

LETTERS

Let's invite children

May I commend you for the interesting and refreshing article on children's books in your December issue. I have long deplored the "ivory-tower" attitude of many writers of science books purporting to be for the average child.

From many years of experience with youngsters, I have seen how frustrating it is to them to try to wade through books full of professional jargon and high-sounding scientific phrases. More power to Mrs Freeman for seeing through this kind of writing, which only masks an author's lack of understanding of children.

Let's invite children into science and not frighten them away from it!

A. Pastornak

North Hollywood, California

Values in a vacuum

The December editorial on the "value vacuum" proposes "an interest in science" as a possible remedy. Unfortunately for this hypothesis, studies of current science and engineering students and graduates indicate great concern for personal status, advancement and income contrasted to indifference to welfare of others, at best, grading into outright contempt for the less fortunate. Academic disciplines, including the natural sciences, do not teach values. The way to teach values is to teach values. There are no shortcuts.

Michael G. Saslow
University of Washington

Other ways to do it

Friedrich Hund, in his very interesting article "Paths to Quantum Theory Historically Viewed" (PHYSICS TODAY, August 1966, page 23), has made some entertaining speculations as to how modern physics might have developed into its present form if it had not developed in the way that it did. Another question that he did not consider is whether the present formal structure of physics is the only possible one that will accommodate the experimental facts.

One of the main building blocks of

modern physics is quantum mechanics. This could have been formulated once two basic principles had been grasped. One of these is that waves and particles are complementary views of the same thing; the logical connection, as distinct from Albert Einstein's 1905 speculation, was first demonstrated by Walter Ritz in 1908. The other is the uncertainty principle, which was known to radio engineers in about 1915 in the form of the gain-bandwidth product of an aerial. If attention had been paid to Ritz's work and to the common knowledge of radio engineers, modern quantum theory might have developed a decade earlier than it actually did.

The other main building block is relativity theory, which can be regarded as the resolution in James Clerk Maxwell's favor of the incompatibility between Isaac Newton's mechanics and Maxwell's electromagnetic theory. The experimental evidence did not necessitate this choice, however; it is equally possible to retain Newtonian mechanics and modify Maxwellian theory. I have recently given an account of a physics built on this basis (*Electronics and Power*, November 1966). Hund's last sentence, "And understanding is no longer pure physics," does not apply to this new physics, which is very understandable.

R. A. Waldron

The Marconi Company Limited

Prejudice is where you find it

On the subject of Negro physicists, Tannie Stovall's letter (PHYSICS TODAY, December, page 11) suggests that racial prejudice may be stronger in France than in the United States—a startling departure from our ordinary beliefs. I have worked at a major government laboratory in Washington, D.C., where I knew well a Negro physicist and also had a Negro secretary. In the small industrial research laboratory in California where I now work, there is a Negro chemist. In neither case did I notice signs of prejudice.

There may, of course, be signs of prejudice which are missed by naïve

BY PRINCETON GAMMA-TECH.

Ge(Li) beans

SOMETHING TO CHEW ON.

Optimum vs. "ideal"

Sometimes a Ge(Li) detector should be planar, sometimes cylindrical, sometimes five-sided. Sometimes small active volume is better than large, sometimes large is mandatory.

For instance. One researcher was doing proton-gamma coincidence studies, using a 3 cm³ planar Princeton Gamma-Tech Ge(Li) detector. We're delighted to report that he achieved a time resolution of 3 nanoseconds (FWHM).

The same researcher then increased his counting rate by using a 26 cm³ five-sided Princeton Gamma-Tech detector. Time resolution wasn't quite as good as with the small planar detector, but we're still delighted with the performance: 6 nanoseconds (FWHM).

When you need more counting rate than a small planar detector can provide, you have to go to a larger one, possibly of another configuration. Point is, the experimental situation will determine what kind of detector will give optimum performance.

A few guidelines, among others:

1. For easiest efficiency calculations, a planar detector is frequently the choice. We make them to 15 cm³.
2. For ease in making solid angle corrections, a planar or cylindrical detector may be chosen. We make cylindrical detectors to 30 cm³.
3. For maximum active volume, a five-sided detector must be chosen. We make them to 40 cm³.

Energy resolution of all our detectors is better than 3 keV (FWHM) at Co⁶⁰ (detector contribution).

There is no such thing as an "ideal" Ge(Li) detector. If there were, that's all we'd make. To help choose the optimum detector for your experimental situation, send for a copy of our GUIDE TO THE USE OF Ge(Li) DETECTORS. Or just telephone us.

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