

# Ecology: Statistics, Politics, Hysterics

By PAUL R. GASTONGUAY

A president, his brother, and a civil rights leader die. "Ban the gun!" cry the people. But a strong lobby wins. The gun is not banned. Silence.

A national election depicts the flaws of an electoral-college system. "Ban the system!" cry the people. But congressional inertia prevails. The college is not banned. Silence.

DDT; oil slicks; pornography; public school prayers; Ralph Nader; the Pill; ROTC; fluoridation; prohibition; communism; civil rights. The human animal has an insatiable appetite for causes, but a pitiful memory. Causes fade away at a rate inversely proportional to their monetary gain or their excitability.

Last week communism; yesterday Cambodia; today ecology; tomorrow compulsory contraception.

Perhaps not true of those affected; perhaps not true of individuals. But true of society. But, luckily, the persistence lacking in man can be found in nature. Nature strives for ecologic perfection, for evolved specialization, for complete harmony and stability, when man allows it to do so. But man strives for self, for monetary and momentary self.

Perhaps 77 billion human babies have been severed from their umbilical cords on this planet in the last 600,000 years. And as his numbers increased, earthly man has become a complex of the "natural" and the "human," as he probably has in the other possible 3,000 human societies in our Milky Way. Even if 6,000 trillion miles separate our society from our nearest intragalactic cousins, we are undoubtedly

as confusing and as confused as they are.

For man is a computer, wherever he may be—but a computer who can program himself; a complex, able to guide his chemicals to do what he wishes, to "un-naturally" overcome the natural, instinctive response to a natural stimulus.

When he cannot see he wears glasses. He has invented the hearing aid, the artificial limb, the crutch, the wig, the artificial organ. And all the smiles are synthetic. He reshapes his nose, deodorizes his sweat, lengthens his eyebrows, paints his face, and replaces his heart. He has a car to partly replace his legs, a computer to partly replace his brain, a test-tube to partly replace his womb.

He has learned to modify his emotions by drugs and to affect his personality by psychiatry or by severing a nerve.

Just as perilously, he has distantly isolated from nature (and has either over-staged or under-carpeted) such natural events as sexual activity, defecation, aggression, play, eating, and shelter-construction.

## Where He Lives, All Is Change

Let us analyze his home, his Spaceship Earth. His entire planet is covered with clusters of living things. Some of these life forms are relatively new; others have become extinct. He knows of more than one million different kinds of animals. He sees constant change. Constant destruction. Constant reconstruction.

Leaves fall. Insects destroy leaves. Leaf materials become used to form new life stuff. Trees grow. Babies grow. Tadpoles change, become frogs. Winter

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kills much life. Spring brings new energy. And through millions of years, through constantly changing conditions—mountains forming, lakes drying, continents forming, islands drowning—there slowly arises the proof.

It becomes obvious beyond any doubt whatsoever that the earth and all life upon it is striving for something. For the increased ability to survive, to sustain normal climate or soil-changes. As the life of a forest, an island, a pond, evolves, it becomes more and more able to improve itself. And, after a time, a very long time, a new creature comes along. A creature of great superiority because of an extremely complex brain, a brain such as there never was one before—a brain, a cerebrum, evolved from simpler brains, slowly, gradually, with occasional biologic error but with a net positive growth, an improvement, a self-awareness.

Miracle of miracles: self-awareness. There's the knife that cuts the mustard. The earth has become enlightened. The earth has fulfilled its goal. Man is here. The simplest atom has become man.

And to assist his brain he has an opposable thumb. Yet of several species with an opposable thumb, he has the only thumb able to fist, to pat, or to crush, while also able to lift a fly, thread a needle, or guide a violin bow so delicately. A brain speaking through a thumb. Man. A brain 45% bigger than it was 600,000 years ago. Man. Presently only three weeks old, on an earth-age scale of 100 years.

### Organization, Flexibility . . . Harmony

As his brain and thumb were evolving, life around him was evolving as well. As man peered from his cave he saw organization, flexibility. He saw plants and animals all in harmony. Rabbits running from foxes. No harmony there? On the contrary. Foxes eat rabbits, keep rabbit population in check. As rabbits die, foxes lack food. Foxes die. Rabbits become happy again. Repopulate. Foxes then find food: fat rabbits. Foxes then repopulate.

So it is. A constant rhythm. All plants and animals in harmony. Man sees nature as it evolved for millions of years. Plants make food for themselves; animals steal it. Man robs the animal. Man sees nature's potential for harmony expressed in the ecology around him. But man should see nature's potential expressed within himself as well.

Next step: the human society. Men group together for better hunting. But then they fight, as rabbits and foxes. But men are more inventive. More destructive also. Men walk away from the cave, become social, urban, mechanized, artificial. Also become proud, wasteful, anxious, unnatural, bored; search for causes.

With his opposable thumb and his bulging cerebrum, man is still a child in a vast natural ocean of miraculous logic and organization, an ocean that yielded his thumb and cerebrum. Yet this most able of earthly entities is the least logical. The most emo-

tional. The most abrupt.

He selects the simplest means without scrutiny. He leads a retroactive existence. He gambles. And he defends causes. Then forgets. More important things to do. Oh, some say he can get to heaven (might pollute that, too; heard some theologians say that angels' wings are deteriorating), but golly, what he will leave behind!

People warn; people listen. But then trip TV switch. People forget. Man thrives on causes; man thinks. But thinks of trivia. Did Adam have a navel? Need a round or a square table in Paris? Was Noah's ark formica-topped? Is God dead? Man thinks. Does not draw list of priorities. SST or Mississippi? Allow the present ecology cause two years, perhaps less, and man will then move on to the next cause.

### What Next? Pills, of Course

Because man's *ever*-enthusiasm has spread to his own body, he has slid into the Pill Age. Without scrutiny. The easy way out. Let's look ahead: male contraceptive pills; pills to determine exact date of birth or whether it's a boy or a girl; pills to increase intelligence or athletic ability or "ideal motherhood"; pills to produce good teachers, good mechanics, good soldiers, good firemen. Memory pills; pills to make us happy, sad, hopeful, more religious on Sunday. Pills to alleviate all sexual desire until the wedding; pills to determine onset of menopause; pills to enable us to refuse to die. Knew a man who refused until 293. Pills to make one pregnant, to replace foods, to render sleep useless. Pill to sound alarm when time to take other pills.

Pills to correct, to plan, to alter, to alleviate. Sprays also. Sprays to kill bugs, so as to camp by fire, eating killed fish. Dams. Dams to alter waterways. Floods to liven valleys. Airports to rush people. Eradicate. Kill. Destroy. Hurry.

Beer can, bread crumb, match; poor chipmunk. Plastic, tin, paper, car ashtray. "Some kook will pick it up."

Smokestack. Symbol of progress. Progress for whom? Not the deer. What a pity for the deer. Harry calls the police. Is ferocious. Saw his neighbor drown some kitties. Pretty little kitties. Next day, after hard week, Harry relaxes in woods. What a lucky day! Right between the eyes. Deer drops, kerplonk. Meanwhile, Harry's wife is happy at home. Lets little Johnny trap dehydrating frog in back yard. Frog dies. Harrys are good citizens.

Asphalt. Driveways, streets, avenues, "drives" for the wealthy, freeways. Build up, build down, build under, build across and through. More tax revenue. Hurry.

Man flies. Sees only an occasional city. Sees forests, forests, forests. Much more space. No need to worry. But then no space. No vegetation. Tree trunks, but no trees. No more leaves. No more food. No more

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green lacelike wings. After the females emerge, there is a preoviposition period of four to six days before the first eggs are laid.

### Observations and Studies

The lacewing is an insect that goes through complete metamorphosis—egg, larval, pupal, and adult stages—with the immature stages not resembling the adults. A life cycle can be completed in about a month at room temperature. (Aphids, which may be used as food for lacewings, are an example of an insect that has an incomplete metamorphosis: they go through only the egg, nymphal, and adult stages.)

Lacewing larvae grow by molting, during which the old exoskeleton is shed several times. The molts can be made easily visible by dusting the larvae with a colored material, such as dry tempera paint.

Rate of growth can be determined by recording the number of days for each larval stage, or instar; or the larvae can be measured to determine their increase in size. If several insects can be reared at different temperatures, the differences in the rate of growth of each stage caused by temperature can be determined.

Differences can be determined in the rate of development caused by feeding different foods, such as insect eggs, small caterpillars, and aphids.

Students may wish to try to evaluate the use of a variety of cages for rearing individual larvae; for example, parts of egg cartons with plastic tops, pieces of plastic tubing, or baby-food jars.

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### N.S.F. Funds Technician Education

To help meet a projected national need for highly trained and educated technologists in research, development, and application in science and industry between now and 1980, the National Science Foundation has started the Technician Education Development Program.

The NSF program seeks to fulfill the need for technologists who have received substantial college-level training in specific fields of science and engineering and who can provide effective assistance, in industry as well as in the universities, to senior research and development personnel.

One segment of the program is aimed at the development of new curricula, courses, instructional materials, and methods so that technical education programs will keep pace with the changing needs of society. Technical and professional organizations, institutions, or groups of technicians and scientists are eligible for NSF funds for curriculum-development activities.

The other part of the program—direct aid to colleges for training programs—is expected to have an important impact on junior and community colleges.

## Ecology . . .

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cities. Some strange, elusive, invisible thing called oxygen balance.

### Funereal Finale

Man preys. Then must pray. Finally prays. Prays only when in need. "But now, not in need." Ecology means pollution. "So what?" He thinks. But he forgets.

Sunny summer beaches. Fall campus registration. Congress adjourns. New fad. New cause. Smokestack still spits, river still chokes, bugs die, fish die, deer die. Happy Thanksgiving.

Oceans die, says Ehrlich.

Autumn leaves bring autumn causes. Poor lungs. Delicate lungs. Delicate life. Fragile nature. The more perfect, the more fragile.

Then man returns brain and thumb to their source. Man had forgotten.

Send flowers. No flowers left.

Send humus.

## Living Organisms . . .

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notify the student about neglect or extra care needed on a project.

Students care for their projects during the last few minutes of the period. If a student finishes his lab work he can take care of his project; if he is running late, another member of the team takes care of it. The projects are a welcome variation if the period has been spent on discussion.

### Definitely a Biology Room

Many of the organisms used in the projects were purchased by students or were unwanted pets. Organisms were checked out over the summer or used in summer school.

Once established, the projects take little supervision by the teacher. The result is a room that definitely is a biology room.

*Acknowledgment.*—The photos are by Gary Jones, a student.

## Lab Drawings . . .

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