

# environmental sciences

## Clearinghouse serves ecology and industry

A unique San Francisco Bay group has just celebrated the first anniversary of its efforts to bring various California groups together in environmental cooperation.

Joseph E. Brown, writing in *EXXON USA*, describes the successes and trials of the Environmental Information Clearinghouse. Formed just over a year ago, the organization includes environmentalists, industrialists, educators and government officials who work together to provide accurate information and communication links to industry and ecology action groups in order to prevent head on collisions. When a county water department wanted to know how best to dispose of a particular pollutant, EIC conducted research and found they could sell it to fertilizer manufacturers. When confusion arose concerning regulations governing outfall from a new industrial plant, EIC arranged a series of meetings for the concerned parties that resulted in an amicable settlement.

Even the most enthusiastic supporters, Brown reports, say it is too early to declare EIC a total success, but as one member puts it, "At least during the first year, something has developed among us that didn't exist the first time we sat down together. That something is trust."

## Noise pollution, a progress report

City dwellers who suspect that the daily insults of urban living resemble some ancient Chinese torture have new ammunition: According to a report in the current issue of *CONSERVATION NEWS*, torture by noise was at least considered as an alternative to hanging for serious crimes in third century B.C. China. The report goes on to list modern refinements of the method and what is being done to limit their application.

Human hearing ranges from approximately zero decibels of sound to about 140 db, at which point pain and permanent ear damage occur. Conversation proceeds at about 40-50 db. Some permanent hearing loss results from prolonged exposure to sound exceeding about 90 db. A jet plane flying at 1,000 feet bombards a large area with sound exceeding 100 db. A car going 65 mph subjects a person standing 25 feet away to 80 db. Noise near a freeway averages 64 db. Inside the home, a garbage disposal grinds away at 80 db and a food blender at 88 db.

A New Jersey ear specialist reports he sees an average of two patients a week suffering noise-induced hearing loss, much of it associated with loud rock music. Other symptoms of noise strain apparently include high blood pressure, headaches and change in kidney function.

Although the Noise Control Act is a year old, national noise-emission standards are not expected until October 1974. Meanwhile private companies complain that the public is suspicious of machines that behave more quietly than expected. A relatively sedate jackhammer, a "whisper quiet" vacuum cleaner and a silenced typewriter have all run into formidable sales opposition for this reason.

## Autos are primary water polluters

A study conducted for the Environmental Protection Agency by Biospherics, Inc., an independent research firm, shows that pollutants spread on roads by autos befoul rivers and streams almost as much as municipal sewage.

The pollutants include asbestos from brake linings, rubber from tires, zinc from oil and tires, lead from gasoline and nitrogen and phosphorus compounds. Rainstorms carry the pollutants into waterways.

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# behavioral sciences

## What's good for the child . . .

Environmental stimulation is known to play an important role in the mental development of infants. But children become bored with repeated or prolonged exposures to the same things. Therefore, says Michael Lewis, director of the infant laboratory at the Educational Testing Service in Princeton, N.J., it is important to vary what the child experiences. He has designed experiments to find out what kinds of environments parents can construct to enrich the mental lives of their children.

Approximately 250 infants participated in attention experiments. They were shown the same picture a number of times until they lost interest. Attention was measured by changes in heart beat, respiration and time spent looking at the picture. When changes in color, form and number were introduced in the picture, the infants showed revived interest. Lewis found that changes in number attract the infant's attention during the first few months. This interest wanes to a low at 12 months then begins to increase. Changes in color were not exciting to the children until 24 months of age. Changes in form, says Lewis, tended to be the most important dimension. Form interested the infants most, especially from 9 to 24 months of age.

## . . . is good for the adult

The developing brains of infants are thought to be more susceptible to the effects of the environment than those of adults. But physiologists at the University of Queensland in Brisbane, Australia, have found that the environment can induce changes in the brains of elderly rats. Their research is reported in the June 29 *NATURE*.

Twenty pairs of infant rats were divided into two groups. The first group (enriched group) was subdivided and raised in two open-mesh cages. They were given an assortment of different toys each day. Rats from the second group were raised in small boxes with solid sides. After 509 days (middle age), half of each group was put through three weeks of maze-running and behavioral testing. After the environmental stimulation of this testing period, all rats were killed. Their brains were weighed, measured and compared. As expected, among the untested rats, the enriched brains were significantly heavier and longer than the isolated brains. Among the tested rats, however, it was found that environmental stimulation had succeeded in increasing the size of the previously isolated brains to that of their enriched counterparts. The researchers conclude that the rat's brain retains its capacity for structural change into adulthood.

## Good (for hyperkinesis) to the last drop

Hyperkinetic children are sometimes given amphetamines to calm them down. This, however, presents several problems. Due to misdiagnosis of the syndrome, amphetamines are prescribed for children who do not need them. Amphetamines are known to produce annoying side effects and amphetamines are among the most abused drugs.

Robert C. Schnackenberg of the William S. Hall Psychiatric Institute in Columbia, S. C., has noticed that many hyperkinetic children are coffee drinkers. In an experiment, he took 11 such children off medication and gave them one cup of coffee at breakfast and lunch. He reports in the July *AMERICAN JOURNAL OF PSYCHIATRY* that teachers and parents rated the children as less hyperactive during the three-week period they were getting coffee instead of amphetamines. The children suffered no side effects.

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