dustry, an employee being lured away every couple of years by a higher paying competitor. As people move, new ideas and designs go with them—to the chagrin of some industry executives and the delight of others. During the tour of Hewlett-Packard, one engineer who commented on this more-or-less legal form of industrial espionage noted that the situation probably bodes well for the future of the U.S. electronics industry. In Japan, where there tends to be a life-long identification with a single company, design ideas sometimes go stale. In the United States, on the other hand, job-hopping has pushed creative tension to new heights.

Paranormal Powers Are So Much Hocus-Pocus

"I feel a little silly, as a grown man, watching kids try to bend spoons while I'm not looking. But I've put up the money, and no one can say I'm not sticking to the bargain."

James Randi, a bearded magician and a founding member of the Committee for Scientific Investigation of Claims of the Paranormal, has been trying to give away $10,000 for the past 15 years. More than 300 people have tried to claim the prize by demonstrating their paranormal powers. All have failed.

"ESP experts and blindfolded psychics have proved better at sleight-of-hand and mouth than they have at genuine psi powers," he says. "Though they make wild and wonderful statements about their powers, examination proves that they are either self-deluded or out-and-out fakes."

Randi sought out three more candidates for the prize during the recent AAAS annual meeting. One was David Evans, whose father, physicist Lawrence Evans declared himself stunned when little David was able to bend spoons after taking a course offered by the Santa Clara County school system. Another was Wilfred Laine of the Veterans Administration Hospital, who has learned how to bend spoons and forks with his mind after studying with a local psychic. A third was a girl in East Richmond Heights who, according to her father, punches holes in plastic butter lids using her mind alone, and also can cause soy sauce to teleport through space.

"With all the claims of paranormal power that we see every day in the press," says Randi, "you'd think that I'd have many more people lined up to take the prize. As it stands, just 52 persons have passed the simple preliminaries, only to fail to support their claims to supernatural powers."

History of Science Losing Its Science

Once a highly respected field that focused on the conceptual evolution of scientific ideas, the history of science is losing its grip on science, leaning heavily on social history, and dabbling with shoddy scholarship.

That, at least, is the situation as seen by Charles C. Gillispie, a historian of science at Princeton University who spoke at the AAAS annual meeting. Gillispie warned the attending scientists to keep a close watch lest the field fall prey to those who would use history against science.

Take a recent round table at the Princeton University school of political science, for example. "Do scientists have blood on their hands?" was the title of a discussion on the history of atomic weapons that Gillispie attended on a whim. The predictable conclusion, he said, was that they do. "There was no one present, either on the panel or in the audience, who knew how the technical prospects for atomic weapons appeared to the physicists concerned at any of the junctures at which they sought to make known the possibilities. The atomic bomb was treated as a foregone conclusion from the moment Hahn and Strassner split the uranium atom—though none of the panelists had the least idea what in fact had happened, and only a vague idea of when it happened."

Less odious but still troublesome to Gillispie are social histories that ignore science altogether, such as studies that deal with the role of women in a particular scientific institution but omit their actual scientific work. "The effect," he says, "is a little like a social history of Philadelphia in 1776 which never mentions political theory and where the signers of the Declaration of Independence are men about town."

Another trend, he said, is that scholars focus on the personal and anecdotal: Newton on alchemy rather than on motion, Kekule's snake dance rather than the benzene ring, Darwin's neurosis rather than his marshaling of evidence. Some so-called scholars focus on scandal. Did Mendel really falsify his data? Did Hale really hate his wife? "These scholars," says Gillispie, "have a lust for just the sort of thing most rigidly ruled out of court in the science we do now—the irrational, the personal."

Gillispie's position, unusual for having been taken in public, is privately expressed by many old-school historians of science. When the field was first founded, many of these scholars were themselves scientists. After studying mathematics, a "hard" science such as astronomy or physics, and the modern languages in which science was transmitted, they learned Greek, Arabic, and Latin. They studied old texts. George Sarton, who helped found the field shortly before World War I, is said to have been perfecting his Mandarin in his late 60's.

During the past two decades, however, students of science history have tended to be political scientists who know little of science and its history and who focus on the social implications of science. "Feelings here are so strong," says Gillispie, "and the science so technical, that any thought of controlling judgement of the events by knowledge of the science is normally abandoned at the outset. The more sensational the title, the less the sensitivity to the reciprocity of the influences between physics and politics or war, and the grosser the depiction of scientists as hucksters of weapons and research."

Though Gillispie says there is doubtless much to be learned from this approach, the trend is sometimes taken to extremes. "Scientists should pay attention to what historians and other social scientists are making of their enterprise. They should exercise a measure of vigilance, at least over the references to technical matters that even the most externally minded commentators cannot altogether avoid."

William J. Broad