

## OF JEREMIADS, JIHADS, AND PLAIN SENSE

Politics is much more subtle than national bandwagons and perfervid pep rallies. And political pressures on journals, though common, are often as dramatic as a request to pass the salt. "My co-workers will be offended if you say they work for me; let's just call them co-workers and leave it at that." "Yes, we're starting up a company, and you've got the plans right. But they're just plans and we're really not equipped to deal with a major disclosure. Would you please hold off for a while?" It usually comes down to a quiet request for a little consideration; sometimes one honors the request; sometimes one judges the material important enough to publish anyway.

Of late, however, we have noticed a pattern that worries and angers us. When Jeremy Rifkin and his Foundation on Economic Trends (FET) bring suit to stop a release of genetically engineered organisms, our sources start asking us to play down their plans for applying recombinant bugs to the environment. When Mr. Rifkin starts howling about transferring genes for human growth hormone, scientists start asking us to delete key words like "human" and "growth" from our references to their work. In other cases, researchers have not only stopped talking about subjects Mr. Rifkin has declared taboo, they have stopped thinking about them as well.

Lawsuits are troublesome things. Even when one wins, one loses—time, money, and reputation are all spent and never returned. Should it shock us that biotechnologists—people with important things to do and learn—should shun this sort of conflict?

By shouting and waving, a lone man can drive tons of beef to new pasture...or to slaughter. Logically, the herdsman can offer his kine no threat; vigor, noise, and persistence are his only weapons. Already, biotechnology firms are making pragmatic decisions to lay down—temporarily, they say—the scalpel of genetic engineering and take up again the blunderbuss of wide-scale mutagenesis and classical breeding. And we have heard rumors of researchers taking their field experiments "underground," as anatomists conducted their dissections in the Middle Ages.

Advanced Genetic Sciences (AGS—Norwalk, CT) sponsored University of California research into non-ice-nucleating strains of *Pseudomonas syringae*. The natural strain is something a joker in the ecological deck; it secretes proteins that prompt ice to crystallize at temperatures slightly warmer than normal. The UC researchers thus developed a strain that was environmentally neutral; they hoped it could supplant the ice-nucleating strain and forestall damaging frosts. Now comes word that AGS is releasing its first commercial product, Snomax™, an ice-nucleating preparation of wild-type *P. syringae*. It will be used to make snow for skiing, to help solidify permafrost for foundations in arctic construction, and possibly to quick-freeze popsicles and quick-cool air conditioners.

Snomax, to be fair, has been in development for several years. And to its credit, AGS continues to work on "ice minus" strains to help preserve some of the \$14 billion worth of crops lost to ice every year. AGS and the UC

researchers are to some extent the accidental victims of this whole affair; certainly, they did not embark on the project intending to hold up a lightning rod for Mr. Rifkin's displeasure. We nonetheless find something ironic in the timing of these developments.

We should point out, too, that Mr. Rifkin's successes have sprung from procedural challenges—the refuge of the politician or lawyer who doesn't have a fact to stand on. We trust—and we hope not naively—that the real issues will someday be considered on their factual merits before a court supple enough to understand them. We will happily pit the scientist's careful spadework against Mr. Rifkin's half-baked claims: that evolution is a dead idea soon to be abandoned by the scientific mainstream; that even the humblest creature has a "mind" that reflects the designs of a cosmic mind; that an organism's development—over its lifetime and through the history of its species—is controlled not by genes, chemical reactions, and the organism's ability to adapt to the prevailing environment, but by hitherto unappreciated "electrodynamic fields," biorhythms, "periodicities," and "temporalities." [Not to mention thrones and dominions.] It is obvious that in the universe of social relativity, Mr. Rifkin is using a yardstick very different from those that make sense to biological scientists. We expect little in the way of rational discussion from his quarter. His purpose is clear:

"To end our long, self-imposed exile; to rejoin the community of life. This is the task before us. It will require that we renounce our drive for sovereignty over everything that lives; that we restore the rest of creation to a place to dignity and respect. The resacralization of nature stands before us as the great mission of the coming age." (*Algeny*, Viking, 1983, p252)

It sounds very nice. But the foundations are flawed and it is all facade. The structure will not hold.

Biotechnology has been more open, more candid, and more responsible than other industries in assessing its own potential for harm as well as for good. The community has far to go, and must doubtless learn some hard lessons along the way. But is it fitting to yield to *this* sort of attack?

Biotechnology—its trade associations, professional societies, executives and researchers—must act decisively to secure for the industry and the public regulation that will safeguard the interests of both. The annual meeting of the Industrial Biotechnology Association was treated to a good dose of very good sense on this head from Harold Green (*BIO/TECHNOLOGY* 2:1015, Dec. 84); its members would do well to listen.

Concern for the public welfare must be paramount, but the public welfare is not Mr. Rifkin's concern. The industry must stop equating the two before it does itself irreparable harm by retreating into a public relations fairy land from which issues nothing but bland assurances. The public and the body politic will not long tolerate such mistreatment. More than this, those who work in the field must stop whispering, stop hesitating. They must ask themselves what is right, scientifically and morally, and stop muttering, "What kind of flak are we going to get from Rifkin on this one?" —Douglas McCormick