

letters

Levich who wish to emigrate to Israel. Nonetheless, I wish to register two objections to your report.

Firstly, by repeated use of the word "apparently" you cast doubt on the reality of the problem—but first-hand reports by many Western scientists who have recently been to Moscow leave no room for doubt.

Secondly, you close by quoting Murray Todd to the effect that "the tragedy is that men of very high competence are being lost to the world of science..." But surely the tragedy lies far more in the fact that *numbers* of individuals, highly competent and average, scientists and ordinary people, are being intensely persecuted without justifiable cause.

LEE A. SEGEL
Rensselaer Polytechnic Institute
Troy, N. Y.

The employment problem in physics has often been described in PHYSICS TODAY. It is encouraging that this problem is not world-wide. Recently, the Soviet Union has indicated its need for Doctor of Science degree holders by refusing to part with them unless a payment of \$39 000 is made. I propose that holders of PhD or equivalent degrees in physics investigate the possibility of immigration to the Soviet Union, to take advantage of the twin benefits of guaranteed employment and a \$39 000 bonus to pay for their privately financed educations.

JEROME W. ELBERT
Salt Lake City, Utah

Like many fellow scientists I have been stirred up by the Levich case and feel that some effective action should be taken by the scientific community to stop this atrocious repression. The professional societies seem to be slow and reluctant to act on this matter, and the effectiveness of a protest letter to the USSR Academy of Sciences with an appended list of signatures is somewhat doubtful also. I would like to suggest a course of action that can be taken individually and might have some impact. Many of us receive reprint requests from Russia and other East Block countries. If the professional societies could supply us, on request, with reprints or copies of reports and reactions dealing with the Levich case, this material could be included with or substituted for the reprints requested by the other side. Such an information campaign would be quite

unpleasant for the Russian authorities and might carry some weight towards changing their minds.

H. E. HUNZIKER
Saratoga, Calif.

Hippocratic oath

In reading over the comments of various physicists (The APS Amendment on Professional Responsibility, November, page 42), I was struck by the overall misunderstanding of the purpose of the amendment. My understanding of the rationale behind the amendment was that some physicists desired an equivalent of the physician's Hippocratic Oath. They wanted to tell the people of the world where physicists stood *vis-a-vis* society's needs. This amendment was not meant as a rule or law, to be enforced as such, but it was meant as a general statement of what was in physicists' hearts. Each individual was to be his own judge as to what was "humane" and what was "harmful."

So let us consider the amendment in the light of what it says about our desires and motives, and not in the darkness of paranoia and distrust of officials.

RICHARD ROTHCHILD
University of Arizona
Tucson, Arizona

Metric-time history

The "metric time" suggestion of N. R. Kunchur in his letter (June, page 13) is a great idea. As with many great ideas this one has actually been tried before—179 years ago!

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letters

vention of Revolutionary France adopted the Republican calendar, which included a completely decimalized 10-hour day as an integral part.¹ In the decree of 24 November 1793, Section 11 each hour was further divided into 100 minutes (*minute decimale*) and each minute was to consist of 100 seconds (*seconde decimale*). Thus the "revolutionary" second of this 100 000-second day was only 14% shorter than our second, whereas Kunchur's second would be 57% shorter.

The Republican Calendar died before its thirteenth birthday. However, the decimalized day fared even worse. Legally, it never even came into existence. While the calendar became effective almost immediately by the enactment of the November decree, the 100 000-second-day was to have become compulsory only a year later on 22 September 1794, at the beginning of Year III of the Republic. In anticipation of this change in the reckoning of time, many models of decimal timepieces were actually constructed, the first one being attributed to Martin Firstenfelde of Carouge (28 November 1793).² Some were for immediate use, such as the clock for the Hall of the National Convention or the clock installed in the *Capitole* of the Town Hall of Toulouse in 1794, which worked for all of three months. Others were built for the competition organized by the Convention. This competition was for the purpose of soliciting proposals for the construction of decimal watches (timepieces), that would provide the "simplest, surest and least costly method." The head of the commission who organized this competition and, indeed, the leading spirit responsible for the adopted Republican Calendar was a Convention deputy from Riom, physics professor Charles Gilbert Rome. Clocks designed by Dela Combe of Poissy, Feron, Janview, Robin and Berthoud are preserved in the *Conservatoire des Arts et Metiers* in Paris.³

But Year III arrived without a decision having been made among the 37 clocks that were entered in the competition. Evidently, no report was ever printed by the responsible Commission.⁴ In fact, the *coup de grace* for the decimal second was delivered half a year later. Acting upon the recommendation of Prieur of Côte d'Or, who advanced five pseudoscientific reasons for the abandonment of the decimal second, the famous decree of 7 April 1795⁵ indefinitely suspended the date for its legal adoption. Ironically it was the same decree that gave birth to the metric system of weights and measures for France—and eventually for the rest of the world—which killed the metric second.

Further, the Republican Calendar featured a ten-day week as part of the calendar reform and an associated tenth day, the "decadi," which was to replace Sunday as a day of rest and rejoicing. Some scholars maintain that the underlying political objective was to weaken the influence of Christianity and of the Catholic Church. However, when Napoleon became the dominant figure in France at the turn of the century (9 November 1799) he found it expedient to restore the Gregorian calendar in exchange for the Pope's recognition of his personal authority over France and parts of conquered Europe. On 9 September 1805, the French Senate dutifully ordered the abolishment of the Republican Calendar and the legal resumption of the Gregorian calendar on 1 January 1806.

In proposing a decimalization of our units of time, it may be prudent to remember these experiences in Revolutionary France. A scientific time proposal laden with political and religious overtones may be short lived.

References

1. J. B. Duvergier; *Collection Complète des Lois*, 2nd edition Volume 6, pages 208-9, Paris (1835).
2. J. Guillaure, *op cit*, Volume III, page 47.
3. *Process verbaux du Comité d'instruction publique de la Convention Nationale*, (J. Guillaume ed), Paris (1890-1907), Volume II page 570.
4. James Friguglietti, *Social and Religious Consequences of the French Revolutionary Calendar*, PhD Thesis, Department of History, Harvard University, April 1966, pages 22-23.
5. J. B. Duvergier, *op cit*, Volume 8, page 73.

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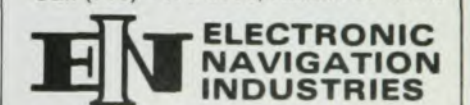
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