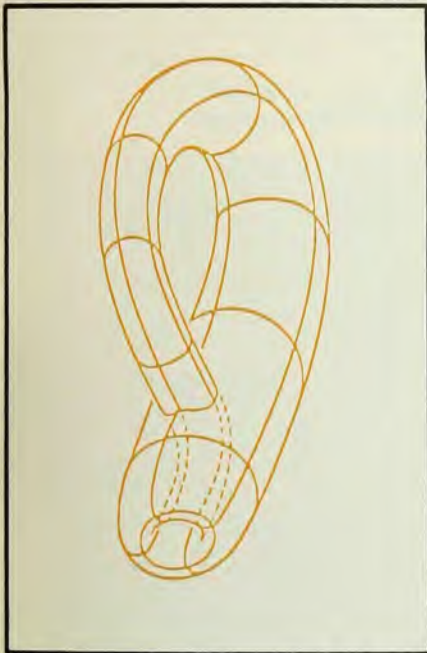


Klein bottle as crucible

Recent published descriptions of a stellar system being drawn into a "black hole" bring to mind the possibility that the Einstein cosmos is not everywhere smooth and continuous but presents structural singularities, which in this instance is known in topology as the Klein bottle.¹

The extension of the black-hole concept to the bottle means that all geodesics form closed loops on the one-sided surface; thus the interior part of the surface cannot transmit any electromagnetic radiation. The 180-degree bending of space at the entrance of the bottle would be accompanied by an intense gravitational field that would not only attract an errant stellar system but would also hurl it into the bottle.

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If the system captured is in mild fusion, such as the solar system where the energy generated is in equilibrium with the energy radiated, adiabatic conditions will favor a rapid rise in temperature to bring about (with further temperature increases) the fusion of all elements down to the minimum of the mass-deficiency curve. Enough energy will be left over for conversion to mass and to bring about the formation of the elements on the rising portion of the curve to uranium and perhaps beyond. Expansion would force the "white-hot" system through the unsubstantial wall and cause it to appear as a bright Nova, which would now be able to radiate its energy rapidly. Thus the Klein-bottle structure may be Nature's

crucible for the formation of the elements through a continuing series of "small bangs."

The fact that the crust of the Earth contains all 273 stable isotopes plus valuable unstable ones, few of them from the Sun, indicates that some previous solar system went through the crucible to emerge as a Nova.

Reference

1. D. Hilbert S. Cohn-Vossen, *Geometry and the Imagination*, Chelsea Publishing Co., New York, N.Y., 1956, page 308.

B. A. LANDRY
Columbus, Ohio

Conflicts of interest

President Panofsky's plan, authorizing APS officials to give advice to the federal government (April, page 119), raises profound questions about the propriety of one person, or a handful of persons, using the prestige of the entire physics profession to influence national policy. (We certainly have come a long way from the modest suggestion of the "Schwartz Amendment," voted down in 1968, that the APS membership as a whole might express its collective opinion on matters of broad concern.)

One issue that must be faced squarely by any organization claiming to speak "in the public interest" is the possibility of conflicts of interest. It is a fact that many officials of the APS are not only "physicists" but also have private professional relationships with certain industries, government agencies, non-profit institutions and other organizations that may have a vested interest in many issues that overlap physics and public policy.

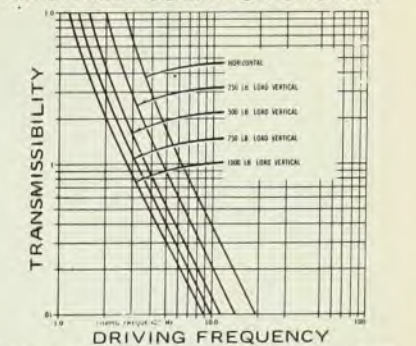
I suggest that the APS institute a policy of regular public disclosure of all professional affiliations for all APS officials and members having any involvement with government in the name of or under the sponsorship of the APS. Such a policy implies no slur upon the integrity of any individual; it is simply the logical means of building and maintaining public confidence. (Remember the Watergate.)

This is not a new proposal; it was first presented to the APS Council five years ago (see Bull. Am. Phys. Soc. 14, pages 715 and 774, 1969). The council rejected this idea and simply reaffirmed the old practice of letting candidates for election write their own bibliographies for circulation with the APS ballot. I assert that this system for informing the APS electorate about the affiliations of its officials is highly suspect, since it encourages candidates to disclose or to conceal information so as to create the most advantageous image.

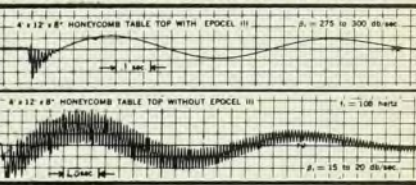
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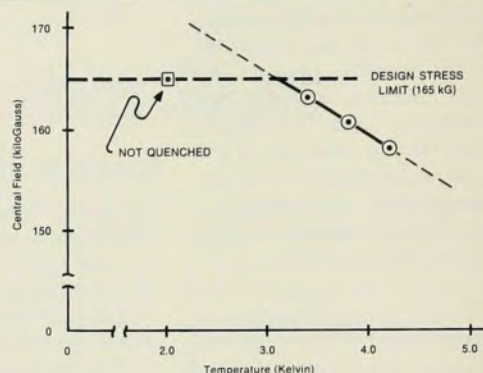
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Quench Field at 3.0K	165 kiloGauss
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letters

tion biographies for the last five years, I have found several people now identified as members of the Jason group of Pentagon consultants. None of these men mentioned Jason in their list of credits, and only one of them (M. L. Goldberger) acknowledged any involvement at all with the Department of Defense. By way of contrast, three did choose to list their consultancies with the Arms Control and Disarmament Agency (F. J. Dyson, W. K. H. Panofsky, S. Weinberg).

In a letter to me, explaining why my 1969 proposal was rejected by the APS Executive Committee, then President L. W. Alvarez wrote: "I do not see how one can find a proper cutoff point for information if one does not restrict it to information concerning one's ability to serve the Physical Society. I think that if I happened to be a member of the Board of Deacons of the local Presbyterian Church, it would be none of the Physical Society's business. I feel the same way about my directorship on the board of the Hewlett-Packard Company, which is known to most of my friends and associates."

The APS's new ventures into the national political mill make it imperative that we recognize the difference between the physics interests of a local church and those of a 500-million-dollar-per-year electronics corporation. And it is high time we broke down those barriers of secrecy surrounding the leaders of the physics establishment, whereby their own "friends and associates" know of their manifold connections but the rest of us are kept in ignorance.

CHARLES SCHWARTZ
University of California
Berkeley

Selling yourself

I think we can get an idea of the present state of our profession from the instructions sent to applicants by the APS Doctoral Employment information Service, which contained examples of what were likely to be "effective" and ineffective resumé. The "good" resumé, besides being a bit more specific, contained phrases like: "I enjoy teaching and have a flair for it," "I have developed a successful new approach" which "heightened student interest" and was "well received by both students and faculty," "The challenge was...", etc. These seem to be examples of a technique, well known in the advertising industry¹, of using words and phrases that convey no information, or, at best convey the applicant's opinion of himself or his opinion about others' opinion of him, but which nevertheless will elicit a positive emotional response. What

they seem to be telling us is that if we are going to survive in today's catastrophic job market, we've got to sell ourselves as if we were selling vacuum cleaners door to door. Since this statement is almost certainly true, I can find no fault with the Doctoral Employment Information Service for telling us so, except perhaps to note that since job hunting is a zero-sum game, any advice or advantage given to all competitors really leaves each one exactly where he was before with respect to the others. What is saddest, however, for the future of our profession is the fact that the best vacuum-cleaner salesmen do not necessarily make the best physicist or physics teachers, and even worse, the best physicists do not necessarily make good vacuum-cleaner salesmen.

Reference

1. C. P. Wrighter, *I Can Sell You Anything*, Ballantine Books, New York (1973).

ROBERT J. YAES
Memorial University of Newfoundland
St. John's

Biographical addendum

In the July issue (page 51) Milton Burton reviews my recent book, *Radiation of Chemistry of Monomers, Polymers, and Plastics* (Marcel Dekker, 1974). In the last paragraph of his review he seems to doubt that I actually worked at the Metallurgical Laboratory of the University of Chicago.

The old Metallurgical Laboratory was the forerunner of what is now the Argonne National Laboratory. The fact of my employment could readily be checked by writing or calling the personnel department of the latter.

Burton also seems to question the fact that I worked with Farrington Daniels at the Metallurgical Laboratory. Daniels is not alive to speak to this point, but I can affirm that he and I did have a warm and cordial relationship at the laboratory. That was a happy time in the early part of our marriage for my wife and myself, and our first child, Virginia, was born at the Lying-In Hospital of the University of Chicago.

JOSEPH E. WILSON
Bishop College
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