

for safety and security, were concerned that such a bomb might arrive at Los Alamos.

One bright sunny day as I walked back from lunch to the Technical Area I noticed many people looking up at a bright point in the sky. There, drifting overhead, was one of the dreaded bombs. Some people on the street were using binoculars and thought they could see the payload attached to the spherical balloon. Rumors abounded about triangulation measurements that gave numbers for the elevation and direction of motion of the balloon. Interest remained high through much of the afternoon. But at sunset the object had drifted well to the west, and the next morning the object rose in the eastern sky. We were all amused that a planet had caused so much concern.

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I took exception to the article "Pathological Science." While the article is informative and interesting, I could not help but feel from its timing and tone that it was a thinly veiled indictment of the researchers who have reported observing cold fusion. It is still premature to dismiss those findings. Perhaps when and if the cold fusion results are retracted, this article will provide an interesting perspective on the phenomenon. Until that time it should be noted that cold fusion is not unlike many other new phenomena that seem at first to be counterintuitive, controversial and irreproducible. One need only think back to the appearance of high-temperature superconductivity for one example. Perhaps PHYSICS TODAY might review the initial resistance to acceptance that other landmark discoveries have faced, rather than hopping on the bandwagon of those who find it rewarding to engage in a cold fusion witch-hunt.

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## Shapley's Poor Seeing of Astronomy's Future

According to *The Diary of H. L. Mencken* (Charles A. Fecher, ed., Knopf, New York, 1989), Harlow Shapley's crystal ball was no better than Ernest Rutherford's. Add astronomers, female scientists, fans of Robert Millikan and those who do not think of Rutherford as an astronomer to those who will now be sore at Mencken. The following is a portion of the entry in his diary for 25 April 1931:

Alfred Knopf and I arrived in Boston night before last and, after a placid sleep at the Ritz-Carlton, went out to Cambridge yesterday morning to see various bigwigs....

We had lunch with Harlow Shapley, the astronomer, at the Faculty Club. He turned out to be an inconspicuous and somewhat rustic looking man, apparently in the late forties. But the more he talked, the more his rusticity vanished. He said that the new 200-inch reflector, now being made, will be of very small value to astronomers save as an advertisement to their profession. He said that practically everything it may be expected to accomplish could be accomplished by the existing telescopes. The latter have already revealed millions of stars, and studying them will occupy astronomers for the better part of a century. Shapley said that the Harvard Observatory needed no more than two or three really competent astronomers. The rest of the work is done satisfactorily by persons with relatively meager equipment. Some of them are girls from the women's colleges. Shapley said that he was opposed to training astronomers in any number. He said that the number of places open for really competent men is small, and that it would be very easy to overcrowd the profession. He expressed strong disapproval of Robert A. Millikan, and especially of Millikan's efforts to reconcile science and religion. I gathered from his talk that he himself is a thorough-going skeptic. He told us of a devastating saying, at Millikan's expense, by Sir Ernest Rutherford, the English astronomer. Rutherford said that publicity grabbing has become one of the learned sciences and a great force in modern life, and that it has become necessary to set up a unit to measure it. This unit, he said, is the *kan*. It is, however, so large that it has become necessary to resort to a workable fraction of it. This fraction is the *millikan*.

When I was a student and junior faculty member at Johns Hopkins in the 1940s, I encountered Mencken a couple of times at the Hamilton Street Club when I was taken there by my adviser and friend Gerhard H. Dieke. I remember Mencken as acerbic, opinionated and egocentric, but outrageously amusing. He wasn't

particularly well informed about science, but he certainly professed to be well informed about important people, eminent scientists among them. There does not seem to be any way he could have invented the contents of the conversation with Shapley, although, of course, his interpretations may have been somewhat hyperbolic.

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## Cold Fusion Theorist's Unwithdrawn Papers

In the news story "Doubts Grow as Many Attempts at Cold Fusion Fail" (June 1989, page 17), Barbara G. Levi writes, "An MIT theorist has withdrawn a paper suggesting how this [helium-4 production in a palladium lattice] might occur." I assume Levi was referring to Peter L. Hagelstein of the department of electrical engineering and computer science, who in April submitted four related papers on a theory that attempts to explain evidence for what some believe to be cold fusion. He submitted his papers to *Physical Review Letters* and subsequently made a number of revisions to them—resubmitting the modified versions each time. In a conversation with Hagelstein on 2 June, he assured me—rumors notwithstanding—that at least as of that date he had not withdrawn his papers.

(Note added in proof: Hagelstein delivered a paper on a modified version of his theory, "Coherent Fusion Theory," on 12 December 1989 at the cold fusion session of the winter annual meeting of the American Society of Mechanical Engineers in San Francisco. This new version of his theory suggests that tritium and heat are the byproducts of possible cold fusion reactions.)

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## Corrections

**December, page 9**—Armand Wyler's formula for the fine-structure constant was

$$\alpha = \frac{9}{8\pi^4} \left( \frac{\pi^5}{2^4 5!} \right)^{1/4}$$

**December, page 17**—In the hydrogen maser developed by Norman Ramsey and Daniel Kleppner, atoms were confined by means of a quartz storage bottle coated with Teflon, not a "magnetic bottle."