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results of using a particular tactic in any given situation.

Computers are also at work off the playing field. For example, Oakland's best pitchers were startled to learn at contract negotiation time that the team's computer attributed much of their success to extraordinary catches by their teammates in the outfield. Major league scouts track the careers of 3,000 U.S. minor league players by printout. Such traditional scouting reports as "He's got an arm that can throw a lamb-chop past a wolf" may no longer suffice.

But baseball romantics need not despair, writes Weissman. Discussions of America's favorite pastime have always been punctuated by statistics and probabilities—batting averages, earned run averages, strikeout percentages. Now fans will just have more numbers to chew over during the TV commercials. Computers will inevitably spread to the remaining 23 major league teams, but the point of the game will remain the same: to beat the odds.

As Casey Stengel observed some years ago, "Baseball ain't nothing more or less than the science of getting 27 outs."

When Scientists Betray Truth

"Madness in Their Method" by Nicholas Wade, in *The New Republic* (June 27, 1983), 1220 19th St. N.W., Washington, D.C. 20036.

When scientific fraud comes to light, it is often cited as proof that "the system works." Organized science is self-policing, say its champions, and cheaters can count on being caught. According to Wade, a *New York Times* editorial writer, the surge of scientific plagiarism and data fabrication cases over the past 12 months suggests just the opposite.

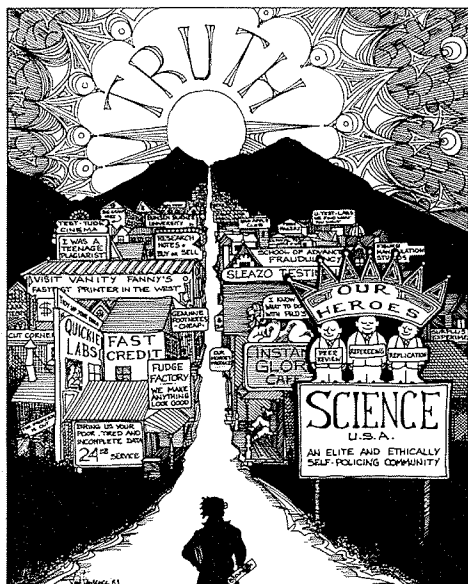
In principle, science's self-regulation depends on "peer review." Specialists assess proposals for research grants and manuscripts submitted for publication. Other scientists repeat, step-by-step, the experiments reported by their colleagues in scholarly journals.

In fact, contends Wade, scientists rarely replicate colleagues' work; there is no glory in doing something already done by someone else. And peer review has failed to detect many recent scandals.

For example, noted heart researcher John Darsee spent 14 years, mostly at Emory University and Harvard Medical School, fabricating data, but he wasn't found out until Harvard colleagues skeptical of his productivity secretly observed him at work. Even then, the directors of his laboratory (who had happily shared credit with Darsee for some of his findings) and a blue-ribbon committee appointed by the dean of the Harvard Medical School cleared him of any wrongdoing. It took a truly independent panel of the National Institutes of Health to uncover Darsee's scam.

Modern science is not only a quest for truth, observes Wade. It is a career. And cutting corners can speed success. Prominent scientists hire researchers like Darsee who receive little supervision and are under pressure for publishable "results." The apprentice system should be re-

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Scientific fraud has a long history: Ptolemy, who argued 1,800 years ago that the Earth was the center of the universe, cribbed observations from others. Yet public confidence in science is strong.

formed so that true collaboration (and oversight) is a prerequisite for co-authorship of scientific books and articles, argues Wade.

Journals so obscure that not even specialists read them also contribute to the problem. Otherwise, how could medical researcher Elias Al-Sabti have published 43 plagiarized articles over a six-year period before he was finally exposed in 1980?

It is hard to say how widespread scientific dishonesty is. But fraud is more than a problem of "a few bad apples," Wade concludes. "Fraud in science has a lot to do with the barrel."

A Challenge to Continental Drift

"Faulting Continental Drift" by Paul D. Lowman, Jr., in *The Sciences* (July-Aug. 1983), P.O. Box 356, Martinsville, N.J. 08836.

The theory of "continental drift" has settled comfortably into the minds of most geologists. But Lowman, a National Aeronautics and Space Administration geologist, believes that while portions of the Earth's crust move, whole continents do not.

Geologist Alfred Wegener first propounded continental drift in 1912. He argued that the seven continents began as one "supercontinent," which he called Pangaea, that fragmented 200 million years ago. Its descendants, according to the theory, are still drifting apart.