to

be destroyed, and 20,000 sealed drums of radioactively contaminated earth had to be shipped off to the United States for disposal by the U.S. military. This was the seventeenth and most serious accident with nuclear weapons, according to the physicist Ralph Lapp.[12]

On May 11, 1969, a fire occurred at the Rocky Flats Atomic plant, a major nuclear weapons manufacturing facility near Denver, Colorado, operated by Dow Chemical Company for the AEC. The fire, involving 20 million dollars' worth of plutonium and another 50 million dollars' damage to the facility, resulted in the release of radioactive plutonium oxide smoke to the atmosphere and posed a serious threat of contamination to the Denver environment. The AEC investigated the causes of the fire and has completed a report on the subject,[13] giving assurances that the fire presented no hazards to the local population. Since no experimental data were given to support these assurances, the Colorado Committee for Environmental Information has conducted its own investigation, including measurements for plutonium in the local environment to assess the extent to which both the fire and the day to day operation of the plant present a hazard to the population. These measurements indicate that the AEC assurances are not well founded, and that the level of contamination is yet to be fully assessed.

The use of chemicals in war—tear gases, defoliants and anti-crop agents now being used in Vietnam, and other agents such as nerve gases, which are produced and stockpiled by the U.S. but are not currently used—also provide the potential for widespread environmental damage.[14] The death of 6,400 sheep in March, 1968, near Salt Lake City was caused when a U.S. Army test involving nerve gas got out of control. A major catastrophe involving human life could have resulted. The nerve gas released in this test was on its way toward Salt Lake City when it was washed from the air by a rain and snow fall in the Rush and Skull Valley areas of Utah. As it was, the gas killed sheep as far away as 45 miles from the point of release, and it crossed two small ranges of mountains to get to this farthest point.[15]

When a group of scientists in Colorado became aware that one of the agents involved in the Utah sheep kill was also stored in large quantities at the Rocky Mountain Arsenal near Denver, at a site just north of busy Stapleton International Airport, they released a memorandum on the subject of the threat posed by a possible air crash into the storage area.[16] This memorandum described the effects that could occur if a commercial airliner were to crash into what was at that time thought to be bulk storage of nerve gas. Under the same atmospheric conditions as existed in Utah, it was clear that lives were in danger all

the way to the center of downtown Denver. The Pentagon apparently agreed when approached by a Congressman from Colorado, and six days from release of the original memorandum, they announced that the nerve gas would be moved.

Subsequently it was revealed in testimony before a congressional investigating committee[17] that the situation was even more serious than had been supposed. The nerve gas was not stored in bulk in steel containers, as had been thought. It was stored in bombs, each containing an explosive charge, designed to disperse the nerve gas into the atmosphere over a wide area, the method of dispersal that had been planned were this weapon to be used in combat. Furthermore, tests had indicated that detonation of one of these bombs could cause detonation of others near by, so that an air crash could have caused the release of a large quantity of nerve gas into the atmosphere by weapons which had been designed for efficient dispersal in order to cause combat deaths.

The accident never occurred, of course, but it is a credible possibility, and disclosure of the facts surrounding the case was sufficient in this instance to instigate an investigation which resulted in a decision to remove the hazard.

In the spring of 1969 it was disclosed that the Army planned to dispose of 27,000 tons of surplus chemical weapons, largely nerve and mustard gases both in bulk and in the form of certain munitions, by shipping them to the East coast and sinking them in the Atlantic Ocean. The hazards of contaminating some portion of the ocean with this material, as well as the hazard to populations near the proposed train routes in the event of derailment, prompted Congressional hearings on the proposed disposal plan and the appointment of a National Academy of Sciences Committee to review the Army's proposal. In light of the rather high frequency with which train derailments occur (an average of 15 a day in 1968),[18] the extremely high toxicity of these poison gases and other complicating factors, the National Academy of Sciences committee recommended detoxification of these materials at their present location in place of the Army's plan for disposal.[19]

As this issue goes to press, the states of Washington and Oregon face a transportation hazard as nerve gas previously stored at Okinawa is returned to the U.S. A series of news reports which appeared during 1968 and 1969 told the story of several potentially catastrophic events. The news reports served to illustrate the creation of environmental problems by the manufacture, storage, testing and shipment of highly toxic chemicals of war. Barring the possibility of an effective international agreement to ban these materials, it is reasonable to expect that the frequency of occurrence of such events will increase, not decrease, as their presence increases.

The widespread use of picloram, cacodylic acid, 2,4-D, 2,4,5-T and other chemicals as defoliants and anti-crop agents in Vietnam has created massive damage to the environment of this Asian country.[20, 21] There has been no adequate study of ecological damage in Vietnam caused by the use of anti-plant agents, but one of the few short term studies that have been made points out the likelihood that it will be at least 20 years, possibly much longer, before the ecology of a certain area returns to normal.[22]

But perhaps the most shocking problem which has come to light recently is connected with the teratogenicity of 2,4,5-T. This chemical, widely used in Vietnam as a defoliant and used in the United States in some garden sprays, has been shown to produce severe birth defects in rats. This chemical may be reponsible for the reported rise in the number of congenital malformations in Vietnamese children.[23] It has recently been withdrawn from use on crops in the United States but its wartime use in Vietnam continues.[24]

The teratogenicity of 2,4,5-T is probably the most dramatic illustration of the environmental effects of modern weapons technology. But there have been a whole series of such unintended insults to the environment, sometimes affecting the very populations these weapons were designed to protect; future generations of people who had no voice in the development of this technology may be affected as well.

The possibility of a large scale epidemic as an accidental by-product of the development of biological weapons is yet another hazard to the population of the entire world. Seymour Hersh documented this possibility in an article in the New York *Times* Magazine.[25] Some physicians and scientists are surprised that such an accident has not already occurred, given the number of people engaged in this work and the known or suspected cases of infection that have escaped the centers where this work is carried on.

Traces of the disease Venezuelan equine encephalitis—on which the Army had been working in its biological weapons program—were found in natural populations of animals in Utah near the Dugway Proving Grounds. This is a disease of birds and rodents which is transmissible to man. It is usually found only in South America, Central America and in two limited areas along the Gulf of Mexico.

The use in war of nuclear, chemical and biological weapons has become a recognized threat to life on the earth. There are disagreements among scientists about the effect of a nuclear war on the environment. There are uncertainties about the particular number of weapons that would be used, their size and composition, and whether they would be exploded in the air or on the ground, so that even immediate effects are difficult to predict. But when it comes to the long-term effects on plants, animals, water and soil, and the disruption of a complex urban civilization by a combination of blast, fire, radiation and possibly chemical and biological agents as well, prediction becomes impossible. The only thing that can be said with certainty is that *we do not know* whether human society and the agricultural and natural systems that support it would survive. [26, 27]

It is now becoming increasingly evident that the mere existence of nuclear, chemical and biological weapons—which entails their production, testing, shipment and storage—poses a major threat to the life and health of all organisms on this planet. ■

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CUSTER'S LAST STAND:

Freeways And The Three Sisters' Bridge

by
JUDITH
COBURN

PHOTOGRAPH BRUCE MISFELDT

The expansion of highways, like the extension of the American frontier, seems to have an internal logic of its own. In the nation's capital, in spite of a decade of sustained and growing opposition by local residents to the further growth of the metropolitan highway system, many city officials and their *de jure* rulers in Congress continue to push for more roads. Like the frontiersmen of another era, these modern-day cowboys in Congress and in the city planning agency pursue their dreams for more highways, playing out the American myth of endless frontiers and man's impulse to conquer nature.

While there are some factors of the Washington freeway fight which are inapplicable to anti-freeway campaigns in other cities (the high percentage of blacks in the city, its colonial status and Congressional hegemony over its local affairs), the outcome

of the struggle will set a precedent for the rest of the country because the city is the nation's capital. In addition, the anti-freeway fight in D.C. is older than most of the others around the country, and can serve as an instructive example for the new ecologists in gauging strategies for their movement.

The Three Sisters' Bridge will be an important link in the projected freeway network connecting the Virginia suburbs and the District. It is named after the Three Sisters islands, tiny graceful bits of land which transform that portion of the polluted Potomac into a Japanese landscape. That is, they did, until the city began to build the piles for the bridge on the islands. The struggle over the construction of the bridge last summer and fall was only one chapter in the local effort to stop the freeways, but it was one of the country's first coalitions of students, conservationists, and the new ecology buffs with the old-line anti-freeway forces.

The beginnings of anti-freeway organizing in Washington grew from neighborhood groups in the early sixties who opposed the routing of the freeways through their neighborhoods. Initially these were white, middle-class groups. They were joined in the mid-sixties by some former local SNCC organizers who had run a local bus boycott against a fare rise, and then turned their attention to fighting the freeways because the roads were then routed primarily through the poor, black areas of the city. The Emergency Committee on the Transportation Crisis (ECTC) was formed in 1965 by these black organizers. A few of the more radical, tenacious members of the old white neighborhood groups were still interested in stopping freeways elsewhere, after they had pushed them out of their own well-to-do neighborhoods.

ECTC opposes freeways because their primary side effect is the destruction of poor, black neighborhoods for the convenience of suburban drivers and the middle-class white commuters of the Metropolitan area. Initially the anti-freeway forces used the methods of the early civil rights movement: mass rallies, picket lines and court cases against the city planning agency and the City Council. In February, 1968, ECTC scored an important victory when the D.C. Court of Appeals granted the group's injunction to stop further construction of freeways until local officials met the legal requirements for citizen participation through public hearings on proposed routes. In response to the court decision, Congress wrote a special provision that the city must go ahead with highway construction in the District into the 1968 Highway Act. But both President Johnson and Secretary of Transportation Alan Boyd declared they were opposed to parts of the local freeway plan, including the Three Sisters' Bridge. (Whether they might later have opposed these sections in a showdown with Congress will never be known.)

The City Council then drew up and approved a new plan in December, 1968, excluding the bridge and the most controversial legs of the freeway. Until this point in the fight, ECTC, like the early civil rights movement, had been surprisingly successful in forcing a compromise on the issue by using the system against itself. It had succeeded in persuading the City Council and important local groups to oppose at least a major part of the freeway plan, and the courts to side with ECTC's interpretation of the law.

At this point in the struggle, however, the anti-freeway forces had to face the Highway Lobby and its friends in Congress. Unlike the D.C. Council and the local courts, whom ECTC had been able to influence through technical expertise and community pressure, these men support freeways out of vested economic interests. Rep. William Natcher of Kentucky, Chairman of the House District Committee (which supervises D.C. affairs) and one of the Highway Lobby's closest friends on Capitol Hill, decided to hold the city's proposed mass transit system hostage of the freeways. Natcher announced that his committee would not release funds for the subway system until the City Council approved construction of the remaining segments of the freeway system and the Three Sisters' Bridge. The outrageousness of the act undercut some of the effectiveness of the blackmail. Despite great public support for the proposed subway, the clear blackmail of Natcher's act infuriated enough Washingtonians so that many seemed willing to sacrifice the subway temporarily. Natcher's announcement was a double slap in the face to ECTC and to the most radical of the freeway fighters. ECTC supporters believe that all freeways should be stopped and a comprehensive mass transit system built instead. (ECTC also believes the present plan for the subway was gutted by the Highway Lobby; the current plan calls for subways that can serve only 20% of the population at top capacity, preserving

PHOTOGRAPH A. PIERCE BOUNDS

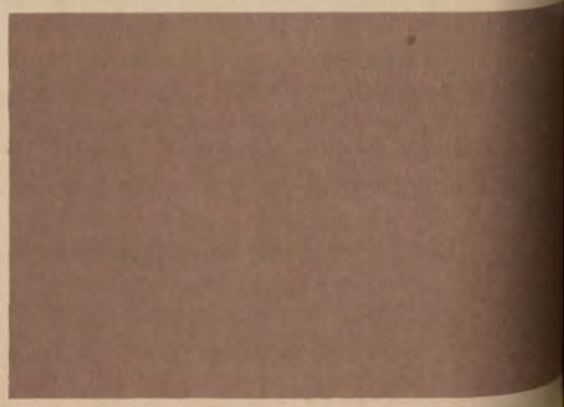
the freeway as the mainstay of the transportation system.)

The openness of this kind of pressure by the Highway Lobby suggests the importance of the Washington situation for the future of freeways nationally. Highway construction in the U.S. is financed by the Highway Trust Fund, a self-perpetuating fund subsidized by gasoline taxes. The way it is set up, the Trust Fund could continue to finance highway construction unchecked until the entire country were paved over. Besides contractors and construction companies directly involved in building the roads, the Highway Lobby includes the major oil companies, auto companies, tire manufacturers and real estate speculators, all of whose profits are insured by more cars, more roads, and the resulting rising cost of land. If the Three Sisters' Bridge was a symbol of the freeway fight in Washington, it was also the Highway Lobby's symbol of the future of the freeway and its expansion in the U.S.

Until June, 1969, the Nixon Administration voiced no position on the freeway struggle in D.C. and the Three Sisters' Bridge. In early July, the White House and Transportation Secretary John Volpe (whose family owns one of the largest construction companies in the country) began to put pressure on the D.C. City Council, which had a newly appointed Republican chairman, to withdraw its earlier revised plan and to comply with the 1968 Highway Act. A deal was made with Natcher: if the City Council agreed to construct the highways in the old plan and build the Three Sisters' Bridge, and if the Justice Department would mobilize resources to defeat citizens' suits against the freeways, Natcher would release the funds for the subway. In August, the Council reversed itself, and approved the first construction contract for the Bridge.

For ECTC and poor blacks, the Three Sisters' Bridge was just another link in the freeway system to be fought along with the rest. For ECTC the bridge was less important than the battle against the north leg of the freeway which would displace 8,376 people in the ghetto and run through the commercial section of the ghetto previously destroyed by the April 1968 riot. Thus the city would be saved the expense of rebuilding it. But for white Washingtonians, many of whom had not been active in the freeway fight, the Three Sisters' Bridge was an important rallying point. It was located across a part of the Potomac near Georgetown, bringing home to that upper-class, well-connected citizenry that, in spite of years of opposition to freeways, even their quaint, expensive neighborhood might soon be glutted with suburban cars and exhaust fumes. The Bridge issue also caught the fancy of old-line conservation groups whose past support for ECTC had been primarily intellectual. The bridge itself was an aesthetic issue for some of the less radical conservation groups, and an important symbol of anti-conservation priorities for others like the Sierra Club. A law suit to stop bridge construction was filed in district court by the groups, but a temporary injunction to stop construction pending the outcome was denied.

In the summer, when construction was due to start on the bridge, a group of students at Georgetown, like other students around the country, had turned on to ecology issues. Many of them had been peripherally involved in the anti-war movement or the McCarthy



PHOTOGRAPH

PHOTOGRAPH A. PIERCE BOUNDS

meet, it is agreed that progress has been made. The conference method helps to legitimize pollution by talking it to death.

It is only recently that pollution became such a passionate public cause. In the early 1960s, the government seldom even announced the existence of an enforcement conference to the daily papers. In those days the conferences were the scenes of in-fighting among bureaucratic sects: lawyers against doctors, systems engineers against old fashioned sewermen; congressmen against state assemblymen. The most bitter fights took place among the doctors of the U.S. Public Health Services and a small group of lawyers who shared control of the pollution program. The Public Health Service doctors believed their job was to channel technical information and friendly advice to the doctors in the state health service. The state health services invariably controlled the state pollution programs and often as not were locked up with local polluting industry. Thus, nothing got done.

For example, on the Raritan Bay, in New Jersey, the federal government has been involved in an enforcement conference with New Jersey for nearly 10 years. While the Public Health Service had the upper hand in managing the federal program, its representatives refused to pressure their doctor friends running the New Jersey program. On one occasion a district director of the Public Health Service actually refused to send a memorandum to the New Jersey health service which showed that more than 100 people had come down with hepatitis after eating clams taken from polluted beds in the state; the memo urged that action be taken. The doctors in PHS argued with the lawyers and finally (in 1965) the administration of the act was taken away from the PHS and placed instead in the Interior Department, where it immediately became subservient to other sets of interests—mining, oil, etc.

In 1965 Congress amended the basic water pollution law, raising the amount of money for building sewers and creating national water quality standards for interstate streams. Under this scheme, states were encouraged to write standards based on federal criteria. The government then could either approve them or force the state to adopt tougher rules. If a state chose not to set standards, then the government could write them itself. At the time, these amendments were viewed as tough anti-pollution measures, but that's not the way things turned out. For one thing, while the government set standards, the states "classify" streams by use. This tends to work in favor of special interest groups, especially industry. If large companies don't care for pollution standards, they threaten to pull out of a state, creating the specter of diminished tax revenue and unemployment.

The water quality standard amendments were passed in 1965; standards were supposed to be submitted by June 30, 1967. However, by the end of 1969, 28 states had yet to file complete sets of standards. Even where states have filed complete standards and the government has approved them, the date of implementation may be as late as 1972.

Moreover, during LBJ's reign, Interior Secretary Stewart Udall was caught in the embarrassing position of approving water quality standards which actually were lower than existing standards of the water in certain states. To rectify this mistake, Udall sought to persuade the states to adopt the so-called "non-degradation clause" which says they are pledged not to lower existing water quality. That created a

PHOTOGRAPH JOHN MAST

fresh quarrel, and so far only 15 states have signed non-degradation clauses. (It was Udall's misfortune to unduly alarm people. The non-degradation clause was to save face among the conservationists. Actually he had written loop-holes throughout. In one part, for instance, the clause says existing standards cannot be lowered unless "such change is justifiable as a result of necessary economic and social development," a statement which could mean anything to anyone).

Over the years water pollution abatement programs have made tiny steps forward whenever the federal government paid for construction of a local sewer. This in turn depends largely on the temper of the people in the House and Senate public works committees who control the money. Sewer money doesn't amount to much ($214 million this year), and it is doled out according to a complicated ratio which is meant to ensure that every congressman gets a little sewer for his district. The law says the government can pay up to 55 per cent of the cost of a local project, but when the Congress appropriates $200 million and the total cost of building sewers in New York state alone is $1 billion, the program obviously becomes a laugh.

The members of the Public Works committees can have considerable sway in the way pollution programs are managed. It was in deference to John Blatnik, who heads the House pollution sub-committee, that the Interior Department during LBJ's time suppressed a report which revealed an enormous source of pollution in Blatnik's district. The Reserve Mining Co., a subsidiary of Republic Steel, is dumping 60,000 tons of ore tailings into Lake Superior every day. But Reserve is in Blatnik's district and it created considerable employment in an area which had been previously starving. (After conservationists set up a cry, the government called an enforcement conference eventually.)

Industry is the biggest pro-pollution lobby. There are others. One of the most peculiar consists of the sanitary engineers, the men who man the sewers. One might think they would be solidly for more pollution control, but often they oppose pollution programs. The sewermen dislike federal bureaucrats messing about the works. They don't care much for the new systems approach with all the talk of sewage so clean you can put it back in the reservoir for tap water. They've always viewed the job as carrying the shit to the river and dumping it in. The federal systems engineers talk about fail-safe sewer plants with stand-by systems all set to carry the load when the big pumps jam.

That's pretty far-out thinking for the sewerman. When the pumps clog in most stations, the operator looks to see if anyone is watching, then yanks the by-pass switch and shoots the raw sewage into the stream or lake. When he gets a spare moment, he empties the pipes and starts all over again. The sewermen sometimes lobby strongly. In Richmond, Virginia, for example, the citizenry is up in arms because the city sewermen want to turn off the main sewage disposal plant for four months while they hook up a new pipeline. During that period, the plan is to dump the raw sewage into the James River. The major proponents of the scheme include the members of the state's water pollution control board.

Since Nixon's election, things have been slower than usual at water pollution headquarters in Washington. Nixon's "Clean Water Team" consists of Carl Klein, a Chicago

savings bank lawyer and friend of the late Senator Dirksen, who is Assistant Secretary of Interior, and David Dominick, a 32-year-old nephew of Peter Dominick, the reactionary Colorado senator. Not long after he took office, Klein asked Edgar Speer, president of U.S. Steel, to stop by the Interior Department for one of the Mr. Clean Water awards Wally Hickel was handing out. The award subsequently proved a bit embarrassing since the government is threatening to sue U.S. Steel as one of the biggest polluters in the nation.

A couple of weeks ago the Nixon gang threw a booze party at the Washington Hilton for 600 executives who are interested in sewage treatment. Each executive paid $100 to get in. Clean Water Speer set the meeting tone: "We oppose treatment for treatment's sake," he declared, pointing out there just were not enough earnings for "ideal" pollution abatement programs. "Unless the money for pollution control is intelligently spent—not by the dictates of emotion—the citizen is paying for something he didn't get," Speer said. "Is an additional 10 per cent improvement in fishing worth $100 million?" John Swearingen, chairman of Standard Oil Co. of Indiana, added, "The central question is not whether we should have cleaner water, but how clean, at what cost, and how long to do the job. These considerations are frequently ignored in popular discussions. Public enthusiasm for pollution control is matched by reluctance to pay even a modest share of the cost. This attitude will have to change."

Earlier this year, assistant secretary Klein told the House Appropriations Committee there was no need to appropriate more money for sewage grants. The pollution headquarters even had money left over from last year, he maintained. But when the House insisted, and voted $600 million instead of the $214 million Klein wanted, Klein said they'd just have to live with the increase.

Meanwhile, David Dominick has ordered his public relations men to write a book which can be published under his name. A book might improve his image as a conservationist and be useful in future political campaigns.

The government's air pollution program, which is called a "center" and is based in HEW, is a feeble imitation of the feeble water pollution program. The federal government cannot set clean air standards, but only recommends criteria for such standards to the states. They do as they like. It does periodically hold enforcement conferences. Eight have been called to date. Most involve relatively small cities, and the air pollution people stay clear of places like Los Angeles or New York, where there are big messes. The air pollution center's most celebrated case to date was its victory in federal court against a chicken rendering plant which sent bad smells from Maryland to Delaware.

Major moves in air pollution, such as attacks on the auto makers for conspiring to delay the development of emission control, come out of the White House. During Johnson's administration, attacks on the auto makers were stopped by the White House. In his last days, Johnson allowed an antitrust suit to be brought against them. Since then, Nixon has terminated the suit. The air pollution control division remains at best a public relations maneuver. The government has no power to control air pollution, and what little regulatory machinery does exist is seldom used.

It seems pretty clear that the laws aimed at combatting pollution function to make it legitimate, providing a defensive cover for the chemical and energy industries which do most of the polluting, and at the same time encouraging the growth of competing technical staffs, whose livelihood in the simplest terms depends on continued environmental pollution.

As pollution grows worse, the prevailing liberal response is to sink more money into building up the technical staffs, seeking solutions through government efficiency and, beneath the cover, proposing new laws under which the population will be taxed to pay industries to install pollution abatement equipment. Incidentally, there is a growing market for this equipment, some of it made by subsidiaries of companies which do most of the polluting. In the future, pollution control will be a growth industry, dependent of course on the continued growth of pollution itself. In short, liberal ideology is creating the foundation for new consumer goods.

However, as the central government itself loses momentum, and the pollution programs become more removed from the populace, they begin losing even the appearance of legitimacy. The people turn to more direct action—picketing, law suits, sabotage—and eventually the seizure of land and formation of new communities. ■

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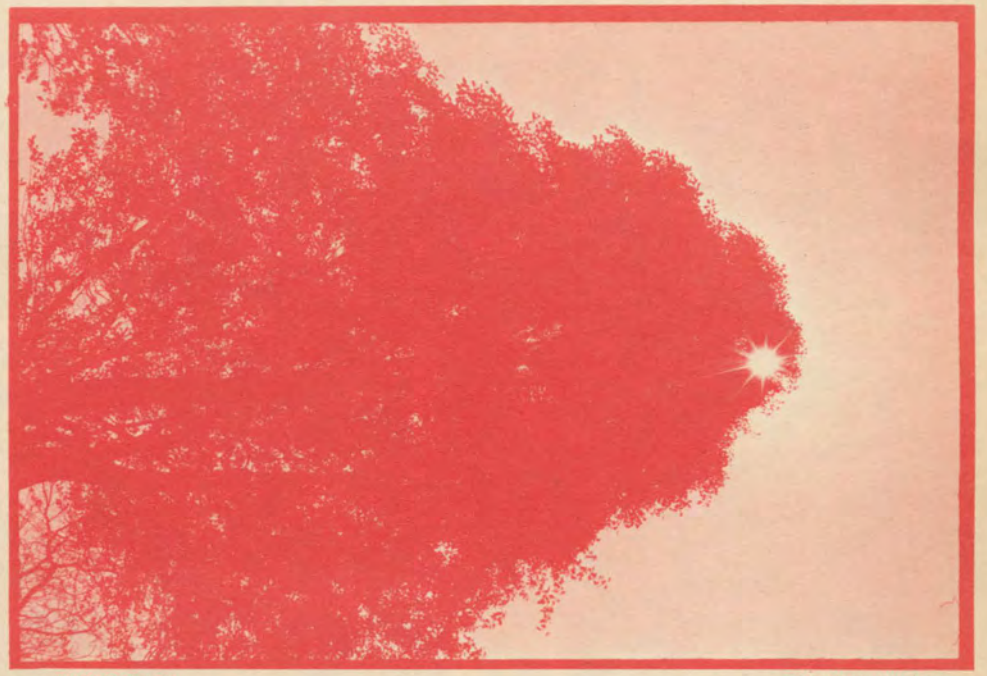
PHOTOGRAPH

RICK SMOLAN



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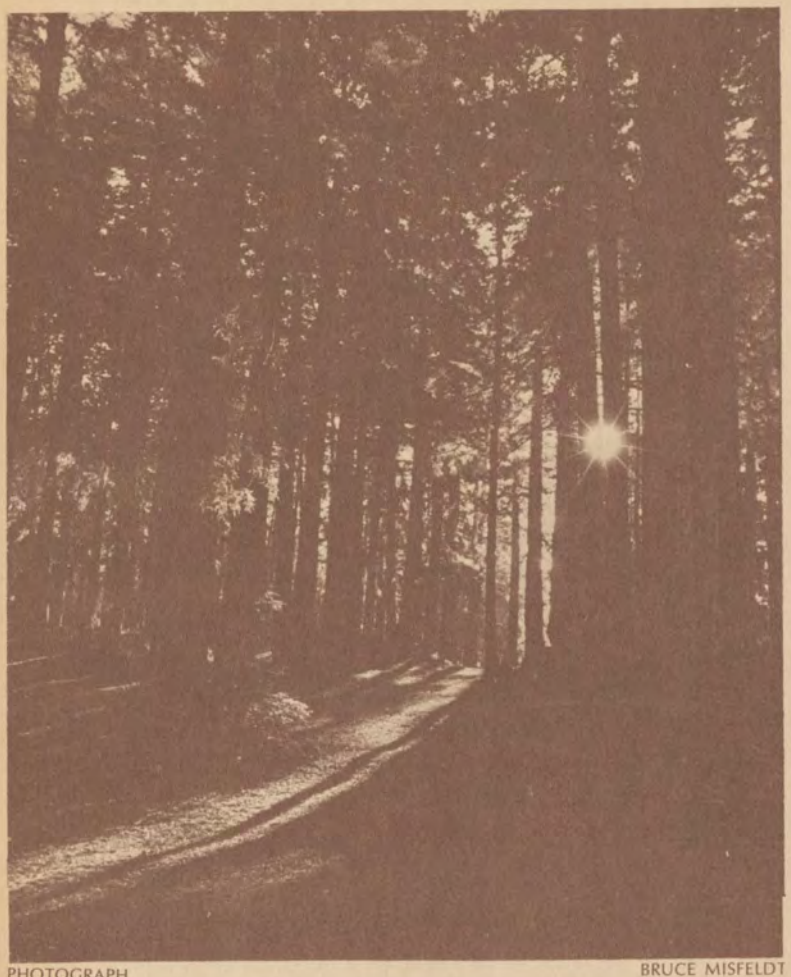
DOUGLAS GILBERT



PHOTOGRAPH BRUCE MISFELDT

LIFE IS ONLY A BREATH AWAY

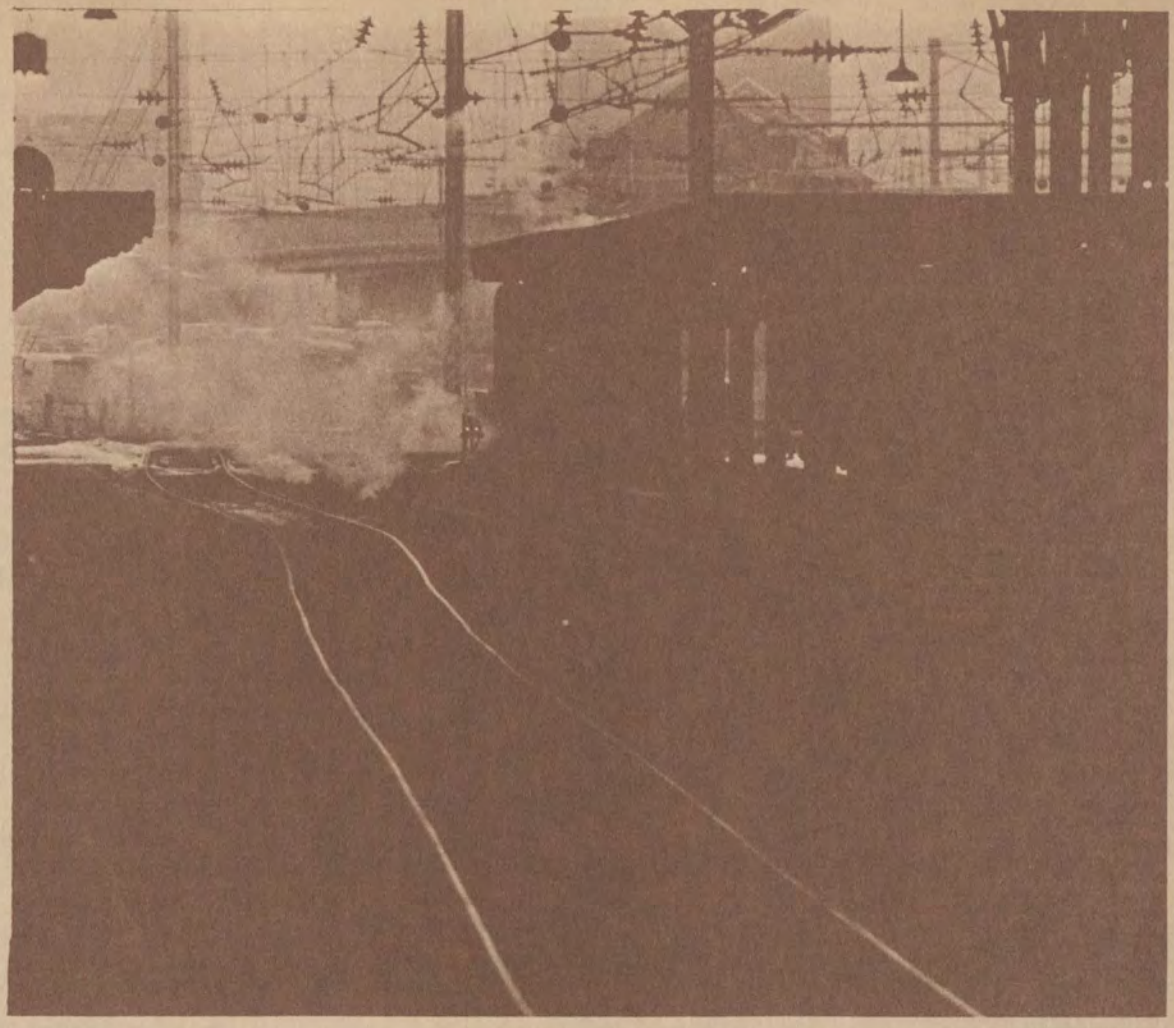
by Frank Potter

The environmental outlook today is dismal. We are afflicted at an exponentially increasing rate by foul air, filthy water, incessant noise, diminishing open space—pick your own horror and you needn't look far for an example.

Are prospects for the future as bleak as they seem? Some say that they are, that there is little or no hope that we may dig ourselves back out of the Pit. I believe that there is hope, but I also believe that the way of redemption, if you will, is longer and more rigorous than anyone can yet imagine.

If we are to reestablish a balance with nature, sacrifices cannot be avoided. Americans have the highest standard of living (if that is the word for it) in the world: our lives abound with conveniences which we have come to accept as necessities—conveniences which create strong and lasting demands upon the environment which sustains us. It is no accident that, coupled with this high standard of living, we have the highest rate of solid waste disposal and of pollution of air and running streams in the world. We have been paying the piper all along—and we have only just begun to recognize the tune.

One American meteorologist, Dr. Alfred Hulstrunk of the New York Atmospheric Sciences Research Center, recently predicted that at present rates of growth, just to survive, Americans will have to live in domed cities by 1990—that the air outside those domes will have become quite unbreathable. No one can say at this point whether he is a Jeremiah or a Nostradamus, but I would suggest that in the interests of our own survival we should listen to what he says and examine his premises with some care. At present rates of growth, our power generation capacity will have quadrupled by 1990, our per capita rate of waste production will have almost doubled and the population of this country will have



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increased by more than 25 million people.

This isolated example could easily be multiplied, but that is not my purpose. My purpose is rather to indicate those ways in which I feel that salvation must lie, if there is to be salvation.

Two rather profound changes in direction must underlie a new effort to reconcile our lives with our environment: one personal and the other social. The first is probably far more critical: we need a new Ethic to control our own behavior. Pollution is no longer an acceptable form of behavior. People are worried and ready, I believe, to take some action to achieve a measure of environmental sanity. Such an ethic would and should have rather profound implications, and its implementation would involve considerable personal sacrifice. It might involve operating only one car per family, a reversion to more primitive forms of packaging, a substantial curtailment of energy consumption, and significant inhibitions in terms of personal mobility and convenience. But the choice seems to me to be clear and inevitable: either we live high and short, or we live less well for a more extended period.

I am no visionary, and I do not assume that it would be easy or painless to shift from a consumptive economy and life-style to a less exploitative way of life. But the choice is there to be made and it will be made (since abstention *is* a decision to continue as we are—"Business as usual, during altercations.") I do not propose to return to a log cabin economy. Barring nuclear war, I do not believe that this option is open to us, even if we were disposed to adopt it: A chilling concept was first brought to my attention by Harrison Brown, who believes that man was able to

develop his civilization only as a result of the ready availability of raw materials, many of which would no longer be available following a widespread social catastrophe.

The other half of the formula has the potential for being as socially disruptive, although I am encouraged to see that it is already slowly in the process of implementation. I believe that we must rework our social corrective mechanisms, so that we may better bring our efforts to bear at the points where they can make an impact. Here I believe that our best hope lies in developing ways in which individuals—human beings—can influence public policies and actions.

For a number of reasons, governments will never be adequate to this task: they are simply not oriented in such a way as to be successful. Bureaucrats at any level of government are motivated chiefly by a desire not to make waves. Legislators are somewhat more responsive to public needs (although they tend to lag), but they can only set policies, and it is in the implementation of these policies that the real pinch comes. The other branch of government—the judiciary—has its own problems, including the incredibly long period of time required for the machinery to adapt to change. And they are reactive in character—they can only work with what someone else presents them. Governments and, as will be noted, industry do have important parts to play in the restoration of environmental and ecological balance between man and Nature. But they will play these parts effectively only to the extent that they are constrained to do so by outside pressure.

For the sake of completeness and symmetry, let me consider the next social institution that plays a role in our society—private enterprise. Will anyone who believes that business and industry will solve these problems without pressure from the outside please stand up, walk outside and take a deep breath?

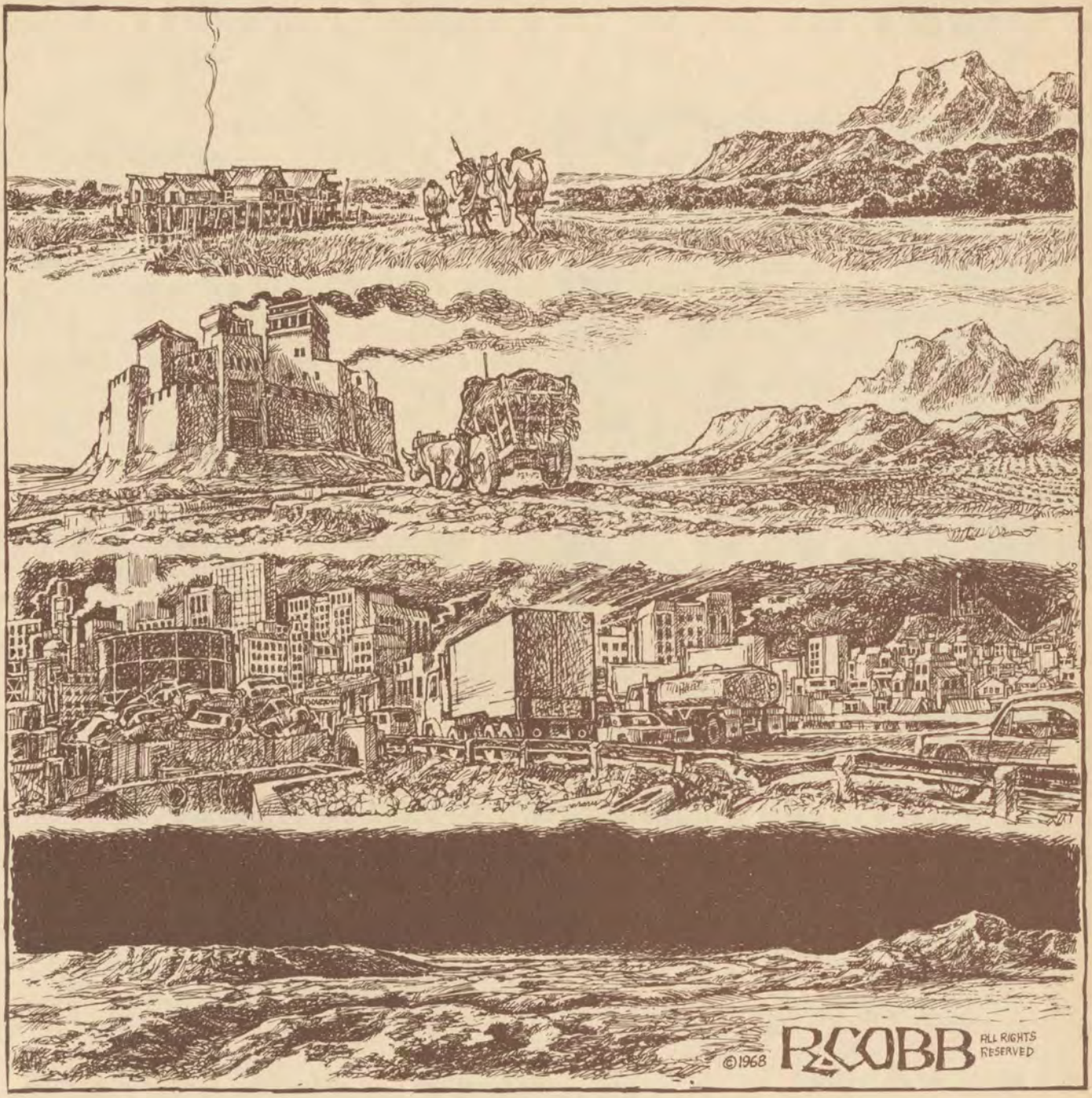
The only remaining social institution is you and me: human beings, individual constituent elements of society. We are the creators of the problems, and we—not our institutions—are the ones who suffer. And far more importantly, we are the ones who must act.

In the past, neither individuals nor the organizations which they have created have been effective in promoting rational environmental goals. With some regret, I include most of the established conservation organizations in this indictment. Our ineffectiveness, it seems to me, has stemmed largely from the fact that we have tended to focus on limited goals, and that these tend to be only distantly related to the total needs of the system.

Ecology has been well defined as the "web of life." The strands that make up this web are directly or indirectly connected with every other strand. Cut one, and the relationship of every other is inevitably affected: stresses change and intensify. Saving the Redwoods is important (remember the Redwoods?), and so is saving the blue whale (your children will probably never be able to see one), but they are primarily important because they constitute part of the genetic heritage of the Earth—not merely because they are beautiful and majestic. It is for this reason—and there can be no more powerful reason in the world—that they must be protected.

Imagine that you stand in the middle of a huge library, containing the only copy of every book in the world. Imagine further that a man runs through the doors and begins to pull books furiously from the stacks and throw them into a rapidly growing fire. Insane you would call him—few would disagree. Now, distinguish that case from the destruction of genetic codes through the elimination of different species of life. Once destroyed, these codes cannot possibly be recreated. Taking the most anthropocentric possible view of the problem, you cannot avoid the probability—not possibility, *probability*—that you are destroying something that may be of direct benefit to man at some time in the unimaginable future. An agriculturist tells me that we are now growing in this country approximately 25% of the varieties of corn that once were grown routinely. Suppose that one of those varieties has been permanently lost that might have had characteristics that would let a hybridized new variety resist a future pesticide-resistant bug.

Citizen interest and concern with environmental issues is increasing almost at the speed of the population explosion. Young people have an important part to play and their interest in the problems is one of the most hopeful signs yet shown. It is a discouraging fact of life that older people (over 21?) tend to get bogged down in more immediate but perhaps less relevant issues, salving any residual twinges of conscience by sending an occasional check to Planned Parenthood or the Audubon Society. Younger members of society, on the other hand, appear to have a healthy disregard for what we have come to accept as the niceties. They want to make waves—to do something.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PHOTOGRAPH JOHN MAST

The Environmental "Teach-In" on April 22 does have the potential for bringing to a focus much current discontent. The students in charge of the operation have taken what appears to me to be the only realistic course of action and have cut themselves off from their early, more political beginnings. This wisdom bodes well for the effort—not everyone over 30 is out to use their efforts for personal ends, but several will try, as indeed many have already. The suspicion and skepticism of the young is wholly justified and it will prove valuable to them.

I do not intend to cop out on behalf of the older, more sedentary members of society—I am emphatically not saying "Okay, kids, we screwed it all up, and it's up to you to pick up the pieces." I look to young people as a source of inspiration to society; for one thing, they are not so firmly wedged into the system, and for another, they have a great deal more to lose if the Earth should become unlivable or intolerable. But older people also are very much involved in the new environmental movement—they control its money and its power, and they must react as well, particularly since many scientists tell us that we have only a little time left before some portions of the environmental crisis become irreversible.

I am not so encouraged by the visible trends toward a more anarchical approach to environmental problems. I hope this is not so much because I am over 30 as that, while there is much that can be and should be condemned in the existing system, I would like to know more of what has been proposed to replace it before I join the rush to the barricades.

Let me return to the point of departure: the apparent need for coordinated citizen action as a means of forcing social changes with environmental consequences. Recall that it was citizens who developed the pressure to stop the Grand Canyon Dams, to block the Everglades Jetport, to demand more federal support for funding the cost of waste treatment facilities and to block the indiscriminate use of DDT. Remember also that the Santa Barbara Channel development was decided upon behind closed doors, with little public outcry to put starch into the backbone of a Secretary of the Interior (whose chief failing during his tenure was a lack of ability to stand up to the exploiters). Similarly, it was citizens who stopped Governor Rockefeller from pushing through his plans to build an expressway along the banks of the Hudson River. And it was citizens, at considerable legal expense, who stopped Con Edison's single-minded efforts to build the infamous Storm King pumped storage project in the Hudson Highlands.

Government can contribute to the effort by providing better tools for citizen action. A number of proposals have been made and are under more or less active consideration in Washington: requiring public disclosure of proposed government agency plans and alternatives considered; providing easier ways to take polluters to court; shifting heavier burdens of proof to the exploiters; and developing new ways to fund citizen actions, either from the public treasury or from the pockets of the people creating the problem.

What else can we do—or more precisely, what else can *you* do? A great deal—by finding out what is going wrong in your area and then raising bloody hell about it.

Finding out what is wrong is not as easy as it sounds, but much expert assistance is available to almost any vigorous local group, and this will make the job easier. This involves developing the answers to questions such as: What are the serious problems in the area? To what extent are they externally, and to what extent internally, caused? What is the major problem, and what factors tend to escalate it? Who do the polluters depend upon for financial and moral support? What are short and long-term corrective treatments that may be available to help? Other ideas will suggest themselves, but these indicate the general nature of what I have in mind. These techniques have worked in other places, and they will again.

As for developing action programs, here I should be somewhat more cautious—no lawyer wants to be caught out counseling disturbance of the peace. And yet the peace of complacency and satisfaction with the status quo *must* be disturbed. Individuals can accomplish much. Witness the Vassar girls who, in protest against plans to build a house in an undeveloped and scenic area on the campus, went out and filled in an excavation in two hours that had taken several weeks to dig out. At last report, the college had abandoned its construction plans.

Groups in California are taking more direct action in different ways: one technique that is said to be effective is to call the officials of offending companies at home at night.

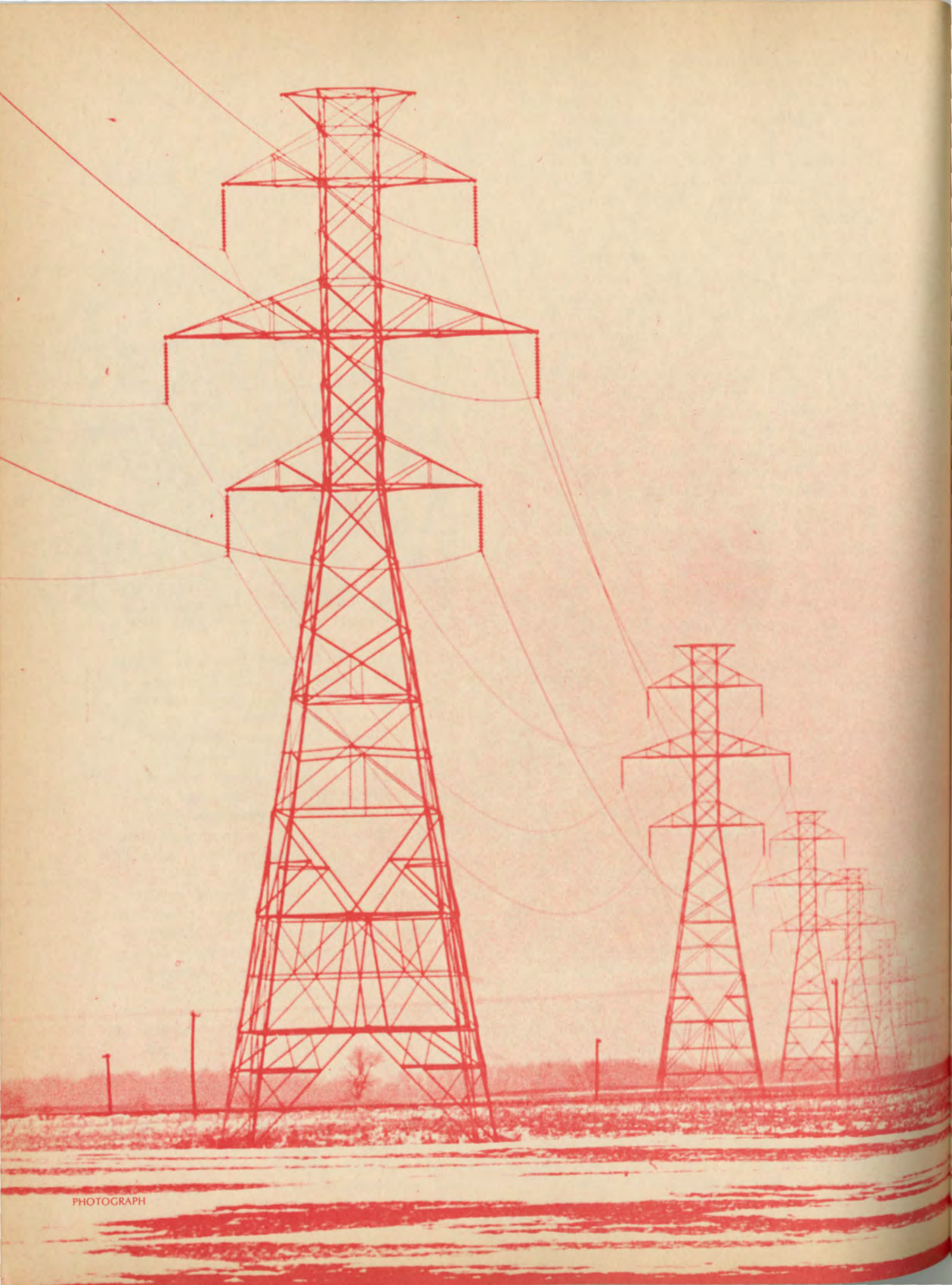
I might add in passing that, at least in the early stages of any environmental movement, there develops an almost irresistable temptation to develop and to attempt to organize campaigns of national and international scope. This is perfectly reasonable: the problems are clearly global in nature, by no means restricted to local areas. At the same time I would urge that the temptation be resisted, because a series of successful local achievements can and will prove far more significant in the long run than would several well-meaning but abortive attempts to resolve complex major issues. Successes on smaller issues may indicate better methods of attacking the larger ones and a history of such successes provides the best possible platform for a subsequent attack on the really big and seemingly unsolvable ones.

PHOTOGRAPH A. PIERCE BOUND

If I were to try to sum up the message that urgently needs to be communicated, I would do it this way: the problems are serious, the prospects are gloomy and the stakes are immense. And yet some hope does exist: it lies in forceful and meaningful action, not by governments and not by industry, but by committed individuals, mobilizing the apprehension and concern that now seems to have been communicated to the entire community.

As problems are exposed, it will generally develop that there are local or regional groups interested in the same problems, or in issues that are closely related to them. Such groups may prove to be effective, and if so, they can use help. If not, form your own.

Like I said, raise hell. ■



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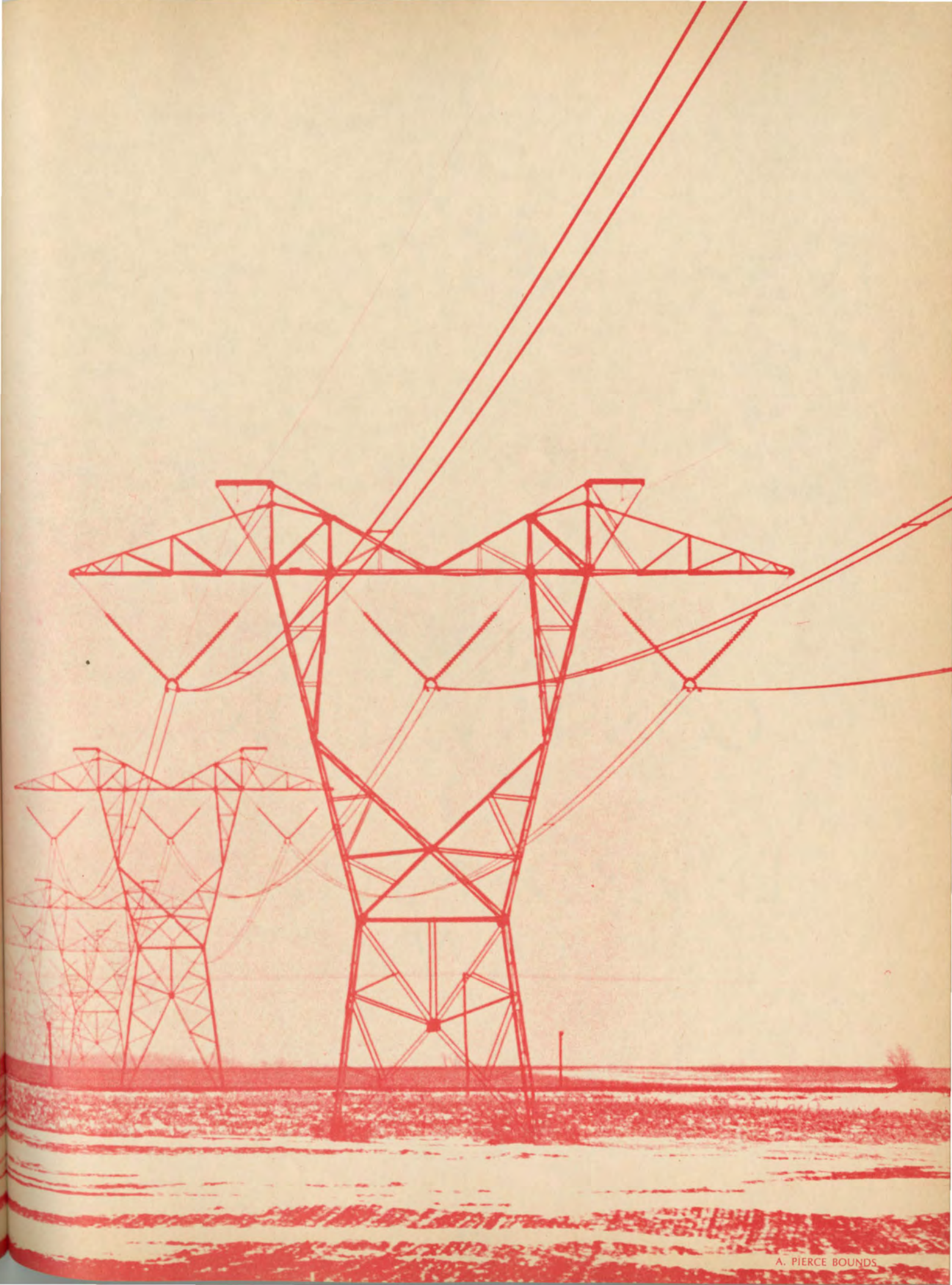


A. PIERCE BOUNDS

If environmental issues are to dominate the seventies as civil rights and racial equality dominated the Sixties, one of the critical questions is whether the courts will play an equally important role. If they do, fundamental concepts of private property rights will have to be reexamined in the light of the basic ecological teaching that one man's toilet is another man's faucet. The philosophy of the frontier still underlies most doctrines of land and water rights and duties.

Despite the absence of clearly applicable constitutional phrases or clauses—such as "due process," "equal protection" and "privileges and immunities" in civil rights causes—the coming and imminent explosion in the courts is clearly in the field of environmental law.

The certainty is based on two separate trails of history, one political and one judicial. The political side is documented daily in every newspaper and news magazine. To young and old, left and right, wilderness hiker and urbanite, the environment is the "in" subject. Every politician is aroused and at least verbally fighting pollution. With the close connection of population explosion and environmental abuse, even motherhood is being challenged.

Understanding the judicial trail of the conservation movement first requires a statement of the first lesson given to law school students in the basic civil procedure courses.

The right to relief in any civil action in any court consists of three elements: *first*, there must be a wrongful act, what lawyers call substantive wrong; torts, such as an act of assault, negligence, defamation or nuisance are examples, as are breaches of contract or of some other specific legal relationship. A rule of conduct, statutory or common law, must be broken by the defendant.

Second, the specific court must have

FROM CONSERVATION TO ENVIRONMENTAL LAW

by David Sive

PHOTOGRAPH JOHN MAST

jurisdiction of the subject matter of the suit and of the persons of the parties. No court has jurisdiction of all suits. Some are reserved for federal courts, some for state courts, some for tax courts and numerous other special courts. A person sued must be subject to the process of the court in which the suit is brought. This means that a defendant generally must be served in the state or other district in which the court lies.

Finally, there must be "standing" of the person suing. That is, the plaintiff must be one whom the court will deem a proper person to bring suit. In cases involving government acts or the acts of parties who were before administrative agencies before the matters came to court, the most frequently used term describing the person who has such standing is the "aggrieved party." He is the person, injured or otherwise aggrieved by the action which he claims to be wrongful.

Where have conservationists stood, what has been the state of the law, with respect to these three elements?

The third element, that of standing, is clearly the area in which conservationists, operating through *ad hoc* citizens' committees or some of the established national and regional organizations, have made the most progress. They have probably won their battle for standing.

Basic rulings of the Supreme Court and other important courts, in environmental and other fields of law, have overruled older doctrines which required special personal injury to a person suing, which in the case of breach of duty by a public official meant injury beyond that suffered by the general public. Such older doctrines often had the ironic consequence of immunizing wrongdoing on a grand public scale, while granting relief from the comparatively minor wrongdoing of private persons resulting in damages as low as the proverbial six cents. The reapportionment cases are among the most important which have helped destroy the requirement of *special injury* to a plaintiff asserting a public right.

The foremost environmental case is the Storm King Mountain case, in which a federal court of appeals reversed the grant of a license, to New York City's Consolidated Edison Company, to build a power plant on Storm King Mountain. Against a background of centuries of the courts' major concern with pecuniary or property rights, there had been a growing series of exceptions to rules that one must be hurt in his pocketbook to be an aggrieved party. Therefore, the United States Court of Appeals for the Second Circuit held that the Scenic Hudson Preservation Conference, a citizen group with no pecuniary or property interest in the controversy, was a party "aggrieved" by the Federal Power Commission's grant of a license to build the plant at Storm King Mountain.

A number of cases in which the standing of conservationist and similar groups has been upheld have followed and broadened the rule of the "Scenic Hudson" case. Included are cases in which the Sierra Club is challenging a proposed Disneyland in Mineral King Canyon in California; in which a group of civil rights organizations challenged a superhighway across Nashville; and a complex of cases brought—by the Village of Tarrytown and an *ad hoc* citizens group together with what many call the "litigious" Sierra Club—to enjoin an expressway planned to be built in the Hudson River.

The standing hurdle, however, is only the first of the three that must be surmounted before the court rules that a river, forest or beach is to be left alone. The jurisdictional and substantive law problems remain.

PHOTOGRAPH JOHN MAST

The very classification of a question or problem as "jurisdictional" is often sufficient for most working lawyers and judges to leave the matter to the theoreticians and scholars who delight in finely spun theories often understood only by other theoreticians. Only a few of the jurisdictional problems of environmental cases can be briefly cited here. One such jurisdictional problem is that of "sovereign immunity," the theory that a sovereign nation or state or any agency of it is immune from suit, unless it consents to being sued. The rule is an application of the medieval and political axiom that the king (the sovereign) can do no wrong.

Many aspects of sovereign immunity have been done away with both by statutes and court decisions. Negligent operation of government vehicles is now almost as actionable as that of private vehicles. Federal and state courts of claims handle such suits. It is generally held that, if an act of a government agent is unconstitutional, he is not exempt from suit; he has no power to so act and, therefore, by one of the semantic tricks in which courts and lawyers specialize, the act is not that of the sovereign.

Still to be determined definitely, however, is the matter of whether an act of a government official which is illegal or beyond his statutory powers—but not necessarily beyond the powers which he could constitutionally be granted—is *ipso facto* not protected by the sovereign immunity doctrine. In many cases a distinction has been drawn between "discretionary" and "ministerial" acts in this connection. The government agent is immune from suit for any discretionary act.

The Hudson River Expressway case, in which the conservationists secured a trial court judgment enjoining the $200 million project involves fundamental sovereign immunity claims. The trial court held that the

expressway is unlawful because construction of it necessarily involves "dike" and "causeway" structures which require Congressional consent under an 1899 law. It is conceded that no such consent was secured.

The government argues that even if the structures were correctly held to be dikes and causeways, and congressional consent were required, the federal officials granting the permit for such construction are immune from suit. They are the sovereign, it is said, and they have not waived immunity. The conservationists' answer is that law, if not order, is required of government officials as much as of trespassing students. The court may have given its answer and the questions been moved up to the Supreme Court by the time of publication of this article.

One other series of jurisdictional problems should be noted here, those of "federal jurisdiction." Most important conservation litigation has been and probably will continue to be brought in the federal courts. Where there is a choice of federal or state courts, conservationists will *generally* seek to go into the federal courts. They, it is felt, are less subject to the pressures of the financially interested groups in the immediate area of a project from which the local contractors, union members and merchants fancy they will grow rich.

Not every case, however, may be brought into a federal court. There must be federal jurisdiction for there to be a federal case. That jurisdiction is generally based upon the diversity of citizenship of the plaintiffs from that of the defendants, or the substantial involvement of federal questions, of rights or duties under federal laws. In diversity cases and in "federal question" cases, the problem of jurisdictional amount is often involved. Only if "the matter in controversy exceeds the sum or value of $10,000" is the jurisdictional amount present.

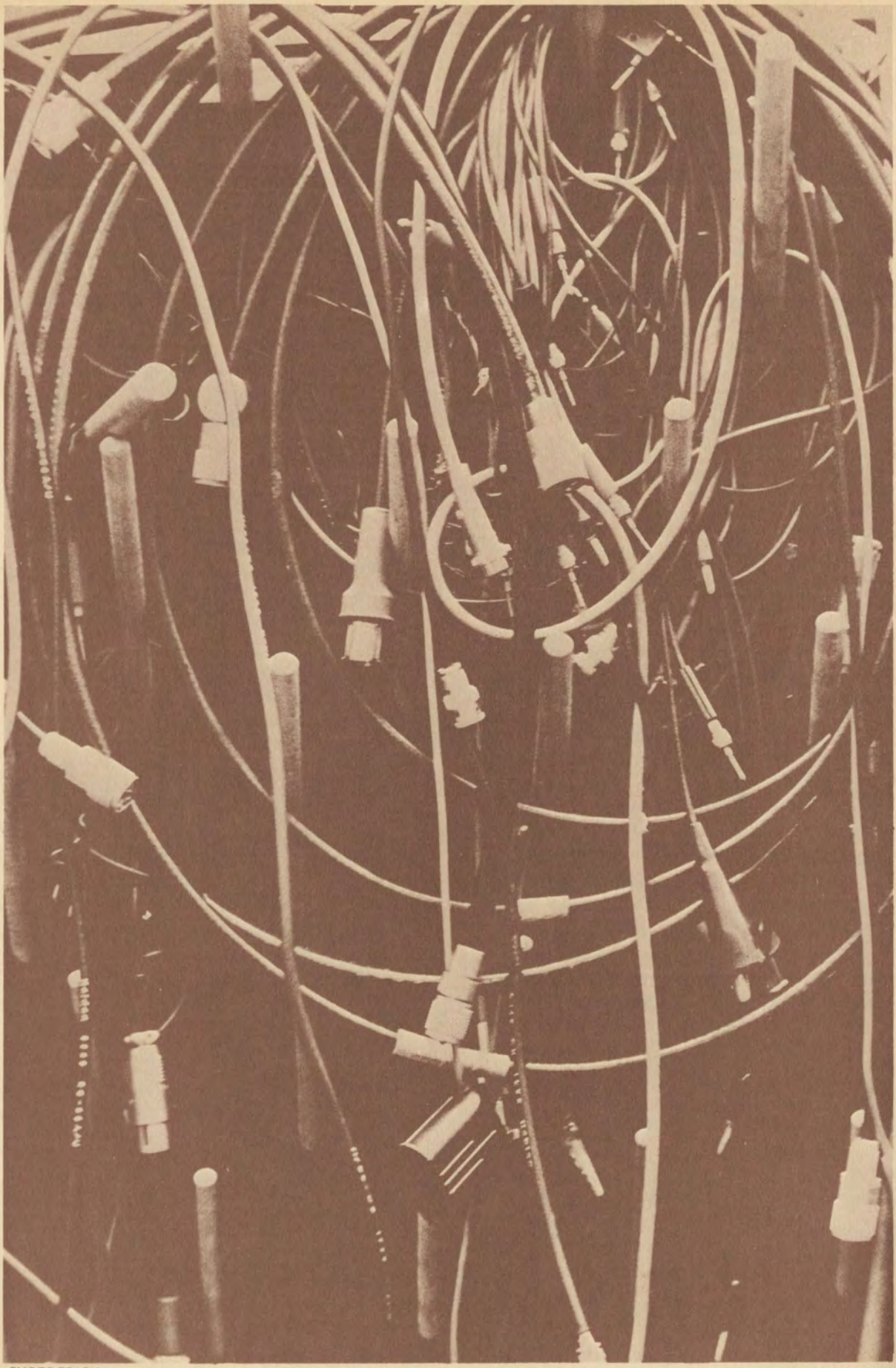
What is "the amount in controversy," however, when the very controversy is over rights and matters which are not measurable in dollars? Must the value of mountains or rivers or air be stated in dollars? If a dollar sign must be affixed to each "impulse from a vernal wood"—though it "teaches more of man, of moral evil and of good, than all the sages can"—conservationists must somehow fuse Wordsworth with Keynes and Friedman. And the fusion must be by a means permitted by Wigmore, the master scholar of the law and rules of evidence. So much for jurisdiction. The bulk of the problems are unresolved.

We turn to the third element, the substantive law. It is perhaps the most important, because all the standing and jurisdiction in the world is of no avail unless the defendant is breaching a rule of substantive law. In addition, if there is a clear breach, if conduct is clearly wrongful, a court will strain to sustain its jurisdiction to enjoin or punish such breach and to find that whoever is in court complaining has the standing to invoke that jurisdiction. The legal sword with which a plaintiff classically arms himself to pierce through the wrongdoer's procedural armor is the maxim that "wherever there is a wrong there is a remedy."

Environmentalists and their lawyers, through no fault of their own, have made little progress in the area of substantive law. In any particular proceedings the standing and jurisdictional battles are generally fought first, because the issues are posed by preliminary motions, involving no disputed facts, rather than by trial. Even more basic is the problem of changing vast bodies of substantive law which for centuries have been built around property or other pecuniary rights. The hearing of claims to aesthetic rights in and to lands, waters and air is still not the everyday practice of most courts.

Environmental lawyers and law teachers are hard at work trying to evolve, under present laws, theories of environmental rights *per se*. Some have promulgated theories based upon common law nuisance doctrines or the law of trusts. Serious study is being given to carving environmental rights out of the constitutional doctrines of "due process" and "equal protection."

While some successes may be achieved in courts by the use of such theories, environmentalists are battling steeply uphill. To prevail "on the merits" after sustaining their standing and the court's jurisdiction, they must continue to rely on finding illegality in the acts of the builders and polluters in some statute or rule not enacted or adopted with environmental rights in mind, or on a host of new anti-pollution and other resource protection statutes. The number and size of such statutes is expanding each month. The need remains for vast bodies of new laws that will reflect basic changes in our attitudes toward the limited resources of our one earth.



PHOTOGRAPH

BRUCE MISFELDT

Shortly there may also be a dramatic upsurge in the demand for a constitutional grant of rights to a clean and livable environment. New York State has adopted a "conservation bill of rights." Senator Gaylord Nelson of Wisconsin, Congressman Richard Ottinger of New York and others are pushing such constitutional amendments.

The New York State constitutional amendment was originally incorporated in a proposed new state constitution adopted by the New York State Constitutional Convention of 1967. Because of serious Church v. State issues, the whole constitution was rejected by the voters in November, 1967. The Conservation Bill of Rights, however, was adopted by the Legislature and ratified by the voters of the state and became part of the state constitution in November, 1969. The basic policy declaration follows:

> *The policy of the state shall be to conserve and protect its natural resources and scenic beauty and encourage the development and improvement of its agricultural lands for the production of food and other agricultural products. The legislature, in implementing this policy, shall include adequate provision for the abatement of air and water pollution and of excessive and unnecessary noise, the protection of agricultural lands, wetlands and shorelines, and the development and regulation of water resources. The legislature shall further provide for the acquisition of lands and waters, including improvements thereon and any interest therein, outside the forest preserve counties, and the dedication of properties so acquired or now owned, which because of their natural beauty, wilderness character, or geological, ecological or historical significance, shall be preserved and administered for the use and enjoyment of the people. Properties so dedicated shall constitute the state nature and historical preserve and they shall not be taken or otherwise disposed of except by law enacted by two successive regular sessions of the legislature.*

A declaration of national policy almost as broad as the above is set forth in the "National Environmental Policy Act of 1969" which became law on January 1, 1970. This widely hailed legislation creates a Council on Environmental Quality* and declares ". . . that it is the continuing policy of the Federal Government in cooperation with state and local governments and other serious public and private organizations to use all practicable means and measures . . . to create and maintain conditions under which man and nature can exist in productive harmony. . . ." The Act directs that "to the fullest extent possible . . . the policies, regulations and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this Act. . . ." It directs all agencies of the Federal Government to:

> . . . utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment.

Whether this national policy declaration affects immediately pending court actions and administrative proceedings—and gives rise to new rights which may be asserted in such actions and proceedings now being brought—is a question being studied by a number of environmental lawyers, scholars and law students. The particulars of the new body of common and statutory law which will reverse the processes of environmental degradation are not clear. It is certain, however, that the field has excited vast numbers of legal and judicial persons. And it can safely be said that a significant new body of law will develop out of such excitement. ■

** Paul Ehrlich, the Stanford ecologist, predicted the composition of this council in a January speech. He said: "I don't know who's going to be on it yet, but I'll bet there won't be one trained ecologist. There'll be a physical scientist of some sort, there'll be a rabbi, there'll be somebody who discovered that the dickey-birds disappeared—by the way, being Jewish let me assure you that it could have been a priest or a minister or even God knows what else. They will have no one with professional qualifications in the field because the ecologists are telling it like it is and the government doesn't want to hear it." Dr. Ehrlich won his bet. The physical scientist appointed by President Nixon is Gordon J. F. McDonald, former vice-chancellor of the University of California at Santa Barbara. Appointed in the "dickey-bird" category was Russell Train, past president of the Conservation Foundation and Nixon's former Undersecretary of the Interior. In the "God knows what else" category is Robert Cahn, a Pulitzer Prize-winning reporter for the* Christian Science Monitor.*—ED.*

TAKING A WALK WITH THE DOG

Things change so fast that
you can hardly count
on the dictionary anymore;
Laramie for instance, pop. 17,520
which I'm sure has changed since then
or Orange County, which in the
last ten years has skyballed,
space industries springing from the furrows

so that a farmer can hardly be himself.
and this old house, sold from
hand to hand, redone; no one
can remember the
proper owner.
in Southern California you can't
go away for a year without
coming back a stranger:
streets torn up, friends moved,
new malls and civic centers

these government programs
the country going crazy growing.
even my dog loves her old sock
and hunts nervous around the house
when we have to wash it.
behind our eyes is something
like Oklahoma,
a place nobody wants.
or Alpine for instance
too old and feeble to know better,
two hundred miles from the nearest airport;
yet even here they have a vague idea
of progress, pains from lumbago
built low-rent units for the aged.
we walk to the edge of town,
to where the prairie starts.
the lights come on behind us.
a satellite keels over.

—PETER WILD

SKIN TEETH

These flowers
growing around us
our sea

the only animal
without bone,
but cartilage
spreading from the mouth,
petals,
new armor
money surrounding us

sharp as waves
sharp as the air we
swim in and breathe;
are there birds in the sky,
we eat them,
fish
in the sea . . .

folding and folding
on ourselves, strained
through our layers,
till they emerge bristling
new skin

smear of the sun
carried beneath the nail
even to this depth,
lying in garbage,
among broken spars,
drunken in the silt torpid
battered, dreaming

anchored in our heads
the ash we've sunken with,
embers embroidering the skin

knives to whose music
at the slightest
breeze, dry blades clashing
we leap
fly from our skins

—PETER WILD

WHERE ARE THEY ALL COMING FROM?

by Ray Balter

Citizen interest in environmental affairs is mushrooming. This interest is demonstrated by the phenomenal growth in local and national citizen "action" groups which may already number in the thousands and which combine a membership of several hundred thousand people.

At the same time the scientific "crackpots" of the 1950s and early 1960s have emerged as respected forerunners of a scientific movement that is gathering strength with each passing month. It has become fashionable, even academically permissible, for the scientist to speak out on the subject of environmental degradation. Such acceptance is a far cry from the cavalier treatment afforded many scientific environmentalists just a few years back.

Somewhat less apparent is what we shall describe here as the New Environmentalist Movement: citizen activity that may in the future play a most significant role in helping to evaluate and determine the choices remaining open to mankind in his struggle for survival.

Many of the activists, scientists and New Environmentalists are dropouts from the established conservation clubs, professional societies, traditional philanthropic organizations and governmental agencies. How did this come to be?

The usual reason given is that the traditional groups are too hidebound, too slow to react and too afraid of any motion that might be construed as politically motivated. A strong case could be made, however, that traditional or establishment-type organizations have been moving more rapidly. Some old line groups are engaged in petition preparation, signature gathering, outright lobbying activities and even political coercion. Still others are advocating obstructionist techniques, confrontations and even more violent activities against such "adversaries" as the U. S. Army Corps of Engineers and other public and private agencies.

The differences between the traditional groups and the New Environmentalists are critical. One of the primary differences is one of priorities. To increasing numbers of citizens, the feeding of hungry millions and the saving of a virgin forest are both laudatory goals; but they are scarcely equivalent. Birth control and free-flowing streams are both desirable goals, but can hardly be paired on the same scale.

Another difference is that of conviction and personal commitment. This involves the difference between intellectual perception of the problems and emotional and physical involvement with them. It is the difference between sending in a small donation (tax deductible requests only, please) and giving of one's substance.

Still another difference is in attitude toward permanence. Men have tended to envision their government and their public and private social orders as inviolate, even in the face of continual gradual change. We deceive ourselves, believing that our institutions should not change even when we recognize that they do change. The new thought is that social orders and value systems *must* change—and very, very rapidly—if men are to survive at all. In this area the divergence in view becomes almost irreconcilable. Traditional conservationists, professional society members, philanthropists, governmental and industrial leaders do not encourage shifts in the social order and value systems because they clearly perceive these as threats to their own existence. The New Environmentalist sees that 5.7% of the world's population cannot continue to consume 70%, 60% or even as low as 40% of the world's natural resources.

Since 1945 the United States has tried to give voice to the "bootstrap" philosophy in dealing with foreign nations (not to mention our own ghetto dwellers). Under this theory, we attempt to bring the underdeveloped nations up to the "high" standard of living that Americans enjoy. Such a philosophy was absurd when it was initiated and grows more ludicrous every passing day. To accomplish this would require an international resource consumptive rate of at least eight to ten times the present one which, in turn, would mean sixteen to twenty times the present rate in thirty-five years when the world's population is scheduled to double, and from thirty-two to forty times the present rate in perhaps sixty-five years by which time the population will have quadrupled. None of these figures

takes into account any gain in American affluence beyond the present date! Nor do they count the additions to all of the figures required for us to see all our citizens elevated to a subsistence diet and a reasonable standard of quality living.

While such a scheme might be a logical extension of the White Anglo-Saxon Protestant work ethic, it simply does not take into account the factors already known. Moreover, such a misguided foreign policy grows more dangerous every passing day. It is dangerous for the obvious reason that we must import raw materials in order to maintain our own standard of living as well as to export finished goods in order to maintain our foreign trade balances. It is cumulatively more dangerous since, in order to maintain the flow of raw materials, we must maintain a strong military position. Such militarism contributes to the consumption and waste that erode our domestic situation and sicken the world that cannot ever "develop" in the face of the consumptive requirements of the already developed nations. This mad and rapidly widening circle leads only to the ultimate destruction of humanity as we know it. War is plainly inevitable, and only a fool can see a winner in World War III.

The above is obviously an oversimplification of a highly complex series of problems. The primary point, however, is clear: the political-economic system as we know it cannot endure.

Not all of the new thought groups and individuals share the same view. There is, in fact, a rather wide divergence among them even as to the practical approach to problem-solving. While labels are useless in a movement that is highly splintered and hardly more than a year or two old, some identification is necessary for placing the New Environmentalist Movement in better perspective.

The citizen action groups that we discussed in the first paragraph might be characterized by their methodology, which is something like interest, concern, motivation and action. These groups attempt to create interest and then concern in environmental matters and subsequently to motivate citizens to direct and specific actions that will effect solutions—or at least changes. Often these solutions or changes involve actions based on negative premises, e.g. (1) the internal combustion engine creates air pollution and other side effects; therefore (2) the internal combustion

engine should be replaced; therefore (3) let's outlaw the internal combustion engine. When pressed for an alternate mode of transportation this type of group most frequently suggests an electric or steam car or, not infrequently, nothing at all except bicycles, walking or mass transit. These citizen action groups, however, have played a major part by increasing public awareness of the environmental imperatives. Most particularly in the area of population control, they have contributed greatly to the spreading of the word relating to the non-infallibility of our governmental and religious leaders.

The scientific groups fall into several categories. Most frequently they divide into the criers of doom (scientific troubadors) and the scientific information groups. In the latter case the attempt is generally to develop the information base in the assumption that someone will use it sometime. In the former, the assumptions are that people must be scared to be motivated and that the more they are scared the more motivated they will be. Other scientific groups have developed differently in recent months. Some have become more militant; a few have joined in suits against governmental agencies for various environmental reasons. Other groups have been paying more than lip service to an attempt to get a wider distribution of simple and readable scientific fact sheets. The plain, unembellished scientific facts are really more than enough to scare anyone of sound and reasoning mind. Statements made with little factual base generally hurt the environmental cause more than they help. The scientists have, overall, come farther faster than anyone could have expected, even hoped. These men and women are obviously scared—and with cause—despite a few of their traditionally minded colleagues who continue to believe that science, technology and the establishment will take care of everything.

The New Environment Movement represents quite a departure from either the citizen action or scientist groups both as to methodology and base position. Where the efforts of the action and scientific groups are outward—toward other people—the NEM individuals and organizations tend to work inward, on themselves, and in a service capacity in their relationship to other groups and individuals.

Interest and concern are to the New Environmentalists the lowest level of environmental perception. At this point the individual

may still be oriented toward the traditional approach or toward the outward activities of other groups. The individual may see the need to evaluate his own personal position in the environmental scheme, or he may simply desire a different informational base than he has received so far. The more he becomes aware, however, the more the individual begins to see that not only are the answers undoubtedly complex, but also that the questions are not at all well-defined. Shortcomings in the criteria for evaluating new information may be discerned, so that new tools will have to be developed. With these tools any answer remains simply another fact which must be evaluated as a part of the larger whole before being used as a basis for a valid conclusion.

The personal commitment of the New Environmentalist is not a continuation of the traditional self-interest motive—"I act because the action will help *me*." The New Environmentalist becomes aware that the process of change is a shift from an orientation with self as the center of the universe to some other value system. The personal commitment is a relatively non-directional commitment to seek a new, quality value system. Ancillary to the non-directional commitment is the conviction that whatever this system may be, it is not precisely known and it offers no instant god or new magic.

Some portions of the new system are obvious. We need to decrease consumption, at all levels, in order to preserve natural resources while working toward presently unknown goals. Other things, such as a more rational mode of transportation and a stimulating educational system, are less clearly seen. Finally, this personal commitment involves accepting the fact that it is likely that those of us who are "educated" and thus locked into our present system can never perceive the social patterns which must emerge for human survival.

Many new Environmentalists participate only modestly. Others work 80 hours each week. Some direct participation is required if only as a means of reinforcing a life-style change. For persons who are deeply involved, these changes come much easier. One doesn't eat steak comfortably in the same room with someone on a subsistence diet. At the same time it is hard to withdraw from old patterns when one is surrounded with the trappings of the old world.

Planning becomes a necessary component

for fundamental change. Three stages of environmental planning will have to be developed beyond the traditional functions of pure and applied research. First, immediate plans must incorporate all of the present and immediately upcoming factors. For example, if complete population control could be exerted as of January 1, 1971, the immediate plan would have to include the birth of our nearly ninety million additional children who would have been conceived already and who would be born in the next 270 days. Thus we may find ourselves planning projects to feed, clothe and house the millions yet to be born.

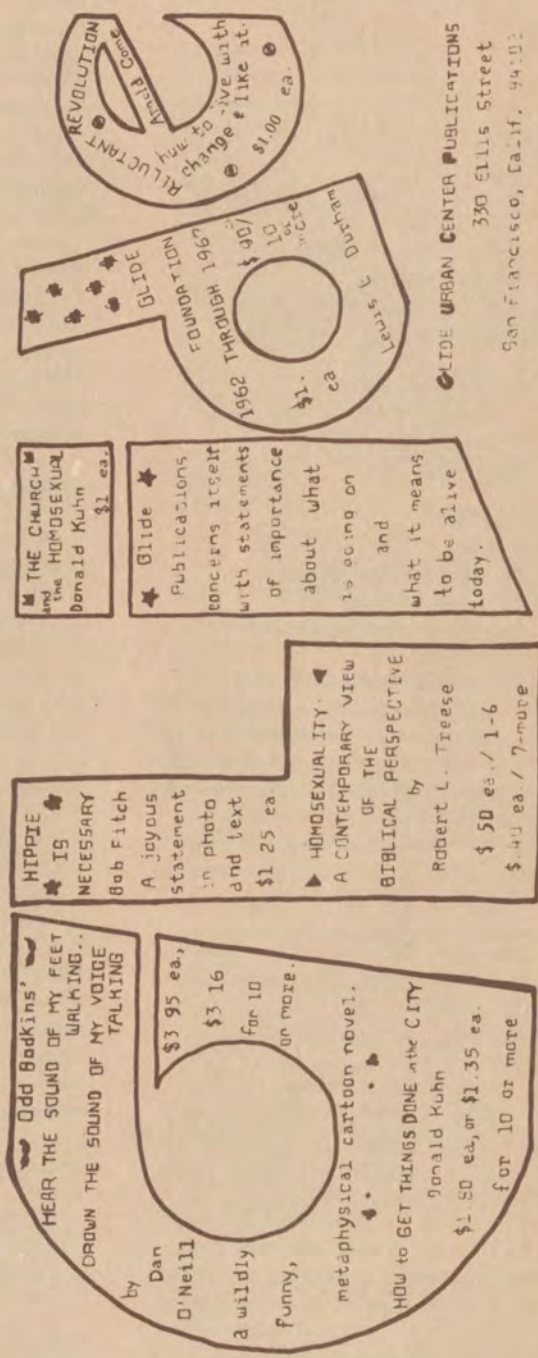
The second stage of planning should incorporate the steps required to reach the desired or developing goals. By this time these goals should be more evident. Selection will have to be made between a relatively high standard of living with very few people (perhaps as low as one-fifth or one-tenth of the present world population), or a much lower standard of living with approximately the same number of people.

The last stage of planning would be the beginning of the new human era, a balanced population, a reasonable standard of living, and a non-destructive human relationship with the ecosystem of the Earth.

The New Environmentalist Movement has not typically been concerned with overt action beyond the personal or small group level. It is questionable if it ever will be concerned with action except in its service function. Many are willing and able to pick up the mantle of leadership. But in the main the New Environmentalist Movement exists to provide such support activities as well as personal commitment to the changing and developing life-styles of the future.

As should be obvious from the above, the New Environmentalist Movement has neither full-time leadership nor structured programs. But it does exist and it is growing. Some New Environmentalists run service or community or ecology centers. Others are poets, architects, organization staff members and citizens from every walk of life. More than twenty "Centers" are either started or in process of being organized. We expect that there will be a hundred or more by the end of 1970. Some of these centers are touching as many as four or five hundred new people each week.

We have come to understand the value and even necessity of voluntary, organized participation. We have come to appreciate the value of what we call "Common Turf" in any community—a place that is not connected with any organization—open to all. ■



ECOLOGY REGISTRY

ARIZONA

Tucson:

Peace and Freedom Association
1028 East 6th Ave.
Tucson, Arizona 85719
Alberta Dannells
A center for movement groups, including an emerging one on ecology.

Venceremos Books
410 North 4th Ave.
Tucson, Arizona 85705
602 / 792-1797

CALIFORNIA

Berkeley:

Berkeley Ecology Center
2179 Allston Way
Berkeley, California 94704
415 / 548-2220
Ray Balter, Noel Goldthwaite
To supply background information for the environmental movement; to aid and co-ordinate activities of all ecological groups, particularly in the San Francisco Bay area.
Publication of information summaries, book sales, reprints, Environmental Switchboard (co-ordination).

Northern California Committee for Environmental Information
P.O. Box 761
Berkeley, California 94701
415 / 642-6707
Dr. Donald L. Dahlsten
To make scientific information available. Primary goals are to present the alternatives on environmental issues objectively. The organization is not an action group but an information group. The group is divided into subcommittees (education, pesticides, air pollution, water pollution, population, chemical and biological warfare, and sound pollution). Sub-committees have local projects, produce "white papers" on pertinent issues and provide speakers.

Save San Francisco Bay Association
P.O. Box 925
Berkeley, California 94701
Dr. William E. Siri
To protect open water, promote regional planning, plan for conservation of wildlife, create boating and recreational facilities, and beautify the shoreline.
Educational activities.

The BioEnvironment Club
2627 Virginia St.
Berkeley, California 94709
415 / 845-9078
T. J. Hewitt
We are organizing an Ecology Job Placement Center to help people find work in areas directly relating to the present crisis, and to help coordinate the efforts of parallel or complementary teams. We are concerned with planetary human ecology and America's leading role in disrupting that ecological balance.
Specific follow-up projects implemented by ad hoc means. We have a comprehensive, annotated bibliography of about 700 references of important books, articles, films, pamphlets, papers, etc. dealing with all aspects of the current crisis in human ecology available on a non-profit basis.

Kentfield:

Marin Ecology Center
19 Cypress
Kentfield, California 94904
415 / 457-1742
Deborah Davidson, Ernest Marris
To create research projects and action projects for the people in our county who are aware of our disaster and willing to work to repair it.

Los Altos:

Zero Population Growth
367 State St.
Los Altos, California 94022
415 / 941-3666
Shirley Radl, Norman Rogers, Eugene Coan
Zero Population Growth is a political action organization whose purpose is to bring about population stability in the United States. Lobbying, public education, media contact, publicity, campaigning.

Los Altos Hills:

Los Altos Hills Noise Abatement Committee
26379 Fremont Rd. (Town Hall)
Los Altos Hills, California 94022
415 / 948-9127
D. A. Miller
Develop improved noise control laws and enforcement procedures; undertake actions which will reduce noise generated by freeway traffic; convey the significance of increasing noise pollution on citizens' lives and their environment.
Providing assistance to the City Council, governmental liaison at other levels, planning designs for noise abatement.

Los Angeles:

Clergy Counseling Service for Problem Pregnancies
P.O. Box 39545
Los Angeles, California 90039
213 / 666-1568
Rev. J. Hugh Anwyl, Elizabeth K. Canfield
Counseling service for women with unwanted pregnancies; community information on 1967 Therapeutic Abortion Act and its application.
Counseling with pregnant women.

Ecology Action (Greater Los Angeles Area)
11317 Santa Monica Blvd.
Los Angeles, California 90025
213 / 473-3498
Russ Salzgeber, Israel Feurer
To break down culturally imposed perceptions of man's relation to his environment. To transform values, attitudes, and beliefs through rational discourse and/or multi-media emotional/spiritual confrontation. And to prepare "homo sapiens" for a constructive role in the evolution of life.
Individual orientation program, lectures, leaflets, conventions, radio shows, eco-faires, street theater, visual displays.

Menlo Park:

Whole Earth Catalog
558 Santa Cruz Ave.
Menlo Park, California 94025
415 / 323-0313
Stewart Brend, Hal Hershey
We *are* as gods and might as well get good at it. So far, remotely done power and glory—as via government, big business, formal education, church has succeeded to the point where gross defects obscure actual gains. In response to this dilemma and to these gains a realm of intimate, personal power is developing—power of the individual to conduct his own education, find his own inspiration, shape his own environment, and share his adventure with whoever is interested. Tools that aid this process are sought and promoted by the *Whole Earth Catalog*.

Merced:

Merced Ecology Action
2832 East Arden Lane
Merced, California 95340
209 / 723-2986 and 723-0895
Marsh Pitman, Wayne Pendleton
Self-education and community education on the application of ecological principles to local, regional and world problems.
Informational meetings, individual studies, providing speakers, discussions, literature / poster distribution, organizing displays, assisting formation of student groups.

Mill Valley:

Marin Ecology Center
Tyrrell's, 17 Madrona
Mill Valley, California 94941
415 / 383-4019
Marcia Hansen, William Seivers

To serve as an axis for ecological action and education in Marin County with the purpose of developing ecological consciousness.
Switchboard function for all ecology / conservation groups in Marin County, e.g. aluminum recycling services.

Palo Alto:

Ecology Action
678 Tennyson
Palo Alto, California 94301
415 / 321-9760
Arden Jones

Ecology action is an educational institute which explores ways to halt the contamination and destruction of the life support system.
Earth Recovery Days—planting trees and ground cover in state parks. Smog-free Locomotion Days, parades.

San Francisco:

Association to Repeal Abortion Laws
P.O. Box 6083
San Francisco, California 94101
415 / 387-6480
Patricia Maginnis

Refers women to foreign countries for abortion care.

Bay Area Institute
9 Sutter Street
San Francisco, California 94104
415 / 989-3026
Barry Weisberg

To work out concrete alternatives to society's suicidal course of environmental destruction, by providing hard facts and analyses on vital issues and by bringing together people in various struggles, communities and institutional settings. We wish to develop broader frameworks for basic reconstruction of society.

California Council, The American Institute of Architects
1736 Stockton St.
San Francisco, California 94133
415 / 986-0759
Melton Ferris
Legislation, public relations.

Ecology Action / Survival
1370 Masonic
San Francisco, California 94117
415 / 861-5533
Hugh Brady

Transformation from growth to harmony. Establishment of greenhouses, educational centers, survival events, etc.

Friends of the Earth
451 Pacific Ave.
San Francisco, California 94133
415 / 391-4270
David Brower, Gary A. Soucie

Preservation, restoration, and rational use of the ecosphere. Political endorsements, exhibit format book publishing.

John Muir Institute for Environmental Studies
451 Pacific Ave.
San Francisco, California 94133
415 / 391-4270
Max Linn, David Brower

Preservation, restoration, and rational use of the ecosphere.
Environmental research, project critiques, symposia, publishing.

Society for Humane Abortion
P.O. Box 1862
San Francisco, California 94101
415 / 387-6480
Educational organization.

Strawberry Network / New Vocations Project / American Friends Service Committee
2160 Lake St.
San Francisco, California 94121
415 / 752-7766
Marshall Palley, Arlene Buch, Bill Anderson

To help people find out what they want to do with their lives and begin *doing* it. We do this through individual counselling, conferences, weekly workshops, group get togethers. To help develop paying jobs in the field so people can work on the problems and survive at the same time. We also publish the *Strawberry Network*, a tool for communication about these concerns.

St. Mary's College:

Students for Ecological Action
St. Mary's College, California 94575
415 / 376-6855
Casey Murphy, Dennis Hedgecock

To better acquaint the college community with the pressing issues of our environment.
Lectures, teach-ins, information centers.

San Jose:

Citizens Against Air Pollution, Inc.
110 Roundtable Dr., 14-1
San Jose, California 95111
408 / 227-8153
P. B. Venuto

To protect Bay Area residents against the serious threat of health damage, chronic respiratory illness, or shortened life span caused by continued breathing of contaminated air; to eliminate the dangers and annoyance caused by visibility-reducing air pollution; to prevent damage to property and destruction of vegetation.
Lawsuits against major air polluters and law-violating agencies.

Environmental Sciences Organization
125 South 7th St.
San Jose, California 95114
408 / 292-4628
Dr. J. Y. Wang

To become the recognized leader in California in matters relating to integrated biological and physical research on the environment. To develop environmental models for the prediction and control of the changing environment. To develop a research center to promote research by educational and private research institutions, government, and industry. To coordinate environmental research of various agencies and individuals by acting as a clearing house for information developed by each. To develop a repository of scientific data to serve the public in decision-making. To disseminate information by means of individuals, advisory groups, symposia, workshops, and publications.

Santa Cruz:

Ecology Action of Santa Cruz
202 Lincoln
Santa Cruz, California 95060
408 / 423-8110
Dane Hardin

Promoting an ecological awareness through our activities.
Recycling activities. Education. Easing our own impact on our environment.

Van Nuys:

California Committee on Therapeutic Abortion
Box 2111 South Station
Van Nuys, California 91404
213 / 873-2388 and 785-0887
Mrs. Milton Roemer, Mrs. Elizabeth Canfield

Community education, research and information on the abortion issue.
Conferences, publication of newsletter on irregular basis at this time.

GEORGIA

Athens:

Balance
c/o *Institute of Ecology, Rockhouse*
Univ. of Georgia
Athens, Georgia 30601
404 / 542-2968
Sharon Davis, Rick Mural

To educate the general public and university non-ecologists about environmental and ecological issues.
Newspaper reports; non-credit ecology course; pollution display; speakers' bureau; information service.

ILLINOIS

Chicago:

Citizens Revolt Against Pollution (CRAP)
4636 North Central Park
Chicago, Illinois 60625
312 / 463-0308
Linda Friedman, Mel Sterling

Picketing and leafleting against Commonwealth Edison; fund raising for newspaper ad in a Chicago daily paper; planning long range programs to protest against Commonwealth Edison, to raise the issue of ecological problems, and to organize other neighborhood groups to fight in the environmental crisis.

We suspect that it will be necessary to make serious changes in the very nature of our society in order to clean up our planet and maintain it in not only a liveable, but also an attractive state.

Evanston:

Spaceship Earth Curriculum Project
Center for Curriculum Design
Kendall College
2408 Orrington
Evanston, Illinois 60204
312 / 869-5240
Noel McInnis, Roger Wicker

To facilitate the comprehension of our planet as a unified life-support system with limited (and currently strained) tolerance for system disruption. Formal curriculum materials are being developed which provide a comprehensive framework with which students can interrelate their other academic studies.

The conceptual framework is inspired by R. Buckminster Fuller.

LOUISIANA

New Orleans:

Ecology Center of Louisiana, Inc.
P.O. Box 15149
New Orleans, Louisiana 70115
504 / 949-7612
Monroe Lyons, Ross Vincent

Increase awareness of the dangers of ecological disaster. To provide a source of accurate, reliable information. To provide a framework within which solutions to these problems can be sought.

MARYLAND

Baltimore:

Ecology Group
c/o William Robinson
3012 Abell Ave.
Baltimore, Maryland 21218
301 / 467-0813
William Robinson

To study and act on ecological problems from a radical perspective. Our chief concern is with rampant technology.

MASSACHUSETTS

Cambridge:

Boston Area Ecology Action
925 Massachusetts Ave.
Cambridge, Massachusetts 02139
617 / 876-7085
Allan Berube, September Goody, Nan Hamilton, Jim Graves, John McGrane

To develop an ecological consciousness and to reverse the massive destruction of the environment through active projects and viable alternatives. To establish an international organization with the same aims.

NEW MEXICO

Cedar Crest:

John Muir Institute for Environmental Studies
Box 11
Cedar Crest, New Mexico 87008
505 / 282-3986
Max Linn, David Brower

Preservation, restoration, and rational use of the ecosphere.

Environmental research, project critiques, symposia, publishing.

NEW YORK

Ardsley-on-Hudson:

Citizens Committee for the Hudson Valley
Box 146
Ardsley-on-Hudson, New York 10503
914 / LY-1-9369
William Hoppen

Rehabilitation and restoration of the Hudson River.

Opposed the proposed Hudson River Expressway and supported a master plan for the orderly development of the Hudson Valley.

Canton:

ECO-ACTION
St. Lawrence University
Canton, New York 13617
315 / 379-5297

Dr. Kenneth L. Crowell, Sue Eggleston

To provide information on environmental and population crises through educational and pop-cultural events. To conduct political activism through writing letters, boycotting irresponsible industry, and holding non-disruptive demonstrations.

Hastings-on-Hudson:

Institute of Society, Ethics and the Life Sciences
Planning Office
84 Summit Dr.
Hastings-on-Hudson, New York 10706
Dr. Daniel Callahan

To do research on the interrelationship of ethics and the life sciences.

New York City:

Association for Voluntary Sterilization, Inc.
14 West 40th St.
New York, New York 10018
212 / 524-2344
John R. Rague

Population control and conservation are inextricably tied together. AVS conducted the first national conference on this subject, entitled "Conservation and Voluntary Sterilization—A New Alliance for Progress."

Our Speakers Bureau of 13 members provide speakers around the country. Last year we filled about 175 requests, mainly on radio and television.

Ecology Action East
Box 344, Cooper Station
New York, New York 10003
Sandy Brownstein, Judy Levich, Anne Parish

To increase in the revolutionary movement the awareness that the most destructive and pressing consequences of our alienating, exploitative society is the environmental crisis, and that any truly revolutionary society must be built upon ecological precepts.

Weekly meetings and creative action and research workshops.

Ecological Task Group
475 Riverside Drive (Fifth Floor)
New York, New York 10027
212 / 870-2284
Nordan Murphy

To establish a concern for human survival and improve the quality of life on this planet. To help the man in the pew see this as a primary ethical value that should govern his life-style.

Friends of the Earth
30 East 42nd St.
New York, New York 10017
212 / 687-8747
David Brower, Gary A. Soucie

Preservation, restoration, and rational use of the ecosphere.

Political endorsements, exhibit format book publishing.

National Association for Repeal of Abortion Laws
250 West 57th St., Room 2428
New York, New York 10019
212 / 265-5125
Mrs. Lee Gidding

Repeal of all laws that would compel any woman to bear a child against her will.

Assist in providing information in all states of direct political action groups; train field workers to organize and stimulate legislative action.

Stony Brook:

Environmental Defense Fund, Inc.
P.O. Drawer 740
Stony Brook, New York 11790
516 / 751-5191
Roderick A. Cameron

Environmental Defense Fund, Inc. is a coalition of scientists and lawyers organized for advocacy of environmental issues before courts and regulatory agencies. Its goal is to translate the understanding of ecologists and other environmentally concerned scientists into sound public policy through the adversary process.
Litigation.

OHIO

Berea:

Survival
Baldwin-Wallace College
Rm. 312E Heritage Hall
Berea, Ohio 44017
Barrett J. Day

Education activities to fight pollution.

OREGON

Eugene:

Natures Conspiracy
Rm. 23 E.M.U.
University of Oregon
Eugene, Oregon 97403
503 / 342-1411, Ext. 1903
Steve Schaefers, Gary Grimm, Doug Newman, Steve Wilson, Jerry Sharrard, Dave Palmer

Where practices of special interest groups currently infringe on the rights of the people, Natures Conspiracy supports moves and proposals to remedy these situations and rechannel their efforts for the good of all the Earth's beings.
Conservation activities. We recently marched 1,500 people to the Forest Service office to SAVE FRENCH PETE, one of three remaining virgin valleys in Oregon. We have been instrumental in getting a bill written by an Oregon Senator to save said valley. We are also interested in population control, DDT, environmental quality e.g. air, water pollution.

PENNSYLVANIA

Bethlehem:

Lehigh University Ecology Action
Lehigh University
Bethlehem, Pennsylvania 18015
Doug Griffes, Pete Skinner

Education of ourselves. Causing awareness of general public to problems. Direct confrontation with problem areas (especially those in immediate area).
We have mostly science and engineering majors in the group. We would like to use our technical backgrounds to try to offer responsible alternatives to many pollution problems we see.

Pittsburgh:

Foundation for Dasein-Synthesis
c/o Dr. Von Eckartsberg
Dept. of Psychology
Duquesne University
Pittsburgh, Pennsylvania 15219
Dr. Von Eckartsberg, Dr. Mary Chisholm

To formulate the principles for a Human Ecology and to sponsor empirical research into complex human ecological systems, e.g. universities, cities, families.

UTAH

Logan:

Earth People
USU Box 1343
Logan, Utah 84321
801 / 752-4100, ext. 296
Tom Lyon, Ivan Palmblad

To become ecologically responsible members of Earth, and to raise the consciousness of fellow humans to planetary and ecological levels. To learn and advance the non-negotiable demands of rocks, trees, plants, and animals. To build a society based on ecological vision and conscience.
Publish newsletter containing both theoretical stuff and news. Hear speakers on immediate important crises. Leaflet and talk to people in town. Clean up National Forest roadside and trails. Plant trees. Run ecology center with bulletin board, creative works, fellowship—"rap" center for ecology. Run hikes led by ecologists.

VERMONT

Woodstock:

Ecology Action
Box I
Woodstock, Vermont 05091
802 / 457-1729
Ginna Newton

Disseminate and educate.
Grow plants; make bread and boys' shirts; give *motive* away free.

WASHINGTON

Seattle:

Ecology Education and Research Institute
c/o Dan Raish
4065-4th NE.
Seattle, Washington 98105
206 / 632-3449

We will carry out research and education concerning the social changes required by our environment. This will include promotion of the political and social transformations necessary to bring about a balance between the needs and aspirations of society and the limitations of the earth life support system.

Project Survival
3130 Franklin Ave. E.
Seattle, Washington 98102
206 / 322-2496
David Sucher

To coordinate activities in the Puget Sound region which will lead to the survival of man on Earth and to our continued, successful Evolution. We recognize that we must redesign our total life-support system from our relations with the basic photo-synthetic process to our urban-computer complex to our family and community structure.

WISCONSIN

River Falls:

River Falls Ecology Action
409 South Winter St.
River Falls, Wisconsin 54022
715 / 425-6976
James P. Lenfestey, Susan W. Lenfestey, Donald Cline.

Function from an awareness that man is an organic process in the cycle of nature. Function from an awareness of the deterioration of the natural environment due to population, pollution, consumption. Discover, research, and develop appropriate actions for regional ecological issues. Function with the awareness that action is the best expression of personal commitment, as well as the best educator. Maintain regional communication with individuals and groups interested in ecological issues.
Just getting underway with specific regional programs: collect and return no deposit-no return bottles and aluminum cans, clean up local rivers, preserve local river as a wild park, anti-sanguine. We believe that ecology action is not an organization but a way of life. The ultimate test is not how conservative, liberal, or radical one is, but how committed.

Sun Prairie:

Survival of Man in Changing Environments
325 Emerald Terrace
Sun Prairie, Wisconsin 53590
608 / 837-7328
Lawrence Giese

To organize citizens' clean air groups in every county. To testify at state hearings on air pollution rules and standards. To issue educational material for churches and other organizations. To develop visual aids and list of resource persons. To cooperate with the universities in determining damages to vegetation from sulphur dioxides.

We wish to continue this Registry of ecological organizations and movements in the hope that making such a list public property will facilitate concerted and effective actions. Please write motive **for a form, or just follow the above format. Information printed here is provided by the group itself. While we realize there are currently some two to three thousand ecological/environmental groups, we shall continue publishing the list as long as we receive the needed information.**—ED.

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NOTICE: This ecology special issue completes Volume XXX of *motive*. The next issue will be in October. If near Nashville this summer, stop by the *motive* house, 2011 Grand Ave.

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CARTOONIST: DAN O'NEILL, whose genius is syndicated by the San Francisco *Chronicle*, gets his mail in care of Odd Bodkins, Box 58, Occidental, California 95465.

POETS: Constructing word-worlds out of the dynamics of language and the rhythms of the heart, poets have long practiced their own brand of ecology. As verb and image interact with the reader's consciousness, the process involved is like nothing so much as the swelling of a seedling tree in the earth. Gathered in this special issue are poems from **RALPH ADAMO,** Metarie, La.; **SALLIE ADAMS,** St. Charles, Mo.; **STANLEY COOPERMAN,** Vancouver, B.C.; **RONALD IKAN,** Solon, Iowa; **LINDA PASTAN,** Washington, D.C.; **KENNETH PITCHFORD,** New York City; **JOHN STONE,** Atlanta; **PETER WILD,** Alpine, Texas; and **JOAN YEAGLEY,** Kansas City, Missouri.

ARTISTS: It is increasingly clear that American artists should visually articulate the problems of their society. To use their work explicitly for social change. For the social, political and ecological problems insist that to do otherwise is only to sustain these enormous problems. The day of creative expression for its own sake is over. Artists seen in this issue who are trying to make a difference are: **J. A. YOUNGBLOOD,** Monroe, La.; **BRUCE MISFELDT,** Chicago, Ill.; **C. C. CHURCH,** Portland, Me.; **A. PIERCE BOUNDS,** Carlisle, Pa.; **JAMES FEE,** San Francisco, Cal.; **RICK SMOLAN** and **JIM DRAKE,** Carlisle, Pa.; **DERLI BARROSO,** New York City; **RITA DIBERT MESSENGER,** Ann Arbor, Mich.; **RON COBB,** Los Angeles, Calif.; **ROBERT ROHR,** Austin, Texas; **JOHN MAST,** Brooklyn, N.Y.; and **DOUGLAS GILBERT,** Chicago, Ill.

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Some people argue futilely that the solution to the population problem is not control, but exporting people to other planets. If we are to hold world population constant at 10 billion people [which experts consider essential], then in 50 years we would have to export 200 million people per year [with population growth remaining at two per cent a year]. Such large numbers would quickly overpopulate any seemingly habitable planets in our solar system, so we would have to send them to neighboring solar systems [and hope they have habitable planets].

A spaceship travelling at one million miles per hour [100 times faster than the fastest interplanetary probe to date] would require 3,000 years to go to the nearest star, Alpha Centauri, 4.3 light years away. Those persons who refuse to practice strict population control on earth would probably not practice it in a spaceship. Therefore, two people, continuing to procreate at two per cent a year, would become 100,000,000,000,000,000,000,000,000 people at the end of the journey. Thus it would be necessary to send off 100 million spaceships a year [or three per second], each carrying two people but ultimately capable of holding the population equivalent of 10 trillion present earths.

Surely, this must not be Man's ultimate destiny.

--LEROY AUGENSTEIN