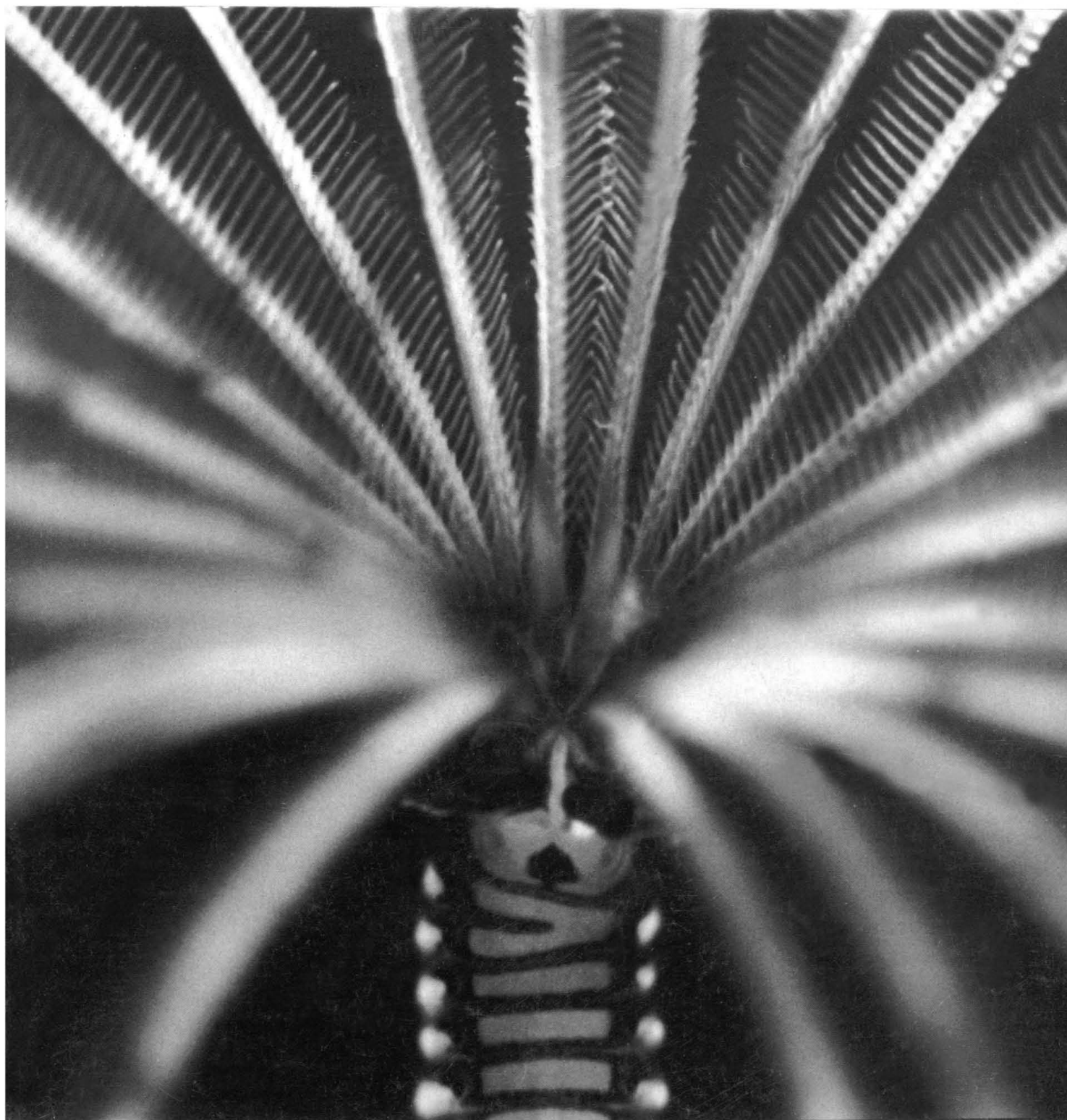


# SCIENCE

26 March 1971

Vol. 171, No. 3977

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



Index Issue

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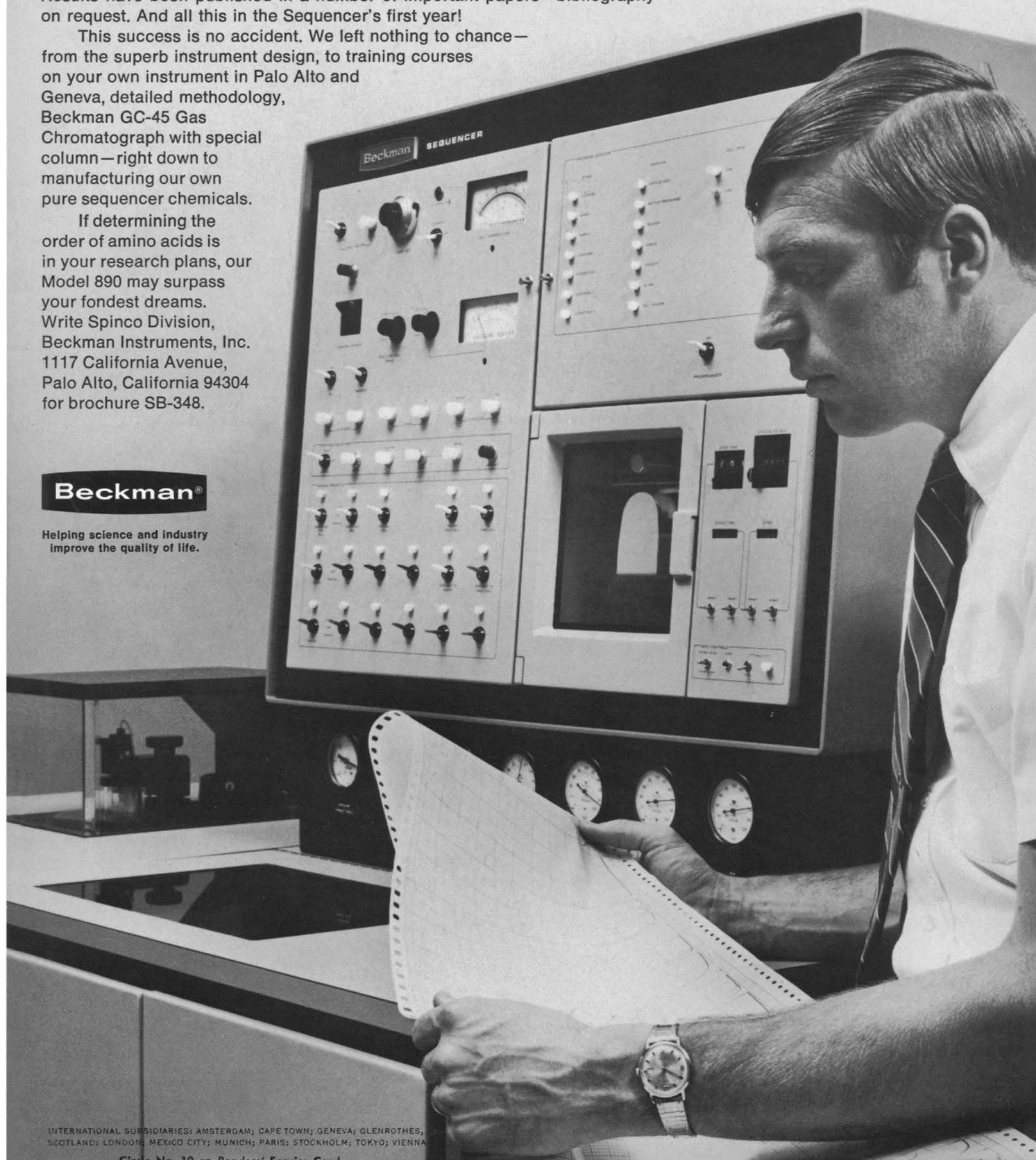
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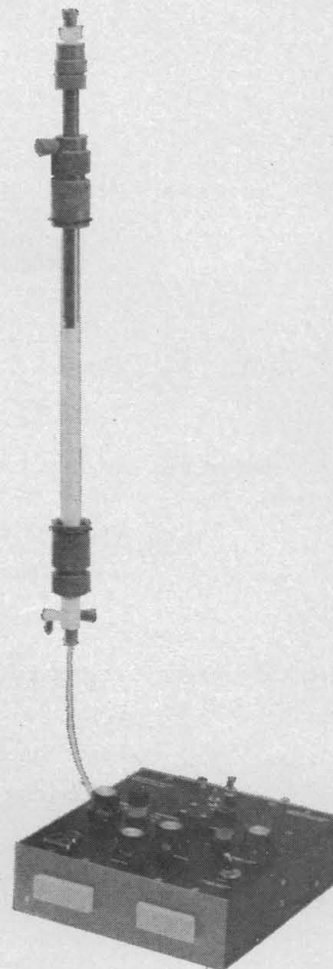
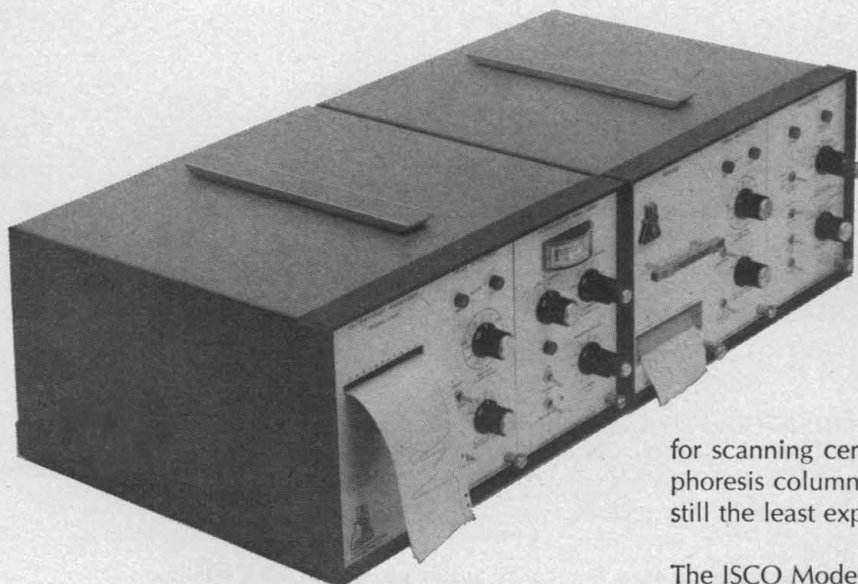
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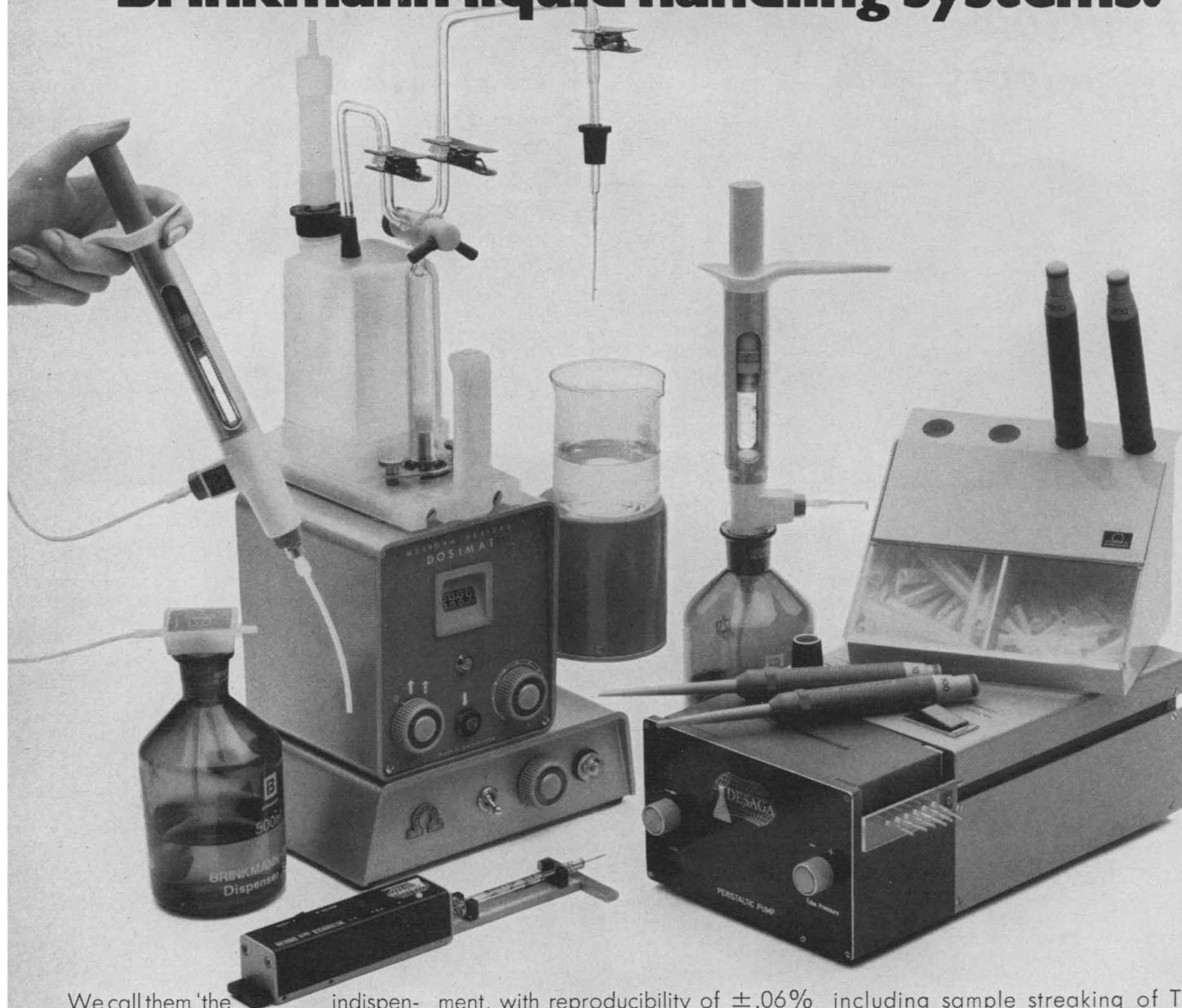
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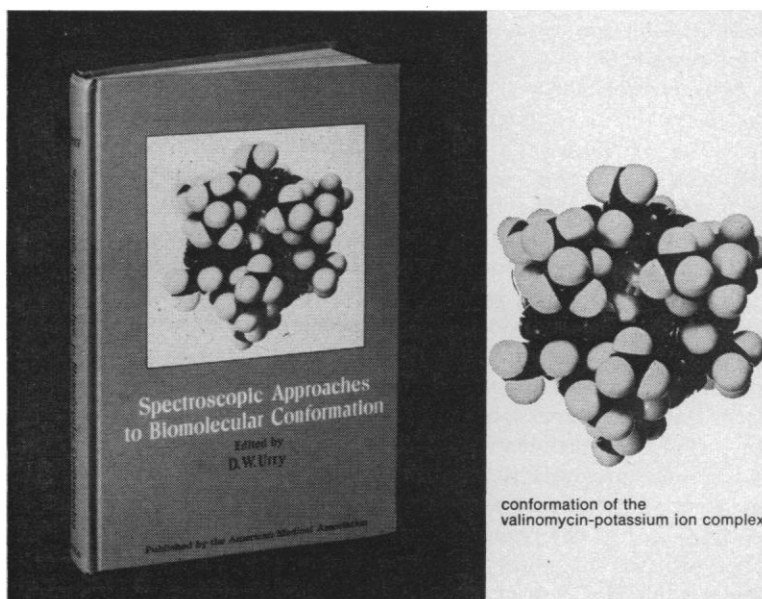




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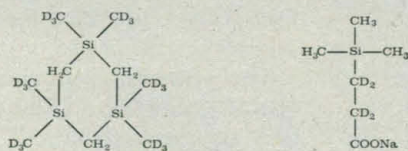
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# ANALYTICAL REPORT



## Two New Proton NMR Standards for High Temperatures and Aqueous Solutions

The temperature range above 100 °C is important for studies of rotation barriers in molecules with hindered rotation, of transition enthalpies of structural isomers and of NMR emission phenomena after chemically induced dynamic nuclear polarization. Tetramethylsilane (TMS) is used in this temperature range with difficulty because of its low boiling point. Cyclosilane with its boiling point of 208 °C would be ideal had it not two NMR signals, from methyl protons near 0 and from methylene protons at -0.327 ppm. So, we removed the CH<sub>3</sub> signals by replacing them with tri-deuteriomethyl groups. The result is cyclosilane-d<sub>18</sub>. Its solubility in solvents used for high temperature NMR measurements is sufficient to obtain a stable locking signal up to the boiling point of the solvent used. It has one sharp resonance signal with a half width of 0.5 Hz at -0.327 ppm and allows recording of undisturbed spectra downfield of TMS.



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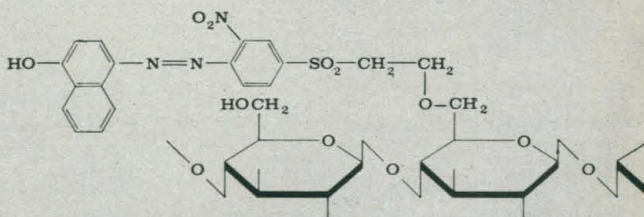
	Insoluble derivative	Free enzyme
BAEE (pH 9.5; 30 °C)	10 U/mg	60 U/mg
BAPA (pH 8.0; 25 °C)	0.1 U/mg	2.0 U/mg
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Specific activity of bound protein		
BAEE	35 U/mg protein	60 U/mg
BAPA	0.3 U/mg protein	2.0 U/mg

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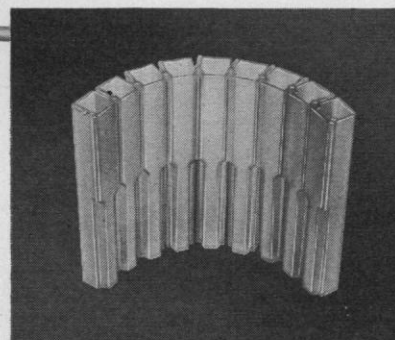


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## The R & D Processing of Domestic Programs

An encouraging development on the domestic front is the increasing, albeit still limited, recognition that ideas for new domestic programs must undergo a full "research and development" processing before they are mass-produced. Such an R & D processing is a fairly standard practice in the engineering of weapons and spacecrafts. However, until recently, the jump from a vague notion of a new domestic social program to a multibillion dollar system or to congressional legislation requiring nationwide implementation has been all too common. In the past, frequently, the assumptions on which the success of a project would depend were not spelled out, nor was the idea subjected to trial runs in real-life situations. Probably the most notorious jump was the last-minute writing into the 1964 antipoverty legislation of a phrase requiring "maximum feasible participation of the poor" in more than a thousand communities, without anyone's having a clear conception what such participation entails, how it is to be effected, and what the consequences are likely to be.\* Less known, but much costlier, was the commitment to spend \$1.05 billion a year on Title I of the Equal Opportunity Educational Act, which provided compensatory education for disadvantaged children, before a major study of the effects of the plan was carried out. When the study was available 3 years later, it showed that there were no measurable beneficial effects.†

In contrast, two new ideas, in the same areas of combating poverty and improving education, are being carefully processed; these are the negative income tax and the school voucher plan. First, they were worked out theoretically; negative income tax was studied primarily in mathematical and statistical terms, while the school voucher plan was carefully spelled out in chiefly qualitative terms. Next, small-scale experiments are being conducted, which have already led to numerous specifications and revisions of the systems, and then these revised versions are next tried in still larger systems. Once the results of these trials have been evaluated, a much sounder foundation on which to base national policy will be available.

One case in point is the school voucher plan, designed in detail by Christopher S. Jencks at the Center for the Study of Public Policy in Cambridge, Massachusetts. The plan provides parents with vouchers to "buy" whatever kind of education they wish for their children from various educational sources. Now, small-scale feasibility studies are being conducted in Seattle, Washington, Gary, Indiana, and Alum Rock, California. If successful, the experiment will be conducted in three or more school districts.

The negative income tax plan was first studied in great detail by economists, chiefly at the University of Wisconsin, and by a Presidential Commission; subsequently, it was tested with 400 families in New Jersey. Next it was planned that a whole state (Vermont) take part in this experiment.

Cynics may say that the motivation for going slow—conducting first studies and *experimenting* next—is not due to a quest for sounder policy but is a result of lack of funds for large-scale programs and the desire to seem innovative and active without taking substantial action. They further point out that, at least in the case of the New Jersey experiment, legislation was promoted before the data were available. Indeed, we may have turned to the correct procedure for inappropriate reasons, and the acceptance of the R & D processing on the domestic front surely is less than complete. Still the two experiments do constitute a step in the right direction, and the success of policies carefully checked out and de-bugged may taste so good that it may yet become a widely followed practice.—AMITAI ETZIONI, *Chairman, Department of Sociology, Columbia University, and Director, Center for Policy Research.*

\* Daniel P. Moynihan, *Maximum Feasibility Misunderstanding* (Free Press, New York, 1969), pp. 87-88. † James S. Coleman et al., *Equality of Educational Opportunity* (U.S. Government Printing Office, Washington, D.C., 1966).

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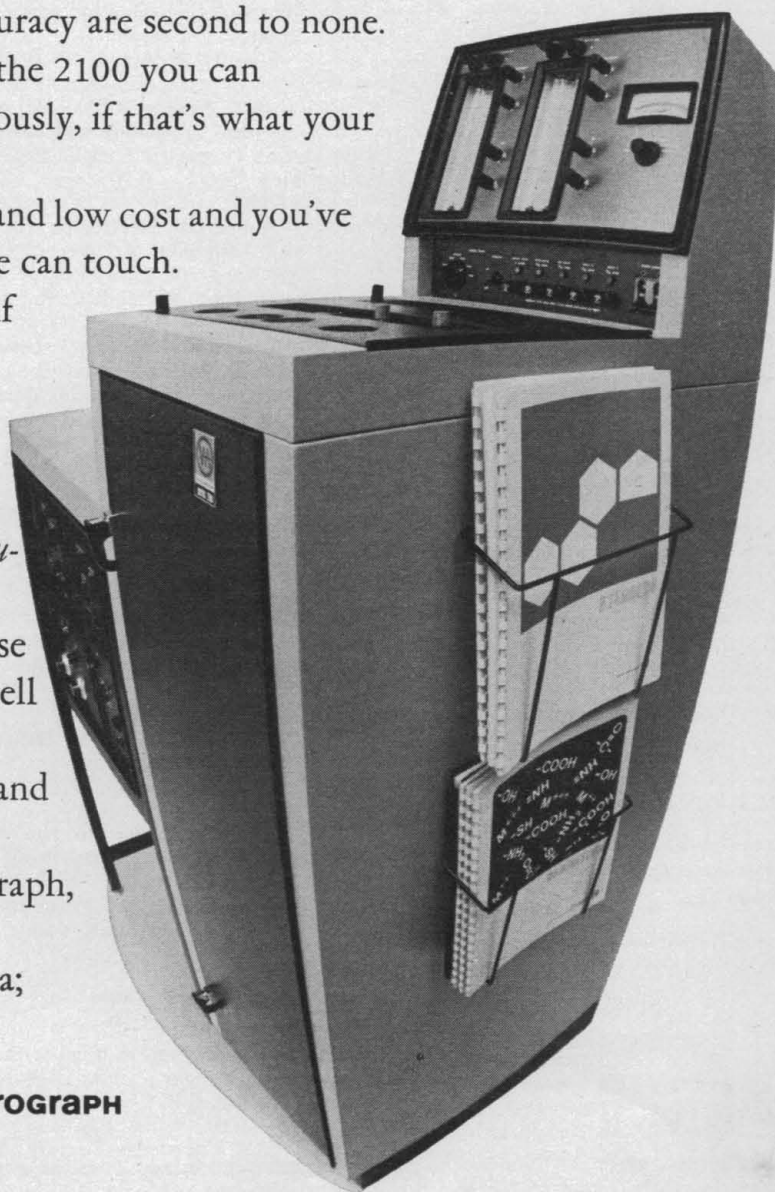
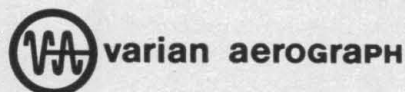
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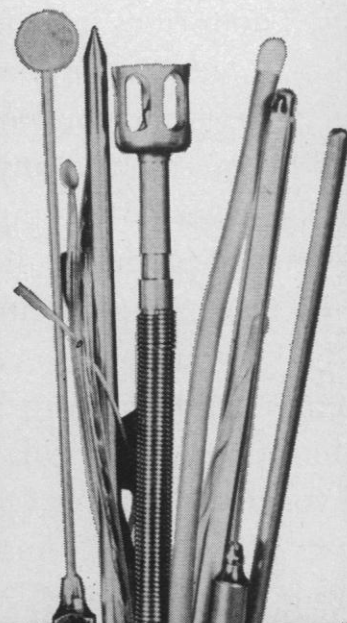
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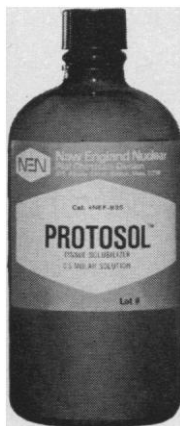
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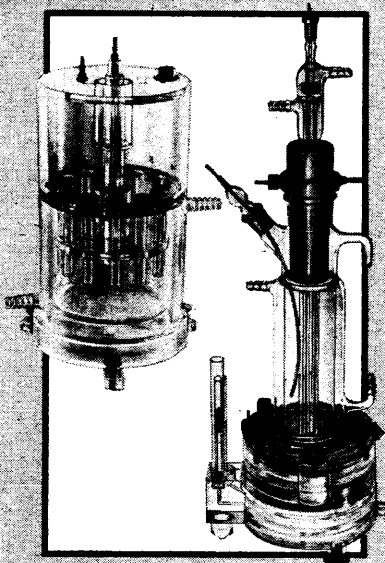
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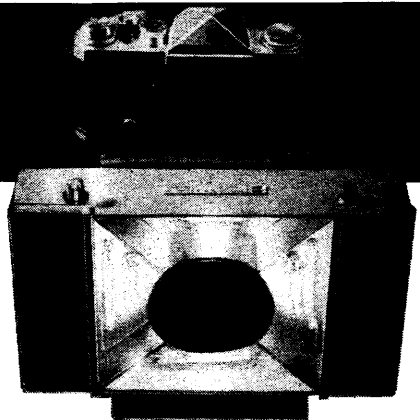
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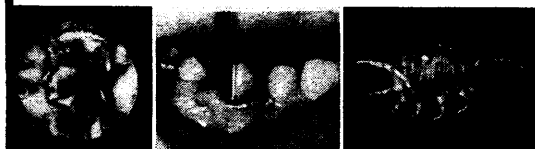
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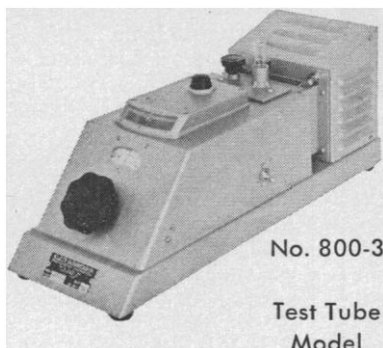
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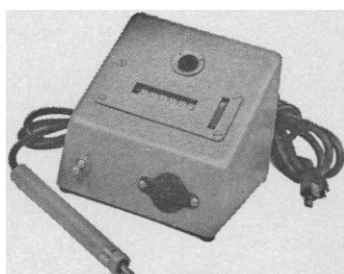
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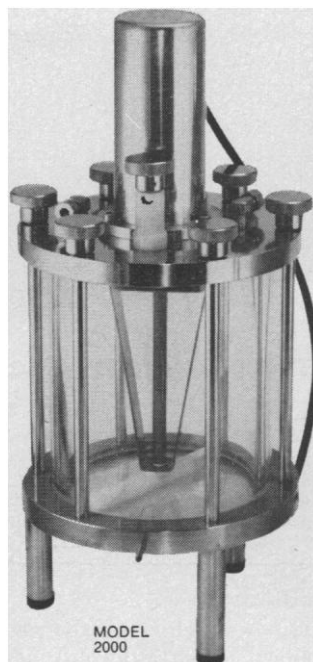
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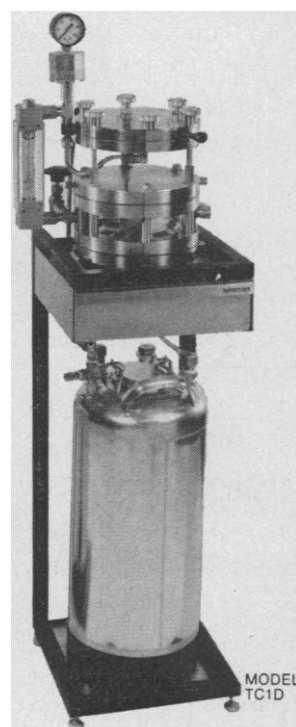
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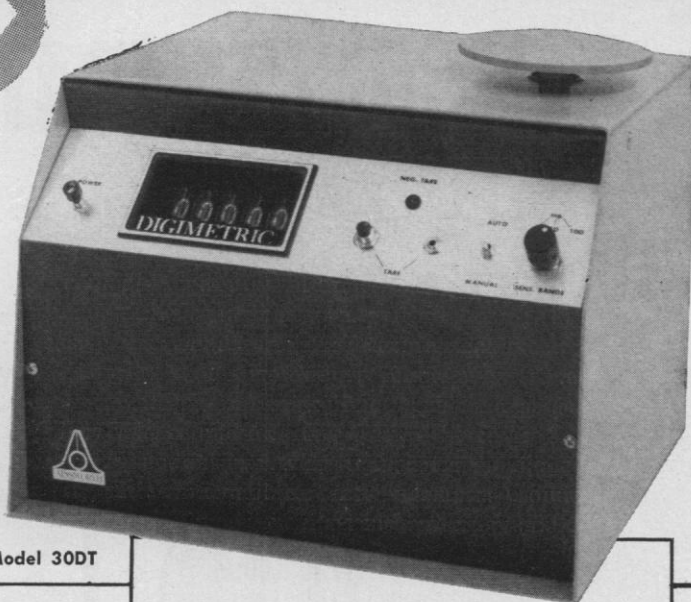
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