

SCIENCE

26 May 1972

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COVER

African Serpent Eagle (*Dryotriorchis spectabilis*). When optimally accommodated, this eagle's image of the photographer is much sharper than the photographer's own retinal image of the bird. See page 920. [Photograph by Lionel G. Standing, Chicago Wesley Memorial Hospital, Chicago, Illinois]

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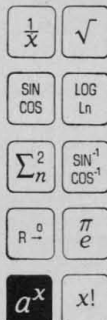
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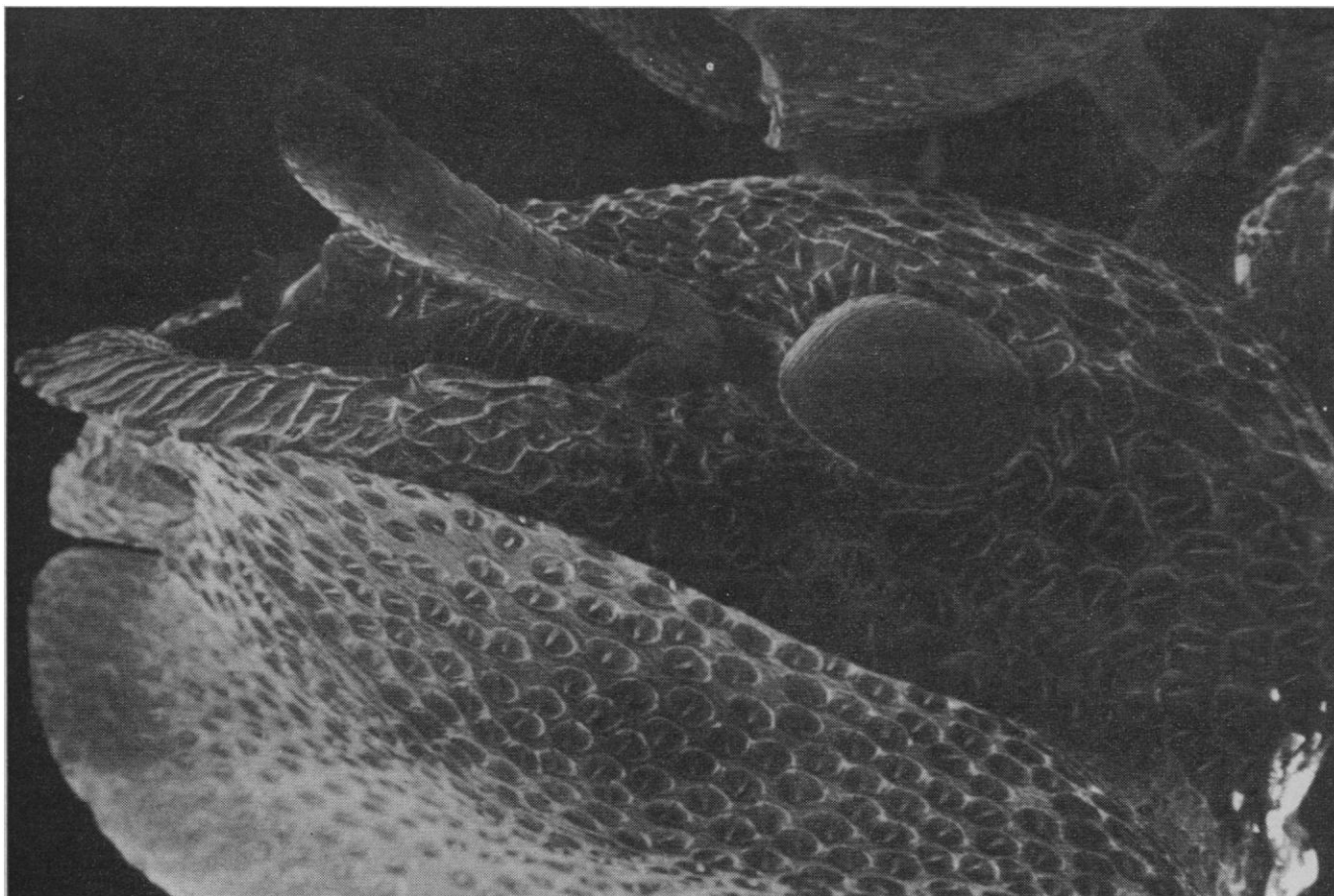
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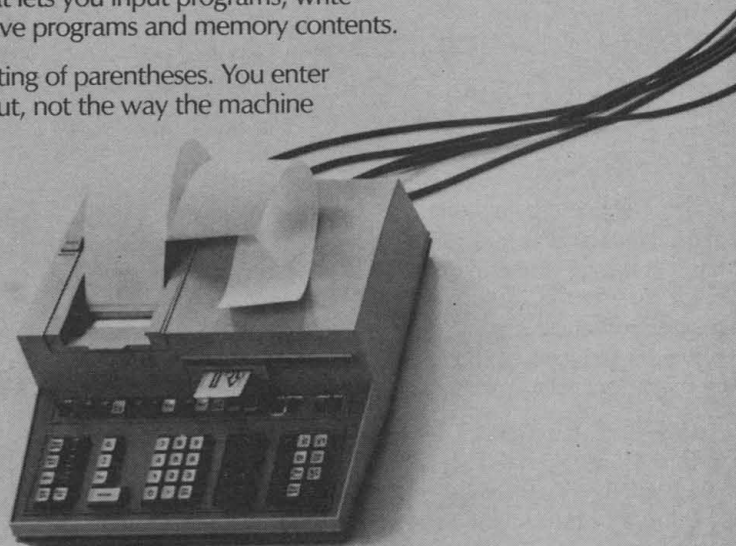
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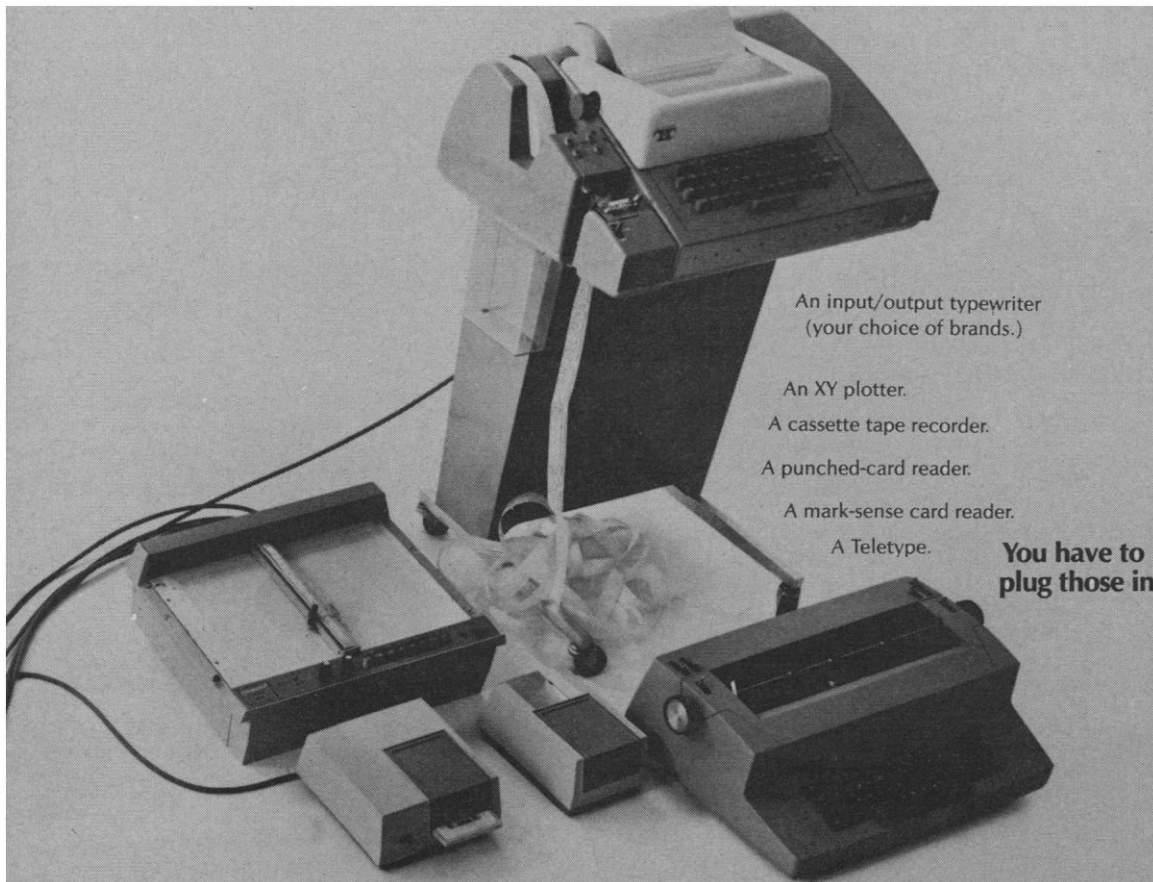
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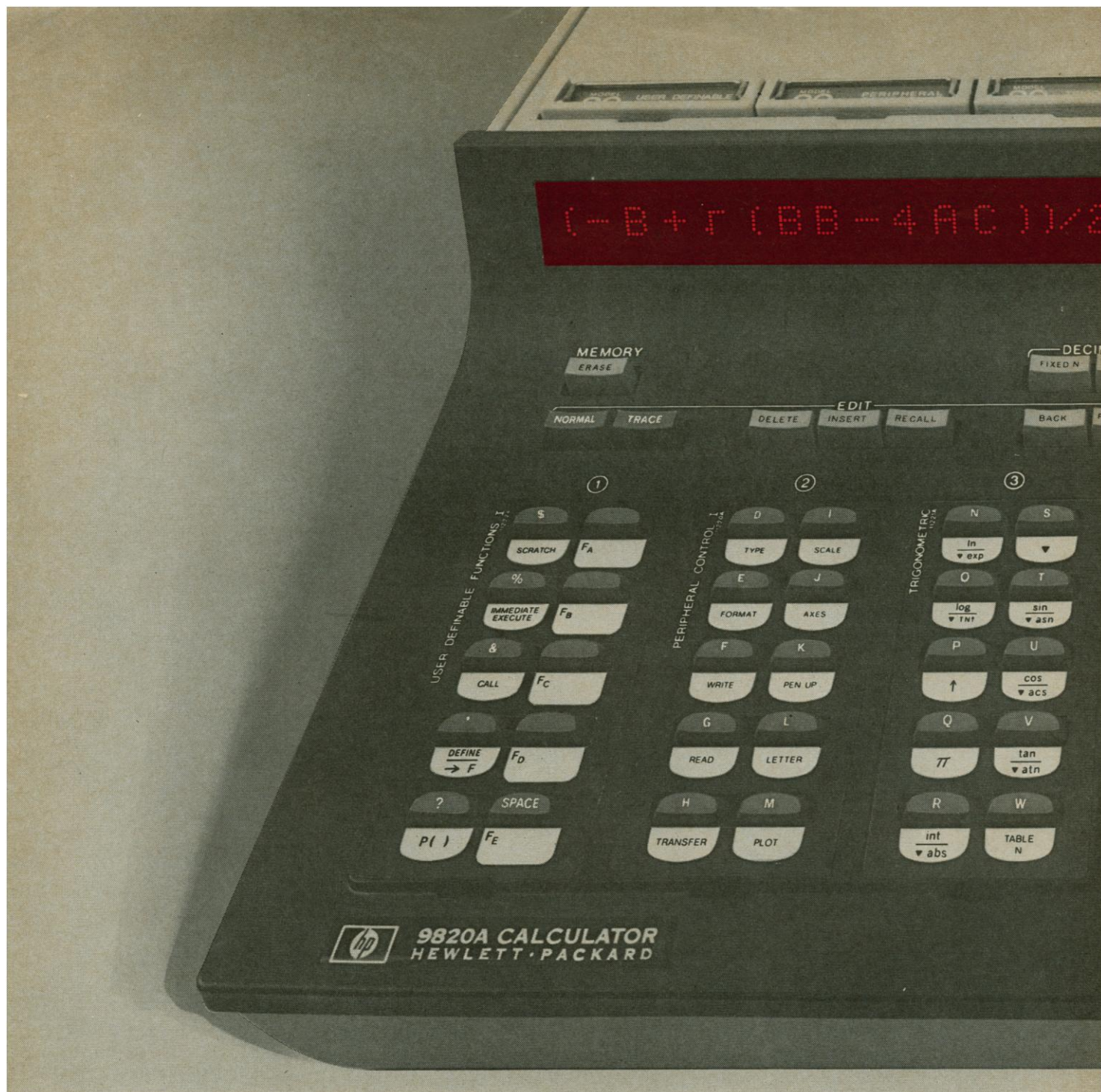
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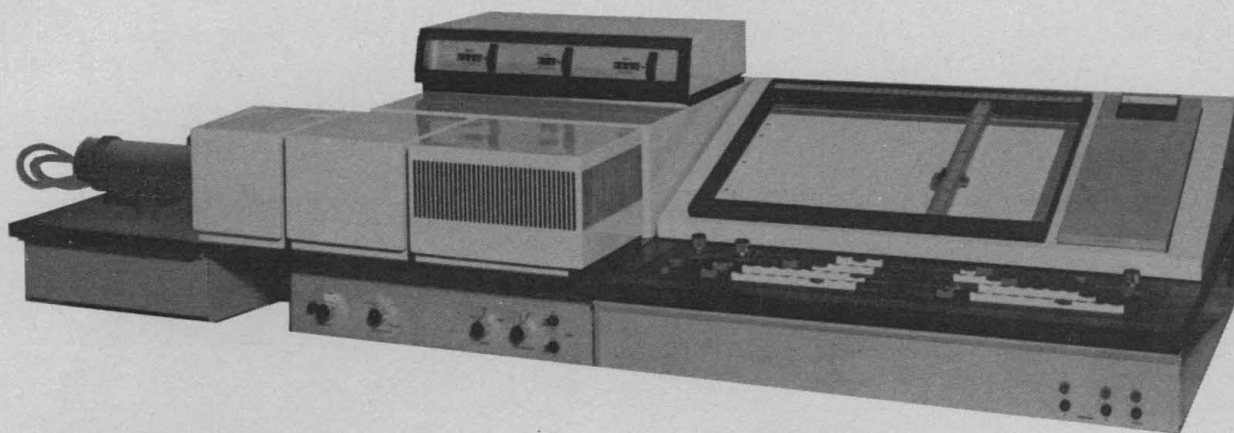
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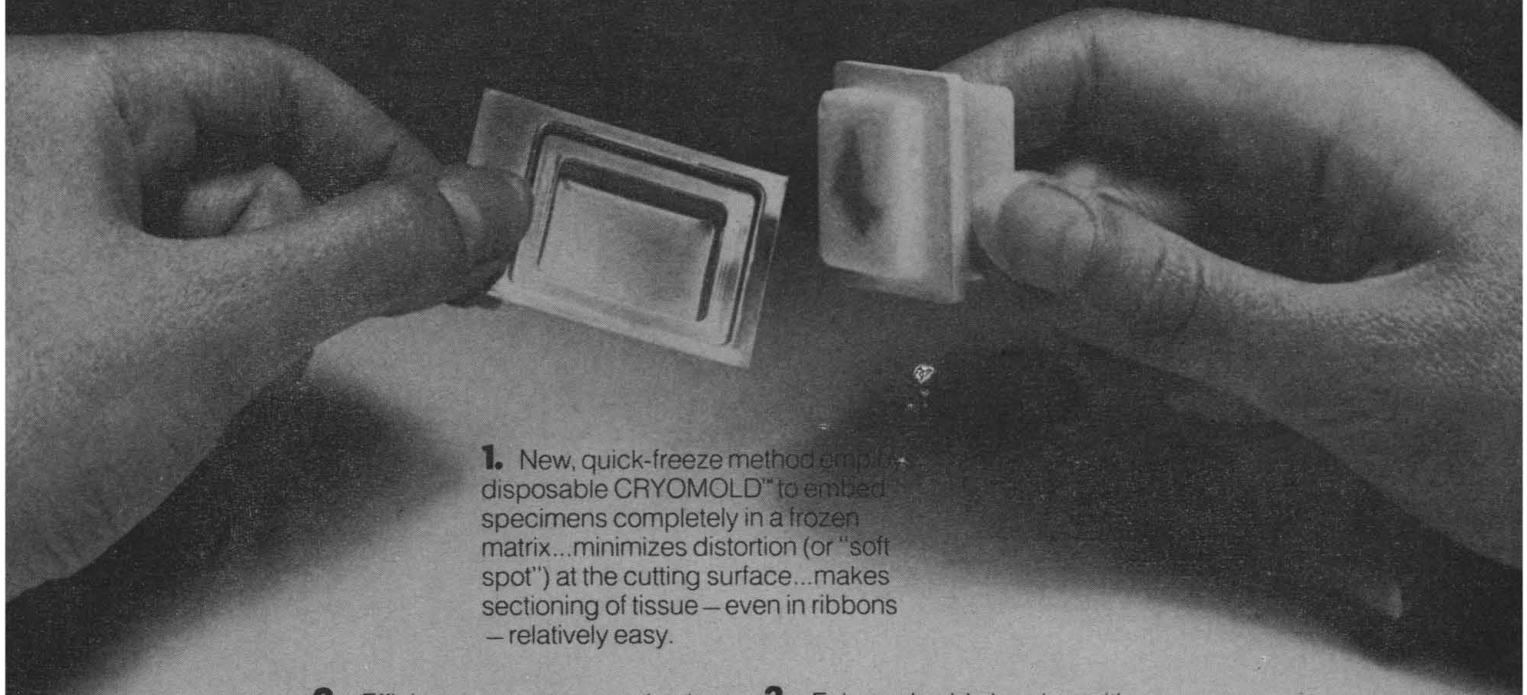
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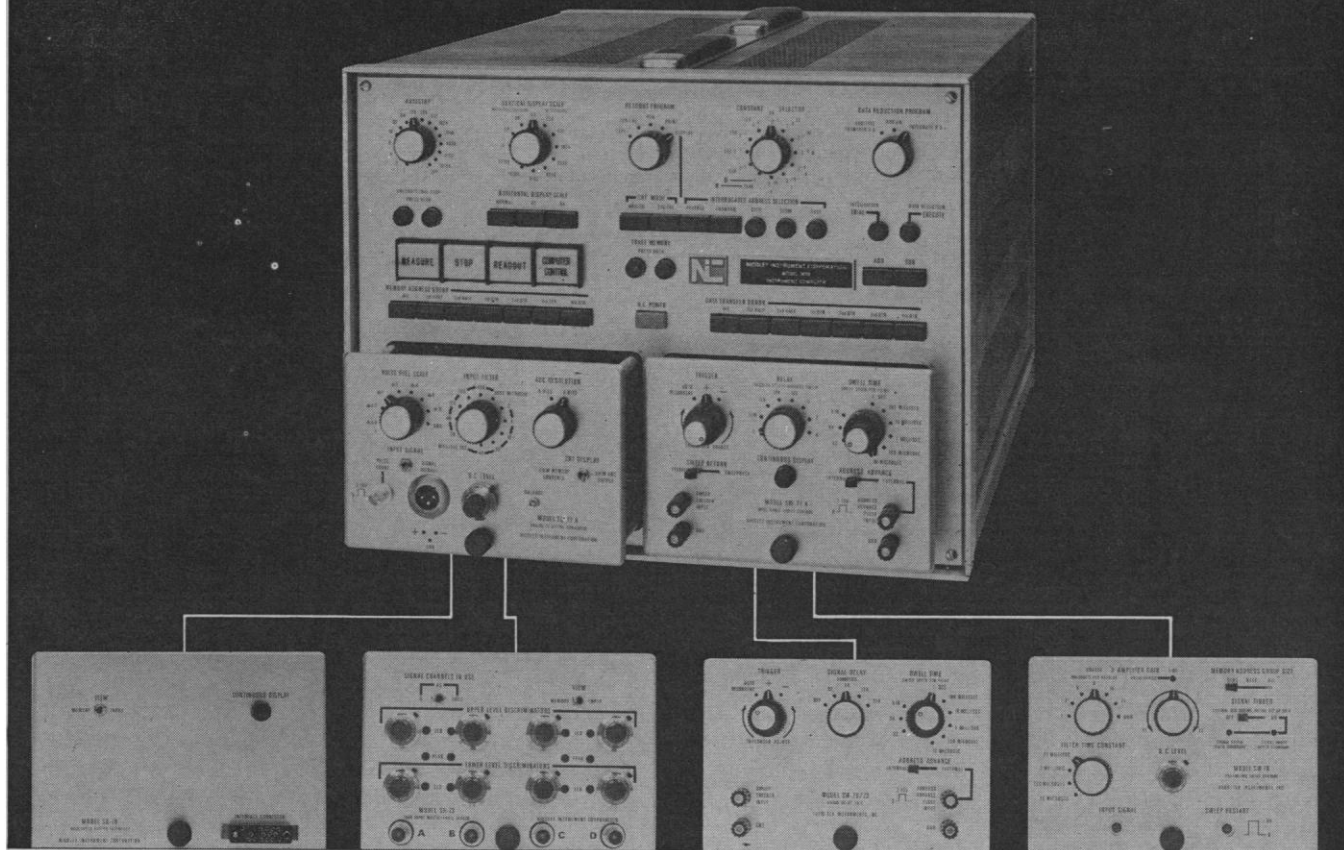
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port as a categorical statement with no recognition of the fact that legal opinion on the question is divided, conveys a false sense of finality and uniformity.

In an excellent review of the law that has been and might be applied to control of population growth, Montgomery (1) concludes, "If the problem is not solved voluntarily, there will be no constitutional bars to compulsory population control." Colorado State Representative Richard Lamm is of a similar opinion (2).

In the 1965 National Fertility Study, respondents reported that one-third of all children born in the previous 5 years were "unwanted." Jaffe, therefore, contends that, "The reduction of unwanted pregnancy . . . provides a tangible objective for national policy. . . ." Before we undertake such a policy, we should first pause to consider the implications of other findings of social science research.

When respondents are asked to label their children as wanted or unwanted, the researcher has little alternative but to accept their replies as valid, for there are no validation criteria avail-

able. In fact, the only way to validate the accuracy of self-reported data, thus we may feel little confidence accepting such measures of unwanted pregnancy as valid.

Green (3) reported responses and actual behavior in a study of contraceptive usage in East Pakistan. Using interview data and clinic records, he found that people underreported both their use and knowledge of contraceptives. Approximately 20 percent of all males and 25 percent of all females who knew about contraceptives (according to education program records) denied any knowledge of them. Of all couples who had used contraceptives (according to clinic records), about 20 percent of husbands and 33 percent of wives denied ever having used them. Other studies have also found significant discrepancies between self-reported data and objectively measured indicators of the same behavior (4).

It would be a mistake to make the elimination of unwanted pregnancy a major objective of U.S. population pol-

icy until we know what we are talking about. What does labeling a child "unwanted" mean? To what extent is the verbal behavior of the parent an indication that they will willingly take preventive action?

EDGAR R. CHASTEEN

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4. D. L. Phillips, *Knowledge from What?* (Rand McNally, Chicago, 1971), p. 23.

The objectives of women's liberation cited by Weis are totally consistent with a national policy to reduce unwanted pregnancy. Indeed, the Commission on Population Growth and the American Future recommends several related efforts—ending sex discrimination in employment and education; changing the content of education that our schools offer both women and men; legitimizing roles for women, alternative to or supplementary to mother-



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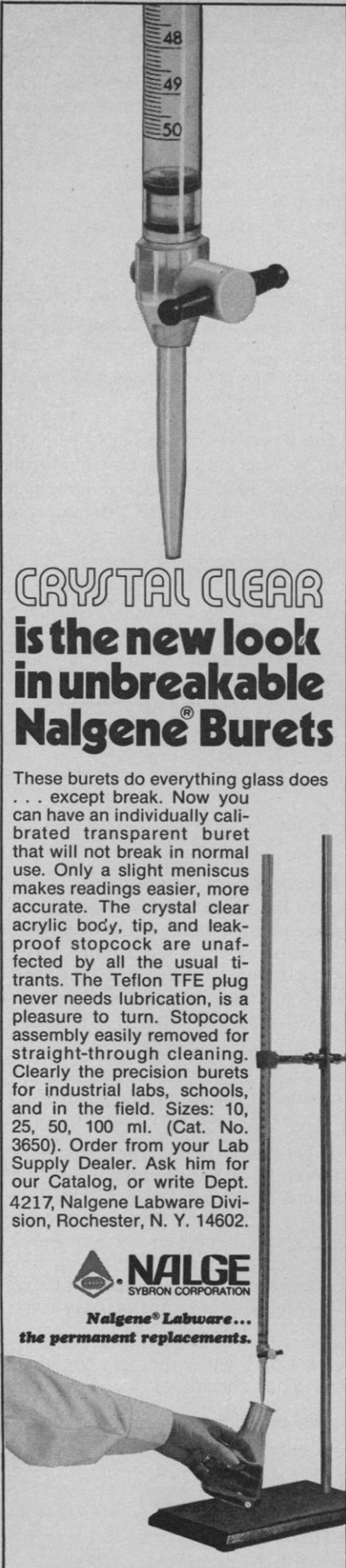
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hood; and providing adequate child-care services—both because they increase personal freedom, and because, in aggregate, they are likely to reduce fertility (1). The interrelation between women's liberation and successful control of fertility seems obvious—without the latter, there is not likely to be much of the former. Some of these efforts, for example, child care and discrimination in employment, are beginning to be conceptualized in specific enough terms to become actual national programs; those which depend on changes in basic values and attitudes continue to lack the specificity necessary for programming. If I “underrated” anything, it was skepticism about our collective capability to induce changes in values directly as a matter of national policy. The more vocal advocates of “beyond family planning” measures rarely confront this problem explicitly, but implicitly they express more confidence in social intervention to change individual motivations directly than is justified by history. Modification of institutional arrangements and priorities seems more tractable, particularly when the institutions involved are in some measure dependent upon public funds and thus more readily influenced by public policy and programs.

The program I outlined stressed the need for various kinds of research to answer unanswered questions, including the “unconscious motives, life-style pressures, and other social and personal factors not always clearly identifiable” that Fein describes. Until they are identified by competent research, it will not be possible to formulate programs that can cope with these factors. I am not familiar with the projects with teenage mothers that Fein cites, but I wonder if they emphasize the *provision* of contraceptive services as strongly as they stress contraceptive *education*; according to an internal evaluation made by the Department of Health, Education, and Welfare of all such comprehensive programs for pregnant teenagers extant in 1968, of all possible services, contraceptive services were *least* likely to be provided in these programs. The problems of already pregnant teen-agers, however, are not necessarily identical to those of all sexually active teen-agers, many of whom might well be able to utilize contraceptive services effectively if they were made available. It will be interesting to see what effect the availability of safe and dignified abortion has on the number of both initial and

subsequent out-of-wedlock births in New York in the next several years.

Chasteen's discussion of the limitations of survey research ignores the basic fact that, in the surveys in question, respondents were required to characterize children already born as unwanted or wanted at the time of their conception. In view of the natural propensity of parents to feel affection for their children and retrospectively to rationalize unwanted conceptions as wanted, the directors of the 1965 and 1970 National Fertility Studies concluded that there was probably error in those findings, but on the side of *underestimation* of the incidence of unwanted births that could have been prevented by more effective fertility control (2). A comprehensive set of programs to achieve such control, at relatively modest social cost, has been recommended by the Commission on Population Growth and the American Future (3), not out of *certainty* that they will by themselves produce replacement-level fertility, but out of the *conviction* that they are likely to take us pretty far down the road to that goal. Reputable legal scholars believe that laws or programs to prevent parents from having wanted children would be deemed unconstitutional in the light of the Griswold case (4) and other rulings. The basic constitutional rationale—the right of the woman to determine whether or not she bears a child—is both implicit and explicit in those recent rulings that invalidate restrictive abortion laws because they violate personal freedoms. Unless the factual circumstances become vastly different from what they are today, it does not seem likely that the same court will interpret the same Bill of Rights as holding state intervention to prevent the birth of wanted children constitutional and antiabortion laws unconstitutional.

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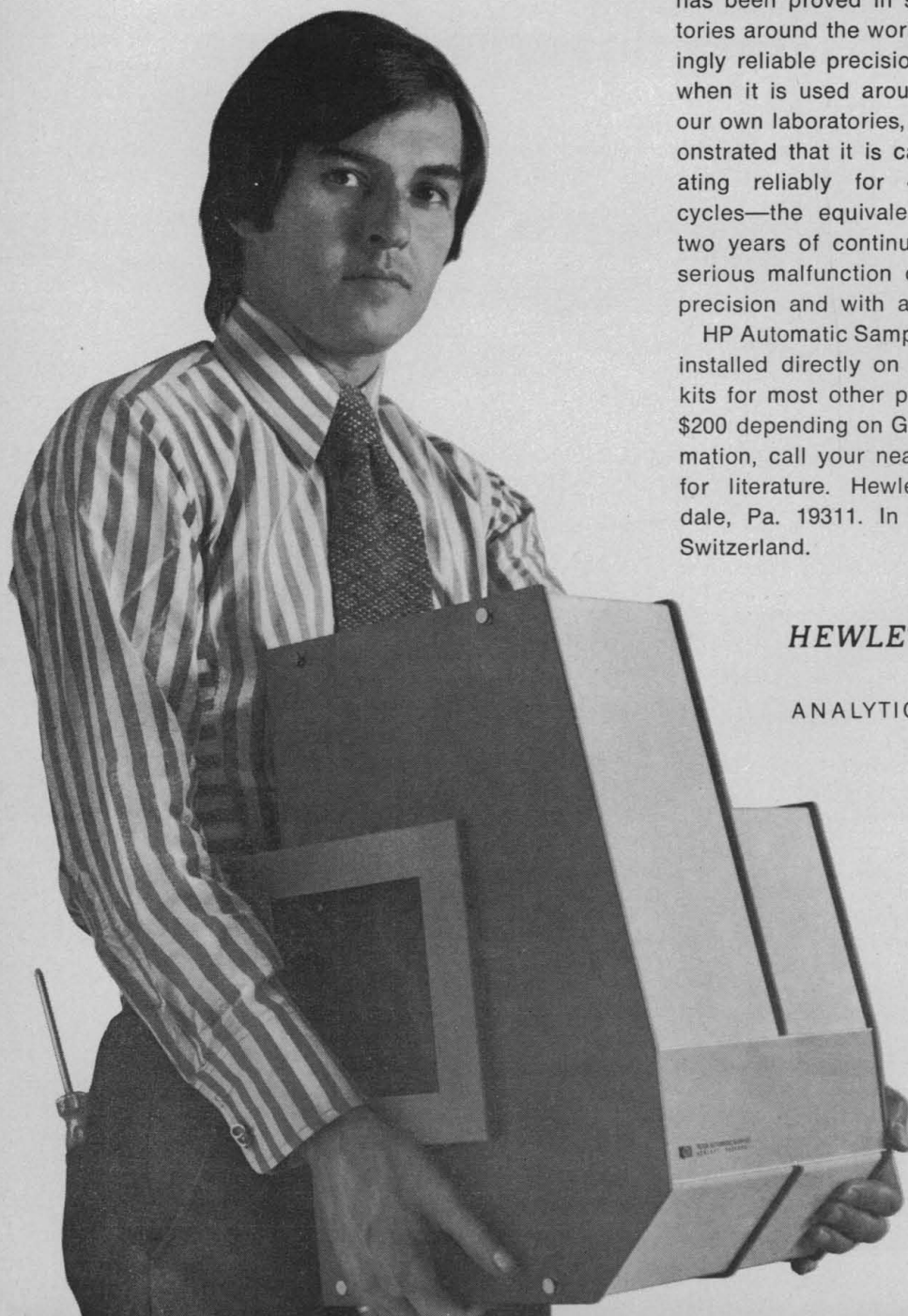
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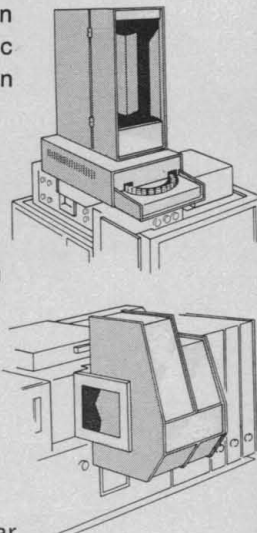
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Research Is Research Is Research

Federal research funding policy, particularly in the mission-oriented agencies, has been a matter of persistent concern to the scientific community for the past several years. Support for a number of significant areas of investigation has been effectively cut, and—perhaps more serious—large numbers of areas have been dichotomized, with ever-increasing rigidity, into basic or applied, with the basic being given a lowered priority as not immediately relevant and therefore unimportant.

But those who set funding policy must learn, as the scientific community is learning, that to dichotomize scientific research into pure and applied is to reify a specious distinction, for science is, in its most fundamental sense, an approach to solving problems. Its goals may be both specific and general, concrete and abstract, practical and theoretical, and immediate and long-range, and several centuries of experience have demonstrated a significant reciprocity between conceptual and practical advance.

An instructive example is found in recent work of the U.S. Department of Agriculture (USDA). Marek's disease is a highly contagious disease affecting the peripheral nerves and the visceral organs of domestic chickens. It results in a loss to the poultry industry of more than \$200 million annually in the United States alone. Scientists at USDA, principally at East Lansing, Michigan, studied this disease for more than 30 years before showing, in basic studies, that it is caused by a herpes virus. In the same year, a similar virus was isolated in turkeys, and within 2½ years a vaccine had been developed that reduced the incidence of Marek's disease in vaccinated chickens by 90 percent, reduced condemnations in broilers by a similar amount, and increased egg production in layers by 4 percent. Efforts are now under way to reduce problems of cost, storage, transportation, and use, in order to maximize the benefits of the vaccine.

But the story does not stop here. Marek's disease is a neoplastic disease, and finding a successful treatment for it may entail a significant breakthrough in the control of at least certain kinds of human cancer. Viruses have been identified with cancer in laboratory animals since the turn of the century. But through the middle 1960's, those so identified were virtually all of the RNA type and were transmitted vertically—that is, passed from diseased egg cell to the cells of the offspring. The work on Marek's disease, in contrast, is not only the first clear demonstration that a herpes virus produces lymphoma, but, more importantly, that the infection is horizontally transmitted (that is, spreads directly among organisms through contact or proximity) and can be successfully controlled by vaccine. While the mechanism of protection is not yet understood, a whole new way of looking at cancer is now possible.

The President, in his 16 March message to Congress,* disavowed the policy of dichotomization in research funding when he reported that all agencies and departments would support basic research. He spoke of "the importance of maintaining that spirit of curiosity and adventure which has always driven us to explore the unknown" and asserted the need to "continue to give an important place to basic research and to exploratory experiments which provide the new ideas on which our edifice of technological accomplishment rests." The scientific community now eagerly looks forward to information on how these agencies and departments intend to translate the President's statement of principle into administrative practice.—WILLIAM BEVAN

* Weekly Compilation of Presidential Documents, Monday, March 20, 1972 (Government Printing Office, Washington, D.C., 1972), pp. 581-590.

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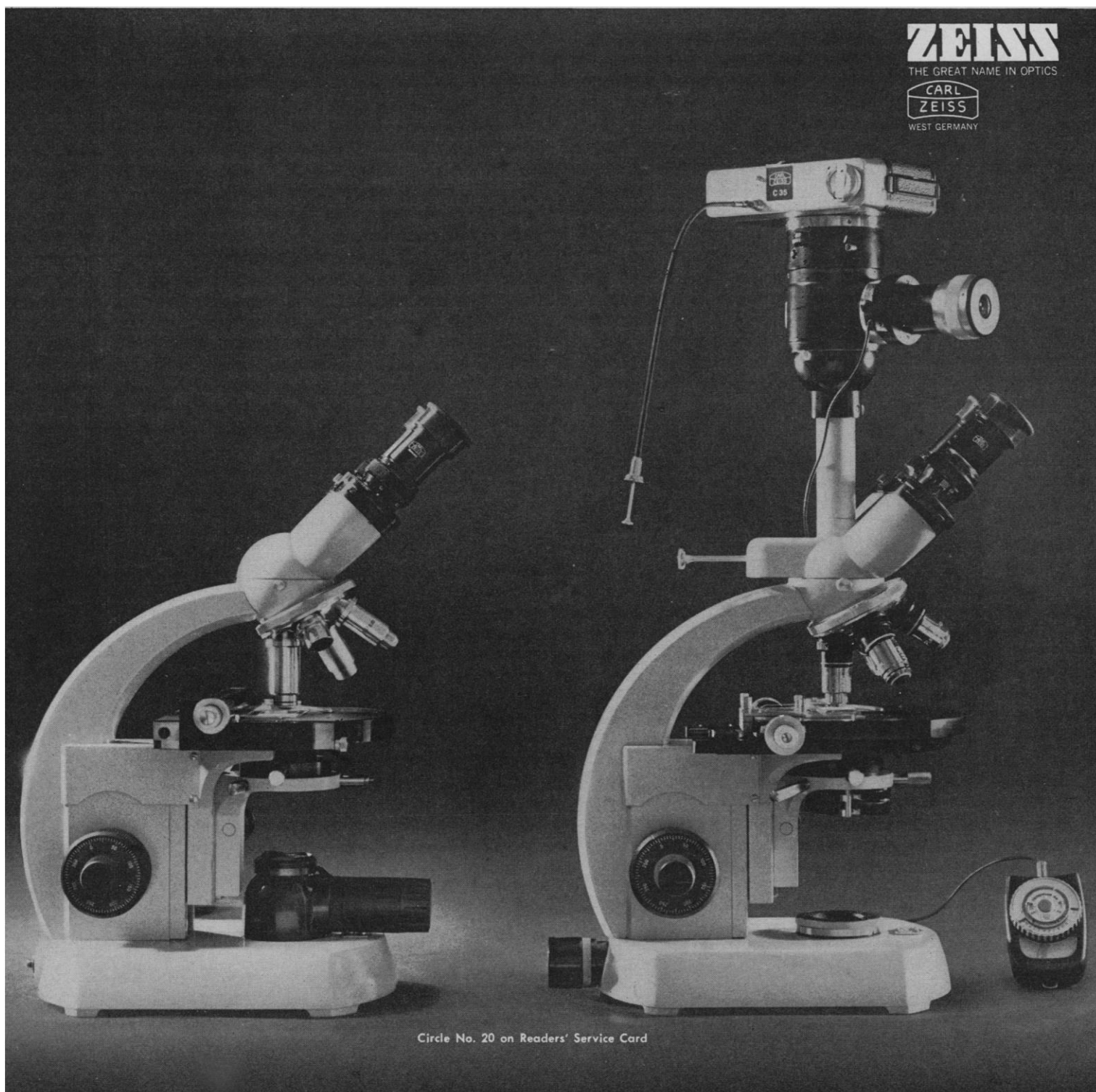
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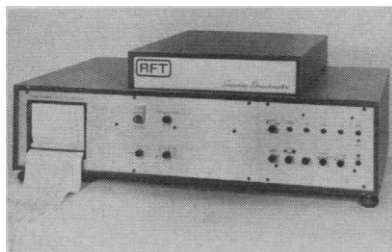
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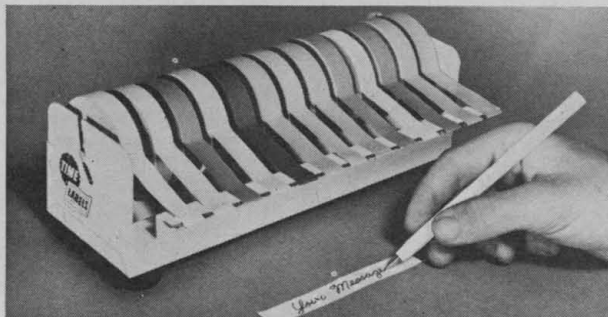
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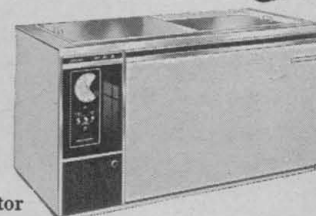
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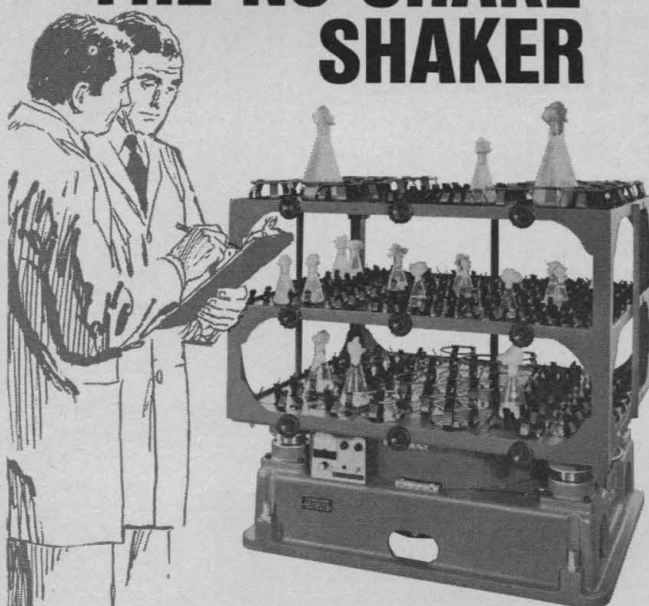
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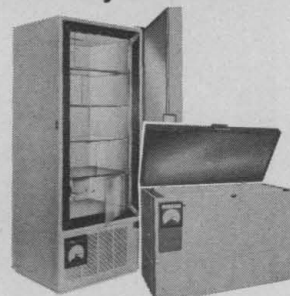
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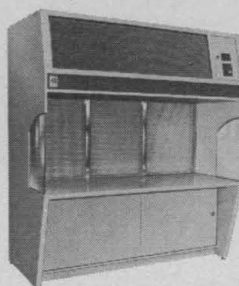
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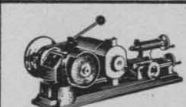
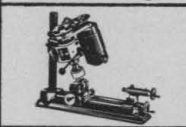
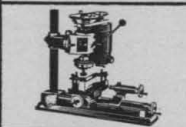
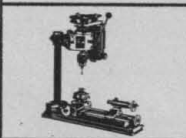
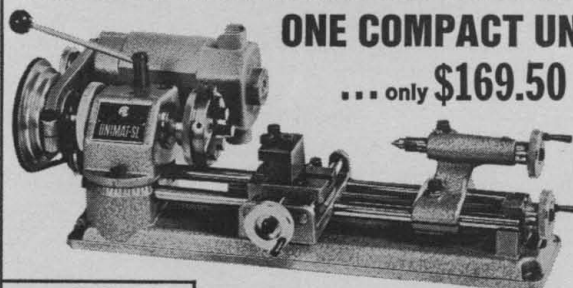


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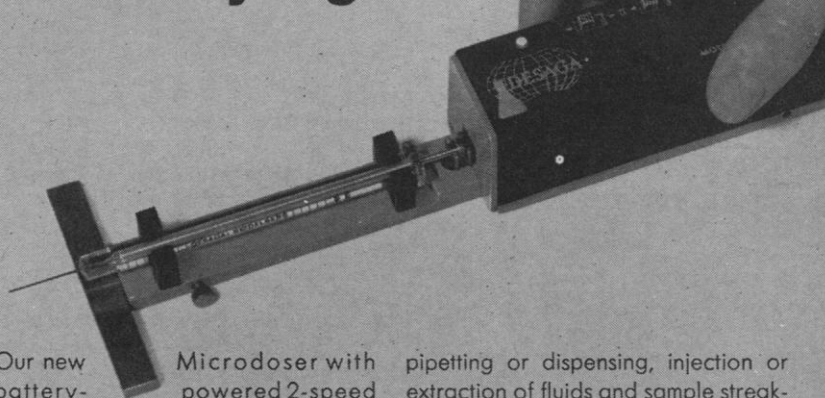
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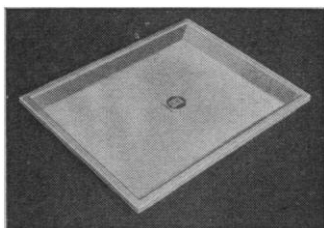
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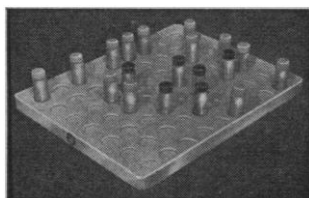
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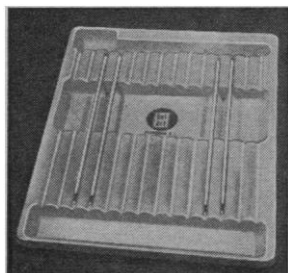
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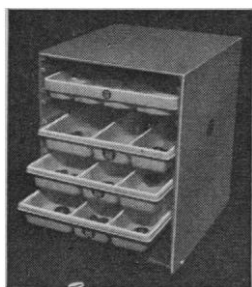
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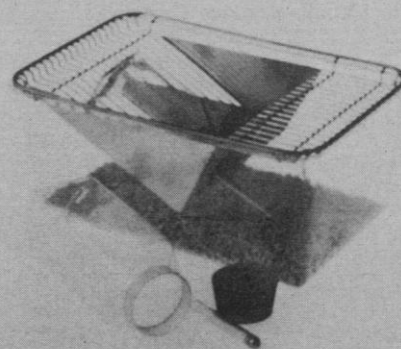
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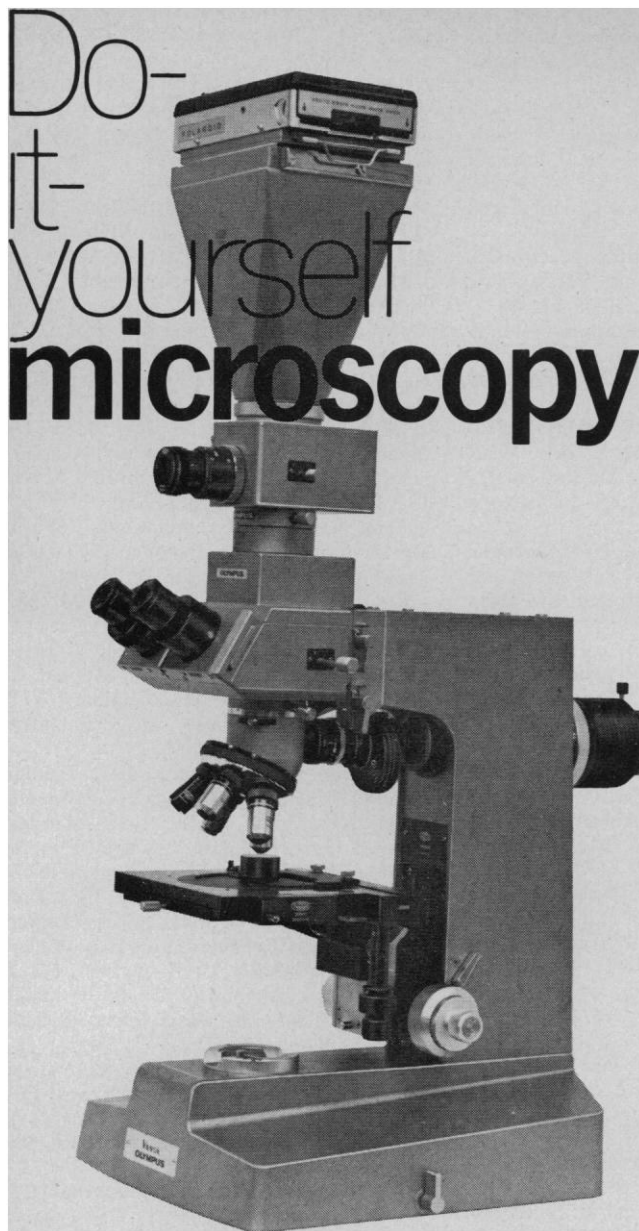
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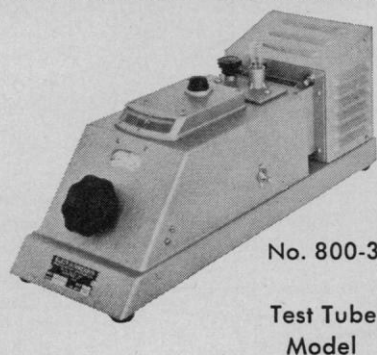
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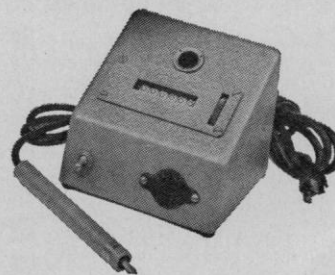
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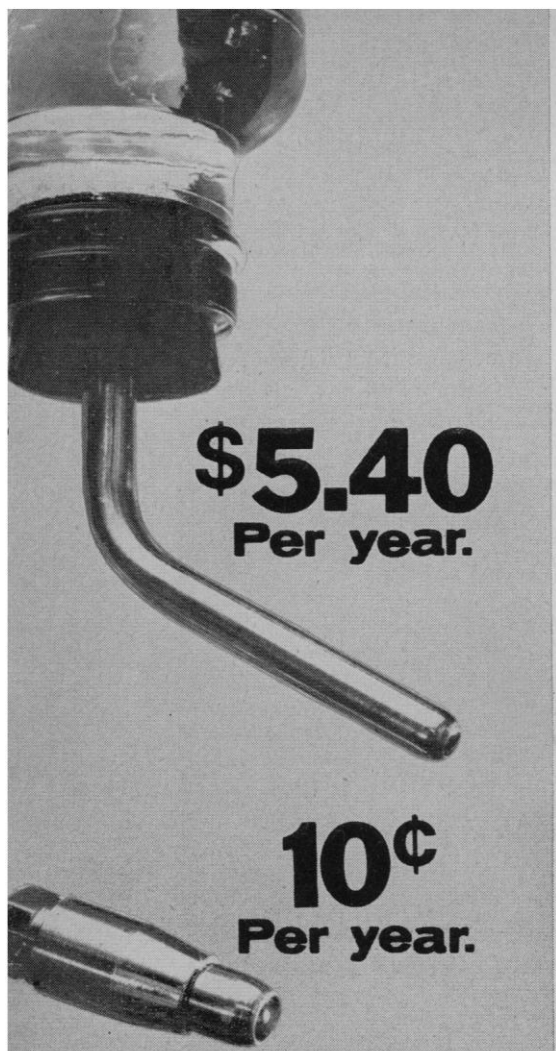
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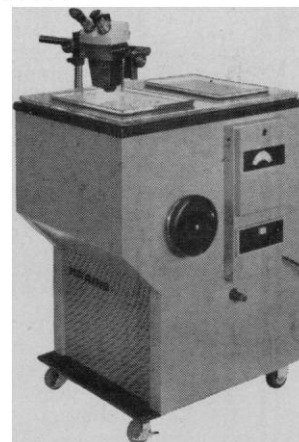
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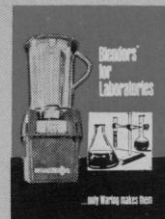
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