

ready suffers because of social discrimination. Recent statistics from the Institute of Electronics and Electrical Engineering (IEEE Spectrum, Sept. 1975) show that, even in professional careers, orientals have an annual salary \$1000 less than blacks and American Indians, and \$2100 less than whites.

In contrast, the crime rate of orientals is one-tenth that of whites and one-hundredth that of blacks; also their average education rate is higher than any other race in the country.

It is very unfortunate that first-class citizenship in terms of advanced education and least crime rate are not rewarded. To call attention to this doubly discriminated status, should orientals speak up noisily against their traditional moral—or should they make conspicuous problems, such as increasing the crime rate by a factor of two hundred?

AKIRA HASEGAWA
Summit, New Jersey

Short life for physicists

I was much interested in the letter in your July issue (page 11) from John Davis, concerning the possibility of a shorter life expectancy for physicists. As a regular reader of the obituaries in PHYSICS TODAY, I was also impressed by the relative frequency of deaths at quite early ages. However, I resisted the conjecture (I made no studies) that there was indeed a shorter life expectancy, if only because I'm sure I've read some authoritative statistics to the effect that scientists in general were among the longest lived. With archeologists leading, if I remember correctly, physicists were in a satisfactory position.

The question then arises: do your obituaries make up a fair sample? Presumably you are limited to active members of AIP (and similar societies), prominent (or erstwhile prominent) nonmembers, and others you hear about by indirect or informal channels.

But there may be a significant number of physicists or ex-physicists who do not fit these categories. Many men (or persons) may have active, even productive, although undistinguished, careers and drop from sight, as far as the physics community is concerned, in their forties or fifties. This may be more common at present (though it will have a delayed effect on the subject under discussion). The reason for this is that about 1% per year leave physics not by death or retirement, as mentioned in Lee Grodzins's report on the employment situation (see W. K. H. Panofsky's article, June, page 23). I imagine this category as distinct or only partially overlapping the middle-aged dropper-from sight category. The point is, ob-

viously, that many in both categories may go on to live to ripe old ages, and never appear in a PHYSICS TODAY obituary.

Therefore, I repeat: how fair a sample of physicists and ex-physicists are those appearing in your obituaries?

GERALD CONRAD
US Geological Survey
Albuquerque, New Mexico

THE AUTHOR COMMENTS: Gerald Conrad's remarks are well taken. How good is the obituary column as a source of the needed data? Is it a biased sample?

Since the publication of my letter, S. M. Luria has kindly sent me a copy of an analysis¹ of the deaths of scientists reported in *Science* from January 1958 through January 1968 categorized by major field, radiation experience and sex.

Luria found the mean age at death for archeologists to be 77 ± 11 years, for physicists 64 ± 16 . Radiation workers from all fields had 62 ± 14 . Luria also found striking differences in the shape of the mortality distributions.

Luria discussed the significance and also questioned the validity of the obituary sample. But apparently no better data are available.

Reference

1. S. M. Luria, Report Number 609, Naval Submarine Medical Research Laboratory, Box 900, Naval Submarine Base New London, Groton, Connecticut 06340. Also ref. Public Health Reports, 84, 661-664 (1969).

JOHN F. DAVIS
University of Utah
Salt Lake City, Utah

Synchrotron radiation

I should like to make some comments to the letter by G. C. Baldwin "Origin of synchrotron radiation" (January, page 9).

As far as I know, the term describing the energy loss connected with the radiation of energy by the moving charged particle was first introduced into the equation of electron motion in a magnetic induction accelerator by W. W. Jassinsky [J. Exp. Theor. Phys. (USSR) 5,983, 1935; Arch. für Elektrotechnik, 30, 590, 1936]. (It is true that after introducing this term Jassinsky neglected it in further calculations.) D. Kerst in his first detailed paper (Phys. Rev. 60, 47, 1941) cited Jassinsky's article.

In 1945 the paper by L. Arzimovich and I. Pomeranchuk appeared: "The radiation of fast electrons in the magnetic field" (J. Phys. USSR 9,267, 1945; see also J. Exp. Theor. Phys. USSR 16, 379, 1946). This paper should have been cited by Baldwin because Arzimovich and Pomeranchuk calculated the

LAKE SHORE CRYOTRONICS

is

The Answer

For all of your
CRYOGENIC NEEDS!

New!



Full Range Digital Cryogenic Thermometers Models DRC-7 & DRC-70

- 1 to 400K Range
- Recorder Output & Optional BCD Output
- Optional 10 Sensor Input
- Interchangeable Sensors
- Solid State Construction & Reliability
- Model DRC-7: 1K Resolution
- Model DRC-70: 0.1K Resolution

The DRC-7 & DRC-70 offer for the first time, full range temperature indication from 1 to 400 Kelvin with completely interchangeable sensors.

The optional BCD output allows one to incorporate these instruments into data acquisition systems where the number of sensors can range from one to several hundred sensors.

The standard recorder output allows one to continuously record temperature as a function of virtually any variable.

The unique design and the use of the proven DT-500 Silicon Diode sensor make the DRC-7 & DRC-70 the obvious choice for both routine or special lab requirements.

For details and literature write, call, or telex



LAKE SHORE
CRYOTRONICS, INC.

9631E Sandrock Rd., Eden, N.Y. 14507
(716) 992-3411

Telex 91-396 CRYOTRON EDNE

Contact us direct,
or our representatives

Southern New Jersey, Eastern Pennsylvania, Maryland,
District of Columbia, Virginia and Delaware

Tyler Griffin Company
46 Darby Road, Paoli, Pennsylvania 19301
(215) 644-7710

Baltimore - Ask Operator for Enterprise 9-7710
Washington, D.C. - Ask Operator for Enterprise 1-7710

New England States

Bordewick Engineering Sales Co., Inc.
427 Washington Street
Norwell, Massachusetts 02061
(617) 659-4915

Northern California
Quad Group
459 Trident, Redwood
City, California 94065
(415) 592-5618

Southern California, Arizona
Quad Group
2030 Alameda Padre Serra
Santa Barbara, California 93101
(805) 965-1041

Circle No. 51 on Reader Service Card