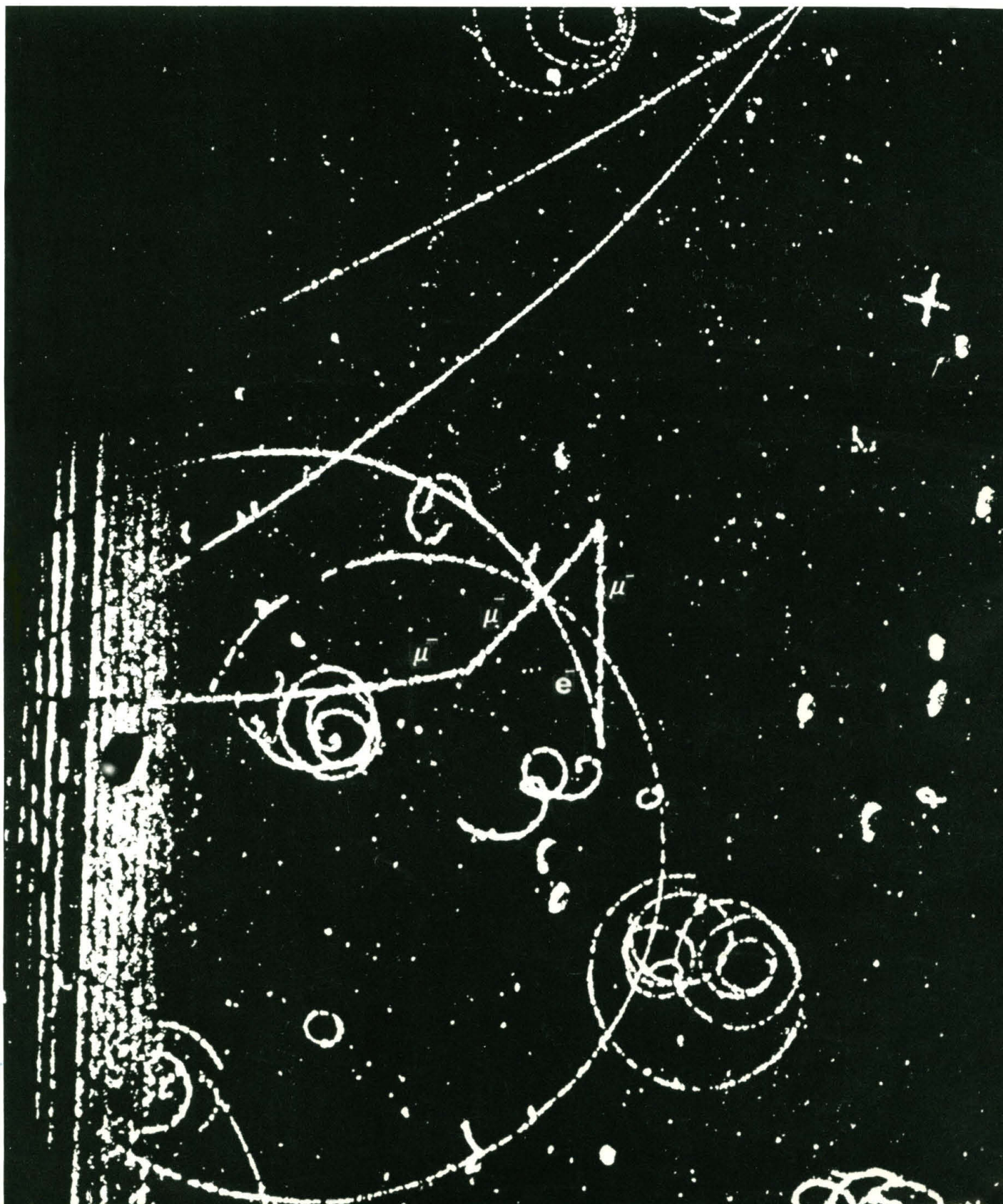


# SCIENCE

12 September 1969

Vol. 165, No. 3898

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SCIENCE is published weekly on Friday and on the fourth Tuesday in September by the American Association for the Advancement of Science, 1515 Massachusetts Ave., NW, Washington, D.C. 20005. Now combined with *The Scientific Monthly*. Second-class postage paid at Washington, D.C. Copyright © 1969 by the American Association for the Advancement of Science. Annual subscriptions \$12; foreign postage Americas \$3; overseas \$5; single copies, 50¢ (back issues, \$1) except *Guide to Scientific Instruments*, which is \$2. School year subscriptions: 9 months, \$9; 10 months, \$10. Provide 4 weeks notice for change of address, giving new and old address and zip codes. Send a recent address label. SCIENCE is indexed in the *Reader's Guide to Periodical Literature*.

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Double muon catalysis. See page 1071. Courtesy of University of California [Lawrence Radiation Laboratory, Berkeley; © Nobel Foundation]

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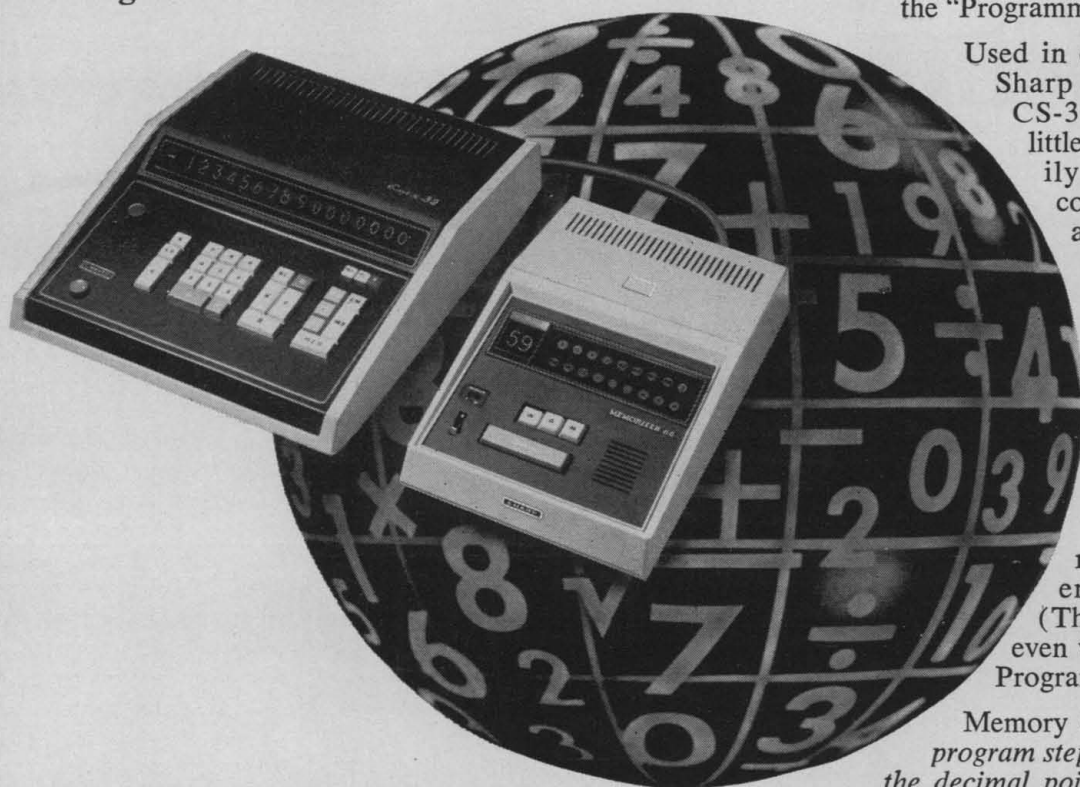
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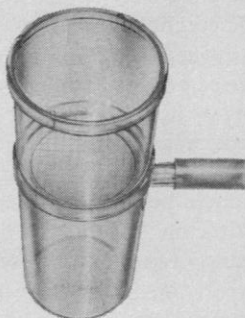
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ington, agency officials with decision powers (directors and associate directors) could stagger lunch and one could report to work an hour later to extend the day. This expedient alone recaptures 60 percent of the talk time lost by West Coast personnel and completely "covers" certain zones. At the present time it is a moot question whether the service which is provided to grantees suffers by this temporal disjunction and whether the gap actually influences communication with Washington.

CHARLES C. CLELAND  
WINDEL L. DICKERSON

Department of Special Education,  
University of Texas,  
Austin 78712

### When Found, Make a Note of . . .

Since 1961 I have doggedly kept exhaustive notebooks as an aid to memory. In them is everything, written down as it occurs: good ideas, bad ideas, plans for experiments, data from experiments, notes of what I read, and what I think. Each entry is dated with the exact time of the entry. Recently I have analyzed the time course of entries in the notebooks. I am astonished to discover regularities. For example, over the years the modal time between entries holds at 2 minutes, half of all entries are made within 1 hour of the previous entry, with about 1200 entries each year.

Many scientists keep comprehensive notes, but do others keep them so that an exact analysis of "ideas" by topics over time might be made? In the *Théorie Analytique de la Chaleur*, Fourier (1) noted that "primary causes are unknown to us; but are subject to simple and constant laws, which may be discovered by observation." Exact time notebooks permit a measurement of the scientific process through Fourier analysis.

I welcome communication from any of you who keep dated notes that would lend themselves to such an endeavor.

HERBERT F. CROVITZ

Department of Psychology,  
Duke University,  
Durham, North Carolina 27705

### Reference

1. J. Fourier, *The Analytical Theory of Heat*, Freeman, Transl. (Dover, New York, 1955).

### McElroy Incident

The editors of *Science* saw fit to publish against my express wishes, emphasized to the author, Philip Boffey, but not cited by him, an article entitled "W. D. McElroy: An old incident embarrasses new NSF director" (25 July, p. 379). I trust you will afford me the courtesy of permitting me to deplore in print what I consider an uncalled for, inappropriate, and tasteless action on the part of *Science*.

The incident discussed was settled, I believe to the satisfaction of all concerned parties, 5 years ago. I accepted McElroy's apologies for his oversight then, and as Boffey acknowledges, I naturally still accept them. Boffey writes of concerned "scientists in England, who are close to the field of research involved" who are requesting "clarification of the matter." I hope that these persons, whose identity has not been divulged to me, together with Daniel S. Greenberg, the foreign editor of *Science* in London, will consider this letter adequate and final "clarification" of an incident that, in its restatement, does little credit to them, to Boffey, to the editors of *Science* or, indeed, to the advancement of science.

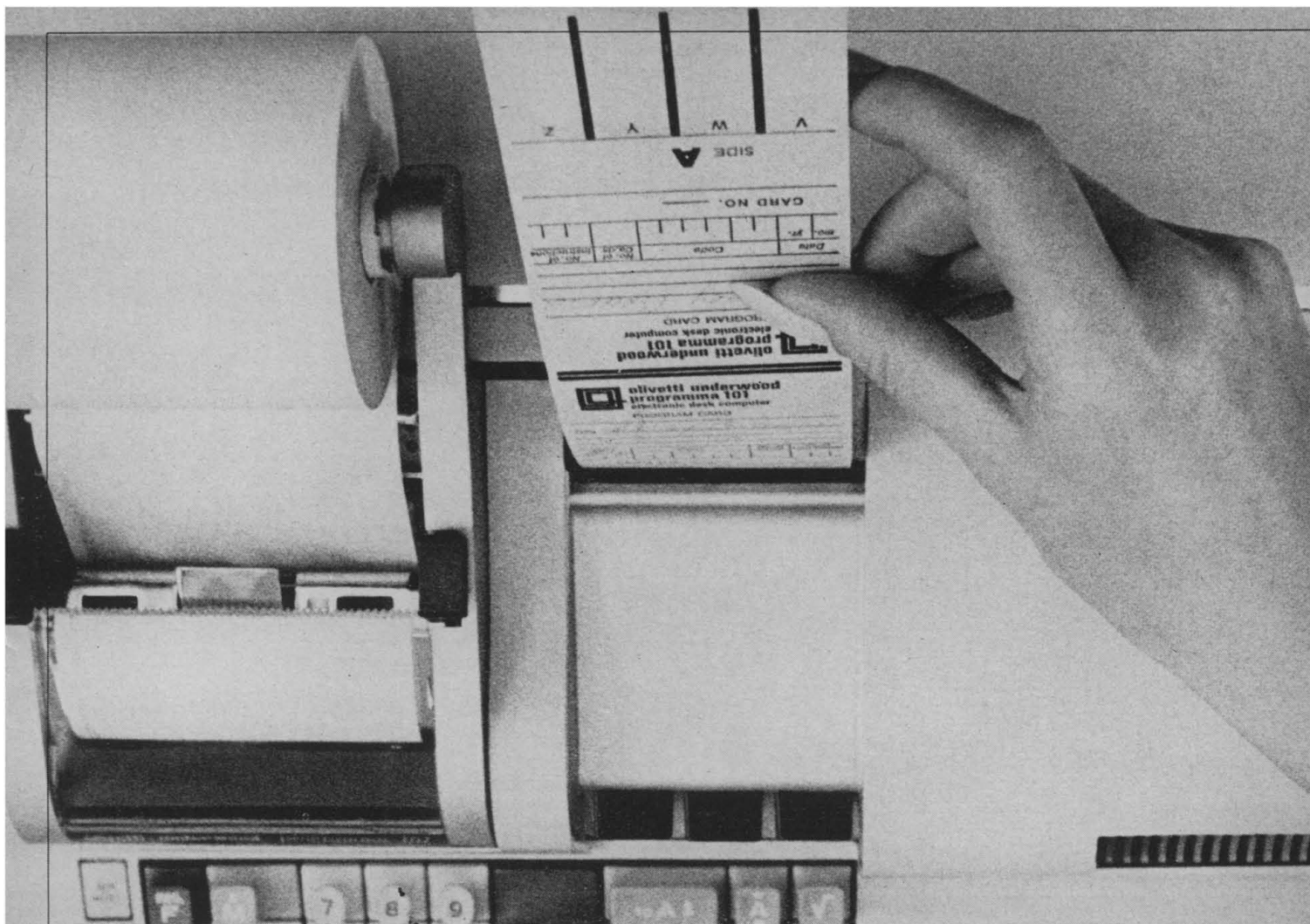
DAVID S. SMITH

School of Medicine, P.O. Box 875,  
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Philip Boffey has given an accurate account of the McElroy-Smith episode insofar as I can remember, but I don't understand what possible point there was in resurrecting the business. The claim that "a few scientists in England, who are close to the field of research involved" are agitating for clarification sounds like nonsense because it is precisely we who are in the field who know that McElroy has never published a word of original research on firefly cytology and could not conceivably have been trying to represent himself as an expert in electron microscopy. As I told my good friend David Smith at the time, the incident was so clearly a bit of stupid and reprehensible, but honest, carelessness by a very busy guy that it could not possibly diminish Smith's own high standing among his informed colleagues.

JOHN B. BUCK

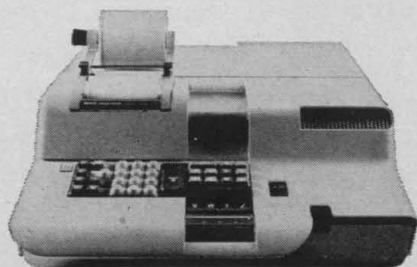
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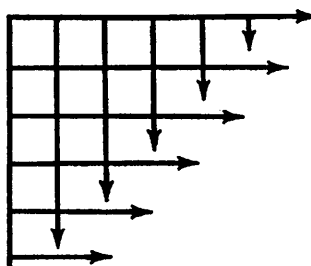
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## Crumbling Foundations of Prosperity

Two decades ago, American prosperity was solidly based. We had bountiful natural resources; our industrial plants were undamaged by war; we led in mass production techniques; and our innovative scientific capabilities were outstanding.

Today the foundations of American prosperity have crumbled to an extent not generally recognized. We still possess great natural resources, but they are not adequate to maintain a high-level economy. We face the necessity of importing more and more raw materials and finding the means to pay for them. This will be increasingly difficult, for our ability to compete in international trade is diminishing. In 1964—a good year—U.S. exports exceeded imports by \$7.1 billion. In contrast, during the first half of 1969 the value of exports topped that of imports by only \$0.15 billion.

An even greater factor than increasing imports of raw materials has been the invasion of foreign finished products such as steel and automobiles from countries that have more than recovered from the destruction of World War II. Our advantage of leadership in mass production techniques has largely disappeared. We still lead in scientific research and in the ability to innovate, but we have lost momentum.

A large contributor to our present problems has been the steel industry. Today, in spite of advantages in raw materials, it does not compete with the steel industries of Germany and Japan. It has been complacent, and slow to adopt the basic oxygen furnace.

In contrast, our chemical industry has long been a leader in research activity. Thus it comes as an especially painful blow to learn that the U.S. chemical industry, which has contributed much to our balance of payments, is feeling the effects of severe foreign competition. This fact was documented in an article by J. G. Tewksbury in the 28 July issue of *Chemical and Engineering News*. He cited as an example one of the crucial petrochemical intermediates, ethylene. This substance enters into plastics such as polystyrene and polyethylene and also into other key chemicals. Analysis of the production and distribution of major items based on ethylene reveals a dramatic change in the U.S. position. Five years ago the United States synthesized about 95 percent of the ethylene products entering foreign trade. By last year this figure had dropped to 40 percent. The big new factors were the European Economic Community and Japan, both of which changed from net importers to heavy exporters. Additional plants are being constructed in Europe and in Japan, and it is quite likely that a further diminution of the U.S. export status will occur.

Tewksbury notes that a number of factors help account for the loss of our competitive ability. The European nations and Japan encourage exports and discourage imports more vigorously than we do. Domestic producers of petrochemicals are handicapped by the oil import program which inflates the cost of their feedstocks. Another factor is the high cost of labor. A few years ago, such disadvantages for the United States were more than counterbalanced by larger plants and advanced technology. These advantages have disappeared. Plants abroad are now of the same scale, and our technology has been disseminated.

The loss of a competitive edge in this area of the chemical industry is a very serious development. It portends similar changes in other areas of high technology.—PHILIP H. ABELSON

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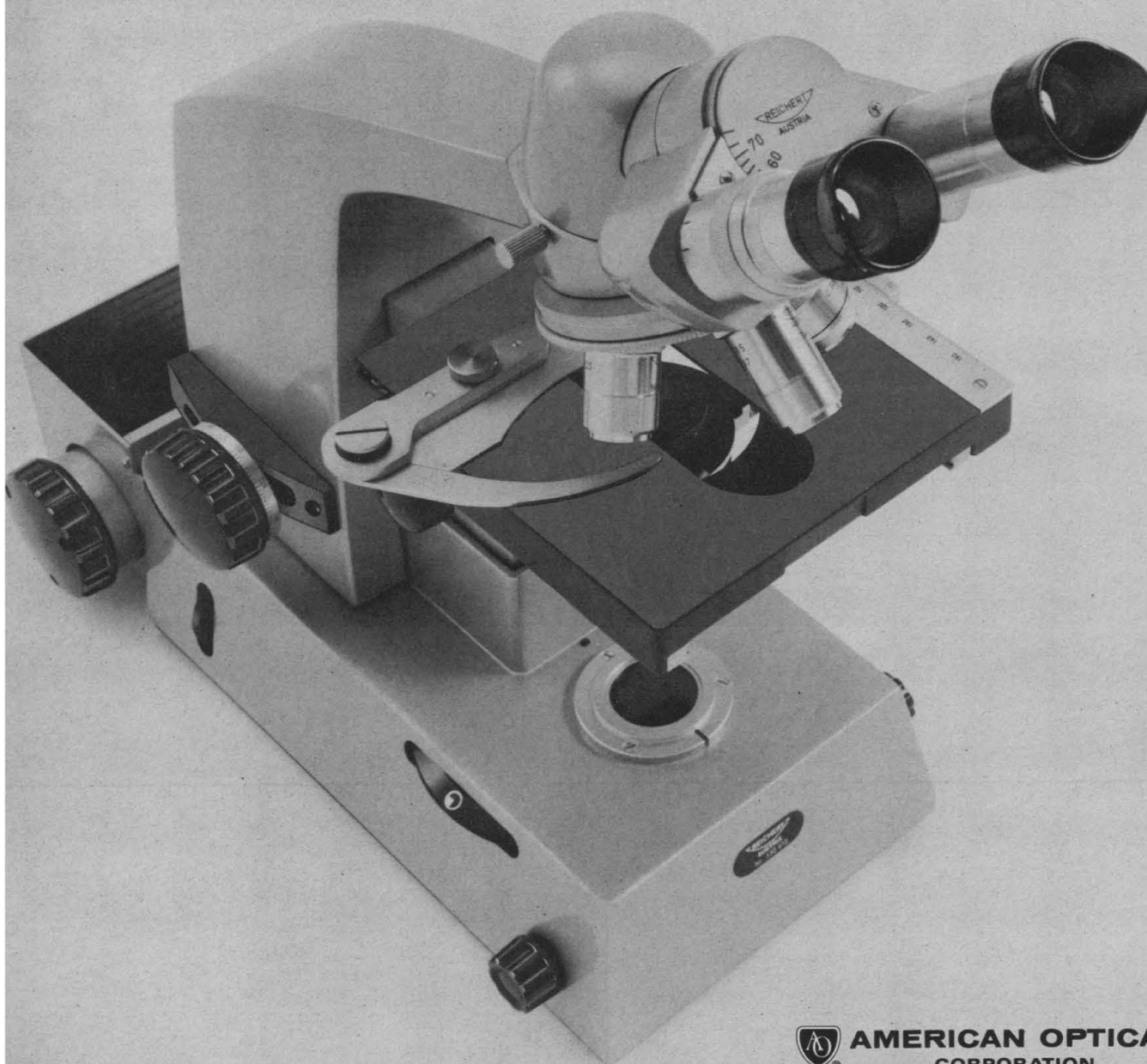
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