

## Newts and nuclear winters

John H. Lawton

**The Machinery of Nature.** By Paul R. Ehrlich. *Simon & Schuster: 1986. Pp.320. \$18.95.*

I MUST confess to breaking the law by catching great-crested newts, lovely, ugly creatures with orange bellies, warty backs and crests like those of a dragon. Under the British Wildlife and Countryside Act, catching great-crested newts even to admire them is now illegal, because they are rare, declining in numbers and endangered. So you need a permit to fish for them, and I didn't know. I do now, and promise to behave myself in future. But it is very sad; as a schoolboy I caught "water dragons" easily and kept them for a time in an old sink. There is nothing like having a dragon in the kitchen for learning about biology. Now it is illegal.

So what? Book reviews do not usually start with confessions of guilt, even of little crimes. There is however a purpose in my confessions, because these muddy little creatures symbolize the problems that confront conservationists as we struggle to hold back mankind's creeping extermination of thousands of endangered species throughout the world. We do not even know how many species of plants and animals there are, nor exactly how many have already been lost through human activities. We do know that the pace of extinctions is rising and that we need to take ever-more drastic steps to stop it. Laws against catching newts are a drop in the ocean compared with the action that needs to be taken. Which brings me logically, if indirectly, to Ehrlich's book.

*The Machinery of Nature* has several themes. One is an eloquent plea for a halt to the inexorable, blind destruction of the species of plants and animals that are the newt's and our fellow travellers on this planet, because some of them are beautiful and others are useful. But most are neither; we must conserve them simply because they are there, and because we do not know what they do and have only the sketchiest idea about how the machinery of nature really works. Once we have taken the machine to pieces and lost some of the bits, we should not gamble on being able to put it back together again. The biggest immediate threat comes from the growing human population, rising expectations and grubby, creeping degradation of all that is varied and beautiful in nature. But instant, cataclysmic destruction in the inconceivable horror of a nuclear war and the freezing terror of a nuclear winter is also a stark possibility, and is a second, recurring theme of the book. A third is the

excitement and uncertainty of doing science, mixed with a passionate love of natural history — the newts-in-the-kitchen syndrome. Last is a plea for more funding for ecological research. How can we possibly understand the machinery of nature on minuscule budgets that are a direct result of government indifference to environmental science?

The components of the machinery as Ehrlich sees them are the usual mix of population ecology and evolution, socio-biology, "two-species" interactions (predation and so on), biogeography and the dynamics of communities and ecosystems, constrained by the physical environment. However this is no ordinary ecology textbook. What it aims to do is explain the science of ecology to the layman and to our political masters. The intention is fundamentally to change attitudes about what we can and cannot do to the planet and get away with; it is a scientific manifesto for the Green Party, written by a first-class scientist.

The book is certainly well written, although it does have some distracting features. One is Ehrlich's tendency to describe his friends, associates and graduate students as brilliant, and by default mark everybody else beta minus. It is clearly done to enliven and humanize the science; I found it mildly irritating. Also the chapters are too long and sometimes lack a sense of direction; basically they are walks through natural history and the science of ecology, with the path frequently deflected in unexpected, albeit interesting directions. My preference is to know where I am going, and why.

One criticism is more substantial. Ehrlich is American and the book is directed explicitly at his fellow countrymen. Yet the problems it addresses are global and concern everybody. It makes no sense to talk just to Americans, even though (for several reasons) that may be a good place to start.

Will the message have any effect? I hope so, but fear not. It has been preached many times before to little or no avail. For example, by coincidence I recently came across this:

It is very certain that the earth is not the chief body in the material universe, and that the world is not subordinate to man's use. It is even more certain that nature is the expression of a definite order with which nothing interferes, and that the chief business of mankind is to learn that order and govern themselves accordingly.

The writer was Thomas Henry Huxley in 1880.

One hundred years later the message is the same but much more urgent. Whether the majority of mankind understand it well enough to respond is another matter. It takes time and effort even to start to understand the machinery of nature, and most decision-makers and politicians do

not have that time, or care too little to find it. But the problem goes deeper than that. It is one thing to educate lay people about ecology, even assuming that they might be interested. It is quite another to translate that knowledge into a workable political philosophy, and even harder to put it into practice. Indeed, one reason why the great surge of environmental consciousness that swept through the 1960s fizzled out was because it was politically naive. With millions out of work in Europe, still more starving in Africa, grinding poverty, social unrest, terrorism and super-power confrontation, who cares about newts? The problem is getting decision-makers to understand enough of the machinery of nature to realize that we are slowly degrading the life-support systems of the planet, without being able to predict when things might start to go badly wrong (assuming that they haven't already) and to take a longer view about what is important. We also have to translate environmental science into practical, realistic political policies and, in Huxley's words, govern ourselves accordingly. Ehrlich's book is an attempt to educate, but it has nothing to say about welding science to practical politics.

Of course there is general agreement about some issues. Only lunatics want a nuclear war. Yet the body politic is conspicuously unable to reduce, let alone get rid of nuclear weapons. So we pass laws protecting newts, fiddling quietly whilst Rome teeters on the edge of the holocaust. Worse, we do not even take the laws that we have to protect nature as seriously as we should. It is irritating to have to change your behaviour or, worse, abandon a road-building project for the sake of a newt. Yet if rich, developed nations cannot look after their remnants of wild nature, how on Earth can we expect some of the poorest countries in the world to conserve great rain forests, coral reefs or swamps? Who is going to pay to keep the lions wild, and the deserts at bay?

The forces ranged against conservation are formidable. Some of them are evil, some greedy, some both. But most are simply ignorant of the dangers, and too preoccupied with the problems of today to care about the next generation. I do not pretend for a minute that Ehrlich's book will transform the picture overnight, or even over the next decade. But it will help to educate the growing number of people who want to know about the machinery of nature, and about the stark choices that confront mankind between now and the end of the century. Whether you are concerned about newts or nuclear winters, there must be a better way to manage the planet. The price of failure doesn't bear thinking about. □

John Lawton is a Professor in the Department of Biology, University of York, York YO1 5DD, UK.