

cal-oriented institution for training conservation warriors.

No time for that, replies Daniel H. Janzen, a zoologist at the University of Michigan. If animal and plant species are to be saved, large tracts of land must immediately be set aside, and with its limited funds, about all the WWF can do is act as a broker for rich persons and corporations who would invest in the areas as art patrons invest in a Van Gogh. Practically speaking, "you could knock out all the jaguars in the Amazon and not affect anything," Janzen says, and the only way to save them is to save their environment for basically aesthetic reasons.

The wildlife fund is considering sponsoring demonstration sites where endangered species could be preserved and studied, with the data produced going to help save other species. But such projects have already been carried out, and the worldwide count of field research stations is steadily shrinking, with most of the knowledge they generated resting peacefully in scholarly journals. One speaker told how one research project he knew of had been duplicated almost a dozen times, for lack of communication and coordination, and another speaker pointed out that government and industry were unlikely to listen to any data that did not have immediate economic importance.

At the heart of the problem is an inability of conservationists and decision makers to speak the same lan-

guage, observes Lee M. Talbot of the President's Council on Environmental Quality. And the "alleged" interdisciplinary conservation programs touted by many schools have, in reality, done little to prepare leaders or even restructure the university's own vested interest in research. Better to have a "floating faculty," he suggests, which could visit several institutions and set up programs, particularly in developing countries where the education system might be more amenable to such innovation.

After years of struggle, some lessons, at least, have been learned. Conservationist attitudes are shifting from a species-by-species approach ("Save the tiger") to the larger issues of habitat protection ("Save the Amazon"). The realization has grown that prevention of endangerment is more practical than crisis response and that habitats are more likely to be salvageable before business interests take notice of them. Still, with growth and development the bywords of the age, a conservation ethic is basically subversive. As self-styled devil's advocate Janzen puts it, the leverage of organizations like WWF comes by commanding a moral force all out of proportion to their numbers and economic power, as they forge government and industry policy through a kind of "political subterfuge." On that, Bormann agrees: "Conservation is not just building fences around pieces of land, it is a matter of attitudes—of man's relationship with nature." □

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## Salt, a cause of hypertension

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For years, the origins of hypertension (high blood pressure) have been obscured by a maze of conflicting data and interrelated causes. Now some order is emerging out of the chaos, with common table salt appearing as the commonest single dietary culprit. Though low-salt diets have been common for some time in the *treatment* of hypertension, little has been known about what role sodium in the salt might play in *causing* hypertension. Recent studies, though not revealing a mechanism for the action, strongly indicate a cause-and-effect relationship between salt consumption and development of high blood pressure. They offer, for the first time, a hope of reducing the incidence of hypertension through dietary control.

One of the leaders in the studies is Lewis K. Dahl, chief of staff of the Medical Research Center Hospital at Brookhaven National Laboratory. In an invited lecture last week at Georgetown University Medical School he

summarized the results of current research. According to Dahl, the key to understanding the role of salt in causing hypertension lies in its ability to trigger an inherited defect. Persons free from this defect can apparently eat large quantities of salt without developing hypertension; those who have the defect suffer increased blood pressure while eating only a little salt. Between the two extremes lies a broad spectrum of susceptibility, where the amount of salt a person eats can play an important role in how soon he develops hypertension. As yet there is no way of clinically testing for susceptibility.

Results of both laboratory and cultural dietary studies have led to the conclusion that salt can act as a trigger for hypertension. White Americans eat about 10 grams of salt a day and have about a 10 percent incidence of hypertension. Black Americans eat twice as much salt and have about twice the incidence of hypertension. Eskimos,

who eat only 4 grams of salt a day have virtually no hypertension, while people in northern Japan consume 26 grams a day and have a 40 percent chance of getting high blood pressure.

Genetic susceptibility to hypertension has been studied in rats, which were interbred for either tolerance to salt or for resistance. While the genetic factor has still not been isolated, the susceptibility to salt-induced hypertension has been demonstrated dramatically. As dietary salt was increased for the two groups, the resistant strain of rats showed almost negligible effect, while the susceptible strain quickly developed hypertension, with most of them dying before the experiment could be completed.

The rats were found to be particularly susceptible to salt exposure early in life. When baby rats were fed on human baby food, for example, many quickly developed high blood pressure. Dahl blames this effect on salt that is unnecessarily added to baby food to please mothers' tastes.

Other environmental factors, besides salt, may also trigger the inherited weakness, which is thought to involve some genetically transmitted kidney malfunction. Whatever the trigger, Dahl stresses that the physiological mechanism producing high blood pressure always seems to be the same. An individual developing hypertension from one cause would probably have developed it later from another.

Other experts agree. They hope disclosure of the role salt plays in causing hypertension may lead to basic dietary changes. "This has opened the doors for the first time on how to prevent hypertension," says Georgetown cardiology professor Frank Finerty.

Some baby food manufacturers are already beginning to remove extra salt from their products, but James Scala, director of nutrition for the T. J. Lipton Co., warns of consumer resistance. When his company tried reducing the salt content of some of its products "they went over like a lead balloon," though consumers apparently could not detect the difference in other products.

SCIENCE NEWS asked Dahl what rule of thumb the average person, not already suffering from hypertension, might follow in his intake of salt. He replied that if a family history of high blood pressure exists, intake should be limited to around two grams a day; otherwise, to five. (Minimum standards have not been set, but are certainly less than one gram a day). The average person may have trouble attaining these reductions, however, since almost all processed foods, except for fruits and juices, have salt added to them. □