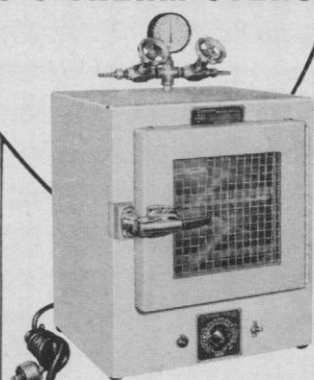


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endorsed. There are also unnecessary opportunities for befuddlement in some of the humanities selections. Let me cite an example from the Jowett translation of Plato's *Republic*, which dates from the Victorian era and which is the translation offered by the "Great Books." As noted by Cornford in the preface to his own more recent translation, the reader of Jowett, when he lights on "the statement . . . that the best guardian for a man's 'virtue' is 'philosophy tempered with music,' might run away with the idea that, in order to avoid irregular relations with women, he had better play the violin in the intervals of studying metaphysics." Not only is this idea false, as the violinist in the Tabu ad has learned to his peril, but this is not what Plato meant by describing (again to quote Cornford) "*logos*, combined with *musiké*, as the only sure safeguard of *areté*."—J.T.

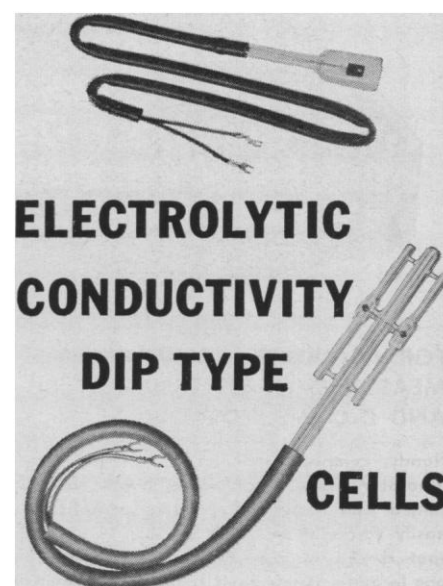
Economics in the News

The tenor of your staff reporter's observations on the economic philosophies supposedly animating the Eisenhower and Kennedy Administrations [*Science* 133, 367 (1961)] prompts me to register an objection and to offer a constructive proposal.

As a political independent who participated in the preparation of all eight of President Eisenhower's annual economic reports to Congress, I find this piece both superficial and intellectually offensive. To identify the Eisenhower position with "the dismal science" while characterizing "Kennedy's economics" as "the dismal science made cheery" may be good enough journalism and may be assumed to be consistent with the emotional commitment of a substantial fraction of the scientific community. But the Carlylean allusion is anachronistic, certainly since the passage of the Employment Act of 1946 with strong bipartisan support; and the equally Carlylean hero worship manifested by your reporter is inappropriate, not only in a scientific publication but also in a pluralistic democracy in which the economic roles of the President and of the federal government altogether are deliberately confined and in which the "declaration of policy" inserted into an employment act must be so burdened with qualification that it cannot provide an unambiguous standard for administration.

As a member (fellow) of the AAAS, I suggest that the same kind of criteria of objectivity, reliability, and high seriousness that presumably apply to the section of *Science* devoted to research reports be extended to contributions to "Science in the News."

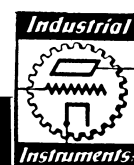
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Surely, the association has a much greater stake in teaching than in de-lighting. It can best upgrade the average level of literacy of its readers regarding other people's specialties by providing unbiased, straightforward, factual reports and balanced analyses. Above all, it must avoid the appearance of concurring in the bizarre proposition that the star of scientific advancement should be hitched to a particular political wagon.

IRVING H. SIEGEL

Operations Research Office,
Johns Hopkins University,
Bethesda, Maryland

Effects of Punishment on Behavior

In his report entitled "Punishment in the squirrel monkey *Saimiri sciurea*" (1), James B. Appel states "little is known about the effects of punishment on the behavior of higher organisms." He presents his observations in the evident belief that long-lasting effects have not previously been reported.

Evidence has for many years been available that punishment by electric shock can condition extremely persistent anxiety reactions to previously "neutral" stimuli, accompanied by inhibition of other responses in the presence of the conditioned stimuli, just as Appel observed in his monkeys. The existence of this evidence may have been obscured by its coming under the heading "experimental neurosis." The first reports, as usual, came from Pavlov's laboratories, where dogs were the subjects; subsequently, similar effects were reported in cats by Dimmick, Ludlow, and Whiteman (2) and by Masserman (3). The Russian workers believed that the persistent behavioral changes in their animals were the result of a "clash" between excitation and inhibition, and Dimmick *et al.* and Masserman attributed the changes in theirs to conflict between feeding and avoidance motivations, because all their animals were punished in circumstances in which food-approach behavior had been conditioned. However, a few years later I demonstrated (4) that in cats subjected, without any preliminary training with food in the experimental cage, to high-voltage, low-amperage shocks in the cage situation, the same persistent behavior, characterized by marked anxiety responses, is conditioned. Thus, despite the opinions of the earlier experimenters, the effects reported by them must be regarded as a straightforward conditioning of emotional and other reactions primarily evoked by electric shock.

Though these conditioned autonomic reactions do not disappear through

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