gifted man who definitely deserved a place in Kannenberg's article, considering that he was truly a "fiscal physicist."

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## Correcting the Record on Jordan, Zermelo

The suggestion of Engelbert L. Schucking (PHYSICS TODAY, October 1999, page 26) that Pascual Jordan is still widely unknown outside the physics community is quite correct. The 1997 edition of *Chambers Biographical Dictionary* contains a short paragraph on "(Ernst) Pascual Jordan (1902– ) German theoretical physicist." Evidently, 17 years after Jordan's death, the editors of the dictionary were not aware of it. Several current popular biographical dictionaries of scientists contain no mention of Pascual Jordan at all. What is more striking is that for many years after World War II, even physics students were hardly aware of Jordan and his work. David Bohm's 1951 textbook *Quantum Theory* does not mention Jordan at all. The 1958 4th edition of Paul Dirac's *The Principles of Quantum Mechanics* makes no mention of Jordan. Nor is he mentioned anywhere in Richard Feynman's *Lectures on Physics* (1965). So for many years, he remained the mysterious third party in the Born–Heisenberg–Jordan genesis of matrix quantum mechanics, an unmentionable person even to students of quantum mechanics.

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I hate to spoil a good joke, especially one by Wolfgang Pauli, but the Felix Klein comment recounted by Engelbert Schucking is spoiled by the facts. Schucking reports having heard the joke when Pauli regaled him and Pascual Jordan with anecdotes about Ernst Zermelo's days as a *privatdozent* at the University of Göttingen, when the math department had been ruled by Klein. Schucking tells us that Zermelo's punch line, "Felix Klein isn't a mathematician," had then been topped by Pauli's laconic remark, "Zermelo was not offered a professorship at Göttingen."

In fact, Zermelo had been appointed professor at Göttingen in 1905, during Klein's tenure as top dog.

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## Sticky Things Heat Up, Cool Quickly

The article entitled "On Stickiness" by Cyprien Gay and Ludwik Leibler (PHYSICS TODAY, November 1999, page 48) is excellent in its coverage of most of the subject of stickiness, but it misses one important topic—the temperature changes involved in the stretching of an adhesive. It is well known that the temperature in adhesive tape increases rapidly and then falls just as rapidly after separation. For information on this topic, your readers can consult Robert J. Good's 1971 paper and my 1995 book.[1]

### References

1. R. J. Good, in *Aspects of Adhesion*, D. J. Alner, ed., U. of London P., London, England (1971). H. H. Hull, *Thermodynamics of Rheology*, Society of Plastic Engineers, Brookfield, Conn. (1995), especially chap. 7, p. 53.

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## Physical Information Before Landauer

The article on the future of computing by Joel Birnbaum and R. Stanley Williams (PHYSICS TODAY, January 2000, page 38) makes exciting reading. Their allocation of credits, however, leaves me a little unsure.

The authors say Shakespeare gave the lines "the fault, dear Brutus, . . ." to Julius Caesar. Actually, these are Cassius's lines.[1] The full quote is "The fault, dear Brutus, is not in our stars, but in ourselves, that we are underlings." Julius Caesar, who was not an underling, would not have made this remark.

Also, Birnbaum and Williams give the impression that Rolf Landauer was the first to understand that computation is physical and related to entropy. I learned this point from Léon Brillouin's 1956 book,[2] but it was pointed out to me that Edwin Jaynes had already published these results in 1957.[3]

I am not sure whether there was cross influence between him and Brillouin or not. Both discussed the physical nature of information quite independently of the electronically mechanized logic gate. This was at a time when digital computers still used vacuum tubes. (By the way, Jaynes's obituary appears in the same January 2000 issue of PHYSICS TODAY, page 71.)

### References

1. W. Shakespeare, *Julius Caesar*, Act I, Scene ii, lines 140–141.
2. L. Brillouin, *Science and Information Theory*, Academic Press, New York (1956).
3. E. T. Jaynes, Phys. Rev. **106**, 620 (1957).

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## Correction

**November 1999, page 25**—The second part of the third sentence in the figure 1 caption should read: Foam wedges 1.2 m long on the walls of the room make the room strongly absorbing for wavelengths shorter than 5 m, or frequencies above 70 Hz. ■