## Looking for Balance

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or better or worse, the debate over environmental policy is dominated by lawyers and economists. Science is invoked constantly to justify positions and outcomes. But the scientists themselves

The Environmental

Pendulum

A Quest for the Truth

about Toxic

Chemicals, Human

Health, and

Environmental

Protection

by R. Allan Freeze

University of California

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337 pp. \$50. ISBN 0-

520-22046-3. Paper,

\$19.95. ISBN 0-520-

22047-1.

are often pushed aside when crucial deals are cut. In *The Environmental Pendulum*, Allan Freeze, one of the world's leading groundwater experts, strides onto the field and firmly plants his slide rule, undertaking a "quest for the truth about toxic chemicals, human health, and environmental protection." His attempt to reach this somewhat grandiose goal meets with mixed success.

Freeze's message is that thinking people must reject the polarization of environmental policy, which produces dramatic fluctuations in our answers to

such questions as how stringently to regulate, how much risk to tolerate, and what priorities to set. Scornful of both the new right proponents of the Contract with America and "selfish" environmentalists who succumb to not-in-my-backyard thinking, he urges us to "stop the pendulum without selling out." Freeze articulates the by-now widespread opinion that we have squandered resources on the cleanup of old dumps while we have spent too little on the prevention of future contamination. He documents his case with painstaking, if overly technical, examples of poor decision-making in the management of hazardous waste.

Freeze is at his best when he deconstructs unrealistic assumptions about how safe disposal will ever be. He offers a coherent triage of the chemicals that should concern us most. Freeze explains why landfills are a necessary evil that inevitably leak, and he argues that the best way to limit the damage they cause to the environment is to place them in geologically desirable locations. He contends that to overcome the syndrome of wasting money on remediation, we must make the siting process more rational. Most important, he wisely introduces the ethical principle of "intergenerational equity" as a factor that should have more influence on environmental decision making. It is momentous to hear a scientist of his stature criticize his profession and its patrons for thinking of costs and benefits in a 30-year timeframe, as opposed to the many more years we hope the planet will last.

Freeze is less successful when he extrapolates from these arguments to make pronouncements about the state of environmental protection across the board. Reciting the by-now hackneyed arguments that we spend far too much per life "saved" on environmental regulations, he relies on the table au-

thored by John F. Morrall that was discredited so convincingly by Lisa Heinzerling in her article "Regulatory Costs of Mythic Proportions" [Yale Law J. 107, 1981 (1998)]. Freeze succumbs to the unfortunate temptation to compare unrelated statistics that is so frequently embraced by more mindless policymakers. He goes so far as to decry the money spent on Superfund cleanups in relation to the low amounts spent on breast cancer research, as if euch programs

as if such programs were in direct competition with each other for

resources and all other public sector expenditures were beyond question.

In his most fragile stretch, Freeze concludes that we are trapped in a regulatory "quagmire." The only example he offers is the unfairness of the Superfund liability scheme. Whatever one may think about Superfund's merits, and however much one might agree that environmental regulation has become uncomfortably complex and inconsistent, the observation of shortcomings is meaningless without a more coherent strategy for simplifying prospective regulation. Such simplification presents a challenge that is very different from the task of cleaning up the legacy of past mistakes. In this regard, Freeze's best suggestion is that we establish parity between private- and public-sector compensation of technical experts. Although commendable and important, this and his other concrete suggestions hardly rise to the level of "the truth" about either toxic chemicals or environmental protection.

But Freeze's largest blind spot is his treatment of the increasingly important topic commonly referred to as "environmental justice." Displaying a disconcerting myopia throughout the book, he characterizes the impact of the regulatory system on poor people and racial minorities primarily as a matter of "overkill" that deprives them of other, again unrelated, necessities. "The roots of environmentalism lie in the hobbies of everyday Americans," he opines forcefully. He identifies bird-watchers, hunters, anglers, hikers, and climbers as both the founders and primary constituency of environmental protection because the benefits of clean water, air, and soil have a "lower value" for the "inner-city poor," who "might prefer that public monies be spent on housing or job creation instead." One wonders where Freeze has been as skyrocketing asthma rates and new waves of lead paint poisoning are reported among the children of the same populations.

Despite these shortcomings, the book is well worth reading, especially for the legions of scientists intent on finding a road map through some of the controversies dominated by their lay colleagues. If *The Environmental Pendulum* is the beginning of a second career, Freeze unquestionably will have an interesting future.

BROWSINGS



Chromatic Fantasy. Leaves in the Midst of Change. *Thomas Eisner*. Sinauer, Sunderland, MA, 2000. Unpaged. \$18.95. ISBN 0-87893-160-0.

Although best known for his research on the chemical ecology of insects, Eisner is also a nature photographer and filmmaker whose work has been widely reproduced and exhibited. This portfolio's 41 plates present closeups of fall foliage as art. When autumn temperatures drop, the greens of chlorophyll fade and uncover the yellows, reds, and blues of carotenoids and anthocyanins. Eisner's images sample the striking patterns formed by differences in hue, intensity, and the effects of insect and microbial damage.

## SCIENCE'S COMPASS

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