LETTERS

Negro physicists—a reply to Branson

It is unfortunate that there probably are not enough black physicists to do a meaningful study of their life in physics. Because our numbers are limited, personal testaments are about the only way to get a clue as to how we fare. At certain points, my impressions of the black man in physics are quite different from those of Herman Branson (PHYSICS TODAY, September, page 70).

On the question of, let us say, closing the color gap in physics, I could not agree more with Branson. In order that effective progress be made, much money and hard work on the part of us dedicated to this cause are needed. Effective racial integration of all American schools would help immensely.

However, I feel that the alleged liberality of the American scientist, including physicists, is a myth. One wonders what Branson means when he says, "There is no racism in science. . . ." Does he mean that a black man with a PhD in physics from an outstanding American university has the same opportunities, on the average, as a white man with the same qualifications? From my personal experience, I would have to say no. A good deal of the fault does not lie directly on the hands of the physicists, because questions of hiring, firing and salary are too often in the hands of people who have only a rudimentary training in science. Nevertheless you will quite often find, in the cases where black physicists have been discriminated against, the decisions were made on all levels by people with considerable training in physics.

It is true that the employment opportunities for black people in physics have increased tremendously since the Kennedy era. But I would think that this has been due to the emerging political power of the American black people, especially on a national level, and subsequent governmental pressures on industry and universities with government supported projects, and not to a diminution of racism on the part of scientists in America.

Branson's statement, "But in general, scientists (and especially physicists) are among the most liberal people to be found anywhere. Now this was not true some years ago," is unbelievable. Does he really think that during his lifetime the feelings that the white man has for the black man have changed appreciably and vice versa?

One wonders if Branson has thought of what happens to the black physicist after he has secured one of those "high paying industrial jobs" and been placed at a desk near the door where the federal inspectors enter. If he thinks that because he is a physicist he will not find the same racial discrimination that others of his race find in all other disciplines in America, I am afraid that he will be greatly disappointed.

Branson has painted a dangerously rosy picture of the black man in physics. I would like strongly to take issue with this view.

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Priority in energy trapping

I was very interested to read the article "Frequency Control Developments" by Arthur D. Ballato and Robert V. McKnight in the August PHYSICS TODAY. This is by far the most comprehensive review of the American work on energy trapping that I have seen and it confirms statements made to me in a private communication last June from W. H. Horton, vice president of Piezo Technology Inc., to the effect that no reference to my own work has been made in America.

The first work on energy trapping was done at the Marconi Co. in 1946 and anticipates William Shockley by some years. My first (internal) report

LETTERS

(Continued)

was issued in that year under the title "A waveguide theory of piezoelectric resonance."[1]

This work was done with the main purpose of damping the untrapped modes so that the spectrum of a frequency-modulated quartz-crystal oscillator (Marconi "FMQ" system) should be clean enough to satisfy the British Broadcasting Corp. for use in their high-fidelity Wrotham transmitter (the first of the VHF chain).

Since then an article was published in *Wireless World*[2] on this system in 1951 and an IEE paper[3] was read in 1957, the latter describing the basic energy-trapping theory first given in the above report. This particular application of the theory (which we called the "waveguide theory") was very successful indeed, and we were unable to detect any unwanted modes at all. Although it might appear from the simple concept of trapping that trapping alone is adequate to suppress unwanted modes, it is only so for a constant frequency. When the oscillator is directly modulated, the sidebands spread into the untrapped spectrum, and although it can be arranged that the energy is small (by choosing the frequency of cutoff), resonances can be excited in the outer part of the plate and are noticeable during constant-frequency audio-modulation tests. No hi-fi engineer could permit this! Therefore we absorb these resonances, and from some of the energy-trapping quartz filter characteristics we have seen it would be a good thing if the American workers incorporated similar absorbers and gave acknowledgement to the Marconi Co.!

Perhaps we should say that we have used the waveguide approach to the design of frequency substandard oscillators (for example, in the TME 2 frequency-measuring equipment and in the Italian broadcasting system). In such cases we do *not* add absorbers.

References

1. W. S. Mortley, "A waveguide theory of piezoelectric resonance," Marconi internal report RD. 756 (1946).
2. W. S. Mortley, "F.M.Q.," Wireless World **57**, 399 (1951).
3. W. S. Mortley, "Frequency modulated quartz oscillators for broadcasting equipment," Proc. IEE **104B**, 15 (1957).

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Adapting journal practices

My qualifications for commenting on the discussion in your June issue of the proposed Physics Information Exchange [S. Pasternack, M. Moravcsik, *A Debate on Preprint Exchange*] are that I work primarily as a librarian but also have responsibility for production of publications in a research establishment.

Before making some points "con" the exchange I should like to point out that Moravcsik's arguments in his rebuttal are based on a false analogy. The exchange is not a scientific experiment but an administrative proposal: the effects and results of adopting such proposals need not be pure guesswork; they can be assessed with fair accuracy in the light of previous experience.

If the two advantages of PIE are speed of publication and ability to obtain comments, appraisals and criticisms of papers, I would suggest that two new periodicals be published: *Physics Papers: Unreviewed* (journal A) and *Physics Papers: Comments* (journal B).

Both of these journals could use the principle proposed for production of PIE preprints, photoreproduction of the original. The only additions required would be a cover and numbers stamped on the pages before copying. Both could be issued weekly.

The advantages of this system over PIE would be: (a) wider availability (any person or institution could subscribe); (b) avoidance of the introduction of a new category of literature (also, proper citation could be made); (c) the journals may be economically viable if not profitable.

The ideas for these journals are not original; indeed journal B was inspired by a letter in the same issue of PHYSICS TODAY (Mendel Sachs, page 12).

I have three additional suggestions about production of these journals: