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many industrial emloyers who hire a man to do a job and could not care less how it is done ("those who can, do; those who cannot, teach").

How can the problem be solved? First of all, university professors should be more realistic and, by example, encourage their students to apply their skills to applied-physics problems—which usually do not have nice, "clean" solutions and very frequently require a far better grasp of more areas of mathematics than do many pure-physics problems. Studying more mathematics will make physicists more, rather than less, versatile. Second, industrial employers should realize that the physicists they hire to do a job need (not merely want, but need) to extend their immediate results to other ends, the value of which is not always immediately obvious. The "if he's so smart why ain't he rich?" syndrome must be corrected.

It is this attitude of many of the less enlightened industrial employers that has restrained physicists in the past from seeking industrial employment. This was a loss to physics as well as to industry. But today, when physicists perforce seek industrial jobs, is a good time to bridge the attitudinal gap. Physicists must be willing to apply their talents to seemingly commonplace problems. No less must industrial employers recognize, encourage and foster their physicists' creative needs to extend, generalize and, wherever appropriate, publish the work for which they were hired.

In the final analysis, there must be far more respect on both sides. The employer must respect (and not just be paying more money) his scientists and the scientist must respect the need of industry (which pays him his salary) for solutions in viable form to problems that may seem, but frequently turn out not to be, pedestrian.

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Challenging experiments

I recently pre-enrolled students in a sophomore course at Berkeley, Physics 4E. It is a day-long process wherein students come in to fill out cards and pick up "handouts." Among the things I handed out was a list of the laboratory experiments together with some comments about them. When I came to those that don't work very well as a rule, I fell back on the usual professorial gambit of describing them as "more challenging." I then grandly departed, leaving the rest of the chore to the graduate teaching assistants. Returning at 4:30 pm to close the pre-enrollment I found that my assistants had compiled their own list of "more challenging labs" on the blackboard. It is a list that might be shared with your readers:

1. Photograph vortex lines of He^4.
2. Measure neutrino flux from the sun; compare with theory.
3. Produce element 106; measure its halflife.
4. Measure gravitational wave flux from Crab Pulsar.
5. Build atomic bomb; test for ecological damage to environment.
6. Construct a 1 gram black hole; compare radiation flux to Siberian meteor of 1908.
7. Build a working fusion reactor.
8. Measure Young's Modulus of metallic hydrogen.
9. Establish radio contact with extraterrestrial life.

The authors of this list were Stephen Pollaine and Jerry Turney, perhaps with a little help from their friends.

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Laser separation

I want to make some comments regarding the paper "Many groups report laser-induced isotope separation" published in September (page 17).

Our first successful experiments on laser separation of isotopes of nitrogen by two-step photodissociation method were made in 1972 and published in January 1973.[1] The mean value of enrichment in our experiments was about 4.

The methods of two-step photoionization of atoms and photodissociation of molecules were experimentally tested by us in early 1971 (with atoms Rb^{85} and Rb^{87} and for molecules HCl^{35} and Hcl^{37}).[2]

References

1. R. V. Ambartzumian, V. S. Letokhov, G. N. Makarov, A. A. Puretzki, JETP Lett. 17, 91 (1973).
2. R. V. Ambartzumian, V. S. Letokhov, IEEE J. Quantum Electron. **QE**-7, 305 (1971); Appl. Optics 11, 354 (1972).

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Correction

January, page 17—"An MIT group" (line 24) should read "A group from MIT and Brookhaven National Laboratory." The BNL member of this combined group is Y. Y. Lee, who is correctly identified in the photograph caption on page 17; Lee's name should be added to the list of authors for reference 1, on page 20. □