

## Trial of Errors

"Pathological Science in Court" by Peter W. Huber, in *Daedalus* (Fall 1990), 136 Irving Street, Cambridge, Mass. 02138.

Scientists have no patience for colleagues who cook numbers and gloss over errors. So it is ironic, says Huber, a Fellow at the Manhattan Institute, that half-baked scientific theories and unproven hypotheses have found a home in, of all places, the American courtroom. During the last decade, he writes, "courts have become steadily more willing to decide factual issues that mainstream scientists still consider unresolved, and to award judgments on the strength of scientific claims that few scientists would endorse."

Huber points to one \$200 million Agent Orange court settlement of a suit based on scientific evidence that even the judge found groundless. Another court handed down a \$4.7 million verdict for the unsubstantiated claim that certain spermicides cause birth defects. Plaintiffs claiming the hazards of microwaves, radon, and extra-

low-frequency electromagnetic fields have also come before judges. "Each favorable verdict," he warns, "each lengthy trial in which the science and nonscience are presented to a jury on cosmetically equal terms, attracts more legal capital, spawns more litigation, and fuels greater public concern."

Huber blames procedural changes for the legal system's acceptance of what the chemist Irving Langmuir called "pathological science." Until the early 1960s, juries in product liability cases decided only whether or not the manufacturer of a harmful product was negligent. Today, they must decide only if the product itself was harmful; scientists' *intentions* count for nothing. Moreover, for half a century the 1923 Frye rule permitted only scientific theories that were "generally accepted" among specialists to be heard in court. But new federal rules of evidence issued in 1975 made no mention of the Frye rule, a green light for judges at all levels to admit nearly any "expert" testimony, no matter how widely disputed.

Unequipped to fathom complex scientific cases even when Frye protected them from questionable scientific testimony, jurors must now also decide whether the "hard scientific evidence" presented to them is actually worthless speculation. That is preposterous, in Huber's view.

Won't some victims be denied compensation if the courts must await a scientific consensus? Maybe so, Huber concedes, but opening up the courts to rank speculation is a greater sin. And science usually moves faster than the Trial Lawyers of America. Huber points out that the courts did not begin handing down verdicts on asbestos until a decade after researchers confirmed that it causes cancer.

To their credit, Huber observes, some judges are beginning to informally reinstate the Frye rule. But many courts are still wide open to the "hundreds of separate legal clinicians who conduct their own forensic diagnoses, reach their own idiosyncratic results."

### Man Bites Mosquito

Noted in *Science*, (Sept. 28, 1990):

*If a promising line of research pans out, you may someday get a chance to help stamp out malaria while inflicting poetic revenge upon one of man's oldest insect enemies. Stanford immunologist Leon Rosenberg believes it may eventually be possible to inoculate humans—not against viruses, but against mosquitoes.*

*Inspired by a series of studies in which cattle injected with ground-up ticks developed antibodies that interfered with the ticks' digestive processes, Rosenberg thinks he might be able to develop a similar antigen for certain mosquito species. Used in a vaccine that is harmless to people, such an antigen would quickly kill any mosquito unwitting enough to bite a vaccinated person.*

*The most obvious application of this technique would lie in controlling the spread of malaria, Rosenberg says. The vaccine wouldn't protect people from the malaria parasite itself, but . . . further spread of the disease could be halted.*