

letters

continued from page 15

(*Physical Review Letters* 54, 2692, 1985) should have been inserted as reference 7 in the discussion on conductance fluctuations. As mentioned in the Physics News section (page S-20) of that issue, it was Stone who clarified the effects of the magnetic field on the conductance fluctuations in the wires, and his calculations were critical to the interpretation of the experiments.

SEAN WASHBURN

IBM Thomas J. Watson Research Center
2/86 Yorktown Heights, New York

Physicists' terminology

Over the years there has been a steady accumulation of properties that help to distinguish physicists from mathematicians. I wish to add to this list by defining a physicist as someone who uses the word "finite" when he really means "nonzero." I have discovered that while physicists universally acknowledge the incorrectness of this choice of words, they are just as universally surprised when it is pointed out to them. The use of expressions such as "finite temperature" and "finite frequency" is extremely widespread even though the point of these expressions is not the exclusion of infinity. This implied meaning of "nonzero" comes through quite clearly in the phrase "small but finite temperature," which is taken directly from a conversation I overheard yesterday.

I can offer no theory on how this misuse of words might have arisen. I also doubt very much whether the awareness raised by this letter will change the situation; the probability of that event I confidently predict to be "not finite!"

VEIT ELSEER

AT&T Bell Laboratories
9/85 Murray Hill, New Jersey

Extraterrestrials

Apropos of Eric Jones's letter (August, page 11) I propose an answer to Enrico Fermi's alleged question in reference to extraterrestrial intelligence, "Where are they?"

Being more intelligent than we, "They" have long ago achieved population equilibrium on their own planet and implemented an economy in harmony with their environment based on recycling nonrenewable resources, and thus need not export surplus population into space nor seek raw materials. They are, of course, motivated by scientific curiosity to explore, but (unless our estimates of interstellar distances

are drastically wrong, and assuming relativity—and a lot of other physics as well—cannot be "beat") simply have not made it this far—at least not with "manned" vehicles. Having achieved planet-wide respect for "human" rights besides, they have no volunteers willing to spend lifetimes in space cooped up on craft that, whatever advance amenities they might be equipped with, are about as interesting as sealed-in shopping malls on a spring day, just to look for life on other planets.

On the other hand, "We" have a long history of always fouling one nest and then moving on to another: Old World-New World, Snow Belt-Sun Belt, Cities-Suburbs-Exurbs. Are we now to have space refuges from our polluted planet, "undesirable" races (the ultimate in apartheid) or perhaps fallout shelters for those who can pay (they won't be cheap)?

The more appropriate question is, "Where are we?"

JAMES B. COLE

University of Maryland
9/85 College Park, Maryland

APS instrument group

Devlin M. Gualtieri's comment (December, page 11) regarding the formation of the Instrument and Measurement Science Group, to the effect that this topic should be the province of IEEE, would be appropriate if instruments and measurements were limited to those that are electrical. Important classes of instruments and measurements are not, although electrical and electronic techniques may be useful in their implementation.

HENRY ERNST SOSTMAN

Yellow Springs Instrument Co
12/85 Yellow Springs, Ohio

Journals for the needy

In the January 1985 issue of *PHYSICS TODAY* (page 125), there was a brief letter from William Foland offering his back issues of journals free to anybody for the cost of packing and shipping. As I wrote to him, informing him of the longstanding program of shipping such surplus journals to libraries in the developing countries, I had a feeling of discouragement and futility.

The program for channeling such journals to developing countries, managed by the International Centre of Theoretical Physics in Miramare 34100, Trieste, Italy, and at present handled there by H. Dalafi, has been successful to the extent of tens of tons of journals. The tens could, however, be easily hundreds or more except for one factor: publicity.

Those of us interested in placing science on an equal footing around the world have been asking *PHYSICS TODAY* for years to place, perhaps three or four times a year, an inch or two of reminder of this journal distribution program. We have been unsuccessful in our request. Isn't it discouraging that a professional organization like AIP, whose member society APS even has a committee for international activities, is unwilling to take full advantage of such a ready opportunity to benefit both the donor and the recipient of much-wanted back issues of journals?

MICHAEL J. MORAVCSIK

Institute of Theoretical Science
2/85 University of Oregon
Eugene, Oregon

THE EDITOR REPLIES: This magazine does not have sufficient space to cover many worthwhile activities repeatedly.

Scientific communication

A recent editorial by Robert R. Wilson (July, page 128) begins with the sentence "The American tradition of freedom of scientific communication is seriously threatened." The threat, he claims, is due to the restraints placed on the scientific community by the US government. It seems that Wilson has not been reading the *Letters* columns concerning the restraint of communication by the reviewing process of this scientific community.

Most recently, Robert C. Stabler (February 1985, page 107) complained that he had lost a seven-month battle with *Physical Review Letters* without receiving a single comment on the accuracy of the results in the manuscript. In a rebuttal letter the editors claimed that "the refereeing his paper received, which was expert and thorough, was also unanimous in recommending that it not be accepted." This is an interesting statement, considering that Stabler received no comment on his results.

Stabler can take comfort that it took him only seven months to lose. I recently lost a 17-month (February 1984 to July 1985) battle with *Physical Review*, also without seeing a single comment on the results in the manuscript. It began with a three-sentence "review," one sentence of which was the rejection. With the first "review" in hand, the second referee agreed that it should not be published. In the formal appeal process, the editorial-board member could not bring himself to give a signed opinion for a year. The editor in chief finally sent it to a second board member, who submitted an opinion not on the manuscript, but rather on my published work upon which the

Vacuum components and Tubing products

Vacuum couplings

VCO® VCR® and ULTRA-TORR® Couplings meet a full range of application needs from low to ultra-high vacuum, with or without bakeout capability, in sizes from 1/16" through 1".

Weld Fittings — Two styles available:

Automatic Tube Weld Fittings are designed for use with automatic orbital head tube welding equipment. Made from 316L or 304L stainless steel for ease of welding. Wide variety of configurations in sizes 1/4" through 1".

Conventional butt weld fittings are lightweight and provide high conductance connections. Available in crosses, tees, elbows and 180° bends in sizes 1/4" through 3/4".

Tubing

Flexible stainless steel tubing, flexible glass-end tubing and glass/metal transition tubes are available in a wide range of diameters and lengths for vacuum or pressurized systems.

All CAJON Vacuum Products are immediately available from your local Authorized Sales & Service Representative.



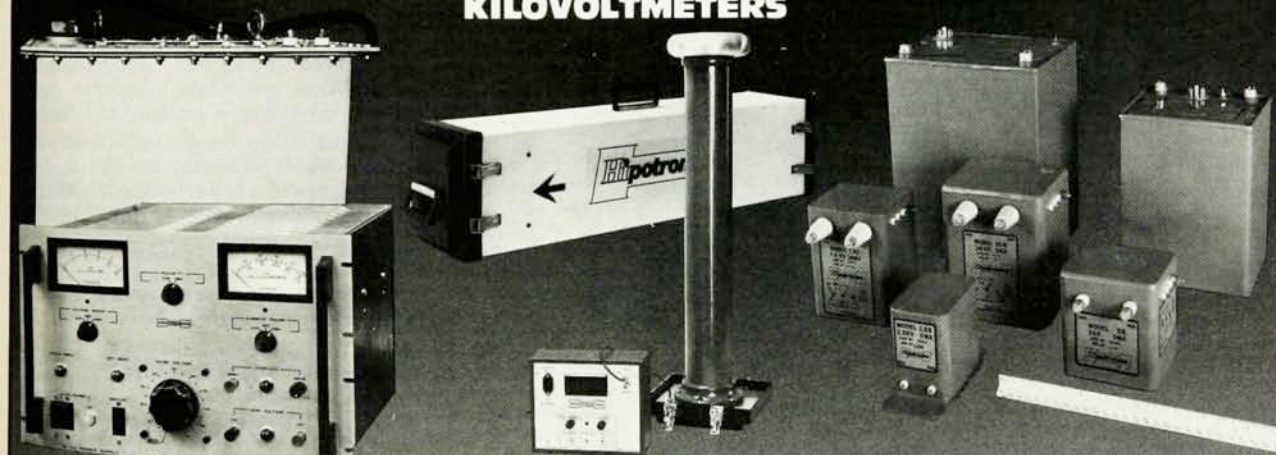
Circle number 74 on Reader Service Card

HIPOTRONICS HIGH VOLTAGE DC

POWER SUPPLIES

DIGITAL KILOVOLTMETERS

POWER PACKS



- Complete Line of DC Power Supplies
- Voltages: 1 to 300 kV
- Power: 1 to 500 kW
- Continuous Duty
- Conservatively Rated

- Measures AC or DC Voltages up to 20, 100, or 200 kV, including DC, AC, RMS, +PK & -PK.
- Portable and Battery Operated

- Power Packs — 115 V/220 V
- Output — 2 to 150 kV dc
- Current — 2 to 10 mA
- Power — 12.5 Watts to 3 kW
- Oil or Epoxy Insulated
- Ideal for high voltage/low current & OEM applications

Applied High Voltage Technology for Industry Science and Utilities.

HIPOTRONICS INC., DRAWER A, BREWSTER, NY 10509 ■ 914-279-8091 ■ TWX 710-574-2420

Circle number 75 on Reader Service Card

Janis Quality!

SuperTran Cryostat Systems



These versatile cryostats combine a flexible transfer line with a cold finger sample mount and a variety of vacuum jackets.

They provide fast cooldown to 2 K, and smoothly vary the temperature to 300 K (600 K, optional) with excellent stability.

Complete systems are supplied with temperature sensors and automatic controllers, plus storage dewars and vacuum pumping stations.

Please contact us with your requirement.

JANIS RESEARCH COMPANY, INC.

2 Jewel Drive, Wilmington, MA 01887 • Tel: (617) 657-8750 Telex: 200079

Circle number 76 on Reader Service Card



NOW

A Totally Hydrocarbon-free Vacuum

Our STP Series Maglev® turbomolecular pumps produce a high vacuum that is completely free from hydrocarbon contaminants by use of frictionless magnetic bearings requiring no lubricants. This design feature also provides:

- very low noise and vibration—less than 0.05 μ m peak-to-peak
- no cooling
- low operating and maintenance costs

The STP turbo pumps are easy-to-operate and are protected against power supply failure by a built-in battery. Three models are available—270, 340, 20001/s (nitrogen speed). The two smaller models can be mounted in any position.

Write for a free brochure.
* manufactured by Seiko Seiki, Japan



Edwards High Vacuum, Inc.
3279 Grand Island Blvd.
Grand Island, N.Y. 14072
(716) 773-7552

Circle number 77 on Reader Service Card

letters

manuscript was based. He found the published work "inconsistent with known physics"; however, he wrote not a word on just how it was "inconsistent" nor on how this inconsistency led fortuitously in the manuscript to an empirical law known for 40 years and not yet explained with "consistent physics." In his final rejection the editor in chief said that the four referees "are world-class physicists who are clearly qualified to render expert judgment about your work." Apparently when a referee (the first board member) does not respond with a review, it counts also against the author. Over the years all of my contributions in the area under discussion have been published in respected foreign journals after rejection in the US. Now I can conclude that "world-class physicists" reside only in the US.

Wilson is also concerned for individuals the "presentation of [whose] results could jeopardize their funding." Manuscripts for review generally go to those who have turf to protect. It would be interesting if Wilson would give us another essay discussing how referees will rise above their vested interests and permit publication of manuscripts that could jeopardize their funding. It seems that protection of turf is abhorrent when done by the government but quite acceptable when carried out by Wilson's scientific community.

In the same issue as Wilson's editorial, there was a book review by Hugh N. Pendleton (page 75). He stated that "Pickering presents something approximating the following arguments," one of which was stated as "Our theoretical preferences and our experimental (data-taking) practices reinforce each other symbiotically, making it difficult, if not impossible, for discordant data or unfashionable theories to get a fair hearing, or even to be noticed." With a fair hearing the membership in the "world-class physicists" club might well change.

Evidence for the disgraceful and often dishonest state of reviewing has been expressed many times by others. An approach to improvement would be to require all referees to sign any rejection. They should not be allowed to hide behind the protection of anonymity. The argument that anonymity provides the referee with the freedom to say what he really thinks is fallacious and smacks of the arguments for tenure. If a referee cannot stand behind his words, then his opinion should be considered worthless. Anything less will never be free of the suspicion of restraint of communication and protection of turf.

HAROLD A. PAPAIZIAN
Littleton, Colorado □

9/85