

# SCIENCE

10 March 1967

Vol. 155, No. 3767

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



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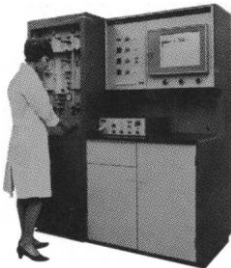
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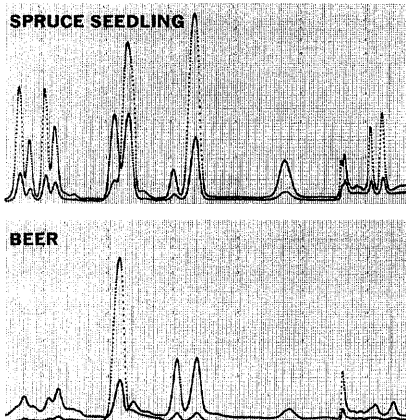
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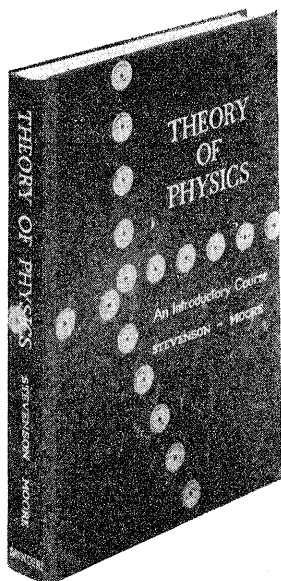
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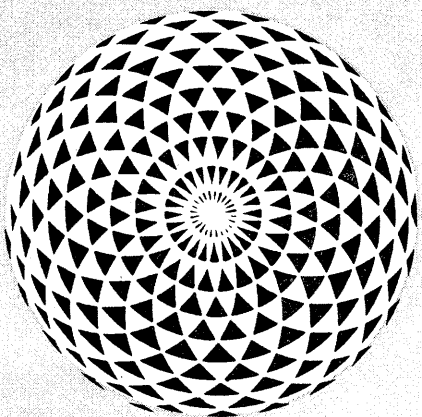


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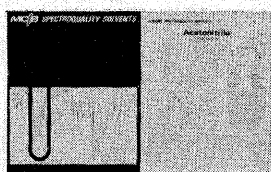
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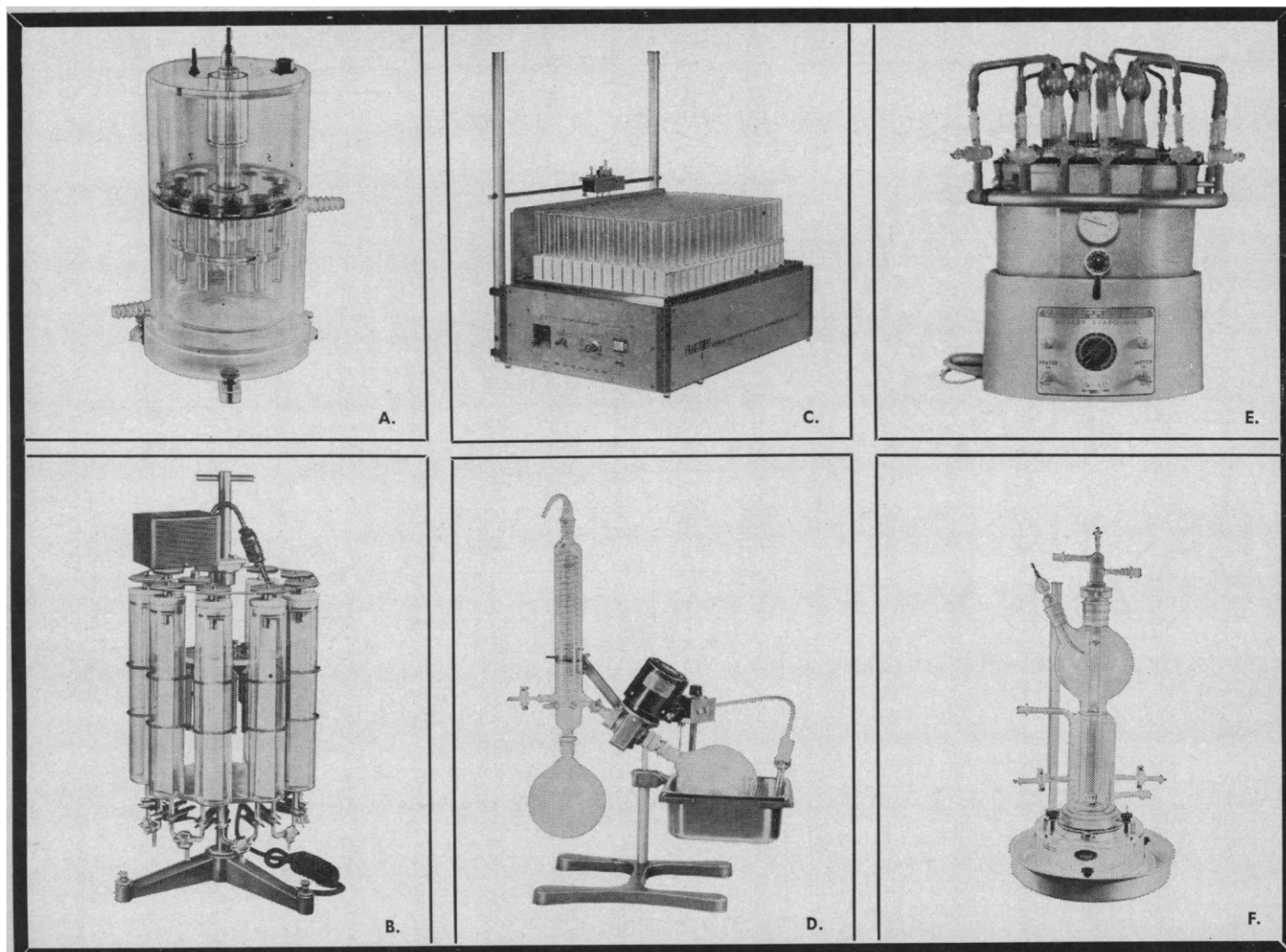
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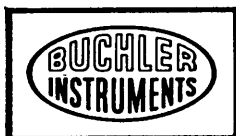
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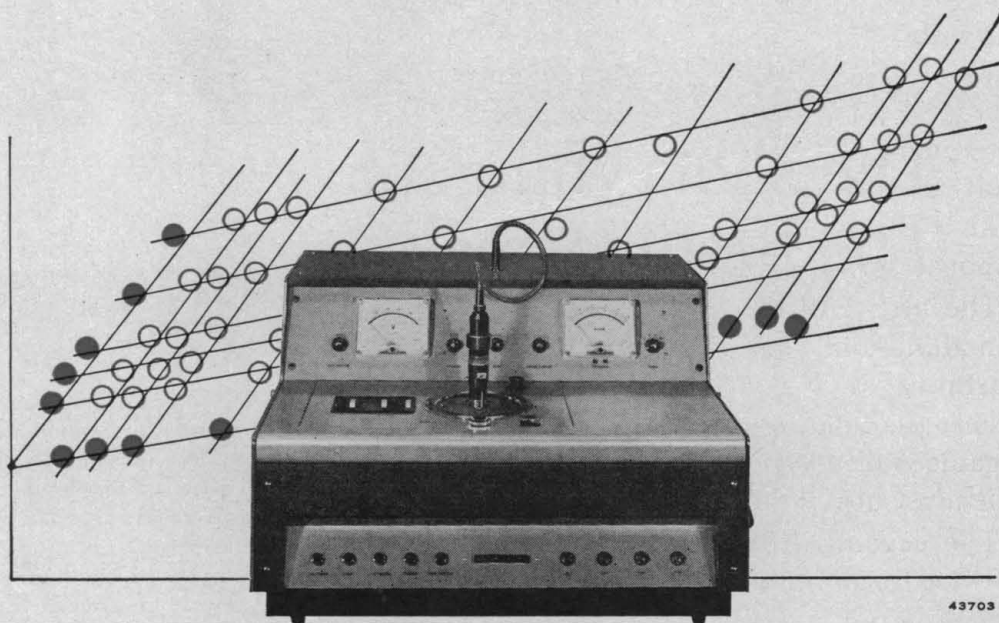
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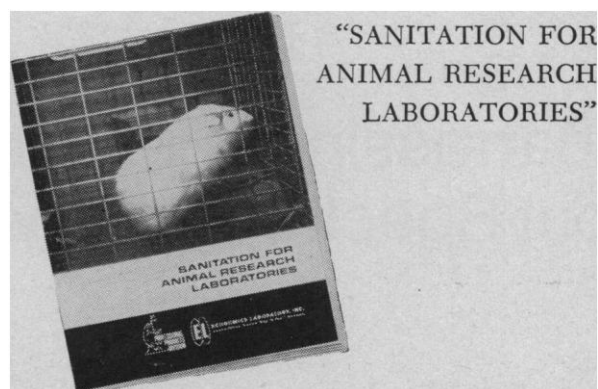
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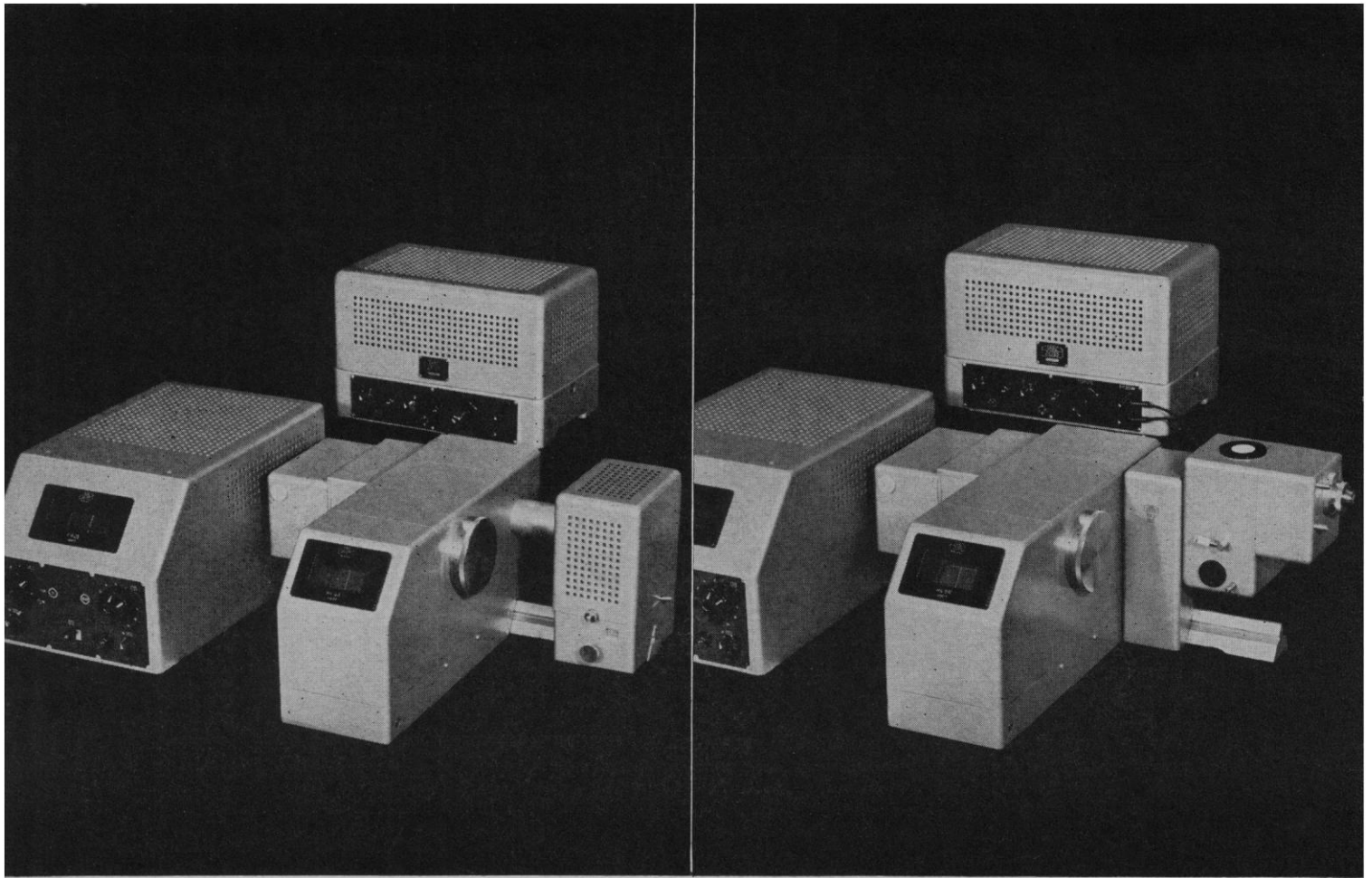
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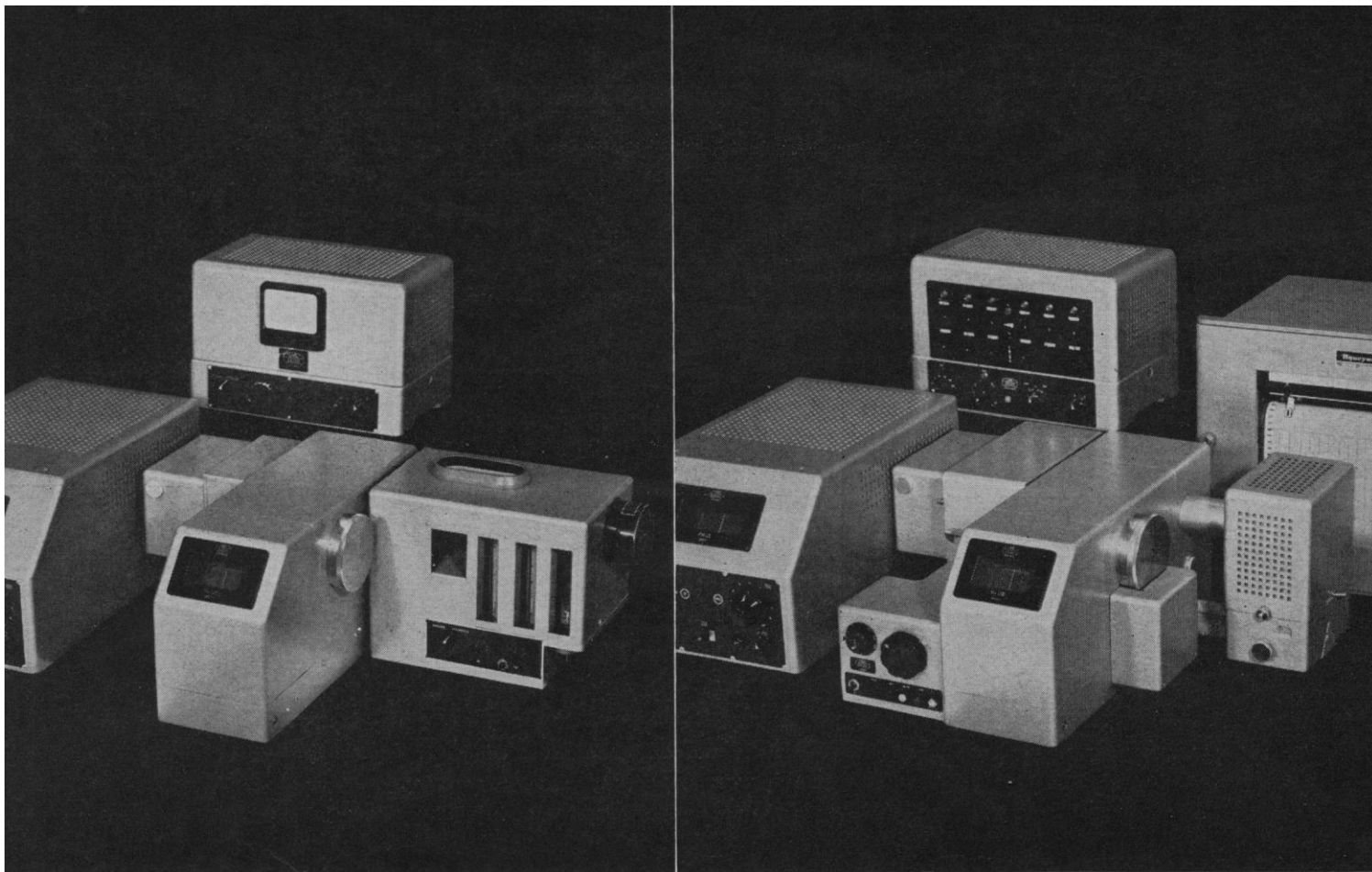
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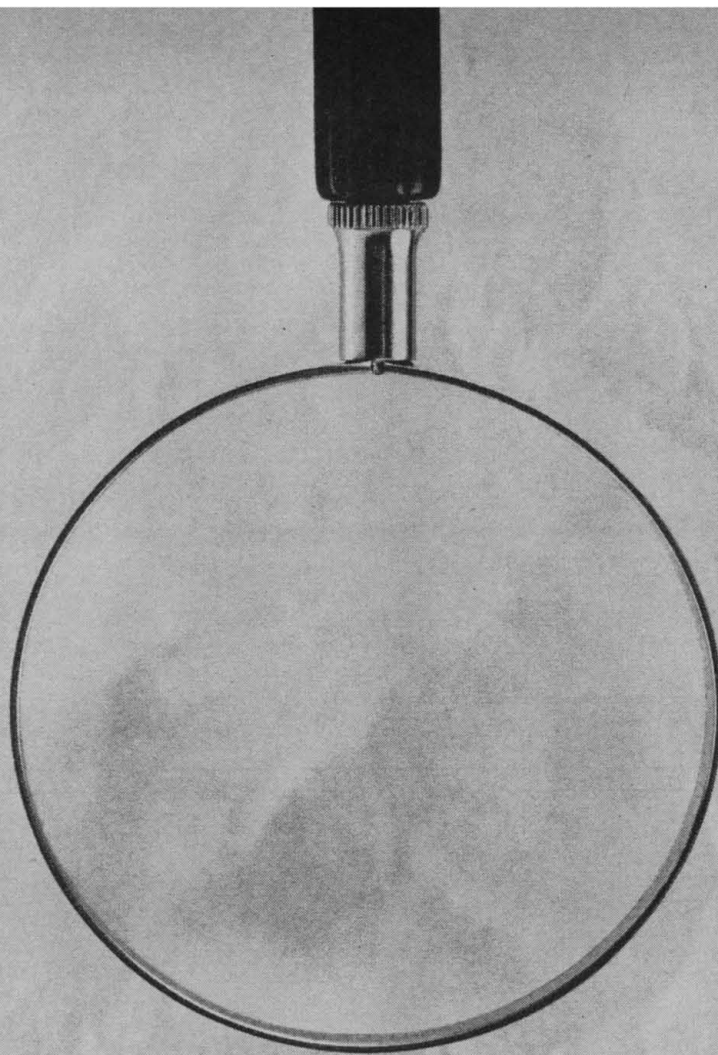
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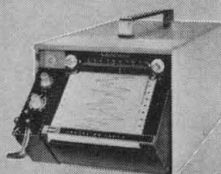
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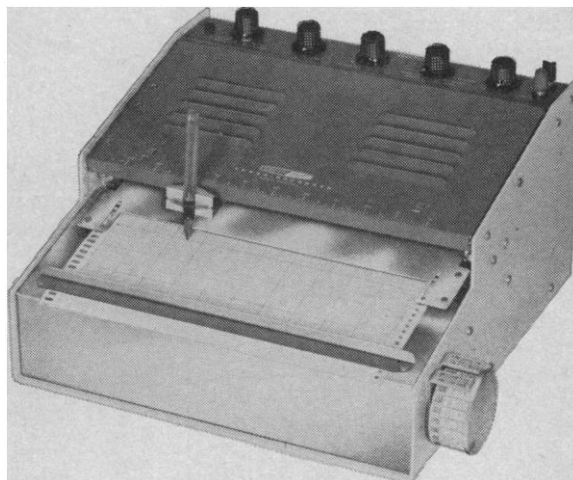
**IOW-14 SPECIFICATIONS** — (Vertical) Sensitivity: 0.05 v/cm AC or DC. Frequency response: DC to 5 mc, —1 db or less; DC to 8 mc, —3 db or less. Rise time: 40 nsec (0.04 microseconds) or less. Input impedance: 1 megohm shunted by 15 uuf. Signal delay: 0.25 microsecond. Attenuator: 9-position, compensated, calibrated in 1, 2, 5 sequence from 0.05 v/cm. Accuracy:  $\pm 3\%$  on each step with continuously variable control (uncalibrated) between each step. Maximum input voltage: 600 volts peak-to-peak; 120 volts provides full 6 cm pattern in least sensitive position. (Horizontal) Time base: Triggered with 18 calibrated rates in 1, 2, 5 sequence from 0.5 sec/cm to 1 microsecond/cm with  $\pm 3\%$  accuracy or continuously variable control position (uncalibrated). Sweep magnifier: X5, so that fastest sweep rate becomes 0.2 microseconds/cm with magnifier on. (Overall time base accuracy  $\pm 5\%$  when magnifier is on.) Triggering capability: Internal, external, or line signals may be switch selected. Switch selection of + or — slope. Variable control on slope level. Either AC or DC coupling. "Auto" position. Triggering requirements: Internal;  $\frac{1}{2}$  cm to 6 cm display. External: 0.5 volts to 120 volts peak-to-peak. Horizontal input: 1.0 v/cm sensitivity (uncalibrated) continuous gain control. Bandwidth: DC to 200 kHz  $\pm 3$  db. General: SADP81 or SADP2 Flat Face C.R.T. interchangeable with any 5AD or 5AB series tube for different phosphor characteristics. 4250 V. accelerating potential. 6 x 10 cm edge lighted graticule with 1 cm major divisions & 2 mm minor divisions. Power supply: All voltages electronically regulated over range of 105-125 VAC or 210-250 VAC 50/60 Hz input. (Z Axis) input provided. DC coupled CRT unblanking for complete retrace suppression. Power requirements: 285 watts. 115 or 230 VAC 50-60 Hz. Cabinet dimensions: 15" H x 10 $\frac{1}{2}$ " W x 22" D includes clearance for handle and knobs. Net weight: 40 lbs.

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**EUW-20M SPECIFICATIONS** — Chart Paper: Grid width, 10". Length, 120 foot roll. Markings, 0-100, right to left. Chart Speed: 5 seconds per inch to 2 hours per inch in 21 speeds, with internal signal. Any speed up to 5 seconds per inch with external signal. Chart-Speed Switch Scale Calibration: Calibrated in sec/inch, inch/min., inch/hour, min./inch & hours/inch. Calibrated speeds are: 5, 10, 15, 20, 30, 50, 60, 100, 120, 200, 300, 500, 600, 900, 1000, 1200, 1800, 3000, 3600, 6000 & 7200 seconds/inch — with additional calibration: 12, 6, 4, 3, 2, 1, 0.5, 0.02 & 0.01 inch/min., and 36, 18, 12, 6, 4, 3, 2, 1, & 0.5 inches/hour, plus intermediate rates expressed in min./inch and hours/inch. Span: Five fixed ranges: 10, 25, 50, 100, and 250 mv, plus a sensitivity control to permit adjustment for any value from 10 to 250 mv. Also external position available for special plug-in ranges. Pen: Standard fountain pen, cartridge-type. Balancing Time: 0.1 second per inch, 1 second full scale (10"). Error (includes dead zone): Less than 1% of full scale for all ranges. 10 to 250 mv. Repeatability: 0.2%. Maximum Source Resistance: 50 k ohm. Reference System: Mercury cell. Reference Cell Life: 300 hours (approx.). Power Requirements: 105-125 volts 60 Hz AC; 57 watts. Dimensions: 15" W x 8 $\frac{3}{8}$ " H x 13 $\frac{3}{8}$ " D.

**EUW-20M**, Multi-Speed Servo Chart Recorder, 26 lbs. . . . . **\$289.00**

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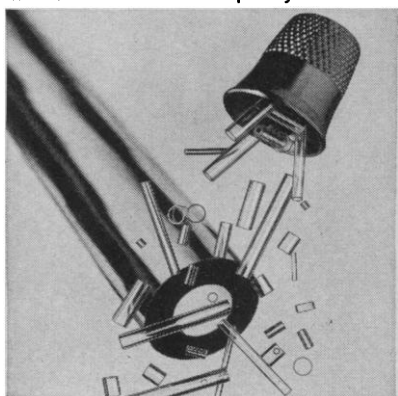
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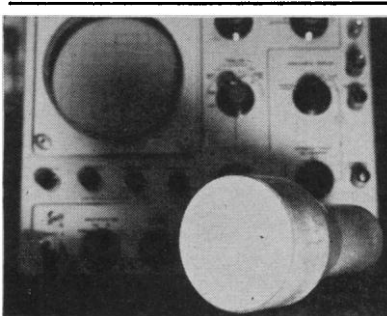
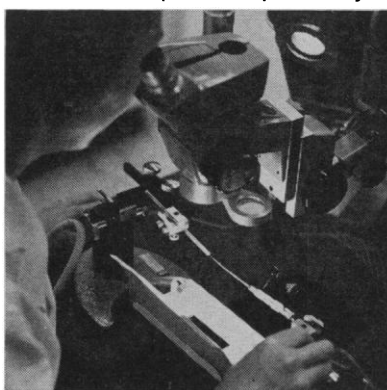
Drawing .010 inch tube from one-inch lead glass stock is the artistry performed by Hanibal Glass in Santa Ana. Hanibal produces about 100,000,000 assorted tubes monthly, used as seals for electronic circuitry components. Seals of G-E Type 012 lead glass are virtually inert, durable, stand up to heat and humidity and have excellent dielectric properties. Why does Hanibal use General Electric glass? Because tubing won't draw to .010 acceptably unless the



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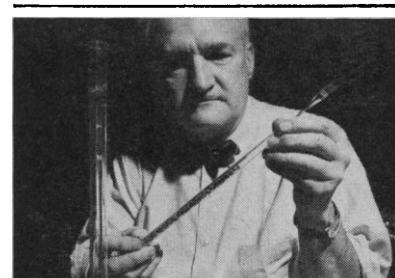
General Electric quartz battles cystic fibrosis at a leading Eastern medical school. Here, a study is underway to discover more about this dreaded hereditary disease via delicate analysis of perspiration abnormalities and characteristics. G-E quartz plays a critical role; ultra-micro "pipettes" are flame drawn from G-E quartz micro-bore tubing and the result is a pure, uncontaminating, non-leaching container for sweat samples. Sample size? Approximately one-millionth of a milliliter. Tubing size? From 5 to 10 microns. And most amazingly, it is necessary to draw even smaller pipettes

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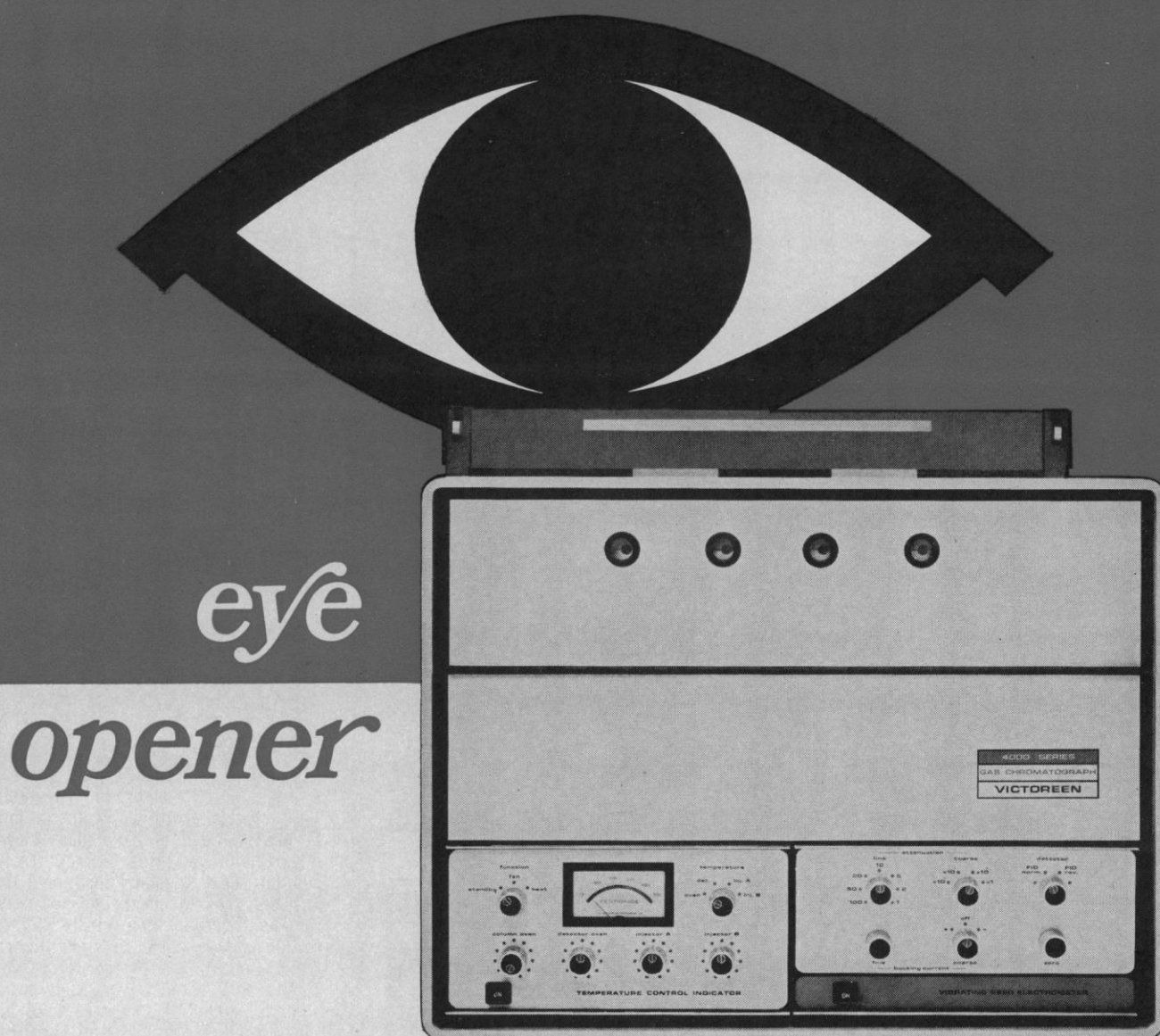
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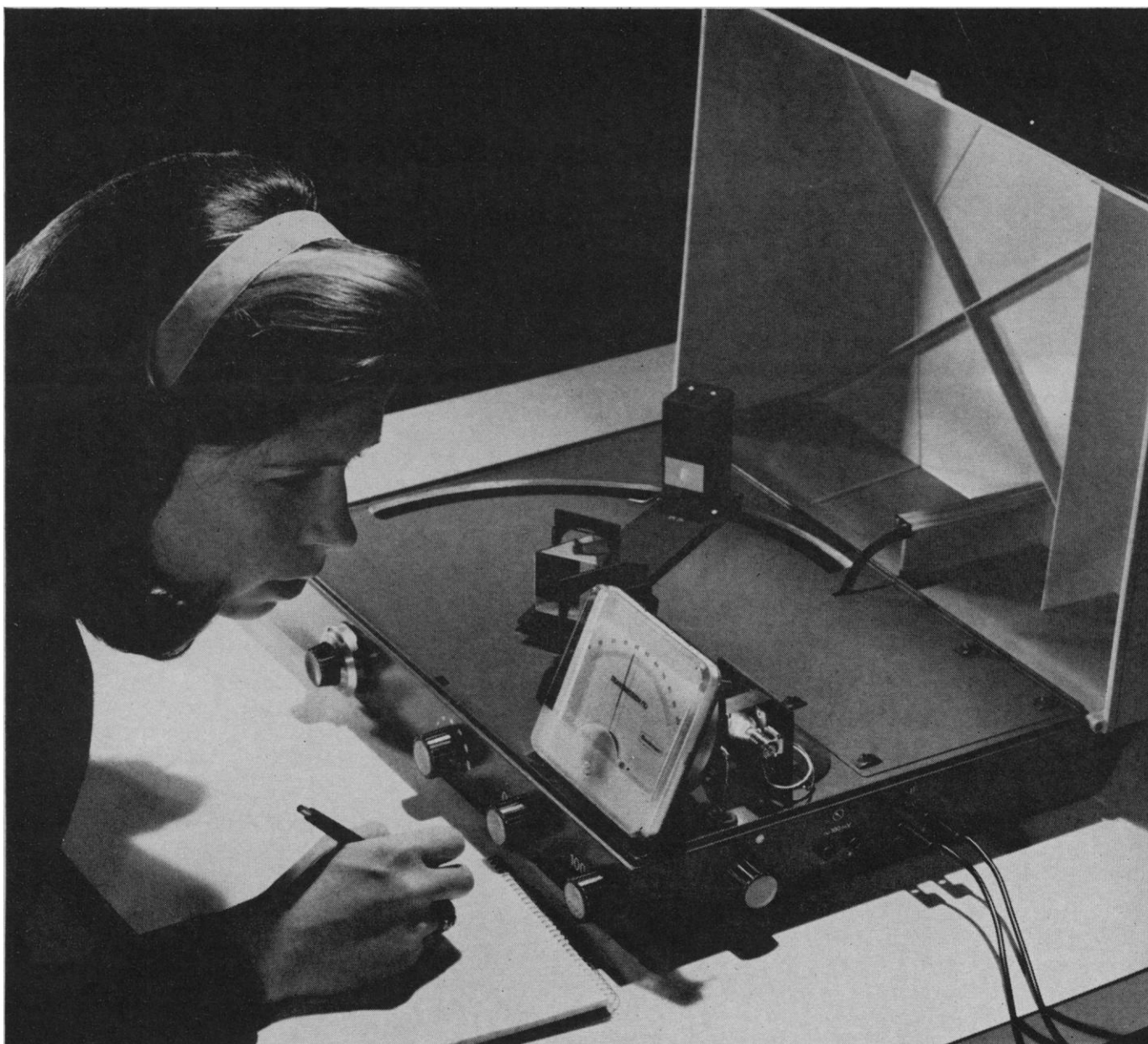
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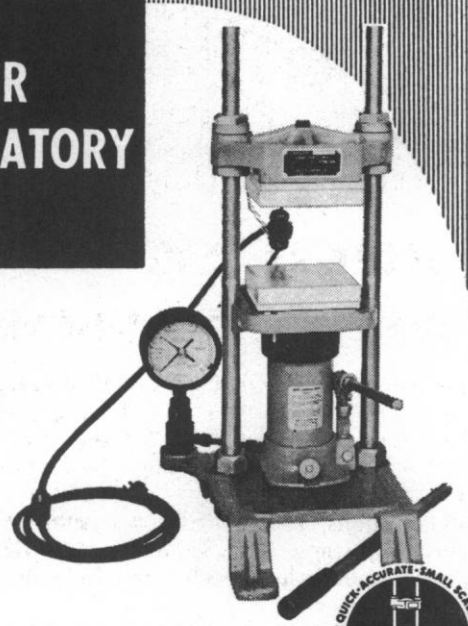
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1271 L&E	86	1271 Bausch & L	119	1393 TMC	152	1410 U.S. Stoneware	185
1272 L&E	87	1272 Bausch & L	120	1394 TMC	153	1411 U.S. Stoneware	186
1273 L&E	88	1273 Bausch & L	121	1395 TMC	154	1412 U.S. Stoneware	187
1274 L&E	89	1274 Bausch & L	122	1396 TMC	155	1413 U.S. Stoneware	188
1275 L&E	90	1275 Bausch & L	123	1397 TMC	156	1414 U.S. Stoneware	189
1276 L&E	91	1276 Bausch & L	124	1398 TMC	157	1415 U.S. Stoneware	190
1277 L&E	92	1277 Bausch & L	125	1399 TMC	158	1416 U.S. Stoneware	191
1278 L&E	93	1278 Bausch & L	126	1400 TMC	159	1417 U.S. Stoneware	192
1279 L&E	94	1279 Bausch & L	127	1401 TMC	160	1418 U.S. Stoneware	193
1280 L&E	95	1280 Bausch & L	128	1402 TMC	161	1419 U.S. Stoneware	194
1281 L&E	96	1281 Bausch & L	129	1403 TMC	162	1420 U.S. Stoneware	195
1282 L&E	97	1282 Bausch & L	130	1404 TMC	163	1421 U.S. Stoneware	196
1283 L&E	98	1283 Bausch & L	131	1405 TMC	164	1422 U.S. Stoneware	197
1284 L&E	99	1284 Bausch & L	132	1406 TMC	165	1423 U.S. Stoneware	198
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1286 L&E	101	1286 Bausch & L	134	1408 TMC	167	1425 U.S. Stoneware	200
1287 L&E	102	1287 Bausch & L	135	1409 TMC	168	1426 U.S. Stoneware	201
1288 L&E	103	1288 Bausch & L	136	1410 TMC	169	1427 U.S. Stoneware	202
1289 L&E	104	1289 Bausch & L	137	1411 TMC	170	1428 U.S. Stoneware	203
1290 L&E	105	1290 Bausch & L	138	1412 TMC	171	1429 U.S. Stoneware	204
1291 L&E	106	1291 Bausch & L	139	1413 TMC	172	1430 U.S. Stoneware	205
1292 L&E	107	1292 Bausch & L	140	1414 TMC	173	1431 U.S. Stoneware	206
1293 L&E	108	1293 Bausch & L	141	1415 TMC	174	1432 U.S. Stoneware	207
1294 L&E	109	1294 Bausch & L	142	1416 TMC	175	1433 U.S. Stoneware	208
1295 L&E	110	1295 Bausch & L	143	1417 TMC	176	1434 U.S. Stoneware	209
1296 L&E	111	1296 Bausch & L	144	1418 TMC	177	1435 U.S. Stoneware	210
1297 L&E	112	1297 Bausch & L	145	1419 TMC	178	1436 U.S. Stoneware	211
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1301 L&E	116	1301 Bausch & L	149	1423 TMC	182	1440 U.S. Stoneware	215
1302 L&E	117	1302 Bausch & L	150	1424 TMC	183	1441 U.S. Stoneware	216
1303 L&E	118	1303 Bausch & L	151	1425 TMC	184	1442 U.S. Stoneware	217
1304 L&E	119	1304 Bausch & L	152	1426 TMC	185	1443 U.S. Stoneware	218
1305 L&E	120	1305 Bausch & L	153	1427 TMC	186	1444 U.S. Stoneware	219
1306 L&E	121	1306 Bausch & L	154	1428 TMC	187	1445 U.S. Stoneware	220
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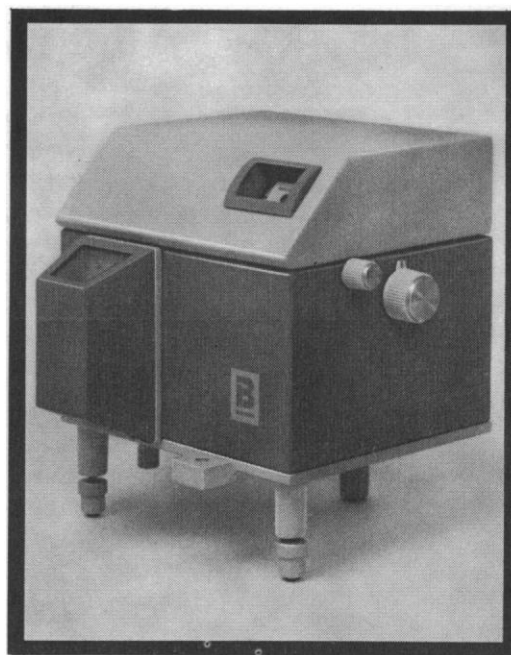
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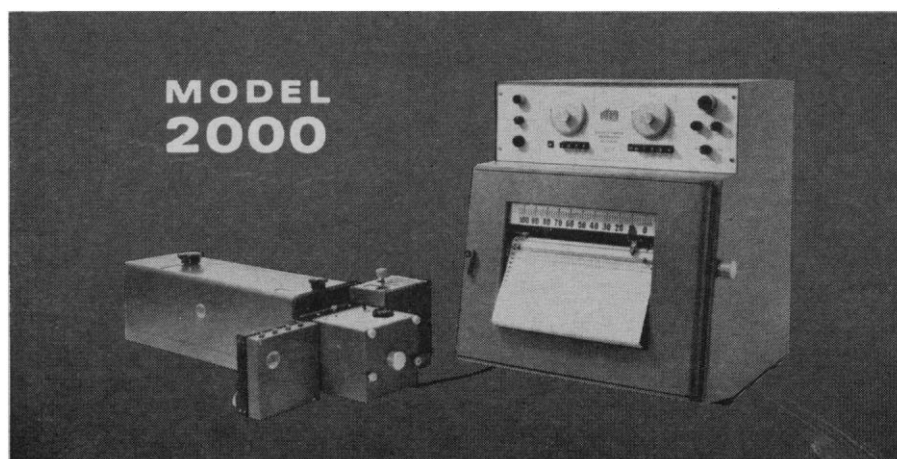
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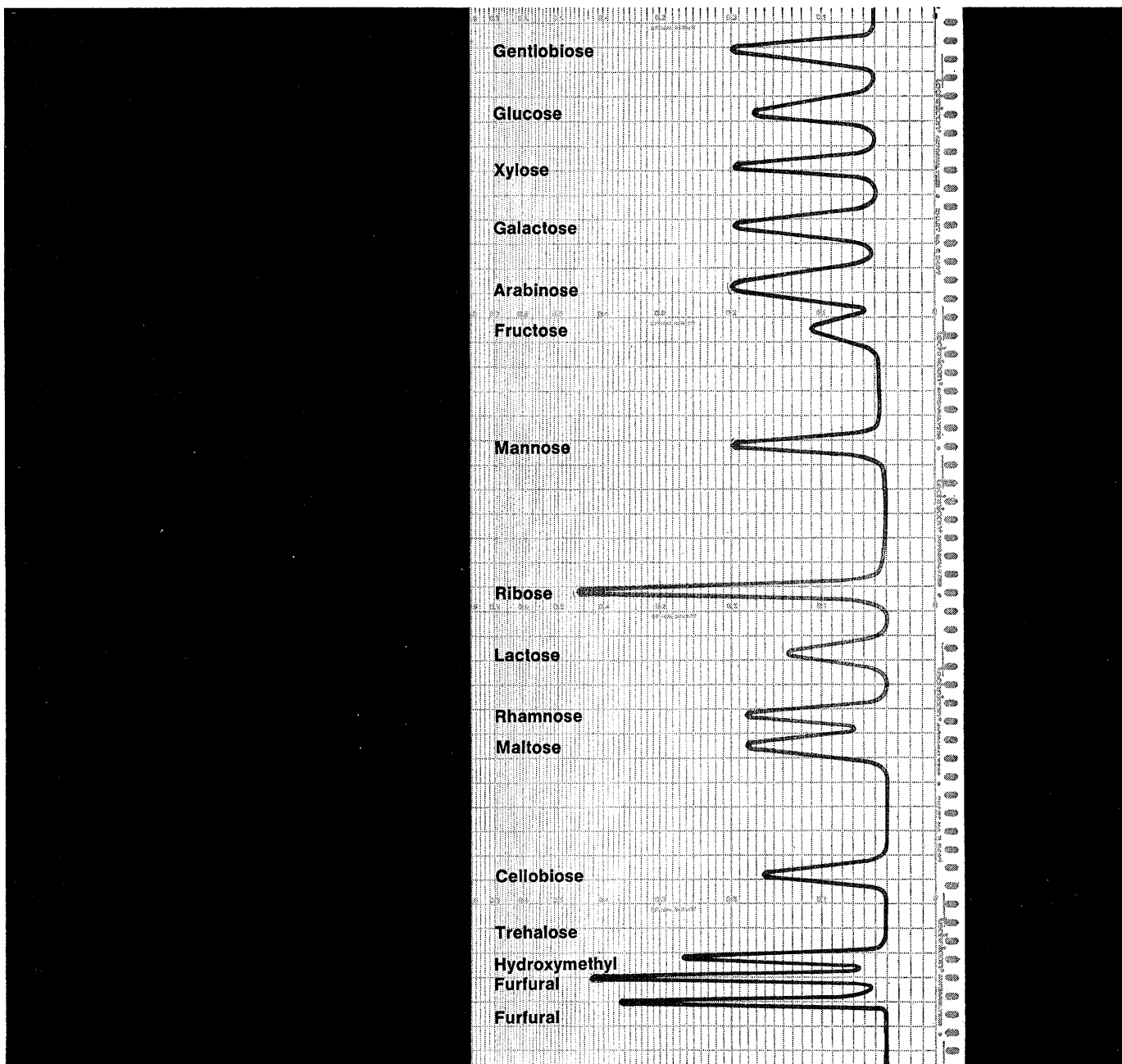
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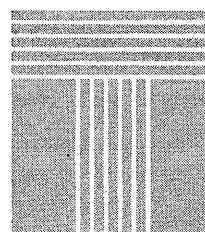


■ The 15-sugar chromatogram reproduced about one-sixth size above was produced on the new, automated Technicon Sugar Chromatography System in 7½ hours. Notice that furfural, hydroxymethylfurfural, pentoses, hexoses, and disaccharides are well resolved.

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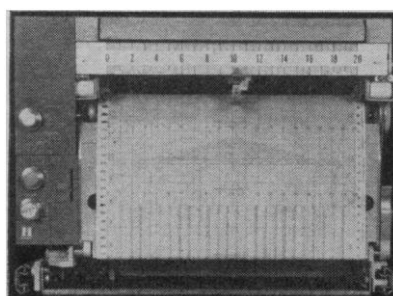
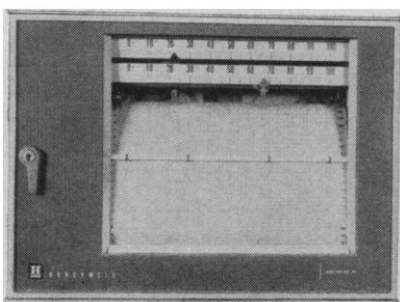
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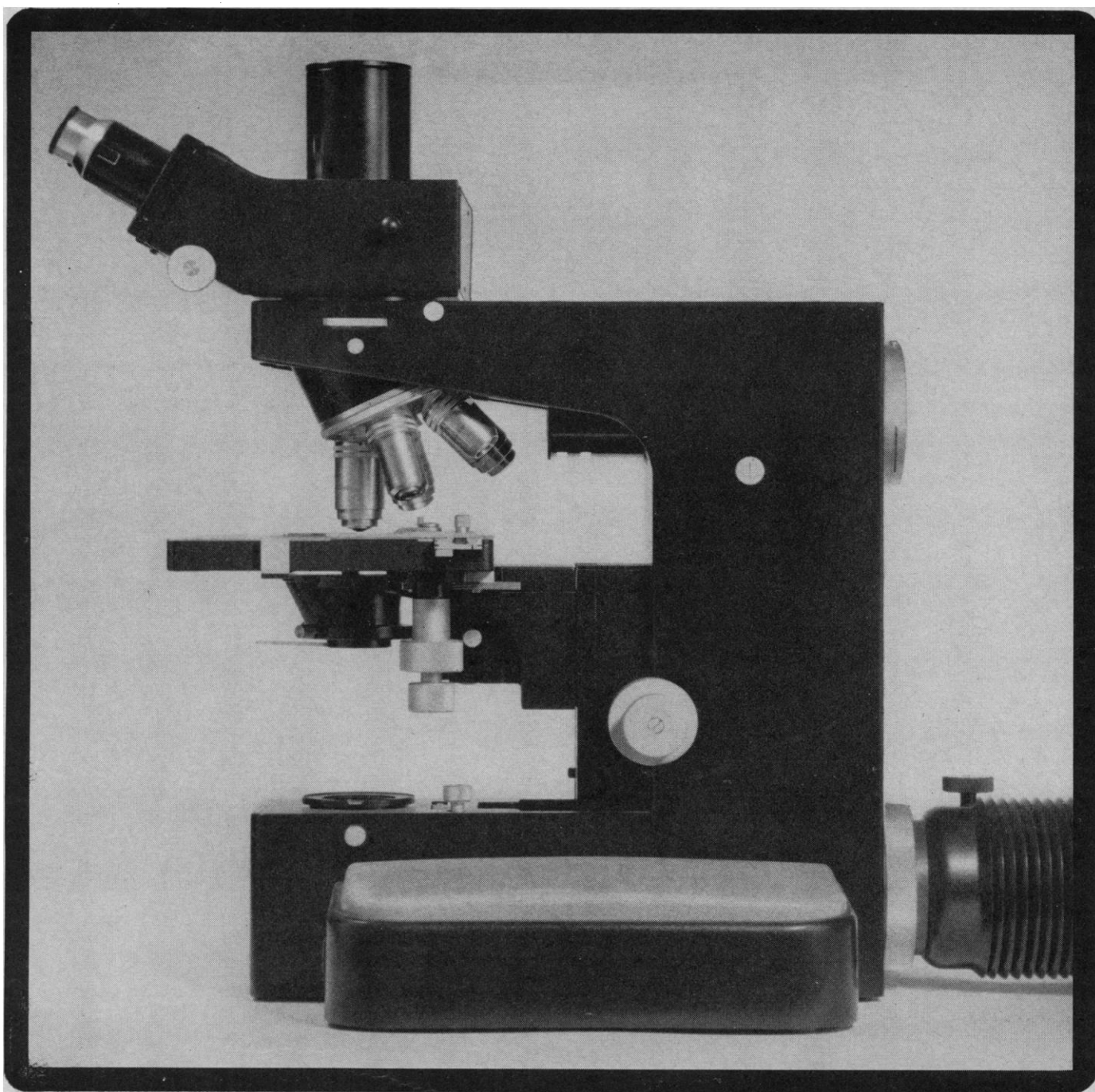
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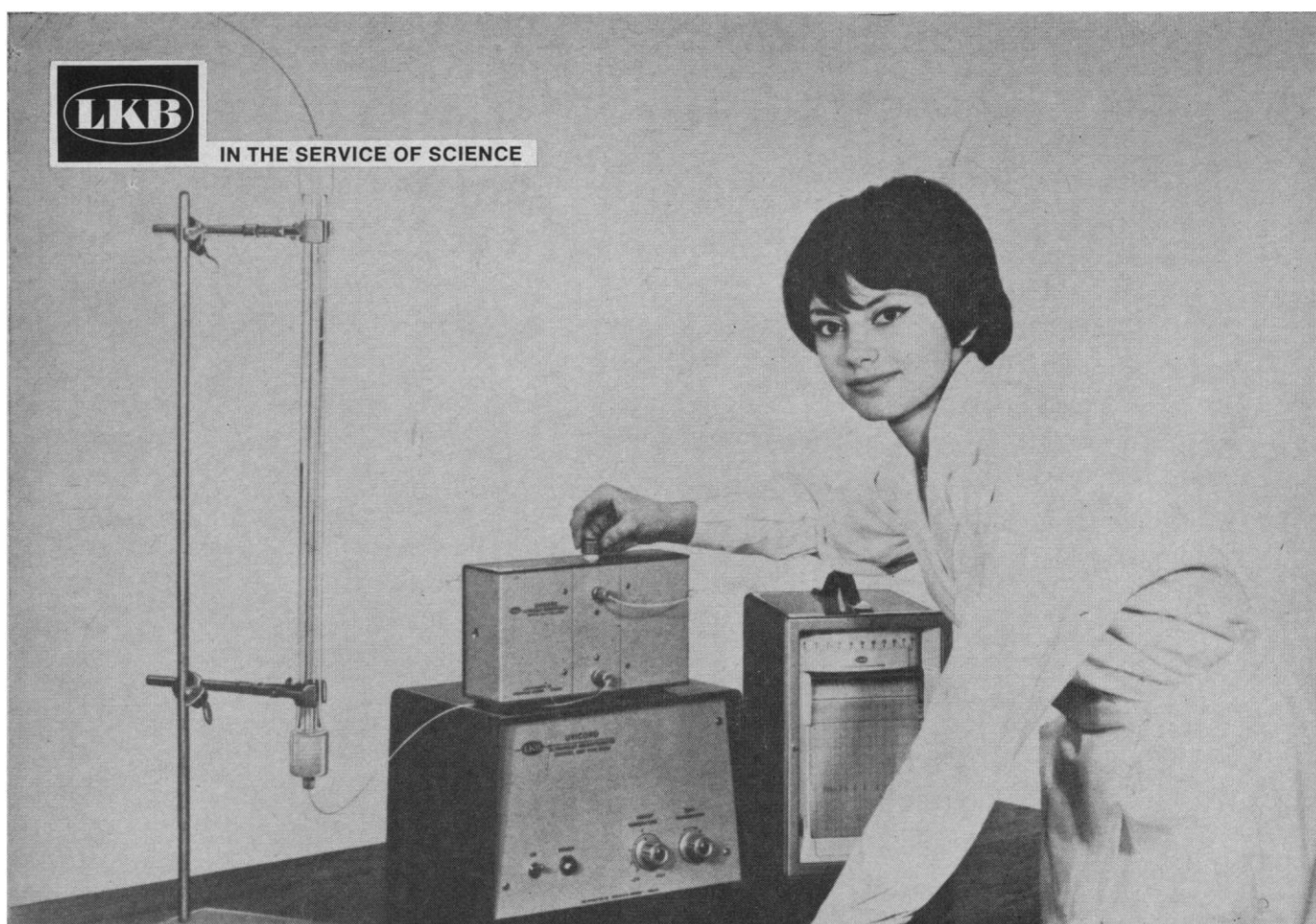
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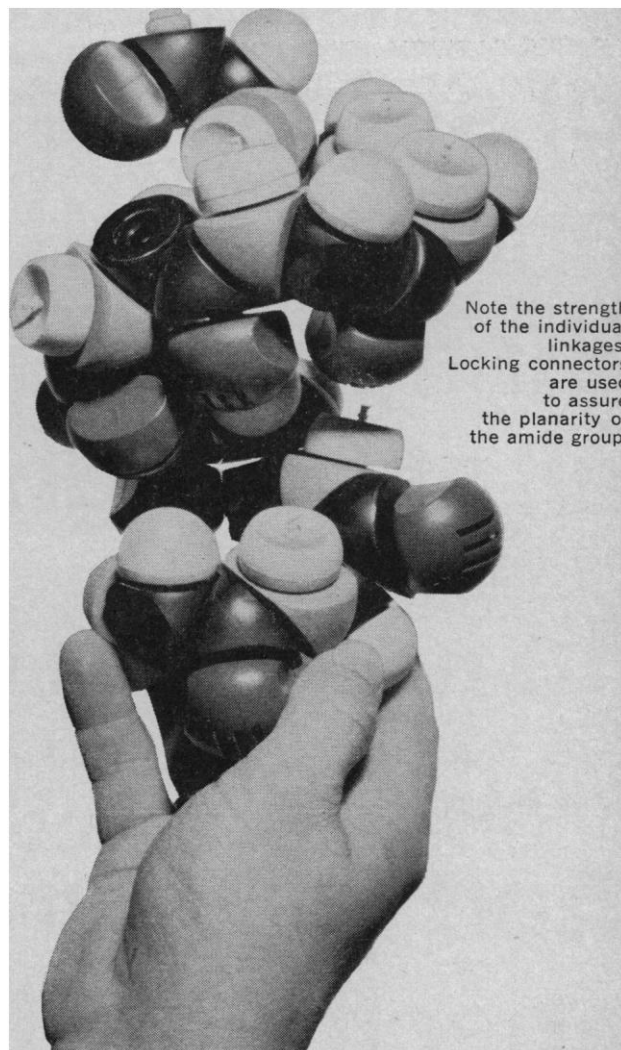
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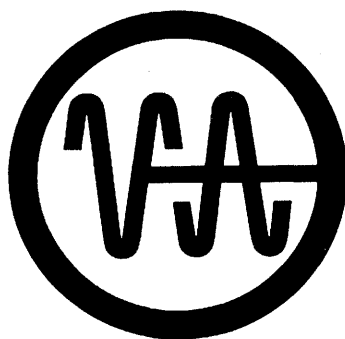


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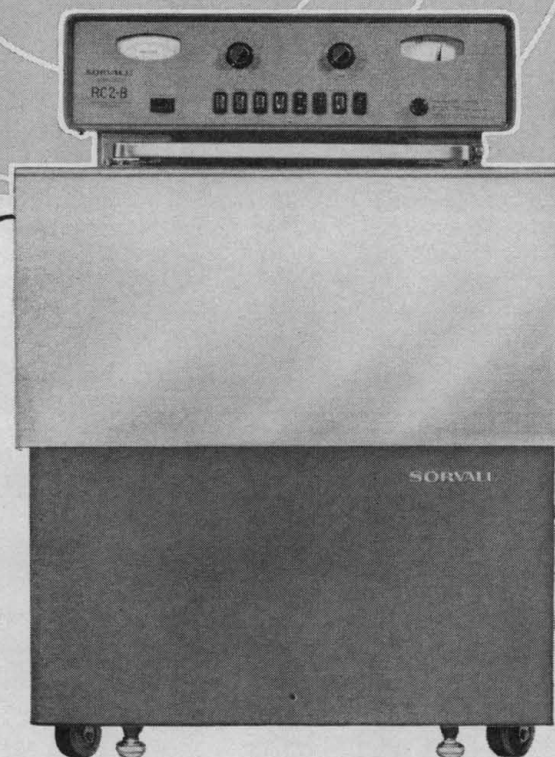
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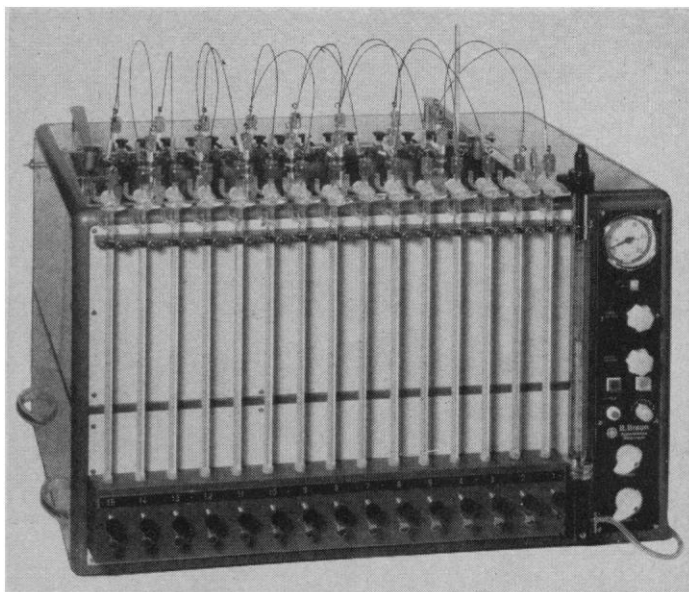
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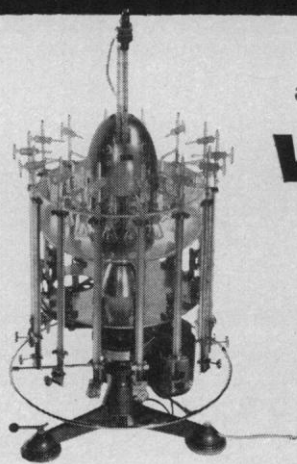
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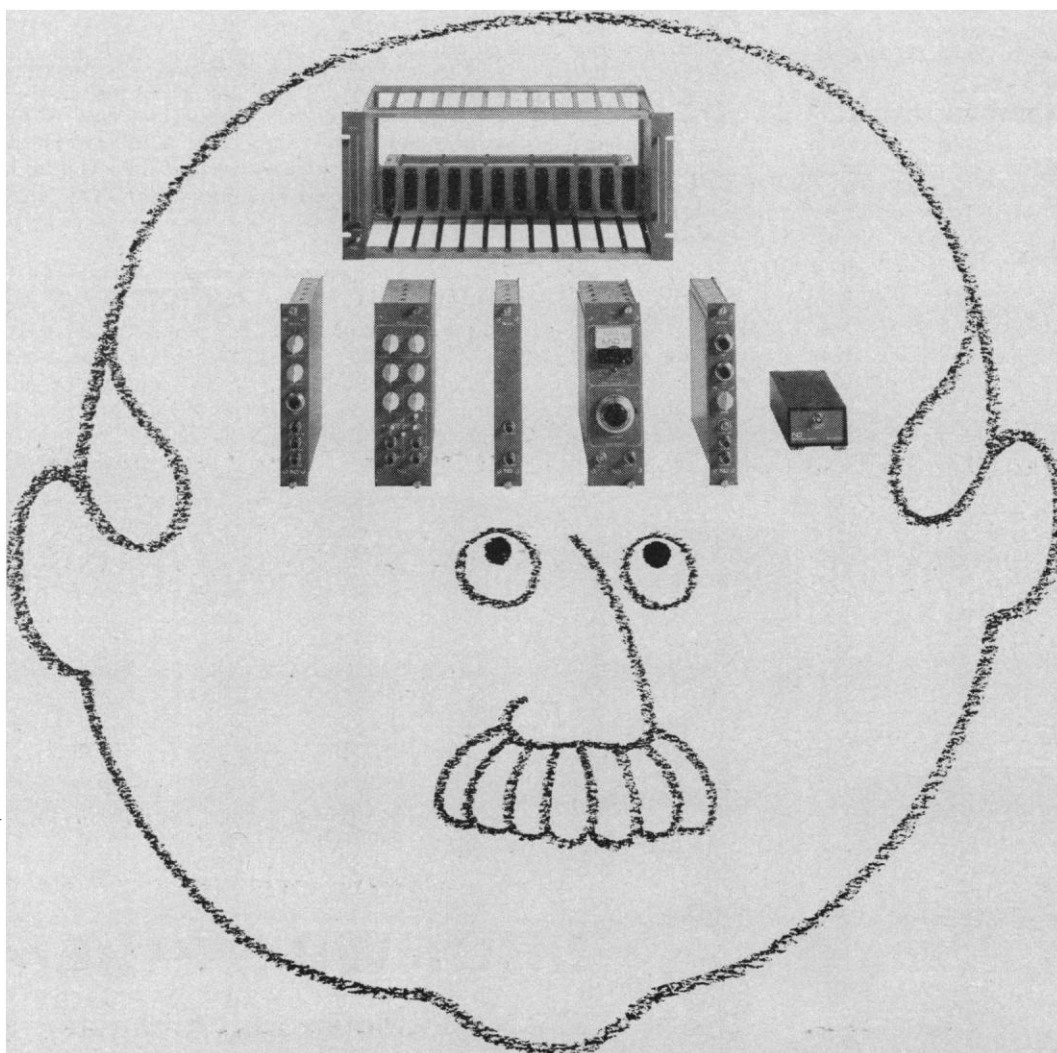
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Ambilog 200 signal processing systems are currently being used for seismic research, dynamic structural testing, sonar signal analysis, wind tunnel testing, speech research, and biomedical monitoring. For technical reports describing in detail these installations and other signal processing applications, contact M. I. Stein, Product Manager, Adage, Inc., 1079 Commonwealth Avenue, Boston, Mass. 02215, (617) 783-1100.

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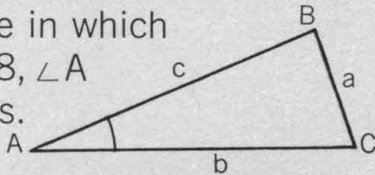
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Someone gave him the following problem:

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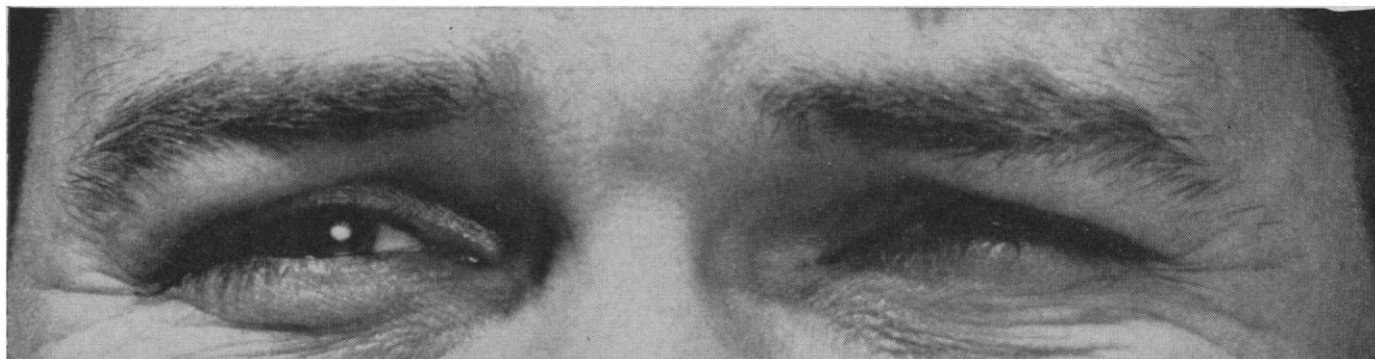
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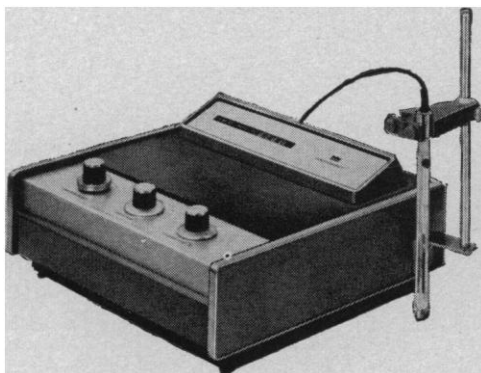
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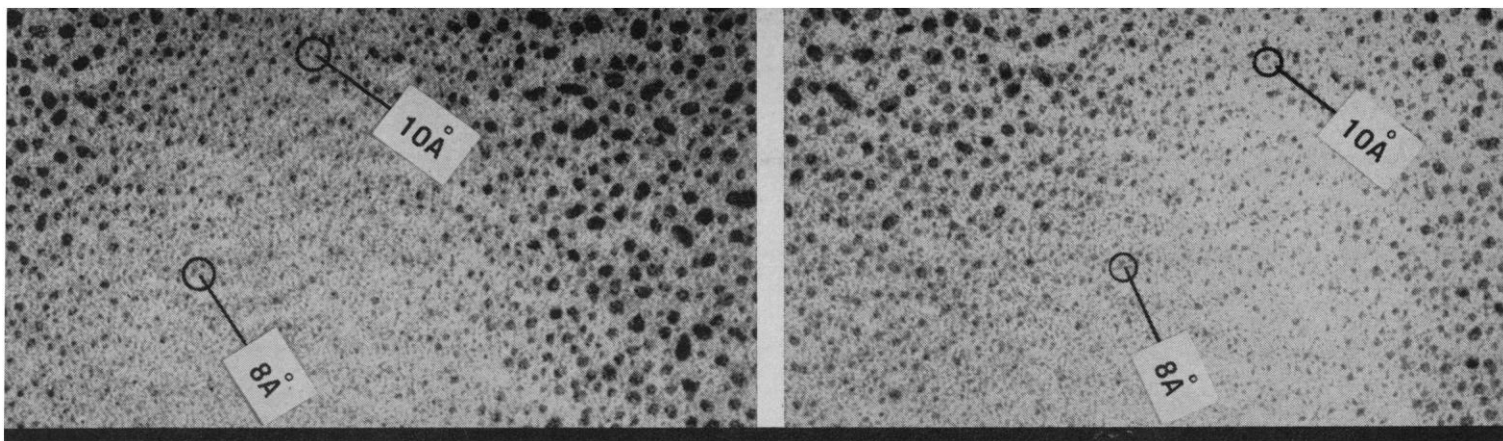


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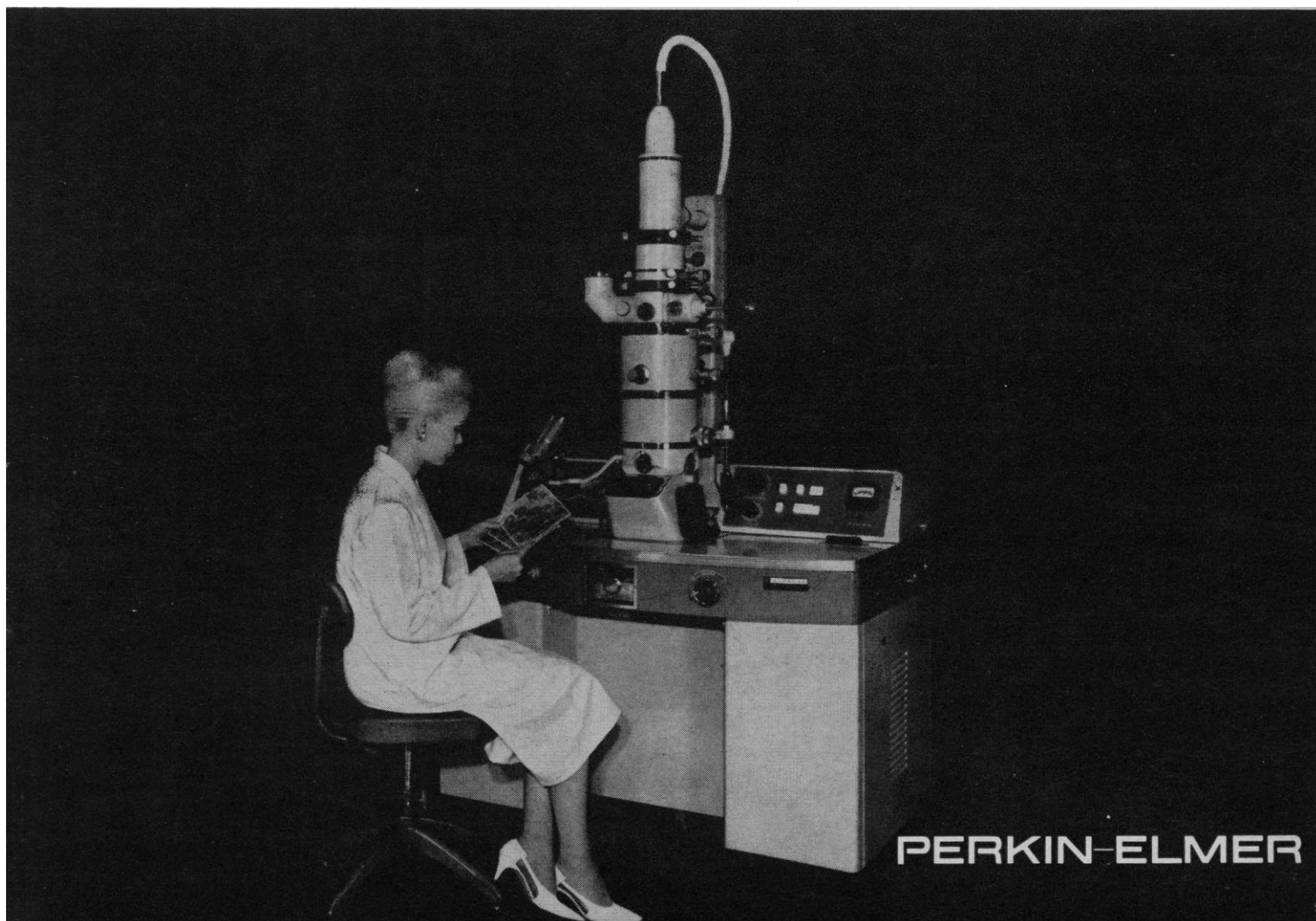
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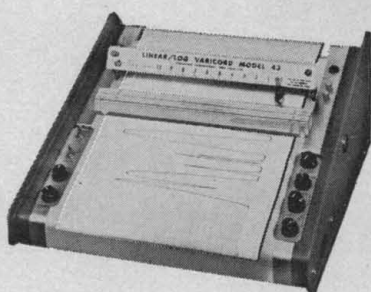
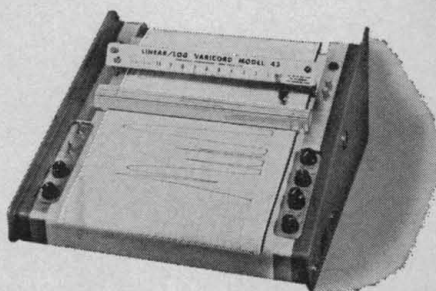
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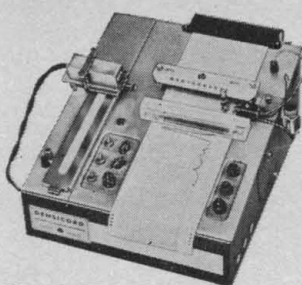
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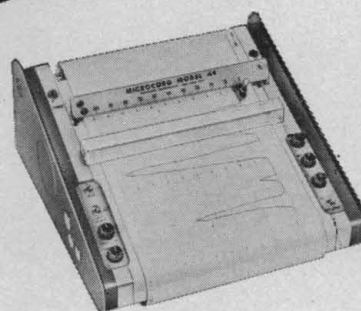
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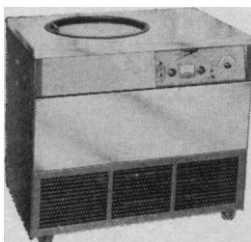
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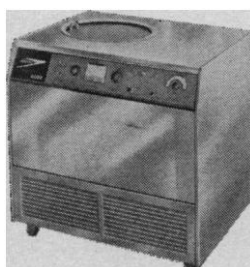
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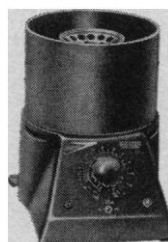
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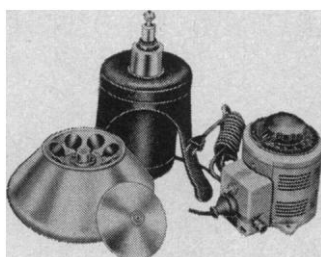
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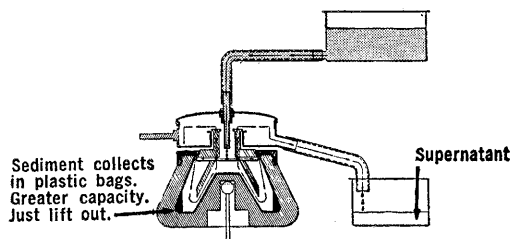
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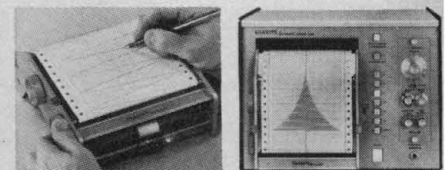
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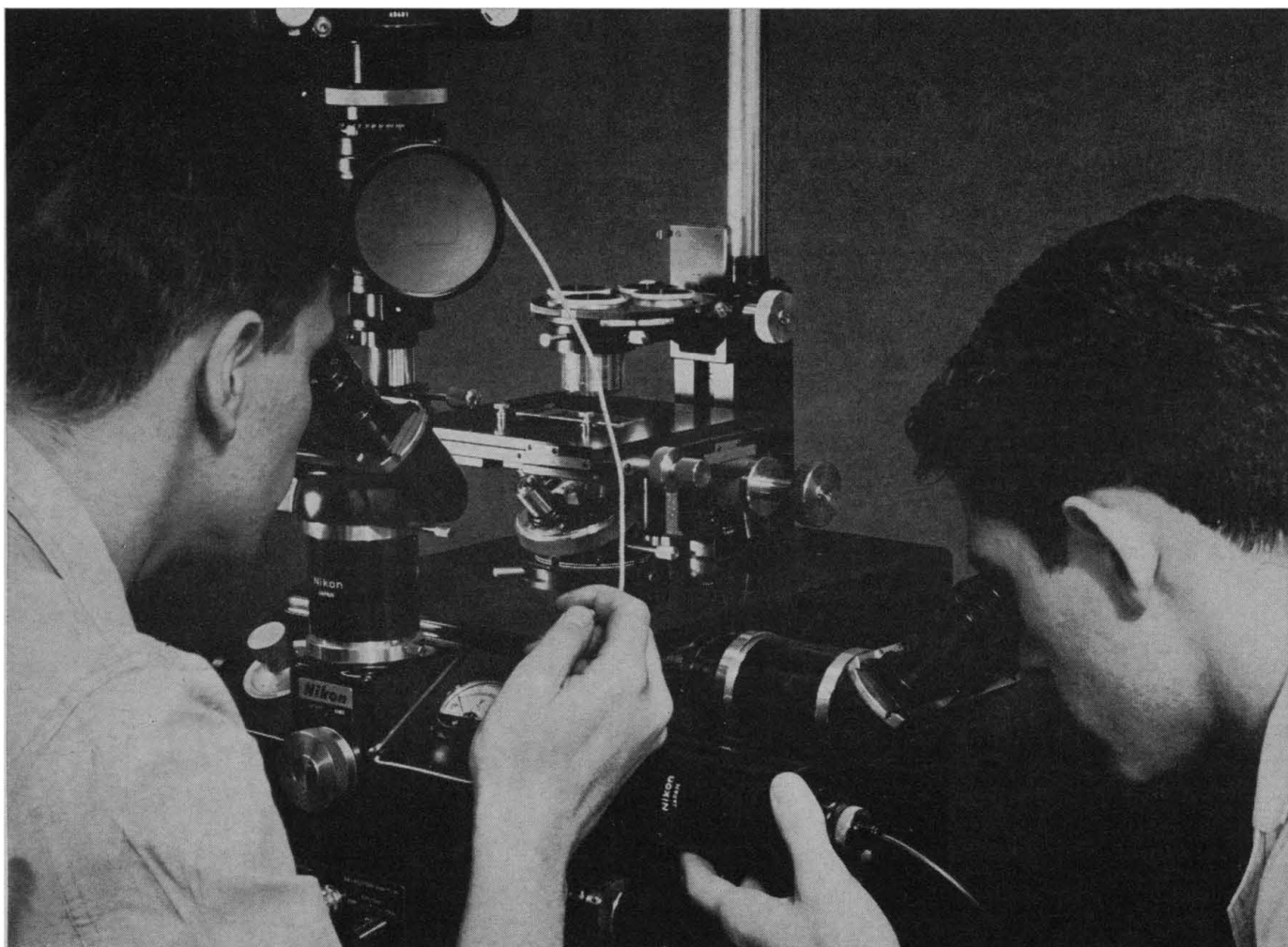
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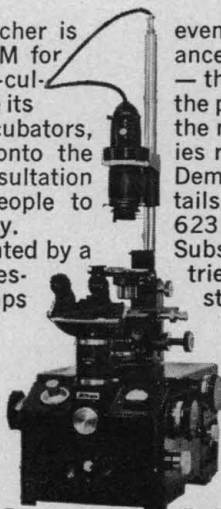
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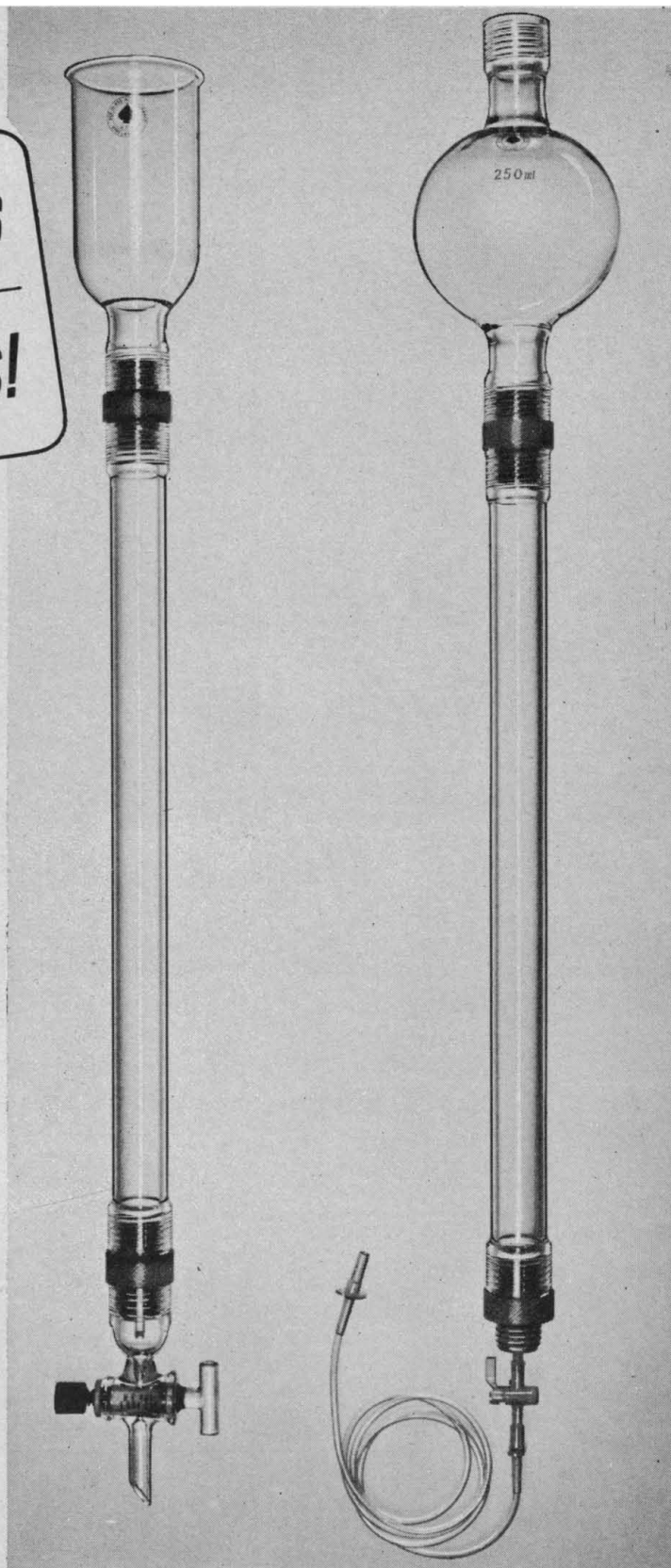
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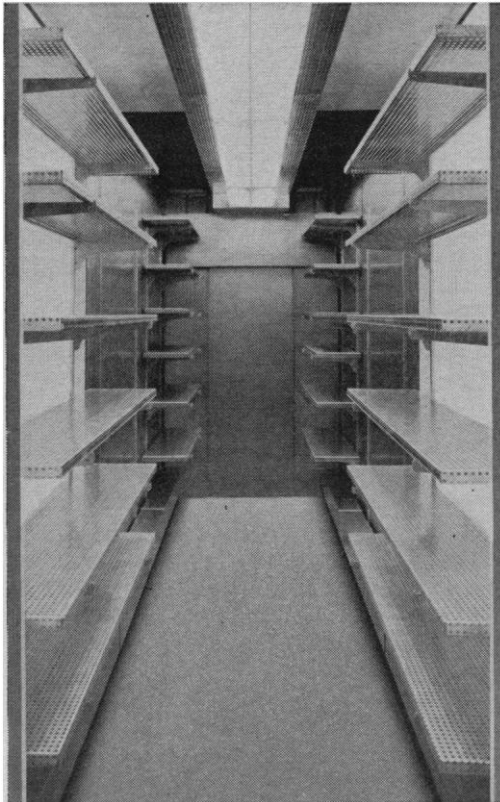


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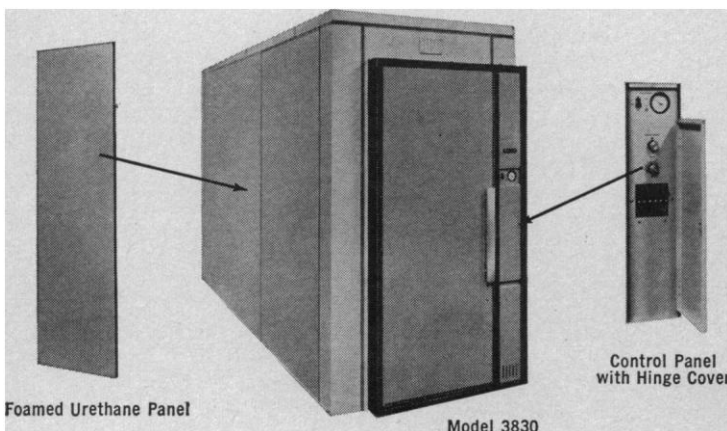
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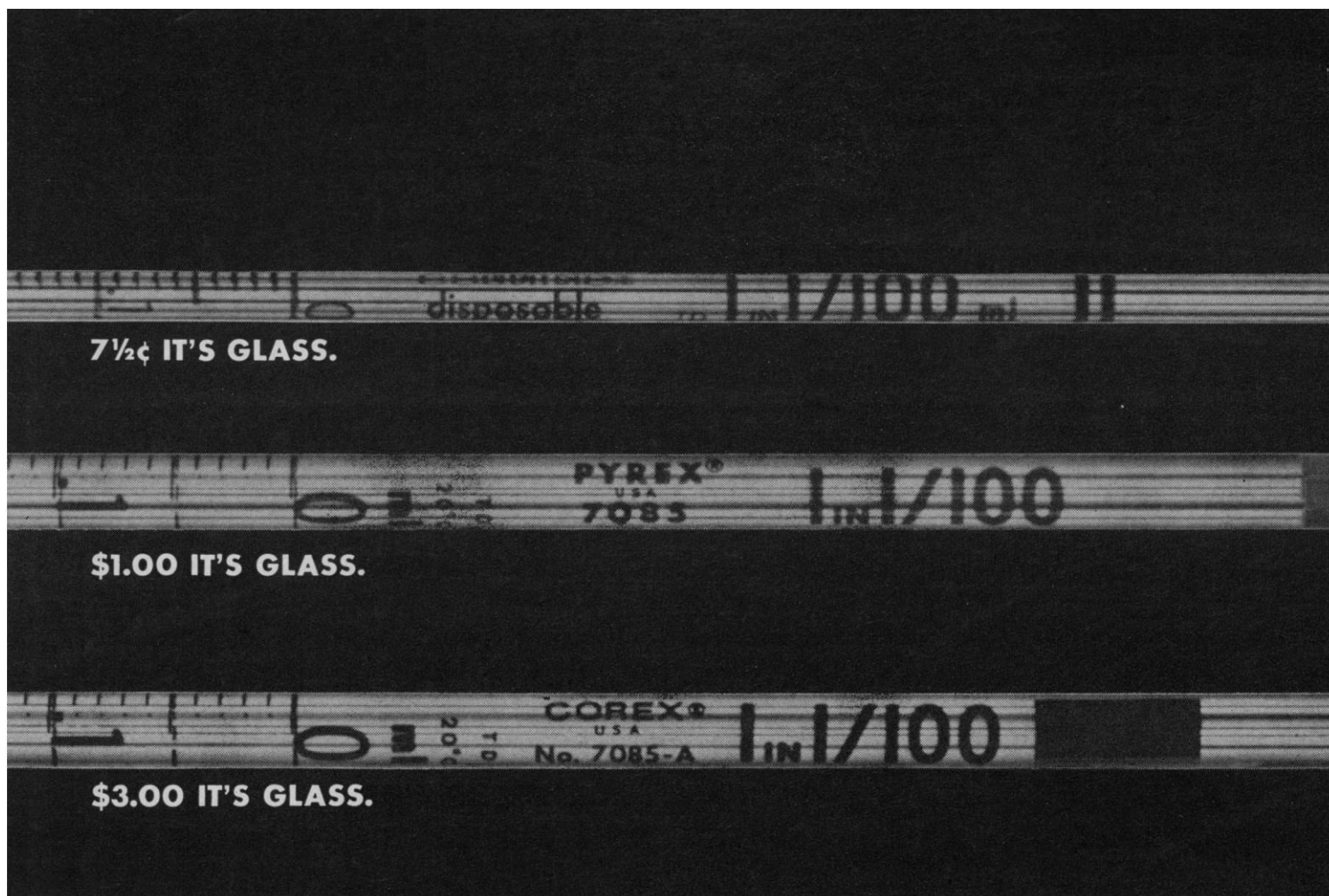
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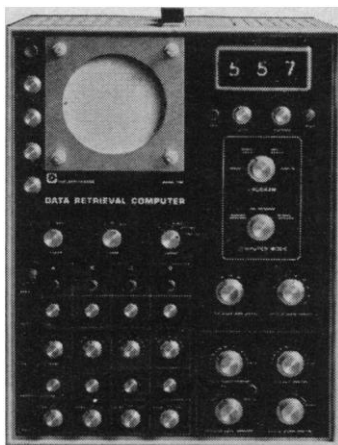
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learn promptly of work by others that bears closely upon his own problems is increasingly insistent. The IEG's have provided such a means of rapid exchange of information among certain groups of workers with closely related interests; they also provided a forum for controversy and discussion, without the inhibiting influences that would attend formal publication. Scientists moving into new fields of research could make their activities known to others at an early stage, long before publication. All these purposes, and others, can be served by the IEG's, and by similar groups that may arise in the future.

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As editors we recognize the responsibilities of the scientific journals for speeding the process of publication and the distribution of journals after publication. We wish to maintain high standards of careful but prompt reviewing before a paper is accepted; but the interval from acceptance to publication should be as short as possible. Some journals have reduced this interval to 2 months, sometimes even less, while maintaining high standards of publication; this of course requires the cooperation of authors in careful preparation of manuscripts and prompt return of proofs. We recognize the responsibility of the journals to make every effort to shorten publication time.

Distribution of published journals by air can make scientific findings available all over the world within a few days of publication, whereas journals sent by surface mail may take 2 months or more to reach Asia or Australia from Europe or America. The obstacles to circulation of journals by air are not technical but financial. IEG memoranda, as a result of being sent by air mail, reached investigators throughout the world almost simultaneously; this was one of the great merits of the IEG experiment. The overseas copies of some journals are already distributed by air; the editors of others are eager to follow their example, if they can solve the financial problems involved. We believe that the rather moderate costs of such rapid distribution will be far more than repaid by the resulting stimulus to the progress of science, and the strengthening of communication among the members of the worldwide scientific community. We believe that the International Scientific Unions should play an active part in promoting such rapid communication.

In summary: (i) We recognize the value of the IEG's and of similar groups that may be expected to arise in future

among scientists with related interests, in promoting rapid communication of material not intended for publication. If the scientists themselves wish to form more such experimental groups, and to find ways of meeting the costs of operating them, such groups may well become more numerous and more varied in the future. (ii) The journals listed below will not consider manuscripts for publication if preprints, of essentially identical content, are to be distributed, in substantial numbers, by an agency independent of the author or of the publisher of the journal. (iii) We recognize that editors and publishers of scientific journals must make every effort to accelerate publication and distribution of accepted papers.

The following journals have subscribed to this general statement of policy: *Archives of Biochemistry and Biophysics*, *Biochemistry*, *Biochemical Journal*, *Biochimica et Biophysica Acta*, *Carbohydrate Research*, *Clinica Chimica Acta*, *European Journal of Clinical Investigation*, *Journal of Lipid Research*, *Journal of Molecular Biology*, *Journal of Nutrition*, and *Molecular Pharmacology*.

The following members of the Commission were present at the meeting in Vienna and voted to approve these policies: J. T. Edsall (*J. Biol. Chem.*), J. C. Kendrew (*J. Mol. Biol.*), H. Neurath (*Biochem.*), E. C. Slater (*Biochim. Biophys. Acta*), W. V. Thorpe (*Biochem. J.*).

W. V. THORPE

Department of Physiological  
Chemistry, University of Birmingham,  
P.O. Box 363, Birmingham 15, England

## Chemical and Biological Warfare: Is Propriety the Issue?

What is the issue concerning University of Pennsylvania research on Army and Air Force Chemical and Biological Warfare projects? (News and Comments, 13 Jan., p. 174). The issue is muddy in my mind. The more I ponder it, the muddier it becomes. Is the research illegal? Is it immoral? Is it unsportsmanlike? From time to time, the issue of the propriety of certain research at universities does arise, and although I find CBW and spy-related work personally distasteful, my personal tastes don't determine right or wrong. Other factors have to be considered.

In any country, the scholars and scientists (they may not be mutually exclusive) depend on the wealth of that country for support. Actually, the emergence of an urban population superstructure (innovators, scholars, scientists, military, merchants, financiers,



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government) is related to the ability of the farmers and the production workers to provide a surplus and, conversely, the ability of the farmers and production workers to provide surpluses is related to the ability of the urban population superstructure to provide innovation, new developments, order, and protection.

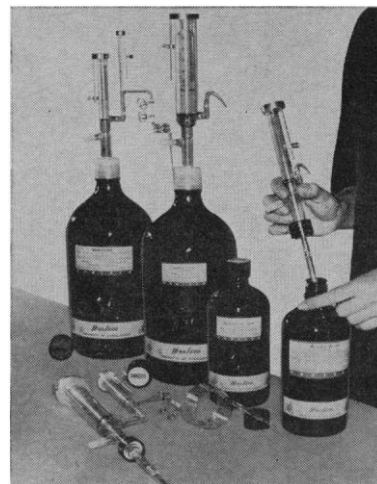
At times, a country's military defends the country from aggression. Other times, it may aggress. But the action taken by the military may not reflect the actual intent. If we were a nation of pacifists, the entire issue would be quite clear. But then again, if we were pacifists, we very likely wouldn't be here now. Occam's razor doesn't seem to apply here. Why the protests? Do the protesters object to war; to the war in Vietnam; only to the University working on war-related projects; or to others receiving the research contracts? How do we rationalize the fact that comparable scientists were mobilized very effectively on equally repugnant projects, such as the atom bomb, during World War II? Even Archimedes consulted for the military.

Somewhere in the issue at Pennsylvania, and perhaps at Michigan State too, is a broader issue that could stand some airing. We are not pacifists. We need a military. But the introduction of weapons-related projects into the University seems to be distasteful. Why?

BERNARD ALPERT

*School of Business,  
San Francisco State College,  
San Francisco, California 94132*

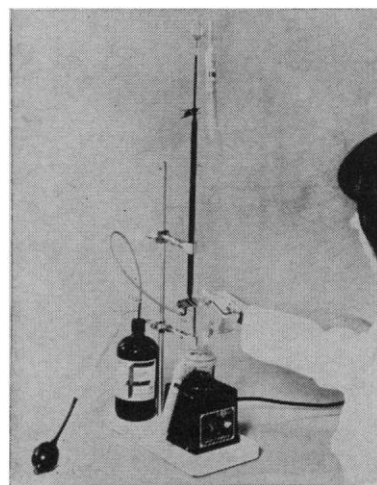
As a practicing forester, I use herbicides routinely in my work. They are an excellent aid in the conversion of low-quality hardwood stands to higher valued and more productive pine stands. . . . I am still in the age group which could be recalled to active duty in case this limited war gets worse. With this in mind, I oppose the petition signed by some of our leading scientists whose motives were humanitarian. As an ex-troop commander, I would not want to be deprived of what I know to be an excellent weapon for reducing the dangers of ambush and guerrilla warfare. Perhaps, when I am older and cannot be sent to a battle area, I will have a different opinion concerning the use of herbicides in warfare. I have not yet reached that philosophical age. Therefore I urge the continued use of herbicides as defoliants or even against crops to reduce the food supply, as this will help to get our troops out of a



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rather unfavorable situation in a difficult area of the world.

By using herbicides we ruin a very rich biological area and very definitely change the ecology. But isn't the sacrifice of this biological area preferable to the increased sacrifice of American lives, whose loss may be traced to the withholding of an effective weapon of war?

HOWARD H. HANDORF

608 Third Avenue,  
Farmville, Virginia 23901

Langer implied that scientists engaged in defense research have betrayed humanity and science. I feel that we who are engaged in such research either directly, as consultants, or under grants and contracts have no cause for guilt. It is unfortunate that in all the years of human existence we have not yet learned how to synthesize plowshares from swords. Since we have not, defense research remains a legitimate and honorable career. The facts of life are as they are. No one can rationally believe that we alone are engaged in such studies. Nor if we abandon such studies, is it likely that others will follow. Whether BW or CW is ever used in warfare is really immaterial. The very possibility of their use requires any sane people to learn of their potential and of defense against them.

I wonder why BW and CW are singled out as particularly heinous. All types of weapons are horrible be they fists, stones, bullets, or nuclear bombs. Why is it more horrible to be ill (even acutely ill for a period of time) than to be mangled or dead for all time? Why is it more horrible to expose the enemy's routes of travel by defoliants than by bombing? Certainly both effectively alter the ecology of the area. Does not the destruction by bombs exceed that of defoliants? BW and CW are not alone weapons of so-called mass casualties. No war has ever been limited to the confines of the battlefield; all have been as devastating for civilians as for the warriors.

If my colleagues are a fair sample, there is probably no one in defense research who would not be happier if the wealth of nations and the efforts of its scientists were spent on Great Societies both at home and abroad. But as long as the world is as it is what nation will abandon its defense research?

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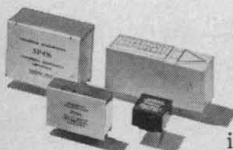
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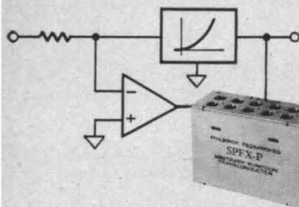
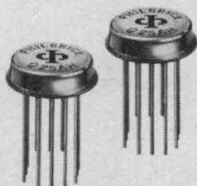


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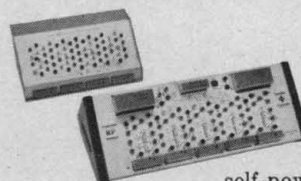
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## Technological Innovation

In some of the discussions of regional economics, it seems to be assumed that a faster rate of growth would follow automatically if the level of research and development were raised. On a national scale it is clear that recent economic growth has come in substantial measure from new technology. Consider electronics, the zipper, jet aircraft, air conditioning, digital computers, xerography, and other success stories. None of these new ideas and inventions became a success, however, until it was followed by product design and engineering, tooling up, initial manufacture, and the opening of a new market. These later stages, it has been estimated, typically cost 10 to 20 times as much as the original research or invention. A new idea lies at the base, but it lies fallow unless venture capital and the skills of the entrepreneur, product engineer, marketing specialist, and manager successfully translate the new idea into the market economy.

The interrelation of these several elements, the factors that foster or inhibit innovation, and the recurring refrain that we know too little about them, are the theme of *Technological Innovation*, a report recently published by the Department of Commerce, which is reviewed more fully in the News and Comment section of this issue of *Science*, where some of the recommendations for fostering innovation are also given.

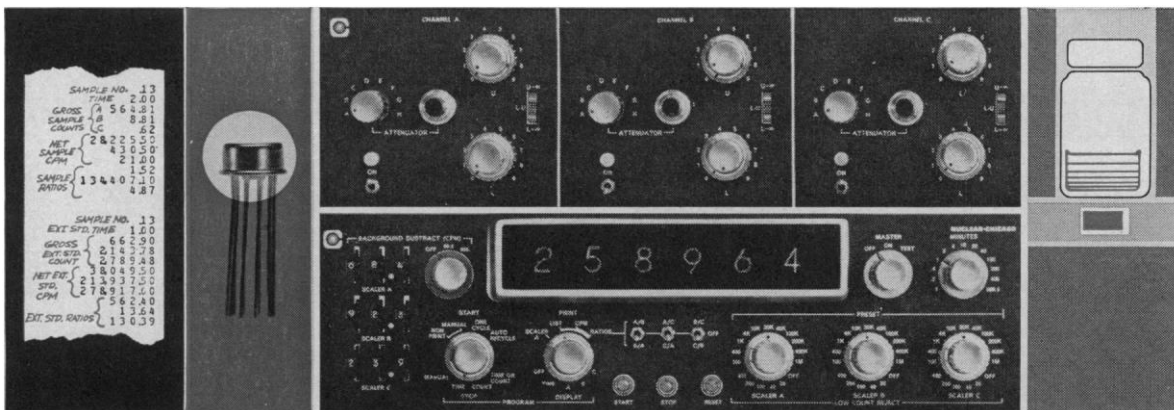
The report raises some interesting puzzles. Why, for example, should it be that when the Federal Reserve Bank of Philadelphia questioned the founders of a number of research-oriented firms in the Boston area, all answered that the universities played an important role in stimulating new science-based firms and that local banks were helpful, while every founder of a similar firm in the Delaware Valley replied that the universities played a small role and that bankers were unreceptive to the idea of putting venture capital into such firms?

Those who are worried, from an economic point of view, by the current geographic distribution of research and development funds and those who are concerned with building a base for the technological development of the poorer nations of the world will endorse the conclusion of *Technological Innovation* that is emphasized over all of its more specific recommendations: "Major effort should be placed on getting more managers, executives, and other key individuals—both in and out of government—to learn, feel, understand, and appreciate how technological innovation is spawned, nurtured, financed, and managed into new technological businesses that grow, provide jobs, and satisfy people."

Perhaps we will understand these matters better in a few years, for the interrelations of the factors involved are being studied. In the literature of economics, the contributions of education and knowledge are being analyzed along with those of capital and labor as factors that contribute to growth. The President has proposed changes in patent law. The Patent Policy Committee of the Federal Council on Science and Technology is studying the conditions that aid or inhibit commercial exploitation of government-owned patents. The State Technical Services Act is being tried out. And the National Aeronautics and Space Administration is encouraging universities with major NASA support to explore and improve their relations with industry in an effort to foster the translation of new knowledge into industrial practice and products.

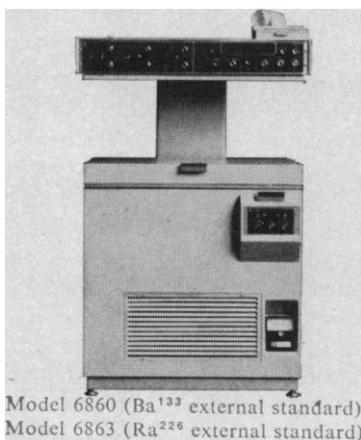
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**CONTENTS:** 2-Acetamido-3,4,6-tri-O-acetyl-2-deoxy- $\alpha$ -D-glucopyranosyl chloride. 2,2'-Bipyridine. 1-Bromo-2-fluoroheptane. 2-Bromo-4-Methylbenzaldehyde.  $\alpha$ -Chloroacetyl Isocyanate. 2-Chloro-1-formyl-1-cyclohexene. Chloromethylphosphonothioic Dichloride. Chlorosulphonyl Isocyanate. Coumarone. 2,2'-Dichloro- $\alpha,\alpha'$ -epoxybibenzyl. 3,4-Dichloro-1,2,3,4-tetramethylcyclobutene. 2-Fluoroheptanoic Acid. Formamidinium Acetate. Hexamethylphosphorous Triamide. Hexaphenylbenzene. 3-Hydroxyglutaronitrile.  $\beta$ -Isovalerolactam-N-sulphonyl Chloride and  $\beta$ -Isovalerolactam. 1-(*p*-Methoxyphenyl)-5-phenyl-1,3,5-pentanetrione. 2-(*p*-Methoxyphenyl)-6-phenyl-4-pyrone. Methyl Benzenesulfinate. 10-Methyl-10,9-borazarophenanthrene. 1-Methylcyclohexanecarboxylic Acid. Methyl Isocyanide. Methyl Phenyl Sulfoxide. *o*-Nitrobenzaldehyde. 2-Nitrocarbazole. Palladium Catalyst for Partial Reduction of Acetylenes. Perchlorofulvalene. 2-Phenyl-3-*n*-propylisoxazolidine-4-5-*cis*-dicarboxylic Acid N-Phenylimide. Phenyltrichloromethylmercury.  $\alpha$ -Pyrene. Sodium Nitromalonalddehyde Monohydrate (Warning). Purification of Tetrahydrofuran (Warning). 1,2,3,4-Tetraphenylinaphthalene. Triethyloxonium Fluoborate. 2,6,6-Trimethyl-2,4-Cyclohexadienone. Trimethyloxonium Fluoborate. Trimethyloxonium 2,4,6-Trinitrobenzenesulfonate. 2,3,5-Triphenylisoxazolidine. Subject Index.

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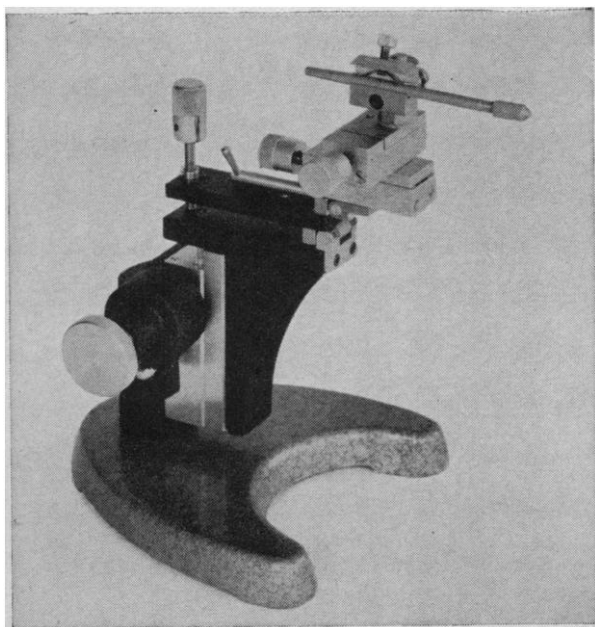
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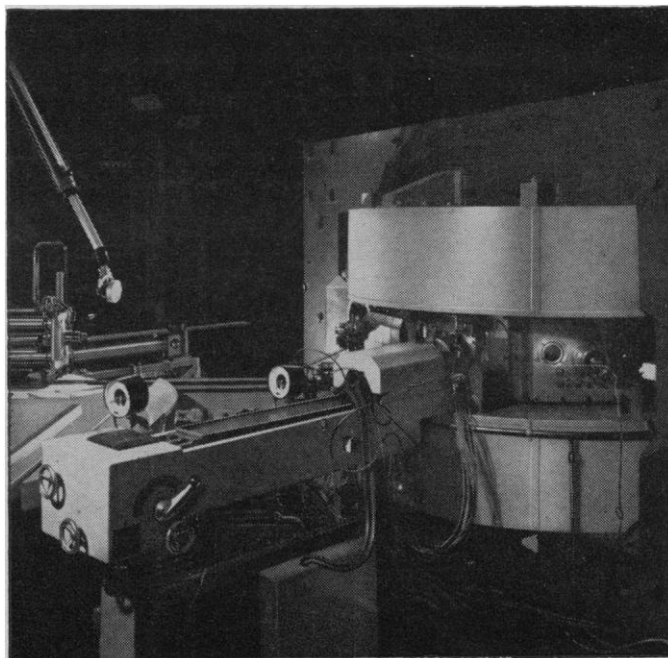
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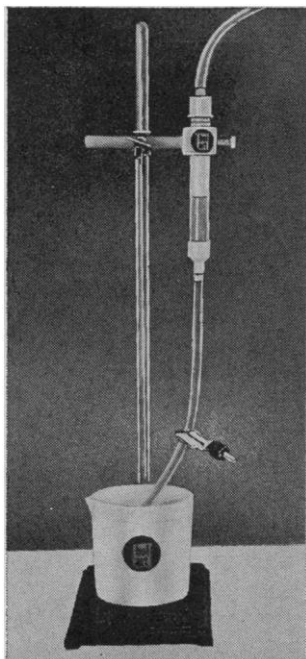
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22 August. Recrystallization and phase changes (R. D. Heidenreich, discussion leader): R. W. Vook, "Low temperature recrystallization of thin films"; C. J. Mogab, "Structural rearrangements in noncrystalline silicon carbide films." (T. E. Hutchinson, discussion leader): M. H. Francombe, "Two-phase structures in oxide and metal films."

23 August. Mechanical properties (R. W. Hoffman, discussion leader): E. Klokholm, "Strains in evaporated metal films"; D. S. Campbell, "Stresses in the initial stages of thin film growth." (C. Weaver, discussion leader): P. F. Schmidt and R. J. Jaccodine, "Oxide films on silicon"; H. D. Keith, "Crystal growth and crystalline morphology of high polymers."

24 August. Dielectric and semiconductor properties (M. H. Francombe, discussion leader): T. W. Hickmott, "Conduction and electroluminescence in oxide films"; J. E. Davey, "Growth and properties of gallium arsenide films (C. Feldman, discussion leader): C. Weaver, "Dielectric loss mechanisms."

25 August. Transport properties (C. A. Neugebauer, discussion leader): H. J. Juretschke and S. Soffer, "Electron scattering near surfaces"; D. C. Larsen, "Resistance and magnetoresistance of metal films."

**Glass**

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**Structure and Properties of  
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28 August. B. E. Warren, "Present-day possibilities for x-ray determination of glass structure"; R. Kaplow, "Structure of crystalline and amorphous B<sub>2</sub>O<sub>3</sub>"; H. A. Robinson, "A model for the structure of amorphous SiO<sub>2</sub>."

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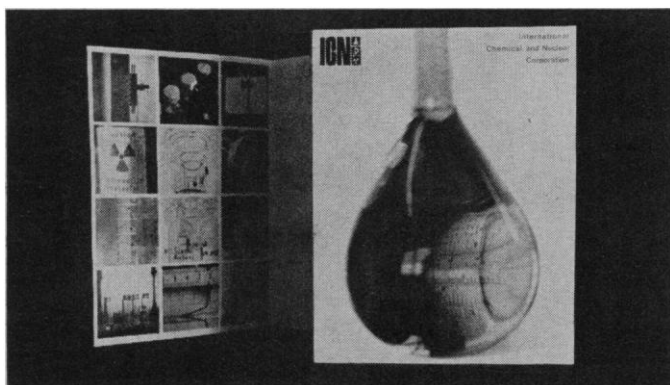
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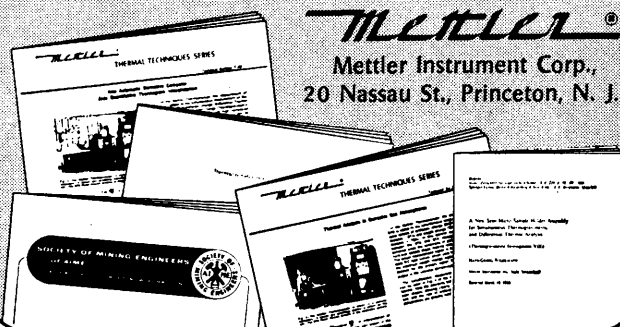


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- 3) A New Semi-Micro Sample Holder Assembly for Simultaneous Thermogravimetric and Differential Thermal Analysis, Hans-Georg Wiedemann
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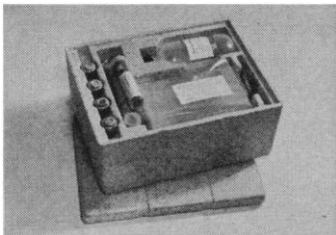
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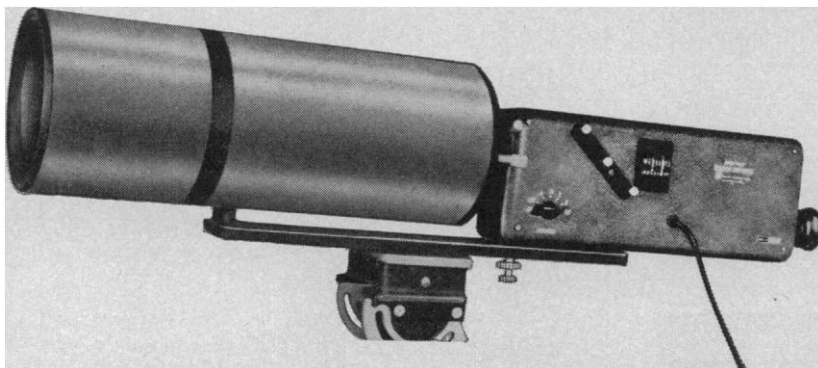
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tions and structure of glasses"; A. J. Leadbetter, "Low temperature heat capacity and related properties of some simple glasses"; R. A. Weeks, "Paramagnetic resonance of oxygen vacancies in crystalline and glassy oxides"; J. T. Krause, "Low temperature acoustic and thermal expansion measurements in simple glasses"; S. P. S. Porto, "Laser excitation of the Raman effect in simple glasses"; P. H. Gaskell, "Vibrational spectra of simple glasses."

30 August. R. Brückner, "Structure-specific investigations and properties of glasses"; D. B. Fraser, "Acoustic properties of fused SiO<sub>2</sub>"; T. A. Litovitz, "Laser spectroscopy of viscous liquids"; P. Macedo, "Viscoelastic relaxation in simple glasses."

31 August. P. Jorgensen, "Hydrogen permeation through fused SiO<sub>2</sub>"; A. Bishay, "Libyan desert sand glass"; I. Burn, "Water in fused SiO<sub>2</sub>."

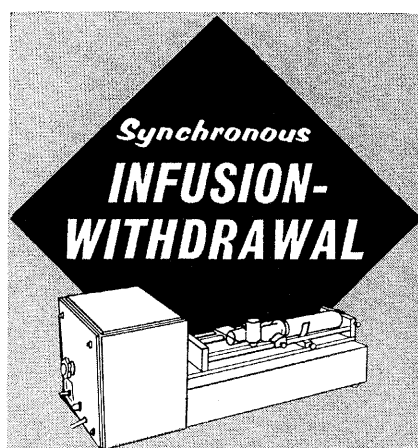
1 September. Short contributions and summary.

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### **Lasers in Medicine and Biology**

Jude R. Hayes and Myron L. Wolbarsht are co-chairmen.

19-23 June. Physical and engineering aspects of laser biomedical research: M. Stein, F. Johnson, "Physical properties of tissues"; D. A. McSparron, "Problems in characterizing laser performance"; R. J. Rockwell, Glen Hardway, "Methods and effects of controlled laser parameter variations for biomedical research." Irradiation damage at the molecular level: F. Barnes, C. Lun-Hu, L. Lauridson, "Thermal-chemical laser damage"; E. Cohen, "In vitro laser-induced changes in gamma globulin"; J. R. Feick, "Photoflash-induced enzyme denaturation in artificially pigmented human leukocytes"; F. Johnson, J. Helsper, D. E. Rounds, "Selected biochemicals as chromospheres." Laser irradiation damage in simple organisms: J. Griffin, "Laser irradiation effects in *Physarum* mold"; N. M. Saks, "Inhibition of chloroplast replication in *Nitella*"; W. H. Wilde, R. Kobylnyk, "Laser effects on arthropod life stages." Phenomenologic studies of laser injury in mammals: E. Klein, S. Fine, "Effects of laser irradiation in mammals"; T. Brown, R. McLaurin, C. True, R. Rockwell, R. Schooley, "Argon laser: biologic studies in neural tissue and hemophilic beagles"; R. Ritter, L. Goldman, "Application of the argon laser



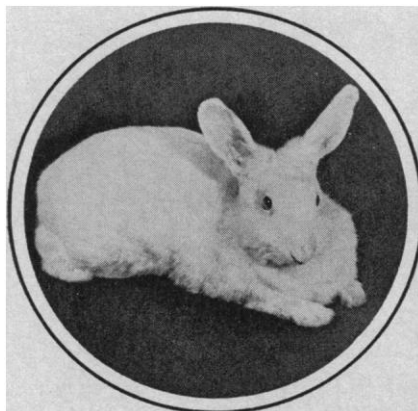
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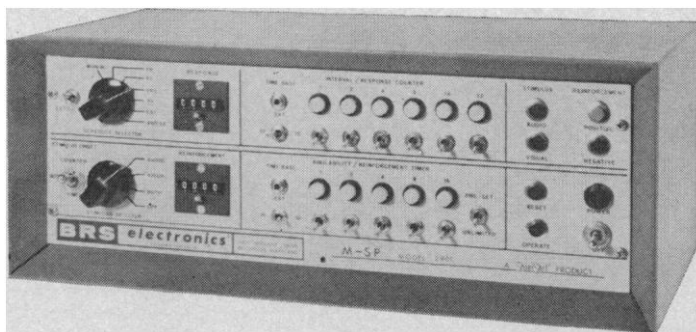


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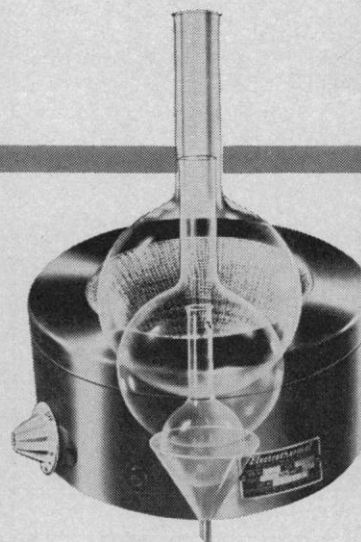
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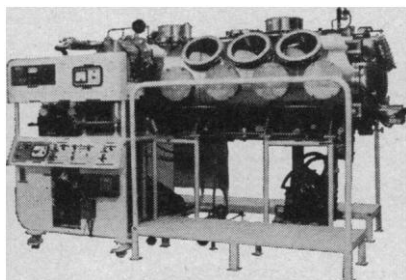
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in hemangioma studies"; R. W. Bull, A. S. Brownell, A. J. Luzzio, W. Parr, "Skin and organ injury and related immunologic effects." The pathology of laser injury: R. C. Hoye, L. B. Thomas, G. Riggle, A. S. Ketchum, "The histopathology of interaction of high energy neodymium laser and tissue"; R. C. Rosan, M. Flocks, "Retinal pathology of laser irradiation"; B. Fine, W. Geeraets, S. Fine, "Light and electron microscopic retinal pathology of laser irradiation"; Y. Laor, L. Simpson, S. Fine, E. Klein, "Pathology of abdominal viscera after laser irradiation", G. Faith, "Ultrastructural pathology of laser irradiated liver." Laser effects in mineralized tissues: J. Adrian, M. Stein, "Minimal pulpal damage from enamel laser irradiation"; R. W. Ebberts, D. F. Buxton, W. C. Kaufman, T. L. Rodriguez, "Destructive effects of laser beams through various thicknesses of bone"; R. H. Stern, F. Goodman, H. L. Renger, "Laser effects on oral hard tissues." Ocular effects of laser injury: H. Rose, "The minimal chorioretinal lesion"; A. Vassiliadis, H. C. Zweng, R. Peabody, R. Honey, M. Flocks, "Minimal spot size threshold retinal lesions produced by long, Q-switched, and mode-locked laser pulses"; W. Ham, W. Geeraets, R. C. Williams, R. G. King, "In vivo and in vitro studies of ocular effects of laser radiation"; C. J. Campbell, M. C. Rittler, C. H. Swope, C. J. Koester, "Some effects of Q-switched laser radiation on ocular tissue"; W. Parr, G. R. Peacock, "Corneal and severe retinal damage from laser radiation in the visible and infrared"; R. Smith, M. Stein, "Effects of trans-scleral laser irradiation"; R. Peabody, N. Peppers, M. Flocks, H. C. Zweng, A. Vassiliadis, "Corneal damage thresholds from CO<sub>2</sub> laser irradiation"; H. Spekreyse, M. Wolbarsht, J. Hayes, "Mathematical models in laser injury"; J. J. Vos, "Mathematical model of retinal burn"; G. Grosoff, "Mathematical model of laser injury." Effects of laser irradiation on integrated retinal functions: M. Yarczower, "Behavioral assessment of retinal damage"; A. J. Welch, "EEG and ERG responses to argon laser flashblindness"; H. Sperling, "Effects of intense light on spectral sensitivity of the eye"; G. M. Wilkening, "Laser safety in a large laboratory"; F. Huppe, "Laser safety at duPont"; F. A. L'Esperance, E. F. Labuda, A. M. Johnson, "The argon laser in ophthalmology"; H. C. Zweng, R. Peabody, "Further clinical experience with laser ocular photocoagulation."

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## Lipid Metabolism

Konrad E. Bloch and DeWitt S. Goodman are chairman and vice chairman, respectively.

26-30 June. C. Freeman Allen, "Lipid metabolism of algae"; A. A. Benson, (subject to be announced); P. P. M. Bensen, (subject to be announced); H. E. Carter, "Plant glycolipids"; H. Goldfine, "Chemistry and metabolism of bacterial lipids"; T. W. Goodwin, "Biosynthesis of terpenes and sterols in plants"; G. G. Holz, "Lipid metabolism in protists"; A. T. James, (subject to be announced); M. Kates, "Lipids of halophilic bacteria"; E. P. Kennedy and N. Stanacev, "Phospholipid biosynthesis in *E. coli*"; S. C. Kinsky, "Studies in lytic mechanisms with membrane models"; J. H. Law, "Biosynthesis of branched-chain and cyclopropane fatty acids"; W. J. Lennarz, "Biosynthesis of aminoacyl phospholipids"; W. R. Nes, "Sterol alkylations in plants"; D. H. Nugteren, "Conversion of essential fatty acids into prostaglandins"; P. W. Robbins, "The role of lipids in the biosynthesis of *O*-antigens"; A. Rosenberg, "Metabolism of glycolipids in algae"; M. R. J. Salton, "Bacterial membrane lipids"; W. Stoffel, "Biosynthesis and  $\beta$ -oxidation of polyunsaturated fatty acids"; P. K. Stumpf, "Fatty acid biosynthesis in higher plants."

## Lysosomes

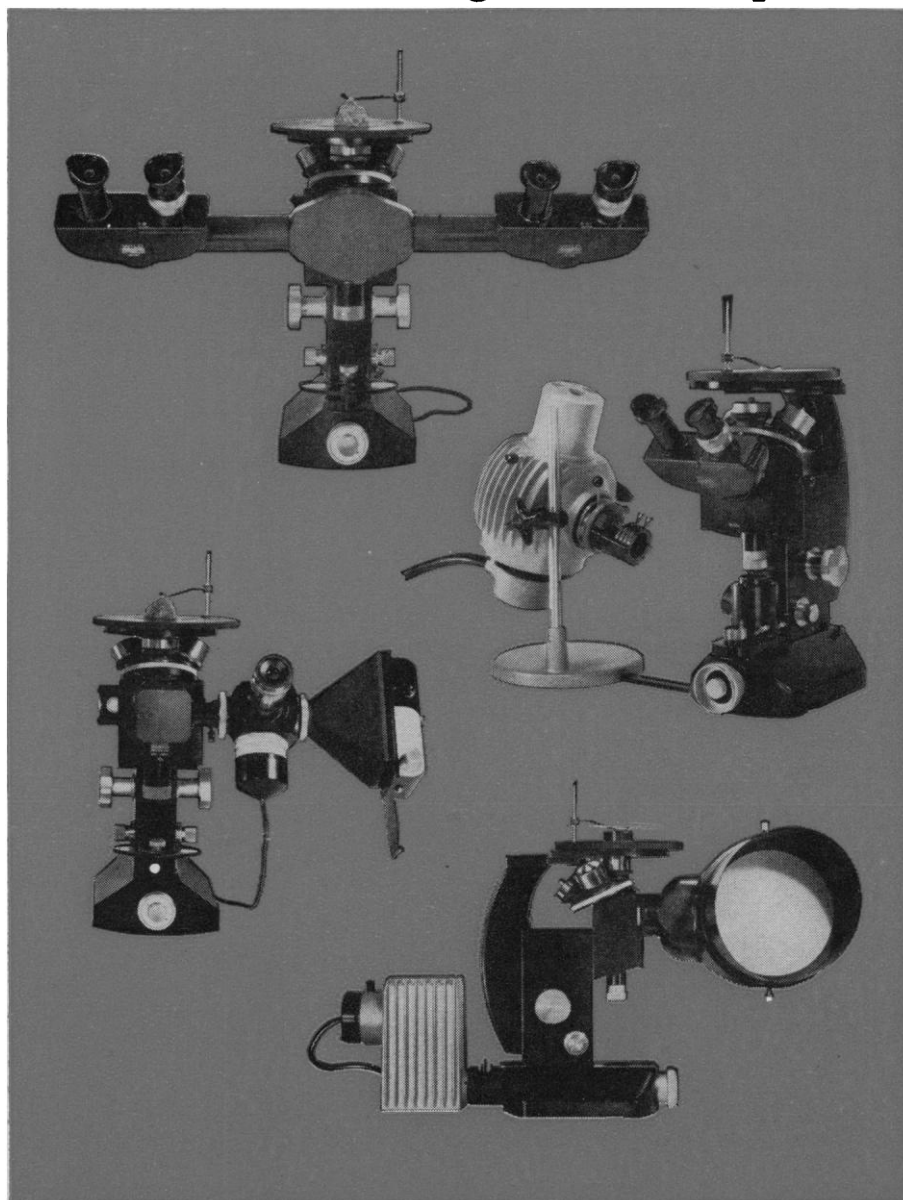
Christian de Duve is chairman.

### Biochemical and Structural Aspects of Self-Degradative Processes in Cells

3 July. Introduction: C. de Duve, "Lysosomal and nonlysosomal mechanisms in cellular self-degradation." Mechanism and control of cellular autophagy: A. B. Novikoff, "Biological significance and cellular mechanisms of autophagy"; B. Trump, "Observations on metabolic control of autophagy in the nephron." J. L. E. Ericsson, "Mechanisms of cellular autophagy"; M. Locke, "Changes in insect cells during molting and metamorphosis"; D. Brandes, "Autophagia during hormonally induced prostatic involution."

4 July. Turnover of mitochondria: L. M. Birt, "Some aspects of the turnover of mitochondria"; S. B. Koritz; N. Gregson; M. V. Simpson; D. R. Sanadi. Turnover of membranes and other particulate components: G. E. Palade, "Turnover of endoplasmic reticulum

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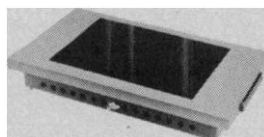
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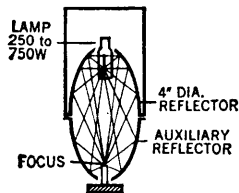
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membrane"; Z. A. Cohn, "Turnover of lysosomal hydrolases"; Th. Peters, "Turnover of catalase and serum albumin."

5 July. Turnover of soluble proteins: D. Schlessinger, "Polyribosome metabolism and the regulation of turnover in *Escherichia coli*"; S. Grisolia, "Substrate-induced enzyme inactivation. Stress and the plasticity hypothesis at the molecular level"; R. T. Schimke, "Studies on the inactivation and breakdown of soluble liver proteins"; H. Munro, "Ferritin turnover." Turnover of ribosomes and RNA: H. Munro, "Liver RNA stability and amino acid supply"; J. Loeb, "Turnover of ribosomal RNA."

6 July. Involution and related processes: J. F. Woessner, "Lysosomes in uterine involution and tissue resorption"; R. Lockshin, "Degradative processes in insect metamorphosis"; M. Farquhar, "Disposal of secretory products by lysosomes"; (Speaker and subject to be announced).

7 July. Pathological aspects of self-degradation: H. G. Hers, "Genetic pathology of lysosomes"; I. M. Weinstock, "The acid hydrolases in muscular dystrophy and atrophy"; H. Swift, (subject to be announced).

### Biomathematics

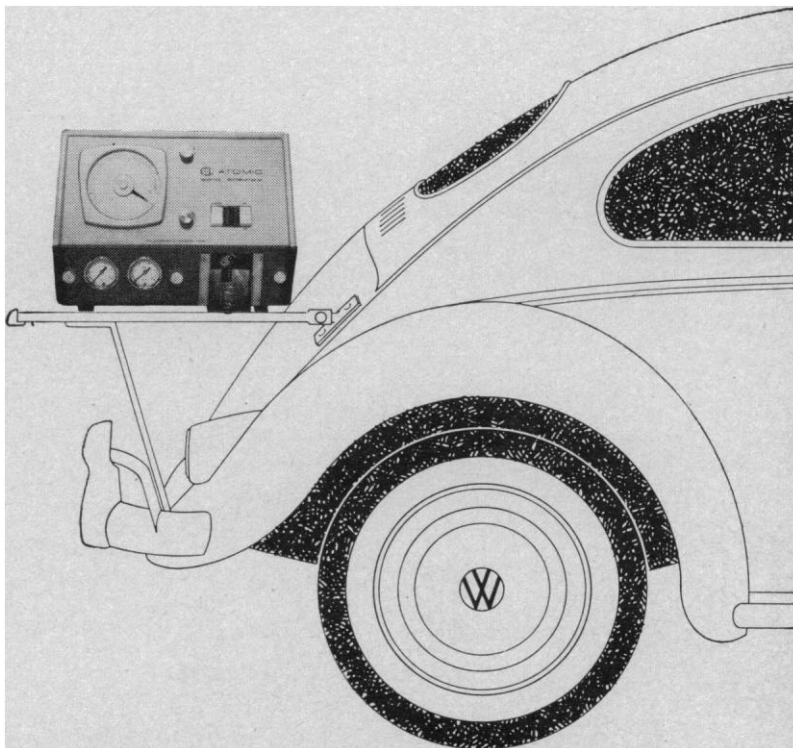
G. D. McCann and John H. Milsum are chairman and vice chairman, respectively.

10 July. Population dynamics (Herbert Landahl, chairman): Richard Lewontin, "Simulation of population genetics"; Prof. Kojima, "Mathematical models of natural selection." (Speaker and subject to be announced); summary and discussions by chairman and speakers.

11 July. Critique of information processing for nervous system research (G. D. McCann, chairman): W. J. McGill, "Decision theory and pattern recognition in life science data"; D. G. Keehn, "Computers and data analysis for visual nervous system research." Ira Richer, "Plexius—a structural modeling concept for the nervous system." Summary and discussions by chairman and speakers.

12 July. Neuromuscular models (John H. Milsum, chairman): G. Melvill Jones, "Man; the incredible neuromuscular system"; D. A. Robinson, "The muscular mechanics of the oculomotor system." L. D. Partridge, "Dynamic aspects of the stretch reflex." Summary and discussions by chairman and speakers.

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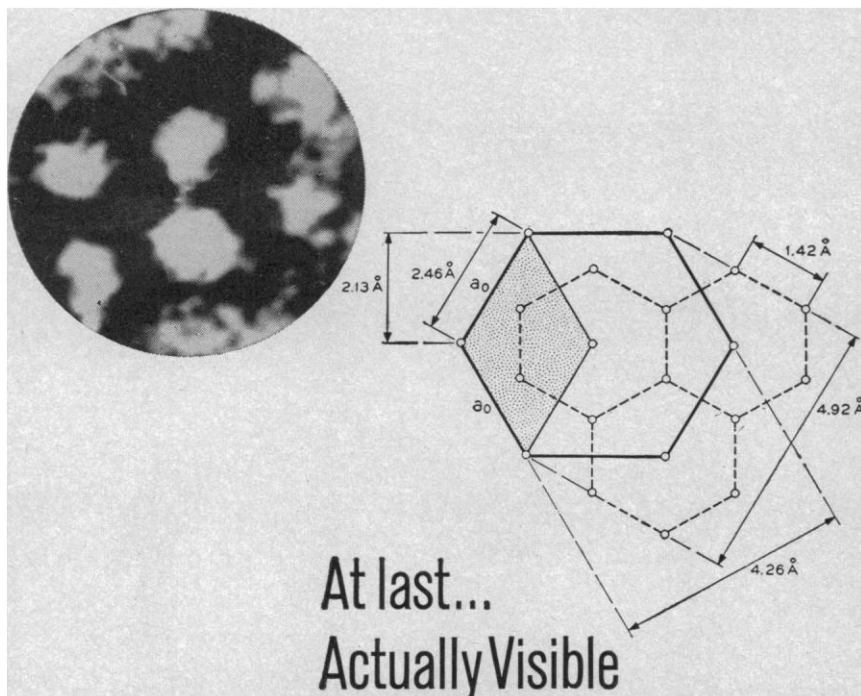
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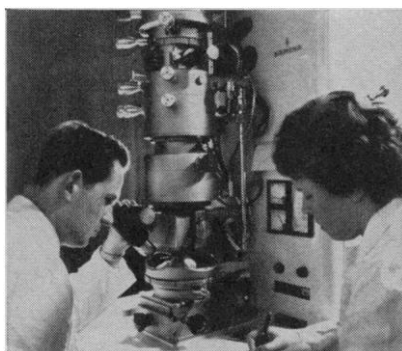


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13 July. Models of the human operator in adaptive systems (D. H. Fender, chairman): Glenn A. Jackson, "Measuring human performance with a parameter tracking version of the cross-over model"; Jerry I. Elkind, "Decision and control theory model for human controller adaptive response." Michael A. Barone, "A methodology to analyze and evaluate critical human performance." Summary and discussions by chairman and speakers.

14 July. (Chairman to be announced): J. T. Apter, "Advances in biological viscoelastic theory"; K. N. Leibovic, "Model of information transfer in the visual pathway."

#### Chemistry and Metallurgy of Semiconductors

Raymond C. Sangster and J. W. Faust, Jr., are chairman and vice chairman, respectively.

17 July. B. A. Joyce, "The growth of silicon on foreign substrates"; W. Salmre, "Dielectric isolation for integrated circuits"; E. E. Loebner, "Deep lying multivalence impurities in silicon: phenomena and models."

18 July. E. F. de Haan, "Semiconductors for vidicons"; J. B. Goodenough, "Conduction processes in oxides"; E. Felty, "Vitreous semiconductors for xerography."

19 July. O. Jantsch, "Slow surface states"; T. L. Estle, "Electron paramagnetic resonance studies of defects in II-VI compounds"; D. B. Wittry, "Semiconductor investigations with electron microprobe instruments."

20 July. R. C. Keezer, "Growth of single crystals of (inorganic) polymers"; W. A. Tiller, "Crystal growth kinetics"; W. R. Field, "Lure and science of diamonds."

21 July. B. C. DeLoach, "Material properties for oscillator structures"; J. J. Tietgen, "The preparation of  $\text{GaAs}_{1-x}\text{P}_x$  alloys for optical and microwave applications."

#### Chemistry and Physics of Paper

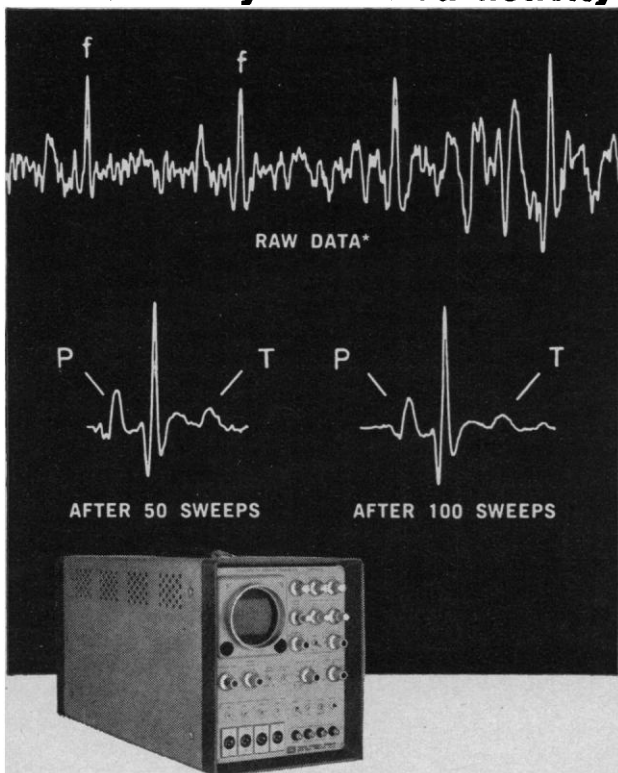
Vivian T. Stannett and Bengt Rånby are chairman and vice chairman, respectively.

24 July. E. Adler, "Lignin, its structure and its reactions in pulping"; N. Thompson, "Recent work in hemi-cellulose chemistry"; D. Attack, "Fundamentals of mechanical pulping."

25 July. A. J. Stamm, "Water-cellu-



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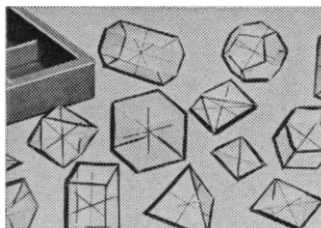
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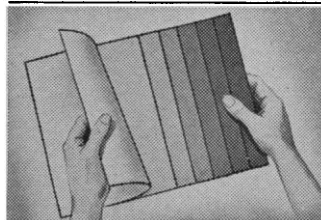
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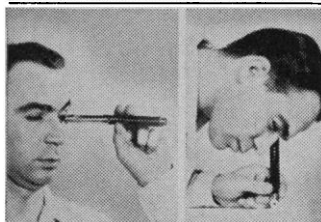
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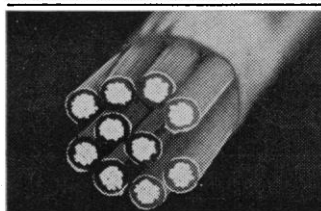
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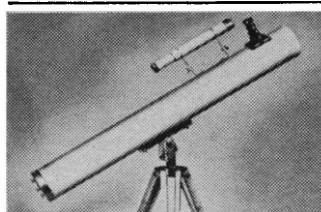
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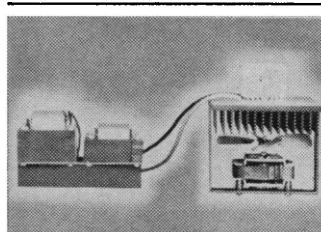
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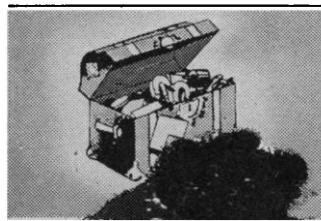
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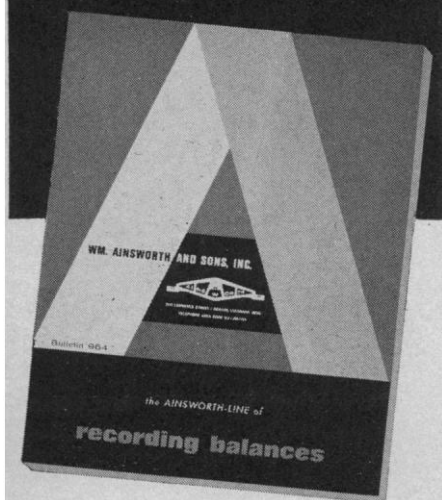
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losic material relationships"; B. Rånby, "NMR studies of water in cellulose"; K. Sarkanen, "Recent work in wood chemistry."

26 July. G. Jacquelin and J. F. Lafaye, "Cellulose-fiber surface properties; streaming potential and other means of investigation"; A. A. Robertson, "The sorption of polymers onto cellulose"; J. W. Swanson, "The role of additives in paper making."

27 July. K. W. Britt, "Fiber-to-fiber bonding in paper"; B. Leopold, "Remarks on the role of single fiber properties on paper strength"; J. K. Craver, "Paper and the hydrogen bond."

28 July. Kyle Ward, "Improvement of paper strength by hydroxyethylation and similar treatments."

### Chemistry and Physics of Liquids

Marshall Fixman and Cornelius J. Pings are chairman and vice chairman, respectively.

31 July-4 August. Berni Alder, "Computer study of molecular dynamics"; George Benedek, "The spectrum of light scattered from a fluid near its critical point"; P. A. Egelstaff, "Microscopic transport phenomena in liquids"; Roy Gordon, "Angular correlations in molecular gases and liquids"; Leo P. Kadanoff, "Theory of  $\lambda$  transitions (critical region)"; Neil R. Kestner, "Additivity of intermolecular potentials"; Joel Lebowitz, "Theory of metastability"; P. L. Fehder, G. W. Robinson and R. P. Futrelle, "Molecular dynamics studies of Lennard-Jones particles with emphasis on microscopic structure and problems of chemical interest"; J. S. Rowlinson, "Status report: fluids in equilibrium"; L. K. Runnels, "Lattice statistics"; Loup Verlet, "Computer study of molecular dynamics"; Ben Widom, "Interfacial tension in the critical region"; W. W. Wood, "Monte Carlo study of liquids."

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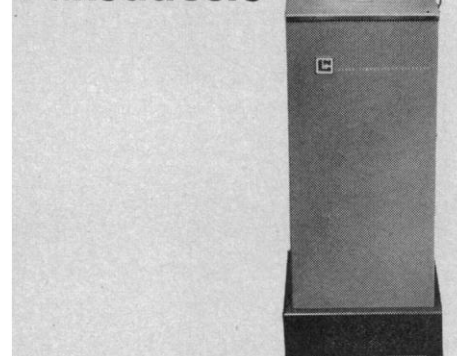
#### Environmental Sciences: Air

E. R. Hendrickson and Walter J. Weber, Jr., are chairman and vice chairman, respectively.

#### Oxides of Nitrogen

3-7 July. (Speakers to be announced.) "Theory of production, sources, original forms, and control of  $\text{NO}_x$  emissions (stationary and mobile)";

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### Chemistry and Physics of Isotopes

Max Wolfsberg and A. J. Kresge are chairman and vice chairman, respectively.

10-14 July. Condensed phase isotope effects (A. Van Hook, chairman); Physical chemistry of isotopes (W. Spindel, chairman); Kinetic isotope effects in "Non-Boltzmann" systems (F. S. Rowland, chairman); Stable isotope geochemistry (J. R. O'Neil, chairman); Heavy atom isotope effects (A. Fry, chairman); Isotope effects and nature of transition states (A. N. Bourns, chairman); Hydrogen isotope effects in hydrogen (proton) transfer (F. A. Long, chairman); Secondary hydrogen isotope effects (S. Seltzer, chairman); Contributed papers.

### Molecular Pathology

Wilbur A. Thomas and Earl P. Benditt are chairman and vice chairman, respectively.

17 July. Energy relationships in cells and their disturbances (Abel L. Robertson, chairman): Alexander Leaf, "Hormonal regulation of membrane transport"; Vincent T. Marchesi, "The localization of enzymes and structural proteins in mammalian cell membrane." (Winfield S. Morgan, chairman): Morris J. Karnovsky, "Ultrastructural study of capillary permeability"; Abel L. Robertson, "Transport of lipids across mammalian cell membrane."

18 July. (R. Foster Scott, chairman): Lars Ernster, "Structural and functional organization of mitochondria"; Godfrey S. Getz, "The response of some mitochondrial components during the early aerobic adaptation of anaerobi-

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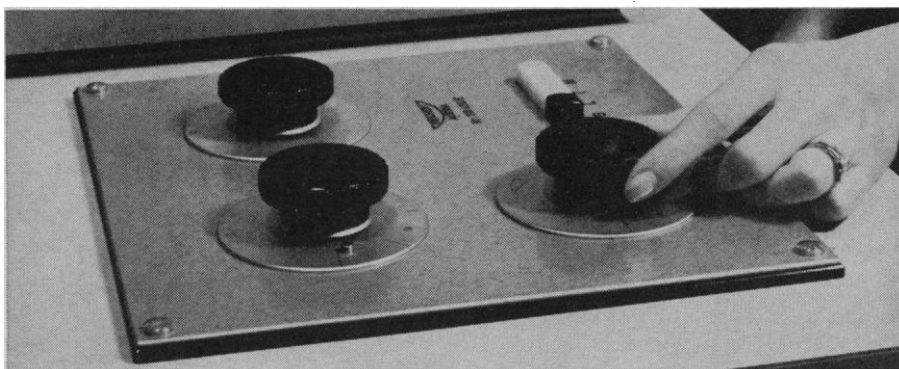
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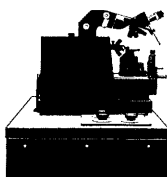


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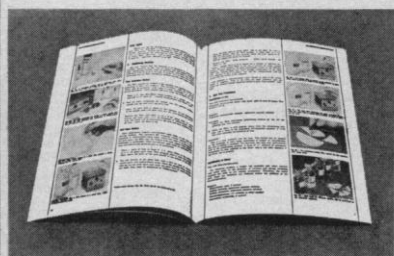
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cally grown yeast cells." (Wilbur A. Thomas, chairman): David E. Green, "Membrane ultrastructure with particular reference to the mitochondrion and the theory of membranes."

19 July. (Earl P. Benditt, chairman): Charles R. Hackenbrock, "Energy-linked ultrastructural transitions in mitochondria"; Dante G. Scarpelli, "Observations on the chronic effects of 2,4-dinitrophenol on mitochondrial structure and function." (Edward A. Smuckler, chairman): Lars Ernster, "Mitochondrial energy metabolism: mechanism and regulation"; R. Foster Scott, "Lipid composition, function and ultrastructure of mitochondria in rats fed high fat thrombogenic diets."

20 July. Ultrastructural and biochemical aspects of viruses and virus-infected cells (Erwin R. Rabin, chairman): Richard Franklin, "Molecular properties of viral ribonucleic acids"; Heather D. Mayor, "Morphology of viral particles and subviral components." (Robert M. O'Neal, chairman): Councilman Morgan, "Studies on the development of herpes simplex virus."

21 July. (Heather D. Mayor, chairman): Samuel Dales, "Participation of membranes in virus infection"; Erwin R. Rabin, "Morphologic studies of in vivo viral infections."

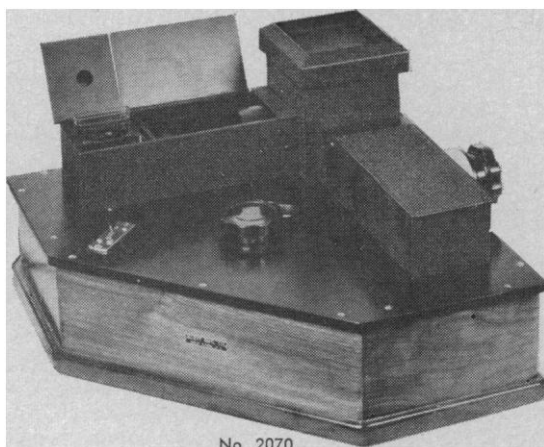
### Dynamics of Quantum Solids and Liquids

Pierre C. Hohenberg and John Wheatley are chairman and vice chairman, respectively.

24-28 July. Solid helium and liquid helium under pressure: N. R. Werthamer, "Theory"; H. Fairbank and H. Meyer, "Experiments on solid He<sup>3</sup>, He<sup>4</sup>, He<sup>3</sup>-He<sup>4</sup> mixtures." Liquid He II: B. Johnson, "Theoretical introduction"; R. Donnelly, "The film, fine channels and orifices"; D. Brewer, "Helium films and two dimensional phenomena"; J. Reppy, "Helium in rotation"; G. Chester, "Theoretical problems." Liquid He<sup>3</sup> and He<sup>3</sup>-He<sup>4</sup> solutions: G. Baym, "Theory"; D. Edwards, "Experiment." Long-range phase coherence in He II and superconductors: D. Scalapino "Theoretical introduction"; J. Mercereau, "Experimental demonstration." Application to construction of devices: W. Fairbank, "Using quantized flux"; J. Zimmerman, "Using weak superconductivity." The physics of very low temperatures: J. Wheatley, "Methods"; P. W. Anderson, "Theory and experiments."



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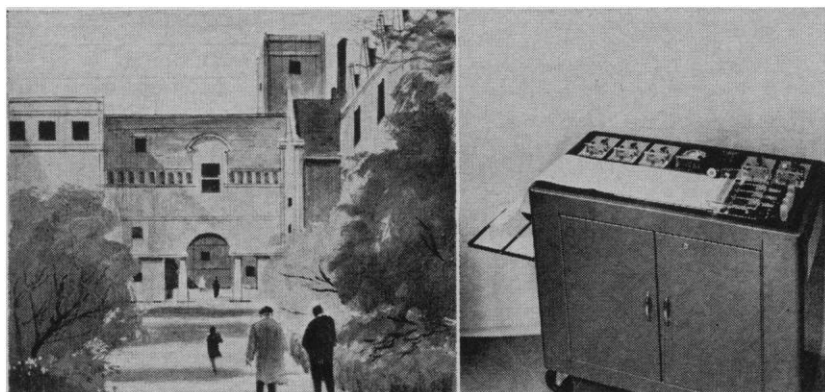
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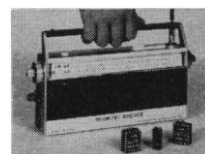
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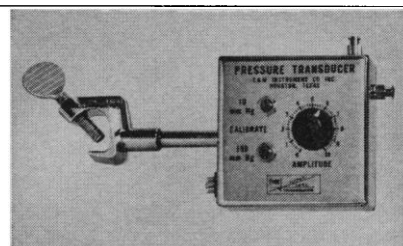
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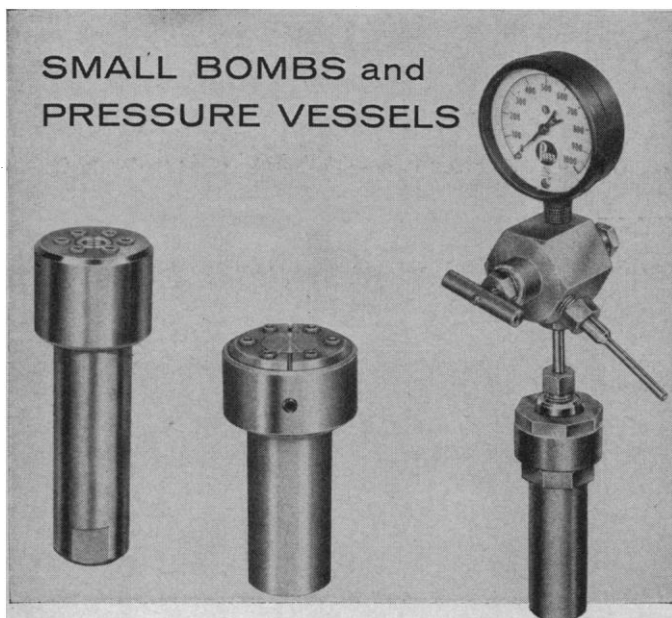
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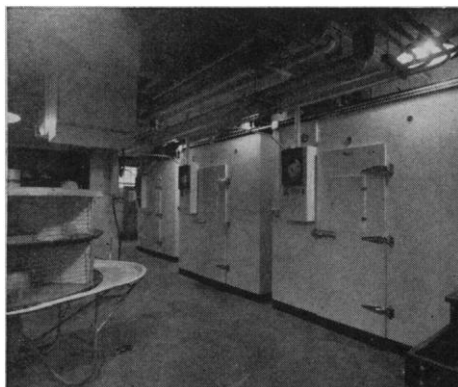
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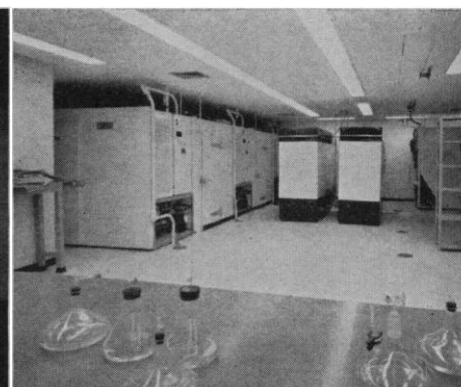
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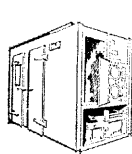
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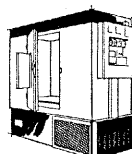
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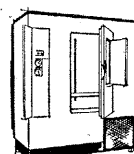
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37 sq. ft. Plant Bed  
5000 Foot-Candles



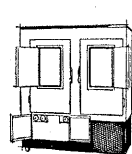
37-14  
14 sq. ft. Plant Bed  
5000 Foot-Candles



25-7 - 25-7HL  
7 sq. ft. Plant Bed  
2500-5000 Foot-Candles



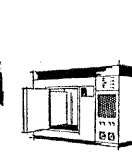
8  
8 sq. ft. Plant Bed  
1400 Foot-Candles



44  
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1400 Foot-Candles



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## Medicinal Chemistry

Armin G. Wilson and Murray Weiner are chairman and vice chairman, respectively.

31 July–4 August. Insect attractants and repellents: Martin Jacobson; Michael Martin, "The chemistry of fungus-growing ants." Enzyme interactions: Hans Hirschmann, George Hein, "The specificity of chymotrypsin—a model for protein-small molecular interactions." Sterol and terpene synthesis: E. E. van Tamelen. Effect of adrogenic steroids on sterol metabolism: Erwin Mossbach. The classification of strong analgesics: E. Hay, "Chemistry"; J. E. Villareal, "Pharmacology"; W. R. Martin, "Clinical." Membrane transport: Elwood Titus. The use of substituent in drug design: Corwin Hansch. Hormonal mechanisms: Martin Sonenberg. Thyrocalcitonin: Philip Hirsch. Approaches to anti-fertility: Alan F. Guttmacher, Gregory Pincus, Harry W. Rudel. Weightlessness: Edward C. Knoblock.

## Plasma Physics

Abraham Bers and Norman Rostoker are chairman and vice chairman, respectively.

### Instabilities and Turbulence in Plasmas

7–11 August. T. Dupree, "General theory"; (speaker to be announced), "Laboratory plasmas"; P. Sturrock, "Space plasmas"; R. Post, "Fusion plasmas."

## Laser Interaction with Matter

Alexander J. Glass and Abraham Herzberger are co-chairmen.

14–18 August. Topics to be discussed: "Laser sources for plasma generation," "Laser breakdown of gases," "Laser interaction with surfaces," "Production of plasmas in vacuum," "External field effects," and "Application to controlled thermonuclear research." Participants include P. V. Avizonis, A. H. Guenther, A. F. Haught, R. E. Kidder, A. C. Kolb, R. W. Minck, A. V. Phelps, K. D. Pyatt, Jr., S. A. Ramsden, and R. G. Tomlinson.

10 MARCH 1967



## FORTHCOMING PUBLICATIONS

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### PHYSICAL CHEMISTRY: An Advanced Treatise

edited by H. EYRING, D. HENDERSON and W. JOST  
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edited by HENRY EYRING

March 1967, 561 pp., \$17.50, \$14.88\*

IN FOUR VOLUMES . . .

### METABOLIC PATHWAYS, 3RD EDITION

edited by DAVID M. GREENBERG

VOLUME 1: ENERGETICS, TRICARBOXYLIC ACID CYCLE, AND CARBOHYDRATES

In preparation

VOLUME 2: LIPIDS, STEROIDS AND CAROTENOIDS

In preparation

### NUCLEIC ACIDS

edited by LAWRENCE GROSSMAN and KIVIE MOLDAVE

Volumes 12A and 12B of Methods in Enzymology, edited by  
S. P. Colowick and N. O. Kaplan

Presents the broad spectrum of nucleic acids in which technique detection, isolation, and involvement are described in detail.

In preparation

### THE VITAMINS, 2ND EDITION—

Chemistry, Physiology, Pathology, Methods

edited by W. H. SEBRELL, JR., and ROBERT S. HARRIS

Contents of Volume 1: Vitamins A and Carotenes. Ascorbic Acid. Vitamin B<sub>12</sub>. Biotin.

April 1967, 570 pp., \$25.00

### METHODS IN CANCER RESEARCH

edited by HARRIS BUSCH

VOLUME 1

The first in a series that will provide an authoritative review of available methods for the analysis of biological, morphological, biochemical, therapeutic, and oncogenic phases of cancer research.

April 1967, about 575 pp., \$28.00, \$23.80\*

### VIRAL AND RICKETTSIAL DISEASES OF ANIMALS

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A comprehensive account of viral and rickettsial infections of domestic animals. Volume 1 deals with the general characteristics of viruses and viral diseases.

Volume 1: July 1967, in preparation

### THE MOLECULAR BIOLOGY OF VIRUSES

edited by JOHN S. COLTER and WILLIAM PARANCHYCH

June 1967, in preparation

### ADVANCES IN HIGH TEMPERATURE CHEMISTRY, VOL. 1

edited by LEROY EYRING

October 1967, in preparation

### PROGRESS IN THEORETICAL BIOLOGY, VOL. 1

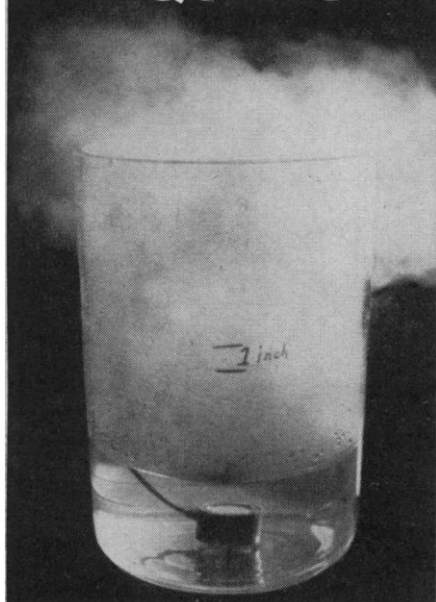
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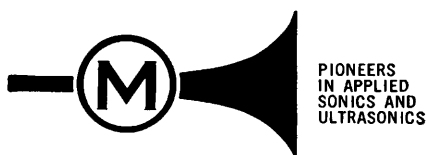
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## Forthcoming Events

### March

20-22. **Physical Electronics**, annual  
conf., Cambridge, Mass. (Research Lab. of  
Electronics, Massachusetts Inst. of Tech-  
nology, Cambridge)

22-24. **American Astronautical Soc.**,  
Rocky Mountain Section, mtg., New  
Mexico State Univ., University Park, N.M.  
(A. Vick, Box 996, Las Cruces, N.M.)

22-24. **Astrogeology**, symp., University  
of Michigan, Ann Arbor, Mich. (E. W.  
Heinrich, Dept. of Geology and Mineral-  
ogy, Univ. of Michigan, Ann Arbor 48104)

22-24. **Modern Optics**, intern. symp.,  
New York, N.Y. (J. Fox, Polytechnic  
Inst. of Brooklyn, 333 Jay St., Brooklyn,  
N.Y. 11201)

23-24. **Seismological Soc. of America**,  
Santa Barbara, Calif. (D. Tocher, U.S.  
Earthquake Mechanism Lab./ESSA, 390  
Main St., San Francisco, Calif. 94105)

23-24. **Social Facilitation and Imitation  
Behavior**, symp., Miami Univ., Oxford,  
Ohio. (E. C. Simmel, Dept. of Psychology,  
Miami Univ., Oxford 45056)

23-25. **American Ethnological Soc.**,  
mtg., San Francisco, Calif. (J. M. Collins,  
Div. of Social Sciences, Southern Illinois  
Univ., Edwardsville)

23-25. **Institute of Mathematical Sta-  
tistics**, central regional mtg., Columbus,  
Ohio. (G. E. Nicholson, Jr., Dept. of Sta-  
tistics, Univ. of North Carolina, Chapel  
Hill 27515)

23-25. **Society of Toxicology**, Atlanta,  
Ga. (C. S. Weil, Mellon Inst., 4400 Fifth  
Ave., Pittsburgh, Pa. 15213)

23-25. **Underwater Archaeology**, 3rd  
conf., Miami, Fla. (S. Schnier, News  
Bureau, Univ. of Miami, Coral Gables,  
Fla. 33124)

24-26. **Image Detection and Processing**,  
conf., Royal Radar Establishment, Great  
Malvern, Worcestershire, England. (Meet-  
ings Officer, Inst. of Physics and Physical  
Soc., 47 Belgrave Sq., London, S.W.1,  
England)

26-30. **Association of American Geog-  
raphers**, 63rd annual mtg., St. Louis, Mo.  
(Executive Officer, 1146 16th St., NW,  
Washington, D.C. 20036)

27-30. **American Physical Soc.**, Chi-  
cago, Ill. (R. G. Sachs, P.O. Box 344,  
Argonne, Ill.)

27-30. **Canadian Inst. of Mining and  
Metallurgy**, 69th annual mtg., Ottawa,  
Ont., Canada. (Secretary, 121 Richmond  
St. W., Toronto 1, Ont.)

28-30. **Engineering Aspects of Mag-  
netohydrodynamics**, Stanford, Calif. (R.  
H. Eustis, Stanford Univ., Stanford)

### April

1-5. **American Soc. of Planning Of-  
ficials**, natl. planning conf., Houston, Tex.  
(The Society, 1313 E. 60 St., Chicago,  
Ill. 60637)

1-7. **American Concrete Inst.**, intern.  
symp., concrete bridge design, Toronto,  
Ont., Canada. (Shu-t'ien Li, South Dakota  
School of Mines and Technology, Rapid  
City 57701)

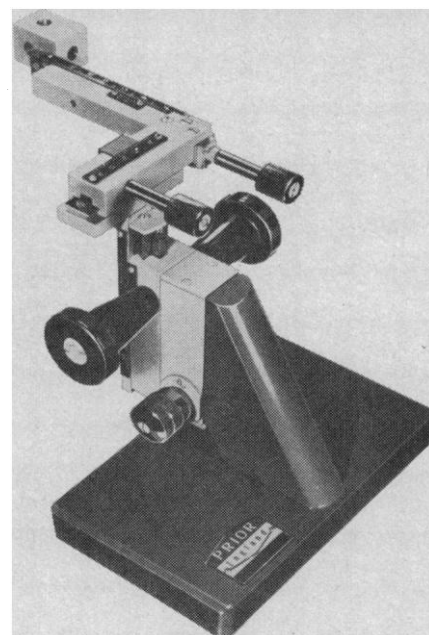
2-6. **American Assoc. of Cereal Chem-**



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ists, annual mtg., Los Angeles, Calif. (AACC, 1955 University Ave., St. Paul, Minn. 55104)

2-6. **Lister Centenary Conf.**, London, England. (Miss M. E. Douglas, Conf. Secretary, Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C.2)

2-8. **European Soc. of Radiology**, 1st Congr., Barcelona, Spain. (Prof. Fros, Hospital Civil, Strasbourg, France)

2-8. **International Symp. on Tropical Root Crops**, St. Augustine, Trinidad. (Symp. Secretary, Dept. of Agriculture and Crop Production, Univ. of West Indies, Trinidad)

2-8. **Latin Federation of Medical Electro-Radiological Soc.**, Barcelona, Spain. (F. Manchon, Aragon 290, Barcelona 9)

2-8. **Seventh World Petroleum Congr.**, Mexico City, Mexico. (Amer. Petroleum Inst., 1271 Avenue of the Americas, New York 10020)

3-4. **Rubber and Plastics Industry**, 18th technical conf., Akron, Ohio. (Office of Technical Activities Board, 345 E. 47 St., New York 10017)

3-5. **American Acad. of Pediatrics**, spring session, San Francisco, Calif. (E. H. Christopherson, Executive Secretary, 1801 Hinman Ave., Evanston, Ill. 60204)

3-5. **American Hospital Assoc.**, Boston, Mass. (E. J. Lanigan, 840 N. Lake Shore Dr., Chicago, Ill. 60611)

3-5. **American Soc. of Mechanical Engineers**, Washington, D.C. (Meetings Manager, The Society, 345 E. 47 St., New York 10017)

3-5. **Metals Engineering**, conf., Amer. Soc. of Mechanical Engineers, Houston, Tex. (Meetings Manager, The Society, 345 E. 47 St., New York 10017)

3-5. **Biometric Soc.**, Eastern North American regional, Atlanta, Ga. (E. L. LeClerc, 6804 40th Ave., University Park, Hyattsville, Md. 20782)

3-5. **British Hydromechanics Research Assoc.**, 3rd intern. conf., Cambridge, England. (H. Stephens, Information Officer, Cranfield, Bedford, England)

3-5. **European Soc. of Ballistocardiography and Cardiovascular Dynamics**, 6th Congr., London, England. (D. C. Deuchar, Guys Hospital, London)

3-5. **European Soc. of Experimental Surgery**, Louvain, Belgium. (J. J. Haxhe, c/o Laboratoire de Chirurgie Experimentale, Univ. de Louvain, 69, rue de Bruxelles, Louvain)

3-5. **Resistive and Dielectric Properties of Thin Films**, Inst. of Physics and Physical Soc., Nottingham, England. (Meetings Officer, Inst. of Physics and Physical Soc., 47 Belgrave Sq., London, S.W.1, England)

3-5. **Society for General Microbiology**, 49th general mtg., London, England. (The Society, 19 Albermarle St., London, W. 1)

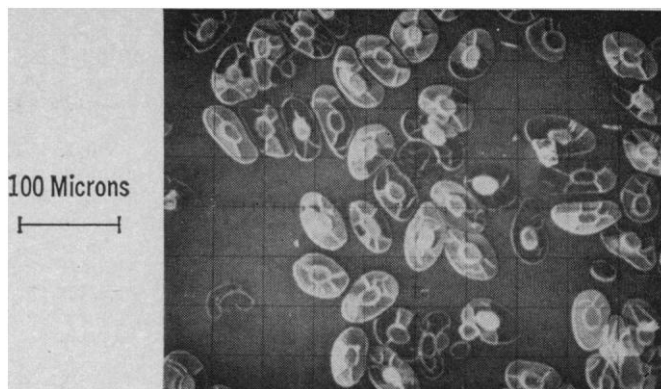
3-6. **Chemical Society**, anniversary mtg., Exeter, England. (The Society, Burlington House, Piccadilly, London, W.1, England)

3-7. **Education for Scientific Information Work**, intern. conf., London, England. (Aslib, 3 Belgrave Sq., London, S.W.1)

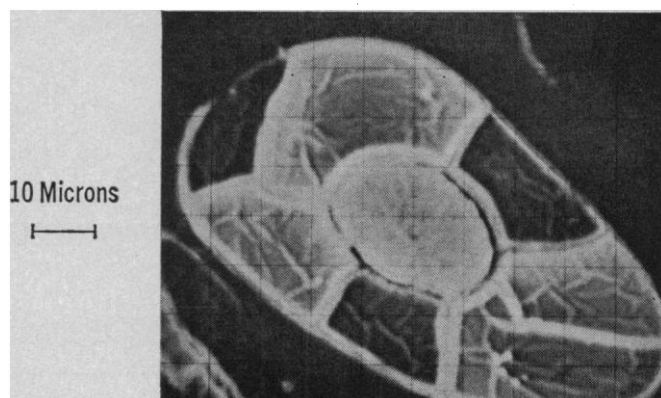
3-7. **Nonlinear Function Analysis and Computation Methods**, Atlanta, Ga. (Director, Dept. of Continuing Education, Georgia Inst. of Technology, Atlanta)

3-7. **Containment and Siting of Nuclear Power Plants**, symp., intern. Atomic Energy

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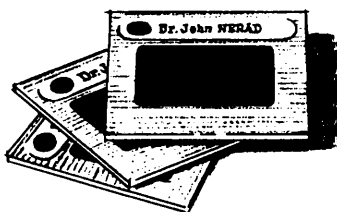
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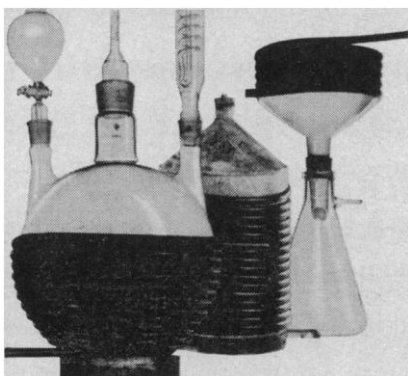


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Agency, Vienna, Austria. (J. H. Kane, Chief, Conf. Branch, Div. of Technical Information, Atomic Energy Commission, Washington, D.C. 20545)

4-6. Strong Tough Structural Steels, British Iron and Steel Research Assoc., Scarborough, Yorkshire, England. (The Association, 24 Buckingham Gate, London, S.W.1, England)

4-6. Conference on Molecular Sieves, London, England. (Soc. of Chemical Industry, Honorary Sec., 14 Belgrave Sq., London, S.W.1)

4-6. Combustion in Advanced Gas Turbine Systems, intern. symp., Cranfield, Bedfordshire, England. (I. E. Smith, Dept. of Aircraft Propulsion, College of Aeronautics, Cranfield)

4-6. World Meteorological Organization, 5th congr., Geneva, Switzerland. (WMO, 41 Avenue Giuseppe Motta, Geneva)

4-7. American Assoc. of Anatomists, Kansas City, Mo. (R. T. Woodburne, Executive Secretary, East Medical Bldg., Univ. of Michigan, Ann Arbor 48104)

4-7. International Conf. of Chest and Heart Assoc., Sussex, England. (Miss H. Walsh, Conf. Secretary, Tavistock House North, Tavistock Sq., London, W.C.1, England)

4-8. French Inst. of Fuels and Energy, 7th intern., Paris. (Institut Français des Combustibles et de l'Energie, 3, rue Henri-heine, Paris 16°)

5. Institute of Textile Science, annual mtg., Montreal, P.Q., Canada. (J. E. Currah, c/o Millhaven Fibres Ltd., P.O. Box 10, Montreal)

5. Nursing School Librarians of Midwest, mtg., Chicago, Ill. (Medical Library Assoc., Inc., 919 N. Michigan Ave., Chicago)

5-6. First Rock Island Arsenal Biomechanics Symp., Rock Island, Ill. (RIA Biomechanics Symp., 1967, c/o J. E. Ekbal, Augustana College, Rock Island 61201)

5-7. Ocean from Space, symp., Amer. Soc. for Oceanography, Houston, Tex. (The Society, P.O. Box 53600, Houston 77052)

5-7. German Concrete Conf., Berlin. (Dilp.-Ing. Misch, Geschäftsführer, Deutscher Beton-Verein, Bahnhofstr. 61, Postfach 543, 6200 Wiesbaden, West Germany)

5-7. Institute of Electrical and Electronics Engineers, 5th intern. conf., Washington, D.C. (Office of Technical Activities Board, 345 E. 47 St., New York 10017)

5-7. Institute of Management Sciences, Boston, Mass. (L. White, Sloan School, Massachusetts Inst. of Technology, Cambridge)

5-7. Spark Discharges, Inst. of Physics and Physical Soc., conf., Liverpool, England. (Meetings Officer, Inst. of Physics and Physical Soc., 47 Belgrave Sq., London S.W.1, England)

5-7. Textile Research Inst., 37th annual mtg., New York, N.Y. (H. J. Jansen, Textile Research Inst., Princeton, N.J.)

6-7. American Soc. for Metals, New York, N.Y. (C. R. Cupp, International Nickel Co., Inc., Paul D. Merica Research Laboratory, Sterling Forest, Suffern, N.Y.)

6-7. Industrial Mineral Development, Univ. of Kansas, Lawrence. (R. G.



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Hardy, Mineral Resources Section, State Geological Survey, Lawrence)

6-7. Society for **Biological Rhythm**, 9th intern. conf., Wiesbaden, West Germany. (W. Menzel, Amalie-Siebeking-Krankenhaus, Farmsener Landstrasse 73, Hamburg-Volksdorf, West Germany)

6-9. **Germfree Life Research**, intern. conf., Nagoya, Japan. (M. Miyakawa, Dept. of Pathology, Nagoya Univ. School of Medicine, Showa-ku, Nagoya)

7-8. **Pennsylvania Acad. of Science**, mtg., Selinsgrove, Pa. (B. Fried, Dept. of Biology, Lafayette College, Easton, Pa. 18042)

7-9. **American Psychosomatic Soc.**, 24th annual mtg., New Orleans, La. (The Society, 265 Nassau Rd., Roosevelt, N.Y. 11575)

7-9. **American Soc. of Internal Medicine**, annual, San Francisco, Calif. (A. V. Whitehall, 3410 Geary Blvd., San Francisco 94118)

8. **New Mexico Acad. of Science**, Socorro. (E. L. Cleveland, New Mexico State Univ., Las Cruces 88001)

8-9. **Arizona Chest Disease Symp.**, Tucson. (L. D. Hudson, Arizona Chest Disease Symp., P.O. Box 6067, Tucson 85716)

8-13. **Stereology**, 2nd intern. congr., Chicago, Ill. (H. Elias, 2020 W. Ogden Ave., Chicago 60612)

9-13. **Aerospace Medical Assoc.**, 38th annual, Washington, D.C. (Exec. Vice Pres., The Assoc., c/o Washington Natl. Airport, Washington, D.C. 20001)

9-14. **American Pharmaceutical Assoc.**, 114th annual mtg., Las Vegas, Nev. (The Association, 2215 Constitution Ave., NW, Washington, D.C. 20037)

9-15. **Cryogenic Engineering**, intern. conf., Kyoto, Japan. (K. Oshima, Dept. of Nuclear Engineering, Univ. of Tokyo, Bunkyo-Ku, Tokyo, Japan)

9-16. **Inter-American Inst. of Agricultural Sciences**, mtg., Rio de Janeiro, Brazil. (The Institute, Apt. 4359, San Jose, Costa Rica)

10. **Blood Group Nomenclature**, mtg., New York, N.Y. (A. S. Wiener, Office of Chief Medical Examiner of New York City, 520 First Ave., New York 10016)

10-12. **Methods and Techniques for Hospital Volunteers**, American Hospital Assoc., Pittsburgh, Pa. (E. J. Lanigan, 840 N. Lake Shore Dr., Chicago, Ill. 60611)

10-12. **American Soc. of Mechanical Engineers**, conf., Detroit, Mich. (Meetings Manager, ASME, 345 E. 47 St., New York 10017)

10-12. **European Federation of International College of Surgeons**, congr., Barcelona, Spain. (Secretary, Intern. Congr., 1516 Lake Shore Dr., Chicago, Ill. 60610)

10-12. **Great Lakes Research**, 10th conf., and Intern. Assoc. for Great Lakes Research, 1st mtg., Toronto, Ont., Canada. (Mrs. J. S. Seddon, Great Lakes Inst., Univ. of Toronto, Toronto 5)

10-12. **Institute of Environmental Sciences**, Washington, D.C. (R. P. Jones, Admiral Corp. 3800 W. Cortland, Chicago, Ill. 60647)

10-13. **American Assoc. of Petroleum Geologists**, 52nd annual conv., Los Angeles, Calif. (E. W. Ellsworth, AAPG, 1444 S. Boulder, Box 979, Tulsa, Okla. 74101)

10-14. **American College of Physicians**,





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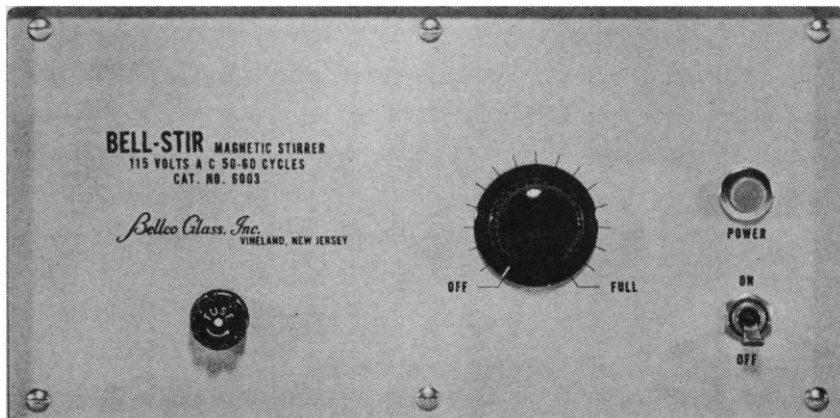
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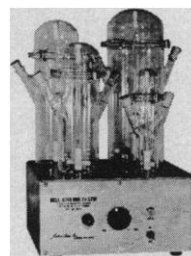
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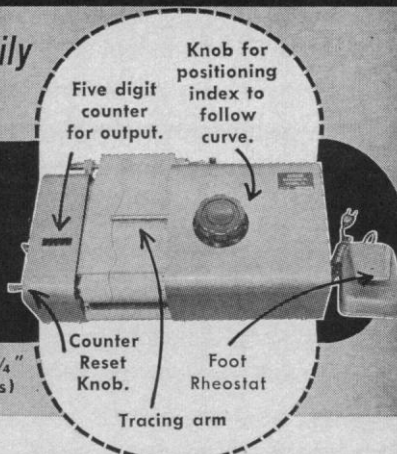


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10-14. **Management for Engineers**, Atlanta, Ga. (Director, Dept. of Continuing Education, Georgia Inst. of Technology, Atlanta 30332)

10-14. **Inorganic Reaction Mechanisms**, intern. conf., Cork, Ireland. (E. N. Mulcahy, Chemistry Dept., University College, Cork)

10-14. **P.A.L. Colour Television System**, conf., Nottingham, England. (J. L. Regan, Inst. of Electrical Engineers, Savoy Pl., London, W.C.2, England)

10-15. **Budapest Festival of Technical Films**, Budapest, Hungary. (Festival of Technical Films, Szabadsag ter 17, Budapest)

10-15. **French Inst. of Electrical and Electronic Engineers**, intern. conf., Paris. (Colloque Intern. sur l'Electronique et de l'Espace, 16 rue de Presies, Paris 15')

10-15. **Seminar on Nutrition**, Santo Domingo, Dominican Republic. (Inter-American Children's Inst., Health Section, Ave. 8 de Octubre 2882, Montevideo, Uruguay)

11-13. **Hospitals and Rehabilitation**, American Hospital Assoc., Denver, Colo. (E. J. Lanigan, Conv. and Mtg. Bureau, AHA, 840 N. Lake Shore Dr., Chicago, Ill. 60611)

11-13. **Nursing Service and Hospital Administration**, American Hospital Assoc., Chicago, Ill. (E. J. Lanigan, Conv. and Mtg. Bureau, AHA, 840 N. Lake Shore Dr., Chicago 60611)

11-13. **British Biophysical Soc.**, Oxford, England. (A. R. Peacocke, St. Peter's College, Oxford)

11-13. **Cleveland Electronics Conf.**, Cleveland, Ohio. (Office of Technical Activities Board, 345 E. 47 St., New York 10017)

11-13. **Faraday Soc.**, Exeter, England. (Faraday Soc., 6 Gray's Inn Sq., London, W.C.1, England)

11-13. **Decision Making in National Science Policy**, symp., London, England. (Ciba Foundation, 41 Portland Pl., London, W.1)

12-13. **Point Defects on Metals**, Inst. of Physics and Physical Soc. and Inst. of Metals, conf., Reading, England. (Meetings Officer, Inst. of Physics and Physical Soc., 47 Belgrave Sq., London, S.W.1, England)

12-14. **Electronic Information Handling**, 2nd natl. conf., Pittsburgh, Pa. (A. Kent, Knowledge Availability Systems Center, Univ. of Pittsburgh, Pittsburgh, Pa. 15213)

12-14. **Optical Soc. of Amer.**, Columbus, Ohio. (Miss M. Waga, OSA, 1155 16th St., NW, Washington, D.C. 20036)

12-14. **Shock Tube Symp.**, 6th intern., Freiburg, West Germany. (R. G. Fowler, Dept. of Physics, Univ. of Oklahoma, Norman 73069)

13-15. **American Assoc. for Cancer Research**, 48th annual mtg., Chicago, Ill. (Secretary-Treasurer, The Association, 7701 Burholme Ave., Philadelphia 11, Pa.)

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Soc. and Inst. of Mathematics and Its Applications, conf., Exeter, England. (Meetings Officer, Inst. of Physics and Physical Soc., 47 Belgrave Sq., London, S.W.1, England)

13-16. **British Medical Assoc.**, annual clinical conf., Londonderry, Northern Ireland. (Secretariat, Tavistock Sq., London, W.C.1, England)

14-21. **French Physical Soc.**, 61st exhibition, Paris. (The Society, 33 rue Croulebarbe, Paris 13<sup>e</sup>)

15-16. American Soc. for **Artificial Internal Organs**, annual mtg., Atlanta, Ga. (P. M. Galletti, Dept. of Physiology, Emory Univ., Atlanta)

15-16. **Histochemical Soc.**, 18th annual mtg., Chicago, Ill. (G. M. Lehrer, Div. of Neurochemistry, Mount Sinai School of Medicine, 11 E. 100 St., New York 10029)

15-16. **Nucleic Acids Symp.**, Santa Monica, Calif. (M. S. Dunn, 9325 Venice Blvd., Culver City, Calif.)

16-21. American **Physiological Soc.**, spring mtg., Chicago, Ill. (The Society, 9650 Rockville Pike, Bethesda, Md. 20014)

16-21. Federation of American Societies for **Experimental Biology**, annual mtg., Chicago, Ill. (FASEB, Convention Office, 9650 Rockville Pike, Bethesda, Md. 20014)

16-21. International **Cartographic Assoc.**, general assembly and technical conf., Amsterdam, Netherlands. (F. J. Ormeling, Secretary-Treasurer, Bachlaan 39, Hilversum, Netherlands)

16-21. Society of **Motion Picture and Television Engineers**, 101st semiannual conv., New York, N.Y. (Executive Secretary, 9 E. 41 St., New York 10017)

17-19. **Elementary Particles**, Inst. of Physics and Physical Soc., conf., London, England. (Meetings Officer, Inst. of Physics and Physical Soc., 47 Belgrave Sq., London, S.W.1)

17-19. Technical Assoc. of **Pulp and Paper Industry**, 4th annual water conf., Philadelphia, Pa. (Technical Secretary, 360 Lexington Ave., New York 10017)

17-19. Institute of **Electrical and Electronics Engineers**, Jackson, Miss. (J. E. May, 1120 Auburn Dr., Jackson)

17-20. American **Geophysical Union**, annual mtg., Washington, D.C. (F. R. Boyd, Eastern Natl. Mtg. Committee, AGU, 1145 19th St., NW, Washington, D.C. 20036)

17-21. American Assoc. of **Immunologists**, Chicago, Ill. (Executive Secretary, Massachusetts General Hosp., Boston)

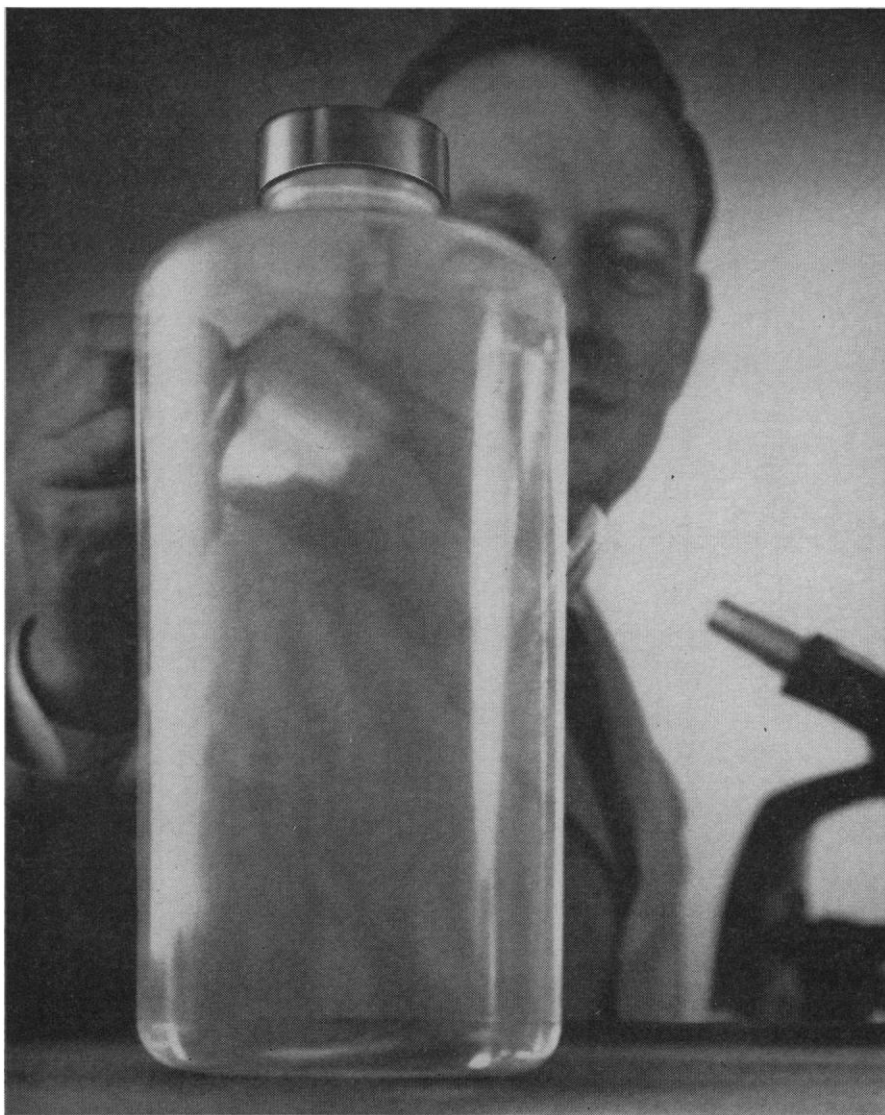
17-21. American Inst. of **Nutrition**, annual mtg., Chicago, Ill. (Secretary, The Institute, Dept. of Foods and Nutrition, Michigan State Univ., East Lansing)

17-21. American Soc. of **Biological Chemists**, Chicago, Ill. (Secretary, The Society, c/o Harvard Univ., 12 Oxford St., Cambridge, Mass.)

17-21. Central **Service Management**, American Hospital Assoc., Miami Beach, Fla. (E. J. Lanigan, Conv. and Mtg. Bureau, 840 N. Lake Shore Dr., Chicago, Ill. 60611)

17-21. Use of Isotopes and Radiation in **Plant Pathology Studies**, Intern. Atomic Energy Agency and Food and Agriculture Organization, symp., Vienna, Austria. (J. H. Kane, Chief, Conf. Branch, Div. of Technical Information, Atomic Energy Commission, Washington, D.C. 20545)

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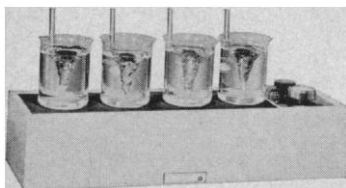
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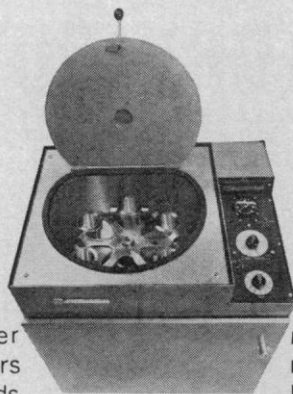


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## NEW BOOKS

(Continued from page 1237)

Martin Levey, Ed. Univ. of Pennsylvania Press, Philadelphia, 1967. 365 pp. Illus. \$8.50. Fifteen papers; most of the papers are in English, others are in German or French.

**The Biochemistry of Copper.** Proceedings of the Symposium on Copper in Biological Systems (Harriman, N.Y.), September 1965. Jack Peisach, Philip Aisen, and William E. Blumberg, Eds. Academic Press, New York, 1966. 606 pp. Illus. \$23.50. Thirty-seven papers.

**The Biology of Human Adaptability.** Based on a Wenner-Gren conference (Burg-Wartenstein), 1964. Paul T. Baker and J. S. Weiner, Eds. Oxford Univ. Press, New York, 1966. 549 pp. Illus. \$16.80. Eighteen papers.

**Calculus with Analytic Geometry and Linear Algebra.** Leopoldo V. Toralballa. Academic Press, New York, 1966. 936 pp. Illus. \$11.95. Academic Press Textbooks in Mathematics Series.

**Canadian Journal of Earth Sciences.** vol. 3, No. 6. Papers presented at a Symposium on Glacier Mapping (Ottawa), September 1965. H. C. Gunning, Ed. Natl. Research Council, Ottawa, Canada, 1966. 179 pp. Illus. Maps. Paper, \$2. Twenty papers.

**Ceramics in Machining Processes.** Alan G. King and W. M. Wheildon. Academic Press, New York, 1966. 329 pp. Illus. \$14.50.

**Clinical Pharmacology.** vol. 1. Pergamon, New York, 1966. 387 pp. Illus. \$12.50. International Encyclopedia of Pharmacology and Therapeutics. Nineteen papers.

**Cognitive Consistency: Motivational Antecedents and Behavioral Consequents.** Shel Feldman, Ed. Academic Press, New York, 1966. 326 pp. Illus. \$8.50. Nine papers.

**The Cold War in Biology.** Carl C. Lindgren. Planarian Press, Ann Arbor, Mich., 1966. 123 pp. Illus. \$6.50.

**Communication Satellite Systems Technology.** Based on the AIAA Communications Satellite Systems Conference, May 1966. Richard B. Marsten, Ed. Academic Press, New York, 1966. 1071 pp. Illus. \$12. Fifty papers. Progress in Astronautics and Aeronautics.

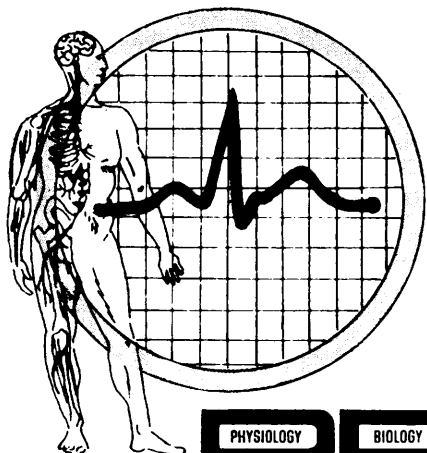
**The Conflicted Relationship.** The West and the transformation of Asia, Africa and Latin America. Theodore Geiger. Published for the Council on Foreign Relations. McGraw-Hill, New York, 1967. 319 pp. \$7.95.

**Control Systems Functions and Programming Approaches.** vol. B, *Applications*. Dimitris N. Chorafas. Academic Press, New York, 1966. 300 pp. Illus. \$11. Mathematics in Science and Engineering Series, vol. 27B.

**Coulomb Excitation.** A collection of reprints. K. Alder and A. Winther, Eds. Academic Press, New York, 1966. 382 pp. Illus. \$8.50. Perspectives in Physics: A Series of Reprint Collections. Eighteen papers.

**Current Topics in Bioenergetics.** vol. 1. D. R. Sanadi, Ed. Academic Press, New York, 1966. 304 pp. Illus. \$11.50. Seven papers.

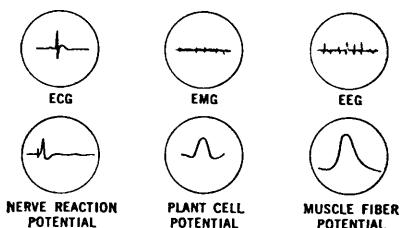




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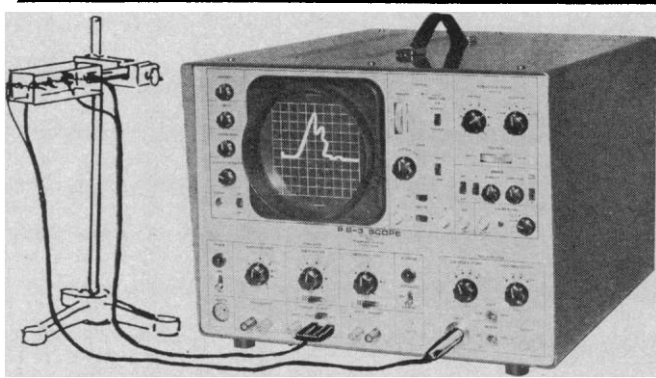


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Kaji, et al., Ann. of N.Y. Acad. Sci., 94, 798 (1961).

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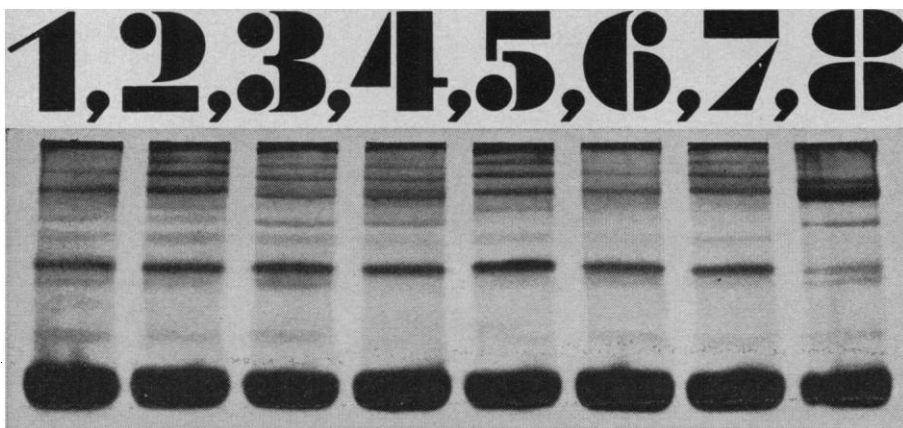
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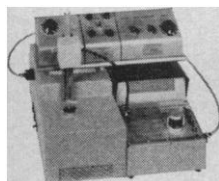
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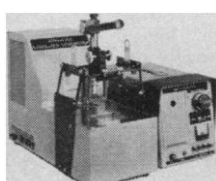
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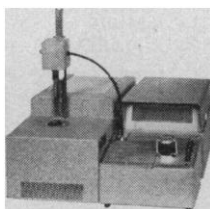
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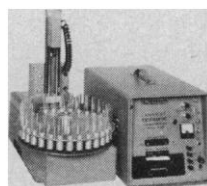
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**Diabetes for Diabetics: A Practical Guide.** George F. Schmitt. Diabetes Press of America, Miami, Fla., 1966. 247 pp. Illus. \$5.95.

**Dynamic Stability of Structures.** Proceedings of an international conference (Evanston, Ill.), October 1965. Sponsored by the Air Force Office of Scientific Research and Northwestern University. George Herrmann, Ed. Pergamon, New York, 1967. 323 pp. Illus. \$16.50. Seventeen papers.

**Exercises in Mathematics.** J. Bass. Translated from the French edition (Paris, 1965) by Scripta Technica. Academic Press, New York, 1966. 471 pp. Illus. \$14.75.

**F-Centers in Alkali Halides.** Jordan J. Markham. Academic Press, New York, 1966. 412 pp. Illus. \$16. *Solid State Physics*, Suppl. 8.

**Free and Inexpensive Educational Aids.** Thomas J. Pepe. Dover, New York, ed. 3, 1966. 189 pp. Paper, \$1.75.

**Functional Analysis and Numerical Mathematics.** Lothar Collatz. Translated from the German edition (Berlin, 1964) by Hansjörg Oser. Academic Press, New York, 1966. 493 pp. Illus. \$18.50.

**Fundamentals of Immunology.** William C. Boyd. Interscience (Wiley), New York, ed. 4, 1967. 791 pp. Illus. \$14.95.

**Fundamentals of Theoretical Organic Chemistry.** O. A. Reutov. Translated from the second Russian edition by Scripta Technica. Thomas J. Katz, Translation Ed. Appleton-Century-Crofts (Meredith), New York, 1967. 601 pp. Illus. \$21.

**The Fungi: An Advanced Treatise.** vol. 2, *The Fungal Organism*. G. C. Ainsworth and Alfred S. Sussman, Eds. Academic Press, New York, 1966. 823 pp. Illus. \$27. Twenty-three papers.

**Generalized Functions.** vol. 5, *Integral Geometry and Representation Theory*. I. M. Gel'fand, M. I. Graev, and N. Ya. Vilenkin. Translated from the Russian edition (Moscow, 1962) by Eugene Saletan. Academic Press, New York, 1966. 467 pp. Illus. \$17.

**Glucuronic Acid, Free and Combined: Chemistry, Biochemistry, Pharmacology, and Medicine.** Geoffrey J. Dutton, Ed. Academic Press, New York, 1966. 647 pp. Illus. \$25. Nine papers.

**A Guide to the Solar Corona.** Donald E. Billings. Academic Press, New York, 1966. 333 pp. Illus. \$14.

**Heritage from Mendel.** Proceedings of the Mendel Centennial Symposium (Fort Collins, Colo.), September 1965. Sponsored by the Genetics Society of America. R. Alexander Brink and E. Derek Styles, Eds. Univ. of Wisconsin Press, Madison, 1967. 467 pp. Illus. Paper, \$2.95; cloth, \$10. Twenty-one papers.

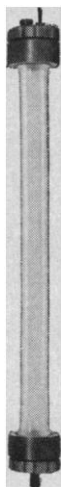
**A History of the Thermometer and Its Use in Meteorology.** W. E. Knowles Middleton. Johns Hopkins Press, Baltimore, 1966. 263 pp. Illus. \$10.

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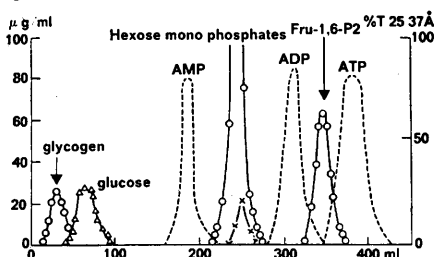


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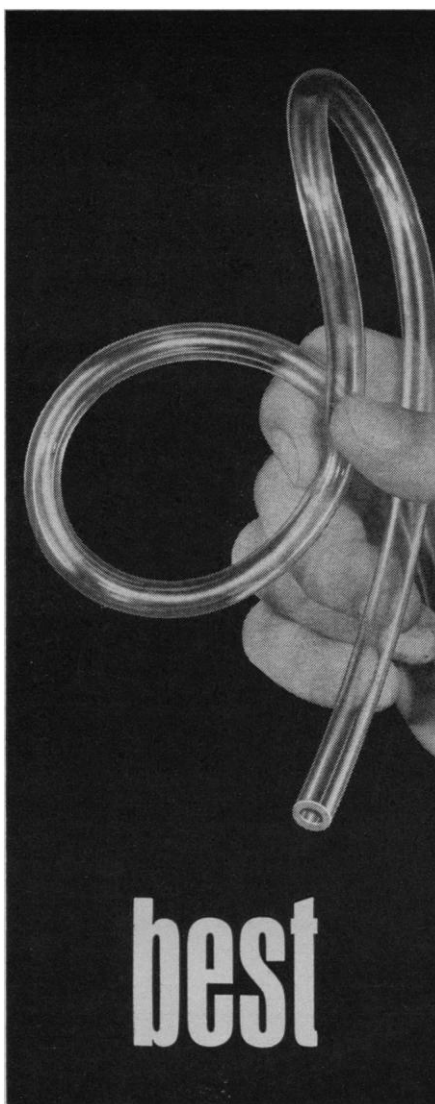
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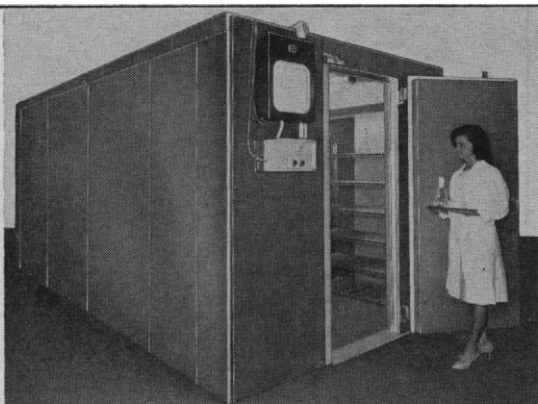
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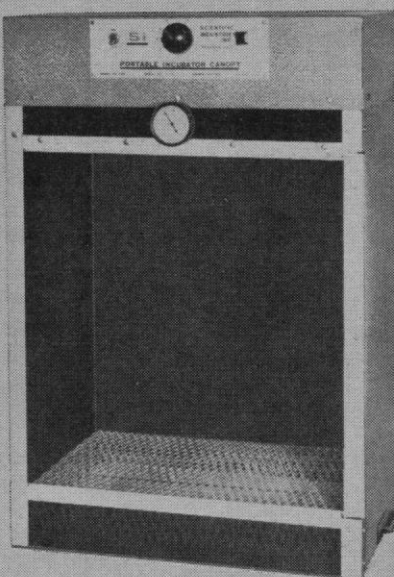
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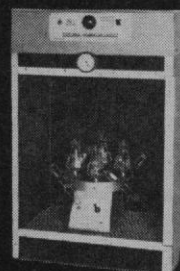
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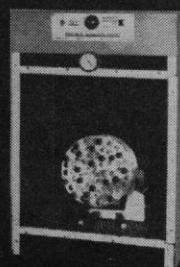
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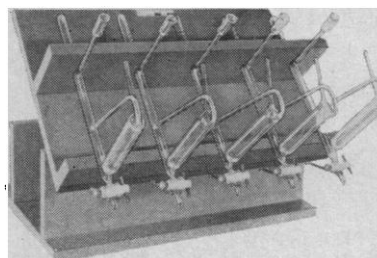
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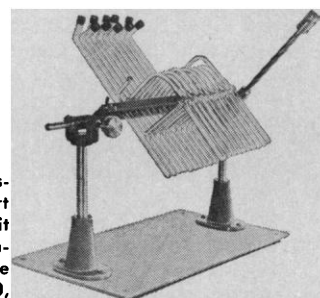
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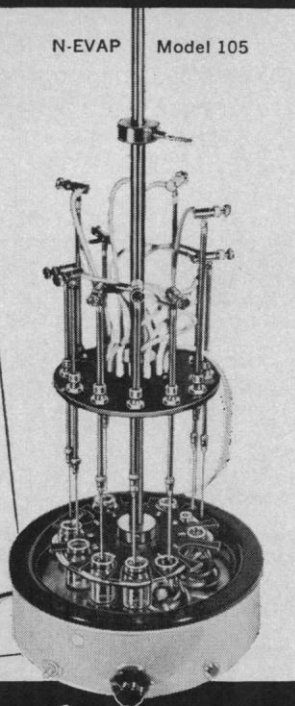
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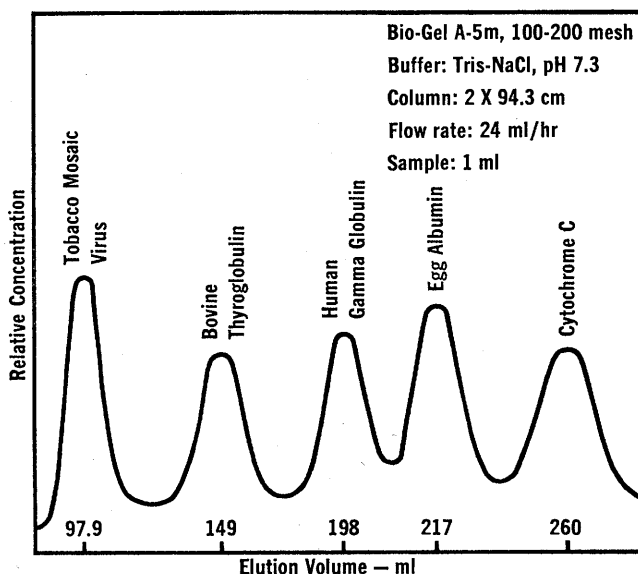
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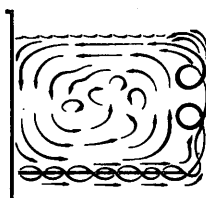
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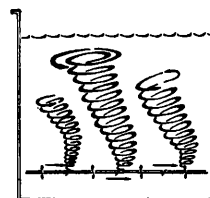
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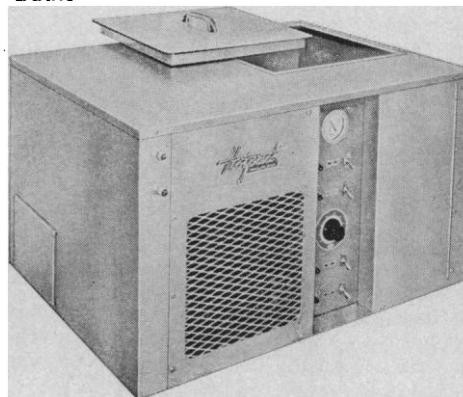
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