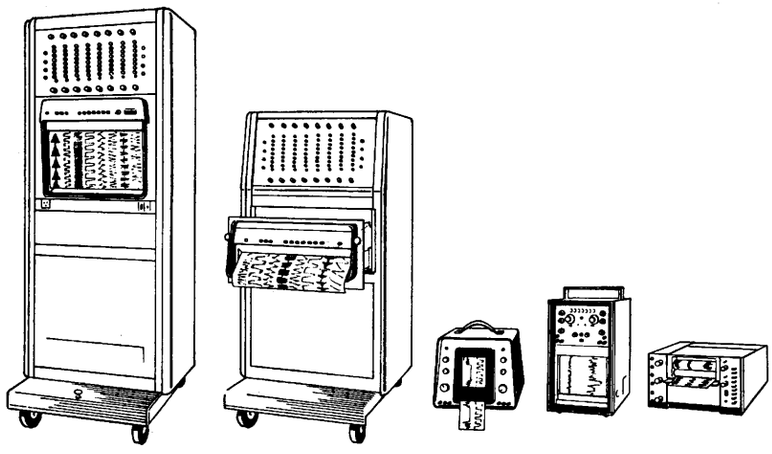
SCIENCE

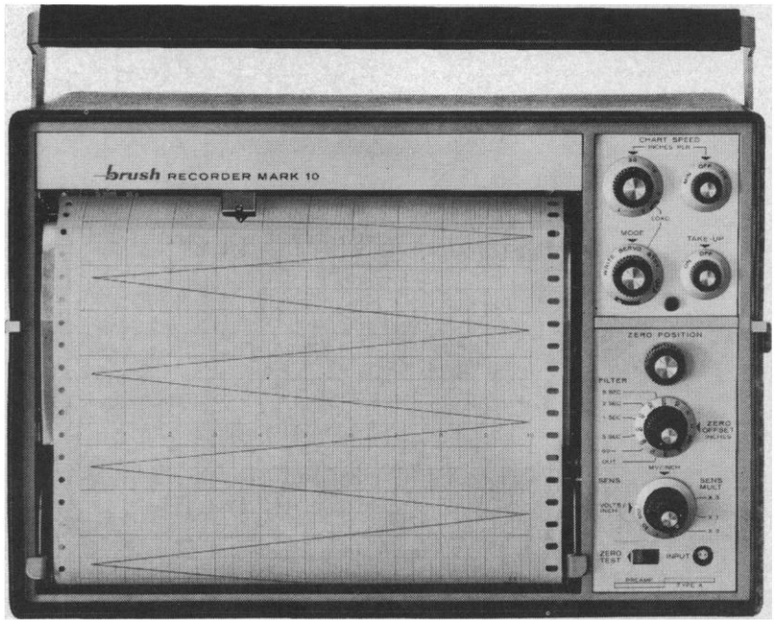
14 August 1964

Vol. 145, No. 3633

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

POTTO AND INFANT





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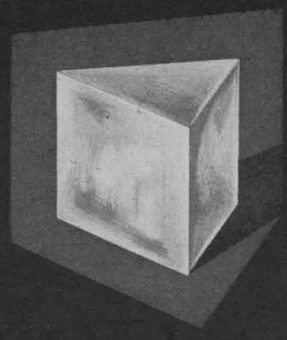

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Twenty-nine-day-old *Perodicticus potto*, born 2 January 1964 at the Oregon Regional Primate Research Center, Beaverton. The infant weighed 66 grams 4 days after birth, and 189.6 grams when this picture was taken. Maternal care was excellent, and the infant more than tripled its weight in 6 weeks. See page 663. [Charles Vonwald]

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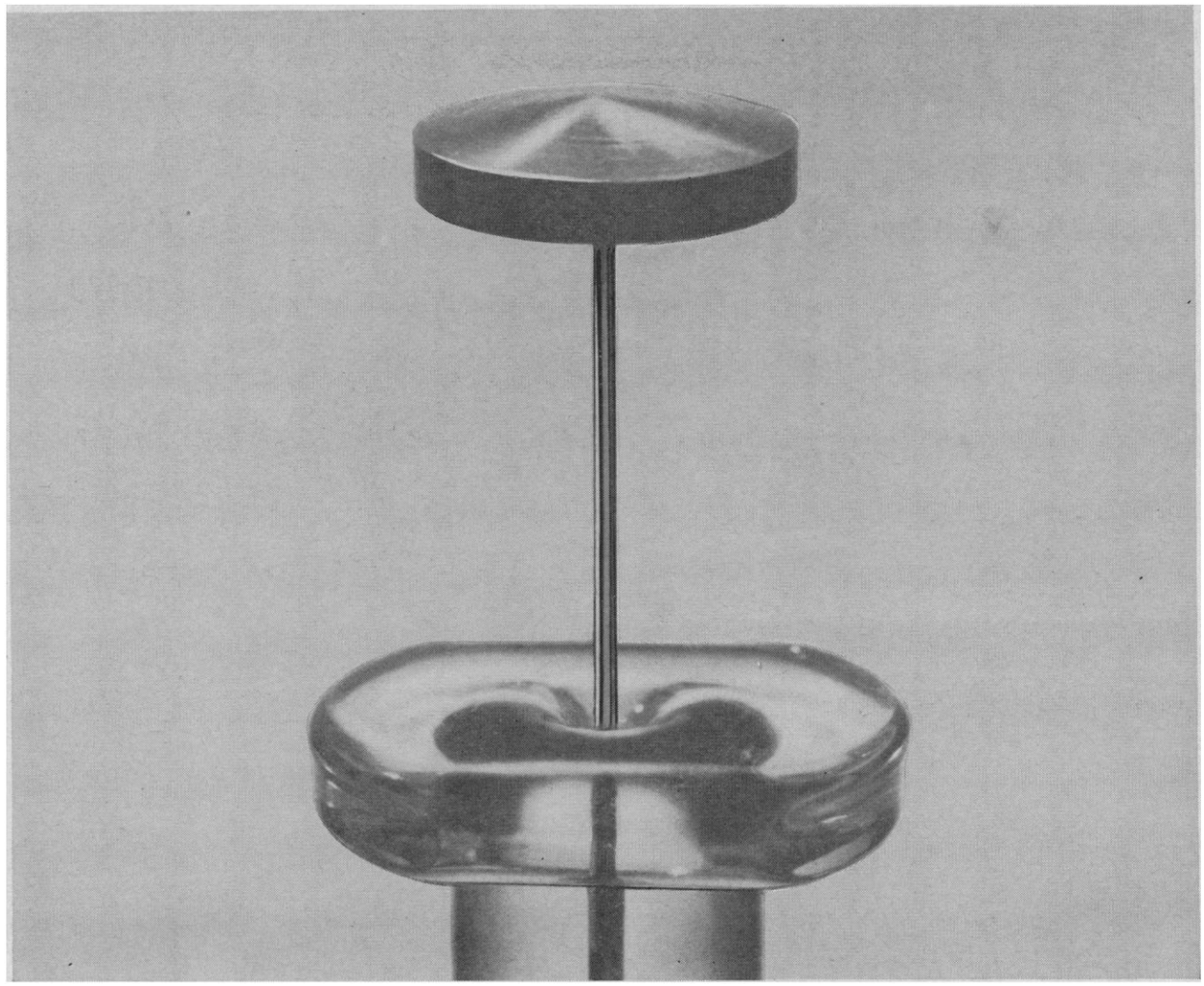

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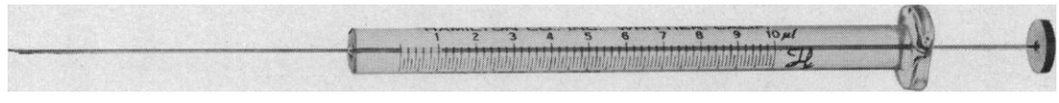

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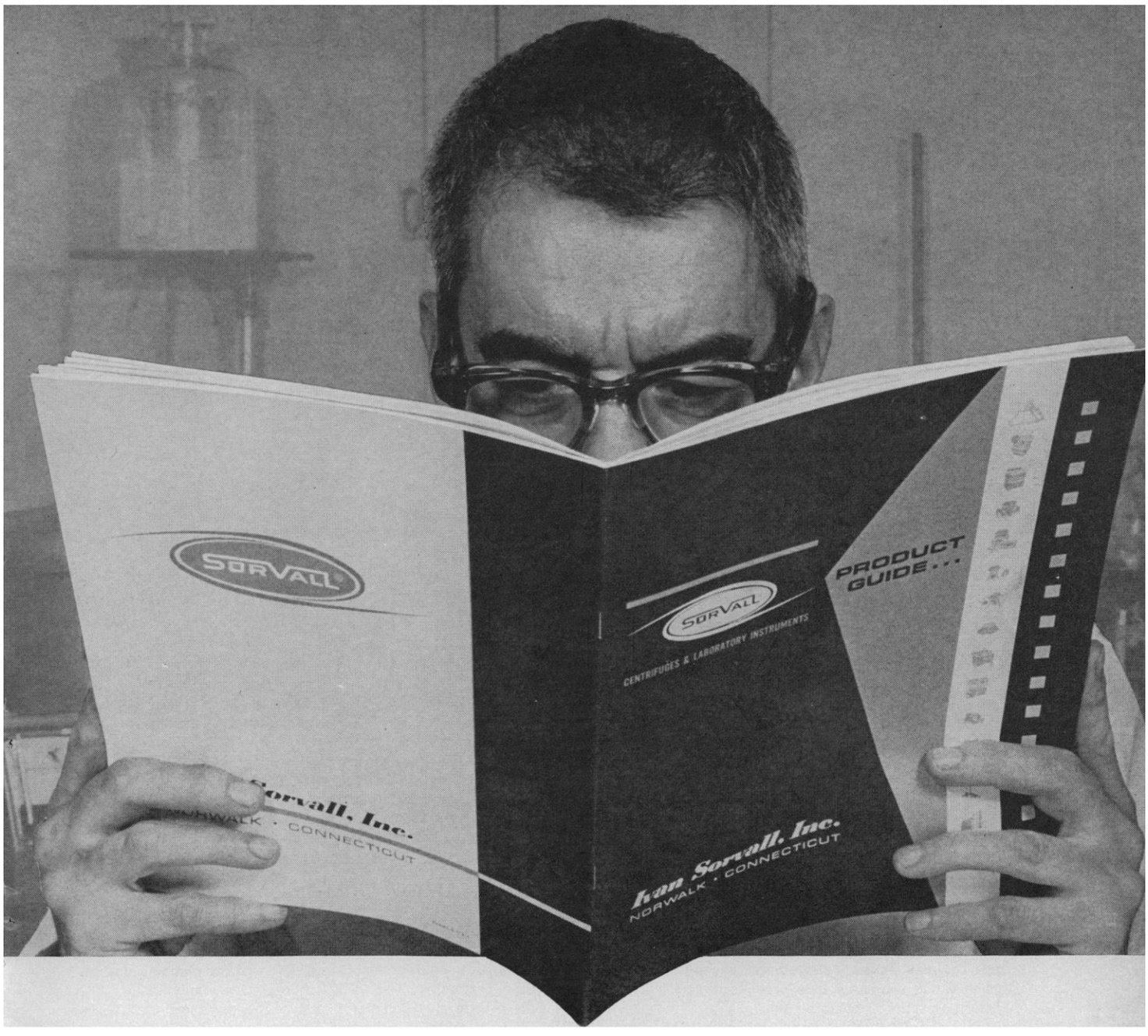

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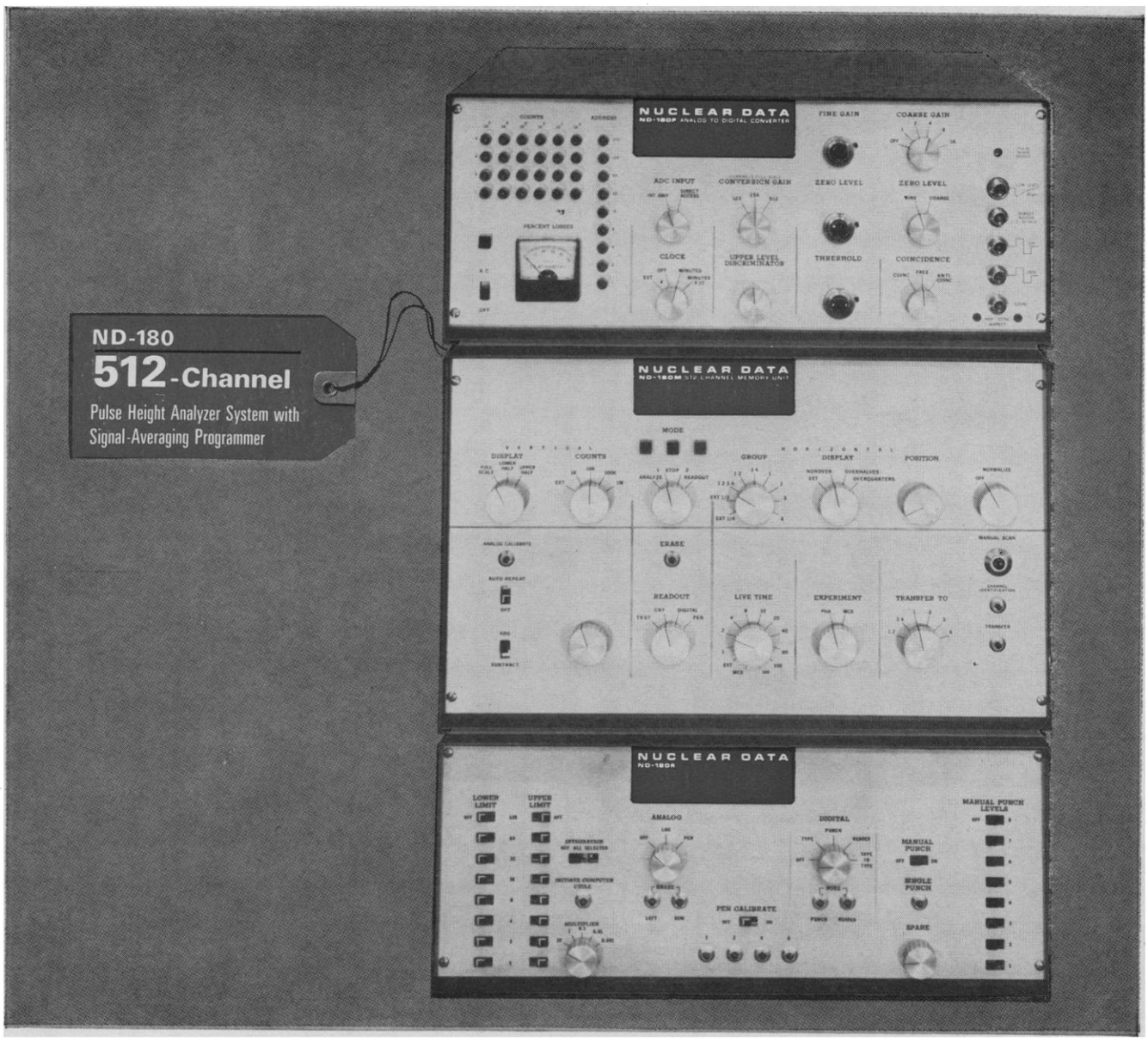

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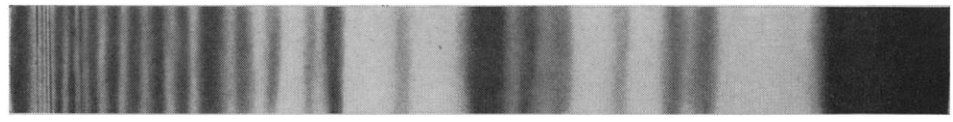

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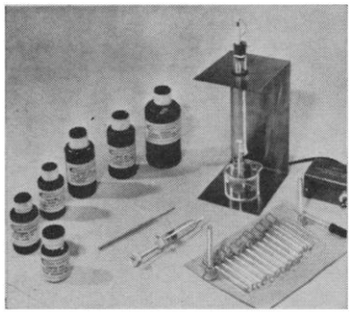

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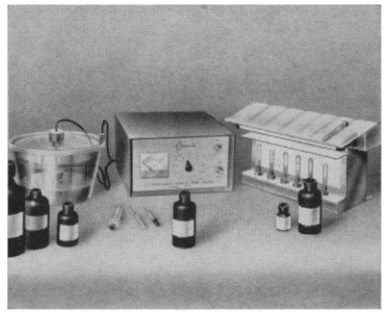

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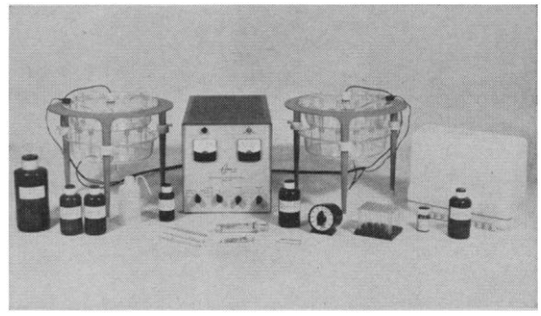

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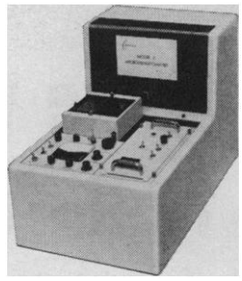

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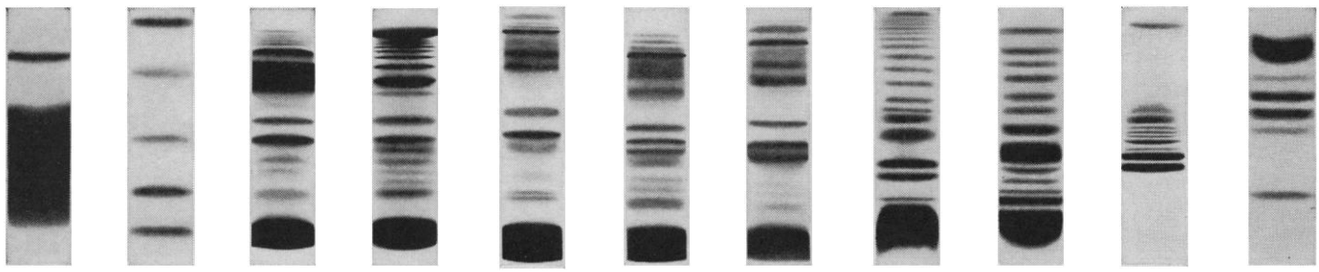

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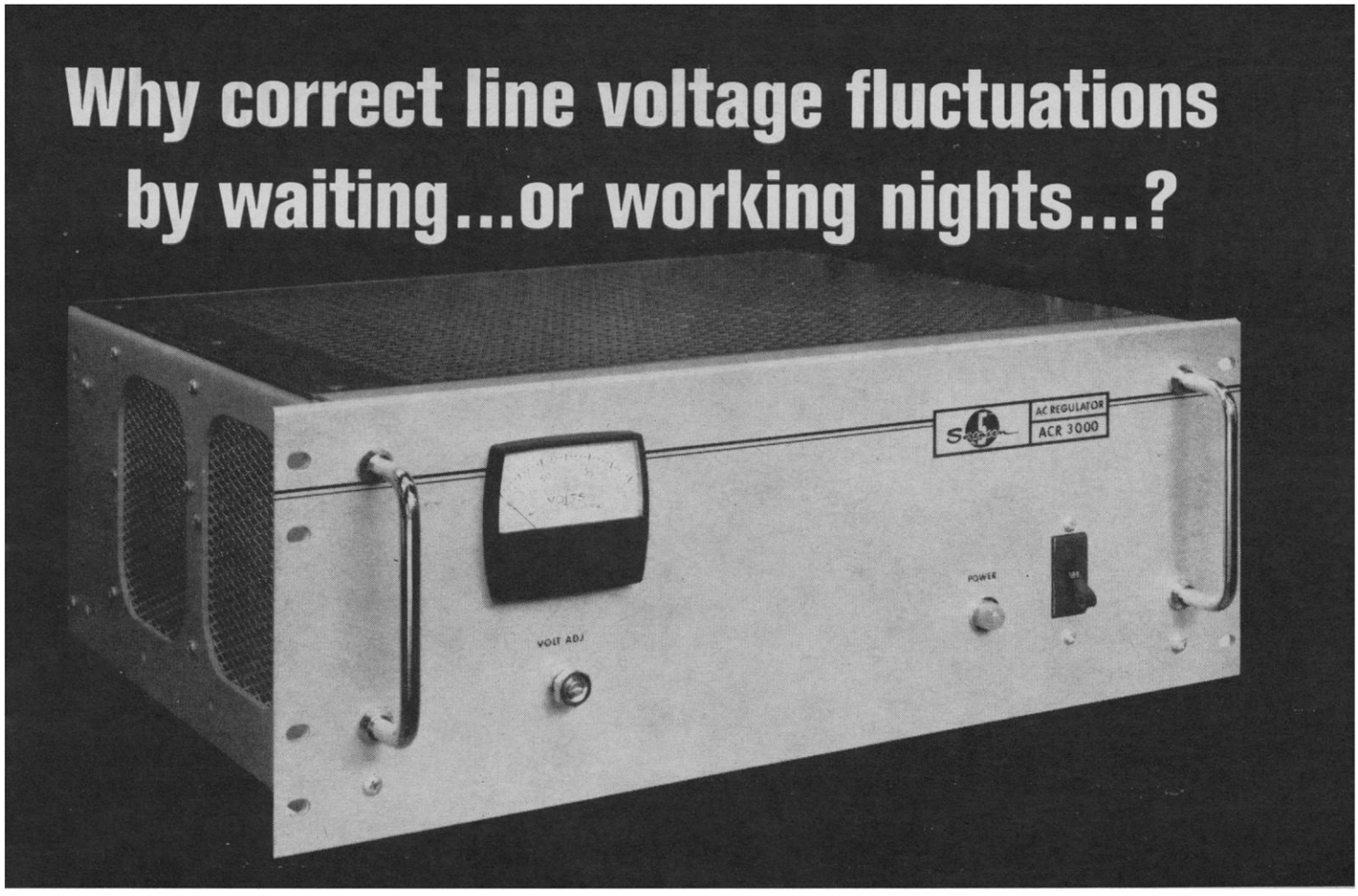

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ACR 3000	0-3000	±0.1%	±0.1%	95%	75%	0-50	.015%	19	7	15	7	555
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CHROMATOGRAPHY

6 papers on latest developments in automated amino acid chromatography. Other individual presentations on automated chromatography for peptides, nucleotides, sugar, hexuronic acid and hexosamines, protein, etc.

LIPID ANALYSES

6 papers devoted to new automated techniques for both individual and simultaneous analyses of lipids, including cholesterol, tryglycerides, etc.

ENZYME ANALYSES

5 papers on automated techniques in enzyme analysis; many encompass simultaneous multiparameter testing.

ELECTROPHORESIS

New automated techniques described for routine serum electrophoresis and nucleotide sequencing studies.

MULTIPLE ANALYSIS AND SCREENING PROCEDURES

8 papers on new automated techniques by which a series of analyses are performed from one sample. They cover design, chemistries, data handling and processing, and operating. Others describe automated advances in blood chemistry screening of large groups.

GYNECOLOGICAL CANCER

A paper on a new automated enzyme test as a screening procedure for vaginal and uterine cancer.

HEMATOLOGY

A paper on new, fully automated system for simultaneous red and white cell counting/hemoglobin analysis.

IN VIVO TECHNIQUES

Paper describes new technique for automatic control of blood sugar level via continuous monitoring and feedback control. Another, on regulation of blood creatinine concentration by automatic analysis and feedback control.

DIGESTION TECHNIQUES

5 papers on new automated digestion techniques include simultaneously measured nitrogen/chromium in feeds; determining phosphates in pesticide residues, etc.

NEW METHODS

8 papers on hitherto unpublished automated methodology for clinical and industrial applications, including new fluorometric methods, completely automatic PBI, amylase, etc.

CELL PHYSIOLOGY

Study of cell growth by continuous monitoring of several parameters such as DNA, RNA, total protein, total cell population, CO_2, glucose, etc.

POLLUTION ANALYSES

9 papers cover automated systems and methods to monitor and control water and air pollution. Specific subjects: oceanic studies; cyanide and phenol analyses of plant wastes; large body of water profiles; methods for chemical oxygen demand, sulfur dioxide-trioxide, fluorides, nitric oxide-nitrogen dioxide, etc.

POWER STATION CHEMISTRY

Papers describe monitoring of copper in steam-water cycle at super critical power plant; closed loop system for automatic phosphate feed to high pressure boilers.

CHEMICAL PROCESS CONTROL

Series of papers describe role of automated chemical analysis in controlling closed loop chemical processing systems.

SOILS AND FERTILIZERS

5 papers on automation of soils and fertilizer component analysis (phosphates, sulfates, potassium, nitrogen, etc.); individual methods and simultaneous analyses from a single sample described.

PHARMACEUTICAL ASSAYS

3 papers present descriptions of automated techniques for single tablet assays; microbiological assays; and insulin assays.

TEXTILE PROCESSING

Papers on control of dye processing by automated acidity and chrome analyses; continuous control of bleaching by automated analysis.

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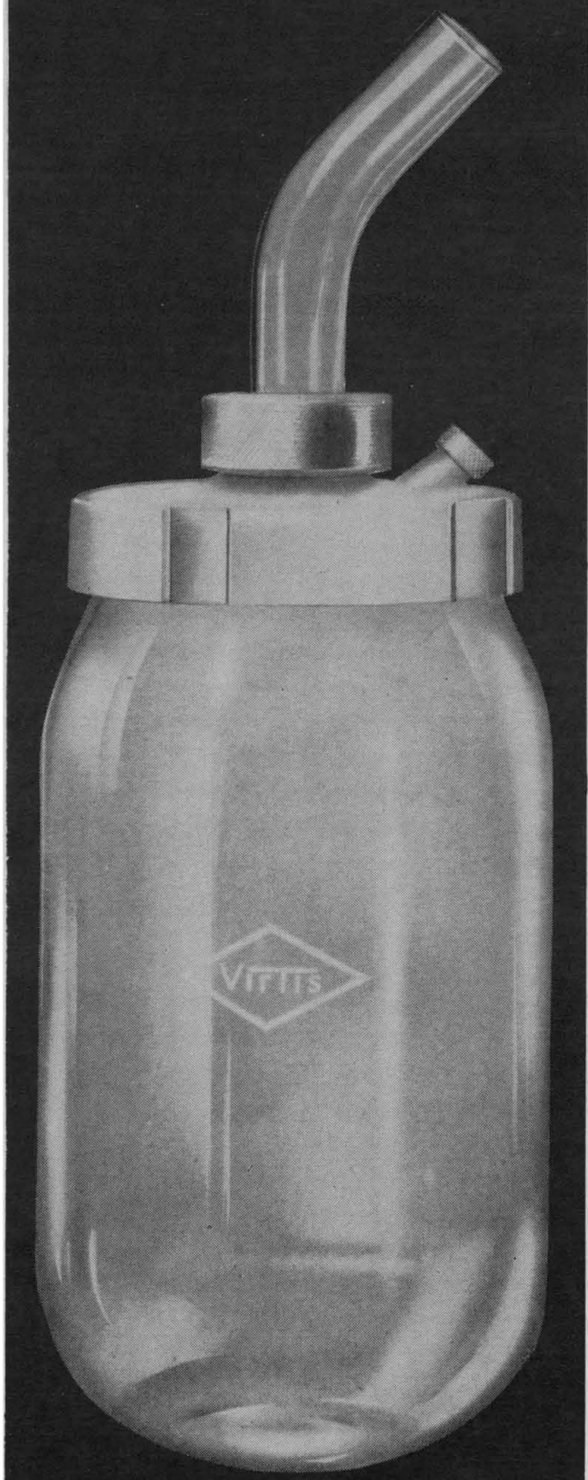


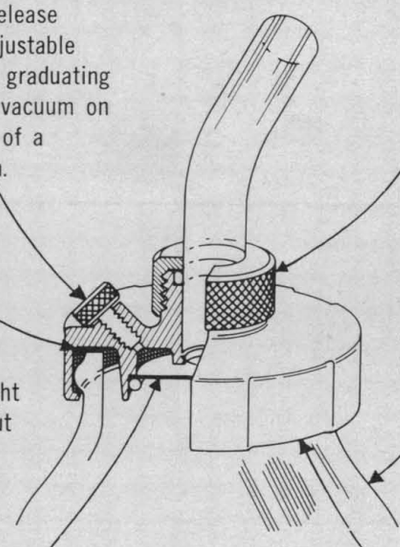
Let's talk *freeze drying* FLASKS

— that really prevent partial loss of Samples and Cross-Contamination. A FLASK with a FILTER? YES, and at least 6 MORE REASONS why VIRTIS FILTER-SEAL* FLASKS are being SPECIFIED in leading Research and Development Laboratories.

CHECK THE "ALL NEW" FILTER-SEAL FEATURES

NEW VACUUM Release Positive Adjustable control for graduating release of vacuum on conclusion of a dehydration.

NEW ADAPTER LOCKING by convenient and positive ½ turn lock — or — release.



NEW VACUUM GASKET (Patented) Provides a vacuum tight seal without the use of vacuum grease.

NEW Pyrex Brand Glass capacities: (ml.) 40, 75, 150, 300 600 and 1,200

NEW VAPOR-FLOW FILTER An exclusive VirTis feature (Pat. Pend.) Prevents partial loss of sample during freeze-drying — Protection against "blow-back" and partial loss of expensive, radioactive or contagious samples.

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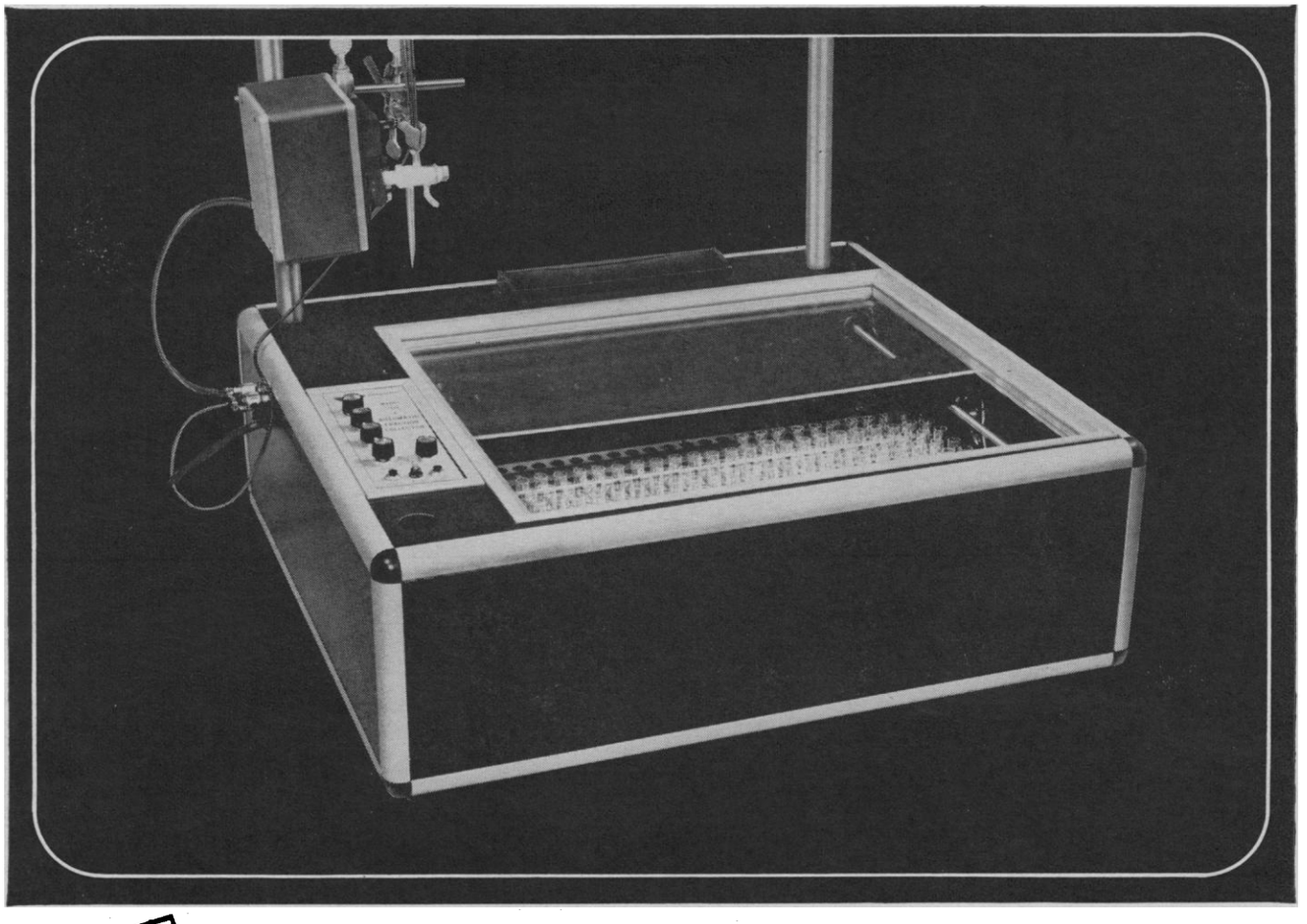
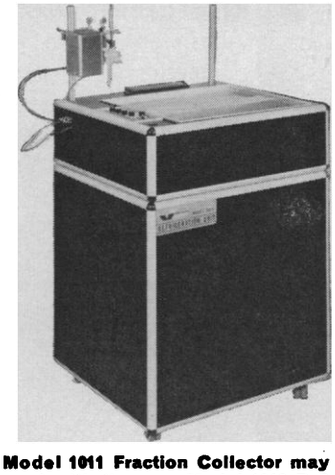


new automatic fraction collector

Vanguard's Model 1011 Automatic Fraction Collector provides the investigator with far greater reliability plus ease of operation plus extremely large test tube capacity—and at a price that makes this instrument available to every laboratory. Here are a few of the features that make Model 1011 Automatic Fraction Collector a remarkable instrument: ■ Space-saving design—Model 1011 measures only 29″ wide, 8″ high, and 26″ deep ■ 400 test tube capacity—tubes contained in eight independently removable stainless steel trays (each tray holds 50 standard size test tubes of 13mm., 15mm., 16mm., or 18mm.) ■ Three sturdy 4-foot stainless steel support tubes in triangular configuration for rigidity ■ Time, Drop and Volumetric capability are all standard at no extra cost ■ Solid state electronics ■ Sliding, clear glass Dust Cover protects test tubes from external contamination ■ No siphons needed with unit.



Model 1011 Fraction Collector may be used with the new Model 1012 Refrigeration Unit. This accessory transforms Model 1011 into a DRY Refrigerated Fraction Collector. Model 1012 measures only 29″ wide, 29″ high, 26″ deep, and is thermostatically controlled.

For complete specifications on the Model 1011 Automatic Fraction Collector and the Model 1012 Refrigeration Unit (shown at left), send for new informative brochure. For immediate information and/or a quotation, call your nearest Vanguard office.

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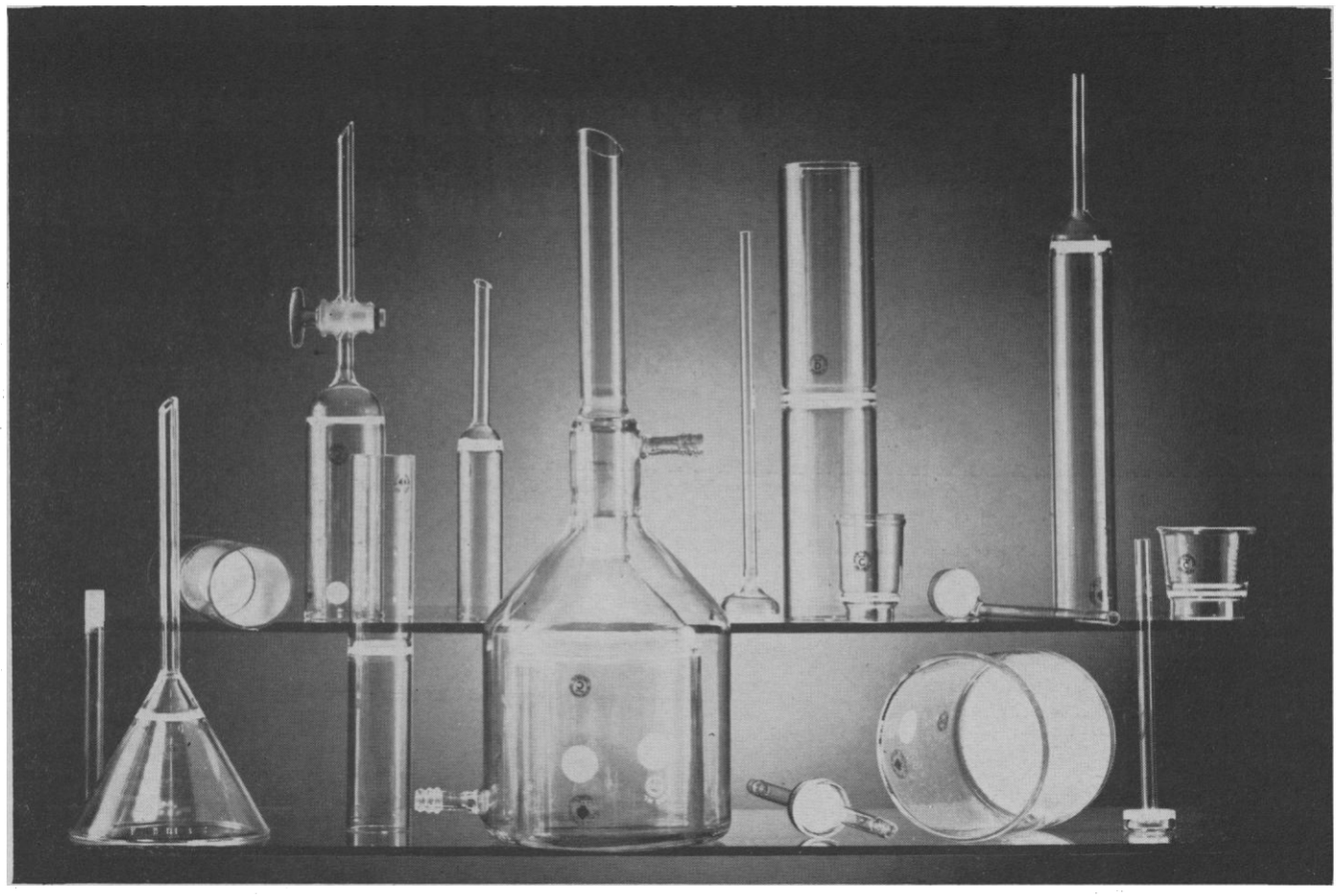

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ACE GLASS INCORPORATED
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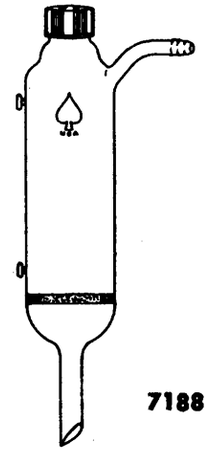
LOUISVILLE, Ky. BOX 996 SPRINGFIELD, MASS. BOX 1688

Dannley Pressure Filter Funnel

makes pressure filtration practical for the first time for small scale use.



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For details, send for NEW Ace Fritted Ware Brochure!

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The Selecta-System is a truly modular gas chromatograph designed to meet the ever-changing needs of the research chemist. Extremely versatile, the instrument adapts to new techniques in gas chromatography without complete instrument obsolescence. You purchase only what you need — when you need it. Salient features include:

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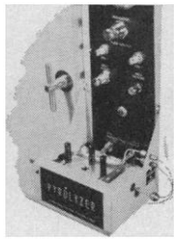
- On-Column Injection
- Capillary Column capability
- Maximum Detector selection
- Low instrument obsolescence
- 500°C upper Temperature Limit
- Versatility



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- Model 5180 Pyrolysis System obtains maximum reproducibility. Features a selectable, reproducible time interval. Does not interrupt carrier flow during operation.
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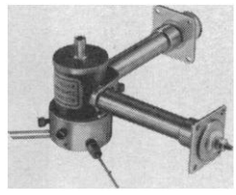
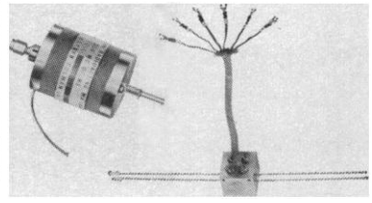
- Dual Channel Gas Chromatography — Dual detection systems such as Flame Ionization and Electron Attachment provide an additional dimension in data presentation. Many detector combinations, easily installed in any Selecta-System instrument.
- Dual Column Temperature Programming — This highly useful technique for column bleed compensation (during temperature programming) is available for Flame or Argon ionization detector systems with Series 5000 Selecta-System instruments.





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- Model 5120 Electron Attachment Detector. This extremely versatile detector features the exclusive adjustable anode. This unique feature permits operation as electron attachment, cross section, and electron drift velocity detectors. Detection of picogram amounts (10^{-15} mole/sec or better).
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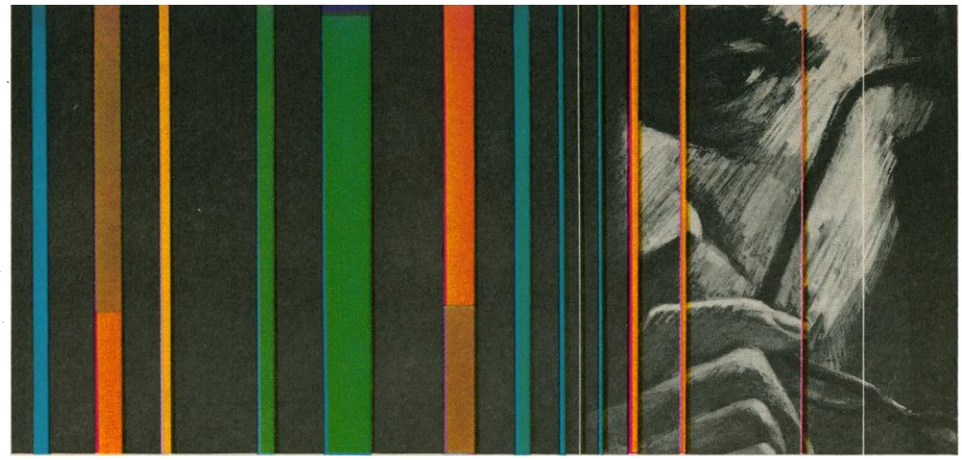

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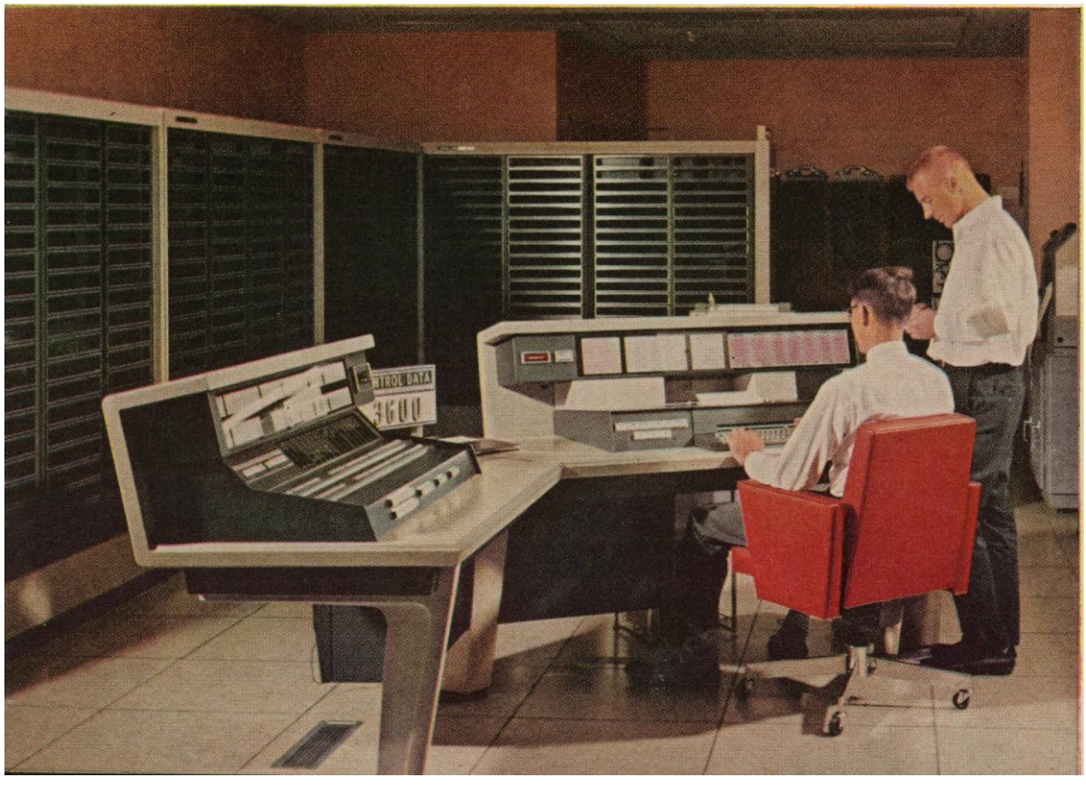

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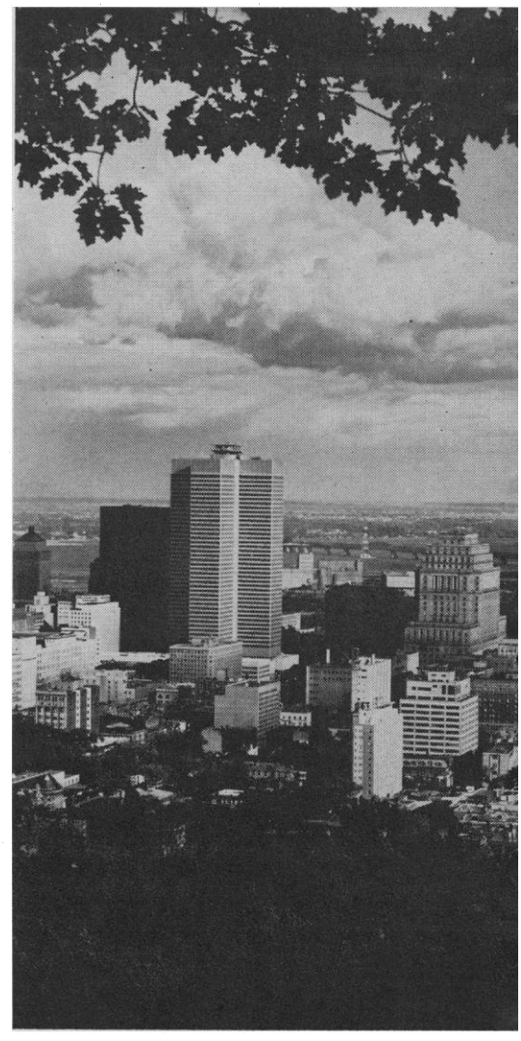
MONTREAL • 131st AAAS

Order Your General Program

It provides complete, detailed information about all the sessions and symposia scheduled, the Annual Exposition of Science and Industry, and the Science Theatre.



Program Highlights

Moving Frontiers of Science V. C. Wynne-Edwards on self-regulating systems in animal populations; J. M. Harrison on nonrenewable world resources; Philip Morrison on a topic on the border between nuclear physics and astronomy; and Clement L. Markert on role of genes in embryonic development.

Interdisciplinary Symposia Possible meteoric or lunar influences on meteorological phenomena; basic concepts of biochemical differentiation; medical geology and geography; history of the popularization of science.

Special Sessions AAAS Presidential Address by Alan T. Waterman; the Joint Address of Sigma Xi and Phi Beta Kappa by René Dubos; the George Sarton Memorial Address by Lloyd G. Stevenson; and the National Geographic Society Illustrated Lecture.

International Conference on Primate Behavior Three AAAS sections and the combined ESA and ASZ Section on Animal Behavior and Sociobiology are sponsors. Five sessions, open to the public, will include 37 speakers from four continents.

AAAS Committees Sessions of the AAAS Committee on Meetings, including two sessions on the sociology of science arranged and chaired by Robert K. Merton; the Committee on Science in the Promotion of Human Welfare; the Commission on Science Education.

Sections and Societies The 20 AAAS Sections and some 76 participating societies are scheduling specialized symposia; some have sessions for contributed papers.

AAAS Science Theatre The latest foreign and domestic films.

Exposition The Annual Exposition of Science and Industry is adjacent to all session rooms on the convention floor of the Queen Elizabeth Hotel.

Advance Registration By registering in advance, you avoid delay at the Registration Center on arrival, you receive the *General Program* in time to plan your days at the meeting, and your name is posted in the Visible Directory of Registrants when the meeting opens. Use the coupon below.

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1a. ☐—Enclosed is $5.00 Advance Registration Fee. This brings me the **General Program** and a **Convention Badge.**

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MEETING • 26–31 DECEMBER

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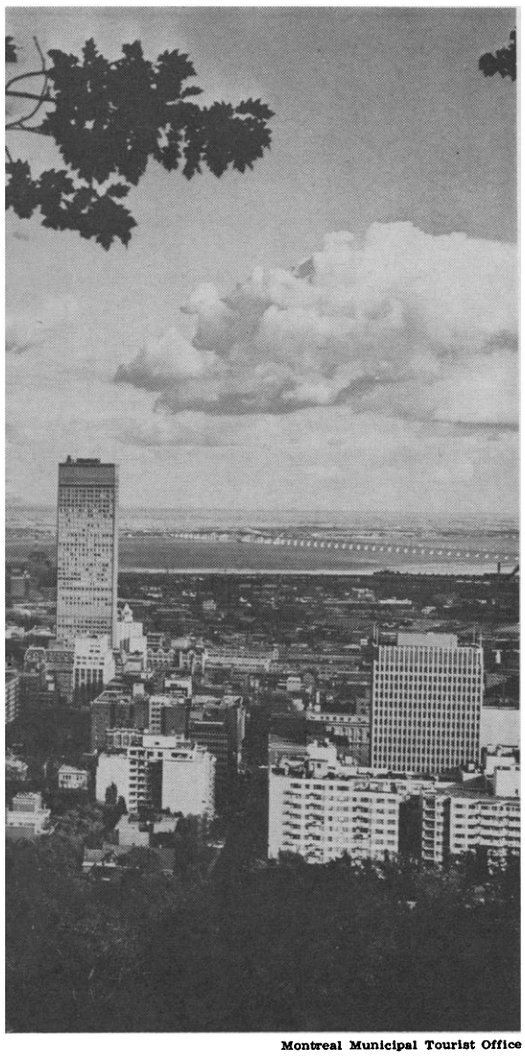

Montreal Municipal Tourist Office

Make sure you have the accommodations you prefer. A list of headquarters hotels of participating societies appears on page 299, 17 July, SCIENCE. The AAAS headquarters is the Queen Elizabeth.

The hotels for the AAAS Montreal meeting have established special, low rates and have reserved large blocks of rooms for the meeting.

Use the coupon below to make your hotel reservation in Montreal. **Send your application to the AAAS Housing Bureau in Montreal, not to any hotel.** Give a definite date and estimated hour of arrival, and also probable date of departure. The Housing Bureau will make the assignment and send you a confirmation promptly.

A rollaway bed can be added to any room at $3.00 per night. Mail your application now to secure your first choice of accommodations.

Hotels with asterisks have unlimited free parking for guests. The Windsor has overnight free parking for guests, but not between the hours of 9 A.M. and 4 P.M.

HOTEL RATES

For a list of the headquarters of each participating society and section, see page 299, 17 July, SCIENCE.

Hotel	Single	Double	Twin	Suite
*Queen Elizabeth	$ 8.50, 10.00	$15.00	$15.00	$30.00–$50.00
*Sheraton-Mount Royal	8.50, 10.00	15.00	15.00	25.00– 45.00
Windsor	8.50	15.00	15.00	25.00– 45.00
*Laurentien (Sheraton)	7.50	12.00	12.00	21.00– 30.00
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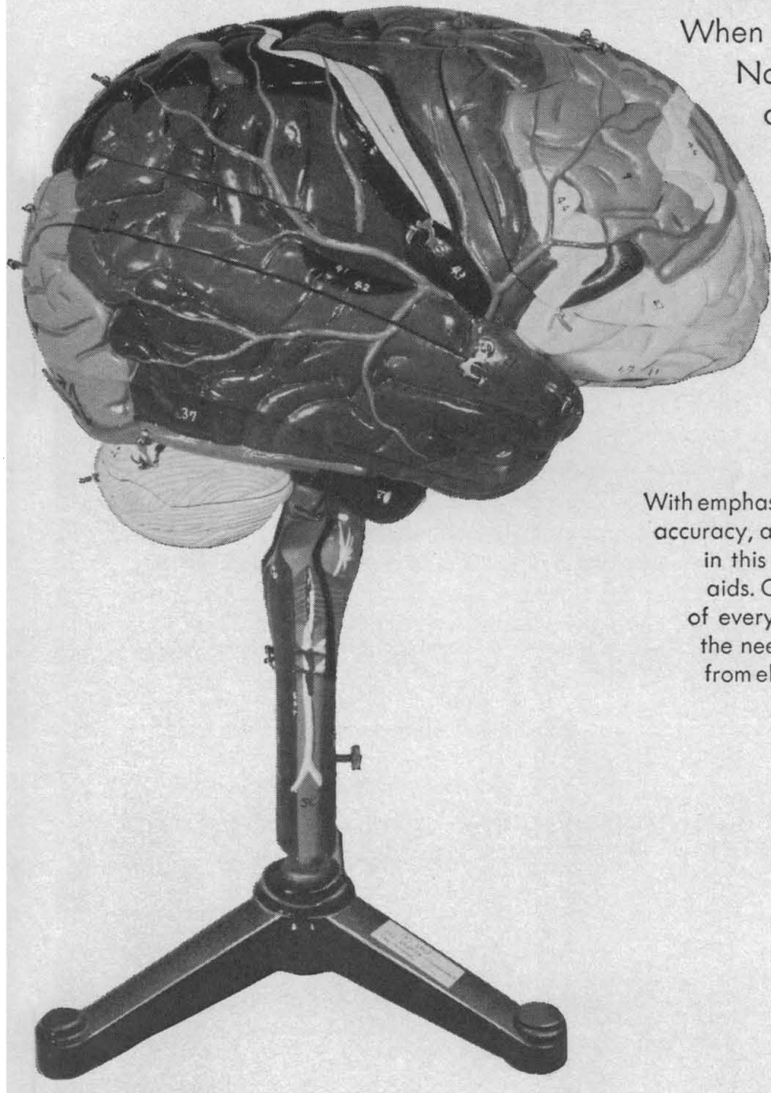
When quality is required in aids for teaching the Natural Sciences, you can place your confidence in Clay-Adams. Continual research and precision craftsmanship have helped maintain the highest possible standards for almost half a century.



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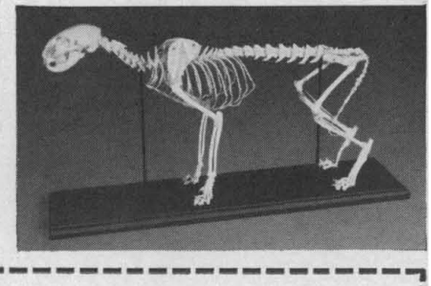

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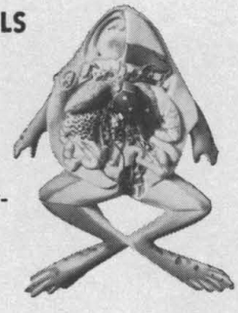

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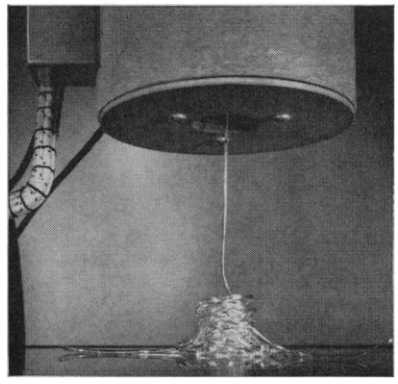
Predicting the flow behavior of molten polymers during processing operations is of basic and practical concern to researchers, manufacturers and fabricators. Unfortunately, the problem is a complex one.

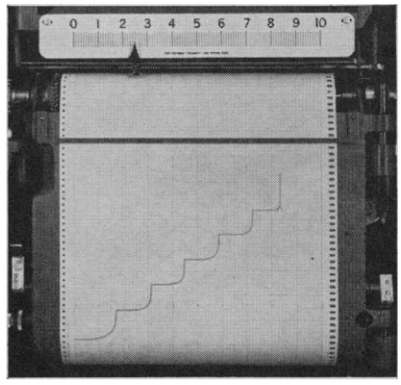
But new insight into the problem is offered as a result of the concentration of work done by Rheologists. An up-to-date, comprehensive summary of several resulting techniques is contained in a recently-translated technical paper.* This paper covers in detail, how Rheometers (and particularly Instron extrusion-type Rheometers) may be used to provide information that can be linked with the molecular and structural as well as elastic properties of polymers. The paper also discusses how these rheological techniques can be used to predict polymer behavior under different manufacturing conditions. As a result, undesirable processing phenomena like melt-fracture can be avoided and products of more uniform characteristics can be obtained.

NEW INSIGHT INTO THE PREDICTION OF POLYMER BEHAVIOR IN PROCESSING

Rheology is a specialized area of investigation in which Instron Universal Testing Instruments, used in conjunction with Instron extrusion-type Rheometers, are contributing to materials technology. With this equipment an entire flow curve can be developed in a few moments with a single filling of the barrel. High test accuracy is assured by the Rheometer's precision temperature control system which permits accurate temperature control to better than ± 0.5°C. over a range from 10°C. above ambient to 340°C.

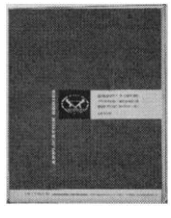


The Instron Capillary Rheometer provides close simulation of actual conditions encountered in plastics processing. This unit, mounted on an Instron Tester, is being used to check the steady-state shear viscosity of high-polymer compounds.



Viscosities can be determined quickly and accurately with the Instron Capillary Rheometer. Here, test results from a typical molten polymer show pressures (proportional to shear stress) obtained from a series of constant programmed piston rates (which are proportional to shear rates).

*This paper, one of the most comprehensive reports we've seen on the rheology of molten polymers, is available on request. In addition, technical articles covering many other areas of materials testing may be obtained without charge. Tell us your area of interest and we will send you appropriate literature.
Write: Dept. 24-C, Instron Engineering Corporation, 2500 Washington Street, Canton, Massachusetts.



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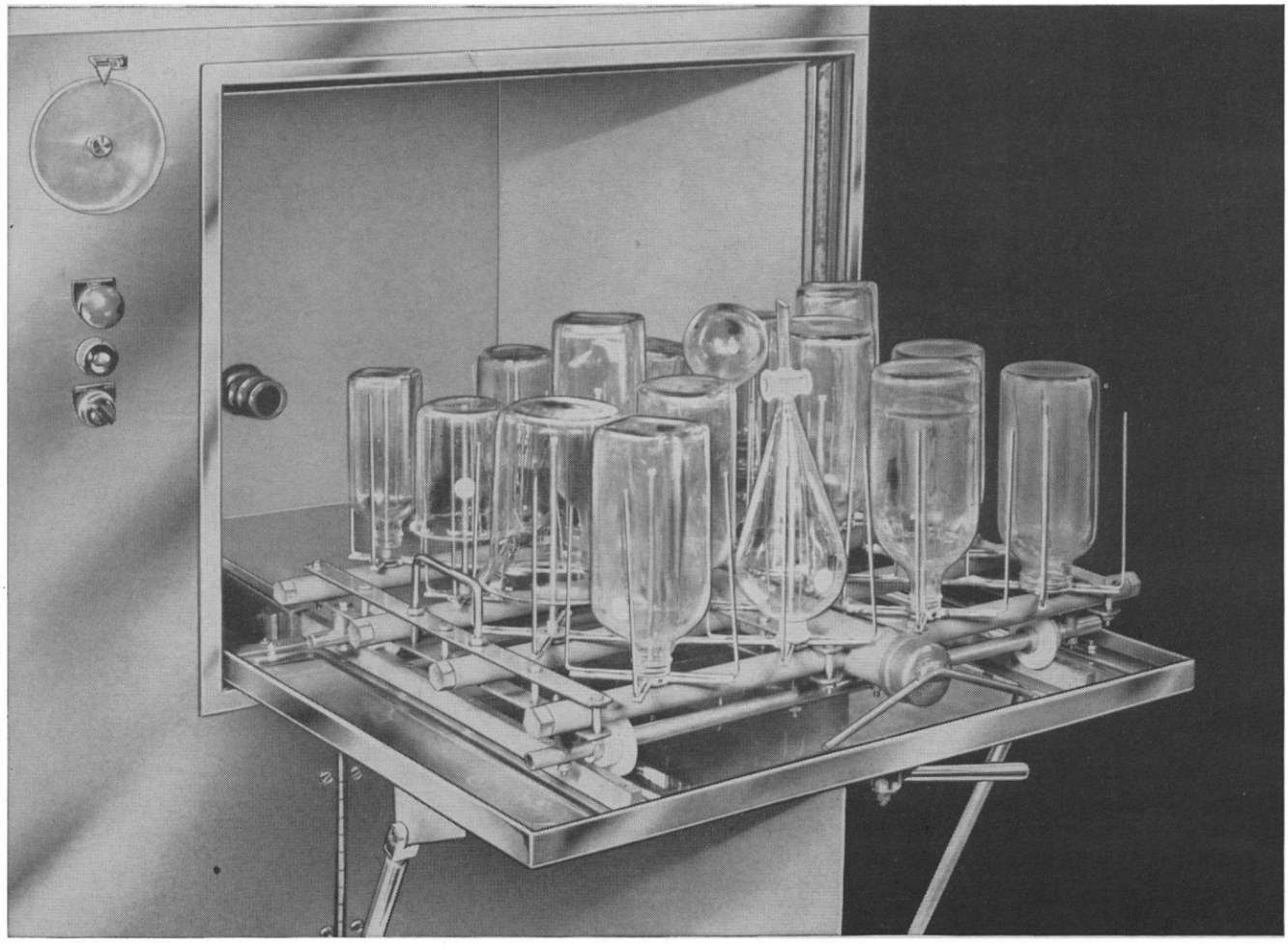

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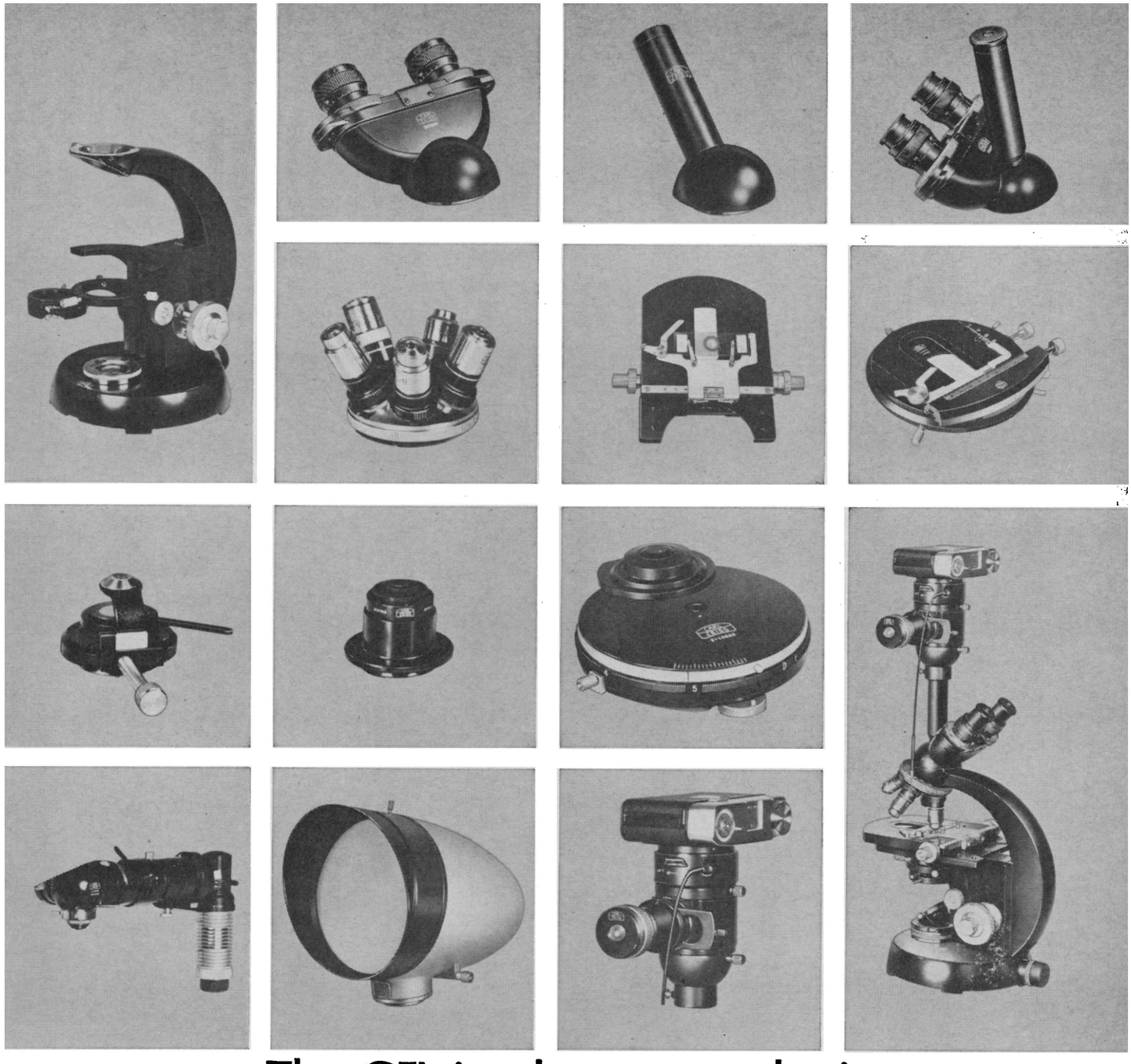

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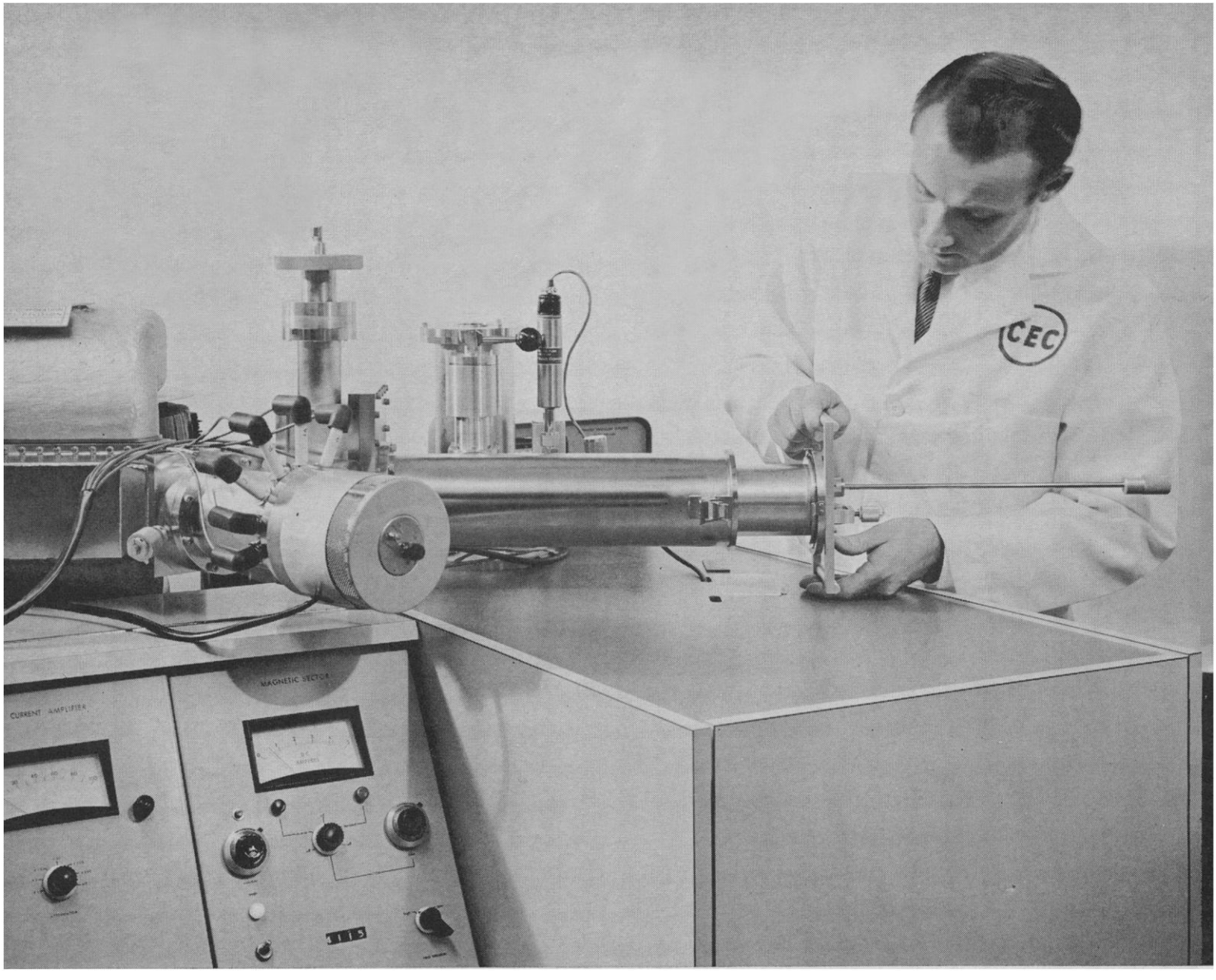

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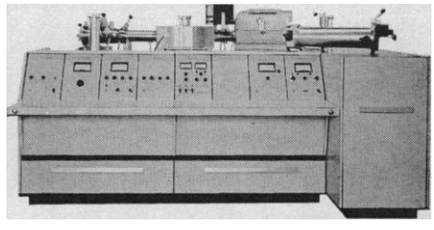

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able argument about the accuracy of his estimate, based upon various assumptions about the kind of stade he used, and that no one seems to have attacked the question directly by measuring the average speed of a camel.

Tobler has called my attention to the work of James Rennell [*Phil. Trans. Roy. Soc. London* **81**, pt. 2, p. 129 (1791)]. Rennell studied the speed of a camel by analyzing the records of a number of desert travellers, and actually proposed that the camel be used as the distance-measuring device in the initial surveying of Africa. Comparison of his results with the work of Eratosthenes reveals an interesting circumstance.

Briefly, Rennell found that the hourly distance travelled by a camel is almost independent of the loading and is remarkably constant. He found a rate of about 2.5 statute miles per hour, with deviations of about 2 percent. The daily distance does depend upon the loading; apparently the more heavily loaded camels simply stop sooner and refuse to continue. For the "heavy caravan," after allowing for stops and the sinuosity of the path followed, he found an average day's journey of 16.6 miles per day, and about 10 percent more for the "light caravan."

Eratosthenes gave 50 days' journey as the distance from Aswan to Alexandria. From an atlas, I judge this distance to be about 520 statute miles, giving 10.4 miles as the "camel-day" in Eratosthenes's time. Thus camels in 1791 travelled 60 to 75 percent faster than camels in 250 B.C., according to the assumptions made about the loading of Eratosthenes's camels. The most likely explanation of this large discrepancy is improvement in the breed.

ROBERT R. NEWTON
Applied Physics Laboratory,
Johns Hopkins University,
Silver Spring, Maryland

Genetic Code: Exaggerated Claims

In your editorial of 22 May you quote the statement by Glenn T. Seaborg of the AEC that "inevitably our recently acquired knowledge of the genetic code will be applied also to the improvement of the human species." As a graduate student of biochemistry and molecular biology I find the appearance of such a statement in the pages of *Science* profoundly unsettling.

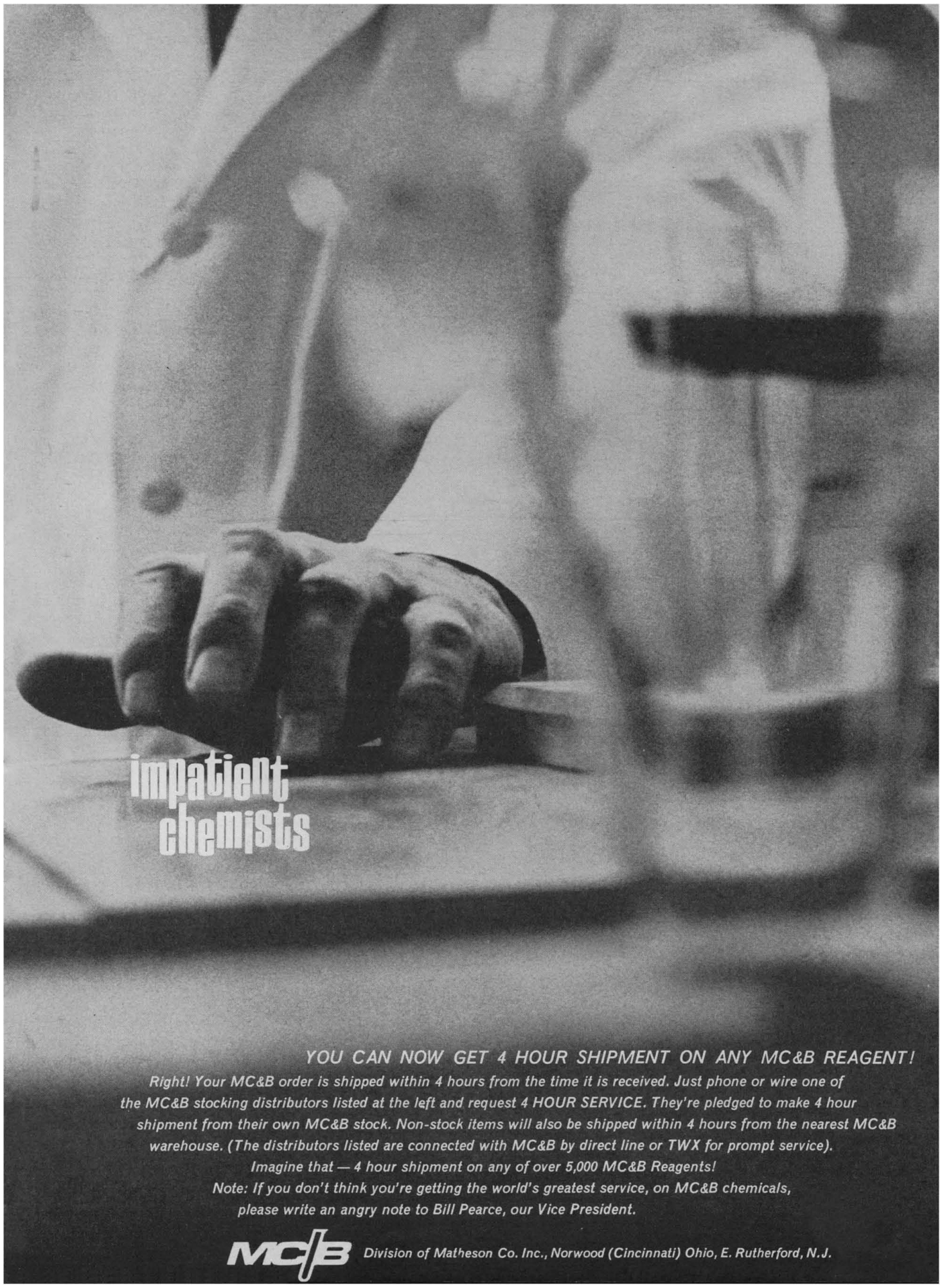
Without a doubt recent advances in molecular biology have opened provocative new vistas both for the acquisition of knowledge and for its application; indeed I believe the coming decades will find this to be the most exciting field of science. Nevertheless, this very fact should make the scientific community aware of the need to guard against sensationalism. We are far from a full elucidation of the genetic code. Many of its most basic features are understood only poorly and some not at all (for example, the sequence of bases within a codon, intercistronic punctuation, and the various kinds of suppressor mutation). The 22 May issue of *Science* gives some idea of the situation in the dispute between Woese and Hinegardner and Engelberg ("Universality in the genetic code," p. 1030).

But leaving this aside, there is the much more fundamental question of the aims of scientific endeavor and the responsibility of scientists to make these aims clear to the public (which foots the bill) and especially to avoid suggesting melodramatic results which are not attainable with presently foreseeable means. Specifically, I know of no way whereby human heredity will "inevitably" be altered because of present studies on the genetic code. It would be fascinating to hear a concrete suggestion. Until the time when such suggestions become current and scientifically responsible, however, I think that a reputable and influential journal such as *Science* should refrain from spreading generalizations which *inevitably* will lead to disillusionment and mistrust of science, or an irrational fear of Frankensteins.

SCOTT C. MOHR
Department of Chemistry, Harvard University, Cambridge, Massachusetts

Meharry Medical College

We sympathize with the University of Skopje, Yugoslavia (Letters, 19 June, p. 1409), in the loss of their modern laboratories. However, they are far more fortunate than we are, for we have never had a modern laboratory. The Department of Pharmacology at Meharry is housed in converted army barracks; the renovations were carried out by the faculty and staff aided by minute grants from two pharmaceutical houses (the only responses to numerous letters sent out by members of the faculty). The building has no permanent heating system; the furniture



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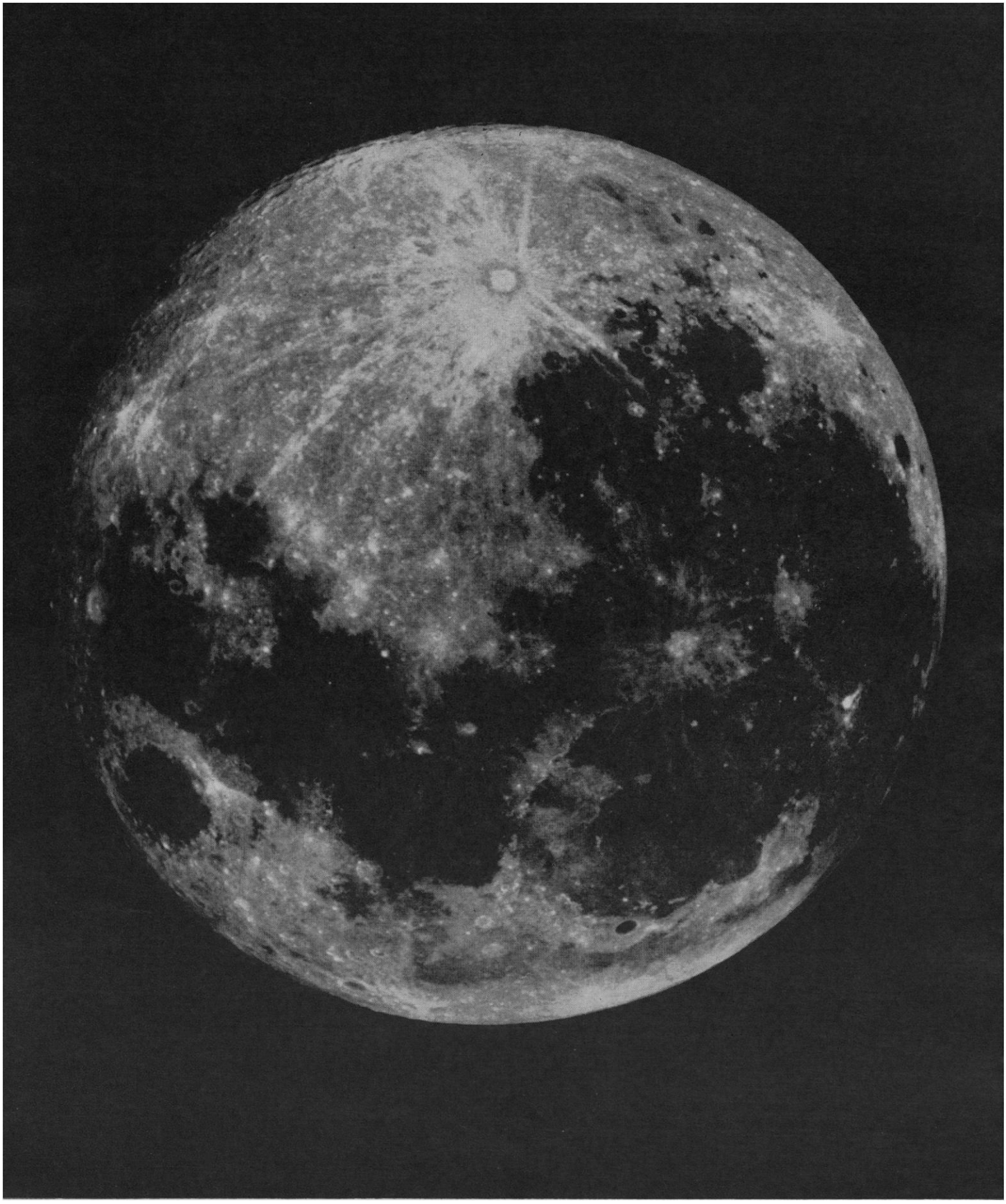

Lowell Observatory, Flagstaff, Arizona, had a fully developed positive and a negative just 20 seconds after photographing the full moon. The picture (which was enlarged 46.8 times for a World's Fair display without loss of detail or evidence of grain) was taken with **Polaroid Type 55 P/N 4 x 5 film.**

and work-benches, for the most part, have been obtained from salvage houses. Despite these obvious handicaps, an active research program has been established in pharmacology, and several publications from this department appear each year in major scientific journals. We have learned to make the best of limited funds and equipment and have become past masters in the art of "do-it-yourself."

We now feel that Meharry should take a larger part in training and research and are endeavoring to initiate a limited graduate training program in the department of pharmacology. We also need a new building, and, since we have no UNESCO or other organization to plead our cause or send us gift coupons, we needs must raise our own funds. To this end, we have written some 80 letters to foundations and pharmaceutical houses throughout the country, outlining our plans and our hopes and asking for contributions. To date, we have received 40 replies, only two of which offered any assistance (a check for $500 and the promise of $5000 worth of materials, both from chemical companies). It is interesting how unvarying was the tone of the refusals: compliments on our program, regrets that funds were allocated for many years to come, and best wishes for our success in raising funds from other sources.

We have no doubt that the University of Skopje will have better fortune.

CHARLOTTE R. HOLLETT

Department of Pharmacology, Meharry Medical College, Nashville, Tennessee

Potto Born in Captivity

The birth of a male *Perodicticus potto* at the Oregon Regional Primate Laboratory on 2 January 1964 afforded researchers the opportunity of recording the first observations on the rate of growth and development of this animal. Once a week since birth the infant has been photographed, weighed, and measured.

Although the animal was conceived in the laboratory, the exact period of gestation is unknown. No information on this subject could be found in the literature.

Since pottos are nocturnal animals, consistent observations of mother-infant behavior, learning, and exploratory behavior were not feasible. The infant clung to its mother from birth and was nourished by the mother. Though alarmed when separated from her infant, the mother readily accepted it back. When removed from its mother, the infant, even shortly after birth, made clicking, guttural sounds; it also uttered feeble squeals. These were practically the only utterances heard. Pottos are silent animals, and the only sounds audible from the adults are soft growls produced when the animals are frightened or angered. The young animal began to produce such growls and to bite fiercely when it was handled at 130 days of age.

The hands and feet of the young had the adult positioning from birth; the pollex and hallux spread 180 degrees from the three functional digits (III, IV, V). The index finger was reduced (as shown in early x-ray films), and at birth the second toe was clawed as in the adults. The locomotor pattern was well developed at birth and had attained the full adult pattern after 2 months.

The newborn was covered with a sparse coat of white juvenile underhairs and longer, widely separated guard hairs. A strip of light brown hair extended down the middle of the back. The relatively long tail was sparsely covered with hair. The animal had prominent yellow ears and brown markings in the nasal and infraorbital areas. All other parts of the body were pink. After 25 days, new, darker hairs began to replace the white ones, particularly on the head. At 46 days the coat had attained the color and quality of the adult pelage on the head and over the shoulders. At 109 days most of the juvenile pelage had been replaced by the brown coat of the adult. However, white baby hairs still persisted on the forearms, the triceps region, and down the back onto the legs. At this date (130 days of age) this color pattern had not changed.

One of the peculiarities of pottos is an elongation of the spines of the last few cervical vertebrae so that they protrude above the surface and are covered only with a tight sleeve of glabrous skin. The cervical spines, not palpable at birth, became prominent at 30 days.

Growth in weight and length progresses at a steady and remarkable rate in a linear pattern. The animal attained a tenfold increase in weight in 109 days.

THEODORE GRAND

EDWARD DURO

WILLIAM MONTAGNA

Oregon Regional Primate Research Center, Beaverton

14 August 1964, Volume 145, Number 3633

SCIENCE

EDITORIAL CORRESPONDENCE: 1515 Massachusetts Ave., NW, Washington, D.C. 20005. Phone: 202-387-7171. Cable: Advancesci, Washington. Copies of "Instructions for Contributors" can be obtained from the editorial office. ADVERTISING CORRESPONDENCE: Rm. 1740, 11 W. 42 St., New York, N.Y. 10036. Phone: 212-PE 6-1858.

Today's Job Market, and Tomorrow's

Federal appropriations for research and development will not increase as rapidly in the next few years as they have in recent ones. Recognition of this change has been marked by the termination of some military contracts, a few layoff and discharge notices, and some talk of "leveling off." Most companies have not hired as many new men this year as they did last. There has been an appreciable decline in the amount of advertising for engineers, scientists, and technicians. The 543 companies and government agencies studied in the recent survey of the Engineering Manpower Commission (*Demand for Engineers, Physical Scientists, and Technicians—1964*) hired 6 percent fewer engineers, mathematicians, and physical scientists in 1963 than they did in 1962, and their recruiting goals for 1964 are 7 percent below those for 1963.

There is real danger of overreacting to these changes in employment opportunities and hiring rates, for the spotlight of public attention will surely be turned upon the termination of a major contract, on the discharge of a group of technical employees, or on anything that can be interpreted as a manpower surplus. One of the exasperating aspects of many discussions of manpower is the undue attention accorded the momentary relation between the number of people employed and the number available for employment. The unhappiness of a competent person who is out of work is not to be minimized, but the simple index of whether there is currently a "shortage" or a "surplus" tells nothing about the gross size of a particular job market and nothing about future trends.

Both short- and long-range aspects of this whole matter are getting high-level attention in government circles, and properly so; government policies are widely influential when nearly 40 percent of the nation's scientists and engineers and more than half of those engaged in research and development are working directly for government agencies or on projects supported by government funds.

But government policy is by no means the only influential factor. Academic scientists and engineers exercise great influence through the advice they give to students and the plans they help their students to make. As a guide for students' plans, tomorrow's job market is at least as important as today's. There are many indications of continued growth in demand. The Engineering Manpower Commission study and recent reports by the American Institute of Physics, the National Science Foundation, and the National Academy of Sciences, while differing in details, all agree that the demand for new graduates in the decade or so ahead will be greater than the prospective supply. The New York Regional Office of the Bureau of Labor Statistics and the College Placement Council report that salaries offered this year to new chemists, engineers, mathematicians, and physicists are higher than salaries offered last year. That rapidly expanding college enrollments will maintain a relatively high demand for teachers is generally recognized. These are better indicators of the future than are the current, and short-term, reactions to changes in the federal budget.

If, too greatly influenced by uncertainties and changes in today's job market, we sell tomorrow's market short, we can expect to be worrying about serious shortages for the next generation.

—DAEL WOLFLE

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IN EUROPE: Technical Measurement Corporation, GmbH, Mainzer Landstrasse 51, Frankfurt/Main, Germany.

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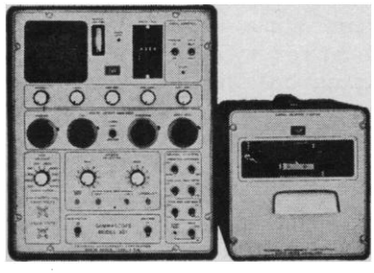

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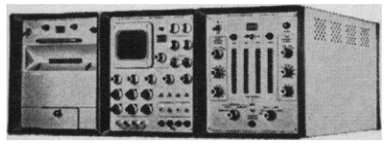

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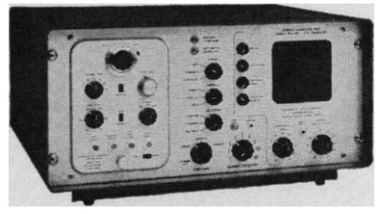

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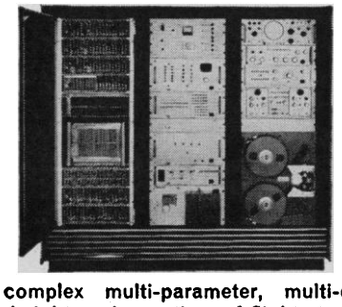

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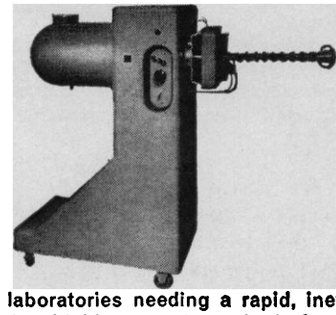

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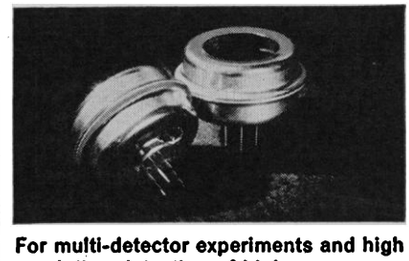

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gested, monolayers can serve as a suitable analogue for evaluating solid state concepts as applied to biological systems.

Many of these notions currently exist in biochemical and biophysical circles. It is clear that the continuing experimental and theoretical progress made on organic solids, particularly in the areas of spectroscopy, photoconduction, and reactivity, must be monitored carefully and critically by workers whose interests primarily concern fundamental life processes.

PAUL L. KRONICK

Chemistry Division,
Franklin Institute Laboratories,
Philadelphia, Pennsylvania 19103

Forthcoming Events

August

23–26. **Soil Conservation** Soc. of America, 19th annual, Jackson, Miss. (SCS, 7515 Northeast Ankeny Rd., Ankeny, Iowa)

23–28. American Inst. of **Biological Sciences**, annual, Boulder, Colo. (AIBS, 2000 P St., NW, Washington, D.C.)

23–28. American Congr. of **Physical Medicine and Rehabilitation**, Boston, Mass. (G. Gullickson, Jr., 30 N. Michigan, Chicago, Ill.)

23–28. **Conservation Education**, conf., Tacoma, Wash. (C. Boyce, Office of the Superintendent of Public Instruction, Olympia, Wash.)

24–26. American Inst. of **Aeronautics and Astronautics**, Los Angeles, Calif. (AIAA, 1290 Sixth Ave., New York, N.Y.)

24–26. Society for **Cryobiology**, annual, Washington, D.C. (V. P. Perry, Tissue Bank Dept., National Naval Medical Center, Bethesda, Md.)

24–26. **Education in the Nuclear Power Era**, conf., Gatlinburg, Tenn. (M. L. Nelson, Education Div., Oak Ridge Natl. Laboratory, P.O. Box 117, Oak Ridge, Tenn.)

24–26. **Mathematical** Assoc. of America, summer meeting, Univ. of Massachusetts, Amherst. (H. M. Gehman, Univ. of Buffalo, Buffalo 14, N.Y.)

24–27. American Soc. for **Pharmacology** and Experimental Therapeutics, Univ. of Kansas, Lawrence. (E. B. Cook, The Society, 9650 Wisconsin Ave., NW, Washington, D.C.)

24–27. **Biological Photographic** Assoc., annual, New York, N.Y. (C. H. Weiss, 81 Bedford St., New York 14)

24–27. American **Hospital** Assoc., Chicago, Ill. (E. L. Crosby, 840 N. Lake Shore Dr., Chicago 11)

24–27. **Toxicology and Occupational Medicine**, 4th inter-American conf., Miami Beach, Fla. (W. Machle, Univ. of Miami School of Medicine, Coral Gables, Fla.)

24–28. International Council of the **Aeronautical Sciences**, 4th congr., Paris,

France. (American Inst. of Aeronautics and Astronautics, 2 E. 64 St., New York, N.Y. 10021)

24–28. **Astrodynamics Guidance and Control,** conf., Los Angeles, Calif. (K. Watanabe, 4731 B Engineering Building III, University of California, Los Angeles 24)

24–28. American **Astronautical** Soc., military space applications symp., Stanford, Calif. (AAS, 516 Fifth Ave., New York, N.Y.)

24–28. Society for **Industrial and Applied Mathematics,** Amherst, Mass. (W. S. Dorn, T. J. Watson Research Center, I.B.M., P.O. Box 218, Yorktown Heights, N.Y.)

24–28. Scandinavian **Mathematical** Congr., Copenhagen, Denmark. (Secretariat, The Congress, c/o Mathematical Inst., H. C. Ørsted Inst., Universitetsparken 5, Copenhagen Ø)

24–28. American **Mathematical** Soc., New York, N.Y. (G. L. Walker, AMS, 190 Hope St., Providence, R.I.)

24–28. **Preventive Cardiology,** first intern. conf., Burlington, Vt., (W. Raab, Preventive Heart Reconditioning Foundation, 206 Summit St., Burlington, Vt.)

24–28. **Water Pollution Research,** 2nd intern. conf., Tokyo, Japan. (Water Pollution Control Federation, 4435 Wisconsin Ave., Washington, D.C. 20016)

24–29. **Psychotherapy,** 6th intern. congr., London, England. (F. Pannell, The Congress, 11 Whitehall Ct., London, S.W.1)

24–29. Preparation and Biomedical Application of **Labeled Molecules,** Venice, Italy. (C. Colombini, Center of Nuclear Chemistry, Univ. of Padova, Via Loredan 6, Padova, Italy)

24–3. International Assoc. of **Agricultural Economists,** 12th triennial conf., Lyons, France. (French Organization Committee of the Conference, 4, rue de Lasteyrie, Paris 16°, France)

25–27. Association for **Computing Machinery,** 19th annual, Philadelphia, Pa. (H. S. Bright, Philco Computers, Willow Grove, Pa.)

25–28. Western Electronics Show and Conv. (WESCON), Inst. of **Electrical and Electronics Engineers,** summer meeting, Los Angeles, Calif. (R. R. Bennett, Suite 1920, 3600 Wilshire Blvd., Los Angeles)

25–29. **Audiology,** 7th intern. congr., Copenhagen, Denmark. (H. W. Ewertsen, c/o State Hearing Centre, 7 D. Tvaergade, Copenhagen K)

25–3. International **Astronomical** Union, 12th general assembly, Hamburg, Germany. (D. A. Bell, c/o Royal Greenwich Observatory, Hertsmonceaux Castle, Hailsham, Sussex, England)

26–2. **British Association for the Advancement of Science,** 126th annual, Southampton, England. (BAAS, 3 Sanctuary Bldgs., London, S.W.1, England)

26–2. **Logic, Methodology, and Philosophy of Science,** intern. conf., Jerusalem, Israel. (Y. Bar-Hillel, Hebrew Univ., Jerusalem)

26–3. **Electron Microscopy,** 3rd European regional conf., Prague, Czechoslovakia. (Organizing Committee, Albertov 4, Prague 2)

27. American Soc. for **Horticultural Science,** Amherst, Mass. (R. E. Marshall,

AMHS, Dept. of Horticulture, Michigan State Univ., East Lansing)

27–28. **Activation Analysis**, Glasgow, Scotland. (J. M. A. Lenihan, Western Regional Hospital Board, 9 W. Greham St., Glasgow, C.4)

27–29. Pacific Slope **Biochemical** Conf., San Francisco, Calif. (M. P. Gordon, Dept. of Biochemistry, Univ. of Washington, Seattle 98105)

27–29. **Reactive Intermediates in Organic Chemistry**, symp., Quebec City, P.Q., Canada. (C. R. Engel, Faculté des Sciences, Université Laval, Quebec City)

28–3. **Neurology**, 8th intern. congr., Vienna, Austria. (H. Hoff, Medizinische Fakultät, Neurologische und Psychiatrische Abteilung, Vienna 9)

29. **Gravity Research Foundation**, annual, New Boston, N.H. (The Foundation, Gravity Village, New Boston)

29–5. International **Epidemiological** Assoc., 4th intern. meeting, Princeton, N.J. (L. Breslow, Div. of Preventive Medical Services, California Dept. of Public Health, 2151 Berkeley Way, Berkeley 95704)

30–2. Electronic Properties and Applications of **Solid-Solid Interfaces**, Boston, Mass. (F. S. Gardner, Office of Naval Research, 495 Summer St., Boston, Mass.)

30–3. **Illuminating Engineering** Soc., Miami Beach, Fla. (A. D. Hinckley, IES, 345 E. 47 St., New York 10017)

30–4. American **Chemical** Soc., fall natl. meeting, Chicago, Ill. (A. H. Emery, 1155 16th St., NW, Washington, D.C.)

30–4. Institute of **Mathematical Statistics**, annual, Amherst, Mass. (D. M. Gilford, Mathematical Sciences Division, Office of Naval Research, Washington, D.C.)

30–4. American **Ornithologists'** Union, Lawrence, Kan. (L. H. Walkinshaw, 1703 Wolverine Tower, Battle Creek, Mich.)

30–5. **Applied Mechanics**, 11th intern. congr., Munich, Germany. (Organisations-Sekretariat des Mechanik-Kongresses, Inst. für Mechanik, Arcisstr. 21, Munich 2)

30–5. **Cell Biology**, 11th intern. congr., Providence, R.I. (J. W. Wilson, Dept. of Biology, Brown Univ., Providence)

30–5. **Haematology**, 10th intern. congr., Stockholm, Sweden. (L. E. Bötiger, P.O. Box 638, Stockholm 1)

30–5. Sensitivity Analysis of **Nonlinear Systems**, Dubrovnik, Yugoslavia. (J. E. Gibson, Electrical Engineering Dept., Purdue Univ., Lafayette, Ind.)

31–2. **Electric Propulsion**, 4th conf., Philadelphia, Pa. (J. M. Sellen, Jr., Physical Research Div., TRW/Space Technology Laboratories, One Space Park, Redondo Beach, Calif.)

31–3. American **Psychopathological** Assoc., Birmingham, Ala. (Secretary, APA, 503 Medical Arts Bldg., Wilmington, Del.)

31–3. American **Sociological** Assoc., 59th annual, Montreal, Canada. (G. M. Sykes, 1755 Massachusetts Ave., NW, Washington, D.C. 20036)

31–4. **Low Temperature Physics**, 9th intern. conf., Columbus, Ohio. (The Conference, P.O. Box 3073, University Station, Columbus 43210)

31–4. British Assoc. of **Paediatric Surgeons**, 11th congr., Rotterdam, Netherlands. (Secretariat, c/o Holland Organ-

izing Centre, 16, Lange Voorhout, The Hague, Netherlands)

31–9. **Peaceful Uses of Atomic Energy**, 3rd intern. conf., Geneva, Switzerland. (J. Gaunt, United Kingdom Atomic Energy Agency, 11 Charles II St., London, S.W.1, England)

31–9. **Soil Science**, intern. congr., Bucharest, Rumania. (N. Giosan, Comite Roumain d'Organisation, The Congress, Bucharest 33)

September

1–4. **AAAS, Alaska Div.**, College. (G. Dahlgren, Dept. of Chemistry, Univ. of Alaska, College)

1–4. **Aerospace Power Systems**, 3rd biennial conf., Philadelphia, Pa. (American Inst. of Aeronautics and Astronautics, 2 E. 64 St., New York, N.Y. 10021)

1–4. **Gas**, 9th intern. conf., The Hague, Netherlands. (R. H. Touwaide, General Secretary, Intern. Gas Union, 4, Avenue Palmerston, Brussels, Belgium)

1–5. **Biological Standardization**, 9th intern. congr., Lisbon, Portugal. (C. de Oliveira, c/o Inst. Bacteriologico Camara Pestana, Rua do Instituto Bacteriologico, Lisbon)

1–5. American Soc. of **Ichthyologists and Herpetologists**, Morehead City, N.C. (J. R. Bailey, Dept. of Zoology, Duke Univ., Durham, N.C.)

1–5. **Nuclear Magnetic Resonance and Relaxation in Solids**, intern. conf., Louvain, Belgium. (L. Van Gerven, Naamsestraat 61, Louvain)

1–8. **Photographic and Spectroscopic Optics**, conf., Tokyo and Kyoto, Japan. (H. Kubota, Science Council of Japan, Ueno Park, Tokyo)

2–4. Structure and Properties of **Coordination Compounds**, Bratislava, Czechoslovakia. (Czechoslovak Chemical Soc., Hradcanske nam. 12, Prague 1)

3–5. Czechoslovak **Orthopedic** Congr., Prague. (M. Jaros, Libuslna 5, Prague 2)

3–8. International Soc. of **Blood Transfusion**, 10th biennial congr., Stockholm, Sweden. (C. Högman, P.O. Box 434, Stockholm 1)

4–5. Great Basin **Anthropological** Conf., Reno, Nev. (W. L. d'Azevedo, Desert Research Inst., Univ. of Nevada, Reno)

4–6. **Gout and Uric Lithiasis**, intern. congr., Evian, France. (R. J. Réveillaud, 4 Boulevard de la Bastille, Paris 12)

4–6. **Parapsychological** Assoc., 7th annual, Oxford, England. (K. R. Rao, 6847 College Station, Durham, N.C.)

4–6. American **Philosophical** Assoc., Pacific Div., Seattle, Wash. (L. E. Hahn, Dept. of Philosophy, Southern Illinois Univ., Carbondale)

4–9. American **Psychological** Assoc., Los Angeles, Calif. (A. H. Brayfield, 1333 16th St. NW, Washington, D.C.)

6. **Spacesuits and Human Performance**, symp., Soc. of Engineering Psychologists, Los Angeles, Calif. (N. M. Molesko, 4918 Castana Ave., Lakewood, Calif.)

6–7. International Acad. of the **History of Medicine**, Basel, Switzerland. (N. Poynter, c/o Wellcome Historical Medical Library, 183 Houston Rd., London, N.W.1, England)

6–11. **Physical Medicine**, 4th intern.

congr., Paris, France. (J. P. Held, French Natl. Soc. of Physical Medicine, 15, rue de l'Ecole de Medicine, Paris 6e)

6–13. **Animal Reproduction and Artificial Insemination**, 5th intern. congr., Trento, Italy. (T. Bonadonna, Via Monte Ortigara 35, Trento)

7–9. **Psychometric** Soc., Los Angeles, Calif. (W. G. Mollenkopf, Procter and Gamble, P.O. Box 599, Cincinnati 1, Ohio)

7–10. **High-Energy Electrons**, symp., European Assoc. of Radiology, Montreux, Switzerland. (P. L. Cova, Casa di Cura S. Ambrogio, Via Faravalli 16, Milan, Italy)

7–11. **Coordination Chemistry**, 8th intern. conf., Vienna, Austria. (V. Gutmann, Verein Osterreichischer Chemiker, 1 Eschenbachgasse 9, Vienna 1)

7–11. **Magnetism**, intern. conf., Nottingham, England. (Deputy Secretary, Inst. of Physics and the Physical Soc., 47 Belgrave Sq., London, S.W.1, England)

7–11. **Microwaves, Circuit Theory, and Information Theory**, intern. conf, Tokyo, Japan. (K. Morita, Inst. of Electrical Communication Engineers of Japan, 2–8 Fujimicho, Chiyoda-ku, Tokyo, Japan)

7–12. **Astronautics**, 15th intern. congr., Warsaw, Poland. (Intern. Astronautical Federation, 250 rue St. Jacques, Paris 5e, France)

7–12. **Laurentian Hormone** Conf., Bolton Landing, N.Y. (J. C. Foss, 222 Maple Ave., Shrewsbury, Mass. 01545)

7–12. **Odontological** Federation of Central America and Panama, 7th congr., Guatemala City, Guatemala. (E. Estrada H., Apartado Postal 513, Guatemala City)

7–12. **Pharmaceutical Sciences**, 24th intern. congr., Amsterdam, Netherlands. (Congress Secretariat, 4 Sint Agnietenstraat, Amsterdam-C)

7–12. **Surface Active Substances**, 4th intern. congr., Brussels, Belgium. (Secretary General, The Congress, 49, Square Marie-Louis, Brussels 4)

7–19. **Photogrammetry**, 10th intern. congr., Lisbon, Portugal. (A. Paes Clemente, Intern. Soc. for Photogrammetry, c/o Instituto Geografico e Cadastral, Praça da Estrela, Lisbon)

8–10. **Gas Chromatography**, 5th intern. symp., Brighton, England. (Organizing Office, 61 New Cavendish St., London, W.1, England)

8–10. **Nonsteroidal, Antiinflammatory Drugs**, intern. symp., Milan, Italy. (S. Garattini, Instituto di Richerche Farmacologische "Mario Negri," Via Eritrea 62, Milan)

9–11. **Applied Spectroscopy and Analytical Chemistry**, 11th symp., Ottawa, Ontario, Canada. (Chemical Inst. of Canada, 48 Rideau St., Ottawa 2)

9–11. Kinetics of **Pyrolytic Reactions**, Ottawa, Ontario, Canada. (K. J. Laidler, Dept. of Chemistry, Univ. of Ottawa, Ottawa 2)

9–11. European Organization for **Quality Control**, 8th conf., Baden-Baden, Germany. (Secretariat, Weena 700, Rotterdam 3, Netherlands)

9–11. International College of **Surgeons**, North American Federation, congr., Chicago, Ill. (Secretariat, 1516 Lake Shore Dr., Chicago 60610)

9–12. Society of **General Physiologists**,

Woods Hole, Mass. (R. Milkman, Dept. of Zoology, Syracuse Univ., Syracuse, N.Y. 13210)

9–12. American **Political Science** Assoc., annual, Chicago, Ill. (The Association, 1726 Massachusetts Ave., NW, Washington, D.C. 20036)

10–13. **General Practice,** 6th intern. congr., Salzburg, Austria. (K. Engelmeier, Intern. College of Medical Practice, Lange Str. 21a, 474 Oelde, Germany)

11–12. **Diseases Common to Animals and Man,** annual West-Northcentral conference, Omaha, Nebr. (N. G. Miller, College of Medicine, Univ. of Nebraska, Omaha 5)

11–12. Scandinavian **Neurosurgical** Soc., 18th annual, Oslo, Norway. (K. Kristiansen, Neurosurgery Dept., Ulleval Sykehus, Oslo)

11–14. German Soc. of **Metallurgy and Mining,** general assembly, Hanover. (Gesellschaft Deutscher Metallhütten und Bergleute, Paul-Ernststr. 10, Clausthal-Zellerfeld, Germany)

13–16. **Electrical Insulation,** conf., New York, N.Y. (J. Lenkey, Anaconda Wire and Cable Co., 605 Third Ave., New York, N.Y. 10016)

13–16. American **Fisheries** Soc., Atlantic City, N.J. (E. A. Seaman, 1404 New York Ave., Washington, D.C.)

13–17. **Power,** World conf., Lausanne, Switzerland. (U.S. Natl. Committee, World Power Conf., c/o Engineers Joint Council, 345 E. 47 St., New York 10017)

14–15. **Chromatography,** 3rd intern. symp., Brussels, Belgium. (Belgian Soc. of Pharmaceutical Sciences, rue Archimede 11, Brussels 4)

14–15. **Nutrition,** Canadian-U.S. conf., Toronto, Ont., Canada. (J. M. R. Beveridge, Dept. of Biochemistry, Queen's Univ., Kingston, Ont.)

14–16. **Military Electronics** (MIL-E-CON 8), intern. conf., Inst. of Electrical and Electronics Engineers, Washington, D.C. (H. M. O'Bryan, Bendix Corp., 1730 K St., NW, Washington, D.C. 20006)

14–17. International Assoc. of **Milk and Food Sanitarians,** Hartford, Conn. (H. L. Thomasson, P.O. Box 437, Shelbyville, Ind.)

14–18. **Aeronautical Research and Development,** NATO advisory group, 14th general assembly, Lisbon, Portugal. (The Assembly, 64, rue de Varenne, Paris 7°, France)

14–18. **Analogue Computation,** 4th intern., Brighton, England. (E. L. Harder, Westinghouse Electric Corp., East Pittsburgh, Pa.)

14–18. **Aviation and Space Medicine,** intern. congr., Dublin, Ireland. (S. O'Quigley, Aer Lingus—Irish International Airlines, Dublin Airport, Dublin, Ireland)

14–18. **Mass Spectrometry,** intern. conf., Paris, France. (Secretariat, Groupement pour l'Avancement des Méthodes Spectrographiques, 1, rue Gaston-Boissier, Paris 15°)

14–18. **Microwave Tubes,** 5th intern. congr., Paris, France. (Secretariat, B.P. no. 20, Bagneux, Seine, France)

14–18. **Operational Research and the Social Sciences,** intern. conf., Cambridge, England. (Operational Research Soc., 64 Cannon St., London E.C.4, England)

14–18. **Radio Meteorology,** world conf.,

Boulder, Colo. (J. W. Herbstreit, Central Radio Propagation Laboratory, National Bureau of Standards, Boulder 80301)

14–18. **Weather Radar**, 11th conf., Boulder, Colo. (J. W. Herbstreit, Central Radio Propagation Laboratory, National Bureau of Standards Boulder Research Laboratories, Boulder)

14–19. **Ceramics**, 9th intern. congr., Brussels, Belgium. (European Assoc. for Ceramics, 13, rue des Poissoniers, Brussels 1)

14–19. **Instruments and Measurements**, 6th intern. conf., Stockholm, Sweden. (RESO Cong. Service, Stockholm 1)

15–17. **Armed Forces Management** Assoc., 11th natl. conf., Detroit, Mich. (The Association, P.O. Box 7603, Washington, D.C.)

15–17. **Luminescence**, conf., Hull, Yorkshire, England. (G. F. J. Garlick, Physics Dept., Univ. of Hull, Hull)

15–17. **Chemical Reaction Engineering**, 3rd European symp., Amsterdam, Netherlands. (J. G. van de Vusse, c/o Kon. Shell Laboratorium, Badhuisweg 3, Amsterdam)

15–18. **Nuclear Photography**, intern. conf., Geneva, Switzerland. (Scientific Conf. Secretariat, European Organization for Nuclear Research, Geneva 23)

15–19. **Industrial Chemistry**, 35th intern. congr. Warsaw, Poland. (Secretariat, Rydgiera 8, Warsaw 86)

16–18. American Assoc. of **Medical Clinics**, annual, Bal Harbour, Fla. (The Association, Box 58, Charlottesville, Va.)

17–18. **Computing**, 7th annual Northwest conf., Seattle, Wash. (R. K. Smith, Northwest Computing Assoc., Box 836, Seahurst, Wash.)

17–18. **Engineering Management**, conf., Cleveland, Ohio. (Inst. of Electrical and Electronics Engineers, Box A, Lenox Hill Station, New York, N.Y. 10021)

17–19. **Cancer**, 5th natl. conf., Philadelphia, Pa. (American Cancer Soc., 219 E. 42 St., New York, N.Y. 10017)

17–19. British Assoc. of **Urological Surgeons**, annual, Sheffield, England. (Joint Secretariat, 47 Lincoln's Inn Fields, London, W.C.2, England)

17–20. **Science Education**, intern. conf., Banff, Alberta, Canada. (S. Trieger, Faculty of Education, Univ. of Alberta, Edmonton, Canada)

18. Hungarian **Chemical** Soc. Tihany. (M. T. Beck, Szabadsag ter 17, Budapest 5, Hungary)

19–26. **Gynecology and Obstetrics**, 4th world congr., Buenos Aires, Argentina. (R. Lede, Primera Catedra de Ginecología, Hospital de Clínicas, Córdoba 2149, Buenos Aires)

19–27. **Scientific Films** Assoc., 18th intern. congr., Athens, Greece. (SFA, 38, Avenue des Ternes, Paris 17e, France)

20–23. **Ceramic-Metal Systems**, American Ceramic Soc., French Lick, Ind. (ACS, 4055 North High St., Columbus, Ohio)

20–23. American Inst. of **Chemical Engineers**, Las Vegas, Nev. (F. J. Van Antwerpen, 345 E. 47 St., New York, N.Y. 10017)

20–24. American Soc. of **Oral Surgeons**, Chicago, Ill. (E. W. Gilgan, 119 North Michigan Ave., Chicago 11)

20–25. **Neuroradiology**, 7th symp., New York, N.Y. (J. M. Taveras, Neurological Inst., Columbia-Presbysterian Medical Center, New York, N.Y. 10032)

20–26. **Anaesthesiology,** 3rd world congr., São Paulo, Brazil. (L. Rodrigues Alves, Caixa Postal 330, São Paulo)

21–24. **Agricultural Engineering,** intern. congr., Lausanne, Switzerland. (P. Regamey, Etat de Vaud, 14. Cite-Devant, Lausanne)

21–24. German Soc. for **Psychology,** 24th congr., Vienna, Austria. (J. Rohracher, Deutsche Gesellschaft für Psychologie, Am Hof le, 5300 Bonn, Germany)

21–25. **Animal Care Panel,** 15th annual New York, N.Y. (ACP, P.O. Box 1028, Joliet, Ill. 60434)

21–26. **Documentation,** 30th intern. conf., The Hague, Netherlands, (Intern. Federation for Documentation, 7 Hofweg, The Hague)

21–26. **Electrochemical Thermodynamics and Kinetics,** intern., London, England. (M. Fleischmann, Dept. of Physical Chemistry, Univ. of Newcastle upon Tyne, England)

Meeting Notes

The following are scientific and technical meetings scheduled in the U.S.S.R and satellite nations. Similar lists will appear regularly in this section. In cases where no other source of information is known, the Academy of Sciences of the nation involved is listed.

August 1964

25–27. Structure and Function of **Red Blood Cells,** 4th intern. symp., Berlin, East Germany. (Gesellschaft für Experimentelle Medizin der DDR, Littenstr. 78, Berlin C.2)

26–28. Neurochemical and Liquor Research, work Group, East Germany **Psychiatric-Neurological** Soc., Rostock, East Germany. (German Acad. of Sciences (Berlin), Mohrenstr. 39, Berlin W.8)

26–3. **Electron Microscopy,** 3rd European regional conf., Prague, Czechoslovakia. (J. Wolf, Organizing Committee, Albertov 4, Prague 2)

30–5. **Nonlinear Systems,** Sensitivity Analysis, intern. symp., Prague, Czechoslovakia. (G. Ruppel, Intern. Federation of Automatic Control, Postfach 10250, Düsseldorf 10, Germany)

31–4. **Mathematical Statistics,** applications in industry, colloquium, Budapest, Hungary. (Janos Bolyai Mathematical Soc., Reáltanoda-ut. 13-15, Budapest)

31–9. **Soil Science,** 8th intern. congr., Bucharest, Rumania. (N. Cernescu, Geological Inst., Sosceaua Kiseleff 55, Bucharest)

August 1964 (dates unknown)

Erythrocytes, 4th intern. symp., East German Soc. for Experimental Medicine, Berlin, East Germany. (Dr. Faulhaber, Sekretariat, Gesellschaft für Experimentelle Medizin der DDR, Littenstr. 78, Berlin C.2)

International Assoc. of **Geodesy and Geophysics,** Sofia, Bulgaria. (Bulgarian Acad. of Sciences, 7th November St. 1, Sofia)

Spectroscopy, conf., Scientific Soc. for Mechanical Engineering, Hungary. (L. Prockl, The Society, Szabadsag ter 17, Budapest 5)

September 1964

1–5. **Drug Standardization**, 2nd intern. conf., Berlin, East Germany. (German Acad. of Sciences (Berlin), Mohrenstr. 39, Berlin W.8)

1–5. **Material Testing**, 3rd conf., Scientific Soc. for Mechanical Engineering, Hungary. (L. Prockl, The Society, Szabadsag ter 17, Budapest 5)

2–4. **Coordination Compounds**, structure and properties, symp., Bratislava, Czechoslovakis. (Czechoslovak Chemical Soc., Hradcanské nám 12, Prague 1)

2–5. Higher Ranking **Chemistry Instructors**, meeting, East German Chemical Soc., Berlin, East Germany. (German Academy of Sciences (Berlin), Mohrenstr. 39, Berlin W.8)

3–5. Czechoslovak **Orthopedic** congr., Prague. (M. Jaroš, Libuslna 5, Prague 2)

5–7. **Obstetrics and Gynecology** Section, Czechoslovak Medical Soc., Bratislava-Smolenice. (V. Kliment, Obstetrics and Gynecology Section, The Society, Albertov 7, Prague 2)

6–20. Czechoslovak **Scientific-Technical Soc.**, Brno. (The Society, Siroka 5, Prague 1)

7–13. **Aeronautical Sciences**, 15th intern. congr., Warsaw, Poland. (Intern. Astronautical Federation, 250 rue St. Jacques, Paris 5°, France)

9–13. **Oto-Rhino-Laryngology** Section, East German Soc. for Clinical Medicine, Dresden. (German Acad. of Sciences (Berlin), Mohrenstr. 39, Berlin W.8)

13–19. Current Problems of **Disarmament and World Security**, 13th Pugwash conf., Prague, Czechoslovakia. (J. Rotblat, Pugwash Continuing Committee, 8 Asmara Rd., London, N.W.2, England)

14–16. Physiology and Pathophysiology of the **Respiratory System in Children**, symp., Prague, Czechoslovakia. (Z. Vokac, Sokolska 2, Prague 2)

14–17. **Coordination Chemistry**, Hungarian Chemical Soc., Tihany. (M. T. Beck, The Society, Szabadsag ter 17, Budapest 5)

5–19. **Industrial Chemistry**, 35th intern. congr., Warsaw, Poland. (Secretariat, Rydygiera 8, Warsaw 86)

15–20. Yugoslav **Pharmacists**, 4th congr. Optija. (Yugoslav Acad. of Sciences, Zrinski trg. 11, Zagreb 1)

21–24. East German Acad. for **Advanced Medical Training**, annual congr., Leipzig. (German Acad. for Advanced Medical Training, Noeldnerstr. 40-42, Berlin-Lichtenberg)

21–25. Czechoslovak and British **Neurosurgeons**, Prague and Bratislava, Czechoslovakia. (Zd. Kunc, Ustredni vojenska nemocnice, Prague)

23–26. **Stomatology**, intern. conf., Budapest, Hungary. (Hungarian Acad. of Sciences, Akademia-ut. 2, Budapest)

28–30. **Microecology**, symp., Berlin and Potsdam-Rehbruecke, East Germany. (K. Taeufel, Section of Nutrition, Class for Medicine, German Acad. of Sciences (Berlin), Mohrenstr. 39, Berlin W.8)

28–1. **Radiochemistry** conf., Liblice, Czechoslovakia. (Czechoslovak Chemical Soc., Hradcanské nám 12, Prague 1)

29–2. **Rheumatology**, 2nd Czechoslovak congr., Pieštany. (F. Lenoch, Výzkumný úsav chorob reumatických, Na slupi 4, Prague 2)

29–3. **Infections Hepatitis**, symp., Prague, Czechoslovakia. (Regional Office for Europe, World Health Organization, 8 Scherfigsvej, Copenhagen Ø, Denmark)

30–3. **Roentgenography**, 9th congr., East German Soc. for Clinical Medicine, East Germany. (German Acad. of Sciences (Berlin), Mohrenstr. 39, Berlin W.8)

September 1964 (dates unknown)

Analytical Chemistry, conf., Peking, China. (Acad. of Sciences of China, Peking)

Catalysis, intern. conf., Prague, Czechoslovakia. (Czechoslovak Scientific and Technical Soc., Siroka 5, Prague 1)

International Committee of **Legal Metrology**, Bucharest, Rumania. (Intern. Organization of Legal Metrology, 9 avenue Franco-Russe, Paris 7e, France)

Czechoslovak **Ophthalmological** Soc., 28th annual congr., Kosice, Czechoslovakia. (Ophthalmological Diseases Clinic, Medical Faculty, P. J. Safarik Univ., Bratislavova 41, Kosice)

Peptides, 7th European symp., Budapest, Hungary. (Hungarian Acad. of Sciences, Akadémia-ut. 2, Budapest)

Prehistoric and Protohistoric Sciences, 7th intern. congr. (Acad. of Sciences of the U.S.S.R., Lenin Prospekt 7, Moscow)

European **Seismological** Commission, general assembly, Budapest, Hungary. (L. Egyed, c/o Loránd Eötvös Univ., Muzeum Körut 5, Budapest 5)

Extrapulmonary **Tuberculosis**, congr., Pneumology and Phthisiology Soc., Czechoslovak Medical Soc., Vysne Hagy. (E. Bartha, Tuberculosis Center, Vysne Hagy)

September-October 1964 (dates unknown)

International **Dairy** Federation, 49th annual, Warsaw, Poland. (Secretariat, 10 rue Ortelius, Brussels 4, Belgium)

Pathophysiologists, 1st all-union congr., Tbilisi, U.S.S.R. (I. R. Petrov, All-Union Soc. of Pathophysiologists, Moscow, U.S.S.R.)

October 1964

2–4. **Morphology** Assoc., conf., Leipzig, East Germany. (Sekretariat, Gesellschaft für Experimentelle Medizin der DDR, Littenstr. 78, Berlin C.2)

2–4. East German Soc. for **Stomatology**, conf. on fluorine prophylaxis, Dresden. (German Acad. of Sciences (Berlin), Mohrenstr. 39, Berlin W.8)

4–14. Functional and Morphological Organization of **Cells**, 2nd intern. symp., Weimar, East Germany. (East German Soc. of Natural Scientists and Doctors, 56 Wuppertal-Eberfeld)

5–10. **Otolaryngological** congr., Czechoslovak Medical Soc., Prague. (K. Vrticka, Phoniatric Research Inst., Zitna 24, Prague 2)

7–9. **Epidermal Barriers**, structure and function, 2nd symp., Czechoslovak Dermatological Soc., Brno. (J. Horáček, Dermatological Clinic, Pekarska 53, Brno)

8. Relations between Albumin and Lipids in **Vegetable Tissues**, symp., Prague, Czechoslovakia. (J. Pelnar, Czechoslovak Chemical Soc., Hradcanské nám 12, Prague 1)

8–10. **Internists**, East German conf., Leipzig. (German Acad. of Sciences (Berlin), Mohrenstr. 39, Berlin W.8)

8–10. **Machine Tools**, conf., Hungary. (L. Prockl, Scientific Soc. for Mechanical Engineering, Szabadsag ter 17, Budapest 5)

8–10. **Physiological Peculiarities in Childhood and Adolescence**, symp., East German Hygiene Soc., Berlin. (German Acad. of Sciences (Berlin), Mohrenstr. 39, Berlin W.8)

12–13. Polish **Urology** Soc., 9th meeting, Krakow, Poland. (Polish Acad. of Sciences, Palace of Culture and Sciences, Dworkowa 3, Warsaw)

14–16. Society of German **Mining Engineers and Metallurgists**, 10th annual, Karl-Marx-Stadt, East Germany. (Gesellschaft Deutscher Berg-und Hüttenleute, Wallstr. 68, Berlin C.2)

15–17. Problems of **Isothiocyanates**, symp., Smolenice, Czechoslovakia. (Czechoslovak Chemical Soc., Hradcanské nám 12, Prague 1)

15–17. East German **Veterinary Medicine** Soc., 11th intern. congr., Leipzig, East Germany. (Secretariat, Scientific Soc. for Veterinary Medicine, Charlottenstr. 66, Berlin W.8)

21–23. **Transfusiologists**, conf., Czechoslovak Medical Soc., Prague. (J. Libansky, U Nemocnice 1, Prague 2)

21–24. East German **Chemical** Soc., annual general assembly, Leipzig, East Germany. (Secretariat, The Society, Berlin W.8, Unter den Linden 68–70)

27–29. Reliability in **Electronics**, symp., Budapest, Hungary. (Secretariat, Scientific Soc. of Telecommunications, Technika Haza, Szabadsag ter 17, Budapest 5)

October 1964 (dates unknown)

Cardiology Section, Czechoslovak Medical Soc., Kosice, Czechoslovakia. (A. Fronek, Inst. of Circulatory Diseases, Budejovicka 800, Prague-Krc)

Infectious Diseases, symp., East German Hygiene Soc., Leipzig. (German Acad. of Sciences, (Berlin), Mohrenstr. 39, Berlin W.8)

Iatrogenic Diseases, Internal Medicine Section, Czechoslovak Medical Soc. (J. Berman, First Internal Medicine Clinic, U Nemocnice 2, Prague 2)

Crude **Oil** Microbiology, intern. Symp., Brno, Czechoslovakia. (W. Schwartz, Inst. for Microbiology, Ernst-Moritz-Arndt Univ., Ludwig-Jahn Str. 15, Greifswald, East Germany)

November 1964

2–4. **Signal Recording**, natl. symp., Liblice, Czechoslovakia. (Scientific Council of Physics, Czechoslovak Acad. of Sciences, Národni tu. 3, Prague 1)

2–6. **Cortico-Visceral Physiology and Pathology**, intern. symp., Berlin, East Germany. (K. Fichtel, Inst. für Kortiko-Viszerale Pathologie und Therapie, Wiltbergstr. 50, Berlin-Buch, East Germany)

5–6. **Electrochemical Processes**, symp., Leuna-Merseburg, East Germany. (Dr. Landsberg, Technische Hochschule für Chemie, Leuna-Merseburg)

5–7. **Nutrition Hygiene**, conf., Brno, Czechoslovakia. (K. Halacka, Obrancu miru 20, Brno)

22–26. Hungarian Soc. for **Dermatology**, congr., Budapest, Hungary. (Hungarian Acad. of Sciences, Akademiaut. 2, Budapest)

23–27. International Atomic Energy Agency and Food and Agricultural Organization, symp., on Use of **Radioisotopes in Animal Nutrition and Physiology**, Prague, Czechoslovakia. (IAEA, 11 Karntnerring, Vienna, Austria)

26–28. East German **Hygiene** Soc., congr., Dresden. (German Acad. of Sciences (Berlin), Mohrenstr. 39, Berlin W.8)

26–28. **Prophylaxis** in the Conduct of **Remedial-Preventive Measures**, intern. congr., Budapest, Hungary. (J. Balog, Szabolcs ut. 35, Budapest 13)

November 1964 (dates unknown)

Epidemiology and Etiology of **Chronic Nephritis**, Yugoslavia. (Regional Office for Europe, World Health Organization, 8 Scherfigsvej, Copenhagen Ø, Denmark)

Progress in Treatment in **Internal Medicine**, 14th internal medicine day, Internal Medicine Section, Czechoslovak Medical Soc., Czechoslovakia. (J. Berman, First Internal Medicine Clinic, U Nemocnice 2, Prague 2)

December 1964

3–5. **Sociological Questions** Pertaining to the **Medical Field**, symp., East German Hygiene Soc., Berlin. (German Acad. of Sciences, (Berlin), Mohrenstr. 39, Berlin W.8)

1964 (dates unknown)

Animal Blood Group, 9th conf., Czechoslovakia. (Czechoslovak Acad. of Sciences, Národni tř. 3, Prague)

Czechoslovak-Polish **Medical** conf., annual, Czechoslovakia. (Czechoslovak Acad. of Sciences, Národni tř. 3, Prague)

Digital Computers, Economic and Administrative Applications, colloquium, Hungary. (A. Prekopa, "Bolyai Janos" Mathematical Soc., Szabadsag ter 17, Budapest 5)

China **Electrical Engineering** Soc., conf., Mukden, Communist China. (Acad. of Sciences of China, Peking)

Electronics, 3rd biennial natl. conf., Prague, Czechoslovakia. (Czechoslovak Acad. of Sciences, Národni tř. 3, Prague)

International Council for **Educational Films**, 14th annual, Dubrovnik, Yugoslavia. (Yugoslav Acad. of Sciences and Arts, Zrinski trg. 11, Zagreb 1)

Technical and Scientific Films, 3rd intern. festival, Budapest, Hungary. (Scientific Soc. of Mechanical Engineering, Szabadsag ter 17, Budapest 5)

Fracture Reservoirs, 3rd all-union conf., L'vov, U.S.S.R. (Acad. of Sciences of the U.S.S.R., Lenin Prospekt 7, Moscow)

High Polymers, conf., Oswecim, Poland. (Czechoslovak Scientific and Technical Soc., Siroka 5, Prague 1)

Laboratory Technique, 4th annual, Chamber of Technology, East Germany. (Fachverband Chemiche Technik, Kammer der Technik, Ebertstr. 27, Berlin W.8, East Germany)

Neurosurgical conf., Prague, Czechoslovakia. (Czechoslovak Acad. of Sciences, Národni tř. 3, Prague)

High Energy **Nuclear Physics**, 12th intern. conf., Moscow, U.S.S.R. (Ig. E. Tamm, Acad. of Sciences of the U.S.S.R, B Kaluzhskaya 14, Moscow)

Obstetricians-Gynecologists, 12th all-union conv., U.S.S.R. (Acad. of Sciences of the U.S.S.R., Lenin Prospekt 7, Moscow)

Electrochemistry of **Organic Compounds**, 5th conf., Moscow, U.S.S.R. (Inst. of Chemistry, Acad. of Sciences of the U.S.S.R., Lenin Prospekt 7, Moscow)

Czechoslovak Soc. of **Orthopedics and Traumatology**, congr., Bratislava. (Czechoslovak Acad. of Sciences, Národni, tř. 3, Prague)

Microelements and Natural **Radioactivity** in Soils, 4th conf., U.S.S.R. (Acad. of Sciences of the U.S.S.R., Lenin Prospekt 7, Moscow)

Zoologists, 2nd conf., Krasnodarsk, U.S.S.R. (Acad. of Sciences of the U.S.S.R., Lenin Prospekt 7, Moscow)

1964–1965 (dates unknown)

Physiological Principles of Complex Forms of Behavior, conf., U.S.S.R. (Acad. of Sciences of the U.S.S.R., Lenin Prospekt 7, Moscow)

March 1965 (dates unknown)

Calibration, 2nd intern. conf., Leipzig, East Germany. (German Acad. of Sciences (Berlin), Mohrenstr. 39, Berlin W.8)

Snythetic Fibers, 2nd symp., Weimar, East Germany. (H. Klare, Inst. für Faserstoff-Forschung, Deutsche Akademie der Wissenschaften, Kantstr. 55, Teltlow-Seehof, East Germany)

May 1965

26–29. Electrochemical Methods and Principles in **Molecular Biology**, 2nd symp., Jena, East Germany. (Inst. for Microbiology and Experimental Therapy, German Acad. of Sciences (Berlin), Mohrenstr. 39, Berlin W.8)

May 1965 (dates unknown)

Ophthalmology, natl. conf., ophthalmology Section, Czechoslovak Medical Soc., Brno. (J. Vanysek, Ophthalmological Clinic, Faculty Hospital, Petarska 53, Brno)

Computers for **Structural Analysis of Crystals**, 4th all-union conf., Moscow, U.S.S.R. (Academy of Sciences of the U.S.S.R., Lenin Prospekt 7, Moscow)

June 1965

27–4. Applications of **Mathematics in the Engineering Sciences**, 3rd intern. colloquium, Weimar, East Germany. (H. Matzke, Hochschule für Architekture und Bauwesen, Karl-Marx-Platz 2, Weimar)

June 1965 (dates unknown)

Microwave Communications, 3rd colloquium, Hungary. (Microwave Research Inst., Hungarian Acad. of Sciences, Technika Haza, Szabadsag ter 17, Budapest 5)

July 1965 (dates unknown)

International Union of Pure and Applied **Chemistry**, 20th congr., Moscow, U.S.S.R. (R. Morf, c/o F. Hoffmann-La Roche, Grenzacherstr. 124, Basel 2, Switzerland)

August 1965

30–10. **Population**, 2nd world conf., Belgrade, Yugoslavia. (United Nations Population Commission, New York, N.Y.)

August 1965 (dates unknown)

Czechoslovak Acad. of Sciences, G. J. Mendel memorial symp., Brno, Czechoslovakia. (M. Sosna, Na cvicisti 2, Prague 6, Czechoslovakia)

Ionization Phenomena in Gases, 7th intern. symp., Belgrade, Yugoslavia. (B. Perović, Boris Kidrič Inst. of Nuclear Science, P.O. Box 522, Belgrade)

Limnology, 16th intern. congr., Poland. (Polish Acad. of Sciences, Palace of Culture and Sciences, Dworkowa 3, Warsaw)

August–September 1965 (dates unknown)

Soil Erosion Problems, Szczecin and Krakow, Poland. (S. Ziemnicki, Melioration and Grassland Inst., Lublin, Poland)

September 1965

3–19. **Speleology**, 4th intern, congr., Lubljana, Postajna, and Opatija, Yugoslavia. (Yugoslav Acad. of Sciences and Arts, Zrinski trg. 11, Zagreb 1)

13–18. **Foundry**, 32nd intern. congr., Poland. (Polish Acad. of Sciences, Palace of Culture and Sciences, Dworkowa 3, Warsaw)

14–20. International **Statistical** Inst., 35th session, Belgrade, Yugoslavia. (The Institute, 2 Oostdiuniaan, The Hague, Netherlands)

15–30. **Electrical Engineers**, 11th annual, Weimar, East Germany. (Fachferband Elektrotechnik, Kammer der Technik, Ebertstr. 27, Berlin W.8)

September 1965 (dates unknown)

Nematology, 8th intern. symp., Aschersleben, East Germany. (J. van Brande, Soc. of European Nematologists, Rujslandbonwhage-school, Coupure links 235, Ghent, Belgium)

History and Philosophy of Science, 11th intern. congr., Warsaw, Poland. (Polish Acad. of Sciences, Palace of Culture and Sciences, Dworkowa 3, Warsaw)

Hydraulic Research, 11th congr., Lenin-

grad, U.S.S.R. (Acad. of Sciences of the U.S.S.R., Lenin Prospekt 7, Moscow)

October 1965

5–10. **Moors**, research on, 9th intern. congr., Budapest, Hungary. (Hungarian Acad. of Sciences, Akademiaut. 2, Budapest)

1965 (dates unknown)

Actinometry and Atmospheric Optics, 6th conf., Tartu, Estonia. (Acad. of Sciences of the U.S.S.R., Lenin Prospekt 7, Moscow)

Invariance in Automatic Control, 3rd all-union conf., U.S.S.R. (Inst. of Automatics and Telemechanics, Dept. of Technical Sciences, Acad. of Sciences of the U.S.S.R., Lenin Prospekt 7, Moscow)

International **Brain Research** Organization, symp., Hungary. (UNESCO, Place de Fontenoy, Paris 7e, France)

Cardiologists, 1st all-union congr., U.S.S.R. (Acad. of Sciences of the U.S.S.R., Lenin Prospekt 7, Moscow)

Chemical Fibers, 2nd symp., East German Chemical Soc., Weimar. (German Acad. of Sciences (Berlin), Mohrenstr. 39, Berlin W.8)

Communications, 6th socialist conf., Peking, Communist China. (Acad. of Sciences of China, Peking)

Czechoslovak-Polish Medical conf., annual, Poland. (Polish Acad. of Sciences, Palace of Culture and Sciences, Dworkowa 3, Warsaw)

Fatigue and Restoration, problems, congr., U.S.S.R. (Academy of Sciences of the U.S.S.R., Lenin Prospekt 7, Moscow)

Geographic Soc. of the U.S.S.R., 4th congr., U.S.S.R. (Acad. of Sciences of the U.S.S.R., Lenin Prospekt 7, Moscow)

Information Theory, statistical decision functions and random processes, 4th conf., Czechoslovakia. (Czechoslovak Acad. of Sciences, Narodni tř. 3, Prague 1)

Macromolecular Chemistry, intern. symp., Prague, Czechoslovakia. (O. Wichterle, Inst. of Macromolecular Chemistry, Petriny, Prague 6)

Natural Foci of Diseases and Parasitology, 5th conf., Dushanbe, U.S.S.R. (Acad. of Sciences of the U.S.S.R., Lenin Prospekt 7, Moscow)

Pharmaceutical Sciences 25th intern. congr., Prague, Czechoslovakia. (J. Hovorka, Inst. of Helminthology, ul. Dukeskych hrdinov 11, Kosice, Czechoslovakia)

Physico-Chemical Analysis, 5th all-union conf., Moscow, U.S.S.R. (Acad. of Sciences of the U.S.S.R., Lenin Prospekt 7, Moscow)

Purest Substances in Science and Technology, 2nd intern. symp., Esst German Chemical Soc., Dresden, East Germany. (East German Chemical Soc., Unter den Linden 68/70, Berlin W.8)

International **Scientific Film** Assoc., 19th annual congr., Bucharest Rumania. (Acad. of the Rumanian People's Republic, Calea Victoriei 125, Bucharest)

Telemechanics and Remote Control, symp., Bucharest, Rumania. (Inst. of Mathematics, Acad. of the Rumanian People's Republic, Calea Victoriei 125, Bucharest)

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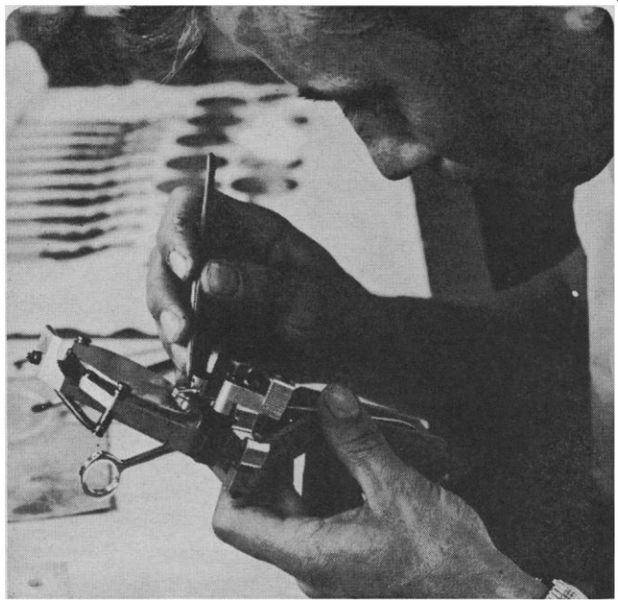

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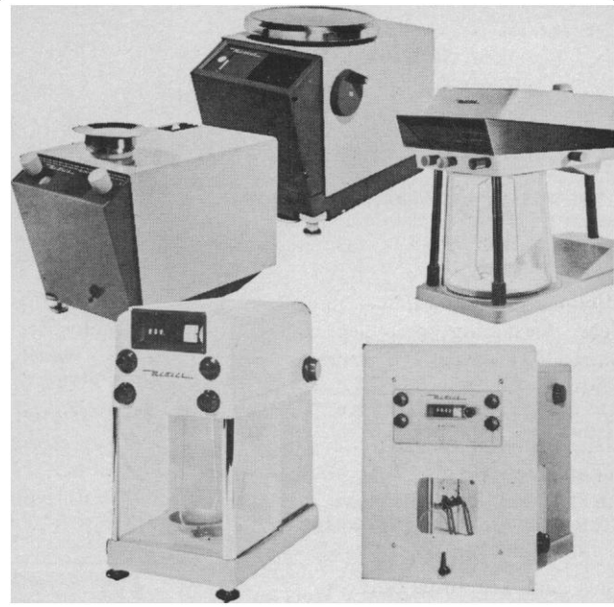

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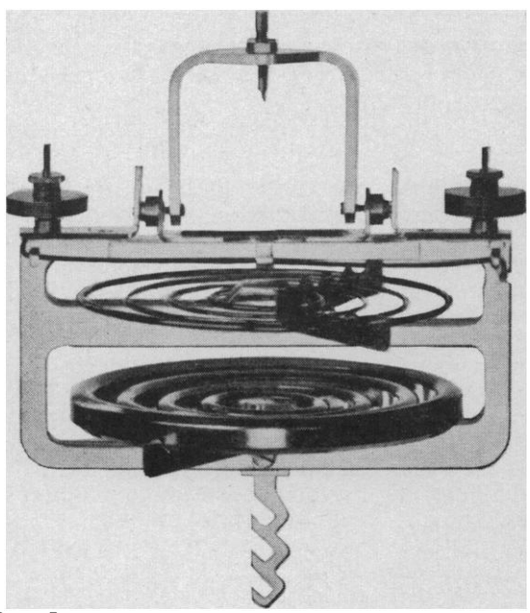

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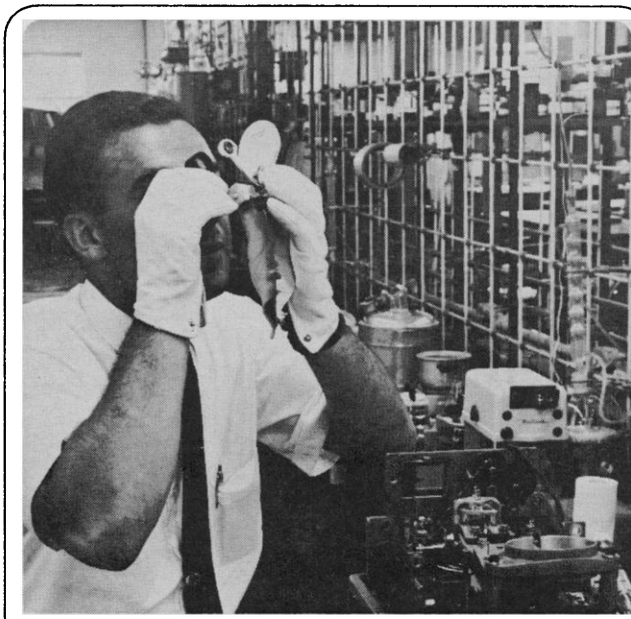

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Bibliography of medical papers and articles pertaining to hyperbaric oxygenation lists over 300 known medical works on this subject from all over the world. In addition to the initial bibliography, complete through December 1963, monthly addenda are being printed and distributed to keep the bibliography up to date. Both bibliography and addenda are 8½ by 11 inches and are three-hole punched to fit standard binders. The Bethlehem Corporation is extending this offer to all doctors who are interested. The initial package offered contains the original 8-page booklet and addendum sheets bringing the bibliography up to April 1964. To receive a copy and future addenda, write the Bethlehem Corporation.—D.J.P. (Bethlehem Corp., Hyperbaric Oxygen Therapy Div., 2250 W. Second St., Bethlehem, Pa.)

Circle 1 on Readers' Service card

Tape programmer is a parallel to serial converter that records continuously at 110 characters per second. Programmer word length is 8 characters, each word consisting of a maximum of 6 characters of primary data and up to 3 characters of auxiliary data. The latter are entered by contact closures. The all-solid-state programmer accepts 8421 parallel codes and is compatible with the manufacturer's analog to digital encoder/readout equipment. Input data to the programmer are stored in a buffer. A punch command is generated by external contact closures or manual push button. One word is punched for each command. Options include expansion to 16 characters, manual entry, desk-mounting console, and actuation of Friden model 2 and Teletype model 28 LARP punches.—J.S. (Perkin-Elmer Corp., Main Avenue, Norwalk, Conn.)

Circle 2 on Readers' Service card

Magnetic stirrer is designed to provide complete yet gentle mixing that eliminates vortex, surface turbulence, and laminar flow. The drive magnet in the housing is mounted at the end of a motor-driven bar. As the magnet sweeps a circle under the housing's aluminum top, it attracts a plate inside the sample vessel. This plate is soft iron, coated with inert nonporous Penton plastic. The plate has two raised sides, and a depressed center with a hole in it. When one side of this "wobble-plate" is pulled down by the magnet, liquid is forced under, downward, and outward, while the opposite side of the plate rocks upward, pushing a column of liquid to the surface. Motor speed is continuously variable from 120 to 300 rev/min on 60-cy a-c, and 100 to 200 rev/min on 50 cy. Three wobble plates are supplied, with 1⅜-inch, 1⅝-inch, and 2¼-inch diameters for 100- to 300-ml, 300- to 600-ml, and 600- to 1000-ml, respectively. The unit performs best in low-viscosity liquids, to 150 centipoises. The aluminum housing, finished in chemical-resistant green enamel, is 5½ by 5½ by 4 inches high. An integral clamp at the rear permits mounting to a lattice or other support. —R.L.B. (Fisher Scientific Co., 415 Fisher Bldg., Pittsburgh, Pa.)

Circle 3 on Readers' Service card

Microwave apparatus for the 3-cm range is designed especially for educational use in high school and university physics classes. Included in the apparatus are a transmitter, a receiver, and a variety of microwave plumbing. These are designed for operation in the X band, 8500 to 9600 Mcy/sec. Relatively little space is required for operation. Microwave experiments that can be performed include transmission, reflection, diffraction, polarization, aperture interference patterns, phase versus free-space wavelength, water opacity, and simulated radar. The transmitter and receiver each has its own power supply, horn, and waveguide. The transmitter is equipped with a Klystron oscillator and the receiver is equipped with a milliammeter and a speaker. Accessories include a slotted line with probe and H-plane bend, a calibrated variable attenuator, an analyzing grating for determination of plane of polarization, a calibrated cavity wavemeter, an index-of-refraction plate, a phase shifter probe, a circular mirror, a rectangular mirror, and a dielectric waveguide mirror. The microwave beam is modulated at 1000 cy/sec to make possible audible monitoring. It can also be modulated from an external microphone, phonograph, or other source. An operating manual and an instruction booklet of experiments are included. Operation is on 115/230 volts, 50/60 cy/sec power.—J.S. (Central Scientific Co., 1700 Irving Park Rd., Chicago, Ill. 60613)

Circle 4 on Readers' Service card

Catheter tubing of radiopaque polyethylene is for use in arterial and venous catheterizations, intravenous and intra-arterial infusions, and contrast media studies. This tubing is moldable and flexible with smooth even surfaces and has the characteristics of medical grade polyethylene tubing. The tubing is available in 15-foot lengths in either of two standard sizes: French size 7F (0.047 inch inside diameter, 0.091 inch outside diameter) which is yellow, and French size 9F (0.071 inch inside diameter, 0.117 inch outside diameter) which is gray. Tip stylettes used in shaping the distal tip of the catheter are available in these standard configurations: "J" tip, shepherd's crook, "S" curve, and Littman curve. Special stylettes are available on request. Also offered as accessories are special fittings, flaring tools, stainless-steel spring guides, puncture needles, and a recommended germicide-detergent.—D.J.P. (United States Catheter and Instrument Corp., Glens Falls, N.Y.)

Circle 5 on Readers' Service card

The material in this section is prepared by the following contributing writers:

Robert L. Bowman (R.L.B.), with the assistance of Denis J. Prager (D.J.P.), Laboratory of Technical Development, National Heart Institute, Bethesda 14, Md. (medical electronics and biomedical laboratory equipment).

Joshua Stern (J.S.), Basic Instrumentation Section, National Bureau of Standards, Washington 25, D.C. (physics, computing, electronics, and nuclear equipment).

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NEW BOOKS

(Continued from page 699)

General Zoology. Clarence J. Goodnight, Marie L. Goodnight, and Peter Gray. Reinhold, New York; Chapman and Hall, London, 1964. 576 pp. Illus. $8.95.

Gonadotropins: Their Chemical and Biological Properties and Secretory Control. Sixth Animal Reproduction Symposium (Corvallis, Ore.), August 1963. H. H. Cole, Ed. Freeman, San Francisco, Calif., 1964. 258 pp. Illus. Paper, $7.50.

Growth and Development. Maurice Sussman, Prentice-Hall, Englewood Cliffs, N.J., ed. 2, 1964. 128 pp. Illus. Paper, $1.75; cloth, $3.95.

Handbook of Cell and Organ Culture. Donald J. Merchant, Raymond H. Kahn, and William H. Murphy, Jr. Burgess, Minneapolis, Minn., ed. 2, 1964. 271 pp. Illus. Paper, $6.25; cloth, $7.50.

Histologie und Mikroskopische Anatomie des Menschen. pt. 5, *Überarbeitete Auflage*. W. Bargmann. Thieme, Stuttgart, Germany (© 1951), 1964. 870 pp. Illus. DM. 72.

Host-Parasite Relationships in Invertebrate Hosts. A symposium, British Society for Parasitology (London), November 1963. Angela E. R. Taylor, Ed. Blackwell, Oxford, England; Davis, Philadelphia, 1964. 142 pp. Paper, $3.50.

Human Reproduction and Sexual Behavior. Charles W. Lloyd, Ed. Lea and Febiger, Philadelphia, 1964. 564 pp. Illus. $12.50.

An Introduction to Genetics. A. H. Sturtevant and G. W. Beadle. Dover, New York, 1964 (reprint of 1939 ed.). 391 pp. Illus. Paper, $2.

An Introduction to the Study of Insects. Donald J. Borror and Dwight M. DeLong. Holt, Rinehart, and Winston, New York, ed. 2, 1964. 831 pp. Illus. $10.75.

Kimura Commemoration Number, Science Reports, Tohoku University (Biology). Tohoku Univ., Sendai, Japan, 1963. 319 pp. Illus. 35 papers published in honor of Professor Arika Kimura on the occasion of his retirement from Tohoku University.

A Laboratory Manual of Mammalian Anatomy and Physiology. Sigmund Grollman. Macmillan, New York, 1964. 220 pp. Illus. Paper, $4.50.

Langzeitbehandlung mit Antikoagulantien. vol. 6. Hamburger symposium (Blutgerinnung), May 1963. L. Zukschwerdt and H. A. Thies, Eds. Schattauer, Stuttgart, Germany, 1964. 250 pp. Illus. DM. 36.

The Liver: Morphology, Biochemistry, Physiology. vol. 2. C. Rouiller, Ed. Academic Press, New York, 1964. 688 pp. Illus. $24.

The Lower Tertiary Floras of Southern England. vol. 4, *A Summary and Survey of Findings in the Light of Recent Botanical Observations*. Marjorie Elizabeth Jane Chandler. British Museum (Natural History), London, 1964. 163 pp. Illus. Plates. £7 10s.

Maheshwari Commemoration Volume (*J. Indian Bot. Soc.* 42-A). T. S. Sadasivan, Ed. Indian Botanical Soc., Madras, 1963. 364 pp. Illus. 36 papers published in

honor of Professor P. Maheshwari. Among the contributors are F. C. Steward and R. H. Wetmore (U.S.); Tsunewaki, H. Kihara, and Y. Morimura (Japan); G. Erdtman (Sweden); and A. Fahn (Israel).

Methods in Cell Physiology. vol. 1. David M. Prescott, Ed. Academic Press, New York, 1964. 479 pp. Illus. $16.50.

Molecular Biology: Genes and the Chemical Control of Living Cells. J. M. Barry. Prentice-Hall, Englewood Cliffs, N.J., 1964. 149 pp. Illus. $3.35.

Molecular Pharmacology. The mode of action of biologically active compounds. vol. 1. E. J. Ariëns, Ed. Academic Press, New York, 1964. 525 pp. Illus. $17.

The Motor Endplate. Sumner I. Zacks. Saunders, Philadelphia, 1964. 333 pp. Illus. $17.

Neural Theory and Modeling. Proceedings of a symposium (Ojai, Calif.), December 1962. Richard F. Reiss, Ed. Stanford Univ. Press, Stanford, Calif., 1964. 439 pp. Illus. $13.50.

Nuclei and Radioactivity. Gregory R. Choppin. Benjamin, New York, 1964. 160 pp. Illus. Paper, $1.95; cloth, $4.95.

The Nucleohistones. James Bonner and Paul Ts'o, Eds. Holden-Day, San Francisco, Calif., 1964. 416 pp. Illus. $12.75. 36 papers presented at the World Congress held 29 April to 2 May 1963.

Perspectives of Biochemical Plant Pathology. Symposia and lectures commemorating the 75th anniversary of the Department of Plant Pathology and Botany (New Haven, Conn.), May 1963. Saul Rich, Ed. Connecticut Agricultural Experiment Station, New Haven, 1963. 199 pp. Illus.

Pesticide Handbook, 1964. Compiled and edited by Donald E. H. Frear and Sidney Friedman. College Science Publishers, State College, Pa., ed. 16, 1964. 314 pp. Illus. Paper, $2.50; cloth, $3.50.

Photosynthetic Mechanisms of Green Plants. A symposium (Warrenton, Va.), October 1963. Bessel Kok, Ed. Natl. Acad. of Sciences–Natl. Res. Council, Washington, D.C., 1963. 778 pp. Illus. $12.

Physikalische Begriffe in der Klinischen Biochemie. Hans Koblet and G. Riva. Thieme, Stuttgart, Germany, 1964. 286 pp. Illus. DM. 30.

The Physiological Clock. Endogenous diurnal rhythms and biological chronometry. Erwin Bünning. Translated from the second German edition (Berlin, 1963). Springer, Berlin; Academic Press, New York, 1964. 151 pp. Illus. $6.50.

The Physiology of Synapses. John Carew Eccles. Academic Press, New York; Springer, Berlin, 1964. 328 pp. Illus. $9.

Pilot Register of Zoology. W. L. Brown, Jr., Ed. Department of Entomology and Limnology, New York State College of Agriculture, Cornell University, Ithaca, 1964. 20 cards (an experimental edition).

Pollen Physiology and Fertilization. A symposium (Univ. of Nijmegen, Netherlands), August 1963. H. F. Linskens, Ed. North-Holland, Amsterdam, 1964. 269 pp. Illus. $11.20.

Radiation and Immune Mechanisms. William H. Taliaferro, Lucy Graves Taliaferro, and Bernard N. Jaroslow.

Academic Press, New York, 1964. 168 pp. Illus. Paper, $3.45; cloth, $5.95.

Radiolysis of Hydrocarbons. A. V. Topchiev, Ed. Translated from the Russian edition. R. A. Holroyd, Ed. Elsevier, New York, 1964. 244 pp. Illus. $11.

Régulateurs Naturels de la Croissance Végétale. A colloquium (Gif-sur-Yvette, France), July 1963. J. P. Nitsch, Ed. Édition du Centre National de la Recherche Scientifique, Paris, 1964. 748 pp. Illus. Papers presented at the Fifth International Conference on Plant Growth Substances.

The Reproduction of Life. Robert L. Lehrman. Basic Books, New York, 1964. 256 pp. Illus. $4.95.

Residue Reviews. vol. 5, *Instrumentation for the Detection and Determination of Pesticides and their Residues in Foods.* A symposium (Los Angeles, Calif.), April 1963. Francis A. Gunther, Ed. Springer, Berlin; Academic Press, New York, 1964. 184 pp. Illus. $6.50.

Review of Gross Anatomy. A dynamic approach. Ben Pansky and Earl Lawrence House. Macmillan, New York, 1964. 455 pp. Illus. Paper, $6.95; cloth, $8.95.

Seaweed Symposium, Proceedings. Fourth International Symposium (Biarritz, France), September 1961. Ad. Davy de Virville and J. Feldmann, Eds. Pergamon, London; Macmillan, New York, 1964. 491 pp. Illus. $15.

The Structure and Life of Bryophytes. E. V. Watson. Hillary House, New York, 1964. 192 pp. Illus. $3.

Studien zum Problem der Deformation von Baumkronen durch Wind. W. Weischet and D. Barsch. Geographisches Institut I der Universität Freiburg, Freiburg, Germany, 1963. 130 pp. Illus. Paper.

Substances Producing Pain and Itch. C. A. Keele and Desirée Armstrong. Williams and Wilkins, Baltimore, 1964. 407 pp. Illus. $8.

A Systematic Revision of the Shrew Genus Crocidura in Southern Africa. Jurgens Meester. Transvaal Museum, Pretoria, 1963. 135 pp. Illus.

Treatise on Invertebrate Paleontology. Raymond C. Moore, Ed. pt. C, *Protista 2: Sarcodina Chiefly "Thecamoebian" and Foraminiferida.* vols. 1 and 2. Alfred R. Loeblich, Jr., and Helen Tappan. Geological Soc. of America, New York; Univ. of Kansas Press, Lawrence, 1964. vol. 1, 543 pp.; vol. 2, 392 pp. Illus. Set, $2.50.

Vertebrate Embryology: The Dynamics of Development. Roberts Rugh. Harcourt, Brace, and World, New York, 1964. 608 pp. Illus. $9.50.

Vistas in Botany. vol. 4, *Recent Researches in Plant Taxonomy.* W. B. Turrill, Ed. Pergamon, London; Macmillan, New York, 1964. 328 pp. Illus. $14. Seven papers: "Philosophy and classification," J. S. L. Gilmour and S. M. Walters; "Palynology," G. Erdtma; "Embryology in relation to taxonomy," P. Maheshwari; "Cytologie, taxonomie, und evolution bei samenpflanzen," F. Ehrendorfer; "Plant taxonomy, phytogeography, and plant ecology," and "Floras," W. B. Turrill; and "Fossill plant taxonomy," K. I. M. Chesters.

Water Metabolism in Plants. Theodore T. Kozlowski. Harper and Row, New York, 1964. 247 pp. Illus. Paper, $3.95.