

late further work that could dispel any doubts that might remain about these strange effects. The high resolution that can be achieved with the scanning electron microscope should make it possible to achieve much greater accuracy in measuring hardness using a diamond indenter and eliminate the subjective factors that appear to have influenced the earlier investigations.

To Yasuo Nannichi I extend greetings, along with assurance that I have no difficulty believing that the high density of injected carriers and their recombination radiation can contribute to dislocation motion and degradation during the operation of semiconductor lasers.

Kyle Forinash and William D. Rumsey question the accuracy of the transcription of Langmuir's lecture. As stated in the introduction to the PHYSICS TODAY article, a copy of Langmuir's talk is on file with the Whitney Library of the General Electric Research and Development Center in Schenectady, as a cassette tape. Those interested are more than welcome to listen to it and satisfy themselves as to the accuracy of the version published in PHYSICS TODAY.

References

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Rehabilitating Romania's Research

I recently received a letter (dated late January 1990) from fellow physicists working at the Institute of Physics of the Romanian Academy of Sciences, on the outskirts of Bucharest. I was, of course, relieved to learn that personnel and facilities (for what they are worth) survived the dramatic and unexpected upheaval of late December relatively unscathed. Anyone who has visited Romania in the past decade undoubtedly shares with me a feeling of admiration for the dedication and determination shown by some of our colleagues in Romania, who strove to continue their research under incredibly dire circumstances, physical, financial and intellectual. These facts are, however, not the point of this communication. I wish instead

to forward an appeal for assistance from my Romanian friends. They write:

In the past year, the Security censorship became so effective that all our correspondence was stopped. Please be so kind as to send us information about [a specific conference] and any other conferences which are being held in the next year or so. We believe that we will be able to attend in the future.

We are entering now the most difficult part of our revolution: building. This is why I... request: If you know any laboratories which have some equipment they wish to get rid of, please ask them to contact me: Dr. V. Lupei, Institute for Atomic Physics, Romanian Academy of Sciences, 76900 Bucharest—Magurele, Romania.

We are in need of almost everything: equipment for lasers, detection and signal processing, computers, oscilloscopes, spectrometers and so on, even typing or copying machines, books and journals.

I suspect that they are not in a position to defray shipping costs; nevertheless, it seems to me that our community has an opportunity to make a humanitarian gesture by answering this appeal, even in some minor way. Their needs are real, and time has come to reintegrate our Romanian colleagues into the greater scientific community. I assume that this also the case with other Eastern Bloc nations. Please feel free to contact me if you have any comments, suggestions or questions.

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Contributions of a Nobelist's Colleagues

I very much appreciated the excellent review of the work of the three 1989 physics Nobel laureates (December, page 17), especially because my thesis research at Columbia in molecular beams brought me into contact with Norman Ramsey's and Wolfgang Paul's contributions and because my long association with the University of Washington has made me a witness to the remarkable development of particle-trapping techniques by Hans Dehmelt. In all but one instance I believe proper acknowledgment was given to Dehmelt's colleagues who have partici-

pated with him in this development.

The exception is related to the idea of Dehmelt's termed the "quantum jump" in the Royal Swedish Academy's press release or the "shelved optical electron amplifier" in the PHYSICS TODAY news story, an idea central to realizing, in a practical way, the incredible precision inherent in the measurement of an optical frequency of a stored ion. In all his recent ion work as well as in the first observation of a quantum jump (*Physical Review Letters* **56**, 2797, 1986) Dehmelt has benefited from a collaboration with his colleague Warren Nagourney. In the quantum jump work cited he also had the assistance of Jon Sandberg, then a University of Washington undergraduate. A history of ion-trapping development would not be complete without these two names.

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DEHMELT REPLIES: Given *in toto*, the citation in my colleague Mark McDermott's letter would read, "Warren Nagourney, Jon Sandberg, Hans Dehmelt, 'Shelved Optical Electron Amplifier: Observation of Quantum Jumps,' *Physical Review Letters* **56**, 2797 (1986)," and I fully agree with the contents of the letter.

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Why Few Take Physics: Educated Guesses

The AIP-AAPT high school physics teacher survey (August 1989, page 30) points up the education problems of our profession. The results should not surprise us, for they are a consequence of the priorities of nearly every PhD-granting physics department in the country: research at the top, followed by doctoral dissertations, graduate courses and undergraduate physics major courses. At the bottom are the introductory courses for science and engineering students and perhaps, if the department is especially broad-minded, a course for the remaining 80% of the student population.

The course for nonscientists, if offered at all, is not taught by those physics faculty members who aspire to publications and tenure. This is the "watered down" physics course, generally a boring image of "real" physics—that is, of the courses that have lots of equations and problems on such fascinating topics as blocks on