

The PhD dilemma: education and employment

After being delighted by your March cover that seemed to promise an exposé of the plight of the graduate student, we were saddened by the wishy-washy contents. We really could not have expected much from the graduate students themselves, because what they might have said could have been held against them in several mortally effective ways. The statistics, as usual, tell the reader what he wants to believe and do not reveal the basic flaws in the US system of graduate education. How the British student fares is largely irrelevant to our own unique methods for PhD production.

Only John Slater's article "Why Has He Changed?" seemed to say that something might be wrong. "Yes, Virginia" he tells us, "once there was a utopian graduate school, populated by developing heroes who unravelled Nature's mysteries while roller skating arm-in-arm with the professors down the hallways of the Laboratory." We mourn with him the passing of this gay era and only wish that those heroes, having assumed leadership, could somehow have preserved the spirit and methods of their youth for the new generation.

The graduate students we knew in the 1960's shall remain nameless. Most were happy doing physics when they were able to take the time for it. Very few were even remotely pleased with their lot. Their "lot" consisted of years of poverty, courses conducted by impersonal professors who dished out endless uninspired problem sets in lieu of teaching, preliminary examinations that measured hardly anything of one's ability to do physics and stultifying thesis research chosen by the thesis adviser to suit his own ends.

All of that would have been tolerable if the student could have maintained a feeling of self-esteem. But the members of the PhD club, for the most part, regarded the graduate students not as junior partners in the quest for knowledge but as pledges or hired lackeys who were lazy, lacking in reasonable intellect and unworthy of being skating partners. After all, the pledges were always trying to take up time that could better be spent apply-

ing for funds, writing reports and grinding out the papers, all vital to the well-being of the modern professor. The professor thought the student owed him something because of the federal money he doles out to him and thought the student an ingrate if he behaved in other than a subservient manner.

Small wonder that most of the survivors have been drained of their enthusiasm and elan, thus becoming the spiritless, conservative types in whom Slater sees little capabilities for leadership. For our part, we are lucky to have met one or two inspiring, human and humane professors in graduate school, and that made all the rest bearable. Probably that is why we are determined that the prevailing attitude will not be inflicted upon our own students.

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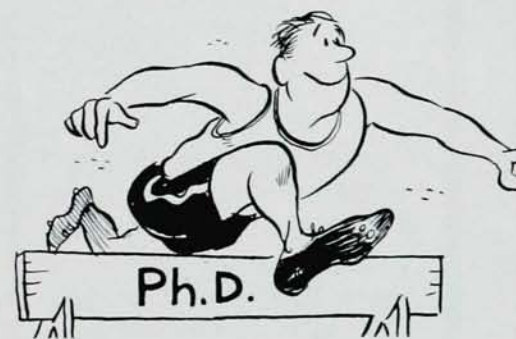
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Two aspects of the March issue of *PHYSICS TODAY* provide an interesting contrast. The first is a letter by Joseph D. Stoecklein, echoing the often-expressed sentiments of the powers-that-be of the American Institute of Physics and American Physical Society, that decries the recent decrease in the number of new physics graduate students. The second is the statistics that indicate that nearly 30% of recent physics doctoral recipients have received no job offers. One can only surmise, despite the relatively ineffectual efforts of the Committee on Physics and Society (COMPAS), that the elite group in control of our professional societies is ignoring the real problems of the profession as a whole.

The current overproduction, especially in certain areas (for example, elementary-particle theory), is in large measure due to failure on the part of undergraduate advisers and graduate faculties to advise students adequately on the employment situation. In many instances this is because of ignorance of the facts, but in many others is the result of a certain selfishness. As pointed out in part by Wolf-

gang Zernik (*PHYSICS TODAY*, February, page 13), the reputations of well established faculty members at larger universities are greatly aggrandized by a large number of graduate students producing publishable research under their tutelage. For this reason they are not anxious to channel prospective students into either other disciplines or areas of physics in greater demand.

Ethical responsibility is not the only reason why those in positions of influence in the profession must face the problem squarely, for we face the prospect of irreparable harm being done to the reputation of physics as a whole. If our only solution must mean a grad-



ual decline in the total number of physicists, so be it. Perhaps this is not an altogether undesirable solution, (see, for example, John C. Slater, *PHYSICS TODAY*, March, page 35).

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I would like to comment on two or three startling facts revealed in the very interesting article by Arnold Strassenburg and Margaret T. Llano, "What Does He Study?" (*PHYSICS TODAY*, March, page 45).

Since coming to the University of Maryland last fall, I have been impressed by the quality, size and rapid growth of the department of physics and astronomy here. It is now the second largest in the country according to table 2 of this article. However, I had not realized that the expansion has been so powerful as to squeeze our distinguished erstwhile neighbour, Johns Hopkins, completely out of the