

Galileo, old and new

One of our editors liked Bertolt Brecht's *Galileo* as it was presented at New York's Lincoln Center of the Performing Arts.

At first glance the problem of the play seems solved. "Ye shall know the truth, and the truth shall make you free" is so much a part of science that we take it for granted. Nowadays few physics experiments are suppressed.

But the rule does not apply universally. Brecht, for example, wrote two versions of his play, one after Hitler had come to power and the other after the bombs had fallen on Hiroshima and Nagasaki. Now the play is presented in a world that tolerates censorship, suppression of personal travel and restrictions on the transport of literature. Although science has learned its lesson about the value of intellectual freedom, it has not completed the job of passing on the information to its colleagues.

Analysis for Wall Street . . .

With many scientists growing rich on fruitful inventions and assaults up the administrative ladder, Albert Gold of the University of Rochester Institute of Optics sees a clear need for training researchers in wealth management. "One need but look to the medical schools with their courses in medical economics to see our way clearly marked," he told me.

Recently Gold organized an undergraduate course titled "Optics and the Stock Market," with a formidable \$1000 entrance fee. Typical topics included the stock market as a stochastic process, fitting the Dow-Jones average with orthogonal functions and Hetty Green's function. Despite meager student response to the course, Gold retains enthusiasm for this new educational venture.

"The market is too complex to be amenable to rigorous mathematical treatment," he told one of our editors. "However it is just this fact that especially suits the physicist, long trained in approximations and model making.

For example several of my colleagues have done very well buying securities on the basis of impulse approximation. Others have used group theoretical buyer-seller symmetry relations to see the fallacy in such popular explanations as 'The market declined today because of heavy selling.' With such insights in hand and a bit of knack for their application, members of the profession are well prepared for second careers as Wall Street investors, traders and speculators."

. . . and playing the horses

If speculation interests you, let me call your attention to a book that a fellow brought in recently. It seems to have some bearing on whether physicists, by selection or training, have minds that are effectively applied to more complicated matters than physics—like people and government and horse racing.

Horse Sense, published in 1965 by David McKay Co., is by Burton Fabricand, a Columbia physicist who spends a lot of time worrying about molecular beams and nuclear magnetic resonance. It is, says the cover, "a new and rigorous application of mathematical methods to successful betting at the track."

The system is based on the author's "Principle of Maximum Confusion," and claims that you win money when the crowd underestimates a horse (in terms of the facts available) and you use your slide rule to find out if a wager is favorable. The book has lots of formulas and examples to show you how.

If you're interested in how a physicist transfers his instincts from lab to track, you will enjoy chapter 1, which ranges from Newton and quantum theory to the urge to gamble, chapter 4 ("Horse Betting and Democracy") and chapter 5 ("The Principle of Maximum Confusion"). If you want to take the book seriously (a tendency the editors around here seldom resist) you will look carefully at Fabricand's assertion that one should recognize "the horse track as a labora-

tory for the study of human behavior, one of the few available." "The science of betting on horses is," he says, "as much concerned with people as with horses."

A lot of my friends think that the physicist is a remote kind of a fellow in a lab coat. I carry the book around with me to show them that he might also be an intensely interested better with his sleeves rolled up at the race track.



Cartoons and smoke photos

The editors asked me to make their apologies. They neglected to give credit for the subsonic-smoke-jet photograph on page 26 of the July



JUDD

PHYSICS TODAY. It was made by scientists at the Avco Everett Research Laboratory.

While I am at it, let me tell you about the two men responsible for those cyclotron cartoons in the August issue. David L. Judd is head of the physics division at Lawrence Radiation Laboratory, Berkeley.



MACKENZIE

Ronald MacKenzie is a draftsman at LRL. The cartoons were a joint effort that started as a conception of Judd's for a keynote address he was asked to give at an Oak Ridge conference on sector-focused cyclotrons. MacKenzie rendered many of them from Judd's sketches and embellished several with ideas of his own. □