rently collecting tissues from native species at Chernobyl and at sites with other forms of pollution to better understand the significance of these events to life forms. The perceived value of research collections has not kept pace with these and other developments and, unlike the case with evolutionary biology, there are limited commercial interests in these resources to enhance their visibility. Natural history museum collections have long provided the underpinning for evolutionary theory (Willi Hennig did not need the current powerful molecular and sophisticated computational tools to develop his important systematic and evolutionary concepts and methods) and continue to play a major role in driving the evolution revolution. The value of these collections to the science of evolution and to society is immeasurable.

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Response

Our editorial did not disparage any field of evolutionary biology. Rather, it referred to the history of a negative image of evolutionary biology and the birth of a change in that image. When the public pays for almost all research on evolution, the field's image should reflect the social and economic ramifications of the work. These applications and our ability to experimentally manipulate evolution also need emphasis to scientific colleagues, many of them biologists, who regard the entire field as an anachronism of soft science.

The revolution in evolution is not displacing the foundations of the field, but is built on a long-held fabric of paleontology, natural history, genetics, and other disciplines. We recognize the continuing contribution of all these disciplines to the field, and the special role of museums (as we have been both contributors to and users of several collections, including those of Baker and Yates). Nonetheless, some directions in this revolution have special relevance to social and industrial goals—such as applications in medicine, biotechnology, agriculture, and bioremediation. Our editorial adopted the view that the wider audience is more appreciative of these new applications and that the public image should acknowledge this relevance specifically, but we did not suggest that the field is abandoning its roots.

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Lectins: More than Insecticides

In the article "Institute copes with genetic hot potato" by Martin Enserink (News of the Week, 21 Aug., p. 1124), it is stated that lectins are a "huge family of insecticides that occur naturally in plants." However, it is well known that lectins are a class of proteins that bind sugars specifically and reversibly (*1*). Lectins are ubiquitous not only in plants but also in animals and microorganisms, their main biological function being cell recognition (*2*). Microbial lectins, such as the influenza virus hemagglutinin or the fimbriae of *Escherichia coli* and *Helicobacter pylori*, mediate the adhesion of these organisms to host cells and thus play a key role in the initiation of infection. In animals, the selectins control the migration of leukocytes to sites of inflammation, while other lectins are involved in innate immunity. No wonder there is considerable interest in potential therapeutic strategies to block carbohydrate binding by these different lectins, in the hope of developing novel antibacterial and anti-inflammatory drugs. The role of plant lectins is, however, still an enigma and, although some have been shown to be toxic to insects (*3*), to refer to these proteins as insecticides is misleading.

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More Salt, Please

In his Perspective of 14 August (*Science*'s Compass, p. 933), David A. McCarron comments on the Dietary Approaches to Stop Hypertension (DASH) Trial 2 (*1*). We would like to correct three of McCarron's interpretations of the DASH results.

First, McCarron indicates that the DASH "combination" diet (described below) lowers blood pressure more than sodium reduction, as tested in the Trials of Hypertension Prevention (TOHP) II study (*2*). It is inappropriate to compare the results of two studies with such different designs. DASH was an 8-week, closely controlled feeding trial in which participants were given all their foods from the

study centers. TOHP II was a 3-year trial in which participants were taught to reduce their salt intake, but were free to select their own foods. An ongoing study (DASH 2) is directly comparing and combining the DASH diet and sodium reduction. Results will be available in 2000.

Second, McCarron estimates that widespread adoption of the DASH diet would reduce the prevalence of "moderately severe" hypertension from 9% to 5%. We did not study individuals with the higher pressures McCarron refers to. All DASH participants had diastolic pressure between 80 and 95 millimeters of mercury. It is ill advised to predict the effect of the DASH diet in persons with more severe hypertension.

Finally, McCarron attributes the benefits of the DASH diet to its mineral content (that is, calcium, potassium, and magnesium). The DASH diet was rich in fruits, vegetables, and low-fat dairy products and reduced in total and saturated fat. The DASH Trial deliberately tested whole foods because preceding trials of individual nutrients (usually as supplements) had typically failed to lower blood pressure appreciably. Whole foods are complex combinations of minerals, macronutrients, fiber, vitamins, phytochemicals, and other factors that alone or in combination could lower blood pressure. The DASH Trial was not designed to identify individual factors that might lower blood pressure. While this may frustrate those of us interested in physiologic mechanisms, it offers an advantage in advising the general public. It is easier for people to understand how to eat four servings of fruit, four servings of vegetables, and three servings of low-fat dairy foods per day than to consume prescribed grams of calcium, potassium, or sodium.

CREDIT: ANN ELLIOTT CUTTING

Does reducing salt in the diet lower everyone's blood pressure?

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Response

Moore and his colleagues suggest that my 14 August Perspective misinterpreted the results of the DASH trial. Their assertion that it is inappropriate to compare DASH to TOHP II seems itself to be an inappropriate conclusion. Obviously, DASH and TOHP were different interventions, but the question for physicians and patients is similar to that faced when one chooses a pharmacologic agent to lower blood pressure: which category of antihypertensive drugs is most likely to produce the greatest benefit? TOHP results, both the short- (6 months) and long-term (3 years), are remarkably consistent with the summary analysis of all trials of sodium restriction (*1*). Likewise, the DASH findings are comparable to other trials that increased mineral intake to lower blood pressure (*2*), as well as to a wealth of data from observational studies (*3*). Patients and their physicians would obviously

choose the intervention with the greater likelihood of achieving a meaningful reduction in blood pressure. The data now available appear to make that choice relatively simple—a dietary strategy using the DASH approach is more effective.

Moore and his colleagues express concern about the use of the results of DASH "to predict the effect of the DASH diet in persons with more severe hypertension." Yet, their own analysis of DASH demonstrated that the blood-pressure reductions were greater in subjects with higher systolic and diastolic pressures. Furthermore, in their original article (*4*), the DASH authors themselves appropriately projected the impact of consumption of the DASH combination diet on coronary artery disease and stroke events in our society. My projection of the effects of the DASH diet on the incidence of moderately severe hypertension, therefore, is consistent with the use by Moore and his co-authors of the DASH data to project an impact on cardiovascular end-points. My projection also documented the published sources of data used to arrive at that estimate.

In raising their third objection, Moore and colleagues ignore the fact that, while I mentioned specific nutrients, the overall emphasis of the article is totally supportive of whole foods rather than single nutrients for optimal blood pressure control. This is a conclusion I first articulated in a 1984 *Science* paper (*5*), which identified the very dietary patterns that DASH tested and confirmed as being beneficial to blood-pressure regulation and at least as effective as mono-drug therapy. We now all know that a diet rich in low-fat dairy foods, fruits, and vegetables provides a viable public health strategy to treat and possibly prevent chronic medical problems whose control continues to elude us.

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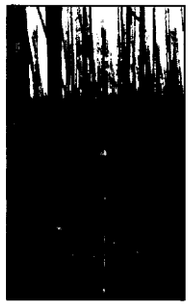
The Burning of Yellowstone—Another Perspective

The article "Yellowstone rising again from ashes of devastating fires" by Richard Stone (Research News, 5 June, p. 1527) describes the struggle to rationalize the official burning of the forests of Yellowstone in 1988. Independent observers who know the status of the park today say that the rosy picture of renewal presented by the National Park Service and by ecologists quoted in this article is not accurate. The photograph shown of young trees sprouting among the blackened tree stumps does not typify 90% of the previously forested areas decimated by the all-consuming fires.

Ecologists who defend the controversial "let forest fires burn" policy that could well destroy the rest of our national parks if it is applied inappropriately do not fully take into account the vast cemetery of burned, rotting, and bug-infested tree stumps that is all that remains of 320,000 hectares of once-beautiful Yellowstone forests, the millions of small animals that were incinerated, and the thousands of tons of topsoil that have washed into stream beds because the stabilizing vegetation was destroyed. The ecologists quoted imply that those who latter struggled to stop the Yellowstone fires in 1988 were misguided, ecologically ignorant souls (this includes most of the general public, leaders of Congress, and the president of the United States at the time).



Yellowstone forest, after the fire

The "miraculous" forest renewal that is described also occurs after controlled burns during off-peak fire season; these burns clean up the forest and make it fire tolerant. Controlled burns at the proper time generally do not incinerate the entire forest and all living things. The cruel irony is that the Park Service has spent more money in the last 10 years to rationalize what it did to Yellowstone than would have been required to carry out a program of controlled burns that could have saved the Yellowstone forest that was destroyed.

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CORRECTIONS AND CLARIFICATIONS

The DNA on the cover of the Genome issue of 23 October was printed incorrectly. The image, meant to be a right-handed helix, was to portray genomic information as a reflection of the commonality of information among life-forms. In showing the mirror image (left-handed DNA), the idea was demonstrated more literally than planned.

In the report "Organic carbon fluxes and ecological recovery from the Cretaceous-Tertiary mass extinction" by Steven D'Hondt *et al.* (9 Oct., p. 276), the images for figures 1 and 2 on page 277 were inadvertently interchanged.