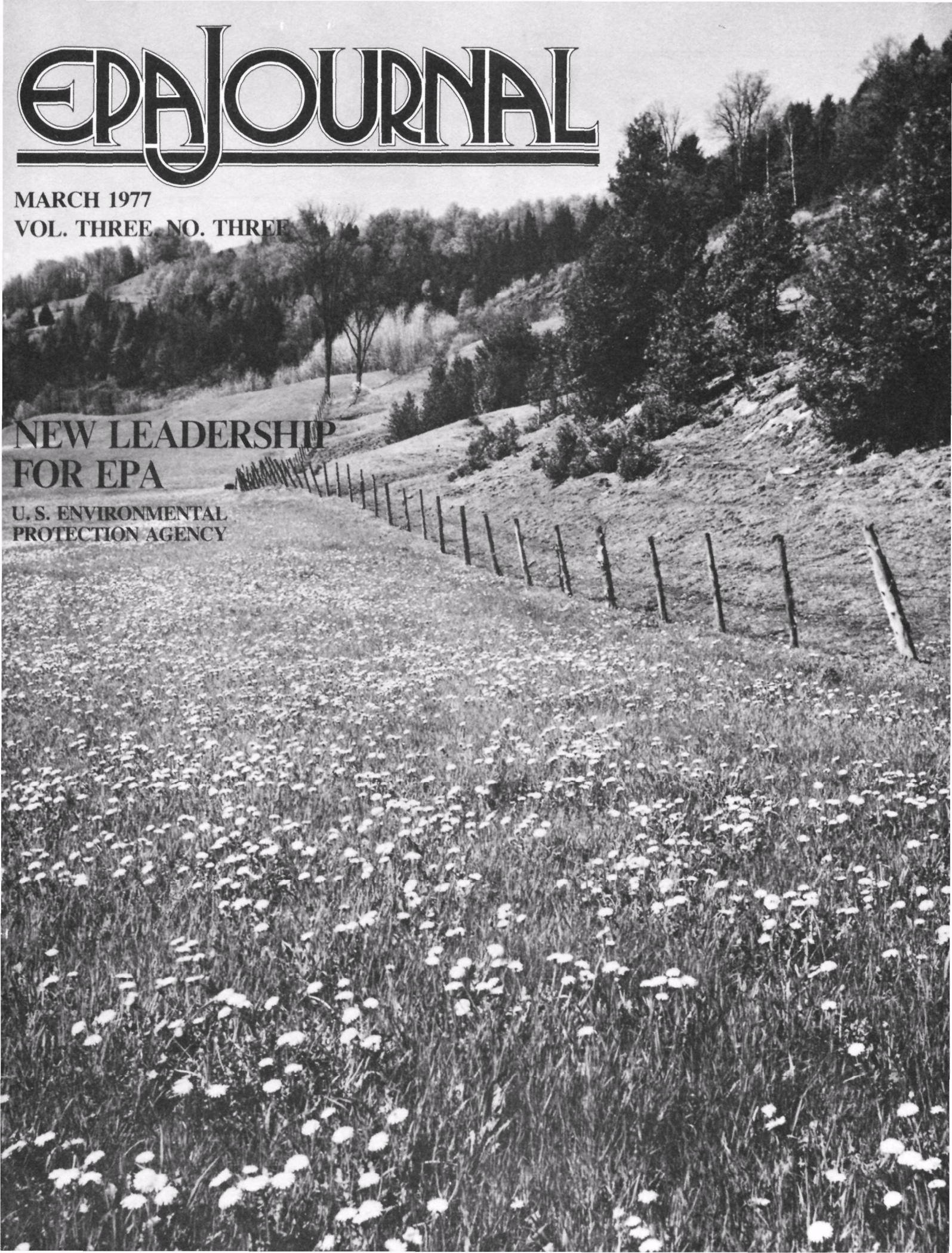
EPA JOURNAL

MARCH 1977
VOL. THREE, NO. THREE



NEW LEADERSHIP FOR EPA

U. S. ENVIRONMENTAL PROTECTION AGENCY

WASTE

With the passage of landmark legislation, EPA has been given important new responsibilities in the solid waste disposal area.

The Agency's plans for carrying out this law and the impact it may have are discussed in an interview in this issue of the Journal with Sheldon Meyers, Deputy Assistant Administrator for Solid Waste.

Other articles on solid wastes include reports on eight EPA projects to turn trash into useful materials and energy, a story on a California city whose buried waste will be converted into gas for heating, and a preview of a new program starting at Fort Knox, Ky., to help reduce bottle and can litter at Federal installations by requiring a nickel deposit on each beverage container.

A photo essay gives a visual report on what is being done to reduce the problem of abandoned automobiles.

Also in this issue is a roundup from leading environmental organizations of their predictions and concerns about the future for the environment.

The Environmental Almanac page, where we take a look at the natural world we are trying to protect, contains a review of a most welcome miracle—the arrival of spring.

Also in the Journal is an article on EPA's budget for Fiscal 1978.

A new department, Update, which replaces Inquiry, starts with this issue. It will try to keep readers abreast of new publications and other materials on the environment.

Another article reports on an effort by the Paris City Government to avoid major fish kills again this summer in the Seine River by pumping oxygen into this famed waterway.

U.S.
ENVIRONMENTAL
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AGENCY

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COVER: Dandelions dot mountain meadow as spring begins its northward march. Photo by Black Star.

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The EPA Journal is published monthly, with combined issues July-August and November-December, by the U.S. Environmental Protection Agency. Use of funds for printing this periodical has been approved by the Director of the Office of Management and Budget. Views expressed by authors do not necessarily reflect EPA policy. Contributions and inquiries should be addressed to the Editor (A-107), Waterside Mall, 401 M St., S.W., Washington, D.C. 20460. No permission necessary to reproduce contents except copyrighted photos and other materials. Subscription: $8.75 a year, $.75 for single copy, domestic; $11.00 if mailed to a foreign address. No charge to employees. Send check or money order to Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

EPA JOURNAL

Printed on recycled paper.

ARTICLES

DEPARTMENTS

COSTLE, BLUM NAMED TO LEAD EPA

Douglas Michael Costle, 37, a former Congressional Budget Office official who had served as head of the Connecticut Department of Environmental Protection, has been nominated by President Carter to be the new Administrator of the Environmental Protection Agency.

Designated as the new Deputy Administrator for EPA was Barbara Blum, an environmentalist and businesswoman.

Mr. Costle, an attorney, served from 1975 to 1977 as Assistant Director for Natural Resources and Commerce of the Congressional Budget Office.

He was Commissioner of Connecticut's Department of Environmental Protection from 1973 to 1975. He administered State environmental planning and programs relating to air pollution, water pollution, solid waste, radiation and pesticides laws. He also directed natural resources and recreation programs dealing with forests, parks, fish and wildlife protection, wetlands protection, dam safety and land acquisition.

As the Deputy Commissioner, from 1972 to 1973, he helped give direction to the fledgling State department.

A Fellow at the Woodrow Wilson International Center for Scholars in 1971, he conducted independent research regarding environmental programs and government reorganization. His work was highlighted by a tour of Western Europe, where he met with cabinet ministers, journalists, and private environmental groups to discuss the ways that different countries deal with environmental problems.

As a senior staff associate on the President's Advisory Council on Executive Reorganization from 1969-70, Mr. Costle headed the study which recommended creation of EPA. He also helped to implement the plan and to set up the Agency before the appointment of EPA's first administrator.

Before joining the Council on Executive Reorganization, Mr. Costle was in private law practice in San Francisco.

From 1964 to 1965, Mr. Costle was a trial attorney for the Civil Rights Division of the U. S. Department of Justice. He worked as an attorney for the Economic Development Administration of the U. S. Department of Commerce from 1965 to 1967, and served as deputy director of a $23 million pilot project designed to reduce unemployment in Oakland, California, through capital investment.

Mr. Costle earned his A.B. at Harvard University in 1961 and his law degree from the University of Chicago in 1964. He is a member of both the District of Columbia and State of California Bar Associations.

Mr. Costle was born in Long Beach, Calif. He and his wife, Elizabeth, have two children, Carolyn Elizabeth, ten, and Douglas Michael, six.

Ms. Blum, 37, was a deputy campaign director for the Carter-Mondale presidential campaign.

Chairman of the Georgia Heritage Trust Commission, Ms. Blum has been a member of the Federal Reserve Board National Consumer Advisory Council since 1976. She

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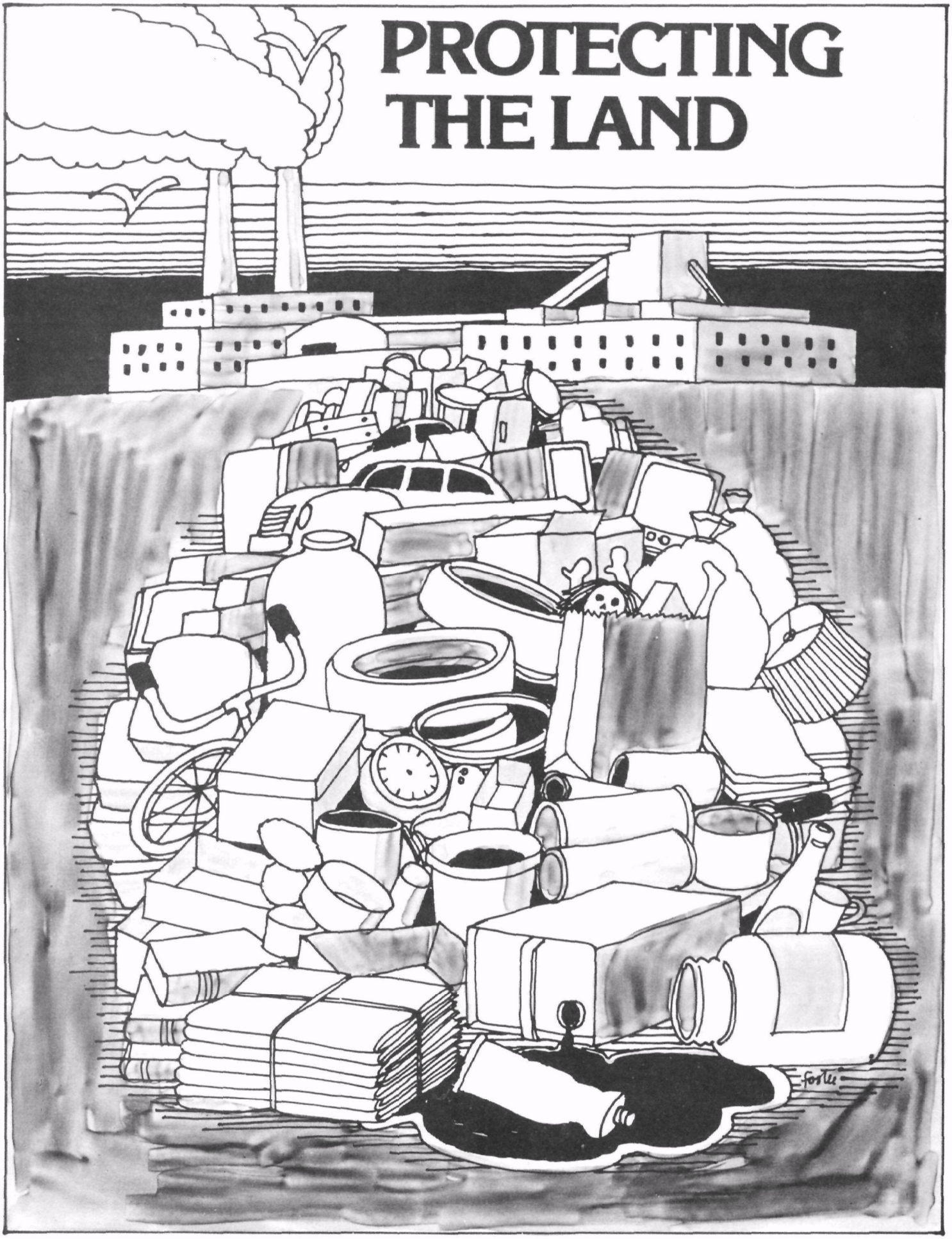
PROTECTING
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NEW APPROACHES TO SOLID WASTE DISPOSAL

Interview with Sheldon Meyers, Deputy Assistant Administrator for Solid Waste

Q. Are you satisfied with the new Resource Conservation and Recovery Act?

A. Yes, indeed. I think it's fair to say that this new Act in the field of solid waste gives the Agency the kind of authority that it didn't have in the past and goes a long way to closing that last, unregulated gap in the pollution control cycle, and that is the land.

Q. Has any section of the Act been given top priority?

A. There are several sections of the Act that are important and I would say are receiving equal priority. These include the work that's being initiated to develop an inventory of open dumps, the hazardous waste regulatory program, and the ability to deliver technical assistance to local communities.

Q. One section requires the EPA Administrator to develop criteria for identifying hazardous wastes and to publish regulations governing their disposal. Doesn't this give EPA a blank check to eventually regulate almost every kind of waste?

A. That particular section of the Act is an important one, since all the other parts of the hazardous waste regulatory program flow from it. In other words, once you've defined hazardous waste, then the transportation, the storage, the treatment and disposal parts take effect, so it's critical that the establishment of criteria of hazardous waste be done properly.

Now that's one of the issues that we will be going out to the public on, to the local communities, interested citizens, and industry, for example. We would like to implement the portions of the law on hazardous waste in a manner intended by Congress. We want to get the help of the public in defining the criteria on hazardous waste.

Clearly, we want to avoid going overboard by making the definition too broad.

Q. Municipal sludge management and disposal is a controversial topic inside and outside the Agency. Is there a possibility that municipal sludge will be deemed hazardous and its disposal regulated under the hazardous waste section of the Act?

A. All municipal sludge will not be deemed hazardous.

Q. Do you feel you have enough manpower and funds to carry out your responsibilities under the new Act?

A. That's always a tricky question to ask a bureaucrat, since the answer is generally: Gee, I could use more. And it's true, we could use more. We will do the best we can with the resources we now have. We certainly can get started. Now my guess is that to fully implement the Act, we're going to have to substantially beef up the manpower and funds out in our Regions, which are really infinitesimal at this time.

Q. What do you regard as your most successful solid waste management program to date?

A. There have been a number of very successful programs. In the area of technical assistance we provided decision makers' guides to local communities that have been well received and widely used.

Others were our programs to help develop resource recovery plants in St. Louis and in Franklin, Ohio, where we invested only two or three million dollars of government funds.

These demonstrated technologies then were picked up by the private sector, using their own money. Industry is spending about $80 million per plant based on the technologies for waste recovery which were developed in part with Federal monies.

Q. What is the outlook for the recycled materials market in 1977? Will they ever compete with virgin materials?

A. It depends on which recycled material you're talking about. People recycle paper, and as you probably know, there have been campaigns in the past about collecting paper and reusing it which depend for success upon the market price of paper. It's a fluctuating market.

But today one can very easily recycle aluminum cans. The big can manufacturing companies have either embarked or will embark upon a program to pick up aluminum cans for recycling. So it's not a single market. It varies. It's dependent upon market conditions in certain areas of the country.

Q. Will the area-wide solid waste management planning required by the new Act conflict with area-wide planning, the Section 208 planning program?

A. No, I think not. The new Act calls for the development of regional local organizations to manage solid waste plans, and the Act specifically says that we should look at the existing agencies operating under the 208 section before we do anything else.

Q. Do you foresee national bottle legislation in 1977?

A. I would say no. I think the Congress will be looking with interest on the programs that are under way now. Our guidelines that affect Federal facilities, the new initiatives in Michigan and Maine and the progress of the programs in Vermont and Oregon. So I foresee a period of at least a year while information is being collected about existing programs before there is any further national action on beverage container deposits.

Q. What is EPA's position on bottle return legislation?

A. As you probably know, the management of the Agency—and by management I mean the Administrator and Deputy Administrator—have testified in the Congress in favor of national beverage container deposit legislation, only if it is phased in over a long period of time, on the order of six, seven, eight, ten years.

Q. Will the Federal Government be more involved in local solid waste management as a result of the Act?

A. Clearly we're going to have an impact in that we will be working with various State, county, and local governments in their planning effort and implementation. We will be providing Federal funds to assist them in planning and implementation. But I wouldn't say that we would be involved directly in their activities at the local level.

Q. What does EPA currently recommend as the most environmentally sound solid waste disposal method?

A. Well, we try not to recommend anything nationally because of the enormous variety of local conditions. In some cases a well designed landfill is the preferred method. In other cases incineration may be the preferred method. Sometimes a resource recovery plant may be the best solution.

Q. What portion of municipal budgets is generally devoted to solid waste management?

A. I can't give you the exact numbers, but as I recall local governmental budgets, the solid waste program is usually third in the hierarchy of expenditures after schools and roads.

Q. Is Federal aid going to be provided?

A. The new Act authorizes substantial financial assistance. I don't know what will be appropriated.

Q. Will State and local taxes rise as States and municipalities work to meet new Federal solid waste guidelines and regulations under the new Act?

A. That's difficult to say at this time. Open dumps have generally been the cheapest form of disposal. If a community develops a well-engineered sanitary landfill it generally will be more expensive than an open dump. However, if the local government votes for a resource recovery plan, costs may be reduced because recovered materials, which were wasted in an open dump, can be sold.

Q. Doesn't a significant portion of municipal solid wastes come from wasteful and unnecessary packaging, especially convenience foods and consumer goods?

A. It's hard to say whether it's wasteful or unnecessary, but it's quite clear that a large percentage of the municipal solid waste is packaging material. I believe it's on the order of 30 or 40 percent.

Q. What happens when we run out of acreage for sanitary landfills?

A. Large cities that are facing that particular situation, are considering other options, such as establishing resource recovery plants or hauling their wastes by rail to other locations, an approach which has generated a lot of opposition from areas which would receive the wastes.

Q. Does the Act differentiate between urban and rural solid waste problems?

A. No. It talks about solid and hazardous waste in general. There is a provision in the Act for a rural assistance grant program, which is

Continued on page 6

Continued from page 5

authorized at the level of $25 million a year for each of fiscal years '78 and '79. This program is designed to help rural communities build sanitary landfills if they have to close open dumps for example. It is the only provision in the Act which allows the grant money to be used for construction purposes. It cannot, however, be used for purchase of land.

Q. What provision is being made to help the rural homeowner who lives where there is no garbage pickup?

A. Except for the rural assistance grant program, there's no specific provision in the Act to take care of that problem. One thing that can be done, of course, is that a regional program can be set up under the Act so that outlying communities can get pickup service.

Q. Will public education and public participation play a major role in the new Act?

A. Absolutely.

Q. What's an example of how this will work?

A. We've had several extensive public meetings already which were designed to inform interested groups what the Act said, where we stand in implementing it, and to obtain comments and suggestions. As working groups for the various regulations and guidelines are developed, we will set up lists of interested people who want to work with the working group, and send to them early drafts of material, so that they can impact at an early stage the content of the standards, regulations and guidelines.

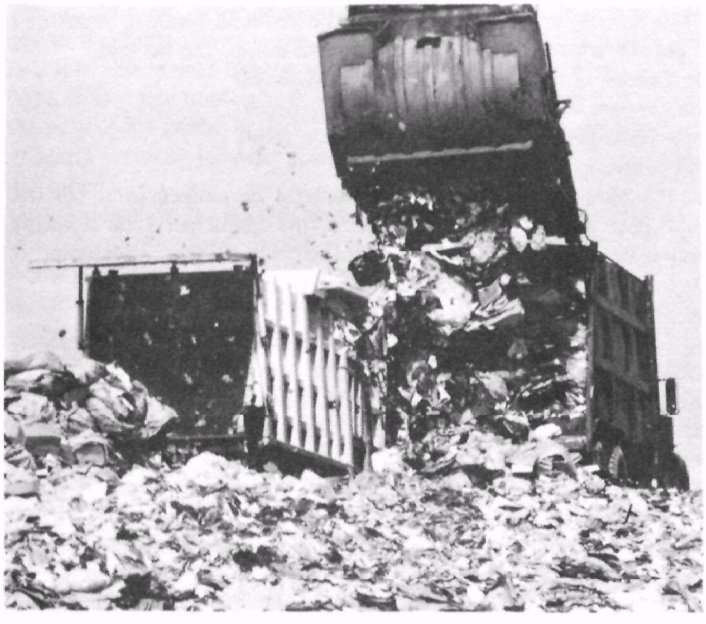
Additionally, we plan to set up a formal advisory group to meet with us regularly and advise us whether we're doing things in a way that makes sense to the outside world.

We're also planning to hold public participation regional meetings around the country which will be managed by our regional offices.

If interested parties suggest that what we are doing is not right and can tell us what the right way is in a fashion consistent with the aims and purposes of the Act, we would be inclined to accept their view. This is what public participation is all about.

Q. Are requirements that citizens separate household wastes becoming widespread?

A. It does hold promise. There are a number of demonstration programs around the country that require separating household wastes. The ones that we fund directly are at Somerville and Marblehead, Mass. and they seem to be working quite well. Whether or not it's the kind of thing that can be used by all communities all the time is not now known, but it's very clearly one of the options available to rural communities where the building of a resource recovery plant might not be economically feasible.



Q. Can all sludge be used as a soil conditioner, or will some have to be burned?

A. I don't think that one can say categorically that all sludge can be used as a soil conditioner, but much of it that's generated in waste water treatment plants, for example, can be used for this purpose. There are certain cases where you would apply the sludge as a soil conditioner only to non-edible plants such as grass, for example, if the sludge has a heavy metal content.

However, if the sludge is relatively free of noxious materials, it can be used as a soil conditioner for food crops.

Q. Will the question of the imposition of disposal charges on products receive serious study under the Act?

A. We intend to give it serious study. There is a mandate in the Act to study the so-called "product charge" rather thoroughly and report to the Congress.

Q. What kinds of assistance will the resource recovery and conservation technical assistance teams offer to State and local governments?

A. We expect that the resource recovery conservation teams will offer help in the complete range of solid waste problems. We will be available to State and local governments if they have a particular problem that they're not sure how to solve—whether or not they ought to have a resource recovery plant, whether they should be looking at a sanitary landfill, or go to source separation.

There's an entire range of questions that come up to the community that wants help. We would try to give them the kind of assistance that would set them in the right direction, so that they could then hire their own consultants to expand upon the information that we have provided to them.

Q. Where are wastes going to be placed when all open dumps are closed by 1983 as required by the Act?

A. They will either be put in sanitary landfills or processed through resource recovery plants. It is also possible that some wastes will be incinerated if the incinerators meet the air quality standards.

Q. When will the standards for hazardous wastes go into effect?

A. The Act calls for the hazardous waste program to go into effect 18 months after the enactment of the law, that is, April 1978.

Q. Which is more important in dealing with the solid waste problem—conservation of resources or recovery?

A. Well, I think they're equally important. The ability to conserve resources is a question the Nation is going to have to face directly rather than piecemeal through acts such as the new solid waste law. It involves whether or not the Government ought to mandate that tires last a certain amount of time and that cars get a certain mileage.

My own feelings are that if you start talking about conservation of resources, you're talking about impacting the manner in which the people of this country live, and those kinds of issues ought to be settled in the Congress.

Q. What are some examples of what EPA is doing in each field?

A. In the conservation area, we've done a number of studies having to do with packaging, one of which resulted in the reduction of the standard one-pint milk container—reduction of the material used in its construction—by some 25 percent. We've done studies mostly in the conservation area, and have not really gone very far in the arena of actually implementing conservation of resources. The beverage container deposit guidelines represent another area that we have been very active in.

In resource recovery, we have a number of demonstration plants

that have been built. I mentioned the St. Louis and, the Franklin, Ohio, projects. We also have the San Diego pyrolysis plant and the Baltimore pyrolysis plant, so we are more active in the recovery area than the conservation area.

Q. What effect will the new Act have, if any, on the garbage disposal problem faced by every homeowner?

A. That's a difficult question to answer at this time. We hope there will be a beneficial effect, but we couldn't say.

Q. Will costs to the homeowner go up because of this Act?

A. If a community has been throwing its garbage in open dumps and now has to go to a sanitary landfill, that could be more expensive. It is possible that the waste disposal cost to the homeowner will go up, but it's difficult to generalize.

Q. Haven't some pollution problems also been associated with landfills?

A. Yes, there has been some evidence that what we considered in the past to be sanitary landfills have, indeed, caused some environmental problems through the contamination of rain water leaching through the landfill and contaminating ground water supplies.

Q. What's being done to make landfills environmentally safe?

A. We're investigating that right now, and to a large degree the siting of the landfill is important. One should look for a landfill that has impervious material between it and the ground water supply. One can also line landfills and then collect the water leaching through and treat it before it's discharged. Another technique is to cover the landfill so that the rain doesn't seep through it.

Q. What hazards are posed by open dumping?

A. Just about everything you can think of. Open dumps have been known to catch fire and explode. They can be havens for vermin. And what we're obviously doing about it is trying to close down the open dumps. The Act mandates that no new open dumps shall be created and that all open dumps shall be either closed down or upgraded to the status of sanitary landfills.

Q. To what extent has the utilization of solid waste as an energy resource become a reality?

A. It is very real. There are a number of communities that already are using municipal solid waste energy sources, and more and more are developing and building the kinds of plants that will utilize municipal solid waste as an energy source.

Q. How effective has the program for bottle returns at Federal installations been?

A. The guidelines were only put in effect several months ago and the Federal agencies have a full year to gear up to implement the guidelines. So in general, the guidelines have not been tested yet on Federal facilities.

However, this past summer Yosemite National Park encouraged the reuse and recycling of beverage containers by charging 5 cent refundable deposits on all beer and soft drinks sold in the park. That was an extremely successful program. In 1975 over one ton of aluminum in used beverage containers was collected. Under the new deposit requirement collections amounted to over a ton a week.

Q. What amount do we as a Nation spend for solid waste collection and disposal?

A. I don't have those figures at my fingertips, but as I mentioned earlier, in many communities the solid waste expenditures are the second or third highest priority in their budgets—after schools and roads.

Q. How much solid waste do Americans currently generate per year, and how much of that can be reclaimed?

A. The rate is on the order of about 150 million tons a year, and it's difficult to say how much of it could be reclaimed, but quite clearly, a relatively insignificant amount is being reclaimed now. In my view a substantially higher portion can be reclaimed.

Clearly, depending on how much you want to spend, most of it can be reclaimed for something, but you then get into an economic trade-off of what is the value of the material you're reclaiming, what can you sell it for, and how much is it costing you to reclaim it. It's something that is being looked at very seriously by many communities. In one respect one could look at a whole garbage dump as a resource and a mine. Whether or not you actually mine it will depend upon costs.

Q. Does the new Act completely replace older Federal legislation affecting solid waste management?

A. Technically, the new Act is an amendment to the existing legislation, but in fact it replaces it completely.

Q. What advice would you give to those who want to waste less and recycle more?

A. Be careful in purchasing. Buy materials that will last longer and that can be recycled. Make an effort to find out where the recycling centers are and bring material to them.

Q. Does the average American waste more now, compared with previous years?

A. It depends on what you mean by waste, but the waste stream grows on the average of five percent a year, so in that context they're wasting five percent more each year—either they're using more or wasting more.

Q. How does America's waste level per capita compare with that of other countries?

A. It is larger than other countries. The more affluent you are the more you waste. ■

RECOVERING WASTES

What happens to the nearly 150 million tons of garbage and trash that Americans throw away each year?

Only about 10 million tons—or seven and a half percent—is recovered and recycled. The rest is dumped or, at best, buried in sanitary landfills.

The 150-million-ton total for 1976, between 3.5 and 4 pounds per person per day, is a rough extension from careful, detailed estimates made by EPA experts for 1974, the latest year for which complete production figures are available.

In that year the total was 143.6 million tons—3.48 pounds per capita per day— and about 9 million tons were reclaimed in some way. About 90 percent of this was paper, and the rest was iron and steel, nonferrous metals, glass, and rubber, in that order.

These figures are for "post-consumer" solid waste, or everything discarded by households and commercial places, and omitting the all-alike or easily sorted scrap material from manufacturers and processors. The statistics are taken from EPA's fourth annual report on resource recovery and waste reduction. The report was in draft form as this article was written. It is expected to be completed and submitted to Congress this month.

Americans are habitually wasteful and produce more trash per capita than any other country, according to Sheldon Meyers, Deputy Assistant Administrator and head of EPA's Office of Solid Waste. "Relatively abundant and cheap supplies of raw materials in the past have encouraged us to use things up and throw them away and discouraged the use of secondary materials," he said.

But Mr. Meyers believes it will take some drastic changes in public policies and personal habits to achieve the maximum potential waste reduction and recycling. The Nation's annual household-business waste in 1985 is expected to total 200 million tons, according to the report. EPA believes this could be reduced about 10 percent by less wasteful design of products and packaging and by building products for longer useful life.

Roughly half of the waste tonnage could be recycled, or burned to recover its fuel value, if efficient large-scale systems can be developed to process mixed waste and sort out the savable portions.

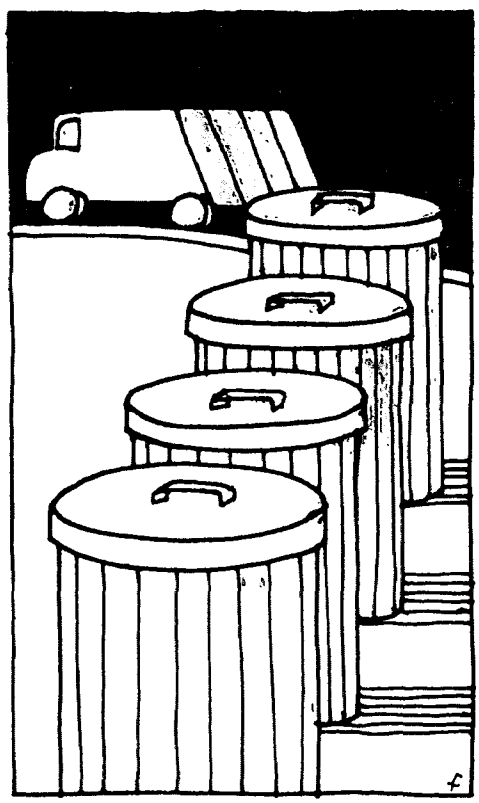
About one-fourth of the total could be reclaimed if Americans would change their habits and sort out savable wastes before discarding them. This would require establishing separate collection systems for paper, tin cans and other iron-containing metals, aluminum, glass, etc.

These are *potential* figures only, the report said, and are "distinctly beyond" attainment without "major shifts in public policies."

EPA and its predecessor agencies have been studying solid waste problems for a dozen years. A large portion of that work has dealt with reclaiming materials and energy from waste, both to conserve resources and to reduce the amount of waste that is returned to the environment, often in damaging ways.

Since 1971 approximately $16 million in EPA funds has been spent on the development and demonstration of various techniques for processing wastes, recovering and reusing materials, and extracting useful energy from the burnable portions of the garbage and trash stream.

How are these projects succeeding? What have we learned from them about technical feasibility and costs? What are the faults and failures? What do they indicate are the directions that future projects should take under the new and expanded solid waste program mandated by Congress in the Resource Conservation and Recovery Act signed into law last October?



Here are brief status reports on eight major EPA demonstration projects in the field of resource recovery from municipal solid waste:

FRANKLIN, OHIO. This is a system for pulping the waste with water and processing the slurry with industrial machinery. It began with a grant in 1969 from the Bureau of Solid Waste in the Consumer Protection and Environmental Health Service, an EPA predecessor. The plant has operated continuously since 1971, processing an average of 35 tons per day of Franklin's solid waste. It has never had to turn away waste because of overloading or equipment failure.

The waste is mixed with water and ground in a machine like a huge kitchen blender. Processing of the resulting slurry uses methods adapted from the paper and ore-handling industries: screening, washing, magnetic separation, flotation, etc. Two products are now sold: ferrous metal scrap and a low-grade fiber that represents about half of the incoming paper waste. This fiber is used to make roofing felt and is pumped in slurry form directly to the nearby roofing manufacturer. Reject fiber is mixed with sewage sludge from the city's adjoining sewage treatment plant and incinerated. The plant also takes and treats all the process water.

An experimental subsystem was added later to separate aluminum and glass from the city's waste, and clear glass is automatically separated from colored glass. These products, however, are not yet of salable quality.

The Franklin wet-processing system has been adopted by the town of Hempstead, N.Y., but the recovered fiber will be used as fuel for electric power generation. Few cities have a handy market for low-grade fiber. EPA's support of the Franklin demonstration ended last March.

ST. LOUIS, MO. The so-called "trash to kilowatts" project sponsored jointly by EPA, the City of St. Louis, and the Union Electric Company was launched seven years ago and has been operating since May 1972. The city's regular garbage and trash is first shredded by machine into pieces no bigger than 1.5 inches in diameter and then separated into light and heavy fractions by a strong updraft of air. The heavy fraction is processed to remove iron and steel scrap and the rest is landfilled. The light fraction (80 to 85 percent of the trash) is trucked to the power

plant and burned as a supplemental fuel in the coal-fired boiler.

The trash has about half the heating value of coal, and it burns well in trash/coal mixtures ranging from 5 to 27 percent, with no apparent damage to the boiler and with no increase in particulate emissions from the stack. The latter result was a surprise; particulates were expected to increase with the percentage of trash burned, and further tests are under way.

The project's success spurred the development of similar commercial plants now operating in Ames, Iowa; Milwaukee, Wisc.; and Chicago. Plants of this type in Bridgeport, Conn., and Monroe County, N.Y. are also being designed.

The principal drawbacks to the St. Louis experiment are design faults in the trash processing. There have been frequent breakdowns of the equipment, so the use of trash for fuel has been intermittent.

BALTIMORE, MD. This full-scale demonstration project, started under an EPA grant in 1972, proposed to use pyrolysis—a heat treatment—to generate fuel gas from solid waste. The gas was to be burned to make steam for the Baltimore Gas and Electric Company's downtown heating and air conditioning customers. Ferrous metals in the waste were to be reclaimed for scrap and a glassy aggregate used for road building. The charred residue would be buried in a landfill.

The plant was completed early in 1975 by Monsanto Enviro-Chem Systems, Inc., which had built a successful small pilot model. In Monsanto's pyrolysis system waste is shredded and fed into a kiln, where heat up to 2,600° F, without enough air for combustion, decomposes organic compounds in the waste to fuel gas.

After a few months of intermittent operation, it became apparent that the plant could not meet two guaranteed conditions: to handle 1,000 tons of waste per day for two months, and to meet the Maryland standard for particle emissions from its exhaust stacks.

Both failings appear to be due to problems of "scaling up" from the pilot plant to full-size operations. Modifications are being made to improve the plant's mechanical reliability under an agreement under which Monsanto contributed $4 million (equal to the original performance guarantee) and EPA an additional grant of $1 million. New air pollution control devices, to be paid for by the city, will bring the added cost to $9.6 million and the total capital cost to about $25 million.

The over-all system is still expected to be economically sound when the technical problems are overcome.

SAN DIEGO, CALIF. This is a different pyrolysis sytem, developed by Occidental Research Corp. Its primary product is an oil to be sold to fuel the boilers of the San Diego Gas and Electric Co. Ground was broken for the plant in August 1975, but construction was delayed for a year. It is expected to be finished this summer at a total cost of $13.6 million.

Incoming wastes will be shredded and sorted by uprushing air into heavy and light fractions. Ferrous metals, aluminum, and glass will be recovered from the heavy fraction. The lighter waste, after being further shredded to vacuum-cleaner-fluff consistency, will be heated at relatively low temperature (about 900° F) in a flash reaction to produce gases that are quickly condensed to oil. This oil has a heating value about two-thirds that of No. 6 fuel oil.

A year-long testing program has begun, covering all aspects of technical and economic feasibility. The plant is not expected to be economical because it is too small. However, the San Diego plant's 200-tons-per-day capacity is a significant scale-up from pilot plant size, and EPA hopes it will provide reliable predictions of full-scale plant performance that would be economical. Valuable information may also be gained from the plant's odor control system and from monitoring its nitrogen oxide emissions. Weather inversions in the area may require periodic shutdown to avoid increasing local smog. Because the fuel produced by this process is storable and transportable, the processing facility and the user need not be close together, and their operating schedules need not be the same.

DELAWARE. Under an EPA grant of four years ago the State of Delaware has planned a solid waste treatment plant that would produce supplemental fuel for an oil-fired utility boiler and also handle sewage sludge. Planned plant capacity is 500 tons of municipal solid waste and 230 tons of digested sludge per day. Byproducts would include composted humus, ferrous metals, aluminum, and glass. A call for contractor bidding has been held up pending approval by the Federal Energy Administration of the utility (Delaware Power and Light Co.) converting its boiler to burn oil instead of coal.

SOMERVILLE AND MARBLEHEAD, MASS. Under grants by EPA the two cities have been testing the feasibility of requiring householders to separate solid waste. Recyclable paper, iron, and glass are sold under contract to commercial processors. Somerville began in December 1975 and Marblehead in January 1976. Both cities passed laws under which citizens must separate their refuse into three categories: paper, glass and cans, and miscellaneous. The first two types are collected weekly by city crews with compartmented trucks. Mixed waste is collected weekly in regular trucks.

Extensive publicity and public education programs preceded the launching of each project and are continuing. Marblehead, an all-residential community, had had some experience with city waste recycling; Somerville, more densely populated and partly industrial, had never done it before.

So far Marblehead is recovering about 30 percent by weight of its wastes and is making a profit. Somerville is recovering about 8 percent and is breaking even.

EPA believes these projects will show the way for other communities to recycle wastes without complicated technology and high capital cost. In the past, the fluctuating market for scrap materials and lack of efficient collection systems have hindered such efforts. This form of resource recovery is expected to become an attractive alternative, or a complement to, the high-technology systems, and it will reduce the need for landfill space.

LOWELL, MASS. This project was designed to demonstrate the recovery of metals and glass from incinerator residues, using industrial processes like those used in separating metals from ores. Design work began under an EPA grant in 1973, and the plant was to be ready for a year of trial operation starting in April 1976. In the summer of 1975 the city asked to withdraw from the project because it had decided to close down the city incinerator.

EPA hopes that some other city may be interested enough to cooperate in such a project in the future. The processes have been tested on a small scale by the Department of the Interior's Bureau of Mines, which found that the average residues of municipal incinerators assay higher in metal content than many workable ores. ■

REFUND AT FT. KNOX

Starting this month at Fort Knox, Ky., and soon at nine other military bases throughout the country, buyers of beer and soft drinks will have to pay a nickel extra for each bottle or can. They'll get their deposit back when the containers are returned for recycling.

The ten bases—three each for the Army, the Navy, and the Air Force and one for the Marine Corps—are the vanguard of the Defense Department's effort to comply with EPA guidelines for all Federal establishments.

The guidelines were announced by EPA last September, and are to go in to effect at all Federal facilities by September 1977. They are designed to encourage the reuse of glass bottles and the recycling of aluminum and steel cans. Reduced litter will be a side benefit.

Although Federal facilities account for only an estimated four percent of all beverage container sales in the country, the Government's example is expected to persuade others to save materials and energy by recycling bottles and cans.

"I have been very impressed by the positive attitude displayed by the Department of Defense," said Harry P. Butler of EPA's Solid Waste Office. Mr. Butler is the Agency's representative on a joint task force that is deciding how the Defense Department can best put the EPA guidelines into effect. The task force is headed by Col. Harlow D. Hart of the Air Force. A civilian contractor is helping to set up the ten test systems.

Beverage sales at Defense Department sites total $300 million a year, or about 95 percent of all such sales at Federal facilities. Other affected departments include Interior (National Parks) and the General Services Administration (Federal buildings).

A container deposit system was tested last year at Yosemite National Park with encouraging results: 70 percent of containers sold were returned for refund (See Oct. 1976 EPA Journal).

"But even if sales remain high," Mr. Butler said, "return rates may be low if consumers don't cooperate. This is most likely to happen in office buildings where drinks are purchased at a snack bar and carried to individual offices for consumption.

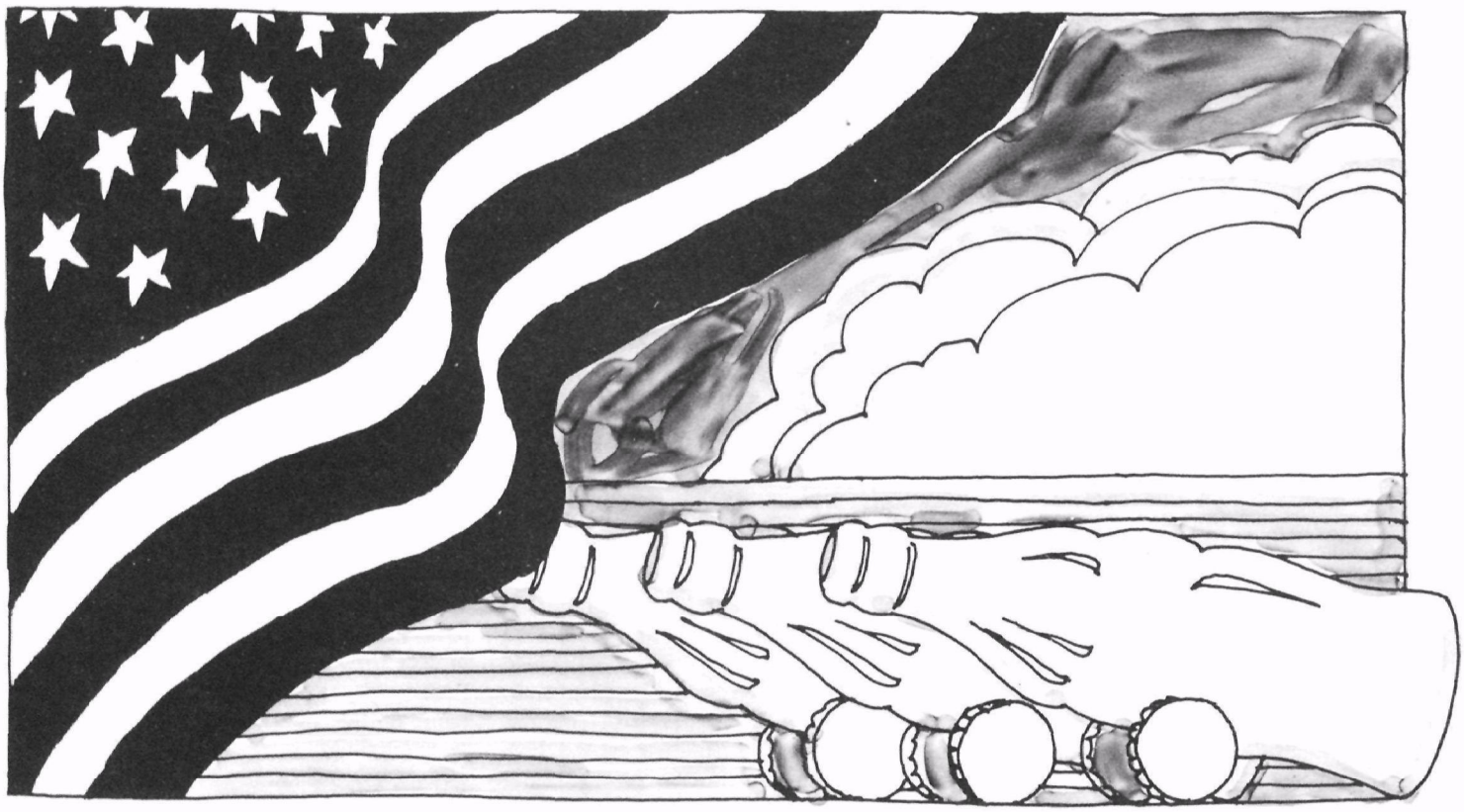
"The system may prove to be impractical in some places, imposing substantial and unrecoverable costs. The guidelines recognize this possibility and provide for halting the program at a particular facility if all reasonable alternatives have been tried.

"We are hoping the trial runs at the military bases will go smoothly and the Department will switch to the container deposit system permanently at all its installations."

Refundable deposit laws are already in effect in Oregon and Vermont, where there has been a marked reduction in roadside litter. Similar laws will soon be in effect in Maine and Michigan, where voters approved them in referendums last November.

Consumers save money by buying beverages in refillable bottles, according to an EPA-supported survey by the League of Women Voters in 28 cities in 1975. The average saving was 30 cents on a six-pack for bottles containing 16 ounces or less, 16 cents for quart bottles.

Beside Fort Knox the other participating military facilities are: Fort Huachuca, Ariz.; Fort Riley, Kan.; Naval Support Activity, Philadelphia; Naval Air Station, Oak Harbor, Wash., and Navy Weapons Center, China Lake, Calif.; the Laughlin, Tex., Malmstrom, Mont., and Patrick, Fla., Air Force Bases; and the Marine Corps Air Station at Yuma, Ariz. ■



FUEL GAS FROM SOLID WASTE

Garbage and trash from Mountain View, Calif., will be tapped for heating gas next month in a two-year experiment sponsored by the city, Pacific Gas and Electric Co., and EPA.

The utility company will drill wells into the city's sanitary landfill, collect and refine gas generated in the garbage, and pay the city a royalty on the gas produced, expected to be a million cubic feet per day.

The project will cost about $630,000, two-thirds from the gas company, which designed and will operate the gas recovery system, and one-third from an EPA grant.

"Gas from landfills will never be a major source of energy," said Stephen C. James, staff engineer with the Land Protection Branch of EPA's Office of Solid Waste. "But it can supplement other fuels, and it's now going almost completely to waste. Indeed, the gas is often a problem for landfill operators and a hazard to nearby residents and businesses."

Mountain View is a city of 51,000 people at the southern end of San Francisco Bay whose landfill is one of 14 Bay area sites that the gas company engineers believe have "good potential as gas producers."

Gas has been recovered before from municipal landfills, but mainly in the Los Angeles area, where the landfills are usually located in canyons and are deeper than the 40-foot Mt. View Landfill.

The most valuable part of landfill gas is methane, a hydrocarbon that is the main constituent of natural gas and that occurs also in certain swamps and coal mines. Methane is produced by anaerobic bacteria that live without oxygen. When decaying organic matter is sealed off from air, as in a covered landfill, these bacteria take over.

Methane is colorless, odorless, lighter than air, and very flammable. In a landfill about half the gas formed is methane; the rest is carbon dioxide, water vapor, nitrogen, and hydrogen sulfide that must be removed to get a fuel gas of high heating value.

In the Los Angeles area studies have shown that each ton of refuse can produce about 1,500 cubic feet of recoverable gas. Methane production increases, according to Mr. James, when certain conditions are met: adequate moisture, sufficient carbon content in the waste, and the right acidity.

"Another favorable factor," he said, "is the landfill's depth, which ranges from 100–140 feet in some canyon sites at Los Angeles.

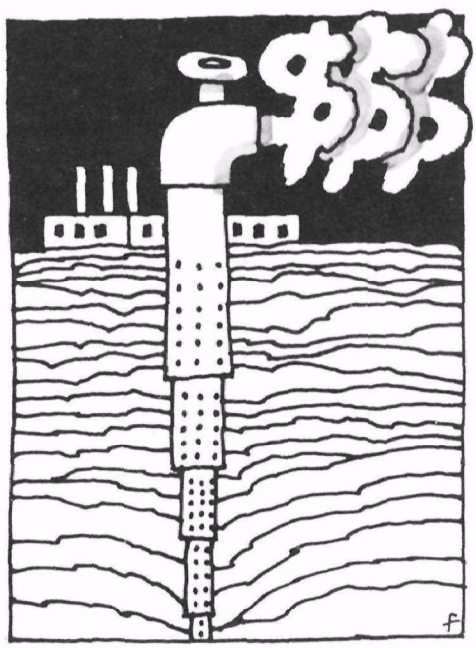
"We are especially interested in evaluating the Mountain View project because the landfill is relatively shallow and more representative of waste disposal sites in other areas of the country."

Production wells drilled into the landfill consist of perforated pipe four or six inches in diameter, with the pipe sizes alternating so they can slide like a telescope as the ground settles.

"Gas must be pumped out at a rate that closely matches the rate of production," Mr. James explained. "If pumping is too slow, the methane may migrate through the ground and then cannot be recovered. If pumping is too fast, air may enter the landfill through the surface as well as the production wells, and oxygen will halt the bacterial process. When this happens it may take months for the landfill to recover and resume methane production."

In the Mountain View project the utility company will pay the city 7.2 cents per thousand cubic feet of low-grade gas. The gas must be refined to remove the impurities and increase the heat value before it can be fed into its regular gas mains. At the expected million cubic feet per day, the city would get $72 a day. After 18 months the price will be renegotiated. Company engineers estimate the site will continue to produce recoverable quantities of gas for at least 10 years.

In other areas landfill gases are at best annoying and at worst deadly hazards.



In 1969 an explosion at a National Guard Armory in Winston-Salem, N.C., killed three men and injured 22 when gases seeped into the building from an adjacent landfill and exploded. In 1971 two persons were injured and a building was destroyed in a similar explosion at Nashville, Tenn. Last fall two families had to evacuate their house in Holtsville, L.I., when dangerous levels of methane were detected in the building, about 30 feet from the edge of the Brookhaven landfill. The U.S. Postal Service is spending an additional $1 million to ventilate landfill gases from beneath a new bulk mail processing plant in Jersey City, N.J.

Landfill gases can damage nearby vegetation. Franklin B. Flower of Rutgers University, who has studied this problem for EPA, says methane and carbon dioxide can migrate sideways from the landfill, depleting oxygen in the root zone of adjacent land and killing trees and other plants. In one instance gases from a landfill migrated 80 feet into a peach orchard and killed 70 trees, Mr. Flower reported. A planned park over a completed landfill at Cherry Hill, N.J., has been plagued by dead and dying vegetation, which has also affected grass and shrubs at nearby private homes.

Last fall State and local officials on Long Island called on EPA for help in coping with landfill gases there. Truett V. DeGeare Jr., chief of the Land Protection Branch, Mr. James, and Michael DeBonis and David Savetsky of the Region II Office conferred with representatives of five towns and two counties to discuss measures to control the seepage of gas into nearby homes.

Good landfill design should include the monitoring of gas formation, Mr. James said, especially around the perimeter of the site. In some cases ventilation pipes can be driven into the fill to vent gases to the atmosphere, or trenches can be dug around the site and filled with gravel so the gas can dissipate upward as it leaves the area. Such trenches must be as deep as the fill, however, and their effectiveness can be ruined when they fill with water after heavy rains. The best protection, Mr. James said, is to pump the gases out in much the same way as in the California experiments.

"The design of many landfills on the East Coast prevents the recovery of landfill gas," he said. "Methane is still produced, but the depth is too shallow for sustained production; air will get into the fill and stop the formation of methane." ■

JUNK CAR RECYCLING

Minus engine blocks and chassis, car bodies are stacked for the crushing machine.

Higher prices for scrap metals have virtually eliminated the derelict auto problem of the 1960's. These photos show what happens to most worn-out cars today: transformation from unsightly junk to useful reclaimed metal in half a dozen mechanized steps.

Crushed bodies are hauled away to be shredded.

Huge pincers lift car hulk.

This mountain of steel fragments is the remains of 30,000 old automobiles which have been processed for remelting by steel mills and foundries.

Among thousands of reclaimed steel products are reinforcing rods (foreground) for concrete road construction.

Shredded scrap is loaded by electromagnet crane for rail haul to the steel mill.

INDUSTRIAL WASTE— PROBLEM OR PROFIT?

By Darby Collins

After making 100,000 gallons of world famous Lushous Nail Polish, the Terrifi Chemical Company found that it had an excess of 17,000 gallons it could not sell. What can you do with 17,000 gallons of leftover nail polish? You can't burn it; because that would pollute the air. You can't dump it in the rivers; that would pollute the water. To have it transformed chemically into something easily disposable is very expensive.

What if you could sell that nail polish to someone who could use it? Sounds too good to be true. Well, the Gee Whiz Toy Company needs enamel for its products. Nail polish, with suitable pigments added, could be used on the toys. Now everybody is happy.

Sound a bit ridiculous? Not really. Today many chemical companies have large amounts of industrial waste. They need a way to turn expensive waste disposal problems into profit-makers.

In Europe, waste "bourses" or exchanges have been doing this for years. Company A has a certain kind of industrial waste which Company B can use. The bourse brings the two together. Money is made, raw materials are saved, and less waste is fed into the environment.

Such a program has now been started in the United States by the St. Louis Waste Exchange. The Exchange emerged from a conference sponsored by the Missouri Department of Natural Resources on hazardous waste management methods. After studying the European waste bourses, the St. Louis Regional Commerce and Growth Association (RCGA) initiated the St. Louis Waste Exchange as a possible solution to the disposal of industrial wastes. The program is modeled after the waste exchanges which have operated successfully in Germany, Italy, Switzerland, Belgium, Great Britain, and the Scandinavian countries for about a decade. Chet McLaughlin, Sanitary Engineer in the Waste Management Section, Region VII, served on the task force that developed this pilot project.

The operation was described by Harry T. Morley Jr., Executive Vice-President of RCGA, as an opportunity to help industry directly in finding viable uses for waste products and also reduce pollution. It is the first United States clearinghouse for materials that pose difficult environmental disposal problems, he said.

Its purpose is to bring buyer and seller together. When companies find buyers for their waste products they provide cheaper sources of raw materials for the buyers. Wastes that might be a liability because of high disposal costs or possible damage to the environment can give the seller additional income. "Equally important, the operation will serve to reduce the volume of hazardous and other wastes which must either be disposed of in local landfills or transported to destruction or treatment facilities," Mr. Morley said.

EPA estimates that the United States generates 10 million tons of industrial waste each year. If only 10 percent of this waste could be utilized the project is assured success.

The Exchange is run on a non-profit basis and charges only $5 a listing. The company's name is not published, assuring anonymity. Previously companies have been afraid to advertise their waste products or raw material needs for fear of giving competitors clues concerning their business problems.

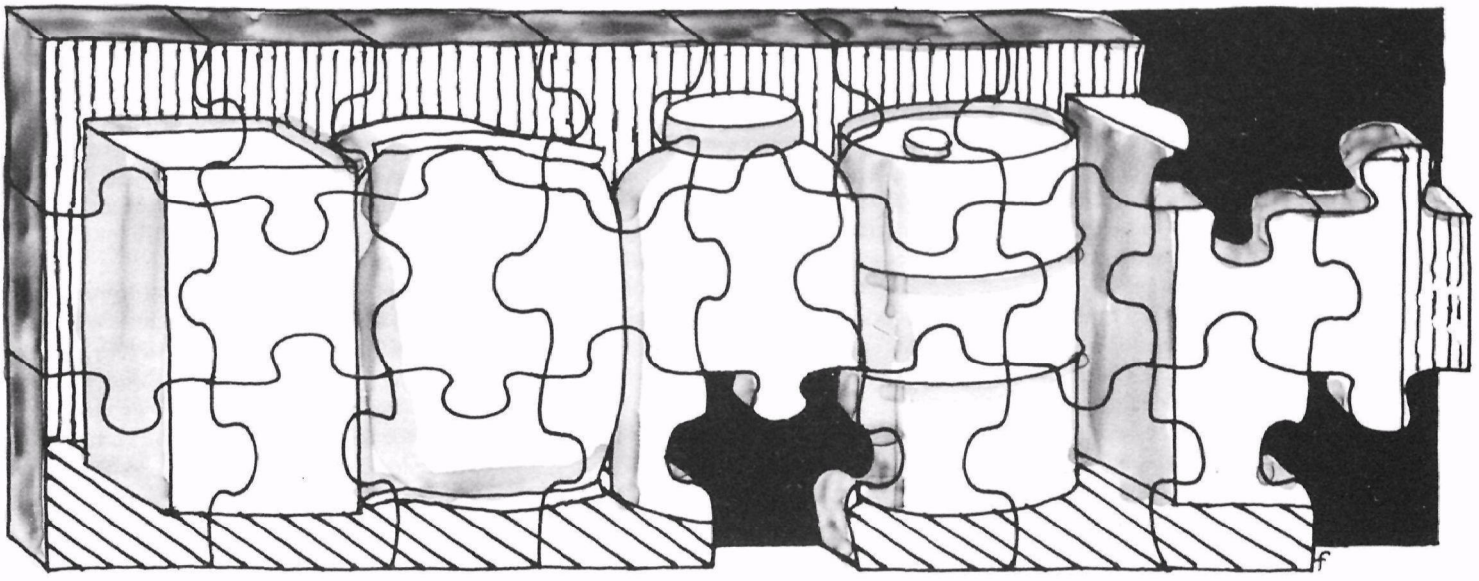
Two listings are published. Type A for available waste items and Type W for those items that are wanted. Each listing includes a description of the item, composition, quantity, packaging and geographic origin. The lists include only materials for which no well-established market exists.

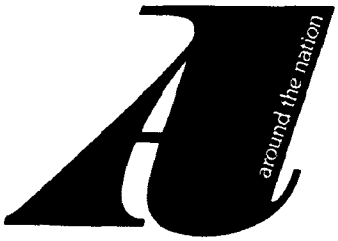
Inquiries to the Exchange are referred to the listing firm, which then determines whether or not it will negotiate. The Exchange asks no questions concerning the dollar volume of exchanges or with whom the company has done business. Federal and State agencies have agreed to respect the anonymity of the competitors in order to encourage resource recovery and decrease the volume of industrial waste.

The RCGA has been very pleased with the results of the exchange. It has progressed from a year trial basis to permanent status. Its mailing list has expanded to 1,000 covering the entire country. The Exchange, now in its fourth publication, has 85 listings representing 60 companies from all over the United States and overseas.

EPA recently gave the Exchange an Environmental Quality Award for its efforts and cited it as a model for other industrial areas.■

Darby Collins is an EPA Region VII public information specialist.





potato pollutants

Fines totalling $45,000 were recently levied against a potato processing firm for polluting the Aroostook River in Maine with untreated wastewater in violation of its discharge permit. The company, Potato Service, Inc., Presque Isle, and its president, Moe Kimmel, were charged with 74 counts of bypassing aerators in the firm's treatment facilities in February, March, and April last year. Mr. Kimmel pleaded guilty to one count in U.S. District Court, and Judge Edward T. Gignoux dismissed the other counts. Company officials said the aerators were bypassed to cut expenses.

pcb limits set

Region I has set strict limits on the amounts of polychlorinated biphenyls (PCBs) that can be discharged in wastewater from two New Bedford, Mass., capacitor manufacturers, Aerovox Industries, Inc., and Cornell-Dubilier Corp. Similar limits will soon be set in discharge permits for two other electrical equipment makers in the State, General Electric Co., Pittsfield, and Sprague Electric Co., North Adams.

new york ruling

Reversing a Federal District Court ruling, the U.S. Circuit Court of Appeals recently decreed that New York City must carry out four aspects of a controversial plan to limit automotive traffic in Manhattan: 1) levy tolls on cars and trucks that cross the Harlem and East Rivers, 2) ban taxi cruising in the midtown area, 3) limit truck deliveries to off-peak hours, and 4) regulate and reduce parking. Gerald M. Hansler, Regional Administrator, hailed the ruling as "a significant and necessary milestone in our efforts to reduce auto-related pollution in New York City."

sludge study

A pilot study of composting sewage sludge from Camden, N.J., instead of dumping it in the ocean has been started under an EPA grant of nearly $1.3 million. The city has been ordered by EPA to halt its ocean dumping, but is continuing the practice under a court-ordered extension, pending development of an alternate disposal method. The order requires the city to move its dumping area to 90, instead of 35, miles offshore. Deputy Regional Administrator Eric B. Outwater said the pilot program would be "an important first step in demonstrating that technology is available to end the dumping of sludge in the Atlantic."

clairton agreement

U.S. Steel Corporation has signed a consent order to control air pollution at its Clairton, Pa., Works, the largest coke oven plant in the world. Regional Administrator Daniel J. Snyder III said the agreement culminated more than a year of negotiations among EPA, the State, Allegheny County, and U.S. Steel. The order sets interim and final deadlines to control particulate emissions. Final compliance for all operations is to be achieved by 1986.

florida canal

The 155-year history of the Cross Florida Barge Canal came to an end—maybe—when the State Cabinet recently voted 6 to 1 to oppose further construction of the $325-million waterway. The Cabinet's action is a recommendation; it is up to Congress finally to halt funds for the on-again, off-again project. The canal, about 40 percent complete, would extend across northern Florida about 110 miles from the Gulf of Mexico to the Atlantic. President Nixon halted work on it by executive order in 1971. Since then the Army Corps of Engineers did an economic and environmental study and found the completed canal would cost $1 for every 66 cents it would bring in. Many of the study's findings supported the contentions of environmentalists and others, including EPA, that the project was ecologically damaging and economically unsound.

The Florida Cabinet has called for a State-Federal task force to decide what to do with land already acquired and a waterway already dug or dredged, with emphasis on restoring the Oklawaha River basin.

inland steel pact

An agreement has been reached that will cut air pollution from Inland Steel's operations in East Chicago, Ind., by more than two-thirds in the next four years. Deputy Regional Administrator Valdas V. Adamkus said six enforcement orders had been issued, and he praised the company management and the United Steel Workers Local 1010 for their cooperation in the negotiations.

Particulate emissions will be cut from 6,100 to 2,000 tons per year, on compliance schedules that run from six months to four years. Three new facilities—a boiler house, blast furnace, and coke battery—will be built, using the best available pollution control technology. Inland Steel will close down two old coke batteries and an open hearth furnace that will more than compensate for the new facilities' emissions.

cleanup profits

How to make profits on pollution controls was the subject of an industry-government conference in Chicago Jan. 17-18 attended by some 300 top businessmen from the Midwest. The conferees discussed new ways to reduce pollution and make money through resource recovery, design changes, and research. The conference was sponsored by EPA Region V, the Department of Commerce, the Chambers of Commerce and Manufacturers' Associations of the six States in Region V, and six private corporations.

injection controls

Great interest is being shown in Region VI in EPA's proposed regulations to control underground injection practices so that ground-water supplies can be protected from contamination, according to Charles Sever, Chief of the Region's Water Supply Branch. Injection wells are widely used in Region VI to spur "secondary recovery" from oil and gas wells. The technique involves forcing fluids (water, brine, or sometimes gas) into the oil- or gas-bearing strata to increase the flow to the producing wells. The period for public comments on the proposed regulations ended Jan. 15. Mr. Sever said the final regulations are expected to be issued by April 1.

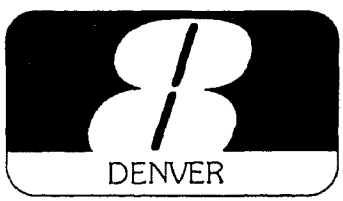
pollution hearing

Regional Counsel Diana Dutton was scheduled to preside at a public hearing March 1 at the Baker Hotel in Dallas on the so-called emission offset regulations. The hearing, one of four throughout the country, was called to receive comments on EPA's proposed new policy to permit major new stationary sources of air pollution to be built in an area provided that offsetting reductions in pollutant emissions are made from other sources.

mighty missouri

An hour-long documentary film, "The Mighty Missouri," has been completed by KCPT, the public televison station in Kansas City, Mo. Funded by a grant from Region VII, the film tells the story of the river from its source high in the Rocky Mountains to its confluence with the Mississippi near St. Louis.

It depicts the pollution problems affecting the river, including accelerated agricultural, industrial, and urban development, and the efforts being made to solve them. The river forms the spine of the Nation's "breadbasket" area, more than half a million square miles covering all or parts of 10 States. Strip mining and coal gasification plants pose new problems for the Missouri basin, and the film touches on historic and present struggles over water rights to the river and its tributaries.



water meetings

Three conferences on water problems took place last month at the Region VIII office in Denver. On Feb. 2 and 3 representatives of the five EPA Regions west of the Mississippi and 23 western States met to discuss implementation of the Safe Drinking Water Act and the establishment of national standards for organic compounds in drinking water supplies. On Feb. 8 and 9 joint boards representing United States and Canada met to discuss pollution control measures on the Red and Rainy Rivers, which flow from U.S. into Canada.

At the end of February the Region's 22 areawide planning agencies, State leaders, and regional staff members were scheduled to meet in Salt Lake City, Utah, to review progress on water quality planning, with special attention to the control of non-point sources of pollution.

non-target species

Do poison baits used to control crop-destroying rodents also kill other, harmless, animals? A study of these "non-target" effects for one pesticide, sodium fluoroacetate, also known as compound 1080, is under way in California, funded by EPA in cooperation with the State Department of Food and Agriculture and the Fish and Wildlife Service of the Department of the Interior. Before the baits are placed on various types of rangeland and cropland, different non-target species—foxes, coyotes, badgers, etc.—will be trapped, fitted with tiny battery-powered radios, and released. After the rodent-baiting, any radio-tagged animals that die will be located and their carcasses recovered and analyzed to determine the cause of death.

Compound 1080 is acutely toxic, and scientists suspect it may be lethal to the larger animals that prey on the rodents.

mislabeling fine

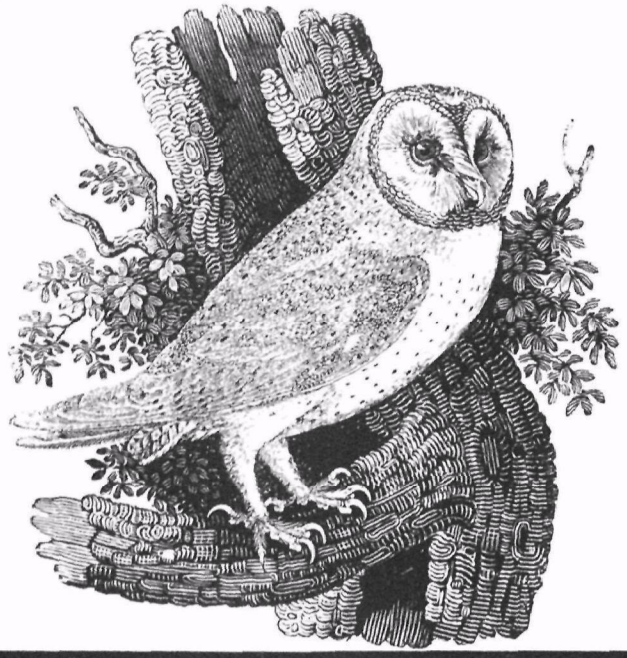
Region X inspectors spotted a shipment of pentachlorophenol, a wood preservative and termite repellant, with labels recommending application at 10 times the needed strength. The product was shipped from the Vancouver, Wash., plant of Champion International Corp. to California. Because the label instructions conflicted with those specified in the EPA registration, Region X filed suit in federal court. The Company pleaded no contest and paid a $2,500 penalty. The mislabeling has been corrected.

Looking At The Future

Concerns and hopes for the future of the environment are expressed in letters supplied to EPA by seven environmental groups for use in "Project Futurespect."

As part of this project the letters were recently placed in a specially prepared container which will be kept by EPA and opened and examined every five years over the next 50 years. The project began on EPA Day last July at the Bicentennial Exposition on Science and Technology at the Kennedy Space Center in Florida.

Excerpts from the letters received from the environmental groups follow:



NATIONAL AUDUBON SOCIETY :

"We of the National Audubon Society do not foresee mankind living under vast plastic domes in artificial climates and existing on synthetic foods. We foresee peoples of the world having shed their technological arrogance although not their technologies, having acquired ecological wisdom, and having regulated their reproduction, living in harmony with the natural world in which the human animal evolved, and upon which the human is as utterly dependent as is the fish, the turtle, the bird, and the bear. We foresee the farmlands flourishing, the fishermen casting their nets productively into the seas, and the cities open to the skies and to the fresh, clean winds.

And we foresee the wild birds still negotiating their ancient migration routes from north to south and south to north, the great whales finding their way through the oceans, and man still mystified by the sacred nature of life. We foresee these things because we believe that enough people will use enough intelligence while there is yet time to make them possible. To that end, we shall continue and intensify our efforts to challenge the rest of the American people to revise and redirect those attitudes and practices of second century America which today so seriously threaten our natural heritage."

LEAGUE OF WOMEN VOTERS OF THE UNITED STATES:

"It may well be that the last half of the 20th century will be viewed historically as the period when Americans finally realized that time was running out on them in seeking solutions to environmental problems. The decades of the 1960's and 1970's have been marked by increased public awareness and political acceptance of the need to halt profligate use of natural resources and unrestricted pollution of water, atmosphere and land.

Much has been done; much remains to be done. There can be little doubt that the country has the technical competence to solve nearly all of the current ills, but the technology is not being matched by the will and the commitment to apply it. Unless the situation changes dramatically in America's third century conditions will get worse, not better. Future problems will not be new ones—but the same old ones accelerated by population growth and concentration, conflict between development and preservation, inadequate financial and legal resources. This rather dismal forecast can be reversed if we see in the next one hundred years changes in human attitudes and life styles, acceptance of a national self-discipline, and application of the technical and human resources we already have at hand."

SIERRA CLUB:

"As we face our third century as a nation, American environmentalists are asking what kind of environment do we want? What is our ultimate dream? What should the face of America look like when all is said and done? Can we recapture some classical notion of the proper appearance of cities and towns as stable cultural and economic enterprises, and of their relationship to the countryside, and its to a hinterland and the wild places within it? How can each operate to be a healthful and humane site for all that lives within it, and each live in harmony with the other?

Or is there nothing ahead but constant flux—the never-ending business of tearing down and ripping up, squeezing resources harder and harder, a restless wandering about the continent, with us all acting our compulsions of a pioneer spirit that has lost its point as the centuries pass. We have proven ourselves as a people who can subdue a new land and indeed overwhelm nature. But can we subdue a technology which threatens to get out of control, and, most of all, can we subdue ourselves? Can we transmute our restless spirit into a gentle spirit which can give birth to an environment which can endure as a fit place for all life? If we can, in what better way could we redeem the vision of our founding fathers?"

THE WILDERNESS SOCIETY:

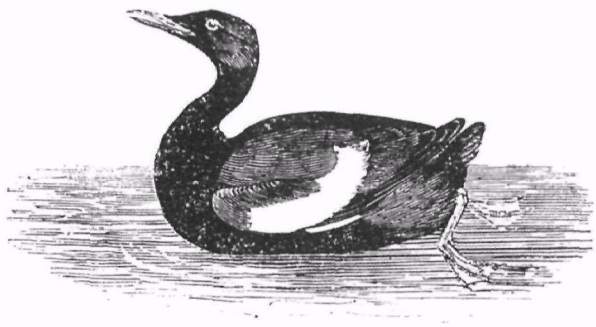
"As America balances between its past—the 200 years of history represented by the Bicentennial—and the future, the third century of its existence, we have both a promise of great things to come, and intermingling with it, an uneasy sense of a world gone awry. The optimistic premise of this past century that "technology will save us" is only partly true, and at an inflating price. As people turn nostalgically toward the past in these bicentennial celebrations, they are also yearning for a simpler form of existence, even for a more nature-oriented life style. Our folk-wisdom has always been rooted in our soil, yet today the majority of Americans are urban dwellers.

Wilderness preservation is a vital part of the solution of this dilemma. Wilderness can provide a constant point of reference for the understanding of the function of natural systems, as well as furnishing irreplaceable habitat for wildlife, safeguarding pure water supplies, and giving spiritual solace to urbanized, overdeveloped man- and woman-kind."

NATURAL RESOURCES DEFENSE COUNCIL, INC.:

"To be concerned with the environment is not to be anti-technology or against social progress. We must be, however, against the blind acceptance of any new kind of technology, or the unthinking continuation of outmoded concepts of 'progress.' We must strive for a future in which man will live more harmoniously in his natural environment—instead of a future in which we must constantly take the greatest pains to avoid destroying or poisoning our habitat.

It is a certainty that increasing world population, with the accompanying acceleration of demand for new energy sources and new food supplies and the economic means to provide them, will place incalculable strain on the world environment. However, by formulating wise, practical, and forward-looking policies today, and by carefully monitoring their enforcement, we can strive to mitigate these inevitable pressures and provide future generations with the basic necessities of life: clean air and water, pure food, and open space."



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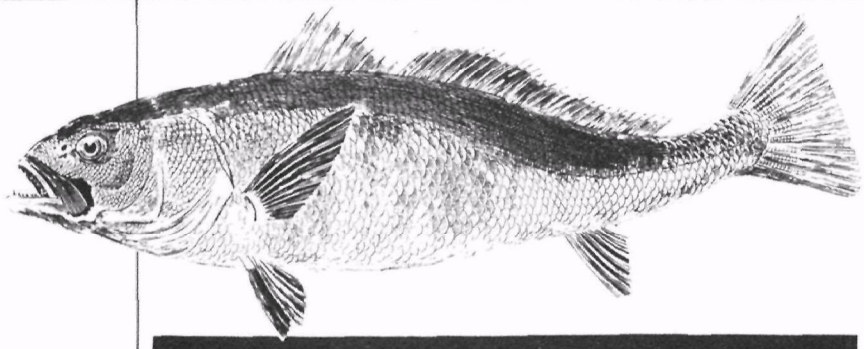
LOOKING AT THE FUTURE

Continued from page 19



THE IZAAK WALTON LEAGUE OF AMERICA, INC.:

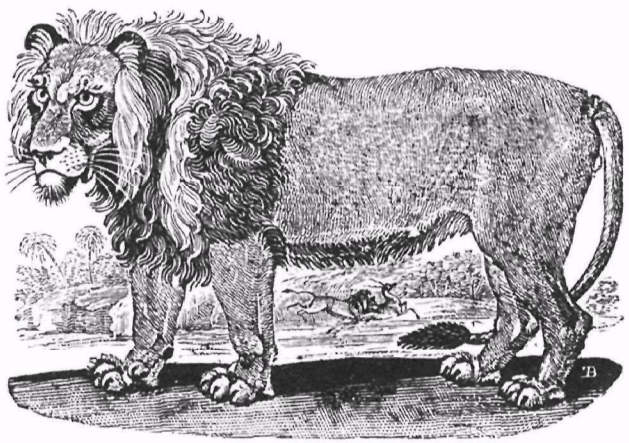
"Like an insatiable swarm of locusts, human beings seem to be racing to devour every vestige of the natural environment, even to the point of eliminating the complex ecosystems upon which we all depend for life. The nations with plenty continue to expand their resource-depleting appetites, while the developing nations struggle to survive. The most difficult problem in the future will be to decide the fate of our oceans. These great bodies of water with their relatively untapped mineral reserves and vast potential for food production are in danger of the same rampant exploitation that has been seen on land. Agreement on a law of the sea is vital.

To survive, all men and women must unite in a world-effort to preserve the natural environment. We must all become evangelists for and living examples of the conservation ethic. We must become caretakers instead of users, stewards instead of consumers. We must turn off the appliances, air conditioners, and engines and once again commune with the land on a one-to-one basis as our forefathers did. Only then will we have true hope for a better quality of life for all."

ENVIRONMENTAL POLICY CENTER:

"When fossil fuels began to play an important role in our economy, coal and oil and gas were so inexpensive that where they came from, or what had to be done to process and transport them, didn't matter much. America's earliest settlements were built without regard to the geography of fossil fuel deposits. Harbors and rivers and forest, wind and water and wood power, determined the location of our centers of development, and the arrival of fossil fuels generally reinforced the growth of existing communities.

Now the stakes for those who could control new sources and systems of energy are so high that working for humane, equitable, or rational energy policies is like being the chaplain on a pirate ship. Where energy reserves are located, where they are processed and converted, and how they are transported, does make a difference. The future of our cities, of our transportation networks, of our patterns of industrial and agricultural development, of the whole fabric of our economy, will depend on energy production choices that, a few years ago, were of little interest except to the companies that dug or drilled and sold the energy."



ENVIRONMENTAL ALMANAC

A GLIMPSE OF THE NATURAL WORLD WE HELP PROTECT

M A R C H

SPRING AT LAST!

At dusk near a marsh in the Washington area countryside you can hear the piping now of hundreds of the tiny little frogs known as spring peepers.

For some people spring is the return of the robin, the blooming of forsythia, the emergence of skunk cabbage or the cavorting of new lambs. For many of us though, the true heralds of spring are the peepers.

They've spent the harsh winter hibernating in the mud at the bottom of some swamp, pond, or ditch. But when they sense the warmer temperatures they begin to emerge from the depths to celebrate the glories of a new season in their brief lives.

They don't give a hoot that spring officially arrives on March 20. They are not aware that the northern end of our spinning globe is tilting again toward the sun. Their own biological clock will tell them when it's time to begin their serenading.

Now the singing males are trilling frantically to attract a mate. In the country you can sometimes hear hundreds of the little creatures joining in an ear-splitting chorus. Their shrill whistling sound can be heard as much as a mile away. From a distance their calls sound oddly like muffled sleigh bells.

Silence drops abruptly across the marsh when, flashlight in hand, you try to find a peeper. If you stand still for a few minutes a frog will utter a hesitant "peep-peep" and then the others gradually join in.

When you finally find one on a tree pad you see that it's less than an inch in length and has a bubble-like sac under its lower jaw which it blows up to help create its unique and unforgettable call. They can also be identified as peepers because they carry an "X" or cross on their backs. This gives the frog its scientific name of Hyla crucifer, or cross-bearing frog.

In the breeding season the males develop pads on their thumbs that help support the nuptial embrace. The toes of both sexes extend into discs which are used as supports in climbing. In summer peepers sometimes climb 60 feet or higher into the trees.

Part of the magnificent mosaic of nature, the peepers have been announcing the end of winter for thousands of years.

As Joseph Wood Krutch, a noted writer-naturalist, has pointed out, we shouldn't take this announcement by the peepers too casually because it is indeed a miracle.

"Think of the enormity of the announcement," he urges. "What would the world be like if spring didn't arrive?"

And another concern, of course, is what would spring be like without the peeping of Hyla crucifer. What if indeed we finally do get Rachel Carson's "silent spring." For peepers are just as susceptible as birds to the poisons in carelessly used pesticides.

These small creatures can also be easily displaced by construction projects. For example, a scientist told us recently of the building of a new power plant on the Wisconsin River which needlessly ruined two small ponds that served as the home of hundreds of peepers. One of the ponds was used for an ash pit and the other was destroyed by the power plant water intake pipeline.

So what? So part of the biological alarm system that can serve to alert us to environmental damage was destroyed. The peeping provides assurance that all's right with a small piece of the environment. So the peepers trill for you and me as well as for lady peepers.

One measure of our success in the environmental cause will be whether the peepers are still piping their songs to announce spring a hundred or a thousand years from now. —C.D.P.

EPA'S BUDGET INCREASED

President Jimmy Carter has proposed increasing EPA's current operating budget by $74 million and raising the Agency's employment ceiling to 10,150 permanent positions, 600 more than the Fiscal 1976 ceiling of 9,550.

The President said he would ask Congress for supplemental appropriations this year as follows: $69 million for areawide water quality planning (the Section 208 program); and $5 million to pay for the new positions which would be distributed by the new Administrator among such high-priority areas as toxic substance control, resource conservation and recovery, construction grants, and enforcement.

For Fiscal 1978, which starts next Oct. 1, President Carter has proposed increases of $41.6 million above the budget request submitted by the Ford Administration shortly after the new Congress met in January. These changes would include: $15 million for the new permanent positions, started in Fiscal '77; $12 million in added assistance to States and communities for pollution control programs in air, water quality, water supply, solid waste, and toxic substances; $10.3 million for loan guarantees under a new law permitting EPA to underwrite Federal lending to cities and States for their share of wastewater treatment plant costs, when they cannot obtain reasonable interest rates elsewhere; $8 million to develop effluent guidelines for the control of toxic material discharges; and a reduction of $3.7 million for standard level user charges (Government Services Administration rental costs).

"These budget increases—the largest since 1970-71—will be of great significance in protecting our Nation's environment," said Douglas M. Costle, EPA Administrator-designate. "President Carter has been aware that EPA is underfunded and understaffed, and his proposed additions are a major step toward bringing EPA's resources into reasonable balance."

The current year's budget authority totals $774 million. The Ford Administration proposed an increase of $29 million—to $803 million—for Fiscal 1978.

President Carter's proposals would provide a current year's budget authority of $848 million and a Fiscal 1978 total of $845 million.

CONSTRUCTION GRANTS

President Carter has proposed that $4.5 billion be appropriated by Congress this year for wastewater treatment construction grants, the first step in a ten-year Federal aid program totalling $45 billion.

The Ford Administration had proposed that the program start in Fiscal 1978. ■

COSTLE, BLUM NAMED TO LEAD EPA

continued from page 2

has been vice-chairman of the Fulton County Planning Commission since 1974.

From 1966 to 1974, Ms. Blum was vice president of Restaurant Associates of Georgia, Inc., an Atlanta management and purchasing company for a wholly-owned chain of restaurants and a restaurant equipment company, founded by Ms. Blum and her husband.

She was a member of Leadership Atlanta (appointed by the Atlanta Chamber of Commerce) from 1974 to 1976, and on the Advisory Board of the Atlanta-Macon Corridor Study (appointed by the Georgia Department of Transportation) from 1973 to 1975. In 1973-74 Ms. Blum served on the Georgia Vital Areas Council, and from 1972 to 1974 she was a member of the Health and Social Services Advisory Board and Governmental Services Advisory Board of the Atlanta Regional Commission.

Since 1972, she has been chief lobbyist in the Georgia General Assembly and in Washington, D.C., for SAVE (Save America's Vital Environment), and from 1973 to 1976 was president of that organization. She was on the board of the National Committee for an Effective Congress in 1976, and has been a trustee of the Georgia Conservancy since 1973.

From 1960 to 1962, Ms. Blum was on the faculty of the Pediatric Psychiatry Clinic at the University of Kansas Medical Center. She was acting administrator of the Suffolk County Mental Health Clinic in Huntington, L.I., in 1963 and 1964. In 1964, she was a founder of the Mid-Suffolk Center for Psychotherapy in Hauppauge, L.I., and she served as a partner and center administrator there until 1966.

Ms. Blum received a B.S. degree, in 1958, and an M.S.W. degree in 1959, from Florida State University.

She is married to Donald W. Blum. They have four children. ■

UPDATE

Beginning this month EPA Journal will list recent Agency publications, and other items of use to people interested in the environment. Each category carries an address listing where these materials are available.

GENERAL PUBLICATIONS

Single copies available from Chris Perham, c/o Update (A-107), U.S. EPA, Washington, D.C. 20460.

An Environmental Law: **Highlights of the Safe Drinking Water Act of 1974** (Revised November 1976) This six-panel leaflet explains the major provisions of the Act, the role of the States, variances and exemptions, and the need for protection of underground water sources.

Highlights of the Toxic Substances Control Act (December 1976) This four-panel leaflet covers the scope of the new law, Agency responsibilities, and steps required of manufacturers.

What You Should Know About the Pesticide Law (Revised 1976) This illustrated 12-page pamphlet explains the enforcement provisions of the Federal Insecticide, Fungicide, and Rodenticide Act.

Clean Water and Agriculture (January 1977) This eight-panel leaflet gives the agricultural community an outline of the impact of the Federal Water Pollution Control Act, especially Subsection 208, on the farmer.

Career Choices (Revised 1977) This 16-page pamphlet describes careers in the environment field, listing careers in environment technology and education, equipment operation, science, and research. It includes a compilation of institutions offering environmental education courses.

Noise Around Our Homes (February 1977) This eight-panel leaflet discusses the problem of increasing levels of noise from household sources and outlines ways to reduce and prevent them.

Noise and Recreational Vehicles (December 1976) This 12-page booklet discusses the major recreational noise sources, their impact on users and bystanders, and ways that noise levels can be reduced.

The United States Environmental Protection Agency; Legislation, Programs, and Organization This 64-page book outlines the history and organization of EPA. It gives the legislative authority for the pollution control programs and covers the appropriations structure and history of the EPA budget.

LEGISLATIVE REPRINTS

Single copies available from the Public Information Center (PM-215), U.S. EPA, Washington, D.C. 20460.

The Toxic Substances Control Act. Public Law 94-469.

The Resource Conservation and Recovery Act. Public Law 94-580.

FEDERAL REGISTER NOTICES

Reprints available from the Office of Radiation (AW-460), U.S. EPA, Washington, D.C. 20460.

Standards for Nuclear Power Operations. Thursday, January 13, 1977.

MOVIES

The Great Cleanup—A 16mm., 53-minute color film about the joint effort of EPA and Environment Canada to clean up the Great Lakes.

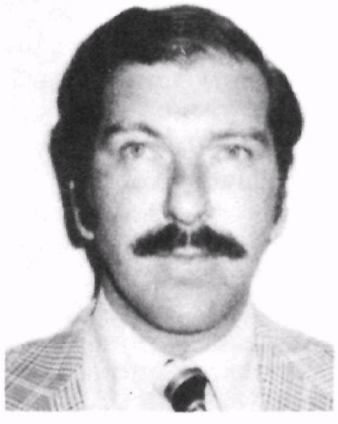
Films can be borrowed at no charge from Modern Talking Picture Service, 2323 New Hyde Park Road, New Hyde Park, New York 11040. Requests should be made well before showing date.

The Mighty Missouri—A 16mm., 58-minute color film, shows the pollution problems affecting the river and its tributaries. It shows the current pollution control efforts and future problems that are anticipated. "The Mighty Missouri" will be shown on public television in Kansas City, Mo. in March and will be available for public distribution in the future.

Is Your Drinking Water Safe?—A half-hour television program produced by Connecticut Public Television under an EPA grant. The film discusses the problems of drinking water supplies and possible solutions to those problems. It will be shown over the Eastern Educational Network early in March and will be available to public television stations nationwide. ■

PEOPLE

Richard Field, Chief of the Storm and Combined Sewer Section at Edison, N.J., a component of the Municipal Environmental Research Laboratory at Cincinnati, Ohio, was recently honored by the New York Water Pollution Control Association at its annual meeting in New York City. Mr. Field received the Association's Kenneth Allen Award for an outstanding paper on wastewater treatment. Last year Mr. Field was given a State-of-the-Art Award of the American Society of Civil Engineers.

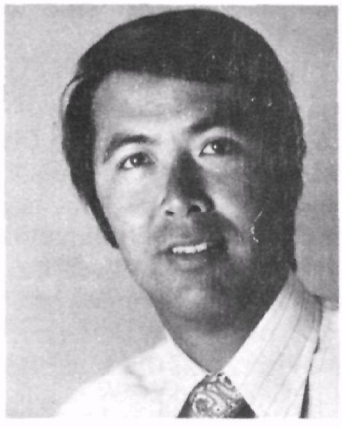


Howard G. Bergman has been named Director of the Enforcement Division in Region VI, Dallas. For the last three and a half years he has been on a special intergovernmental assignment as Air Pollution Control Commissioner in Cleveland, Ohio.
Mr. Bergman, 39, is a native of New York and earned a B.S. in chemical engineering from New York University and an M.S. in engineering administration from George Washington University, Washington, D.C. He was a physical science administrator in EPA headquarters, Washington, from 1971 to 1973. He and his wife, Roberta have four children.

Bruce W. Ingalls, library technician at EPA's Headquarters library in Washington, will start next month on a two-year assignment at the University of Montana, Missoula. There he will help set up a model microform library of environmental and energy information. This largely technical collection on microfilm rolls and microfiche cards will be available also to Montana State University at Bozeman, and Montana Technical College at Billings. The collection will have a close working relationship with EPA's Region VIII Office in Denver, Colo.
Mr. Ingalls's appointment is under the Interdepartmental Personnel Act, which provides for the short-term exchange of workers among Federal, State, and local governments.
A native of Montana, Mr. Ingalls came to Washington 26 years ago. Since 1966 he has worked for the Federal Water Pollution Control Administration (later the Federal Water Quality Administration) and EPA.

Stanley J. Pac was recently appointed Commissioner of the Connecticut Department of Environmental Protection by Gov. Ella Grasso. Mr. Pac had headed the State's Department of Motor Vehicles for two years. Before that he had served one term in the State Senate, two terms in the General Assembly, and as Mayor of New Britain. In the Assembly, Mr. Pac was chairman of the Public Health and Safety Committee and of the Environment Committee and was instrumental in writing the legislation that created the Department of Environmental Protection.

Henry Bunczewski of the Water Supply Division of Region VII, Kansas City, recently received his B.A. degree in biology after studying at four colleges and several correspondence schools over an eight-year period.
Mr. Bunczewski received his diploma from Park College, Parkville, Mo. He also studied at the University of Missouri at Kansas City; the Water and Wastewater Technical Training School, Neosho, Mo.; and Orange Junior College, Costa Mesa, Calif. He has been with EPA five years, four of which were in the Surveillance and Analysis Division doing microbial and chemical analyses of water samples in the field and in the regional laboratory.



Alex Young has been named Chief, Personal Management Branch, in Region IX, San Francisco, succeeding **George A. Lawton,** now Deputy Director of the Personnel Management Division in EPA's Washington headquarters.
Mr. Young, 32, has been in the Federal service nine years, three of which have been with EPA. He previously worked in staffing, job classification, and employee relations at the U.S. Naval Shipyards at Pearl Harbor, Hawaii, and Hunters Point, Calif. He earned a degree in business administration from Oregon State University in 1966 and is a member of the International Personnel Management Association and the Classification and Compensation Society. He received a Sustained Superior Performance Award in 1973.

SUPREME COURT ISSUES MAJOR ENVIRONMENTAL DECISION

The U.S. Supreme Court has ruled 8 to 0 that EPA has authority to impose uniform regulations to control factory wastes discharged into the Nation's waterways. The court rejected the argument of eight chemical companies that the Agency could only set general guidelines and permit variances for individual plants. Acting Administrator John R. Quarles termed the decision "a very important victory. This . . . provides critical support for the strategy used in requiring the cleanup of literally thousands of water pollution sources in this country."

GUIDELINES PROPOSED TO HELP CUT SEWAGE PLANT COSTS

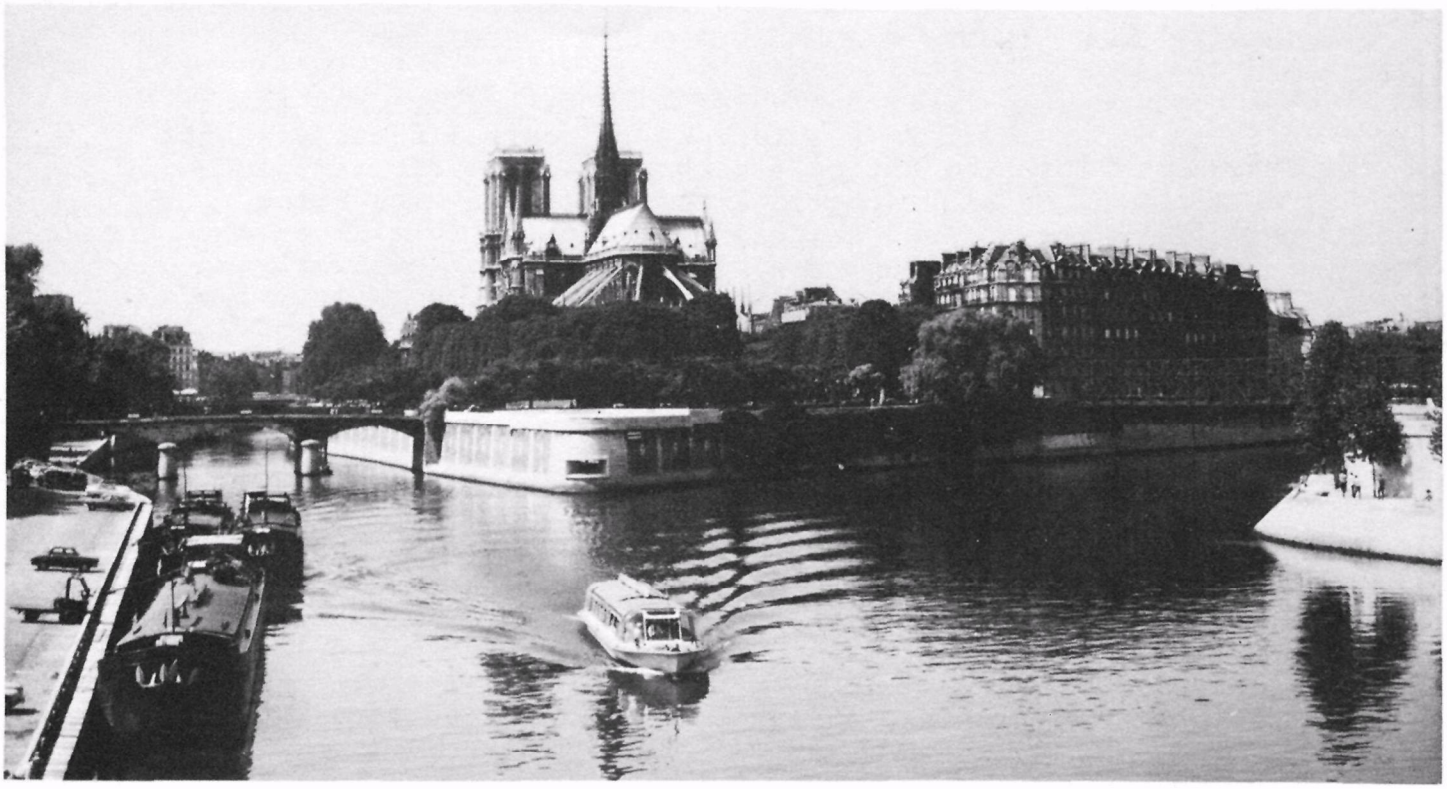
New guidelines have been proposed by EPA which could mean large savings at all levels of government on sewage treatment plant costs. The proposals include guidance in planning the optimum size for such plants, the types of upkeep required during the plant's lifetime, and procedures for population forecasts and wastewater flow projections. The new proposals should especially ease the burden of taxpayers in small communities.

BREAKTHROUGH IN ENVIRONMENTAL PHOTOGRAPHY

At the request of EPA, the U.S. Air Force has developed a compact, low-cost unit called an Enviro-Pod which may provide the best means to date for photographing environmental disasters such as oil spills. The Enviro-Pod is small enough to be treated as hand luggage and can be easily installed on light aircraft. It allows officials to take pictures from rented planes and have processed photos within 24 hours. A decision on whether or not to contract for production of the Pod is expected by mid-1977.

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PUBLIC AFFAIRS (A-107)
WASHINGTON, D.C. 20460

PARIS TRIES OXYGEN



Notre Dame Cathedral on the Seine River.

Plans are being made to pump oxygen into the Seine River in Paris to help prevent recurrence of the fish kills which plagued the French capital last summer.

The Paris City Council is considering having a contractor lay a plastic tube pierced with tiny holes under the Seine as it flows by Notre Dame Cathedral. Compressed air would then be bubbled into the river to revive the fish.

Thousands of dead fish floated to the surface of the Seine last July when a heat wave boosted water temperatures and robbed the river of oxygen.

Cost of the project has been estimated at 500,000 francs (approximately $100,000). One problem foreseen is that the bubble machine might stir up too much mud on the river bottom.

The use of aeration techniques to help increase the amount of oxygen in rivers and lakes in this country has been tried from time to time.

EPA's General Counsel's Office now has under study a request for an opinion from Region V on whether in-stream mechanical aerators can be used to help meet water quality standards in the lower Fox River in Wisconsin.

In response to a request for comment from the General Counsel's office, Eckardt C. Beck, Deputy Assistant Administrator for Water Planning and Standards, noted that the numerous dams on the Fox River have reduced the opportunity for natural aeration of this stream into which a number of pulp and papermaking industries discharge their wastes.

He noted that in the 1930's before the increasing load of industrial wastes the Fox River was so full of mayfly insects, usually an indication of clean water, that the bridges across this stream sometimes became impassable and that road graders had to be used to clean the bridges of the slippery mass of insects. However, the mayfly population was drastically reduced after industry began depositing its wastes in the river.

In his memo, Mr. Beck noted that while EPA has not categorically forbidden the use of in-stream aeration to meet water quality standards, EPA has discouraged the use of this technique as an alternative to meet water quality standards.

"The use of in-stream aeration," Mr. Beck recommended, "should only be as a supplement to the application of the best available pollution control technology economically achievable and it should be in consonance with water quality management plans developed" under the Federal Water Pollution Control Act.

*U.S. GOVERNMENT PRINTING OFFICE: 1977 720-136/1003 1-3