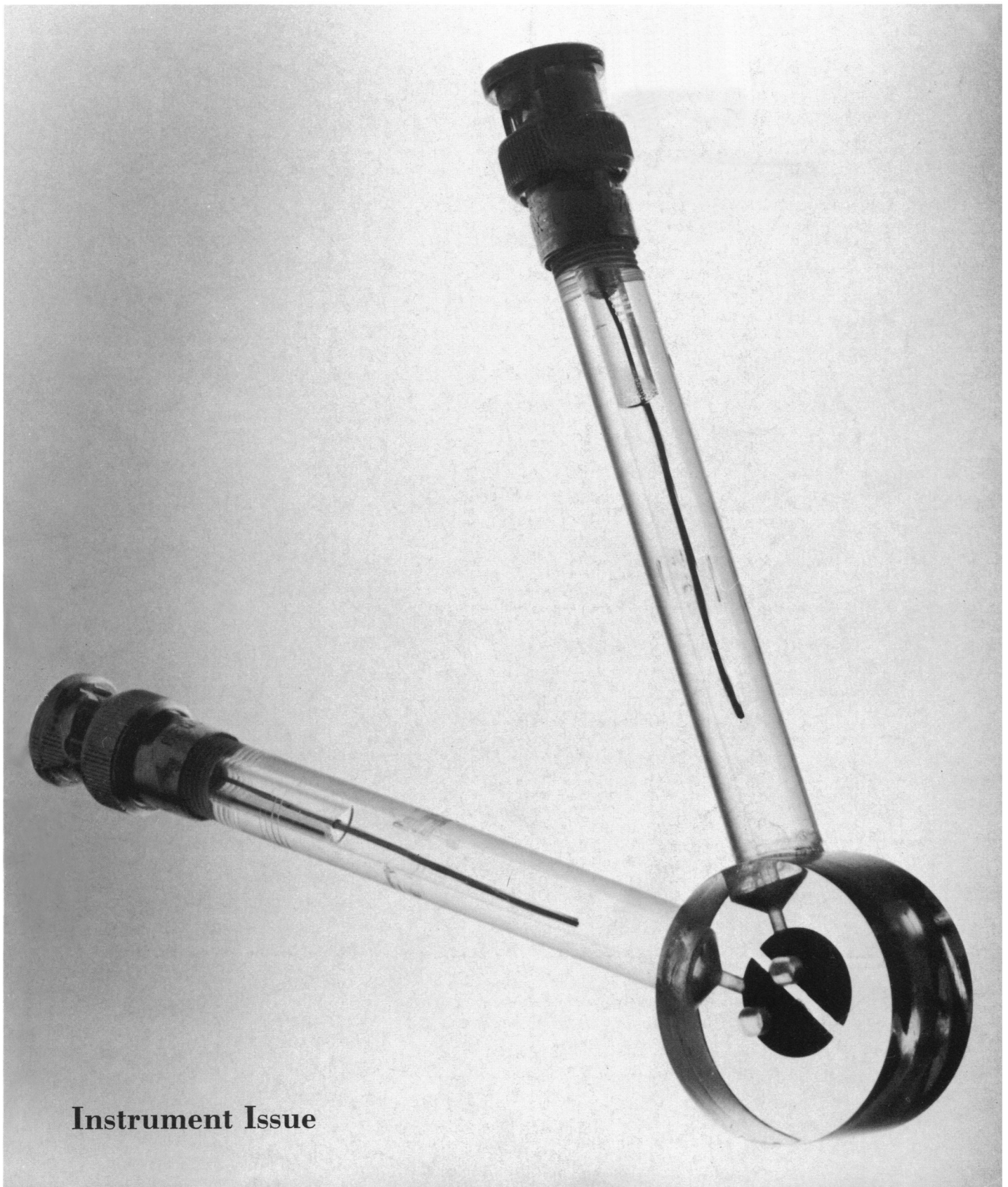


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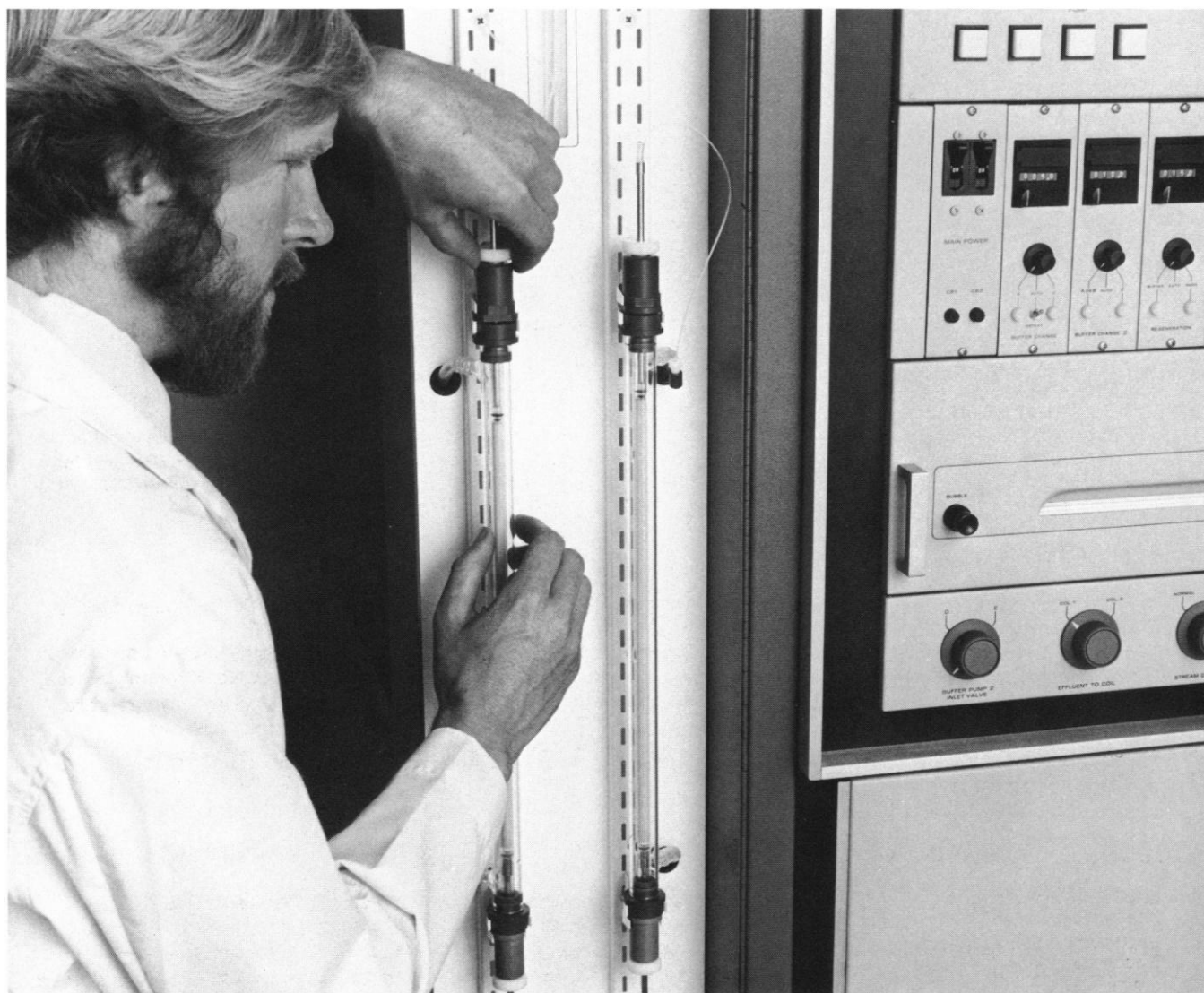
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Instrument Issue

New Beckman Model 119C

The easiest-to-use amino acid analyzer now offers the benefits of 6-mm columns



The Model 119 is well known for its reliability and simplicity of operation. Now in the new Model 119C with 6-mm columns, you can also get the advantages of faster analyses, twice the sensitivity, and half the reagent consumption.

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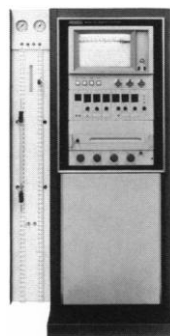
logical samples using lithium citrate buffers. It clearly separates glutamine and asparagine and lets the 119C handle these analyses completely automatically.

The 119C is one of a family of four instruments covering a wide range of needs and budgets. Others include the automatic 119B which uses conventional 9-mm columns, and the semi-automatic 118B and 118C which have manual

instead of automatic sample injection.

For more information, write for Data File 428 to Spinco Division, Beckman Instruments, Inc., 1117 California Avenue, Palo Alto CA 94304.

Beckman



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Catalog No.

1816	1-Naphthyl Isocyanate (Reagent for amino acid characterization)	11388	1-Amino-2-naphthalenesulfonic Acid (Dye intermediate)	14388	p-Nitrophenyl iodoacetate
1876	4,4'-Bis (dimethylamino) benzhydrol (Reagent for protein sulfhydryl groups)	11523	7-[4-Chloro-6-(diethylamino)-5-triazine-2-yl]-amino-3-phenylcoumarin (Fluorescent brightening agent)	14389	5-[N-(2 Iodoacetyl aminoethyl) amino]-1-naphthalenesulfonic Acid (1,5-I-AEDANS) (Fluorescent probe)
1977	Ammonium Sulfate (Reagent ACS)			14392	Perfluorooctanoic Acid
2079	Phosphomolybdic Acid (Reagent ACS)	11611	2-Naphthol-8-sulfonic acid Potassium Salt (Dye intermediate)	14414	3,3'-Dihexyloxacarbocyanine Iodide (Fluorescent probe)
4792	2-Amino-2-methyl-1,3-propanediol (Biochemical buffer)	11633	Thiofluorescein	14432	Chlorodifluoroacetic Acid
5776	3,4-Dihydro-2H-pyran (Functional group protecting agent)	14327	1,3,6,8-Pyrenetetrasulfonic Acid Tetrasodium Salt (Intermediate for fluorescent probes)	14476	1-Octadecyl Isocyanate
7281	8-Hydroxy-1,3,6-pyrenetrisulfonic Acid Trisodium Salt (Fluorescent probe)	14335	Sodium Cyanoborohydride (Selective reducing agent)	14480	Ethyl Chrysanthemate
9001	Betaine Ethyl Ester Chloride (Methyl donor for transferase)	14349	Chlorosulfonyl Isocyanate	14553	β -Cyclodextrin
		14357	Nicotinamide Adenine Dinucleotide Disodium Salt (Reduced)	14557	Acridine Yellow
				14634	Flavine Adenine Dinucleotide
				14667	Boron Tribromide (Reagent for aryl-alkyl ether cleavage)

A group of liquid crystals and intermediates

4503	p-Ethylphenol	11650	p-Pentylphenyl 2-Chloro-4-(p-pentylbenzoyloxy) benzoate	14045	(+)-p-(2-Methylbutyl) benzoyl Chloride
10086	Diethyl 4,4'-Azoxycinnamate	11868	Pentyl p-[N-(p-Valeryloxy-benzylidene) amino] phenyl Carbonate	14046	p-Pentylphenyl p-Propylbenzoate
10834	Cholesteryl 2-Ethylhexyl Carbonate			14047	p-Cyanophenyl p-Heptylbenzoate
11096	p-Propylbenzaldehyde	11874	p-Cyanophenyl p-Pentyloxybenzoate	14049	(+)-(2-Methylbutyl) Benzene
11097	p-Butylbenzaldehyde	14044	p-Cyanophenyl p-Butylbenzoate	14334	p-Octylbenzaldehyde
11185	p-Pentylbenzaldehyde			14337	p-Hexylbenzaldehyde
11648	2-Chloro-4-Hydroxybenzoic Acid			14483	p-Heptyloxyphenol

New laser dyes, Q-switch dyes, and solvents

9740	EASTMAN Q-Switch I, for Neodymium Lasers	14368	Coumarin 151 (Laser Grade)	14402	IR-140 (Laser Grade)
9860	EASTMAN Q-Switch II, for Neodymium Lasers	14369	Coumarin 152 (Laser Grade)	14403	IR-144 (Laser Grade)
13187	1,2-Dichloroethane (Laser Grade)	14370	Coumarin 307 (Laser Grade)	14404	IR-123 (Laser Grade)
14321	Sulforhodamine B (Laser Grade)	14371	Coumarin 153 (Laser Grade)	14433	8-Hydroxy-1,3,6-pyrenetrisulfonic Acid Trisodium Salt (Laser Grade)
14351	3,3'-Diethyloxadicarbocyanine Iodide (Laser Grade)	14372	Coumarin 311 (Laser Grade)		
14352	Rhodamine B (Laser Grade)	14373	Coumarin 314 (Laser Grade)	14617	Bis (4-diethylaminodithiobenzil) Nickel (Q-switch for neodymium lasers)
14353	Carbostyryl 124 (Laser Grade)	14374	Coumarin 106 (Laser Grade)		
14354	3,3'-Diethyloxatricarbocyanine Iodide (Laser Grade)	14375	Oxazine 170 Perchlorate (Laser Grade)		
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		14401	IR-132 (Laser Grade)		

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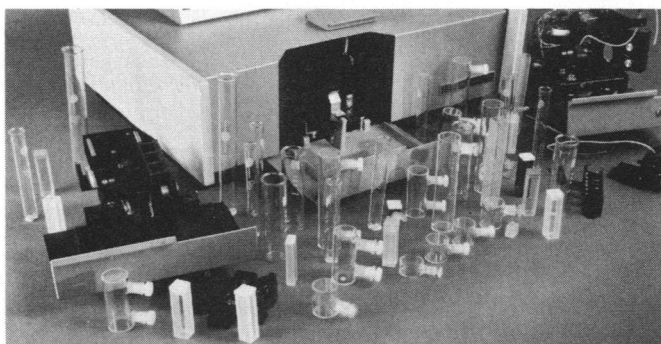
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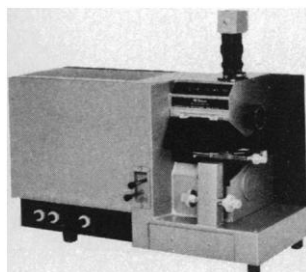
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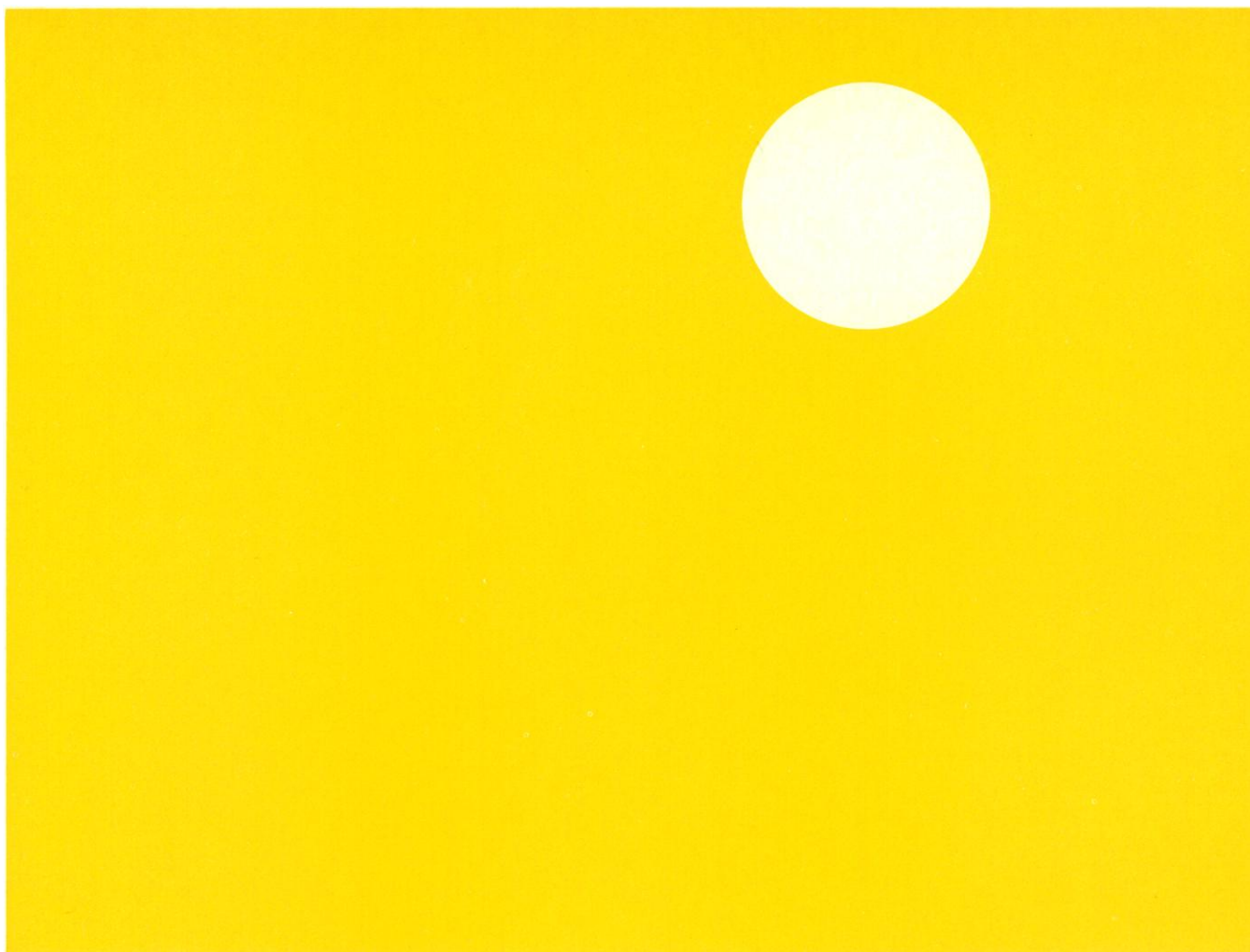
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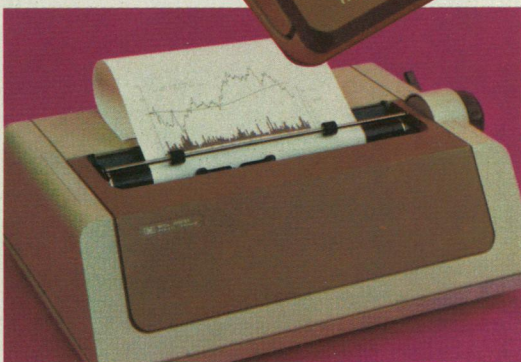
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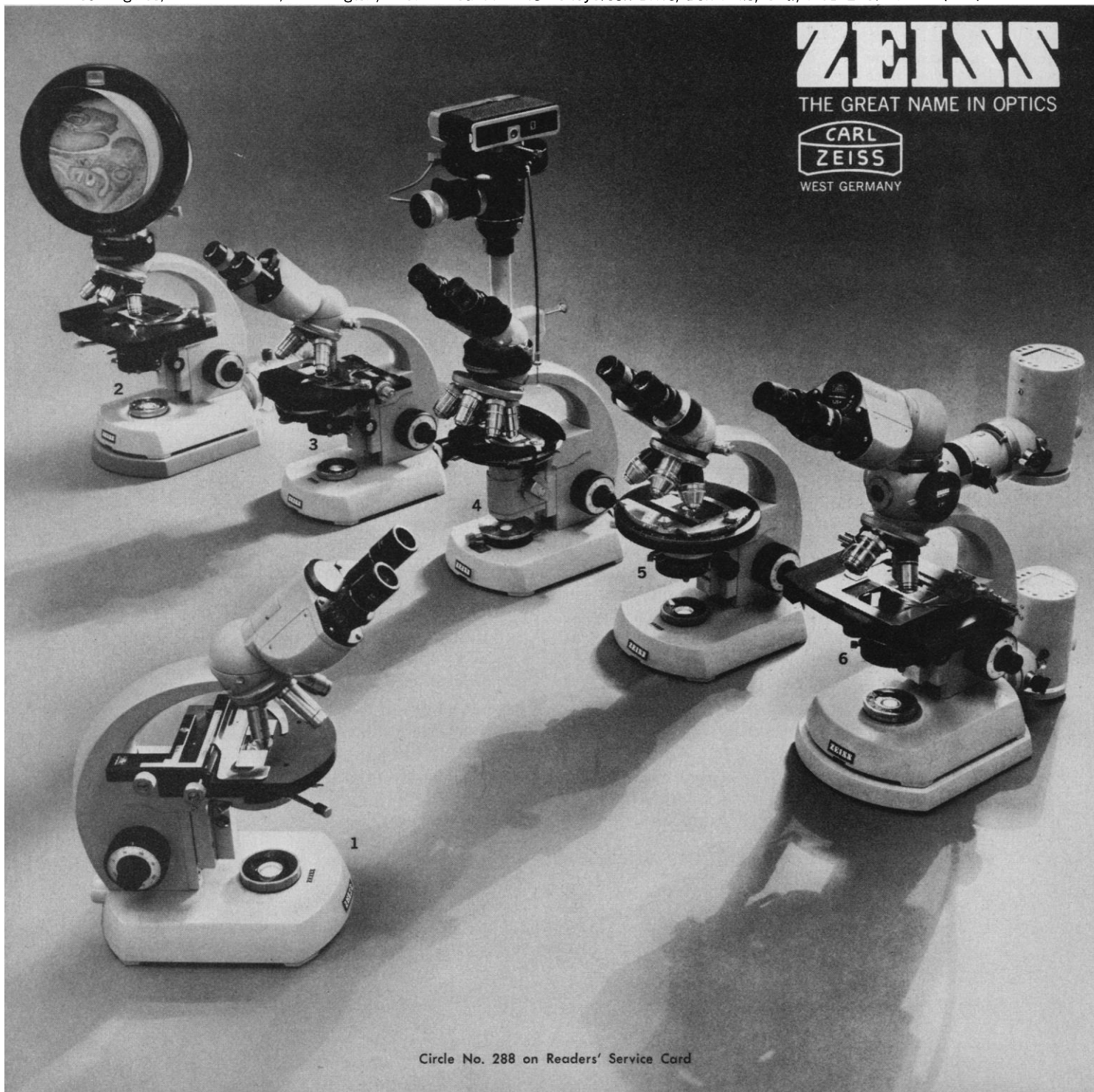
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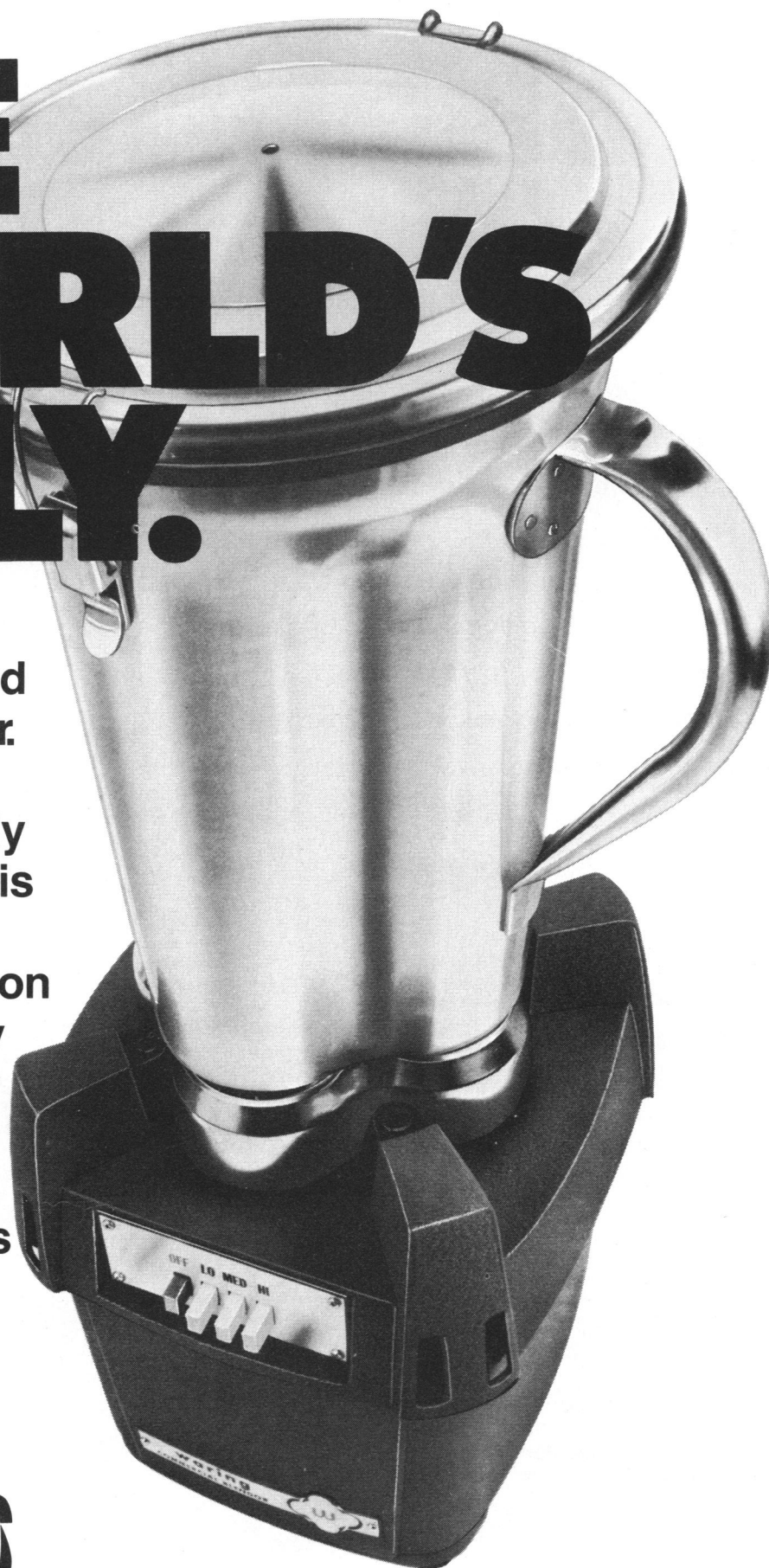
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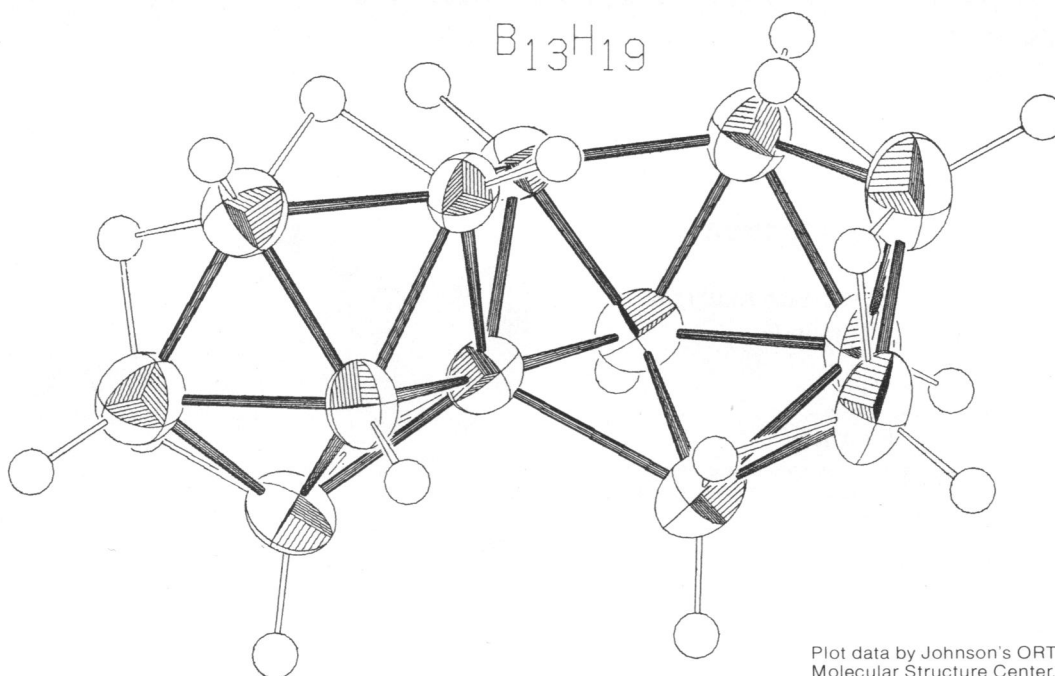
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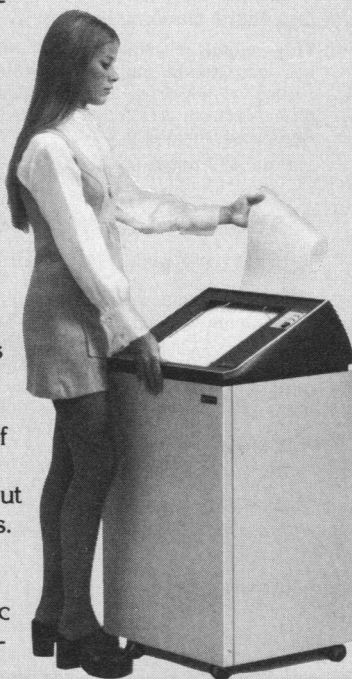
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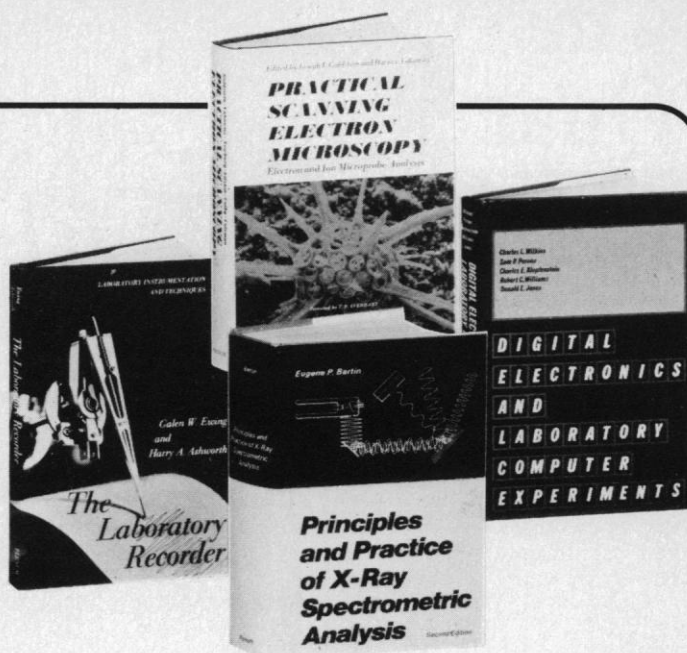
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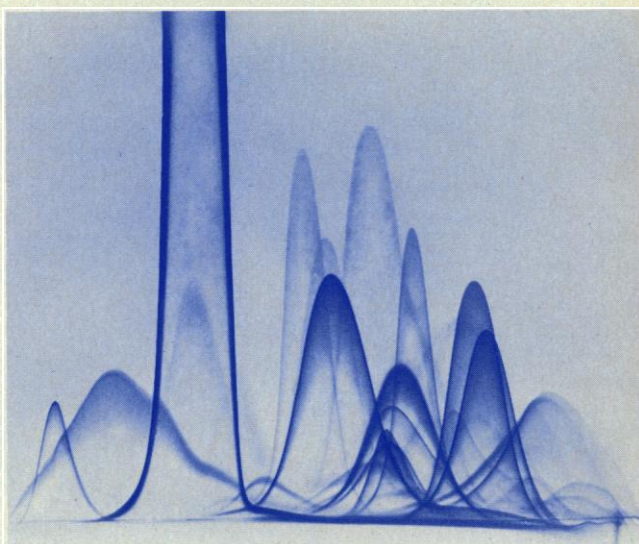
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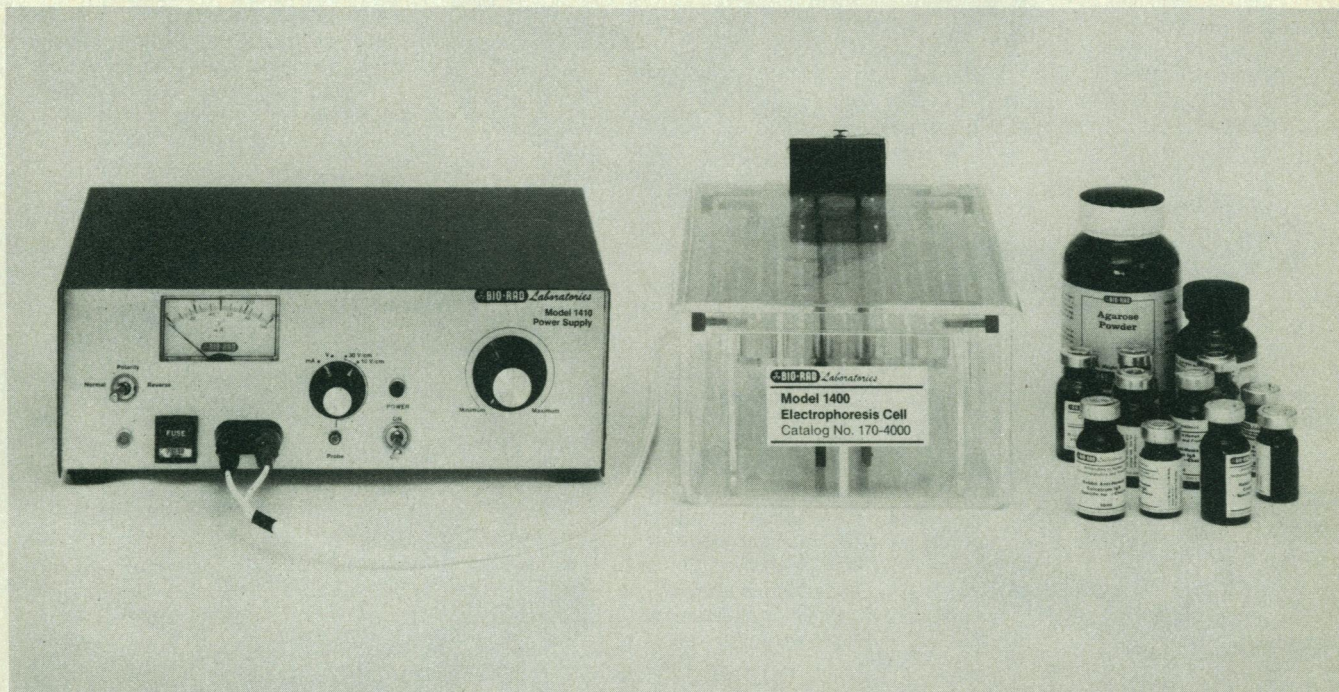
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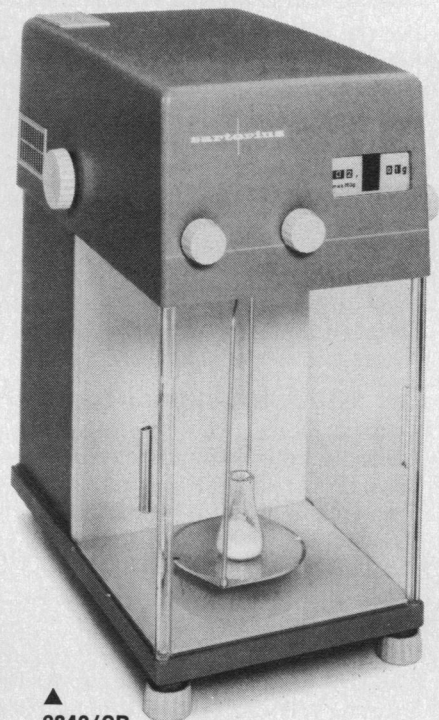
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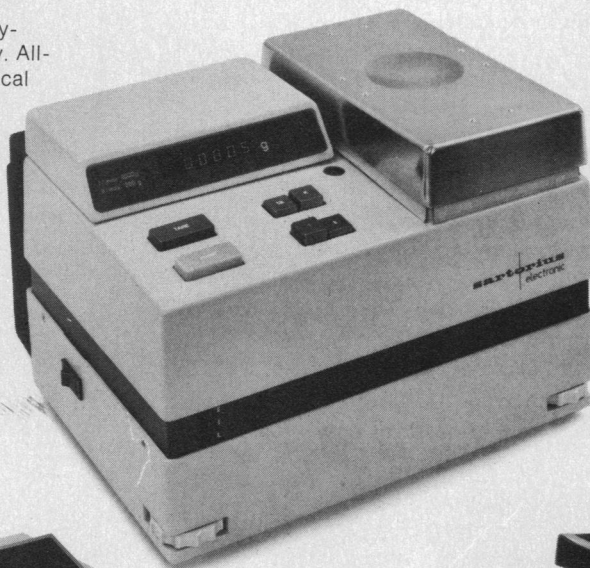
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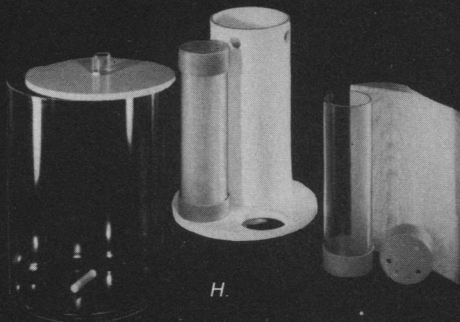
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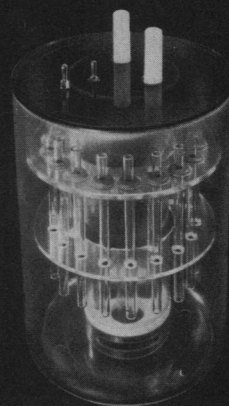
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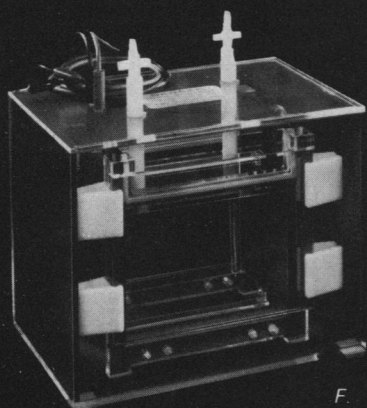
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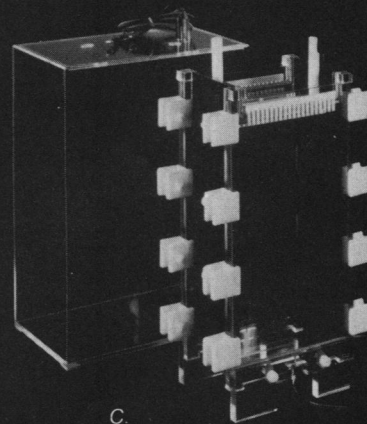
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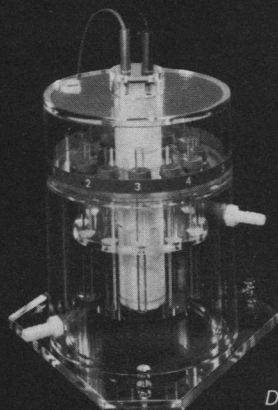


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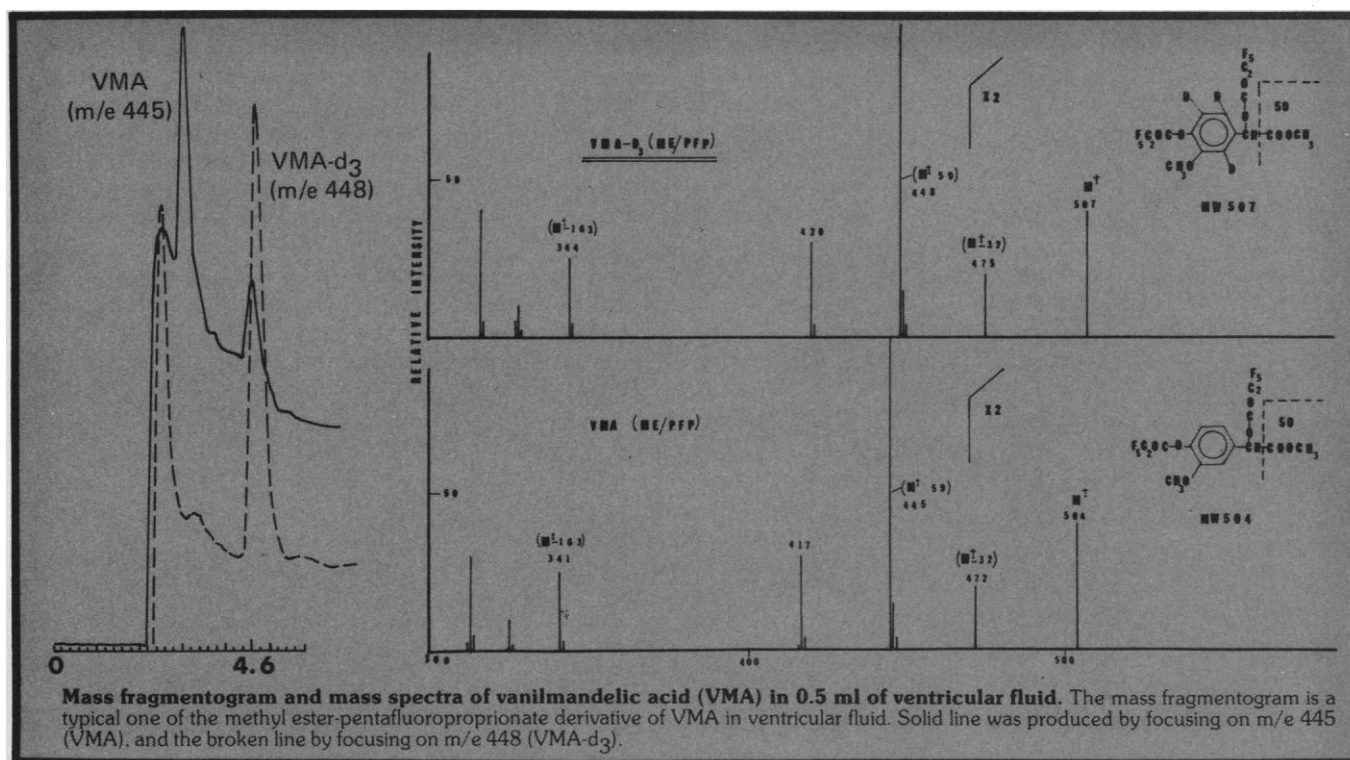
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The quantitation of these amines and their metabolites is important for understanding how the central nervous system works in health and disease. To this end, several scientists at the Division of Special Mental Health Research, NIMH are dedicated. At present, mass fragmentography is being used extensively to measure different biogenic amines and their metabolites in CSF (1) and brain tissue (2; 3).

Vanilmandelic Acid (VMA)

It has been assumed that VMA is a minor metabolite of central nervous system norepinephrine and of little importance. The results of recent work by NIMH scientists suggests, however, that VMA may be an important catecholamine metabolite in man. The mass spectra and mass fragmentogram above show typical results of assays of VMA in 0.5 ml of ventricular fluid obtained during neurosurgical procedures in nine patients (1). The mean (\pm SEM) content of VMA was 3.08 ± 0.60 ng/ml.

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(1) F. Karoum, C. Gillin, R. J. Wyatt, Human cerebrospinal fluid (CSF) of biogenic amine metabolites. *Federation Proceedings* (1975) **34**, 146.

(2) F. Karoum, F. Cattabeni, E. Costa, C. R. Ruthven, and M. Sandler, Gas chromatographic assay of picomole concentrations of biogenic amines. *Analytical Biochemistry* (1972) **47**, 550.

(3) F. Cattabeni, S. H. Koslow, and E. Costa, Gas chromatographic-mass spectrometric assay of four indole alkylamines of rat pineal. *Science* (1972) **178**, 166.

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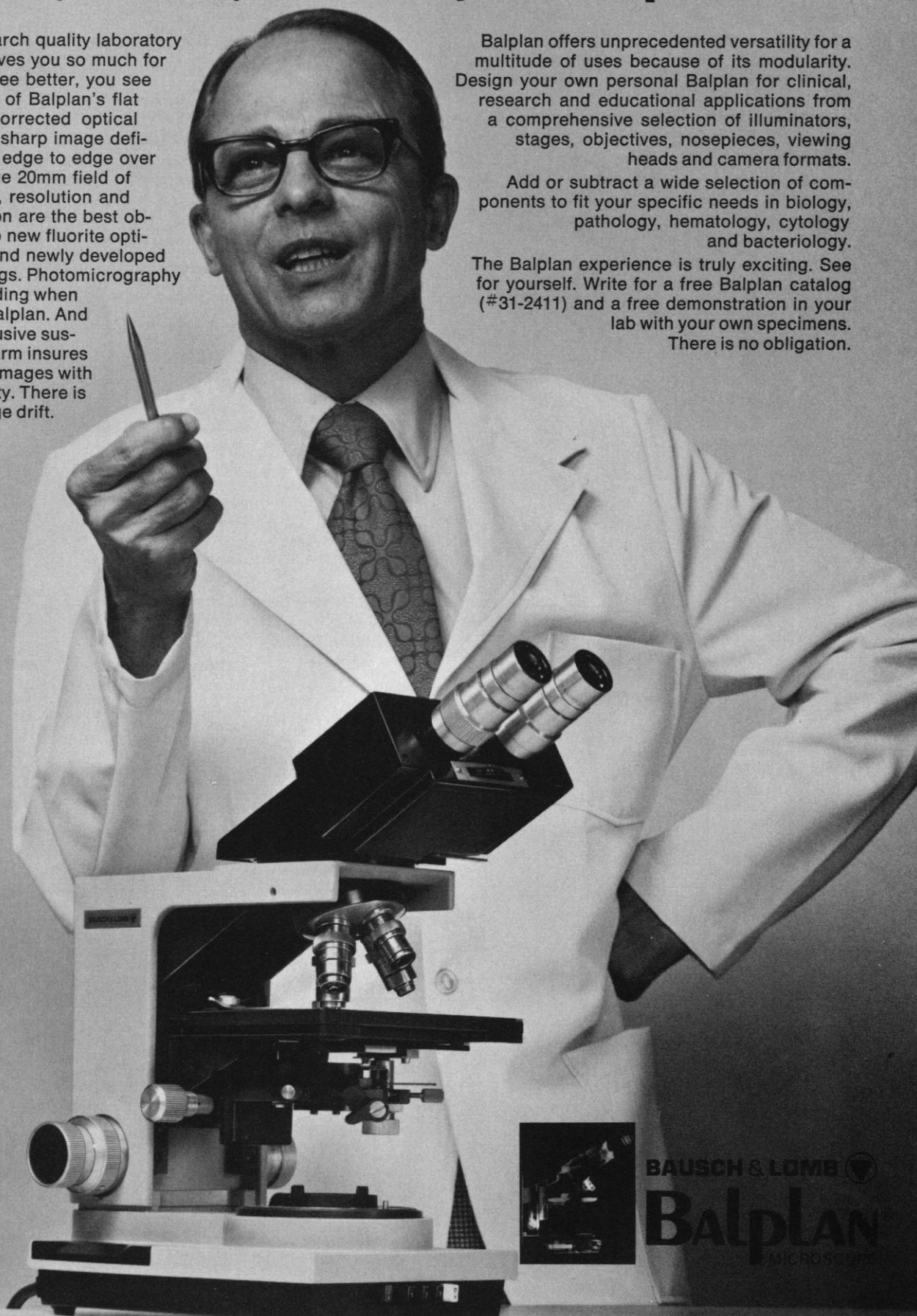
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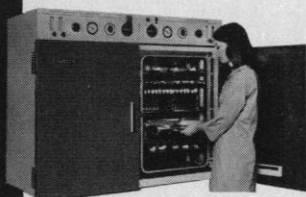
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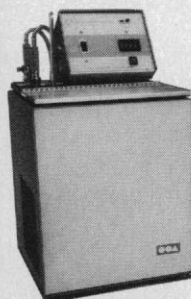
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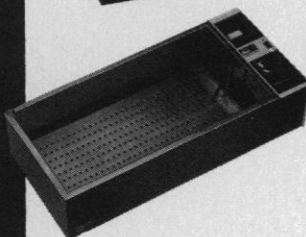
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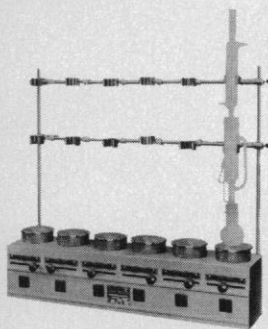
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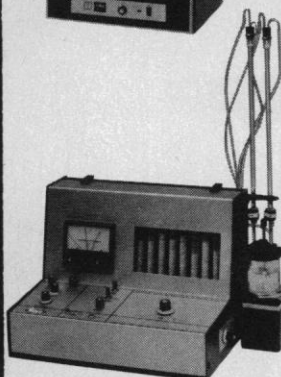
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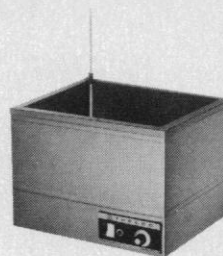
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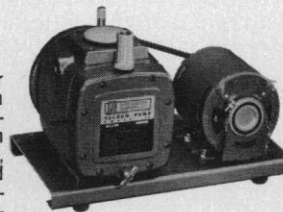
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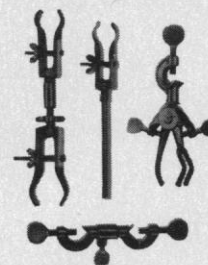
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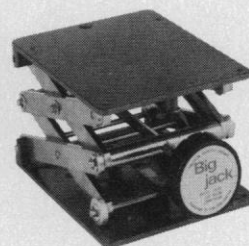
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LETTERS

Jensen's Address at APA Meeting

In a briefing (News and Comment, 19 Sept., p. 978) concerning my address before the American Psychological Association (APA) annual meeting in Chicago, it is stated, "Some APA officials were uncomfortable about having Jensen on the program at all, and were irritated that Jensen, in a press release, appeared to represent himself as having been invited by the leadership of APA when he was in fact invited by the division of educational psychology."

The only press release that was issued was written and sent out by the Office of Public Information of the University of California, Berkeley, and contained just one sentence concerning the status of my presentation, as follows: "Jensen reported his findings this afternoon (Tuesday, Sept. 2) in an invited paper at the 83rd Annual Convention of the American Psychological Association in Chicago." The official program of the APA convention lists my paper in two places (pages 163 and 215) under the heading "Invited Addresses on Test Bias."

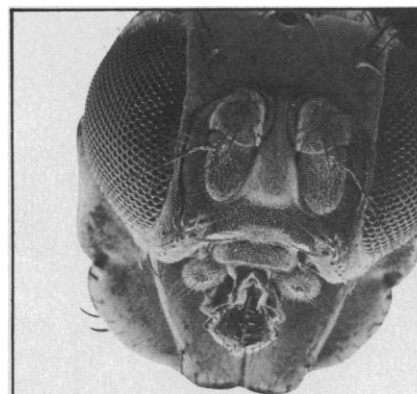
ARTHUR R. JENSEN

*Institute of Human Learning,
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Oil Spill Effects

The article by Mark Panitch, "Offshore drilling: Fishermen and oilmen clash in Alaska" (News and Comment 18 July, p. 204), contains several quotations regarding research findings from the Auke Bay Fisheries Laboratory of the National Marine Fisheries Service (NMFS). Some of these statements are largely speculative, some are preliminary, and others are solidly backed by past or ongoing research.

In the first category, I meant by the statement "Any spill situation will exceed these [LD₅₀] values even at depth" that any major crude oil spill situation in which the mixing energy (such as storm-driven waves) is sufficient to result in the formation of oil emulsions at depth (as occurred in the Chedabucto Bay, Nova Scotia, spill of Bunker C fuel oil) will likely produce water-soluble oil concentrations at depth in which these LD₅₀ values (1 to 5 parts per million as determined by infrared spectrophotometry) are exceeded. The duration and extent of these water-soluble oil concentrations depends upon circulation patterns, flushing rates, and sediment loads in the spill area. The potential for these values occurring will be greatest in areas of poor flushing and circular gyres. My



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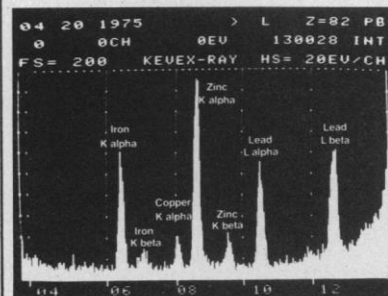
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The KEVEX fruit fly multi-element analysis. Object: detect trace amounts of lead. Result: minimum detection for lead was found to be 5 nanograms. Also detected were iron, copper and zinc.

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prediction is partially based on the results of studies of the behavior of oil-water mixtures in our laboratory, but more data on the distribution and dynamics of water-soluble concentrations of crude oil resulting from oil spills under a variety of environmental conditions is needed to correlate laboratory bioassays with real spill situations.

Furthermore, because of the dynamic complexities of oil in contact with biological systems and the specificities of various chemical methods, determination of LD_{50} values with other analytical techniques in addition to infrared spectroscopy (ultraviolet and fluorescent spectroscopy, gas chromatography, and mass spectroscopy) may be necessary before we can obtain complete information on the relative and synergistic toxicities of various components of crude oil. Thus, LD_{50} values quoted in the article (based on infrared data) should not be viewed as the final answer with regard to the toxicity of crude oil.

Comments on the relative shrimp production of Kachemak Bay and the Gulf of Mexico by Evan Haynes, as they appear in the article, may be misleading to the reader. On the basis of catch per unit effort, the shrimp production of Kachemak Bay may indeed exceed ten times the *average* catch rate in the Gulf of Mexico. This type of comparison is probably not valid, however, since the Kachemak Bay shrimp fishery is a day fishery with little effort being expended in locating shrimp, while the Gulf fishery is typified by fishing trips of 2 to 27 days during which considerable effort is expended on exploratory fishing. There is no doubt that Kachemak Bay is an extremely productive area where shrimp production may be equivalent to or exceed some of the most productive areas in the Gulf of Mexico (1).

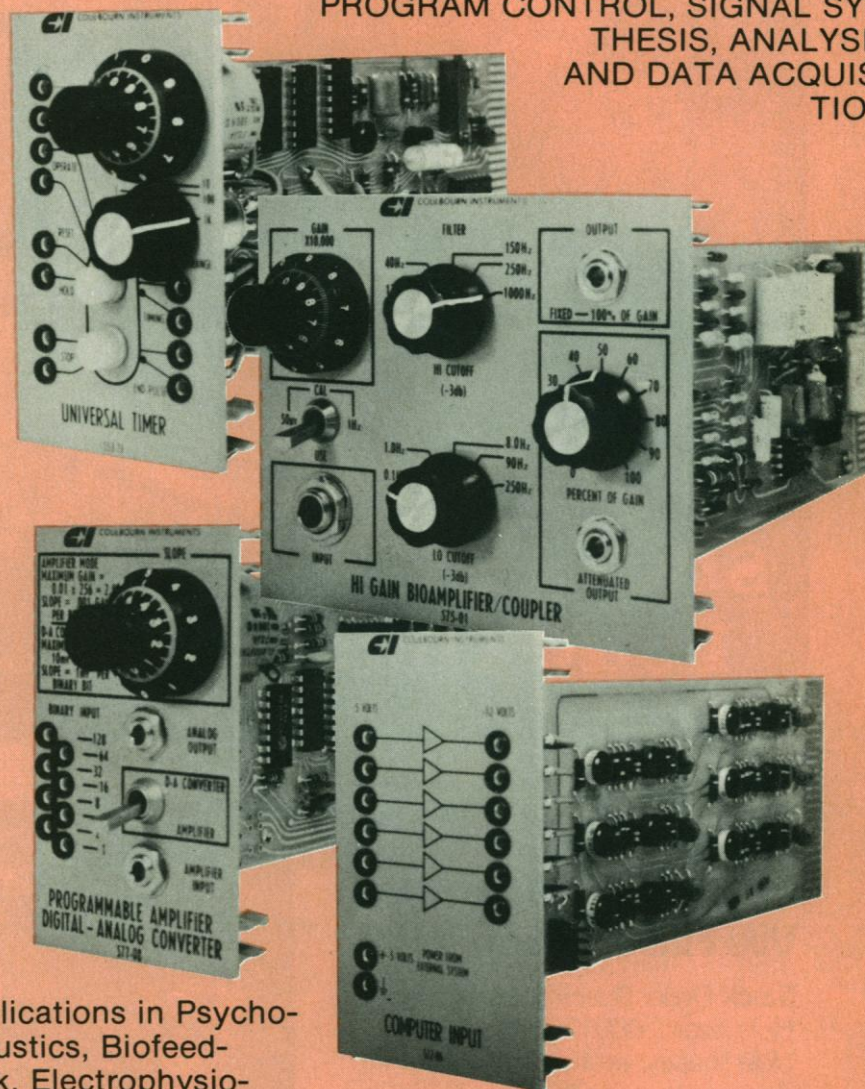
Other comments identified by Haynes as speculative in nature are supported by available data. The existence of anticyclonic circulation or low flushing rates in outer Kachemak Bay is strongly suggested by NMFS current meter data, drogue studies by the Alaska Department of Fish and Game, and by Haynes' data on larval shrimp and crab distribution. Haynes suggests a circular current in the area holding larvae hatched there for several months, but larvae may also be carried in and out of the bay by prevailing currents. Therefore, the accumulation of larvae may result from the low flushing rate in the area rather than a circular flow per se. Important unknown factors are the duration and seasonal persistence of the current and the circulation at depth.

The article by Panitch is well written and, as a whole, appears to be the type of objective reporting one expects from *Sci-*

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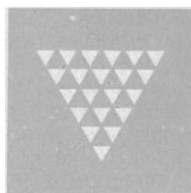
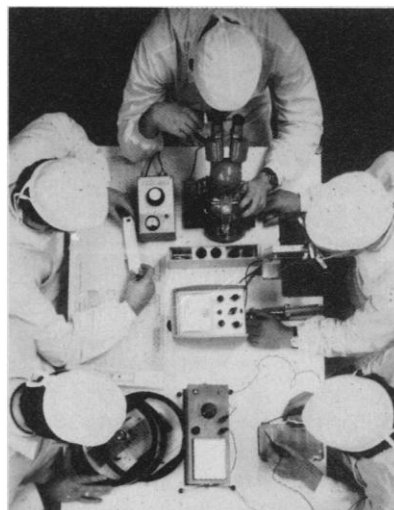
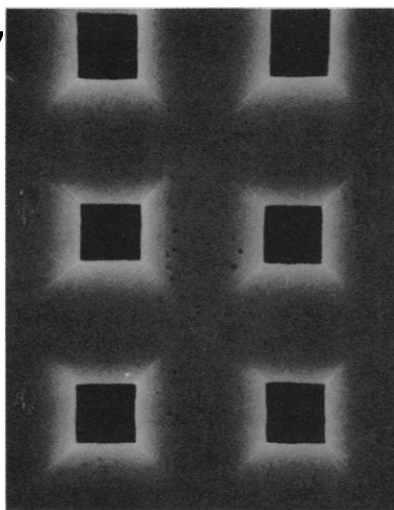
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ence. However, several errors in spelling are readily apparent to Alaskan readers, namely Kasitsna Bay, not Kisitsna Bay; Evan Haynes, not Evans Haines; and Tony Mecklenburg, not Tony Micklenburg.

The \$175,000 NMFS toxicity study mentioned in the article was cooperatively funded by a group of oil companies including the Shell Oil Company, Union Oil Company of California, Standard Oil Company of California, Marathon Oil Company, Phillips Petroleum Company, and Texaco, Inc. All comments in the article by investigators associated with this project and other NMFS studies should be regarded as personal opinions and not official NMFS positions or those of the funding organizations.

JOHN F. KARINEN

Auke Bay Coastal Fisheries Research Center, National Marine Fisheries Service, Auke Bay, Alaska 99821

References

1. K. W. Osborn, B. W. Maghan, S. B. Drummond, *Gulf of Mexico Shrimp Atlas* (Government Printing Office, Washington, D.C., 1969), pp. 1-20.

Lost Strain of Rats

The National Multiple Sclerosis Society has been interested in the use of experimental allergic encephalomyelitis (EAE) as a laboratory model for evaluating the efficacy of drugs for therapeutic treatment of multiple sclerosis. Such an evaluation is made difficult by the tendency of most strains of rats to recover relatively rapidly and spontaneously from EAE.

From 1968 to 1971, scientists at the Upjohn Company did an important series of therapy experiments (1) using a strain of Wistar rats from Manor Farms. In this strain, EAE was easily produced and the paralysis lasted for many weeks, so the therapeutic effects of drugs could be evaluated with ease.

Unfortunately, this strain of rats is no longer maintained commercially and may very well have been lost. If any scientists presently possess breeding colonies derived from Wistar rats obtained from Manor Farms during the period from 1968 to 1971, the society would appreciate the opportunity to obtain and test some of these animals.

HARRY M. WEAVER

National Research Programs, National Multiple Sclerosis Society, 257 Park Avenue South, New York 10010

References

1. M. E. Greig, A. J. Gibbons, G. A. Elliott, *J. Pharmacol. Exp. Ther.* **173**, 85 (1970); G. A. Elliott, A. J. Gibbons, M. E. Greig, *Arch. Int. Pharmacodyn. Ther.* **204**, 62 (1973).

Age and Tenure

Since a journal such as *Science* should stress facts rather than fiction, I was concerned when I read the editorial by Frank Press (18 July, p. 126). Press states that there "are many university scientists in the age range 55 to 65 who believe that their contributions to science are behind them." Since he is below this most productive age range, I assume his statement is not a self-appraisal. It may relate to some scientists in his department, but I am confident that it is not typical of my associates.

As a scientist in this alleged obsolescent age range, who is in his most productive years, I am aware of juvenile propaganda which has resulted in many forced early retirements of productive scientists and limitations on earned income by those receiving social security benefits. However, I am unaware of any facts that might be used to support such unsound edicts.

With regard to the alternate careers suggested by Press for these discarded scientists, I have worked in local government and in foreign technical assistance programs, taught science at a small college, written textbooks, and served as a staff member of professional and educational organizations. Was I mistaken when I considered such assignments as worthwhile contributions?

I doubt that my experienced colleagues, such as Robert A. Alberty (age 54), Paul Doty (age 55), William Doering (age 58), R. B. Woodward (age 58), Glenn Seaborg (age 63), Norman Hackerman (age 63), or Melvin Calvin (age 64), would agree with Press's proposal. Perhaps they, like myself (age 63), would appreciate hearing of any factual data showing that their contributions are behind them. Please say it isn't so, Dr. Press.

RAYMOND B. SEYMOUR

Department of Chemistry, University of Houston, Houston, Texas 77004

I cannot understand Seymour's response to my modest proposal that those scientists in the age range 55 to 65, who themselves believe they can contribute more to other endeavors than academic research, be allowed to do so in a respectable and financially rewarding manner. I am just as aware as Seymour of the many important contributions made by scientists over the age of 55, and I would be the last one to tamper with this reservoir of talent.

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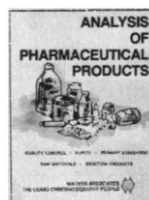
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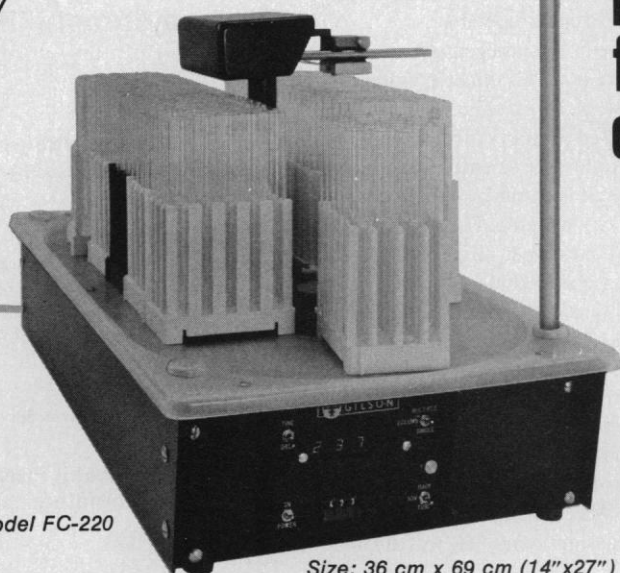
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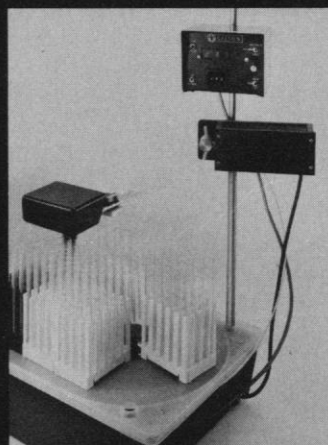
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Federal Intervention in Universities

University presidents and other spokesmen are beginning to state publicly what they have been saying privately*. Congress and the federal bureaucracy are increasing their many modes of interference with universities. No institution is immune, and indeed the more prestigious one is, the more it is an object for attack. A common device is the ultimatum with a short deadline: If you do not do such and such, your grants and contracts will be cut off.

For some schools the confrontation is not dramatic, it is piecemeal. There are at least 12 federally mandated programs that cumulatively impinge on the financial health of all universities. The American Council on Education has stated that one large public university's annual expenses for implementing federal programs increased from \$438,000 to \$1.3 million between 1965 and 1975. During the same period a large private university's expenses increased from \$110,000 to \$3.6 million, and a private college's \$2,000 to \$300,000. The monetary expenditures are only part of the costs. They do not reflect the diversion of effort from scholarship to attention to federal demands.

Until about 1960 government involvement in academia was not great and interference was minimal. But in the late fifties, federal grants for research started to become a substantial factor in university budgets. The government chose to demand detailed accounting for individual grants. Since that time, the fastest growing component at many universities has been the business office. The sixties also brought a weakening of the status of presidents of universities. A contributing factor was the Vietnam war, but the federal grants system also played a major role in diminishing the authority of university leaders. In addition, the sudden termination of large federal fellowship programs which had previously grown rapidly caused substantial financial problems.

Thus, in the seventies the leaders of universities were ill-equipped to deal decisively with Washington and its agents. In consequence, the universities are now forced to cope with laws, proposed laws, regulations, proposed regulations, and authority-grabbing bureaucrats. The laws are proposed and enacted for worthy purposes, such as occupational safety, fair employment, or social security. Each of itself is laudable and defensible. But their total impact on the financial and intellectual life of the universities is severe. Moreover, the laws are subject to interpretation by the Executive Branch. Enforcement of regulations is in the hands of local agents, who often extend federal interference with university affairs. For example, auditors from the San Francisco office of the Department of Health, Education, and Welfare have been pushing around the California State University and College System. They demand that anyone paid on a federal project account for his or her total effort and that the schools change their payroll systems, under the threat that noncompliance will result in withholding of letters of credit.

A saddening development in the federal approach to universities in the past decade has been a shift from offering inducements to threatening punishments. This is especially significant in the area of fair employment practices. The universities have been slow in recruiting women and minorities, but bludgeoning and threats are creating a poor climate for change. Competent women appointees are being taunted that they owe their positions not to their own qualifications but to federal pressure. How much better change might have gone with the carrot instead of the stick!

The irony of punitive federal intervention is that a government which is unable to manage its own affairs competently insists on spreading its own brand of inefficiency throughout higher education. It is to be hoped that the university faculties will unite behind their presidents in opposing further federal involvement. A truly unified academic community could halt the federal crippling of higher education.—PHILIP H. ABELSON

*For example, K. Brewster, *Science*, 11 April 1975; S. K. Bailey, keynote address, annual meeting of the National Association of College and University Business Officers, New Orleans, 10 July 1975; D. Aldrich, testimony before the Subcommittee on Education, U.S. Senate, 15 July 1975; J. C. Calhoun, testimony before the Committee on Science and Technology, U.S. House of Representatives, 17 July 1975.



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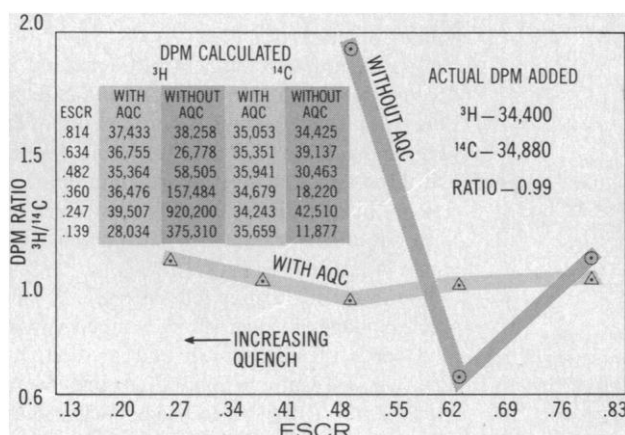
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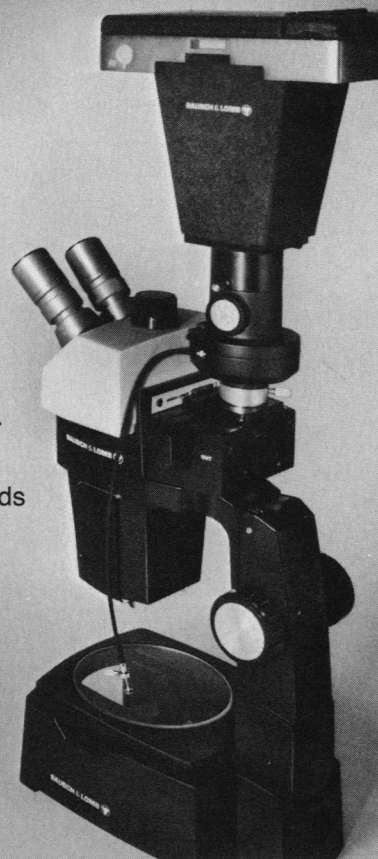
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Aquatic Microbiology. G. Rheinheimer. Translated from the German edition (Jena, 1971) by Anna Mayr-Harting. Wiley-Interscience, New York, 1975. x, 184 pp., illus. \$11.

The Assault on World Poverty. Published for the World Bank by Johns Hopkins University Press, Baltimore, 1975. xiv, 426 pp. Cloth, \$17.50; paper, \$5.95.

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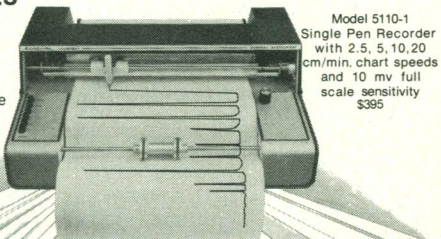
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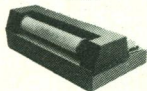
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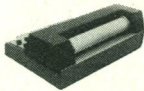
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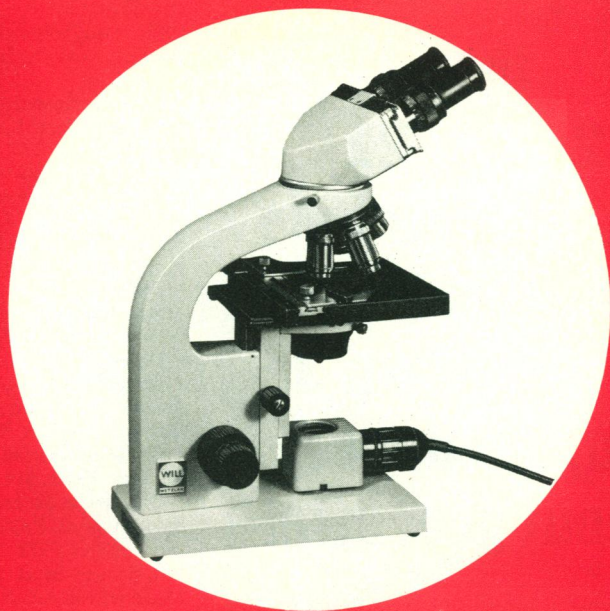
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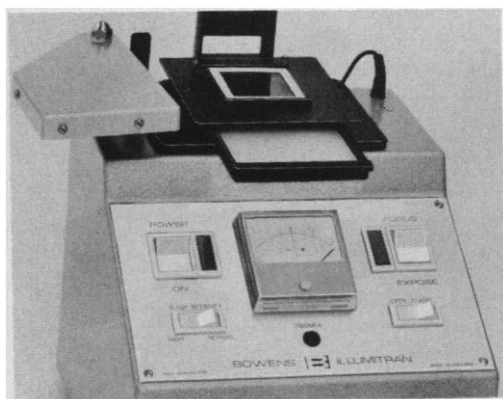
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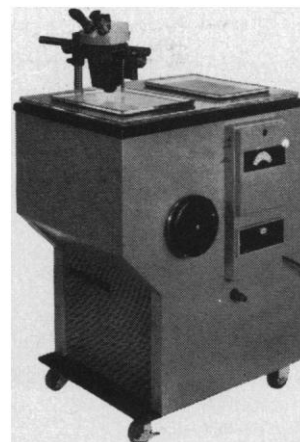
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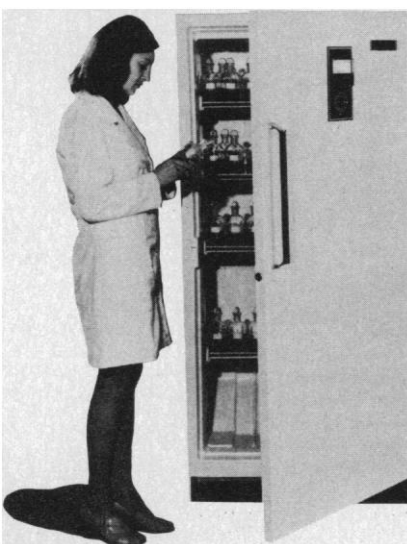
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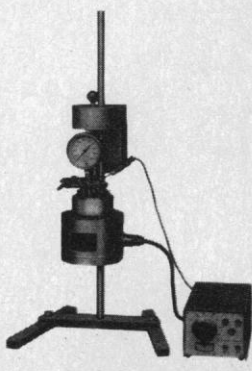
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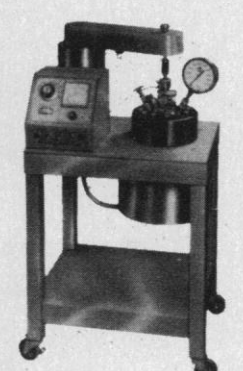


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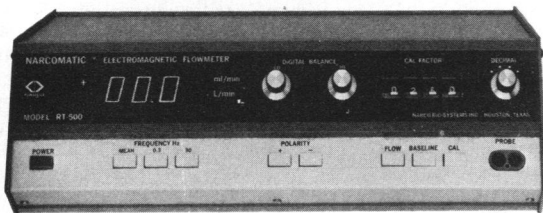
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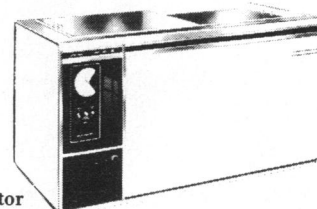
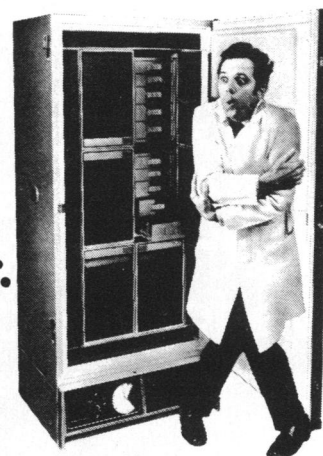
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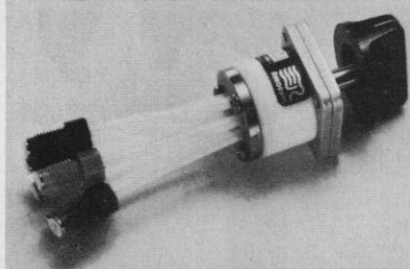
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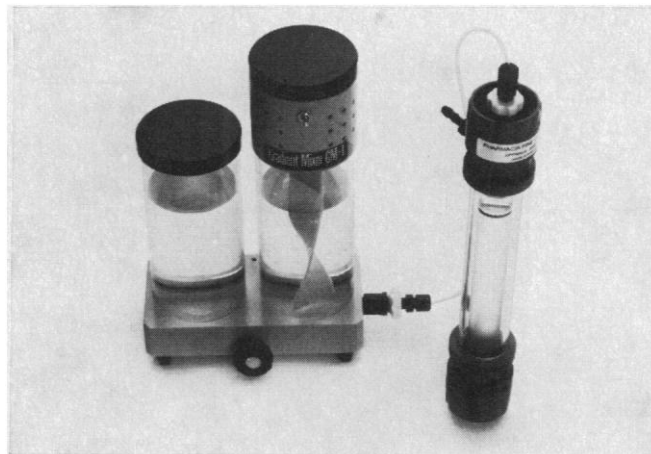
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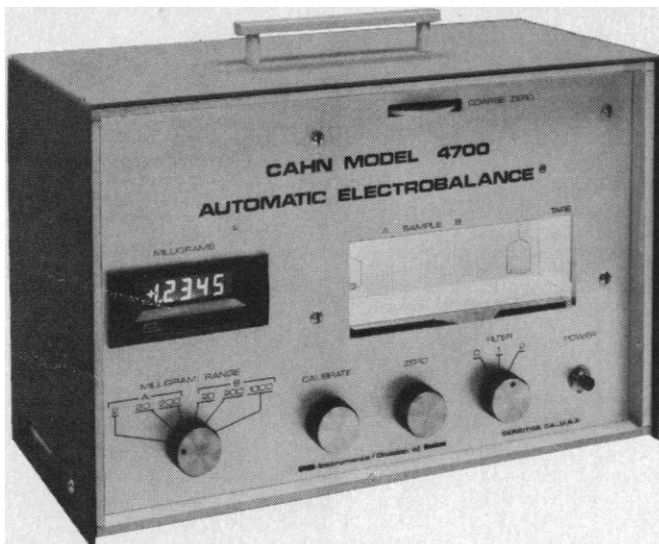
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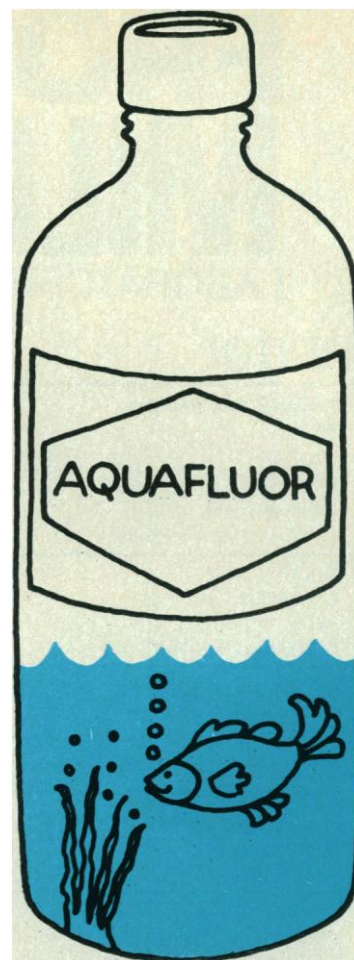
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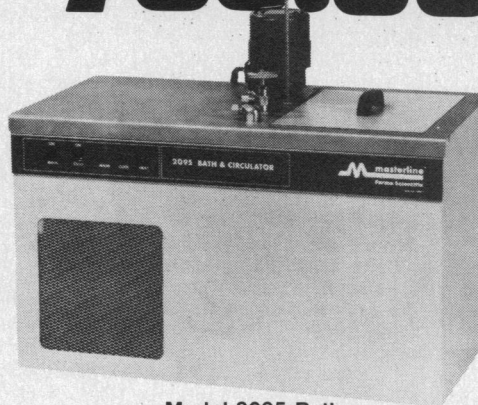


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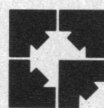
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