

In all the discussion of the employment problem the only *real* fault of the physics departments appears to be in the attitude they impart to their graduate students. I would agree that applied research has come off second best because of this attitude, but why not correct this problem and leave the rest of the training essentially as it is? All that would then be needed would be for some of these industrial outfits to back away from their "cake-and-eat-it-too" stance and recognize that most physicists are still pretty versatile.

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More on Schwartz's abstract

I have read with great interest your account of the American Physical Society's Chicago meeting (March, page 67). Two questions immediately come to mind.

Did a representative of the APS first contact the Air Force office to obtain permission to print Charles Schwartz's acknowledgment?

Does a subsequent council action mean that now the APS, or the author, or both, must furnish proof that acknowledged support is actually from the source stated in each abstract submitted to the *APS Bulletin*? How else could one ascertain equitably that "no laws are violated?"

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REPLY FOR APS: In the case of the Schwartz paper given at the Chicago APS Meeting, the Society was first called by Schwartz's university, the University of California. Their US Air Force Contract Administrator had become aware of the USAF credit line contained in the Schwartz abstract and denied that this was a correct representation as far as the USAF contract with the University of California was concerned. Subsequently, the Society also was approached by the Office of the Secretary of the Air Force by phone and by correspondence denying viability with the claim of crediting Schwartz's work to the Air Force.

Under normal circumstances, the Society prints abstracts by direct photocopy reprint as received. Due to the time required in processing hundreds of abstracts submitted, it is only

when a gross error is brought to our attention that a correction can be entertained.

The use of the expression "no laws are violated" pertains more appropriately to the nonprofit, second-class postage rates that the Society enjoys in forwarding journals to its members, without which there would need to be gross increases in subscription costs. Within very stringent financial limits, this is the fastest means of moving bulk technical information into the hands of members. Postal regulations are very severe in sanctioning the type of material that is permitted to use this privilege. The Society feels that if its journals were to become less of a technical and educational text, while increasing focus on political positions and debate, the continuation of its second-class mail privilege would be jeopardized. The administration of the Society dislikes to base its rationale on a dollar-and-cents consideration, but from a practical standpoint, we feel that low-cost diffusion of knowledge in physics must remain the priority control.

W. W. HAVENS, JR
Executive Secretary
American Physical Society

Lord Rayleigh and the bicycle

The editor of an electrical-engineering journal recently suggested that his authors should make sure that their researches had not been published by Lord Rayleigh. David Jones's very interesting article on the stability of the bicycle (April, page 34) has been to some extent similarly anticipated. He does not refer to the classical article by F.J. Whipple, titled "The Sta-

bility of the Motion of a Bicycle," which appeared in the *Quarterly Journal of Pure and Applied Mathematics*, no. 120 (1899).

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THE AUTHOR COMMENTS: This paper has already been brought to my attention by F. J. W. Whipple's son, R. T. P. Whipple, who states that his father did not have the facilities for experiments as elaborate as those I was able to perform. He also tells me that his father's thesis examiners insisted that the action of pedalling played an essential part in the action of balancing (those were the days before the free wheel!).

Quartic equations of motion have also been obtained for the bicycle by A. Sommerfeld and by R. H. Pearsall, whose work, referred to in my paper, I took as typifying this approach. My investigation was concerned with checking such theoretical work, and the diverse explanations frequently advanced for bicycle stability, by experiment. I concluded that center-of-gravity and casting effects have not always been given due weight.

I am grateful to Thompson for calling my attention to Whipple's paper, and if any reader has knowledge of other references in this field that I may have missed I shall be glad to hear of them. I intend at some future time to derive an equation of motion including all the empirically important factors; it will be interesting to compare it with those obtained by the classical investigators.

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Win \$100 or more with your camera

Cash prizes of \$100 or more will be awarded to the winners of our photography contest, full details of which were announced on page 86 of last month's *PHYSICS TODAY*. Black-and-white and color photographs illustrating physics applications in three categories — the environment, energy sources and the life sciences — are eligible for six prizes of at least \$100 each, and a seventh \$100 prize will be awarded for the color photograph chosen as the cover of the December issue.

Sponsors. The competition has been made possible by financial assistance from: Bell Telephone Laboratories, the General Electric Company, Westinghouse Electric Corporation and Xerox Corporation.

The judges will be Walter Litten, Senior Advertising Associate, Eastman Kodak Company; William J. Numeroff, former member of the art staff of the New York World-Telegram and Sun, and John T. Scott, managing editor of *PHYSICS TODAY*. Harold L. Davis, editor of *PHYSICS TODAY*, will choose the December cover photograph.

Closing date 1 September

Details on page 86, July *PHYSICS TODAY*