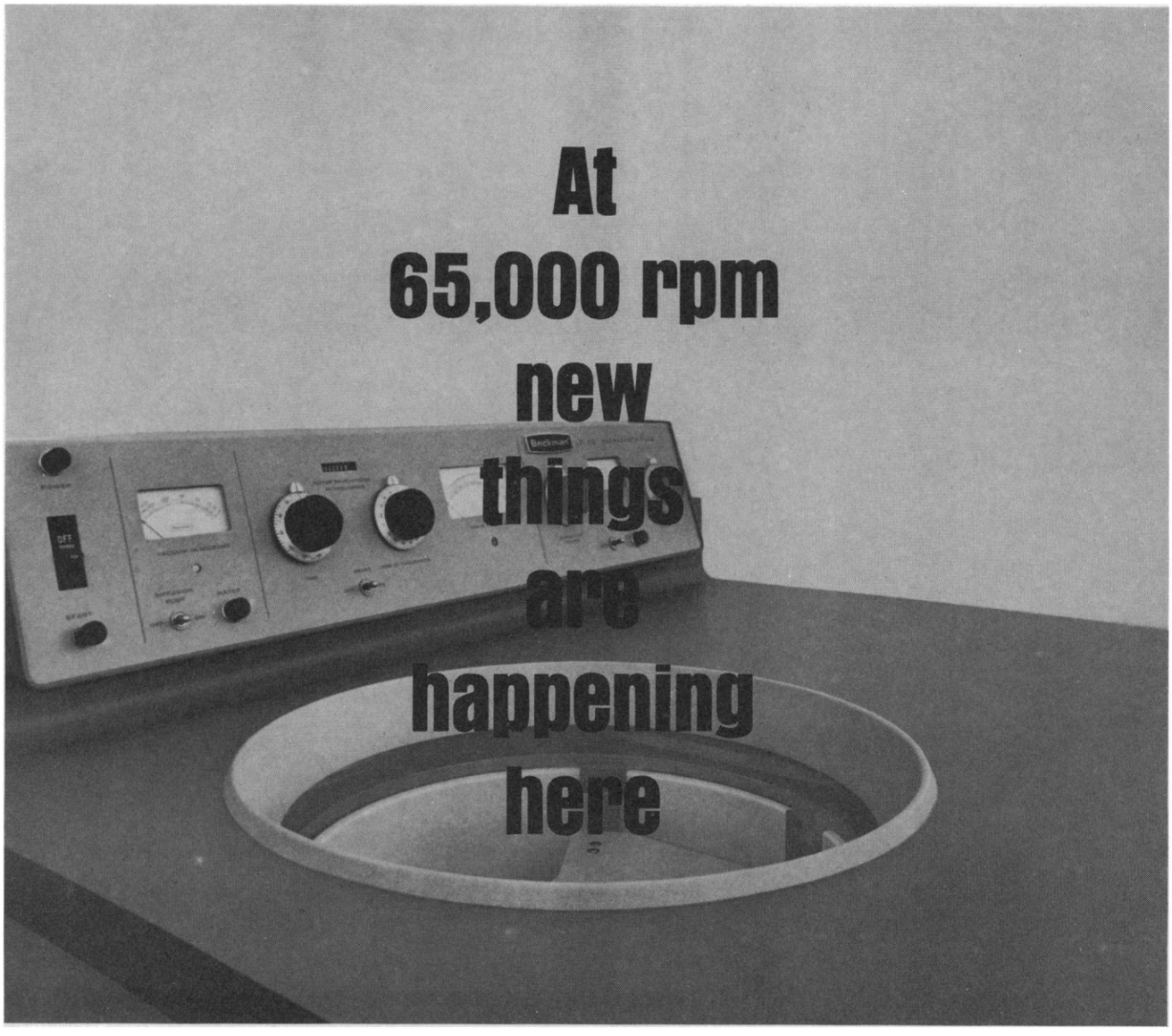
SCIENCE

21 January 1966
Vol. 151, No. 3708

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

MONTRASTREA ANNULARIS



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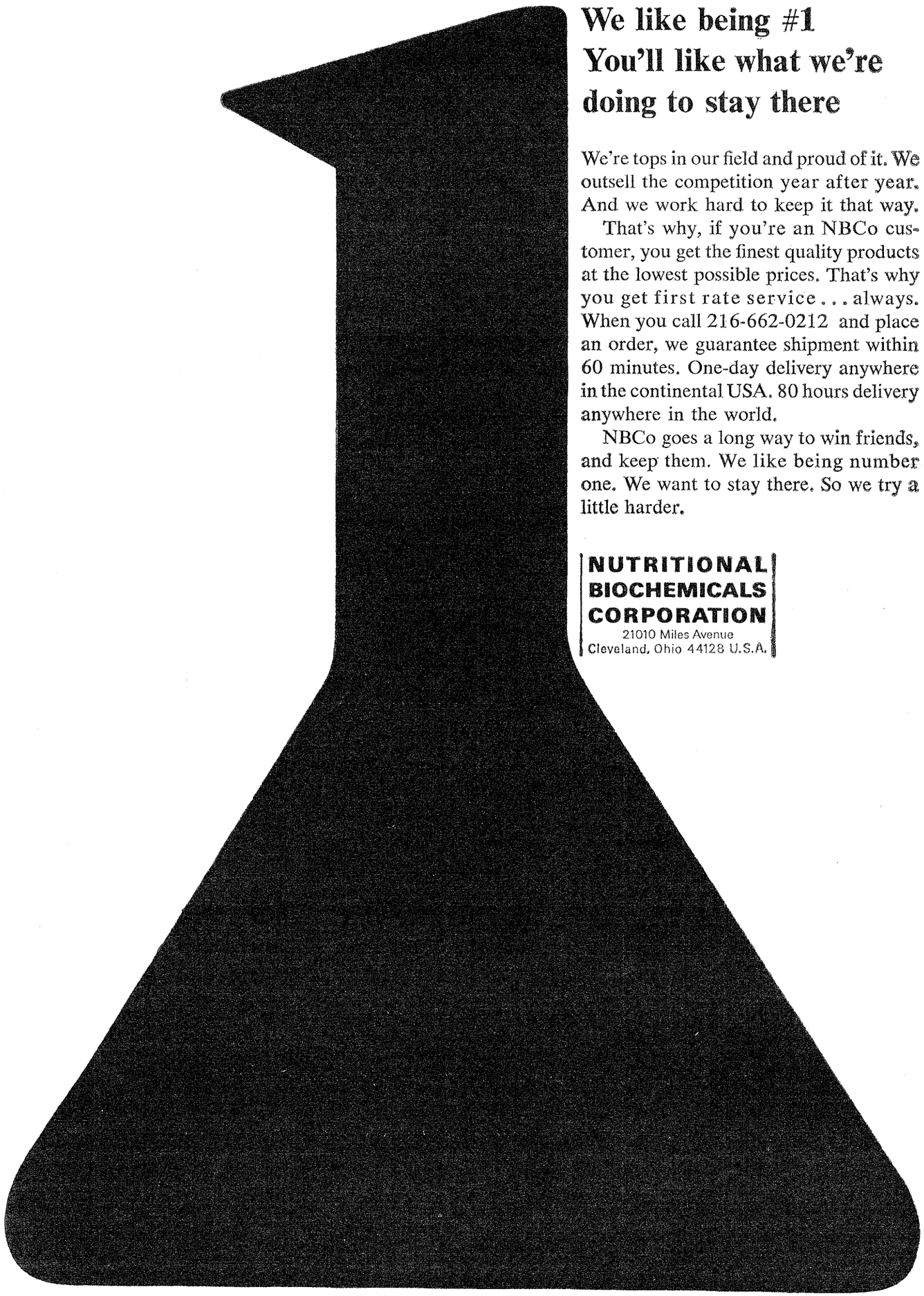

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COVER

Large colony of *Montastrea annularis* without *Mycale*, Maria Buena Bay, Jamaica, 40 meters in depth. The outer edges of the coral lack pronounced folds. A heavy growth of encrusting organisms hangs from the under surface of the coral. The trumpet-shaped sponge (*Agelas* sp.) in the foreground is 1.25 meters long. See page 343. [T. F. Goreau, University of the West Indies]

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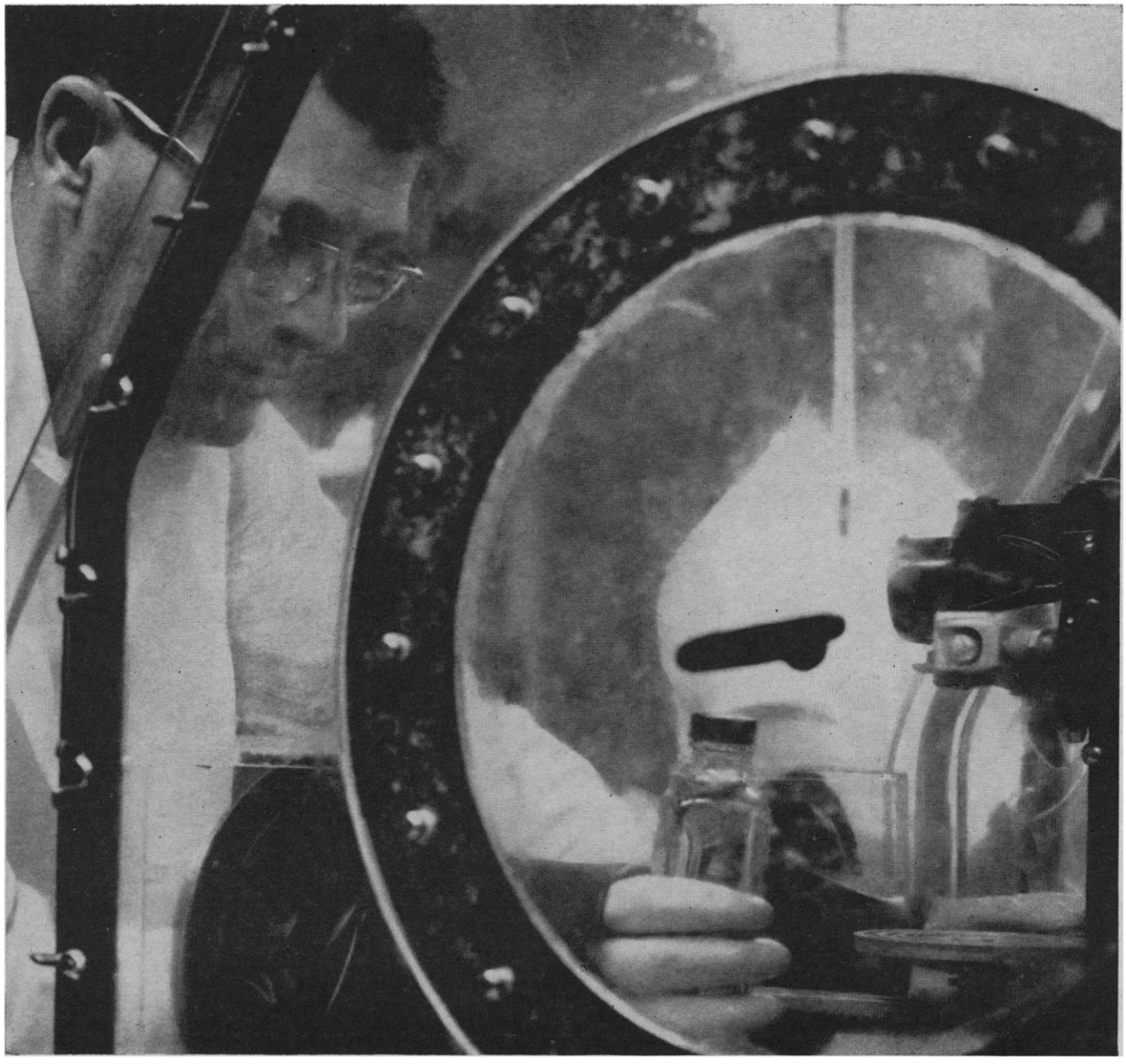

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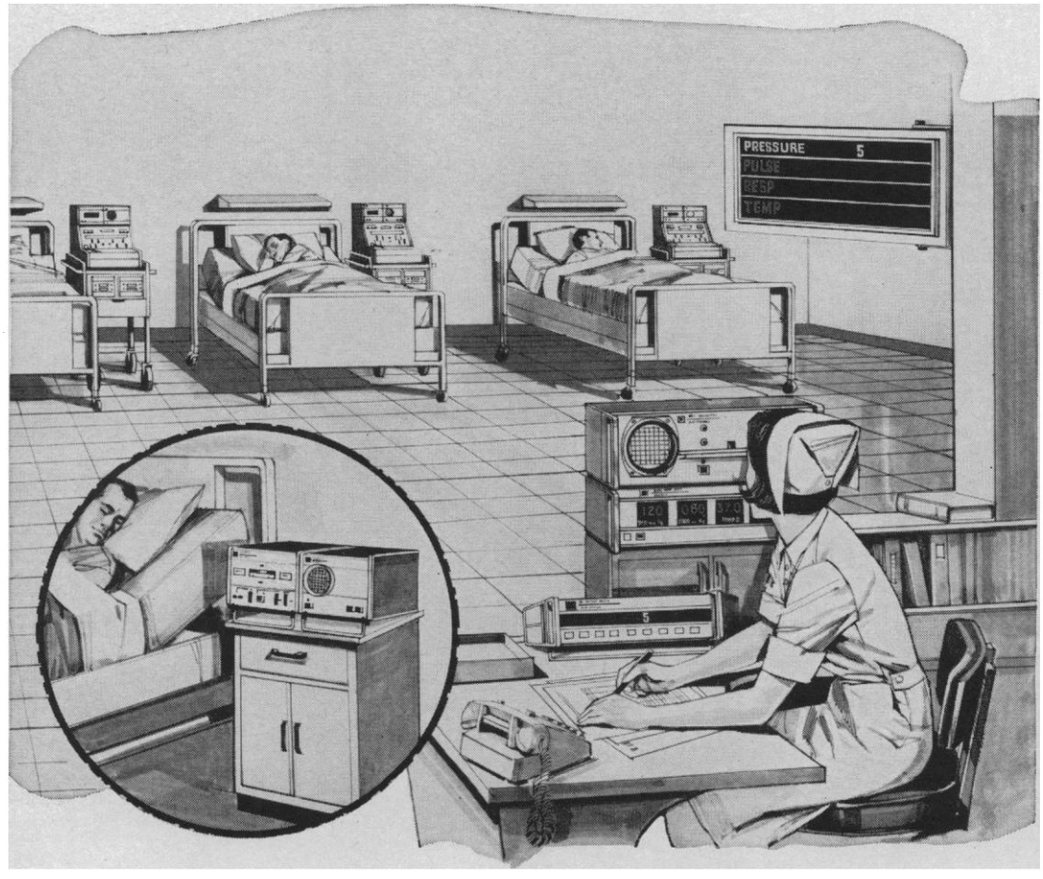

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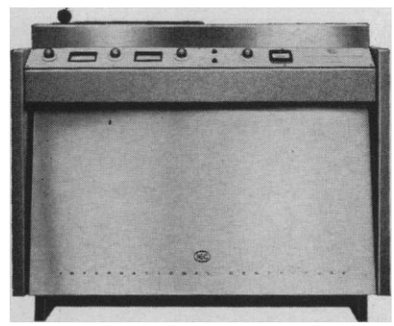

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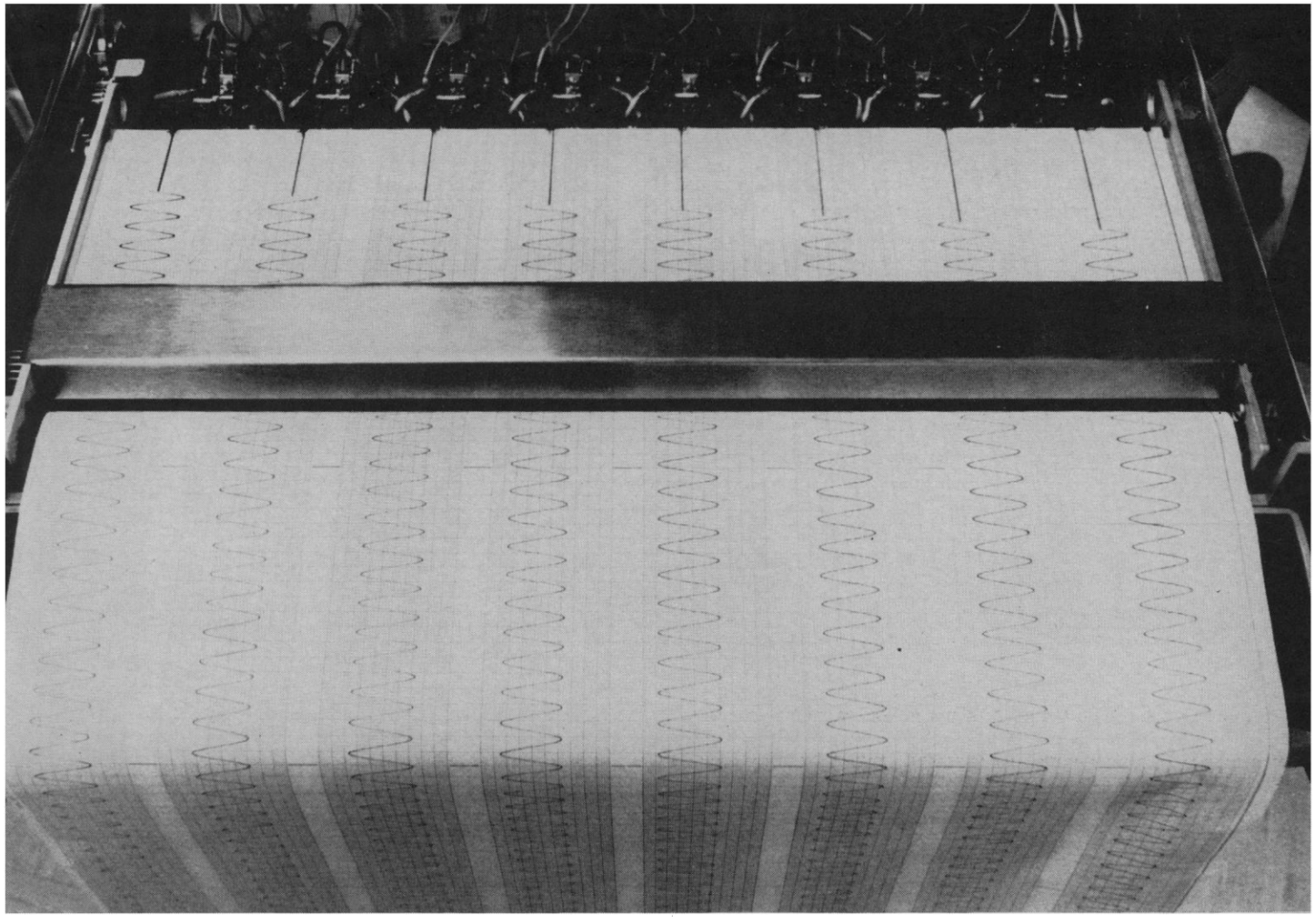

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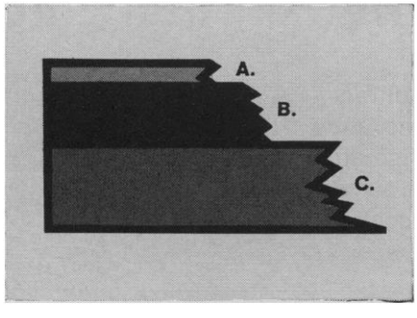

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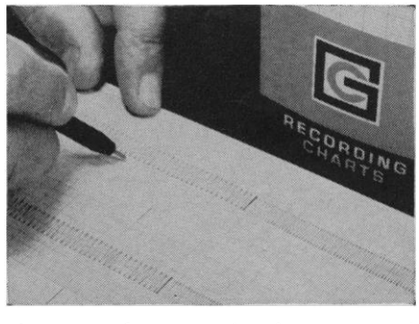

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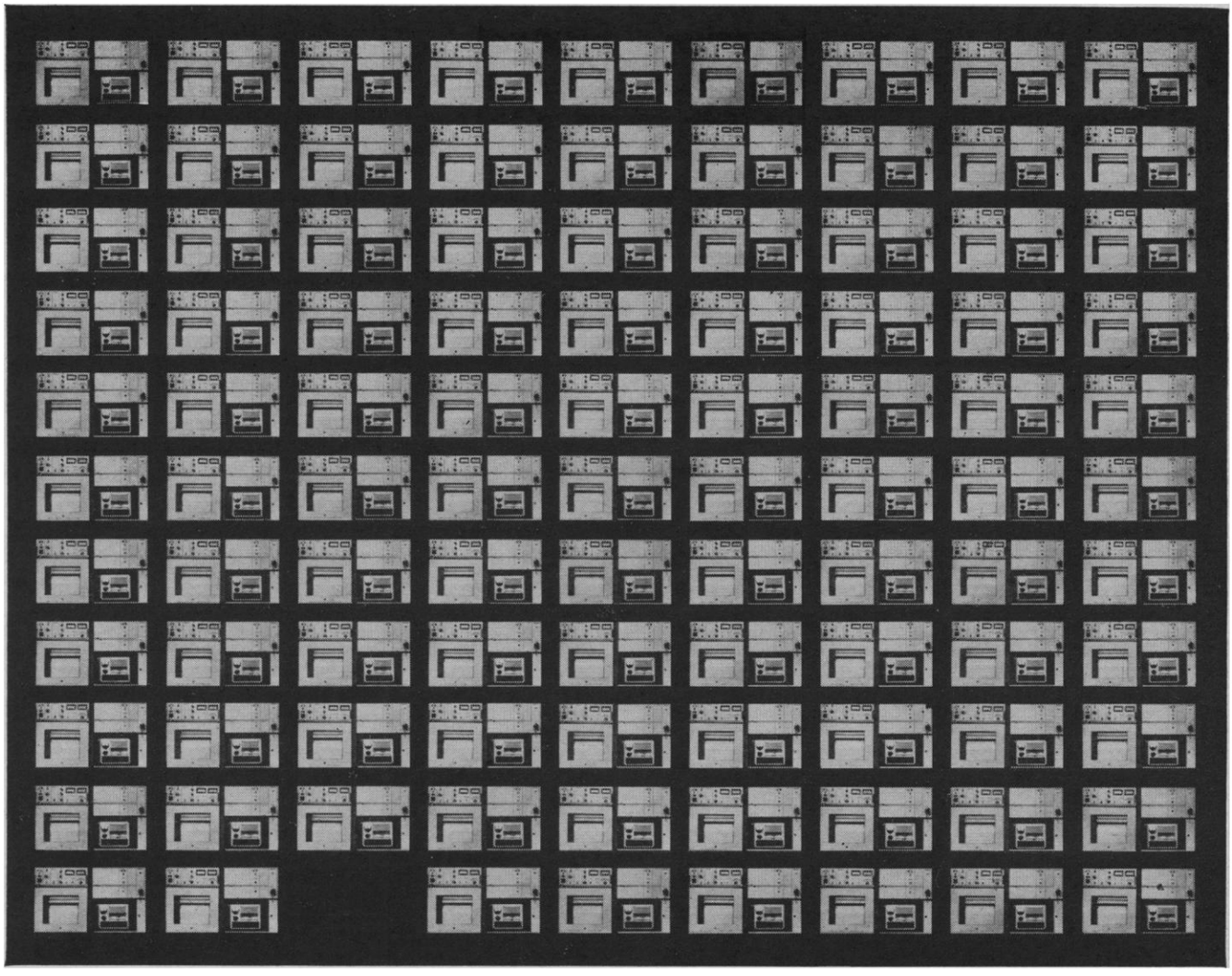

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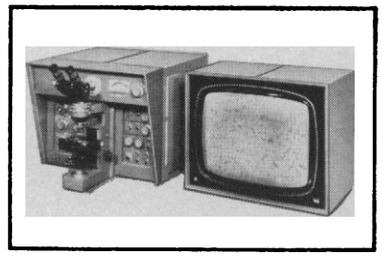

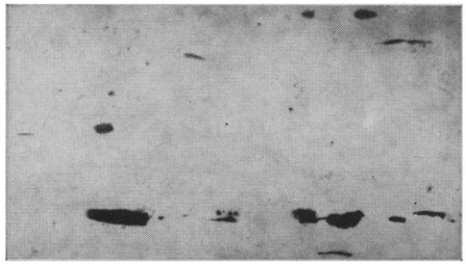

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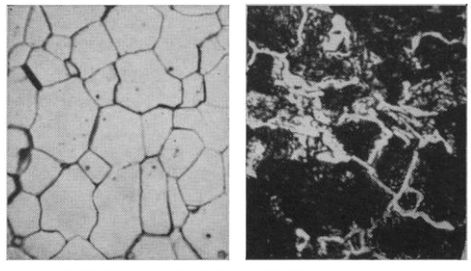

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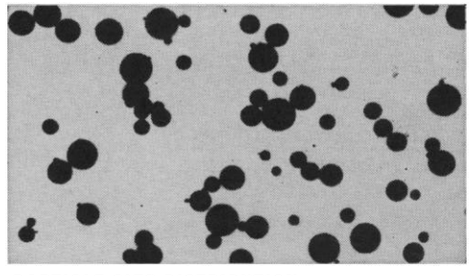

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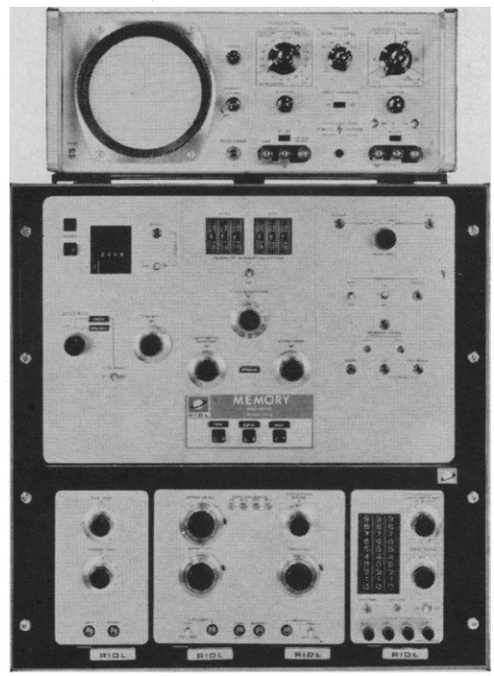

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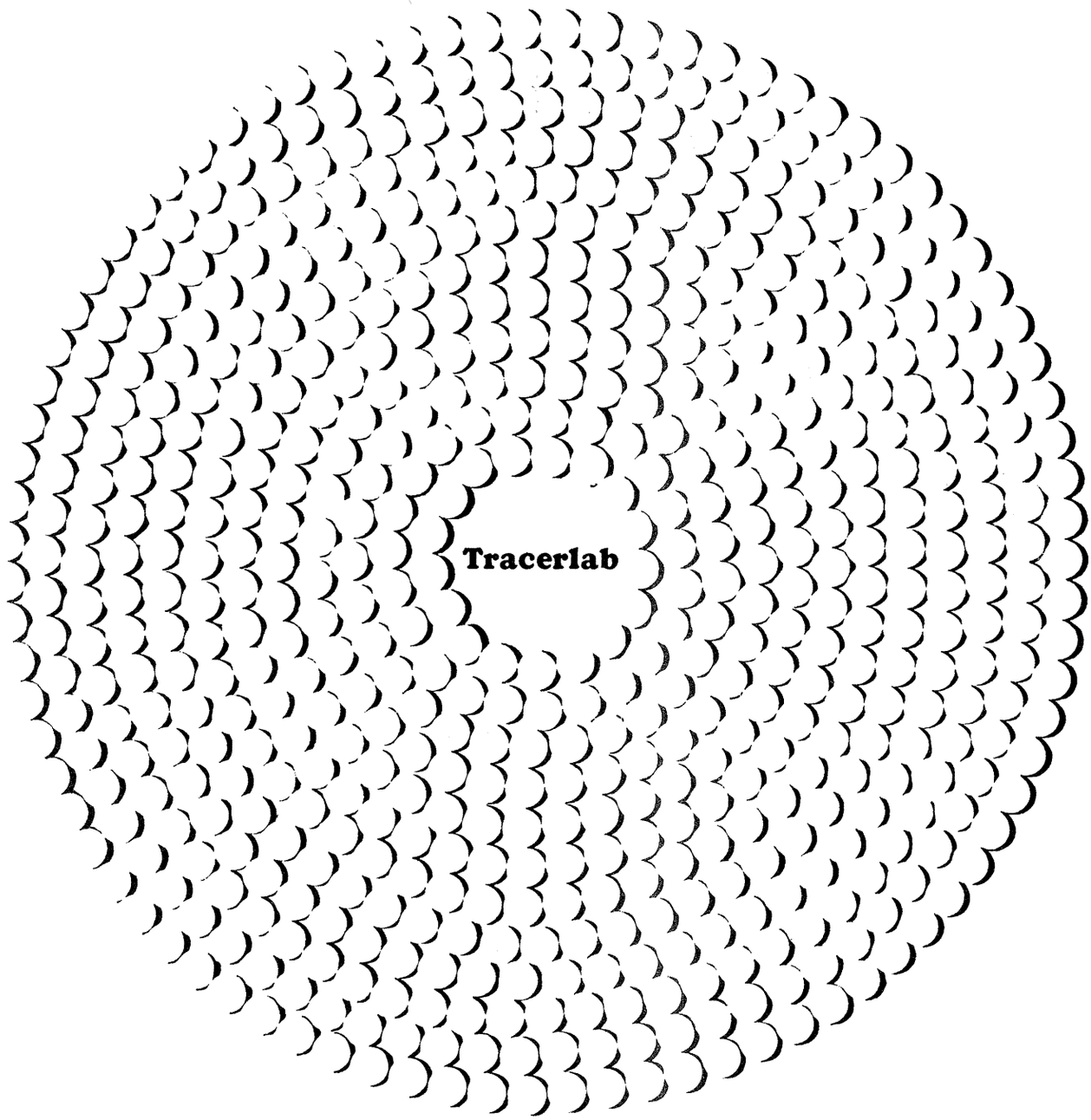

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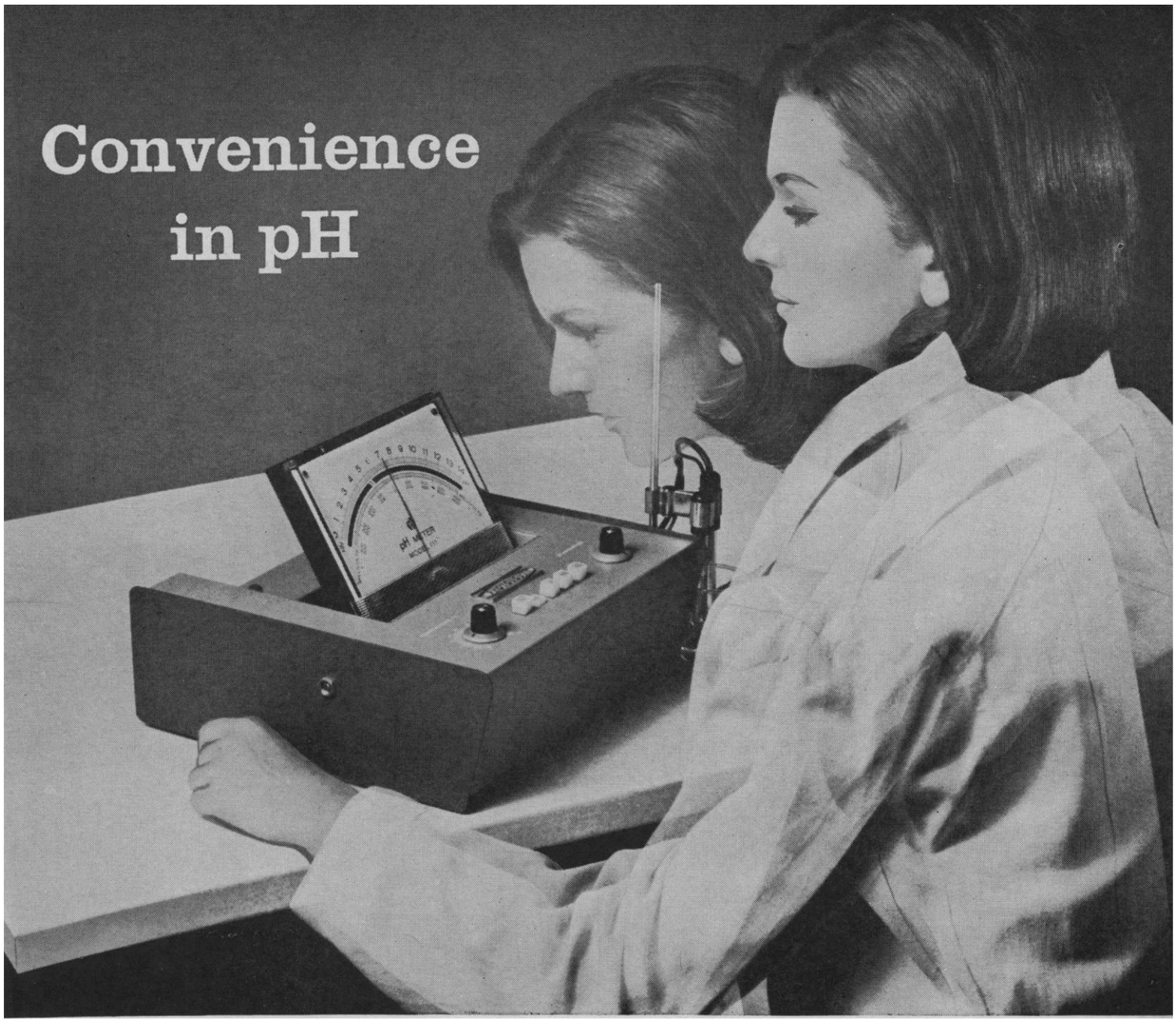

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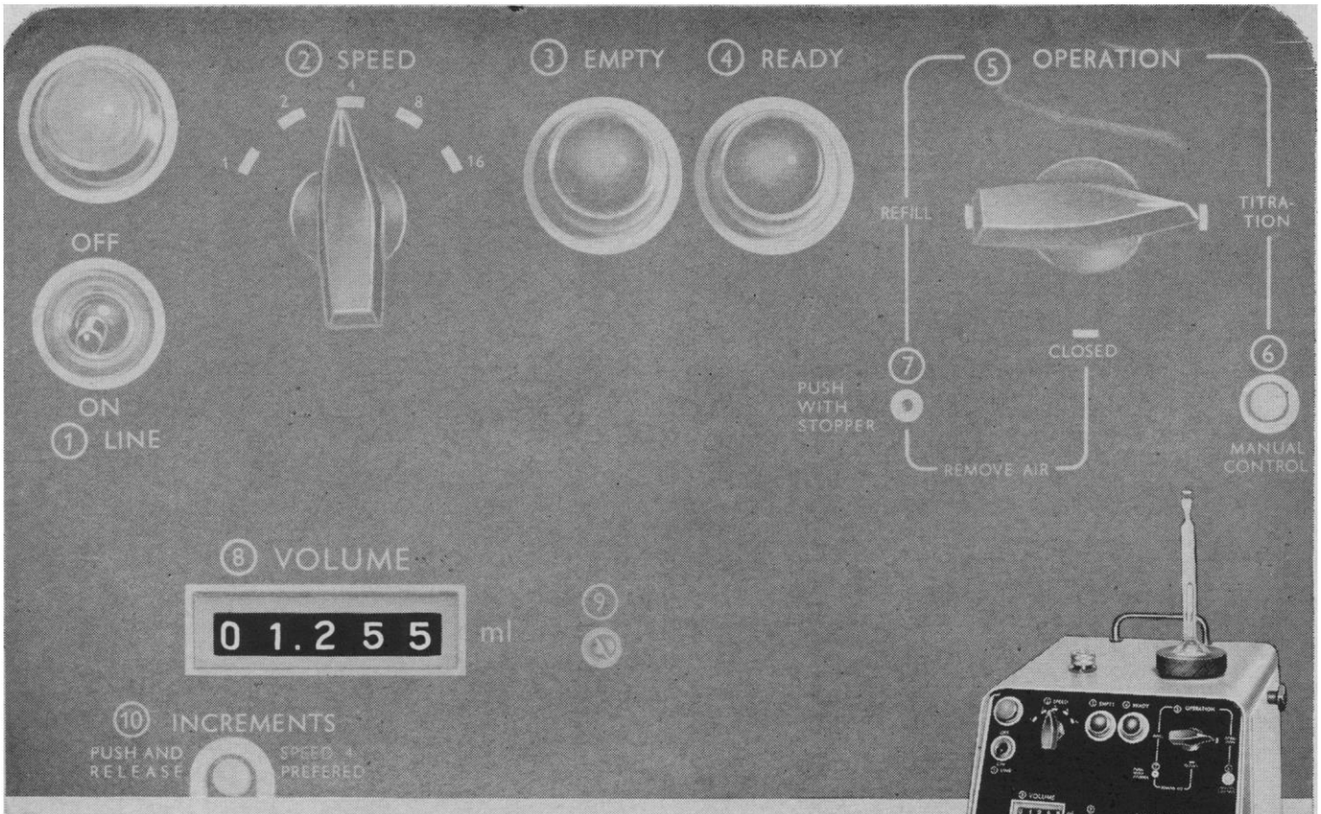

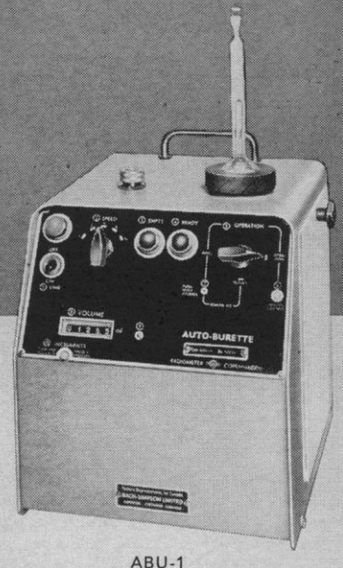

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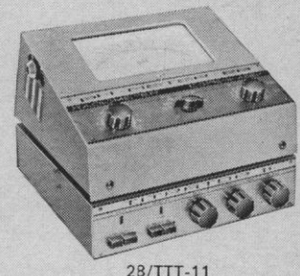

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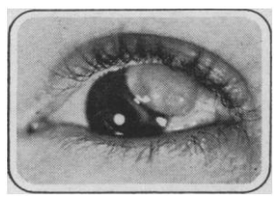
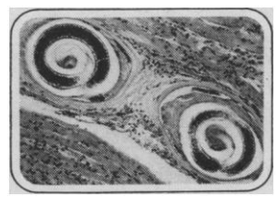
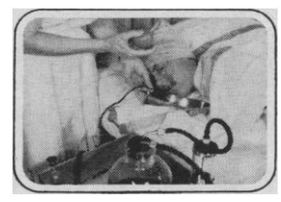
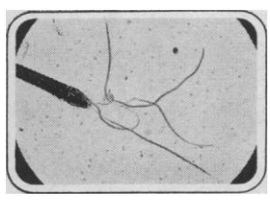

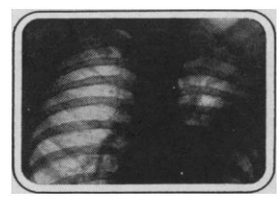
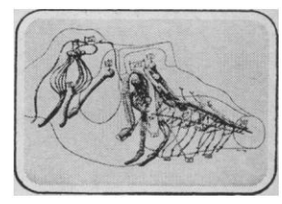

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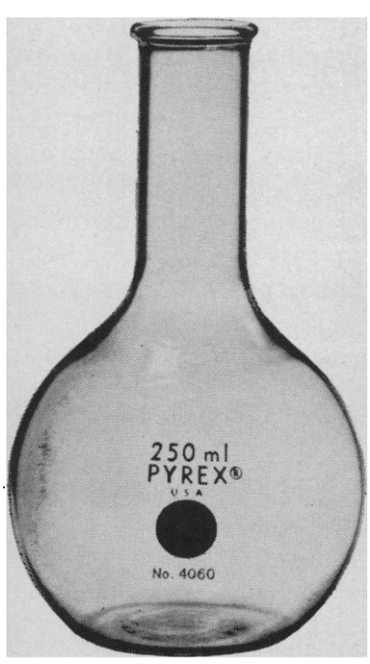

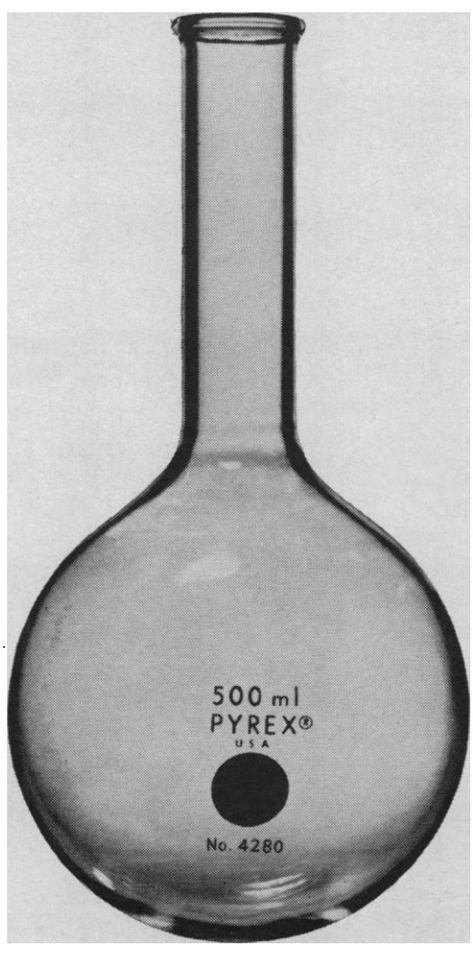

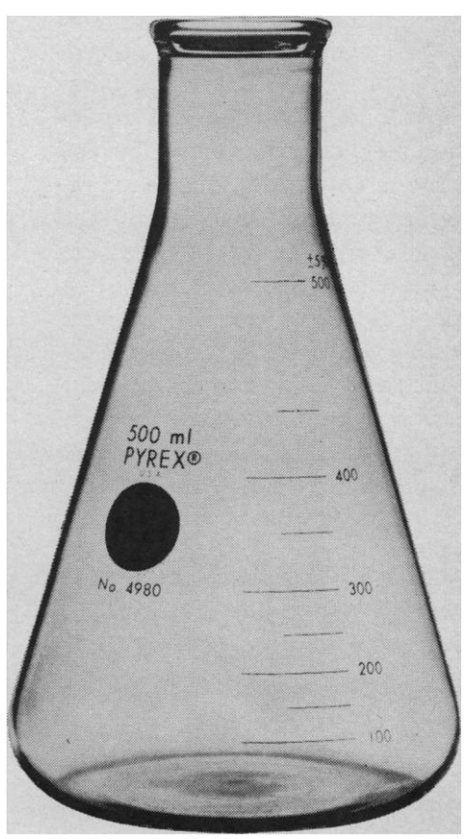

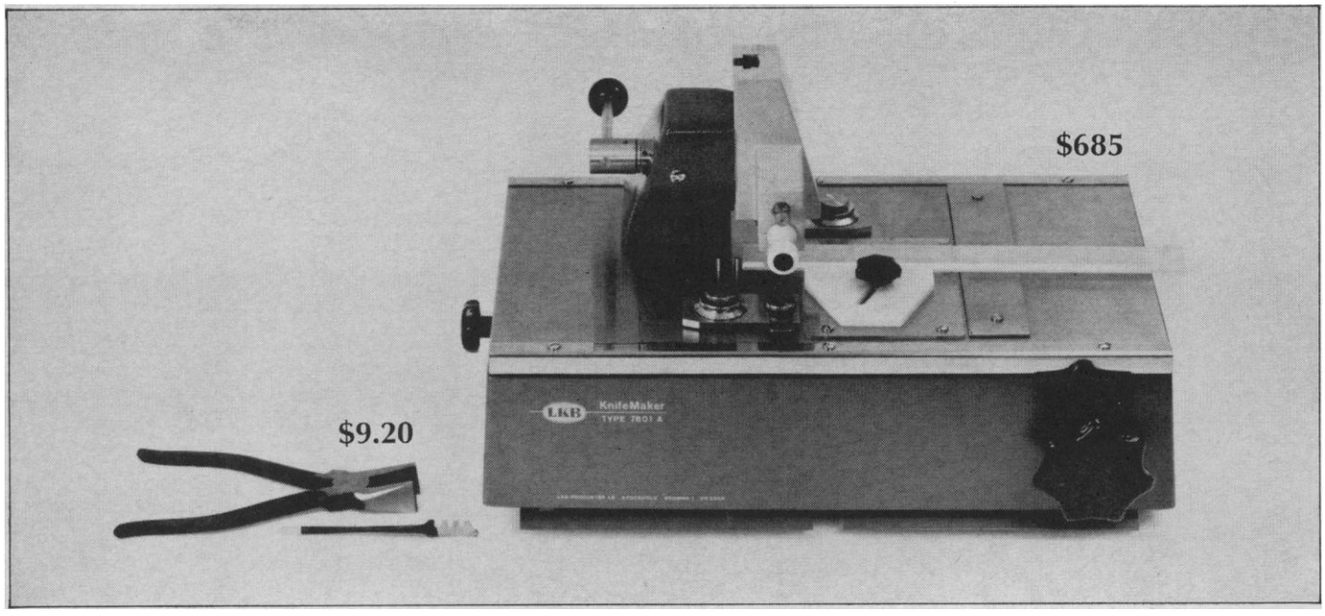

We sell two kinds of equipment for making ultramicrotome knives

(the expensive one is cheaper)

Perfectly good glass knives can be made with the inexpensive equipment shown on the left. *Sometimes.* However, as you well know if you make knives this way, it is not uncommon for an expensive ultramicrotome, an even more expensive electron microscope, several expensive people, and *your* research to stand by immobilized while awaiting a usable knife to be made with these rather primitive, albeit inexpensive, hand tools. Frustrating. And now unnecessary because of the new unit on the right.

This unit on the right—henceforth called the Knifemaker—is the first and only precision instrument for breaking glass knives. The design goals for the Knifemaker were these: to provide a simple, rapid, mechanized technique for making usable knives with highly reproducible (but adjustable) cutting angles without requiring prolonged experience, manual dexterity, or some special "touch". Happily, these goals were achieved. (All of this requiring a most modest sacrifice of bench space on your part. The Knifemaker uses only 19" X 12" X 13½".)

But how long does it take to learn to make usable knives with the Knifemaker? Assume that your new Knifemaker has just been delivered. Since it arrives completely assembled with a supply of glass and an explicitly helpful instruction manual, it will take less than an hour from removal from shipping carton until you make your first usable knife—*even if you've never seen the Knifemaker before.* Subsequently, with modest experience, you will be producing knives having at least ⅓ usable edge perhaps 90% of the time. And about half of this time, you'll get *two* usable knives from each break rather than one. Total time required for scoring and breaking square and then scoring and breaking square into two knives? Less than a minute.

You might wish to consider ordering the Knifemaker from this ad immediately since you now know most of the story and the price. (For prices, etc., outside the United States, please contact our Stockholm address shown below.) If, however, you desire more information, a demonstration, or both, we'll be happy to oblige. Write today and refer to 7800S1.

Incidentally, we also stock and will be pleased to sell to you the inexpensive hand tools shown on the left instead of the Knifemaker. But we respectfully suggest that you can't afford them.

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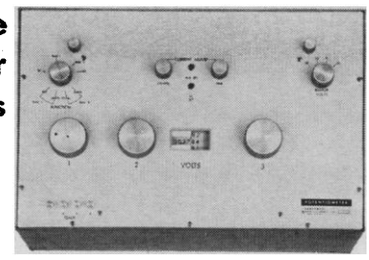

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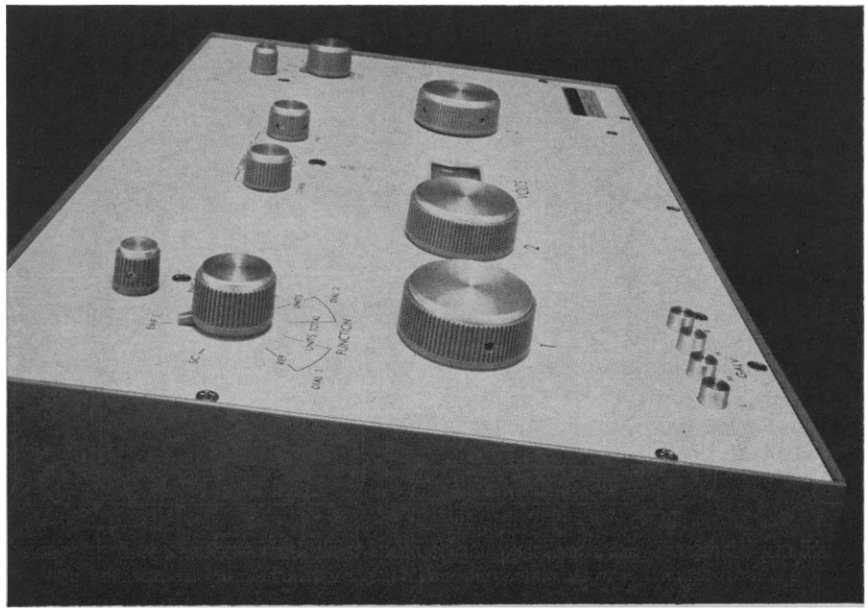

It's the all-new Model 2784 Laboratory Potentiometer from Honeywell! We invite you to check specs and prices on all other pots—you'll find that only instruments costing three to four times as much offer the features built into the new 2784. Features such as:

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For technical reports describing in detail these and similar AMBILOG 200 applications, or for a demonstration, write Irving Schwartz, Vice President, 1079 Commonwealth Avenue, Boston, Mass. 02215.

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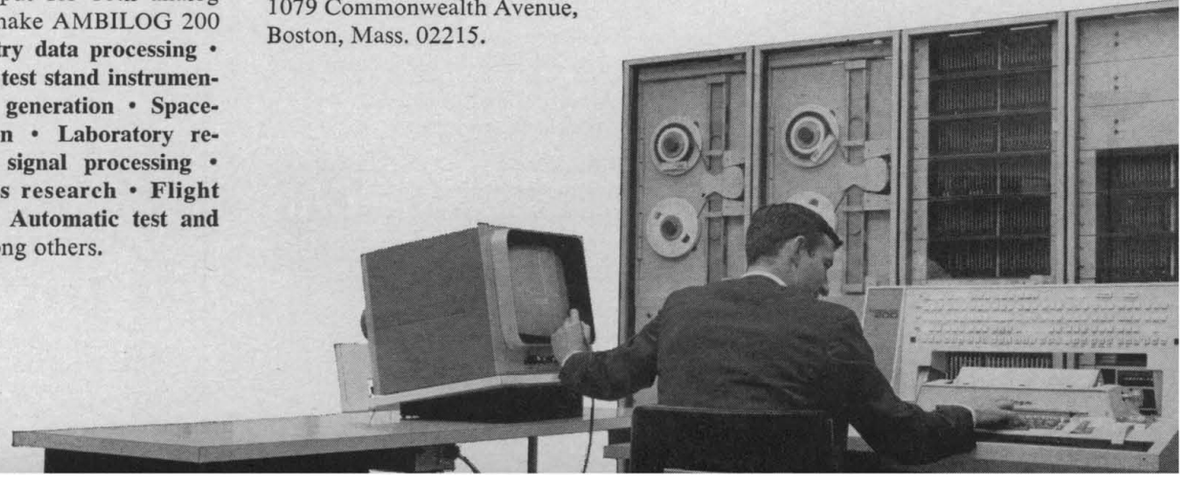

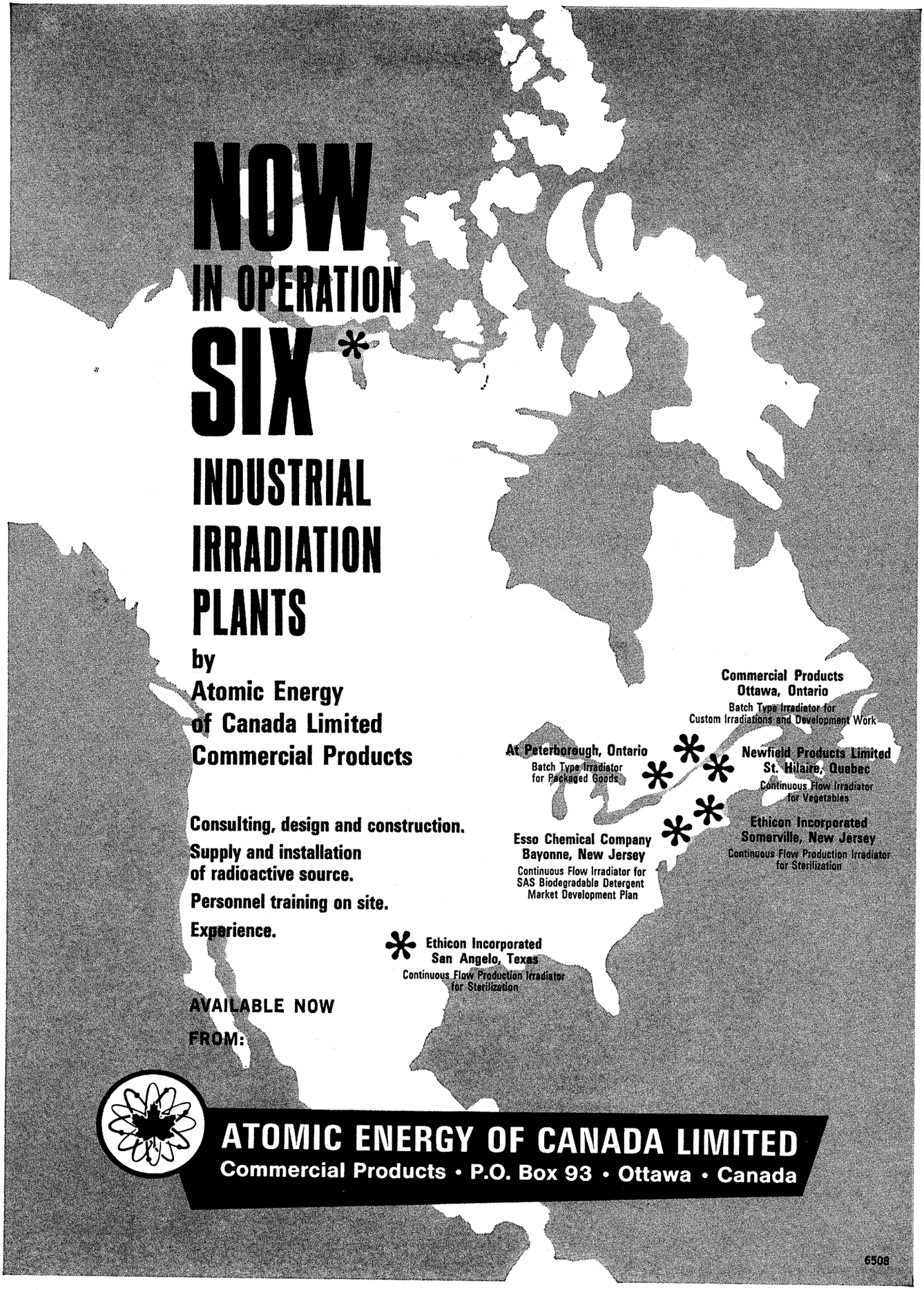
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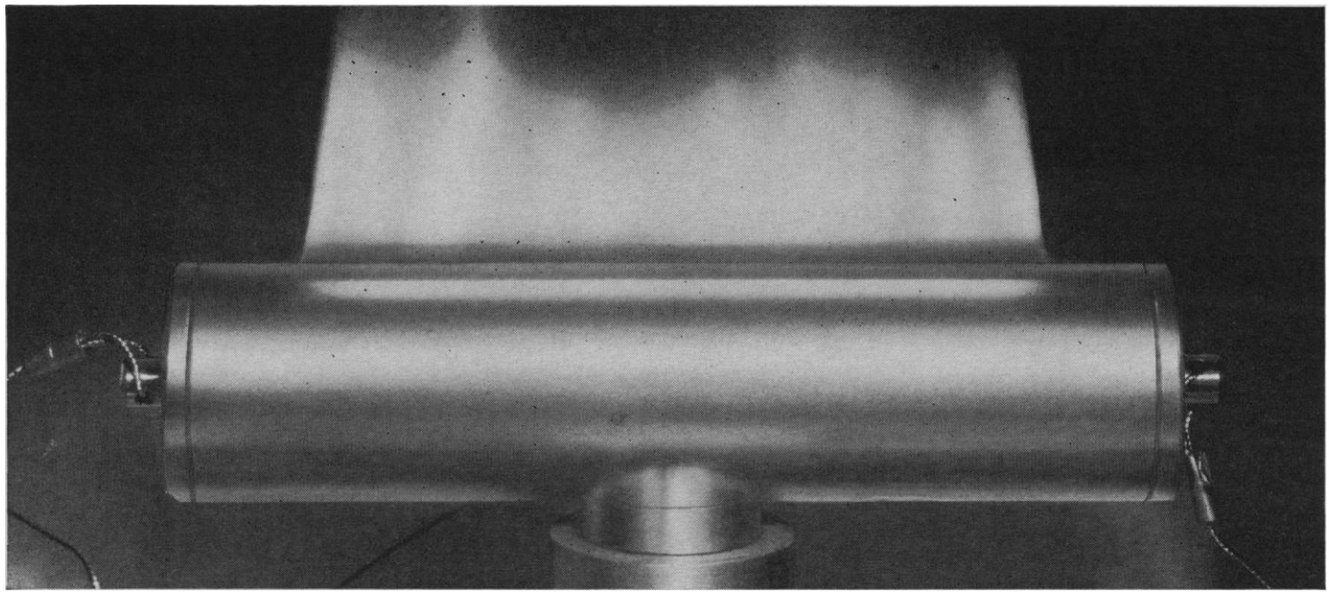

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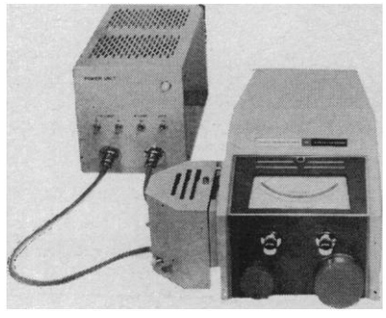

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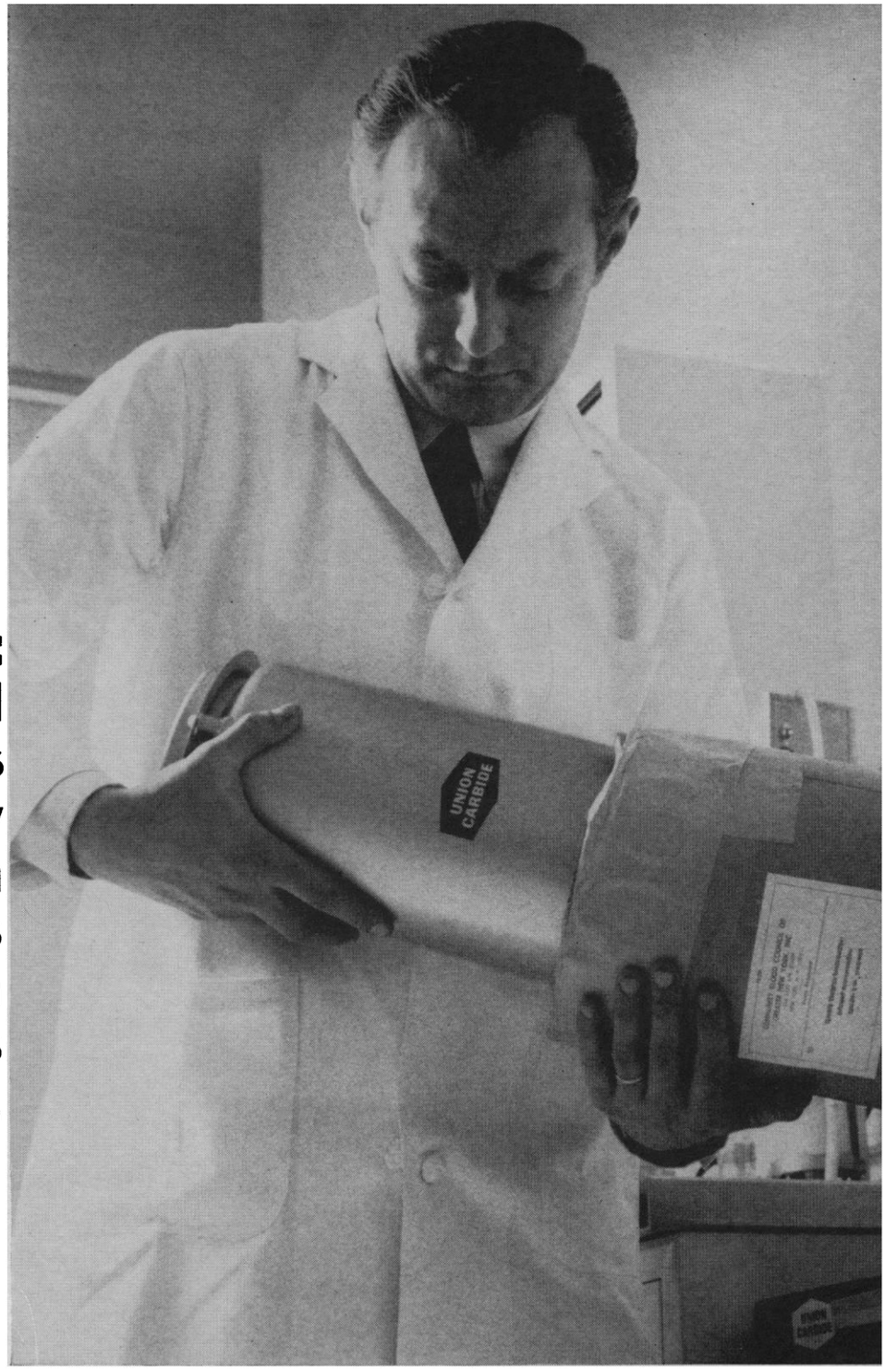

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By Jerry K. Aikawa. *Univ. of Colorado, Denver.* The life of Dr. Howard T. Ricketts is recounted briefly . . . his remarkable contributions described in detail. Subsequent chapters review studies into the gross and microscopic pathology of Rocky Mountain spotted fever, events leading to discovery of the etiologic agent, evolution of an effective vaccine, recognition of the disease, artificial cultivation of the Ricksettia of Spotted Fever, diagnostic and immunologic studies, pathophysiology, prevention, and treatment.

January 1966 — *About 128 pp.*
In Press — *About 23 il.*

RESEARCH METHODOLOGY AND NEEDS IN PERINATAL STUDIES

By **Sidney S. Chipman**, *Univ. of North Carolina, Chapel Hill*; **Abraham M. Lilienfeld**, *The Johns Hopkins Univ.*; **Bernard G. Greenberg**, *Univ. of North Carolina*; *and* **James F. Donnelly**, *North Carolina State Board of Health, Raleigh. (67 Participants)* Recent work on the study of chromosomal patterns in a general neonatal population is reported here for the first time. The epidemiological aspects of prematurity are reviewed in detail including studies of specific etiologic factors. Large-scale epidemiological studies are described and discussed in detail.

January 1966 — *328 pp., 16 il.*
$16.50 — *33 tables*

DISTURBANCES IN HEME SYNTHESIS:

Special Considerations of the Sideroachrestic Anemias and Erythropoietic Porphyrias

By **Ludwig Heilmeyer**. *With the collaboration of* **Roman Clotten** *and* **Ludwig Heilmeyer, Jr.** *All of Univ. of Freiburg, Germany. Translated by* **Manfred Steiner**, *New England Center Hospital, Boston.* The first published study of disorders of heme synthesis in various disease states . . . accomplished by two newly-developed methods—by setting up the hemoprecursor pattern and by incubation tests with peripherous erythrocytes in vitro. The sideroachrestic anemias are presented in both their congenital and acquired forms, **and the three known erythropoietic porphyrias are discussed**. *(Amer. Lec. Hematology edited by Walter H. Seegers)*

January 1966 — *250 pp., 39 tables*
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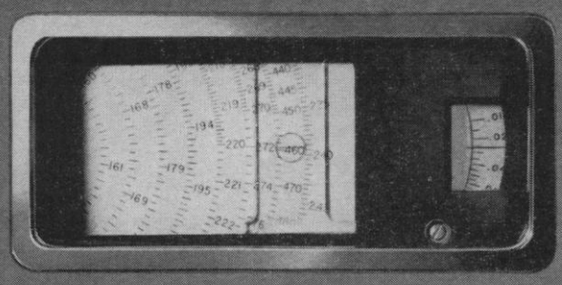

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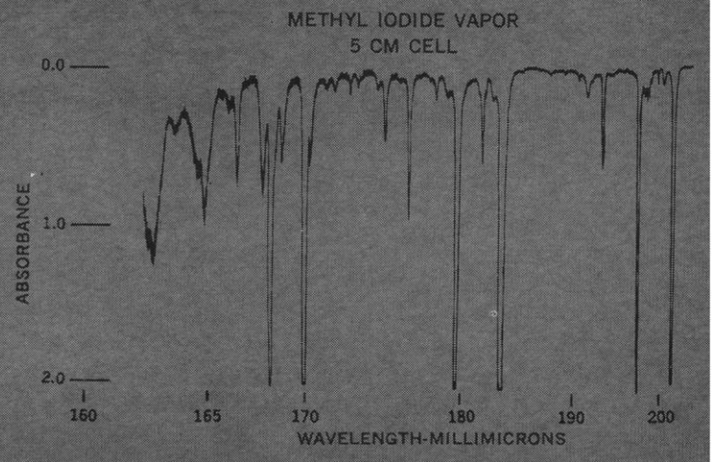

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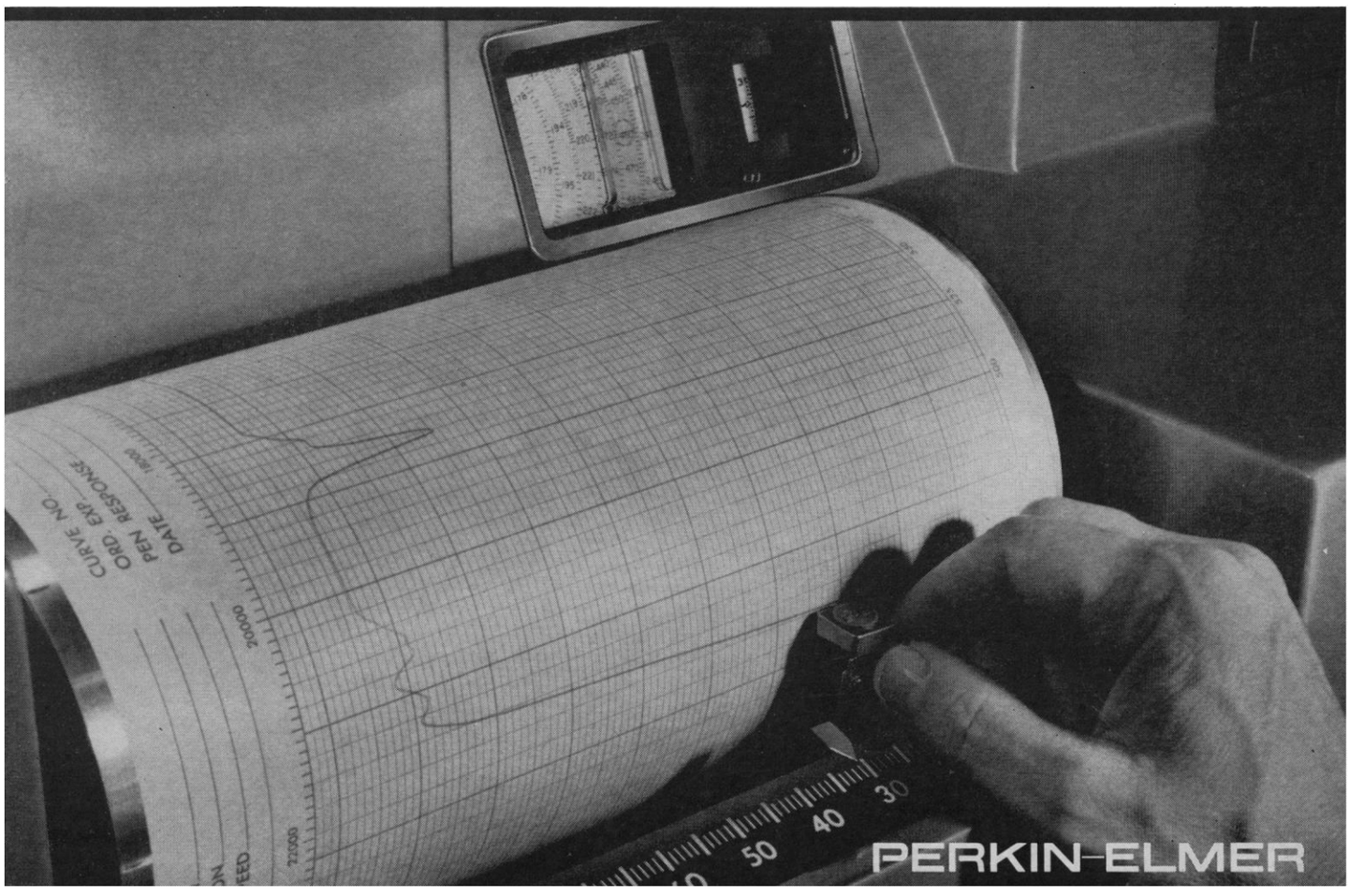

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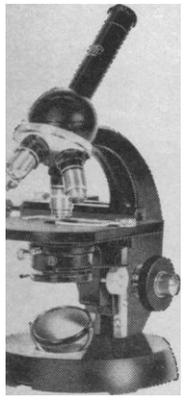

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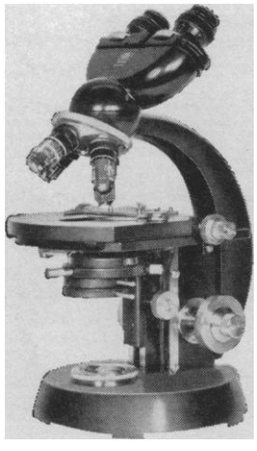

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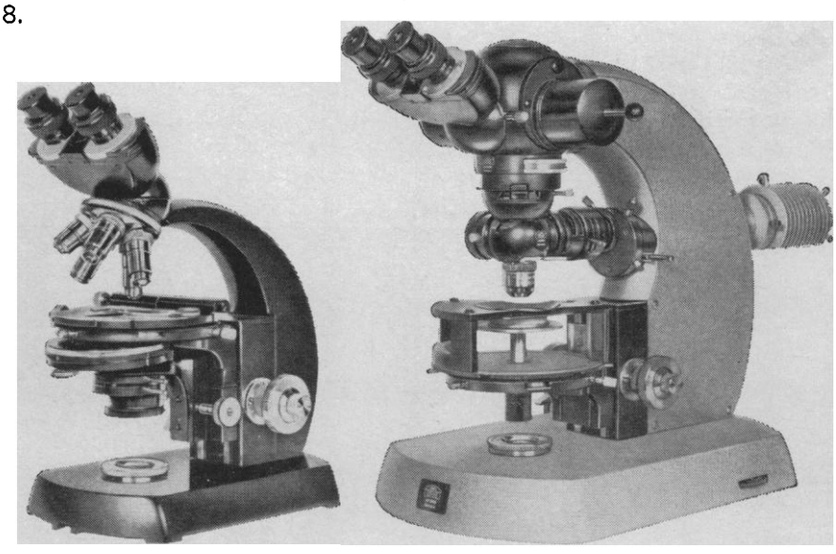

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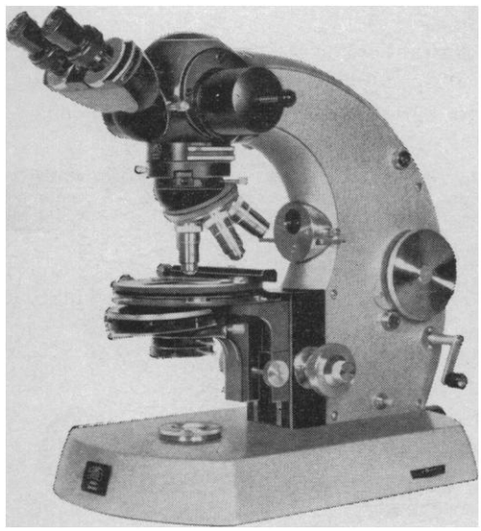

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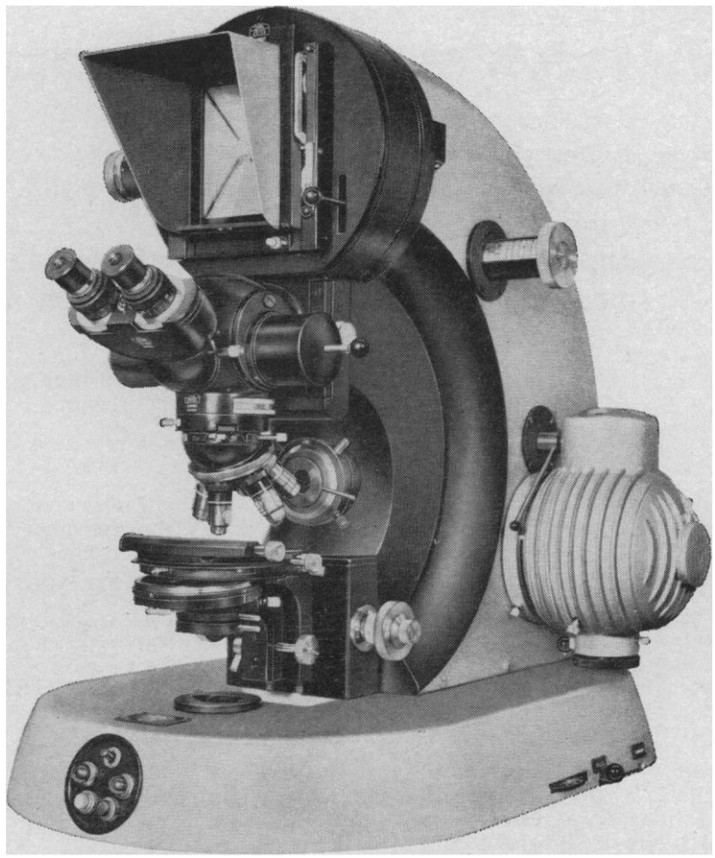

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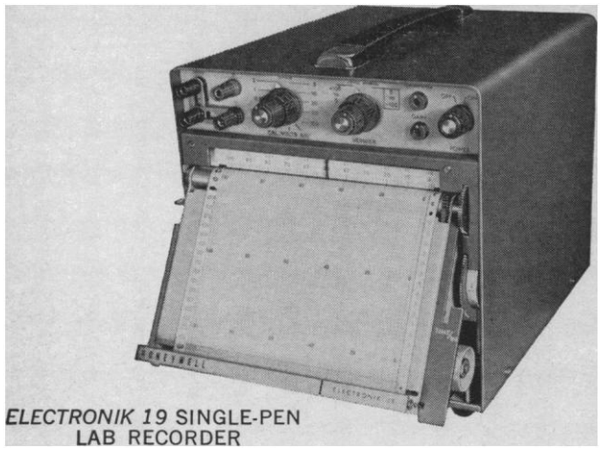

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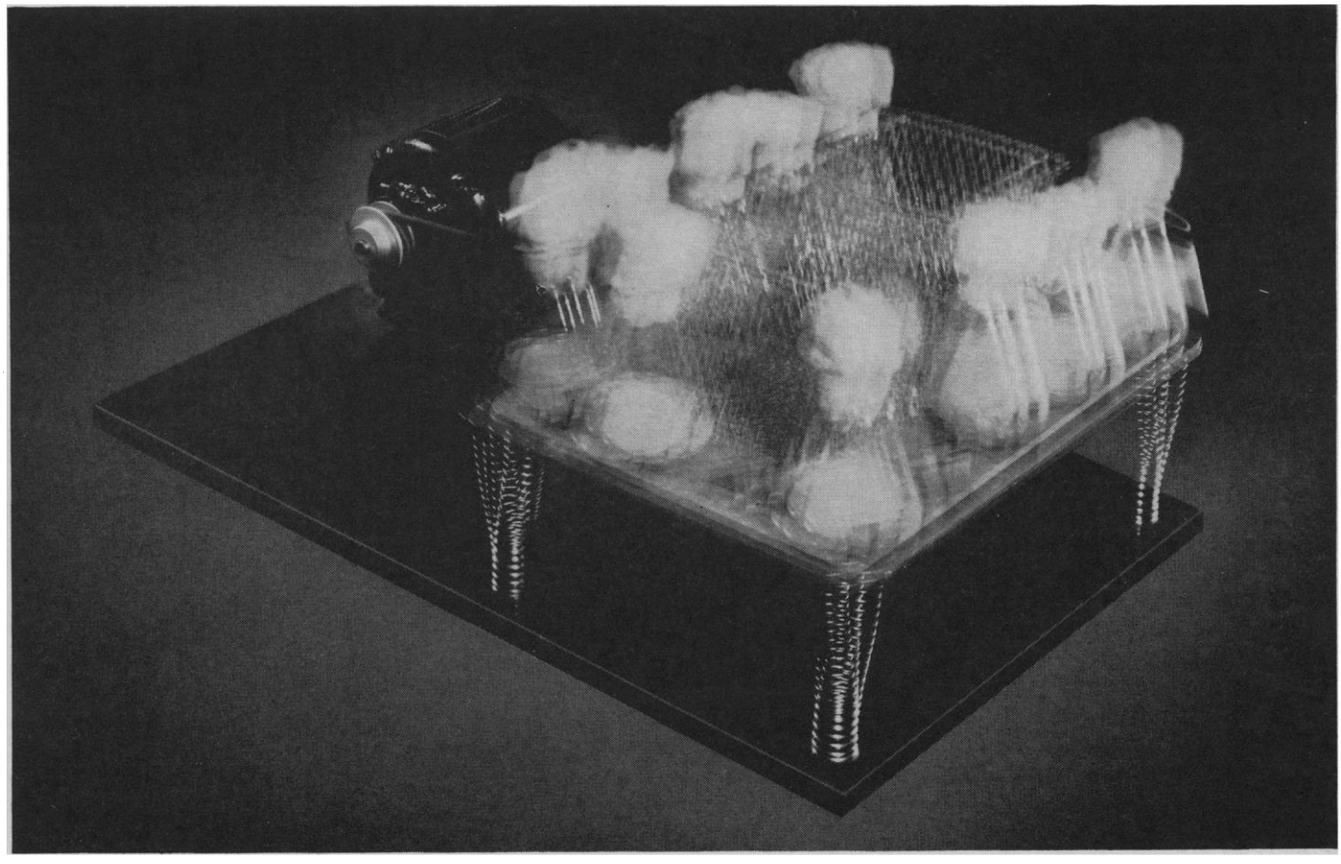

While other equipment sleeps, this New Brunswick shaker works overtime. It has been running almost 24 hours a day for 17 years . . . day-in, day-out . . . at the Rutgers University College of Agriculture. This Model "C" sustains three times more shaking action than those machines that are switched off after a normal 8-hour day. Simple multiplication shows that this workhorse has provided 51 years of service . . . and it's still going strong!

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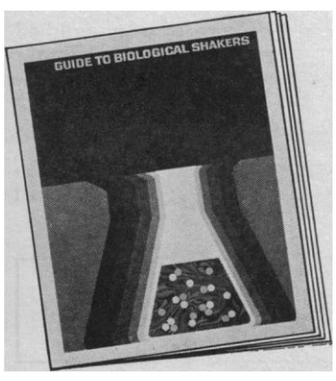

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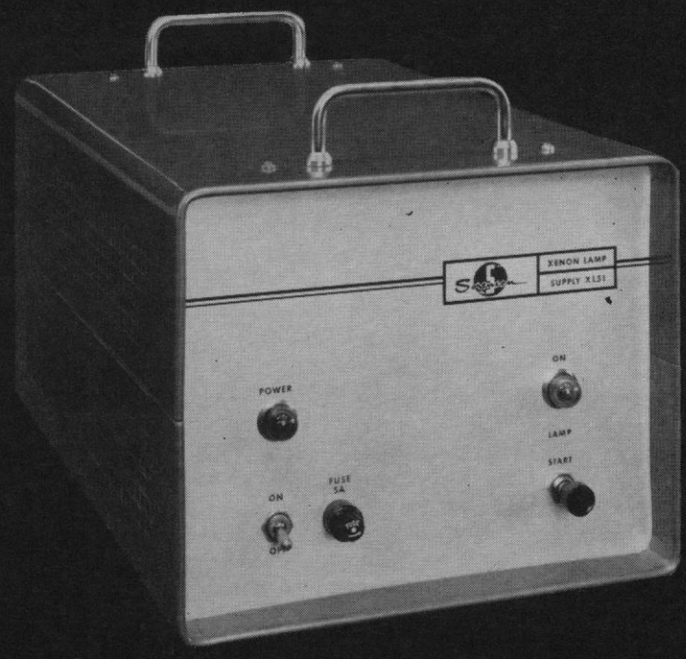

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ELECTRICAL SPECIFICATIONS

MODEL NUMBER	INPUT VOLTAGE*	INPUT FREQUENCY	OUTPUT STARTING VOLTAGE	OPERATING VOLTAGE	OPERATING CURRENT	CURRENT REGULATION	CURRENT RIPPLE	LIST PRICE
XLS-1A (150W)	100-130/200-260 VAC Single Phase	60cps ± 1%	20 KV (starting energy less than 0.5 joules)	20 VDC ± 3V	7.5 ADC nominal	Better than ± 1.0%** over full input voltage range	less than 5.0% peak to peak less than 1.75% RMS	$375
XLS-1B (150W)		50cps ± 1%		20 VDC ± 3V	7.5 ADC nominal			415
XLS-2A*** (35W)		60cps ± 1%		12 VDC ± 2V	3.5 ADC nominal	Better than ± 0.25% over full input voltage range		325
XLS-2B*** (35W)		50cps ± 1%		12 VDC ± 2V	3.5 ADC nominal			360
XLS-3A (450W)		60cps ± 1%	30KV (starting energy less than 1 joule)	20 VDC ± 3V	22-28 ADC (adjustable in 1 ampere steps)	Better than ± 1.0%** over full input voltage range		715
XLS-3B (450W)		50cps ± 1%		20 VDC ± 3V				785

* Shipped wired for 100-130 VAC operation

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ments in the vehicle. Driving and roads must also be improved, but vehicle improvements are long overdue.

Seats that do not break, and shoulder straps as well as the lap belt (provided riders use them) are one answer. We are exploring an alternative possibility—airbags about the passengers (but not the driver) that would inflate automatically if sensors detect a potential accident situation, or ultimately and at a faster rate if impact actually occurs. The passengers would be protected even though they had not "strapped in." Work on such a device for astronauts and aircraft passengers, done with NASA support, has had promising results.

We should insure that the study of the problems and the development of solutions bear a growing relation to the magnitude of our losses, which—roughly measured by the cost of car accidents, injuries, and deaths (including insurance settlements and wages lost)—are about $9 billion this year. The approximately 25 cents per car which Nader indicates manufacturers spend for safety research, and the 4 or 5 cents per car passenger which the federal government spends each year for highway safety research, should be increased until the number of deaths and injuries each year no longer climbs and indeed is significantly reduced. . . . Apparently legislators must take the next steps, for the informed consumer cannot obtain or afford to buy the safety features which he should have, while manufacturers sell us "tuned" and "styled" tigers.

CARL CLARK
Research Department, Martin Company 3033, Baltimore, Maryland

. . . The evidence of great resistance within the automotive industry to changes that would reduce deaths and injuries in highway accidents is seen as well in changes that would reduce the likelihood of an accident. Major features of cars that have been shown to be hazardous because they interfere with vision are tinted windshields, distorted windshields, large windshield corner posts, view-obstructing inside rear-view mirrors, chromium windshield trim, chromium covers on the inside of the corner posts, and chromium on the steering wheel. Recently Chrysler and General Motors began using, in most of their models, a dull, relatively dark paint or padding on their dash panels. The Ford Motor Company is still selling cars with glossy painted dash panels, which reflect into the windshields with devastating effect on vision under certain circumstances. Chromium anywhere within the field of view that can reflect the sky or headlights into the driver's eyes is known to be harmful. Apparently manufacturers believe the natives want to buy shiny trinkets, and if they complain of glare they can then be sold tinted windshields.

Manufacturers's indifference to safety problems is well illustrated by their failure to adopt periscopic, panoramic rear-view mirrors that were publicly demonstrated over 10 years ago, and by failure to use a method of windshield wiping by a flow of air that prevents water, dirt, and bugs from getting on the windshield at all. The currently standard shield placed above the filament in headlights was not adopted for over 17 years after its invention, although the inventor tried to sell it to the automobile and lightbulb manufacturers before his patent expired.

A very serious omission can be seen in the continued absence of standards for signals. Turn signals can be buried in bumpers, hidden by fenders, and covered by chromium. They can be small or huge, feeble or bright, and close to headlights or far removed. Tail lights may be combined with brake, turn, and backup lights in all possible combinations, or they may exist alone. They may be high, low, widely separated, close together, large, small, bright or dim, single or double, shielded by fenders, covered by chromium, and colored deep red, orange red, or amber. That this most important safety feature has not been removed from the stylists' manipulations is indeed remarkable.

That manufacturers apparently have little interest in drivers' safety is seen in the so-called after-market. Millions of dollars' worth of useless automotive accessories, some hazardous, are widely promoted and sold each year with never any word of caution from the automobile manufacturers. An example is the chromium "sleepy eye" headlight covers that lie flat against the upper half of the bulb. (Some new car advertisements in magazines and on billboards have implied the presence of these covers by a line drawn across the head lamp.) Our studies have shown that the claims made for these covers are fraudulent. They do not reduce glare as claimed, but rather increase it from two to ten times, and they do not increase useful light on the road

as claimed, but reduce it, sometimes to less than 50 percent. Any automotive lighting engineer worth his salt knows these facts. . . .

MERRILL J. ALLEN
Division of Optometry,
Indiana University, Bloomington

It is astounding to me and should be humiliating to the scientific community that *Science* would permit the printing of such an unscientific book review as that given to Ralph Nader's *Unsafe at Any Speed*. The reviewer says that the book "is likely to be the *Silent Spring* of traffic safety." To me this only means that it will be as packed full of errors and leftist propaganda as was *Silent Spring*.

The controversy over automobile safety sorely needs the application of more true science. An approach to this was made some 15 years ago in a joint study by the Pennsylvania State Police and the Union Switch and Signal Company on the cause of crashes (I refuse to call them "accidents") on the Pennsylvania Turnpike. This study, which certainly approached scientific status, showed that the major cause of all crashes on the turnpike was not speed, or poor car design, or poor car maintenance, but *driver ineptitude*. I hold that more, many more, studies of this type are needed.

I disagree wholeheartedly with the reviewer's comments on Nader's references to the Corvair. I drove a 1961 Corvair for 4 years and have driven a 1965 for almost a year without the slightest difficulty, and I have some scientist friends who have done similarly. I'll admit that I do not try to make 90-degree turns at 75 miles per hour, nor do I try to stop on a dime on an icy road. I believe that, if the cause of the alleged difficulties with the Corvair were truly known, they would be no different from similar difficulties with other cars when ordinary drivers in thick traffic start imagining they are driving the "500" at Indianapolis.

Close observation on a short drive in almost any large U.S. city will readily demonstrate that an appreciable element in the causes of crashes is the disregard of very ordinary safety practices by one or more of the drivers involved. This in turn is caused by such driver characteristics as (i) ignorance of safe practice, (ii) simple ineptitude, (iii) lack of coordinating ability, (iv) disregard of the welfare of

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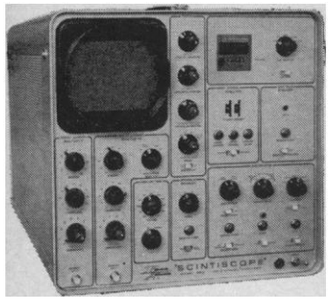

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others and themselves, (v) aggressiveness, determination to get ahead no matter what happens, (vi) driving too fast for traffic conditions. The tendency to blame the manufacturers, aside from the socialistic implications of the federal government, represents a tendency in nearly all walks of life for people to blame external things for their own shortcomings. There is a greatly increasing tendency to abhor the acceptance of personal responsibility.

If the manufacturers ever contrived to build a car safe enough for all of the nuts on the road, it would look like a tank and cost like one. It is almost as though the flying public were to demand that passenger-carrying aircraft be designed and built to withstand any kind of crash from any altitude. Anyone who has driven cars for the past 45 years, as I have, will, I think, agree that through the years cars have become progressively safer. Anyone who has seen the wooden wheels of a Model T catch fire coming down Laurel Mountain will agree to this. In fact, it is to be wondered how enough people survived the earlier cars to nurture the automotive industry to its present state.

So please! Let's have more science in *Science* and less politics.

ROBERT C. DICKINSON
19 Verona Road,
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Grants and Copyrights

The U.S. Office of Education has recently ruled that materials produced by its grantees are not to be copyrighted but are to be placed in the public domain. Although the clear intent of the regulation is to serve the public interest, it appears likely that, in practice, it will have the opposite effect.

What are the probable effects of this new regulation on the future production and dissemination of curriculum materials similar to those, for example, prepared recently by the secondary school science projects in biology, chemistry, geology, and physics, which have been quite widely regarded as of great public value? (I am not concerned here with the effect of the regulation on studies of primarily technical or academic interest.) If a USOE grantee were to produce a manuscript for a good chemistry textbook that could not be copyrighted, the reaction of the major textbook publishers would be, I believe, generally negative. An ethical publisher might acknowledge the excellence of the new text and might recognize how satisfactorily it could supplement his line of textbooks. But he would realize that the same materials could also be published by any other publisher, with or without change, and perhaps more rapidly and cheaply. Thus, he might well decide that his necessarily extensive investment in such a book, for careful editing, preparation of illustrations, training of salesmen, national advertising, and printing and distribution, would place him at a competitive disadvantage with respect to other publishers who might use the same materials with a minimum investment. It appears probable that contemporary public-domain materials would be ignored by the more substantial publishers who have full facilities for national distribution, and might even be considered too risky by virtually all publishers.

But there is a more fundamental consideration. Such materials as these do not emerge simply as the result of a grant; they depend also on the creative efforts of scholars and writers. They have an intellectual as well as a fiscal component. Surely the traditional rights of an author should not be summarily discarded simply because his work promises to be of public benefit and has therefore been judged worthy of support from public funds.

The director of a curriculum project supported by the Office of Education may find it difficult to recruit writers who are seriously interested in producing new curriculum materials for our schools, if they are aware of the possible effects of the public domain policy on their efforts. They would realize that their materials might never be published and made available for use in the schools; that their carefully devised themes and logical presentations could be altered at will by editors and publishers; that they might be completely excluded from the opportunity to revise their original ideas on the basis of actual use in the schools. . . .

It seems clear to me that the public domain policy of the Office of Education requires further study. Execution of the policy should be postponed until it is abundantly clear that it is not contrary to the public interest.

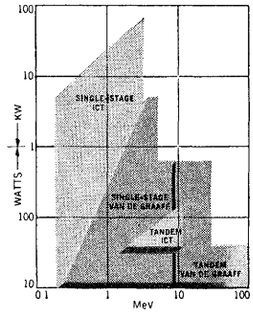
ARNOLD B. GROBMAN
Rutgers University,
New Brunswick, New Jersey

CHARGED PARTICLES

THE ICT CONCEPT:
new high-current machines emerging from HVEC research

Development of higher energy Van de Graaff particle accelerators which retain high beam precision, stability, and homogeneity, remains a continuing contribution by HVEC to "energy-oriented" research.

To provide even greater freedom of experimentation, HVEC is also anticipating the need for the higher beam intensities required in *power*-oriented research projects. Invented by Dr. R. J. Van de Graaff, the new Insulating Core Transformer (ICT) accelerator now provides high beam currents with all the desirable beam characteristics of Van de Graaff machines. As the graph shows, the high power levels available from the ICT accelerator now make possible a new realm of precision experimentation.



The Insulating Core Transformer

The ICT is essentially a three-phase power transformer with multiple secondaries, each of which is insulated from the other. Rectified current from the secondaries is series-connected to achieve total voltage. In the ICT, electrostatic and electromagnetic fields exist in the same space, as contrasted to the conditions in a coventional transformer. The result is a highly efficient dc power source capable of stable operation at elevated potentials *and* power levels.

A number of ICT accelerators and power generation systems are now available.

Single-Stage ICT Accelerators

Two types of single stage ICT accelerators have been developed for research use. The first incorporates an ICT power source coupled to the acceleration assembly through a coaxial cable. The second system utilizes a rigid transmission line to transmit electrical power to the accelerator terminal.

	PROTON ENERGY (KeV)	CURRENT (MAX.) (Analyzed)	TANK HEIGHT Feet	TANK HEIGHT Meters	TANK DIAMETER Feet	TANK DIAMETER Meters
ICT 300	300	15 mA	4'4"	1.32	4	1.2
ICT 500	500	10 mA	5'3"	1.60	4	1.2

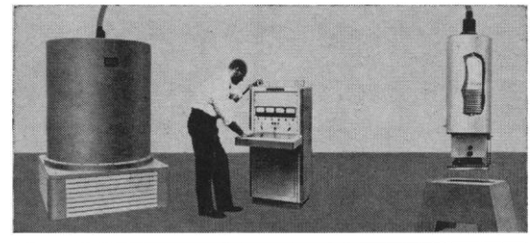
4 MeV ICT	ENERGY (MeV)	CURRENT	DIMENSIONS Length Feet	DIMENSIONS Length Meters
Positive Ions	1.5-4	3 mA	26'6"	8.08
Electron Conversion	1.5-3	10 mA	26'6"	8.08
3 MeV ICT Electrons	1.5-3	20 mA	29'	8.84

8 MeV ICT Tandem Accelerator

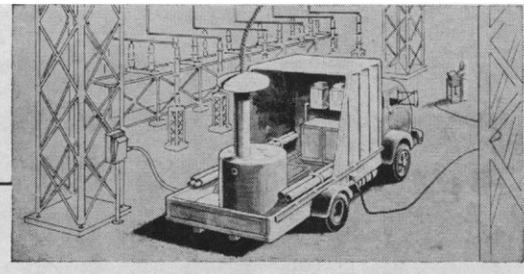
The 8 MeV ICT Tandem provides proton energies continuously variable from 3 to 8 MeV at a maximum guaranteed beam current of 2μA. The ICT power source is capable of providing 12 mA at 4 mv which, in combination with newly developed components emerging from HVEC, will enable the accelerator to keep pace with future research requirements. The 8 MeV Tandem is convertible to single-stage ion or electron operation.

ICT Electron Processing Systems

Developed primarily as high-current sources of electrons for industrial processing applications, these systems allow extreme flexibility of operation. Two models are available: 300 kv at 30 mA maximum beam current and 500 kv at 20 mA maximum beam current.



Series 7 ICT Power Supplies



ICT equipment has crossed many barriers to dc operation at high particle energies and currents. There is no indication that a ceiling exists to further advances of similar importance.

Available with output ratings ranging from 240 kv at 80 mA to 600 kv at 20 mA, these highly stable power sources are suitable for use in high energy beam separator systems, r.f. transmission systems, plasma research and high voltage testing programs.

For detailed information, please write to Technical Sales, High Voltage Engineering Corporation, Burlington, Massachusetts.

HIGH VOLTAGE ENGINEERING

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SCIENCE

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The Need for Leaders*

Leadership is dispersed among a great many groups in our society. The President, of course, has a unique, and uniquely important, leadership role, but beneath him, fragmentation is the rule.

Although our decentralized system of leadership has served us well, we must not be so complacent as to imagine that it has no weaknesses, that it faces no new challenges, or that we have nothing to learn. There are grave questions to be answered concerning the leadership of our society. Are we living up to standards of leadership that we have achieved in our own past? Do the conditions of modern life introduce new complications into the task of leadership? Are we failing to prepare leaders for tomorrow?

Nothing should be allowed to impair the effectiveness and independence of our specialized leadership groups. But such fragmented leadership does create certain problems. One of them is that it isn't anybody's business to think about the big questions that cut across specialties—the largest questions facing our society.

Very few of our most prominent people take a really large view of the leadership assignment. Indeed, it is my belief that we are immunizing a high proportion of our most gifted young people against any tendencies to leadership. Most of our intellectually gifted young people go from college directly into graduate school or into one of the older and more prestigious professional schools. There they are powerfully indoctrinated in a set of attitudes appropriate to scholars, scientists, and professional men. This is all to the good. The students learn to identify themselves strongly with their calling and its ideals. They acquire a conception of what a good scholar, scientist, or professional man is like.

As things stand now, however, that conception leaves little room for leadership in the normal sense; the only kind of leadership encouraged is that which follows the performing of purely professional tasks in a superior manner. Entry into what most of us would regard as the leadership roles in the society at large is discouraged. As a result the academic world appears to be approaching a point at which everyone will want to educate the technical expert who advises the leader, or the intellectual who stands off and criticizes the leader, but no one will want to educate the leader himself.

Leaders worthy of the name, whether they are university presidents or senators, corporation executives or newspaper editors, school superintendents or governors, contribute to the continuing definition and articulation of the most cherished values of our society. They offer, in short, moral leadership.

So much of our energy has been devoted to tending the machinery of our complex society that we have neglected this element in leadership. I am using the word *moral* to refer to the shared values that must undergird any functioning society. The thing that makes a number of individuals a society rather than a population or a crowd is the presence of shared attitudes, habits and values, a shared conception of the enterprise of which they are all a part, shared views of why it is worth while for the enterprise to continue and to flourish. Leaders can help in bringing that about.

Leaders have a significant role in creating the state of mind that is the society. They can serve as symbols of the moral unity of the society. They can express the values that hold the society together. Most important, they can conceive and articulate goals that lift people out of their petty preoccupations, carry them above the conflicts that tear a society apart, and unite them in the pursuit of objectives worthy of their best efforts.—JOHN W. GARDNER

* Condensed from "The Antileadership Vaccine," by John W. Gardner, in the 1965 annual report of the Carnegie Corporation of New York.

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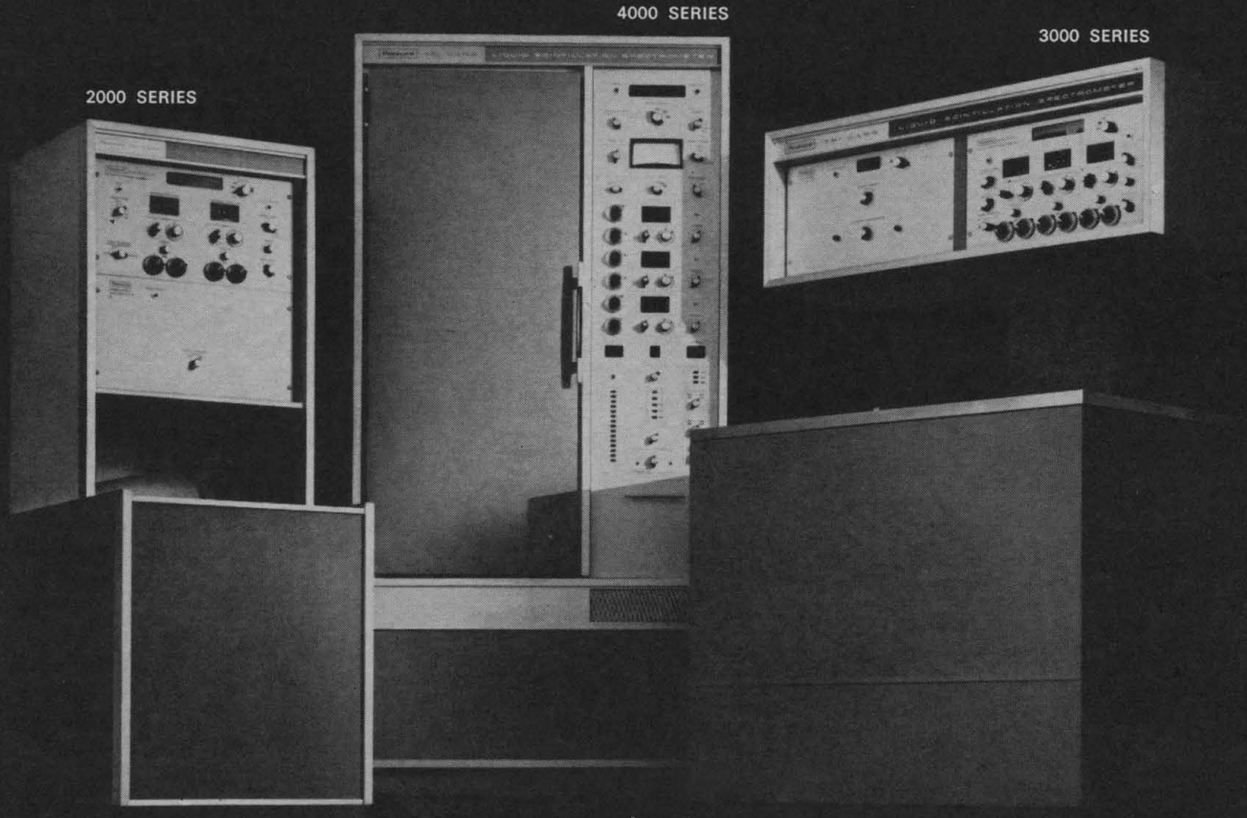

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Forthcoming Events

January

26–29. American **Physical** Soc., annual mtg., New York, N.Y. (K. K. Darrow, APS, 335 E. 45 St., New York 10017)

26–29. American Assoc. of **Physics Teachers**, annual mtg., New York, N.Y. (M. Phillips, Ryerson Physical Laboratory, Univ. of Chicago, Chicago, Ill. 60637)

27–29. American **Group Psychotherapy** Assoc., Philadelphia, Pa. (AGPA, 1790 Broadway, New York 10019)

27–29. International **Medical Assembly** of Southwest Texas, San Antonio. (S. E. Cockrell, Jr., 202 W. French Pl., San Antonio 78212)

28–29. **Proteins**, 21st conf., Rutgers Bureau of Biological Research, Rutgers Univ., New Brunswick, N.J. (R. L. Squibb, Rutgers Univ., New Brunswick)

30–4. Institute of **Electrical and Electronics Engineers, Power Group**, winter mtg., New York, N.Y. (E. C. Day, IEEE, 345 E. 47 St., New York 10017)

30–4. American Soc. for **Testing and Materials**, spring mtg., Washington, D.C. (T. A. Marshall, ASTM, 1916 Race St., Philadelphia 3, Pa.)

31–2. **Information Theory**, intern. symp., Inst. of Electrical and Electronics Engineers, Univ. of California, Los Angeles. (A. V. Balakrishnan, Dept. of Engineering, Univ. of California, Los Angeles 90024)

31–2. Solid Propellant **Rockets**, 7th conf. (American Inst. of Aeronautics and Astronautics, 1290 Sixth Ave., New York)

31–3. Scientific Aspects of **Pest Control**, symp., Washington, D.C. (Agricultural Board, National Academy of Sciences, 2101 Constitution Ave., NW., Washington)

February

2–4. **Aerospace and Electronic Systems**, winter conv., Inst. of Electrical and Electronics Engineers, Los Angeles, Calif. (A. S. Jerrems, Aerospace Group, Hughes Aircraft Co., Culver City, Calif.)

2–6. American College of **Cardiology**, Chicago, Ill. (W. D. Nelligan, 9650 Rockville Pike, Bethesda, Md. 20014)

3–4. American **Chemical Soc.**, 1st Middle Atlantic regional mtg., Philadelphia, Pa. (Philadelphia Section Office, ACS, 212 Harrison Laboratory, 34th and Spruce St., Philadelphia 19104)

3–9. **Medical Education**, congr., Chicago, Ill. (W. S. Wiggins, 535 N. Dearborn St., Chicago 60610)

6–9. American Inst. of **Chemical Engineers**, Dallas, Tex. (The Institute, 345 E. 47 St., New York 10017)

7–8. Perspectives in **Virology**, 5th mtg., New York, N.Y. (M. Pollard, Lobund Laboratory, Notre Dame, Ind.)

7–9. **Reactor Physics** in the Resonance and Thermal Regions, mtg., San Diego, Calif. (G. Joanou, General Atomic Corp., P.O. Box 1111, San Diego, 92112)

7–18. World **Meteorological Organization**, regional assoc. #5, 4th session, Wellington, New Zealand. (WMO, 4 Avenue, Giuseppa Motta, Geneva, Switzerland)

8–9. **Cost Aspects of Water Supply**, 8th sanitary engineering conf., Urbana, Ill. (J. H. Austin, 203 Civil Engineering Hall, Univ. of Illinois, Urbana 61803)

9–11. **Solid State Circuits**, 13th annual conf., Philadelphia, Pa. (K. H. Fischer, U.S. Army Electronics Command, Attn: AMSEL-KL-I, Fort Monmouth, N.J.)

10–11. **Snow**, eastern conf., Hartford, Conn. (G. Ayer, P.O. Box 948, Albany 1, N.Y.)

10–12. **Intermediate Energy Physics**, conf., College of William and Mary, Williamsburg, Va. (R. T. Siegel, Physics Dept., College of William and Mary, Williamsburg 23185)

13–16. **Radiation Research** Soc., 14th annual mtg., Coronado, Calif. (F. Smith, Biology Dept., American Univ., Washington, D.C.)

14–16. **Transplantation**, 7th intern. conf., New York Acad. of Sciences, New York, N.Y. (F. T. Rapaport, New York Univ. Medical Center, 550 First Ave., New York 10016)

14–18. Society of **Economic Geologists**, New York, N.Y. (J. O. Kalliokoski, Dept. of Geology, Princeton Univ., Princeton, N.J. 08540)

15–17. **Radioisotope Applications in Aerospace**, symp., Dayton, Ohio. (P. Polishuk, Flight Dynamics Laboratory, Wright-Patterson AFB, Ohio)

15–18. Treatment and Storage of Highly **Radioactive Waste**, symp., Richland, Wash. (W. H. Regan, Jr., U.S. Atomic Energy Commission, Washington, D.C. 20545)

16–17. **Voluntary Health**, 2nd natl. conf., Chicago, Ill. (Dept. of Community Health and Health Education, American Medical Assoc., 535 N. Dearborn St., Chicago, 60610)

16–18. Practical **Space Applications**, symp., San Diego, Calif. (C. Tross, Box 931, Rancho Santa Fe, Calif.)

16–19. National Soc. of **College Teachers of Education**, Chicago, Ill. (E. H. Goldenstein, Administration Bldg., 413, Univ. of Nebraska, Lincoln 68508)

16–19. Institute of **Management Sciences** annual mtg., Dallas, Tex. (W. M. Campbell, Atlantic Refining Co., P.O. Box 2819, Dallas 75221)

17–19. American **Educational Research** Assoc., Chicago, Ill. (R. A. Dershimer, The Association, 1201 16th St., NW, Washington, D.C. 20036)

18–20. American **Psychopathological** Assoc., symp., New York, N.Y. (F. A. Freyhan, The Association, Natl. Inst. of Mental Health, c/o St. Elizabeths Hospital, Washington, D.C. 20032)

19. **Pleistocene of Ohio**, interdisciplinary conf., Ohio Acad. of Science, Columbus. (J. L. Forsyth, Dept. of Geology, Bowling Green State Univ., Bowling Green, Ohio)

21–25. **Analytical Chemistry and Applied Spectroscopy**, Pittsburgh, Pa. (R. E. Hein, Mellon Inst., 4400 Fifth Ave., Pittsburgh 15213)

21–25. Society for **Nondestructive Testing**, spring natl. conv., Los Angeles, Calif. (E. L. Criscuolo, U.S. Naval Ordnance Laboratory, White Oak, Silver Spring, Md. 20910)

21–25. **Non-Elastic Processes in the Upper Mantle**, symp., Upper Mantle Committee, Intern. Union of Geodesy and Geophysics, Newcastle, England. (D. C. Tozer, School of Physics, The University, Newcastle-upon-Tyne, 1, England)

22–24. **Offshore Exploration,** 1st conf., Long Beach, Calif. (P.O. Box 88, 2550 Via Tejon, Palos Verdes Estates, Calif. 90275)

22–26. Canadian Assoc. of **Radiologists,** 29th annual, Montreal, Quebec. (The Association, 1555 Summerhill Ave., Montreal 25)

23–25. **Biophysical** Soc., 10th annual mtg., Boston, Mass. (J. Baruch, Bolt, Beranek and Newman Inc., 50 Moulton St., Cambridge, Mass. 02138)

24–26. American Acad. of **Forensic Sciences,** Chicago, Ill. (S. R. Gerber, Law-Medicine Center, Western Reserve Univ., Cleveland, Ohio 44106)

24–26. Interdisciplinary Aspects of **Radiative Energy Transfer,** Philadelphia, Pa. (J. J. Welsh, Space Sciences Laboratory, General Electric Co., Box 8555, Valley Forge, Pa.)

25–26. **Thoracic** Soc., spring mtg., London, England. (H. M. Foreman, Sully Hospital, Sully, Glamorganshire, England)

27–3. American Inst. of **Mining, Metallurgical, and Petroleum Engineers,** annual mtg., New York, N.Y. (The Institute, 345 E. 47 St., New York 10017)

27–4. International **Anesthesia Research** Soc., Bal Harbour, Fla. (A. W. Friend, 227 Wade Park Manor, Cleveland, Ohio 44106)

28–4. **Aerial Triangulation,** symp., Urbana, Ill. (M. B. Scher, Intern. Soc. for Photogrammetry, Commission 3, 9701 East Light Dr., Falls Church, Va.)

28–4. American **Crystallographic** Assoc., mtg., Univ. of Texas, Austin. (W. L. Kehl, Gulf Research and Development Co., P.O. Drawer 2038, Pittsburgh, Pa. 15230)

28–4. American Assoc. of **Junior Colleges,** 46th annual conv., St. Louis, Mo. (The Association, 1315 16th St., NW, Washington, D.C. 20036)

March

1–2. **Dairy Engineering,** natl. conf., Michigan State Univ., East Lansing. (C. W. Hall, Agricultural Engineering Dept., Michigan State Univ., East Lansing)

1–3. **Space Maintenance** and Extra-Vehicular Activities, natl. conf., Orlando, Fla. (M. B. Goldman, Mail No. 302, Martin Co., Baltimore, Md. 21203)

1–10. **Industrial Development** in the Arab Countries, regional symp., Kuwait. (Intern. Agency Liaison Branch, Office of the Director General, Food and Agriculture Organization, Via delle terme di Caracalla, Rome, Italy)

2–4. **Air Pollution** Medical Research, AMA conf., Los Angeles, Calif. (Dept. of Environmental Health, American Medical Assoc., 535 N. Dearborn St., Chicago, Ill. 60610)

2–4. **Plasmadynamics,** conf., Monterey, Calif. (American Inst. of Aeronautics and Astronautics, 1290 Sixth Ave., New York 10019)

2–4. **Scintillation and Semiconductor Counters,** 10th symp., Washington, D.C. (W. A. Higinbotham, Brookhaven Natl. Laboratory, Upton, L.I., N.Y.)

3–4. Louisiana Soc. for **Electron Microscopy,** 3rd annual symp., New Orleans. (W. R. Goynes, Southern Regional Research Laboratory, Box 19687, New Orleans)

3–5. Central **Surgical** Assoc., Chicago, Ill. (C. E. Lischer, 457 N. Kingshighway, St. Louis 8, Mo.)

4–5. **Cineradiology**, 5th symp., Rochester, N.Y. (R. Gramiak, Div. of Diagnostic Radiology, Univ. of Rochester Medical Center, Rochester 14620)

4–6. American Assoc of **Pathologists and Bacteriologists**, 63rd annual mtg., Cleveland, Ohio. (P. Fitzgerald, Downstate Medical Center, 450 Clarkson Ave., Brooklyn 3, N.Y.)

5–7. Society for American **Archaeology**, 31st annual mtg., Univ. of Nevada, Reno. (D. D. Fowler, Dept. of Anthropology, Univ. of Nevada, Reno 89507)

5–10. International Acad. of **Proctology**, 18th annual conv., Miami Beach, Fla. (A. F. Cantor, 147-41 Sanford Ave., Flushing, N.Y. 11355)

6–11. American Soc. of **Photogrammetry**, Washington, D.C. (C. E. Palmer, 5917 Brookview Dr., Brookland Estates, Alexandria, Va.)

7–9. Fundamental **Cancer Research**, 20th annual symp., Univ. of Texas, Houston. (M. Mandel, Dept. of Biology, M. D. Anderson Hospital and Tumor Inst., Univ. of Texas, Houston 77025)

7–9. **Electric Propulsion**, 5th conf., American Inst. of Aeronautics and Astronautics, San Diego, Calif. (A. T. Forrester, Electro-Optical Systems, Inc., 300 N. Halstead St., Pasadena, Calif. 91107)

7–9. **Space**, 3rd congr., Cocoa Beach, Fla. (R. M. Barnes, PAA-Guided Missiles Range Div., Bldg. 423, MU 111, Patrick Air Force Base, Fla.)

7–11. American Soc. for **Metals**, western metal and tool exposition and conf., Los Angeles, Calif. (The Society, Metals Park, Ohio)

7–11. Society of **Plastics Engineers**, 22nd annual technical conf., Montreal, P.Q., Canada. (G. L. Bata, Union Carbide Canada, Ltd., P.O. Box 700, Pointe-aux-Trembles, P.Q.)

7–12. Inter-American **Nuclear Energy** Commission, 6th mtg., Washington, D.C. (J. D. Perkinson, Jr., Pan American Union, Washington 20006)

8–3. World **Meteorological** Organization, commission for synoptic meteorology, 4th session, Wiesbaden, Germany. (WMO, 41, avenue Giuseppe Motta, Geneva, Switzerland)

9–11. **Ethics in Medical Progress**, Ciba Foundation symp., London, England. (Ciba Foundation, 41 Portland Pl., London W.1)

9–13. Teaching Machines and **Programmed Instruction**, intern. symp., Nürtingen, Germany. (Arbeitsgemeinschaft Programmierte Instruktion, Inst. für Kybernetik, Pädagogische Hochschule Berlin, Malteserstr. 74-100, 1 Berlin 46)

10–11. **Heat Transfer** to Non-Newtonian Fluids, 12th annual heat transfer conf., Oklahoma State Univ., Stillwater. (J. D. Parker, Dept. of Mechanical Engineering, Oklahoma State Univ., Stillwater 74075)

11–13. National Council of **Teachers of Mathematics**, San Diego, Calif. (J. D. Gates, 1201 16th St., NW, Washington, D.C. 20036)

11–13. National **Wildlife** Federation, annual mtg., Pittsburgh, Pa. (T. L. Kimball, 1412 16th St., NW, Washington, D.C. 20036)

12–13. **Linguistics**, 11th natl. conf., Linguistic Circle of New York, New York. (L. Pap, State Univ. College, New Paltz 12561)

14–16. Society of **Toxicology**, annual scientific mtg., Williamsburg, Va. (C. S. Weil, Mellon Inst., 4400 Fifth Ave., Pittsburgh, Pa. 15213)

14–16. **Wildlife and Natural Resources** 31st North American conf., Pittsburgh, Pa. (C. R. Gutermuth, Wildlife Management Inst., Wire Bldg., Washington, D.C. 20005)

14–20. **Obstetrics and Gynecology**, 8th Australian congr., Hobart. (J. F. Correy, 173 Macquaire St., Hobart)

14–6 May. Extraordinary Administrative **Aeronautical Radio** conf., 2nd session, Geneva, Switzerland. (Intern. Telecommunication Union, Place des Nations, Geneva)

15–16. **Flame Resistant Polymers**, conf., London, England. (Secretary, Plastics Inst., 6 Mandeville Pl., London, W.1)

15–18. **Optical Soc.** of America, spring mtg., Washington, D.C. (M. E. Warga, 1155 16th St., NW, Washington, D.C. 20006)

17–19. **Isobaric Spin in Nuclear Physics**, intern. conf., Florida State Univ., Tallahassee. (D. Robson, Dept. of Physics, Florida State Univ., Tallahassee)

18–19. **Rural Health**, conf., Colorado Springs, Colo. (B. L. Bible, 535 N. Dearborn St., Chicago, Ill. 60610)

18–20. American **Psychosomatic** Soc. annual mtg., Chicago, Ill. (W. A. Greene, The Society, 265 Nassau Rd., Roosevelt, N.Y. 11575)

20–23. **Solar Energy** Soc., 2nd annual mtg., Boston, Mass. (F. Edlin, Arizona State Univ., Tempe 85281)

21–24. **Aerospace Instrumentation**, 4th intern. symp., College of Aeronautics, Cranfield, England. (E. K. Merewether, ISA Aerospace Industry Div., 4515 Canoga Ave., Woodland Hills, Calif.)

21–25. Institute of **Electrical and Electronics Engineers**, intern. conv., New York, N.Y. (IEEE, 345 E. 47 St., New York 10017)

22–23. **Biomagnetics**, 3rd intern. symp., Univ. of Illinois, Chicago. (M. F. Barnothy, Univ. of Illinois, 833 S. Wood St., Chicago)

22–23. Modern Concepts of **Cardiovascular Diseases**, conf. and workshop, Reno, Nev. (G. T. Smith, Laboratory of Patho-Physiology, Univ. of Nevada, Reno 89507)

22–24. Measurement and Applications of **Neutron Cross Sections**, conf., Washington, D.C. (W. W. Havens, Dept. of Physics, Columbia Univ., 538 W. 120 St, New York 10027)

22–31. American **Chemical** Soc., spring mtg., Pittsburgh, Pa. (ACS, 1155 16th St., NW, Washington, D.C.)

23–25. Institute of **Mathematical Statistics**, Purdue Univ., Lafayette, Ind. (G. E. Nicholson, Jr., Univ. of North Carolina, Chapel Hill)

23–25. Modern Methods of **Weather Forecasting and Analysis**, Chicago, Ill. (J. R. Fulks, U.S. Weather Bureau, 5730 S. Woodlawn Ave., Chicago)

24–26. **Biomathematics and Computer Science** in the Life Sciences, symp., Houston, Tex. (Dean, Div. of Continuing Education, Univ. of Texas Graduate School

of Biomedical Sciences, Texas Medical Center, Houston 77025)

24–26. Pediatric and Adolescent **Gynecology**, conf., New York Acad. of Sciences, New York. (W. R. Lang, Jefferson Medical College of Philadelphia, 1025 Walnut St., Philadelphia, Pa.)

24–26. **Pollution and Marine Ecology**, conf., Galveston, Tex. (S. M. Ray, Texas A&M Univ. Marine Laboratory, Galveston 77550)

24–27. International Assoc. for **Dental Research**, 44th general mtg., Miami, Fla. (G. H. Rovelstad, U.S. Navy Dental School, Natl. Naval Medical Center, Bethesda, Md. 20014)

25–26. National Assoc. of Biology Teachers, western regional conv., Los Angeles, Calif. (The Association, Professional Building, Great Falls, Mont.)

26–2. **Stress Analysis**, 3rd intern. conf., Berlin, Germany. (H. Kotthaus, Verein Deutscher Ingenieure, Prinz-Georg Str. 77/79, 4 Düsseldorf 10)

26–27. Arizona **Chest Disease** Symp., Tucson. (E. A. Oppenheimer, P.O. Box 6067, Tucson 85716)

27–30. American Assoc. of **Dental Schools**, Miami Beach, Fla. (R. Sullens, 840 N. Lake Shore Dr., Chicago, Ill.)

28–30. **Great Lakes Research**, 9th conf., Chicago, Ill. (B. M. McCormac, IIT Research Inst., 10 W. 35 St., Chicago 60616)

28–31. Collegium Intern. **Neuro-Psychopharmacologicum**, 5th biennial mtg., Washington, D.C. (M. K. Taylor, 3636 16th St., NW, Washington 20010)

29–31. **Airborne Infection**, 2nd intern. conf., Illinois Inst. of Technology, Chicago. (E. K. Wolfe, U.S. Army Biological Laboratories, Fort Detrick, Frederick, Md.)

29–31. **Applied Meteorology**, 6th natl. conf., Los Angeles, Calif. (B. N. Charles, Booz-Allen Applied Research, 6151 W. Century Blvd., Los Angeles 90045)

29–31. **Chemical** Soc., anniversary mtgs., Oxford, England. (General Secretary, Burlington House, London W.1)

29–31. **Surface-Active Substances**, intern. conf., Berlin, East Germany. (Inst. für Fettchemie, Deutsche Akademie der Wissenschaften zu Berlin, Rudower Chaussee 5, 1199 Berlin-Adlershof)

29–31. **Symbolic and Algebraic Manipulation**, symp., Assoc. for Computing Machinery, Washington, D.C. (J. E. Sammet, I.B.M. Corp., 545 Technology Sq., Cambridge, Mass. 02139)

29–1. American Assoc. for **Contamination Control**, 5th annual technical mtg., Houston, Tex. (W. T. Maloney, The Association, 6 Beacon St., Boston, Mass. 02108)

29–1. Ultraviolet and X-Ray **Spectroscopy of Laboratory and Astrophysical Plasma**, conf., Abingdon, England. (Inst. of Physics and the Physics Soc., 47 Belgrave Sq., London, S.W.1, England)

30. **Oral Cancer**, 4th symp., St. Francis Hospital, Poughkeepsie, N.Y. (M. A. Engelman, 1 E. Academy St., Wappingers Falls)

30–1. **Magnetohydrodynamics**, 7th symp., Princeton, N.J. (R. G. Jahn, Guggenheim Laboratories, Forrestal Research Center, Princeton, N.J. 08540)

31–2. **Michigan Acad. of Science, Arts, and Letters**, Wayne State Univ., Detroit. (E. A. Wunsch, Dept. of English, Univ. of Michigan, Ann Arbor)

CONFERENCE AND SYMPOSIUM REPORTS

(Continued from page 320)

The Genetics of Colonizing Species. Proceedings of the First International Union of Biological Sciences Symposia on General Biology (Asilomar, Calif.), February 1964. H. G. Baker and G. Ledyard Stebbins, Eds. Academic Press, New York, 1965. 606 pp. Illus. $24. Twenty-five papers contributed by R. W. Allard, H. G. Baker, M. H. Bannister, L. C. Birch, Hampton L. Carson, Paul DeBach, Theodosius Dobzhansky, Friedrich Ehrendorfer, Frank Fenner, Alex Fraser, John L. Harper, Charles B. Heiser, Jr., Walter E. Howard, J. Katznelson, R. C. Lewontin, Ernst Mayr, F. H. W. Morley, Gerald A. Mulligan, J. W. Purseglove, Forbes W. Robertson, Kan-Ichi Sakai, G. Ledyard Stebbins, C. H. Waddington, Edward O. Wilson, Frank Wilson, Kazimierz Wodzicki, and Daniel Zohary.

Marine Geochemistry. A symposium (Kingston, R.I.), October 1964. David R. Schink and James T. Corless, Eds. Narragansett Marine Laboratory, Univ. of Rhode Island, Kingston, 1965. 380 pp. Illus. Paper. Thirteen papers: "The dating of molluscs from raised marine terraces" by David L. Thurber; "Deposition rates by protactinium method" by William M. Sackett; "Trace element economy in the oceans" by Karl K. Turekian and Donald F. Schutz; "Some thoughts on dissolved gases in the oceans" by Bruce B. Benson; "Distribution of gamma emitting radionuclides in the Gulf of Mexico" by J. Frank Slowey, David Hayes, Bryon Dixon, and Donald W. Hood; "Sulfur isotopes in the marine environment" by M. L. Jensen; "Factors affecting the distribution of deuterium in the ocean" by Alfred C. Redfield and Irving Friedman; "Radiogenic leads of the Canadian and Baltic Shield regions" by Tsaihwa J. Chow; "Geochemistry of iodine, bromine, and chlorine in the air-sea-sediment system" by John W. Winchester and Robert A. Duce; "Marine geochemistry: Some guesses and gadgets" by Dayton E. Carritt; "Concentrations of common lead in Greenland snows" by M. Murozumi, T. J. Chow, and C. Patterson; "Manganese-iron accumulations in the shallow marine environment" by F. T. Manheim; and "Isotopic oceanography: Deuterium and oxygen 18 variations in the ocean and the marine atmosphere" by H. Craig and L. I. Gordon.

Molecular Biophysics. Proceedings of an international summer school (Squaw Valley, Calif.), August 1964. Bernard Pullman and Mitchel Weissbluth, Eds. Academic Press, New York, 1965. 462 pp. Illus. $19.50. Fifteen papers presented at a summer school sponsored jointly by NATO and the U.S. Office of Naval Research.

Mossbauer Effect Methodology. vol. 1. Proceedings of a symposium (New York), January 1965. Irwin J. Gruverman, Ed. Plenum Press, New York, 1965. 208 pp. Illus. $12.50. Fifteen papers: Reviews (3 papers); Spectrometers (3 papers); Measurement (5 papers); and Environment (4 papers).

Oxidases and Related Redox Systems. vols. 1 and 2. Proceedings of a symposium

(Amherst, Mass.), July 1964. Tsoo E. King, Howard S. Mason, and Martin Morrison, Eds. Wiley, New York, 1965. vol. 1, 560 pp; vol. 2, 632 pp. Illus. $32.50 set. Forty-seven papers.

Oxygen. Proceedings of a symposium sponsored by the New York Heart Association. Alfred P. Fishman, Ed. Little, Brown, Boston, 1965. 295 pp. Illus. $6. Eleven papers: Structure and function of oxygen (2 papers); Oxygen-transporting pigments (3 papers); Oxygen consumption by the cell (3 papers); and Nonhemoproteins and oxygen (3 papers).

Physics of Solids at High Pressures. Proceedings of the first international conference (Tucson, Ariz.), April 1965. C. T. Tomizuka and R. M. Emrick, Eds. Academic Press, New York, 1965. 617 pp. Illus. $14.50. Thirty-six papers: Electronic properties (11 papers); Magnetism (6 papers); Lattice defects (8 papers); Phase transformations (6 papers); and Phase transformations and lattice properties (5 papers).

Population Dynamics: International Action and Training Programs. Proceedings of the international conference on population (Baltimore), May 1964. Minoru Muramatsu and Paul A. Harper. Johns Hopkins Press, Baltimore, 1965. 256 pp. Illus. $6.50. Nineteen papers.

Programmed Teaching. A symposium on automation in education. Joseph S. Roucek, Ed. Philosophical Library, New York, 1965. 204 pp. $10. Thirteen papers: "Teaching machines—Six dangers and one advantage" by Robert B. Nordberg; "The effects of the preparation and utilization of automated teaching on the classroom teacher" by Jerome P. Lysaught; "Teacher education and teaching machines" by Emma E. Plattor; "The programmed textbook or the teaching machine?" by Kenneth V. Lottich; "Exploring the limits on the automation of guided, planned experiences in creative thinking" by E. Paul Torrance; "Programmed learning and the teaching of the humanities and social sciences: "Some practical applications" by Robert M. Frumkin; "Automation in the secondary school social studies" by Eldon E. Snyder; "Programmed instruction in the language arts" by Regina M. Goff; "Automation and culturally deprived children" by Ralph H. Hines; "The use of instrumentation in special education" by Norman R. Willey; "The use of teaching machines with the mentally retarded" by Betty M. Bradley; "Programmed instruction for retarded children" by Leslie F. Malpass and others; and "Instructional television" by Donald L. Barnes.

Regeneration in Animals and Related Problems. An international symposium (Athens, Greece), April 1964. V. Kiortsis and H. A. L. Trampusch, Eds. North-Holland, Amsterdam, 1965. 592 pp. Illus. Forty-five papers given at a symposium sponsored by NATO's Division of Scientific Affairs.

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Kline; "Science and technology in the emerging nations" by Abdus Salam; "Implications of population trends for the military" by Phillip M. Hauser; "The frontiers of psychology" by Ernest R. Hilgard; "Living models for lively artifacts" by Warren S. McCulloch; "Theories of memory" by Julian H. Bigelow; "Biological clocks" by Colin S. Pittendrigh; "Combustion instability" by Frank T. McClure; "The stability of nonlinear dynamical systems" by Joseph P. LaSalle; "Tides of the planet earth" by Walter H. Munk; "High field magnets and magnetospectroscopy" by Benjamin Lax; "The relation of ATR to absorption spectra in the infrared" by Bryce Crawford, Jr.; "Space chemistry" by Willard F. Libby; and "The nature of the long-range interaction in hemoglobin" by Willard F. Libby.

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The Scientific Basis of Drug Therapy in Psychiatry. A symposium (London), September 1964. John Marks and C. M. B. Pare, Eds. Pergamon, New York, 1965. 231 pp. Illus. $10.50. Fourteen papers: Basic concepts (3 papers); Major tranquillizers (4 papers); Anti-depressants (3 papers); Anti-anxiety compounds (2 papers); and General considerations (2 papers).

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General

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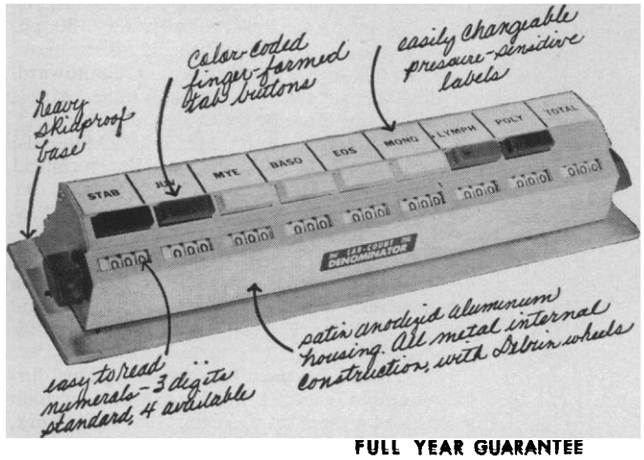

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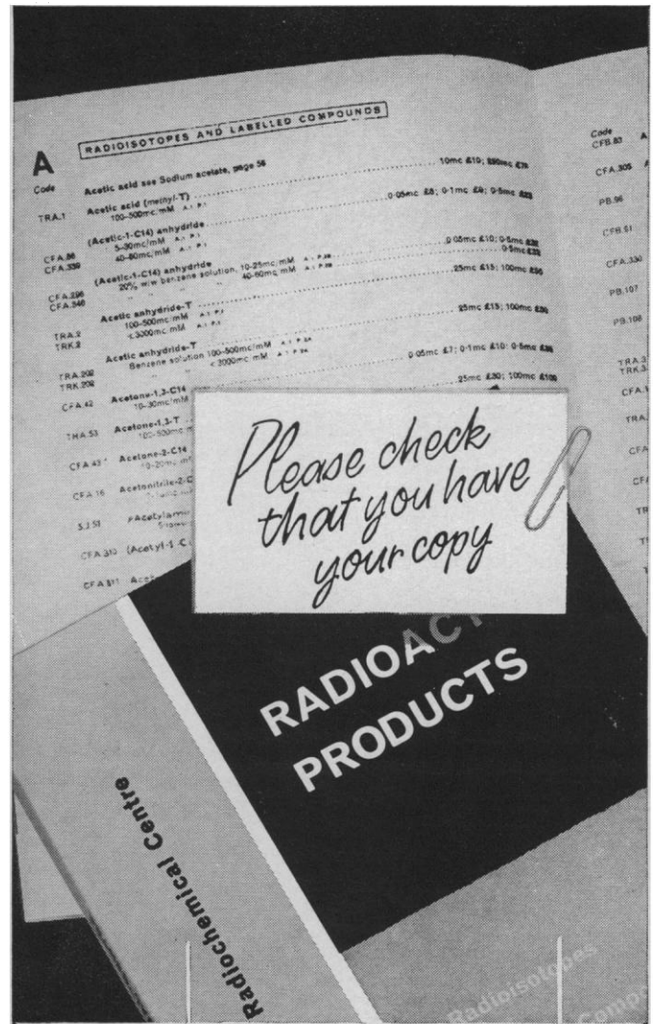

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Myrl H. Ahrendt. Holt, Rinehart and Winston, New York, 1965. 160 pp. Illus. Paper. Holt Library of Science, Series 3.

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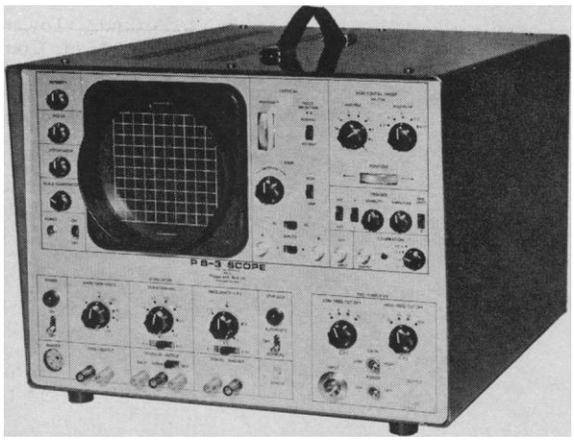

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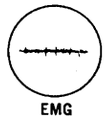

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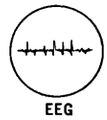

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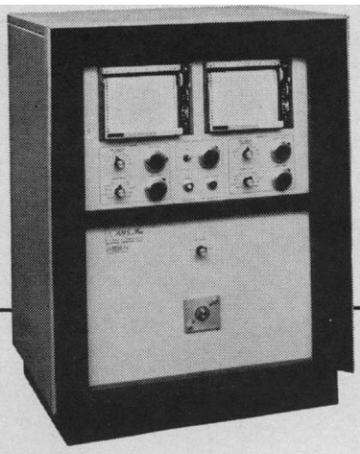

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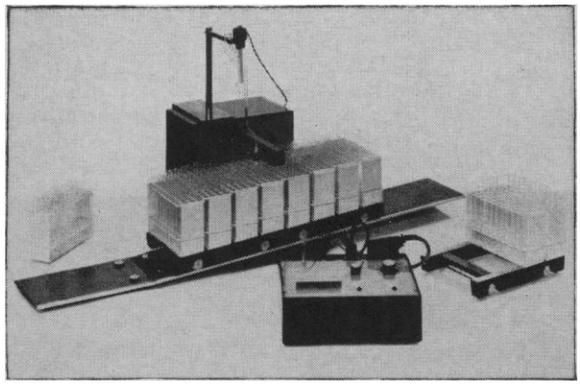

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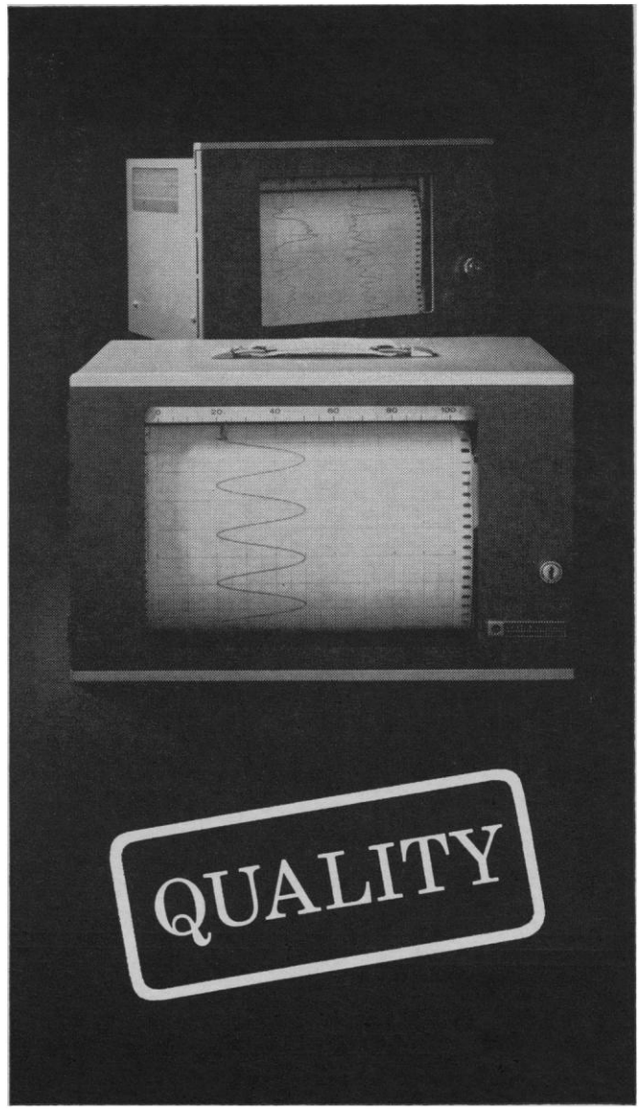

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