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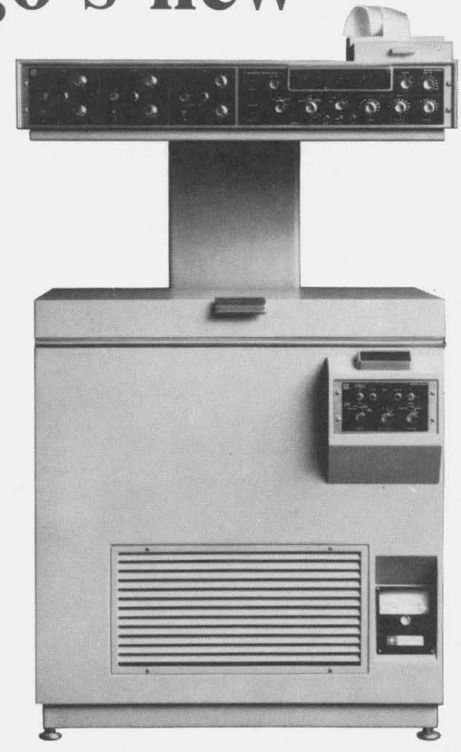

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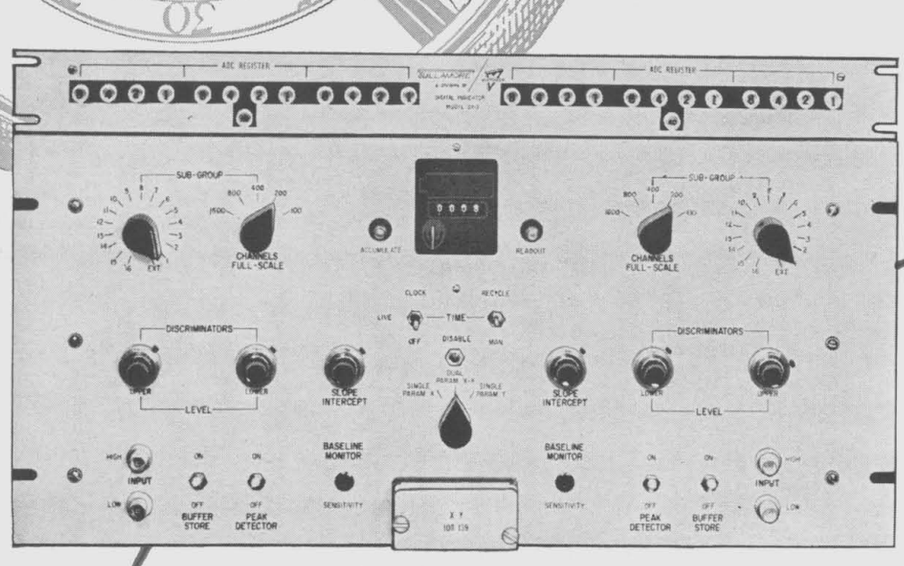

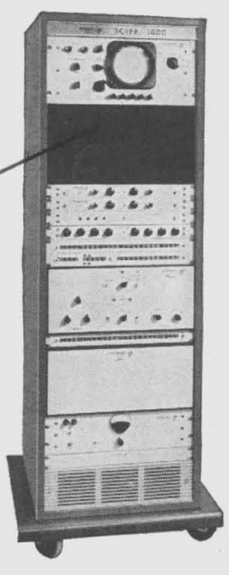

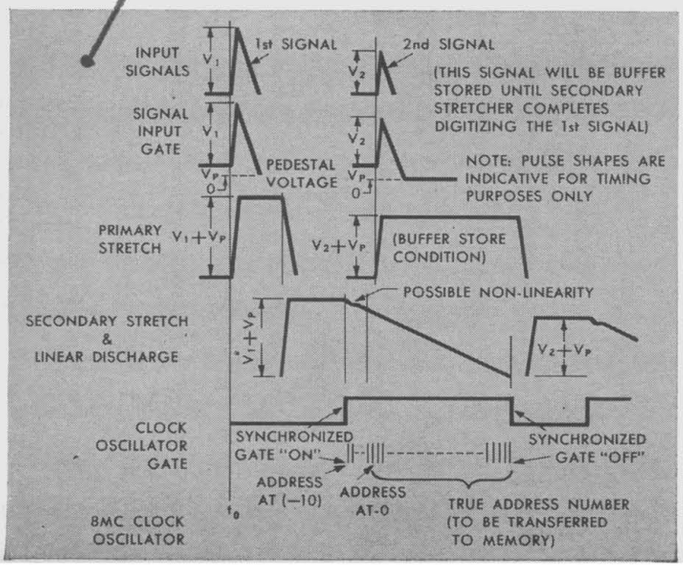

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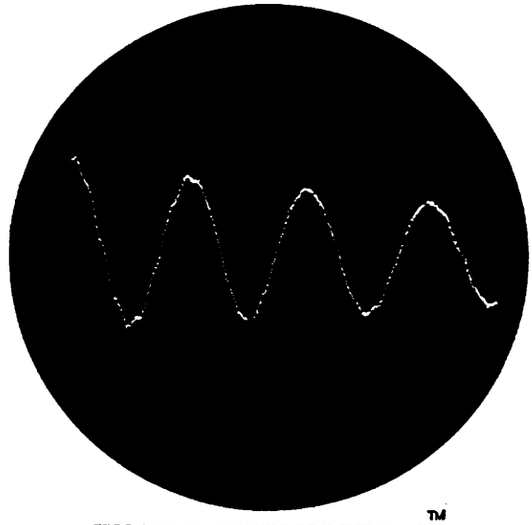

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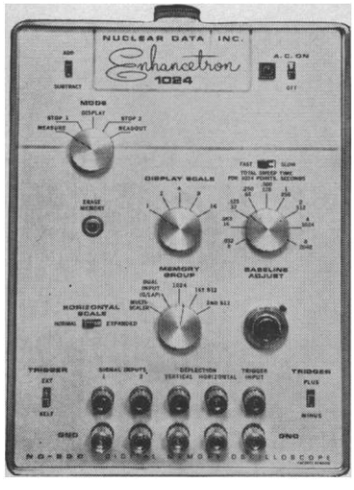

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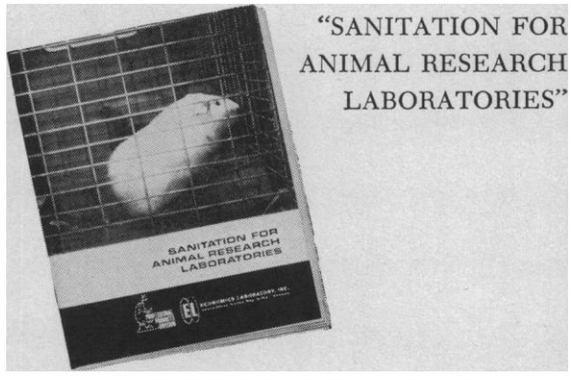

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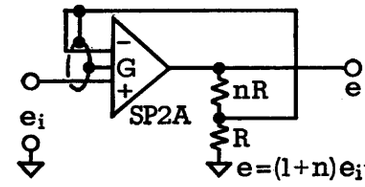

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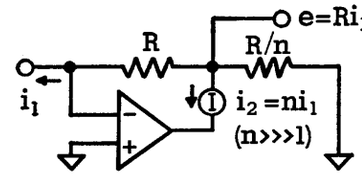

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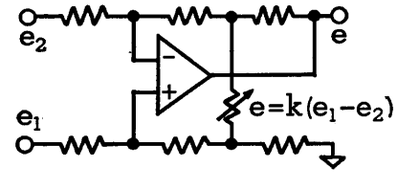

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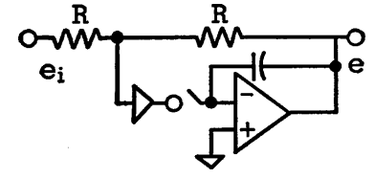

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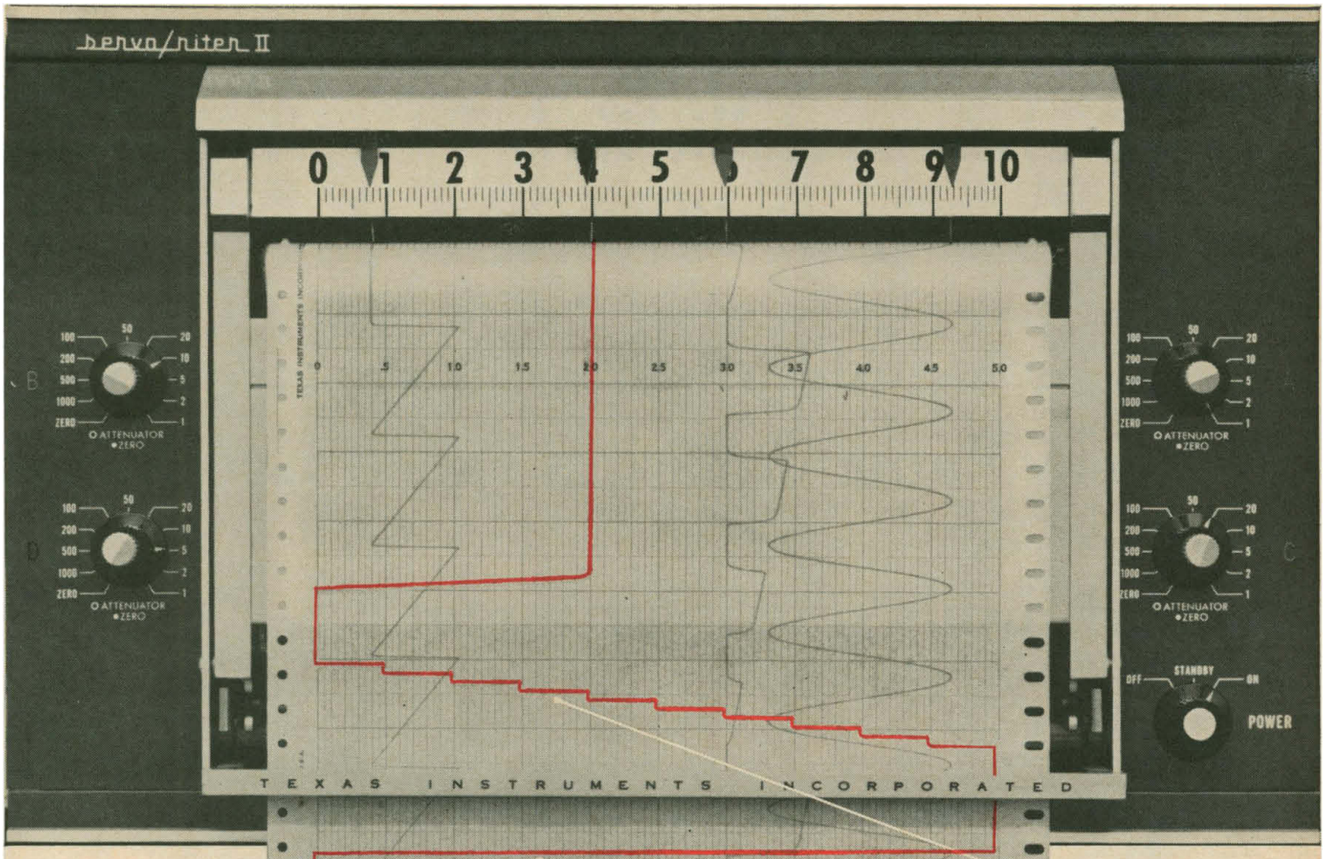

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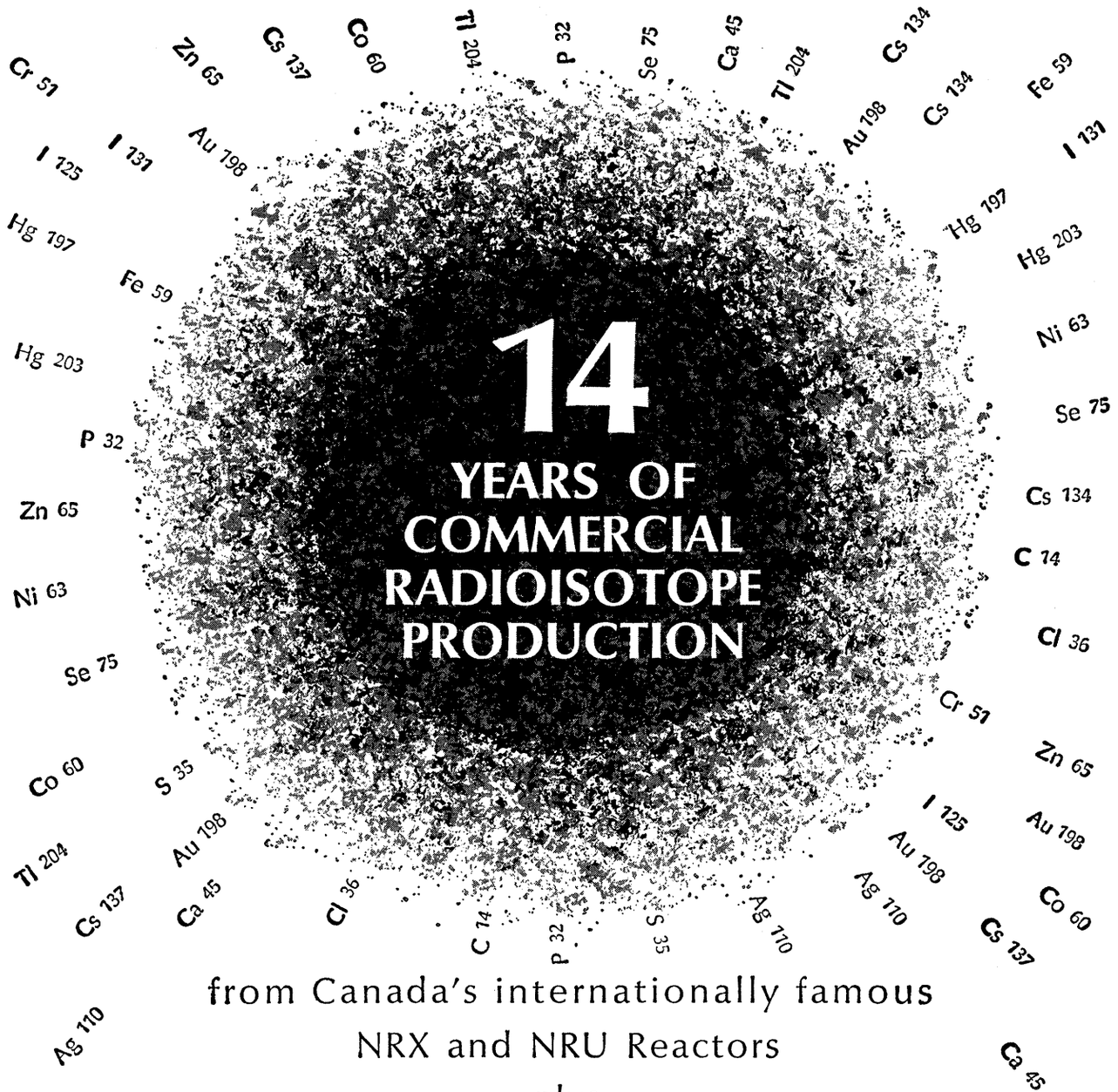

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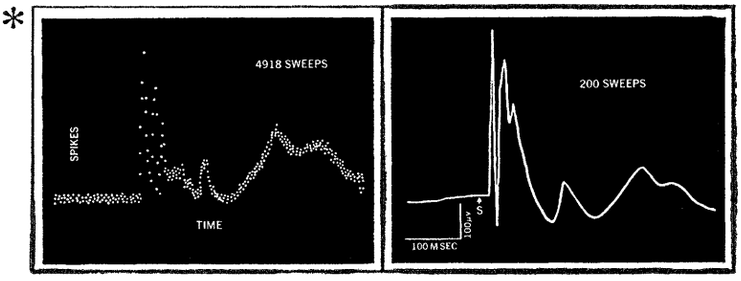


Problems solved with Signal Averaging

Are best solved with TMC's new 400C—the full capability CAT®

Research workers in medicine, chemistry and physics have made significant advances with the aid of signal averaging techniques using TMC's Mnemotron CAT (Computer of Average Transients). Now an improved version, the CAT 400C offers the proved advantages of previous models, plus new capabilities developed from experience with hundreds of successful installations. The 400C — with associated accessory units — offers the most complete and accurate system available for on-line analysis of repetitive signals, as well as histogram operation.

CHECK THESE FEATURES:

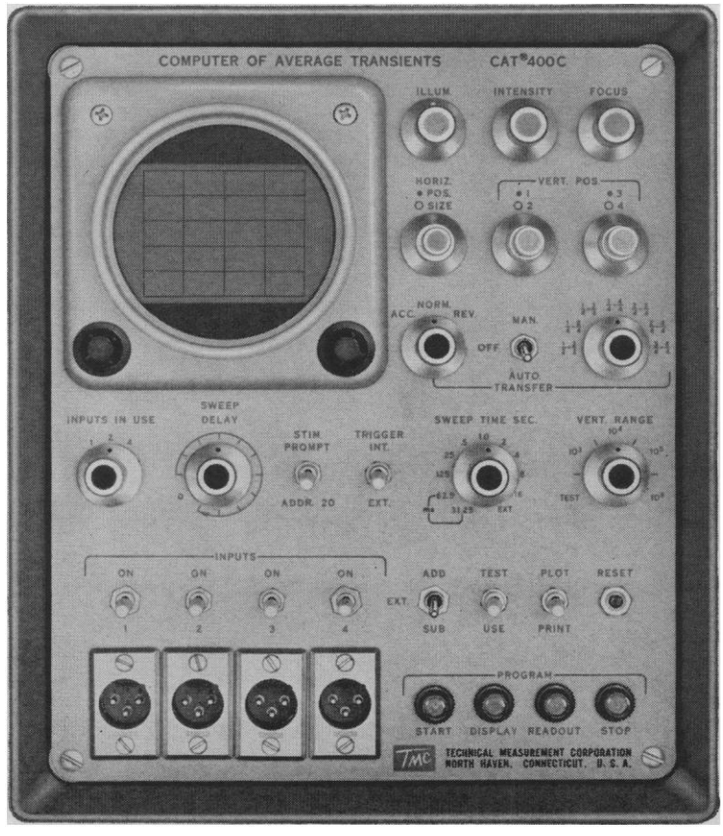
Fewer Sweeps Required — the CAT's ADC circuitry gives maximum resolution per sweep, resolves difficult signals with far less sweeps than other instruments require — very important where fatigue or environment cause changes with time.

Instant Data Transfer — data stored in any quarter or half of the memory is transferable to any other quarter or half. Quick comparisons of data can be made, or background effects subtracted with a Model 522 Resolver/Integrator. Add/subtract can be locally or remotely controlled.

Complete Histogram Capability — only the CAT, with available accessory equipment, provides convenient on-line computation of either non-sequential or sequential histograms of time intervals or amplitudes. The sequential mode is particularly useful for disclosing time trends in the occurrence of repetitive events.

Statistical Correlation — with the COR-256 correlator, computation of autocorrelation functions of repetitive phenomena, or crosscorrelations of two related events may be accomplished.

Digital Magnetic Tape Readout — a computer-compatible digital magnetic tape readout is available which can reduce instrument dead-time by a factor of 100, store data in minimum space, and allow further data processing by a general-purpose computer. (*Other conventional digital and analog readouts also available.*)



OTHER CAT FIRSTS:

- *Floating Input* accepts signal from push-pull amplifiers.
- *Sweep Counter* permits computation of true average value.
- *Slide Rule Calculator* provided for rapid calculation of average voltage or signal level. (Available free to present CAT owners.)

Contact your nearest TMC field office for full details and application engineering assistance, or write: Technical Measurement Corporation, 441 Washington Ave., North Haven, Conn.

See us at the Federation Meeting, Atlantic City, April 10-14.

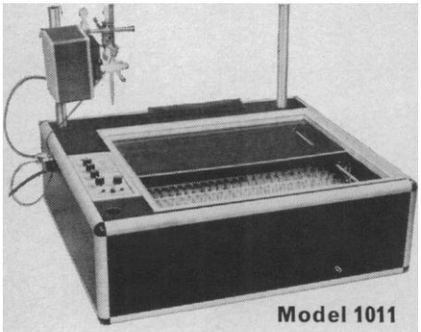
TMC TECHNICAL MEASUREMENT CORPORATION

Frequency distribution histogram of single-cell firings in response to 4918 stimuli, and averaged evoked potential to 200 stimuli (visual cortex of CAT). Data courtesy of S. S. Fox and J. H. O'Brien; see "Duplication of Evoked Potential Waveform by Curve of Probability of Firing of a Single Cell," SCIENCE, Vol. 147, No. 3660, 19 February 1965.

VANGUARD

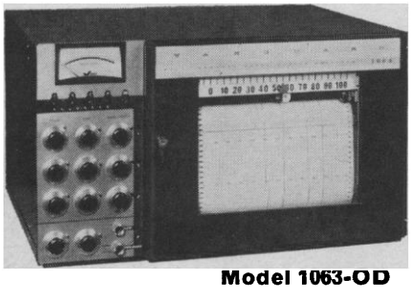
Precision Instruments for Research

When equipping your laboratory, be sure to investigate Vanguard quality, performance, and service. You will find in Vanguard instruments greater compactness, versatility, ease of operation and simplicity of design. Please give our representatives an opportunity to explain in detail the benefits and innovations that will help you speed your experiments with highly accurate information.



Model 1011
Fraction Collector

Time, drop, or volumetric operation. Time range 0-100 minutes in increments of 1/10 minute. Drop range 0-1000 drops in each tube. 400 standard test tube capacity. 8 removable stainless steel trays. Glass dust cover. 2 digital indicators. Available with Model 1012 Refrigeration unit.

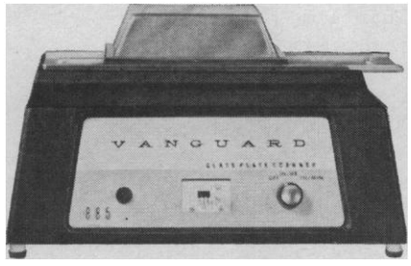


Model 1063-OD
Automatic Multi-Channel Ultra-Violet Analyzer

Presents recording at three different wave lengths. Provides a recording of the ratio of the optical density of the effluent at two of these wave lengths. Space-saving design. Completely transistorized. Detection system completely self-contained and light shielded.

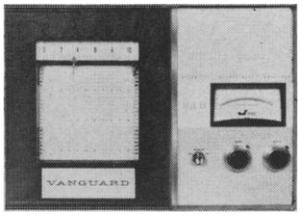
Model 880D
Dual Channel Low Background Autoscanner

Each channel has independent range and time constant selectors. Recorder provides two 5″ charts on one 10″ strip. Can examine simultaneously intense and weak areas of radioactivity. Completely transistorized. Better than 2% accuracy on all ranges. Adaptable to direct digital quantitation.



Model 885 Glass Plate Scanner for Thin Layer Chromatography

Extends the range and operates in conjunction with the Autoscanner. Assays TLC glass plates with greater accuracy and sensitivity. Sits on top of Model 880. Provides 2 pi windowless detection for tritium, carbon-14, sulphur-35 and other beta-emitting radioisotopes.



Model 1056-OD Automatic Ultra-Violet Analyzer

Provides chart recording of the optical density of the effluent from a chromatographic column. A plane diffraction grating monochromator enables the operator to select any wave length from 200 millimicrons into the visible spectrum. Completely transistorized. Detection system self-contained and light shielded.

Model 1000
Volumetric Fraction Collector

Completely self-contained and transistorized. Compact design. Model 1000 for volumetric control. Model 1010 for time-drop control.

Write for complete detailed specifications. Representatives available to explain and demonstrate Vanguard instruments.

VANGUARD INSTRUMENT CORPORATION

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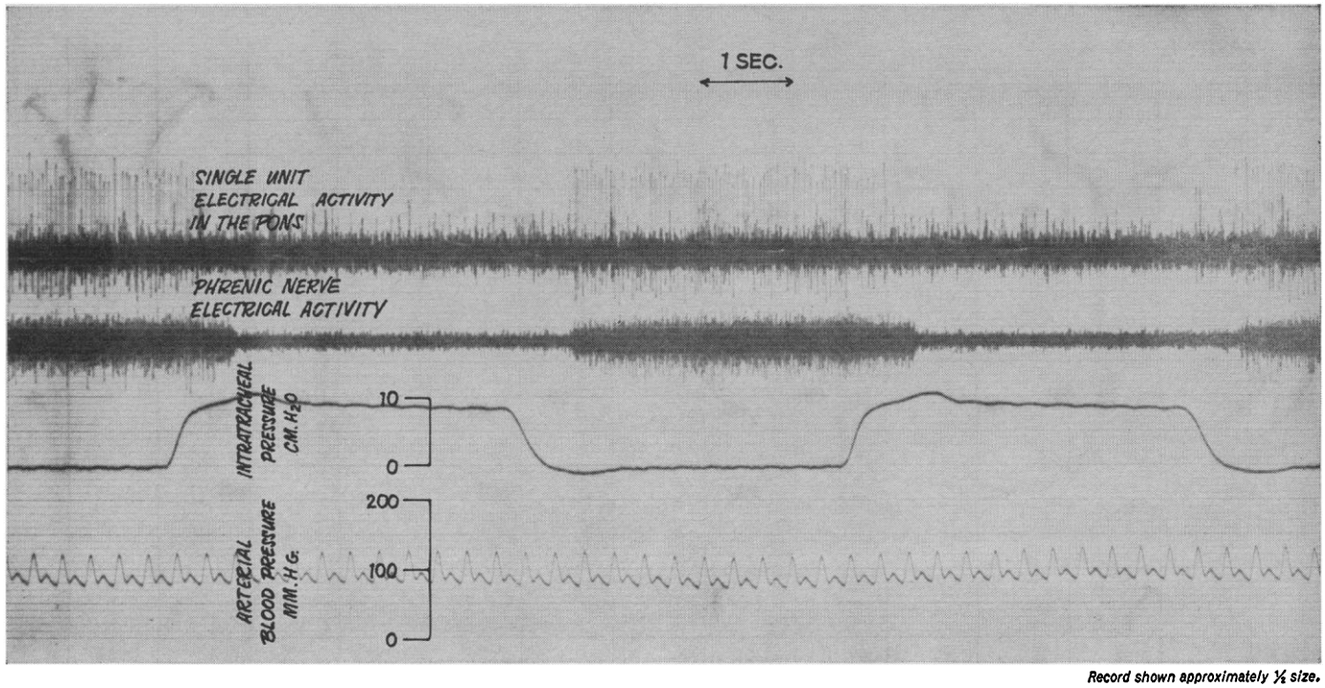
TECHNICAL MEASUREMENT CORPORATION

Designers and Manufacturers of Precision Instrumentation for Research • 441 Washington Ave., North Haven, Conn. 06473

This is a typical record from a Honeywell Neurophysiological Recording System



Record shown approximately ¼ size.

See for yourself how it records both high and low frequencies, while maintaining an accurate time correlation between channels.

If you're using an oscilloscope and 35mm camera to handle the information from your research, consider these facts . . .

The Honeywell Visicorder oscillograph that produced this neurophysiological record for a research laboratory provides an immediate, readable recording. There's no film to develop, no enlargement to make.

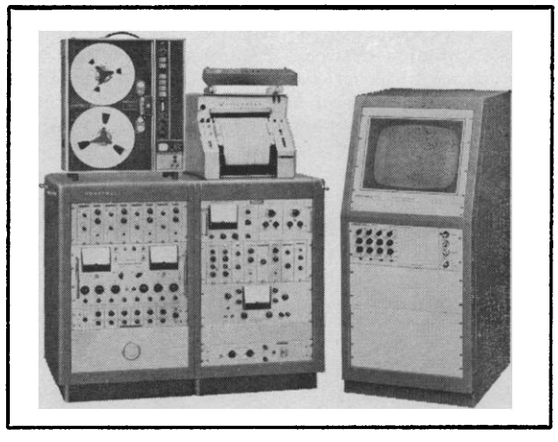
It provides data continuously. You eliminate the lapses you get with ordinary oscilloscopes.

It handles up to 24 channels, with accurate time correlation between all of them . . . far more than you can do with any scope and camera combination.

Honeywell physiology/engineering teams can design a system to meet all your data acquisition, storage, and reduction requirements.

Visicorders are available to instantly and simultaneously record up to 36 channels of physiological data of frequencies from DC to 10,000 cycles per second. They have as many as 15 recording speeds, from 2.5mm to 4000mm per second.

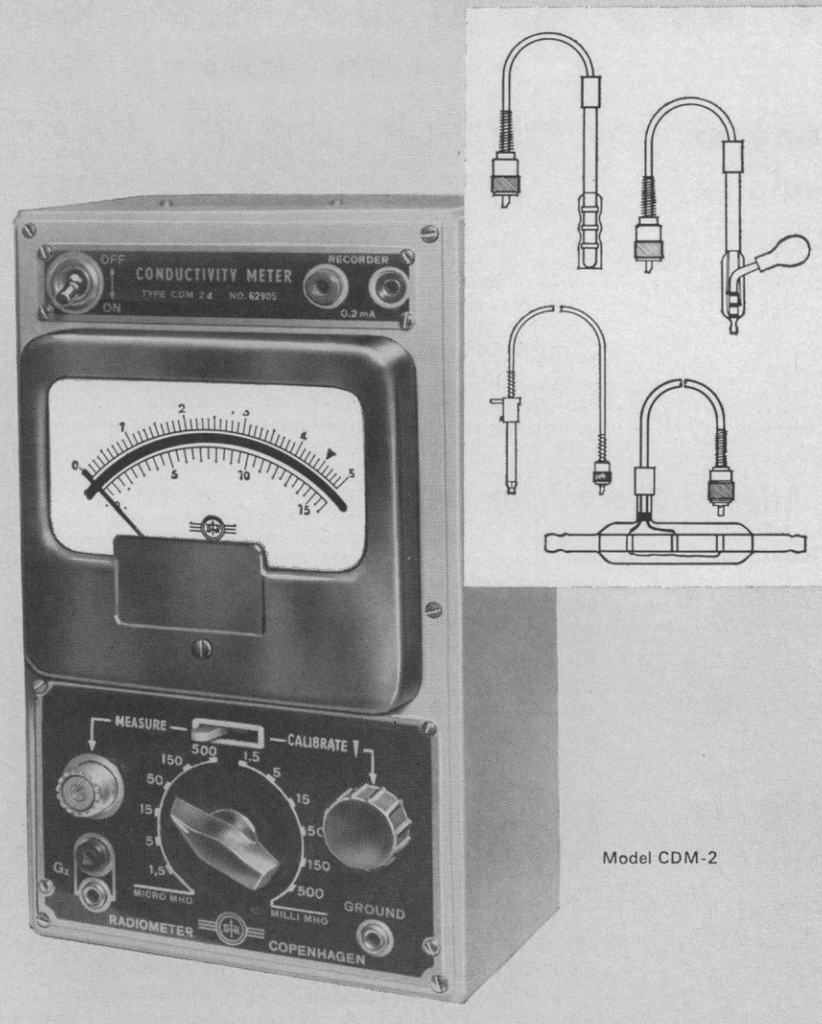
For complete details on using Honeywell data acquisition to handle the information from your research, write direct to Dr. D. C. Sutfin, Mail Station 418, Honeywell, Denver, Colorado 80217. In Canada, Honeywell Controls, Ltd., Toronto 17. Sales and service in all principal cities of the world.



This medical data acquisition system was custom-engineered from standard modules. Shown is a 24-channel Visicorder, a Model 8100 FM portable tape recorder / reproducer (8 channels, DC to 10KC), and a multi-trace oscilloscope which simultaneously monitors up to 8 channels.

ELECTRONIC MEDICAL SYSTEMS

Honeywell



Model CDM-2

Direct reading CONDUCTIVITY METER *by RADIOMETER*

The Radiometer Model CDM-2 has been designed with laboratory requirements in mind. Without any sacrifice in accuracy it has been made more flexible and simpler to operate than the conventional conductivity bridge—and covers the *complete* range of conductivities.

Direct readings on 12 ranges are displayed instantly on a hand drawn illuminated mirror scale with an accuracy of better than ±1% on most ranges and ±2% at the extremes of conductivity.

A choice of conductivity cells makes CDM-2 ideal for all normal laboratory conductivity measurements as well as conductometric titrations. Available cells cover either immersion, flow, or pipette applications—all on grounded or ungrounded media.

Output terminals are provided for connection to recorders for continuous measurement, or to automatic titrators for automatic conductometric titrations.

Write for complete descriptive literature and prices.

RANGES: (12 complete full scale ranges)

0 - 1.5 - 5 - 15 - 50 - 150 - 500 micromhos.

0 - 1.5 - 5 - 15 - 50 - 150 - 500 millimhos.

Price $373.00 inclusive of one measuring cell

THE LONDON COMPANY

811 SHARON DRIVE, WESTLAKE, OHIO

RADIOMETER COPENHAGEN

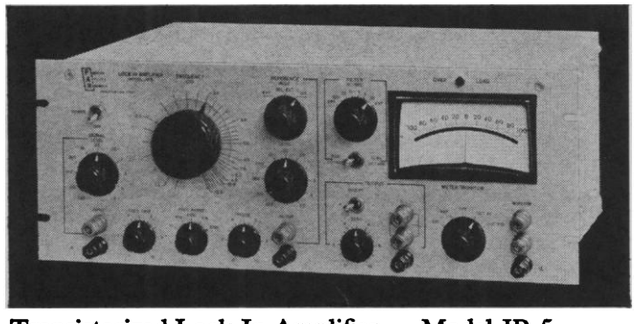
In Canada: Bach-Simpson Limited, Box 2484, London

a note to the experimentalist who has signal/noise problems:

It is safe to say that the majority of current research in the physical sciences involves the measurement of small-effect phenomena where noise sets the limit to attainable precision or detectibility. When discussing noise, we include most of the extraneous effects that arise during the course of an experiment that mask the effect under investigation. We also include noise having as its origin either the fundamental thermal fluctuation of all matter not at absolute zero or the quantized nature of radiation. One does not have to be engaged in highly sophisticated research problems such as detecting the Doppler shift of 21 centimeter galactic radiation to have need for modern signal processing techniques. In fact, many less exacting experiments, be they in physics, chemistry, astronomy or even biology, would be rendered more tractable by the application of relatively simple concepts that allow the realization of signal-to-noise ratios near the theoretical optimum.

LOCK-IN TECHNIQUE SOLVES THE PROBLEM

A particularly simple, yet elegant, way of achieving this goal has been pointed out by R. H. Dicke* who applied it to his sensitive microwave radiometer. This technique involves modulation *at the source* of the quantity being measured. The unknown signal may be a voltage, current, mechanical displacement, radiation, or any physical quantity that can be transformed into electrical energy. The signal to be detected is switched on and off at a fixed frequency, f_0, a frequency not too high for the transducer to follow, and not so low as to invite flicker-effect noise. The resulting small AC electrical signal, together with the multi-sourced noise that has entered the picture are now brought up to a high level in a selective amplifier tuned to f_0. A tuned amplifier is used to avoid dynamic range problems (overloading on noise) and to reject harmonics of f_0, when important. The amplified signal plus noise and a large "reference voltage" at f_0 are then fed into a mixer. This mixing process is called "coherent detection" and shifts the information in a given bandwidth at f_0 to an equal bandwidth about DC. The signal at DC is filtered by a simple resistor-capacitor low-pass network and displayed on a D'Arsonval meter or strip-chart recorder. It is easily shown that the equivalent bandwidth of the overall system is the cut-off frequency of this RC low-pass filter, which can be made as narrow as desired.

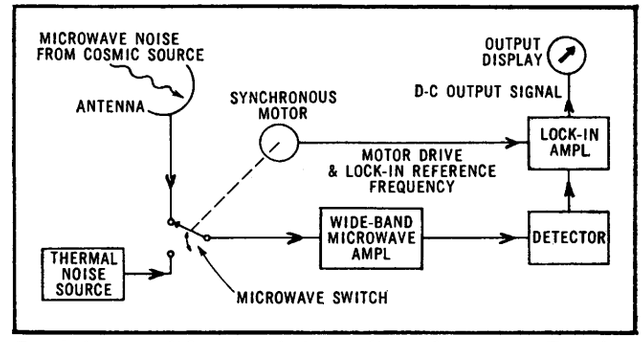


Transistorized Lock-In Amplifier — Model JB-5

**R. H. Dicke, Rev. Sci. Inst. 17, p 268, 1947*

NO FREQUENCY DRIFT PROBLEMS

Inasmuch as the signal frequency is always "locked-in" to the detector, there are no frequency drift problems, regardless of the bandwidth used. The signal/noise ratio can thus be made arbitrarily large at the expense only of observation time. A sample experimental set-up is shown in block-diagram form below.



Lock-in amplifier used in radio telescope. Receiver noise, although much larger than noise signal from antenna, is not modulated and hence contributes little to DC output of lock-in amplifier. With this arrangement, it is possible to detect cosmic noise signals 40 db below the input noise level of the wideband microwave receiver.

Princeton Applied Research can provide the experimenter with a lock-in detection system for implementing this technique, the use of which will allow signals deeply buried in noise to be retrieved and measured with good accuracy. This equipment is contained in a single 7" relay rack chassis and has the following specifications:

TECHNICAL FEATURES

Transistorized Lock-In Amplifier — Model JB-5

Frequency Range: 1.5 cps to 150 kc continuously tunable in five ranges.

Time Constants: 0, 0.001, 0.01, 0.1, 1, 3, 10, EXT. Single or double section RC filtering.

Gain: (rms AC in to push-pull DC out) — Greater than 9,000.

Linearity: Better than ±1% of full scale.

Zero Drift: ±½% of full scale per hour, maximum.

Outputs: (a) ±5 volts DC maximum, balanced to ground into high impedance load. (b) ±1 ma or ±½ ma switch selectable into pen recorder of less than 2K internal resistance.

Frequency Selective Amplifiers: Selectivity characteristic of tuned amplifiers in signal and reference channels is that of parallel resonant circuit with a Q of approximately 25 (*NOT TWIN-T TYPE*).

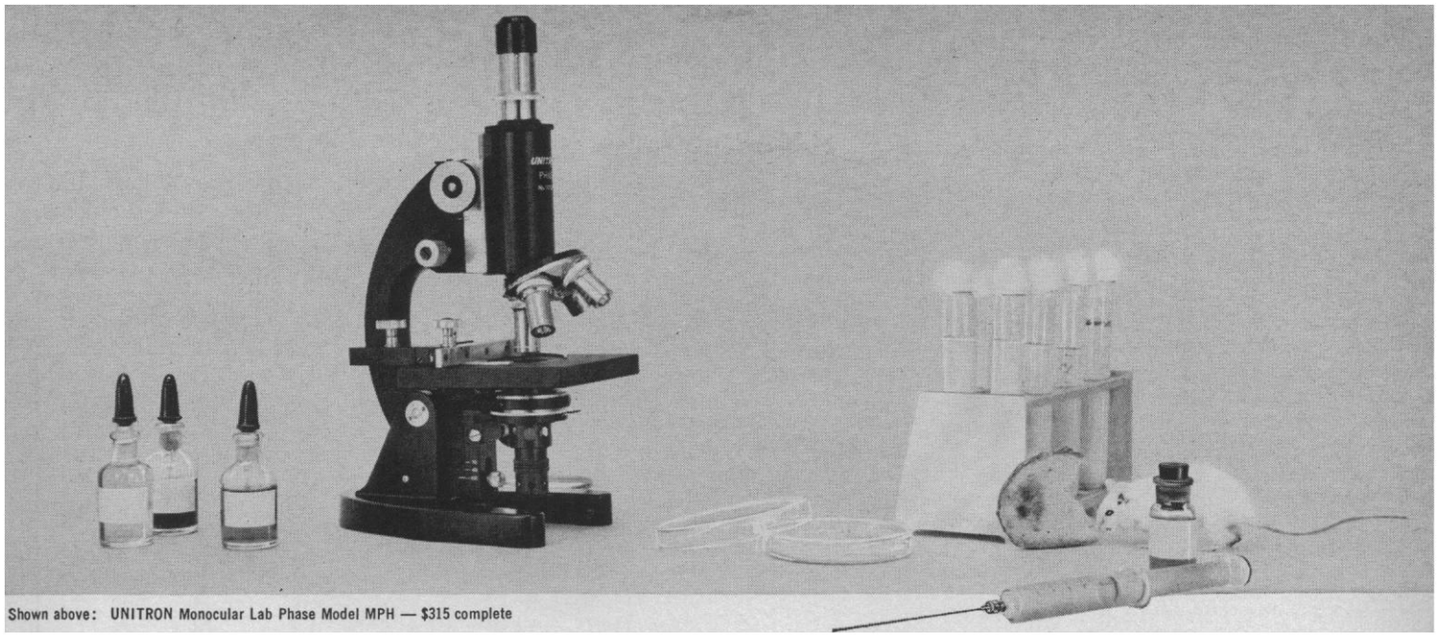
Operating Modes: External, Selective External or Internal. Lock-in accepts sinusoidal or non-sinusoidal reference signal or provides sinusoidal 5V p to p reference from internal oscillator.

Price: $1350.00

To aquaint those interested we are offering our Bulletin 109 which describes how the PAR lock-in system may be used to advantage in experiments in many fields.

Write for Bulletin 109 to:

PRINCETON APPLIED RESEARCH CORP., Box 565 / Princeton, N. J. / Tel. 799-1222, Code 609



Shown above: UNITRON Monocular Lab Phase Model MPH — $315 complete

There are 3 microscopes in this picture

. . . at a distinctly singular UNITRON price

Most lab microscopes are used for ordinary *brightfield* studies.

So is UNITRON's MPH.

Some lab microscopes can also be used for *darkfield.*

So can UNITRON's MPH.

Still other lab microscopes offer *phase contrast* to aid in the study of *living, unstained* material.

So does UNITRON's MPH.

Until now, no lab microscope has provided all 3 for the price of 1.

UNITRON's MPH does. The 3 most important techniques of microscopy are built-in, yet the MPH costs less than many single-purpose microscopes.

That's not all. UNITRON's MPH gives you more than just the advantages of 3 specialized microscopes. It unites them in "Continuous-Transition Microscopy." With a turn of the condenser knob, you change from *brightfield* to *darkfield* to *phase contrast,* all in rapid succession. Operation is so easy, it's almost automatic. There are no accessories to attach and no time-consuming adjustments to make. Everything has been factory-centered for you. Even the light source is built-in and permanently aligned.

Have cost and complexity kept you in the dark about phase? If so, you're in for a treat. UNITRON phase contrast will impress you all the more if you've tried to study *unstained, living* material with ordinary brightfield microscopes. There's no need to close the iris to pinhole size, reducing resolution and detail. Gone are those ghostly artificial images.

UNITRON Phase Contrast provides optical staining. You get the benefits of chemical staining, without the time-consuming preparation. And what's more, you see material *alive* with vivid contrast and pin-point detail. With phase, even your stained slides show unsuspected details. All this, without any special effort.

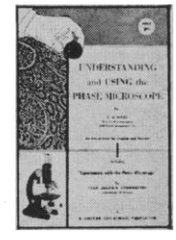
There's more. UNITRON's built-in illuminator provides five intensities . . . more than enough to meet your visual and photographic needs. Even the eyepieces are special . . . the widefield type for comfortable viewing.

And now, the moment of truth. The price. Only $315 for UNITRON's Monocular Laboratory Phase Model MPH . . . less than you pay for many ordinary brightfield lab microscopes. The Binocular Model BPH, with several additional features of its own, costs only $527.

UNITRON prices include everything but the specimens. In addition to all the special features of our phase models, you'll find everything else you expect in a good lab microscope. Four achromatic objectives (including high-power oil-immersion), mechanical stage, focusable substage condenser with iris diaphragm and filter system, fitted cabinet, etc. These, and all the other features we've described, are standard equipment with UNITRON. *There are no hidden extras to buy.*

Too good to be true? You needn't take our word for it. Borrow a UNITRON Monocular MPH or Binocular BPH for 10 days. No cost or obligation. (We'll even pay shipping charges for a chance to let you put our microscope through its paces.) Give this UNITRON an opportunity to prove its value in your lab. We think it will sell itself.

Teachers will be interested to learn that UNITRON even offers *student phase models* for as little as $99. To introduce phase to the student lab, and to other areas where it has been a stranger, UNITRON has published a fully illustrated 64-page booklet, *Understanding and Using the Phase Microscope.* The text includes a special chapter of experiments written by Professor Julian D. Corrington of the University of Miami. Other subjects are covered, including the optical theory of microscopes in general. The booklet normally sells for $1.00 but we will be glad to send a free copy to any interested teacher or researcher.



Ask for a free 10-day trial. Please specify whether you want to try Model MPH or BPH. A phase booklet is shipped with each microscope . . . or, you may request the booklet separately.

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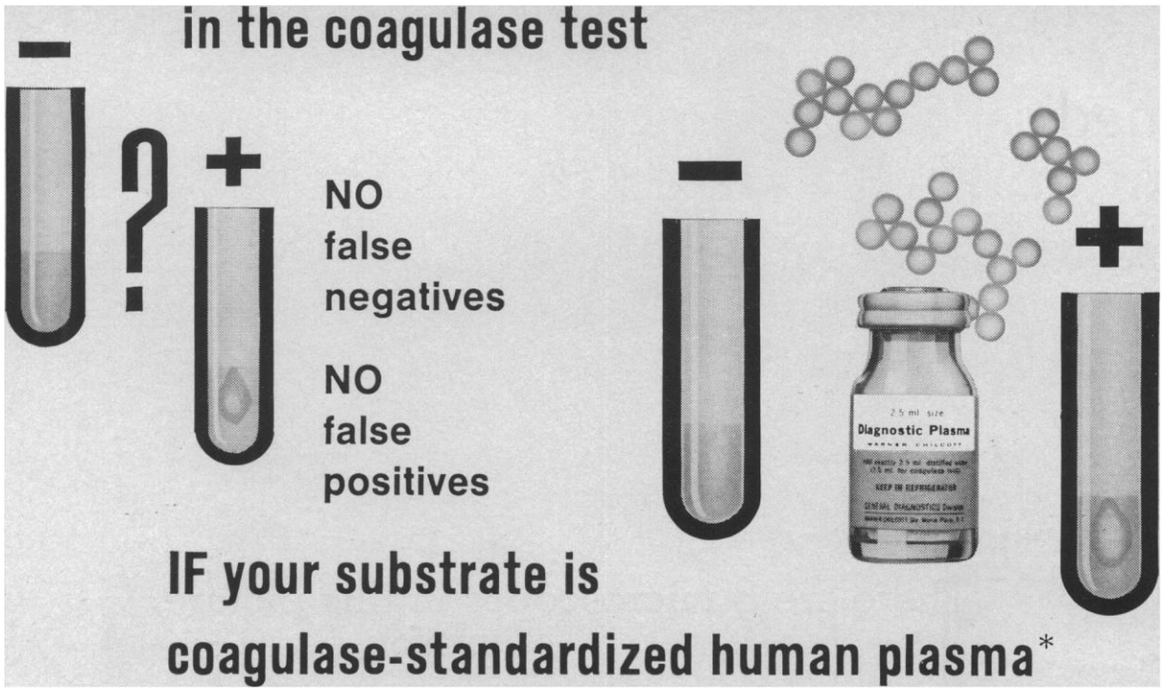

With nonhuman plasma you may get false positive results because of "species differences in coagulase activators and strain differences in coagulase production."[1] Tompsett[2] used human plasma in differentiating between *Staphylococci* with negative and positive clumping factor—because rabbit plasma gave coagulase positive reactions in **all** of them.

With human plasma over four hours old (as blood bank plasma is very likely to be) **you may get false negative results.** In a comparison study,[3] lyophilized human plasma* detected 122 strains of proven pathogenic *Staphylococci* by positive coagulase reactions; pooled plasma over 4 hours old detected only 91. With plasmas of dubious age it is possible that, even within a 24-hour period, no clot will form. On the other hand, the coagulase-producing organism may also produce staphylokinase[4,5] which, within a 24-hour period, may cause a formed clot to lyse.

Diagnostic Plasma/Warner-Chilcott gives results identical to those obtained with freshly drawn human plasma.[6,7] It is standardized against strongly positive, weakly positive and negative coagulase-producing *Staphylococci.* From vial to vial, lot to lot, Diagnostic Plasma/Warner-Chilcott contains optimal concentrations of clotting factors. Results are usually visible within one hour,[7] always within three hours.

Ask your General Diagnostics representative about Diagnostic Plasma/Warner-Chilcott—the ideal substrate for the coagulase test.

When ordering,
specify *DIAGNOSTIC PLASMA/WARNER-CHILCOTT

Diagnostic Plasma/Warner-Chilcott is available in boxes of:
10 vials, 2.5 ml. size (15 coagulase tests per vial)
10 vials, 0.5 ml. size (3 coagulase tests per vial)

GENERAL DIAGNOSTICS DIVISION
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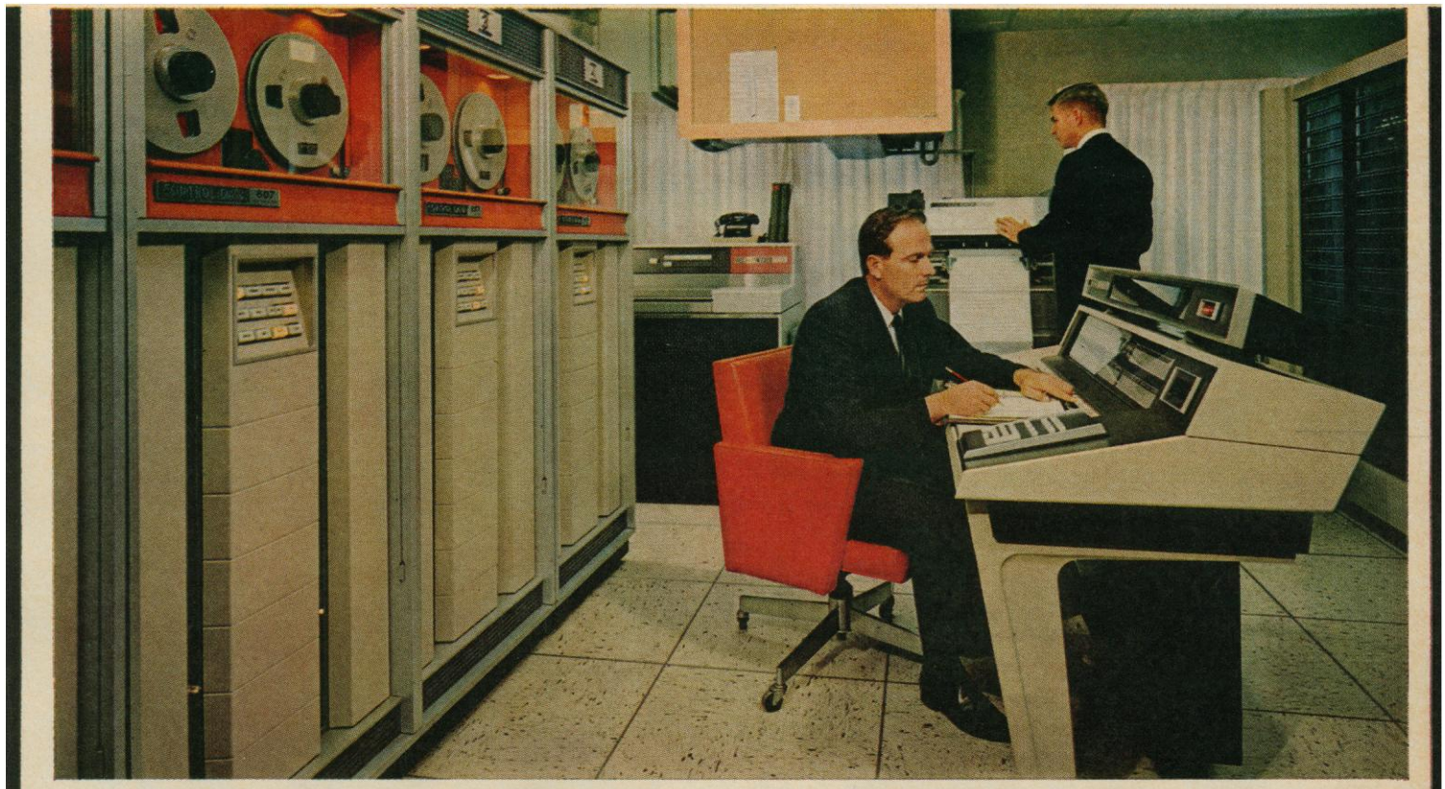
1. Rammelkamp, C.H., Jr., and Lebovitz, J.L.: Ann. New York Acad. Sc. *65*:144, 1956.
2. Tompsett, R., in Finland, M., and Savage, G. M.: Antimicrobial Agents and Chemotherapy, Ann Arbor, Braun-Brumfield, 1961, pp. 67-73.
3. Waller, E. J.: Hosp. Topics *35*:111, 1957.
4. Lack, C. H.: J. Clin. Path. *10*:208, 1957.
5. Lack, C. H., and Wailling, D. G.: J. Path. Bact. *68*:431, 1954.
6. Turner, F. J., and Schwartz, B. S.: J. Lab. & Clin. Med. *52*:888, 1958.
7. Boyd, H.: Am. J. Med. Tech. *22*:232, 1956.

From advanced technology available today!

Biomedical Simulation Laboratory uses CONTROL DATA® 3200 computer to explore physiological phenomena



System includes:

- A CONTROL DATA 3200 computer with a 32,768 word magnetic core storage; cycle time — 1.25 microseconds; access time — 750 nanoseconds; buffered arithmetic section operates concurrently with non-arithmetic instructions
- A CONTROL DATA simultaneous analog-to-digital and digital-to-analog conversion system, providing 8-channel multiplexing
- CONTROL DATA software and support includes programming language, monitor systems, assembly routines and simulators

Here in the *Biomedical Computer Simulation Laboratory* at Salt Lake City, Utah, you see an example of that fast growing breed of newer special computers, the hybrid digital-analog system.

A powerful CONTROL DATA 3200 digital computer interfaces with a large-scale analog computer through a CONTROL DATA eight-channel conversion system. The analog component pre-processes raw data on physiological phenomena undergoing study . . . while the digital portion provides speed and capacity required to evaluate the many independent variables. Marriage of the two creates a biomedical computer system of tremendous versatility and power.

In the Salt Lake City laboratory, mathematical models of circulatory systems are being structured, covering blood pressure, heart rate and related, rapidly interacting factors. The computer is used to analyze and act upon input in a split-second — literally, between heartbeats.

CONTROL DATA generates highly creative man/machine research partnerships, through hardware, software, and follow-up support *oriented to the scientific user and his way of working.* For information on these computer systems contact the CONTROL DATA representative nearest you, or write our Minneapolis address, Dept. G-45.

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COLEMAN

Coleman pH Instrumentation

Low-cost Metrion pH Meter is a line-operated instrument featuring a basic simplicity of design and operation which make it ideal for general-purpose laboratory use. With measurement accuracy to 0.05 pH, the Metr*ion* provides a level of performance far out of proportion to its moderate cost.

Features:

- Stabilized against line voltage fluctuations over 95-125 volt range.
- Easy-to-read duplex scales cover 0-14 pH range.
- Calibration control provides compensation for temperature effect.
- Simplified operation—"push-to-read" pH control.

Cost—from $139.00.

Increased versatility, Metrion II pH Meter offers the same simplicity of design and operation as the basic Metr*ion*. It also features two additional circuits for increasing versatility of the instrument:

...a true temperature-compensating circuit with a control knob conveniently located on instrument's front panel.

...an output jack for use with an automatic titrator such as the Coleman Titr*ion*.

Addition of these two circuits makes the Metr*ion* II valuable for an increased variety of specialized laboratory applications with only a small price increase.

Cost—from $162.50.

Fully-versatile Companion pH Meter is a zero-restoring instrument ideal for a broad range of laboratory applications. It provides pH measurement over the 0-14 pH range with a routine accuracy of 0.05 pH and reproducibility within 0.02 pH. The instrument also may be used for millivolt measurements over a 1400 mv span.

Features:

- Zero-restoring circuit for drift-free operation.
- May be used with recorder, automatic titrator, and automatic temperature compensator accessory.
- Simplified control system for easy operation.
- Manual Temperature Compensator control permits accurate measurement over 0-100° C. range.

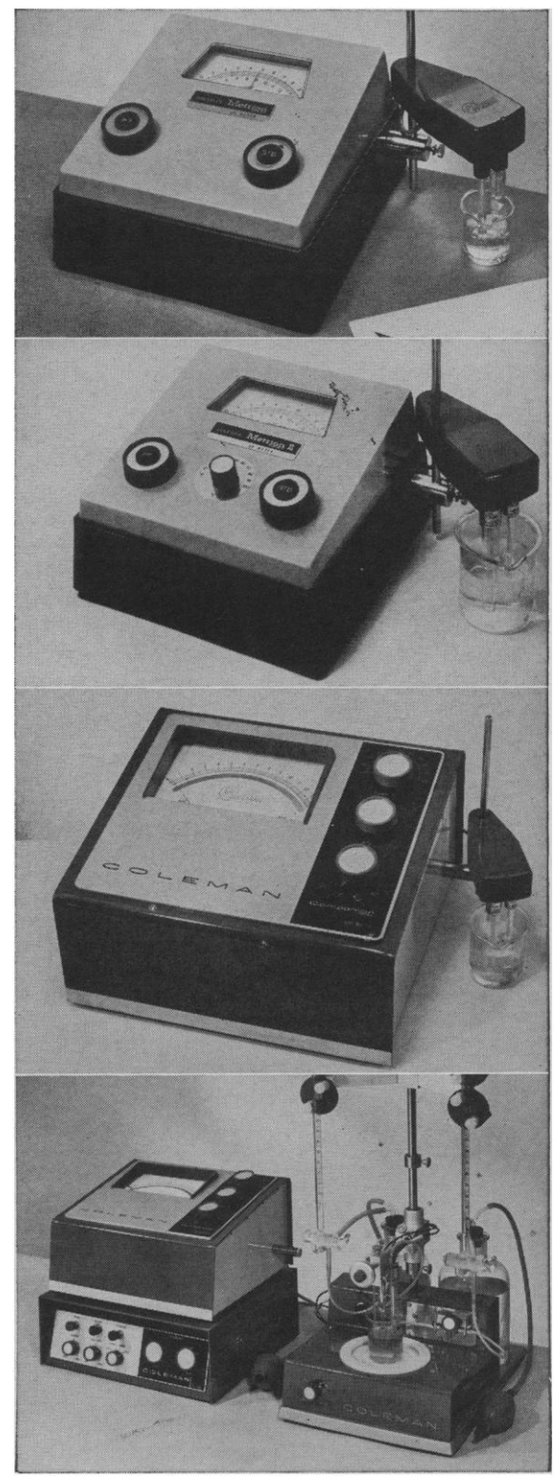
Cost—from $308.50.

The Coleman Titrion, with either the Compan*ion* or Metr*ion* II, provides an instrument package capable of automatically performing virtually any electrometric titration in the analytical laboratory.

- **Speed**—titrations are completed automatically in 1 to 1½ minutes.
- **Accuracy, sensitivity**—routine accuracy well within 0.1 pH; 2 millivolt potential difference causes titrant flow.
- **Automation**—electronic sensing of end-point and automatic adjustment of titrant flow.
- **Practicality**—no special training of personnel required for maintaining high levels of accuracy.

Cost—$670.00.

Write for Bulletin SB-289



COLEMAN INSTRUMENTS CORPORATION, MAYWOOD, ILLINOIS

Precision Biomedical Tape Recording

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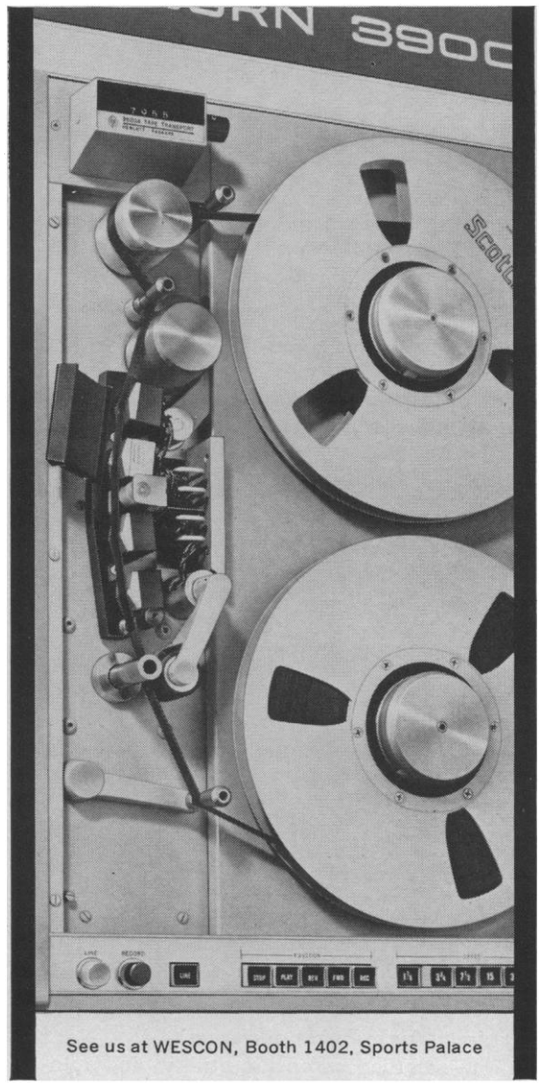

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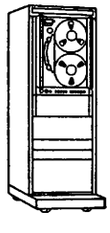

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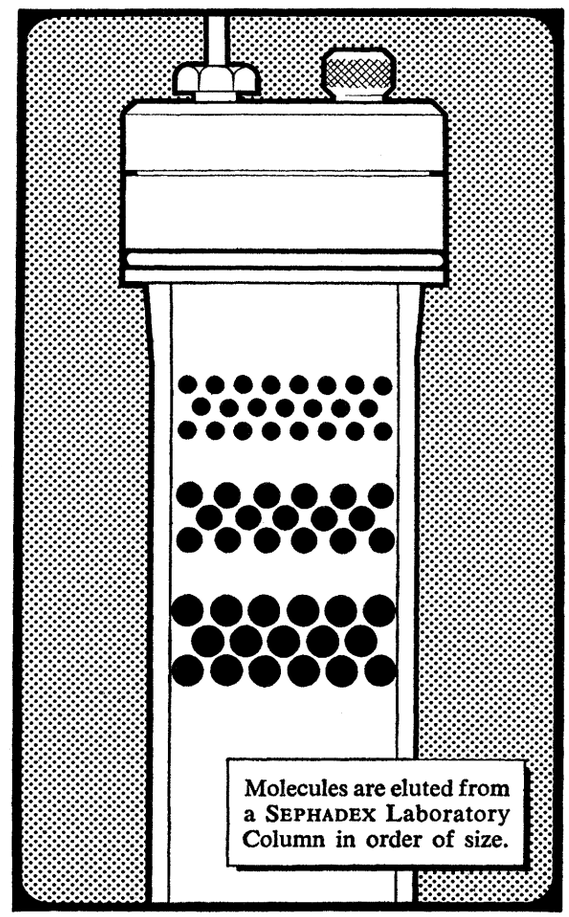

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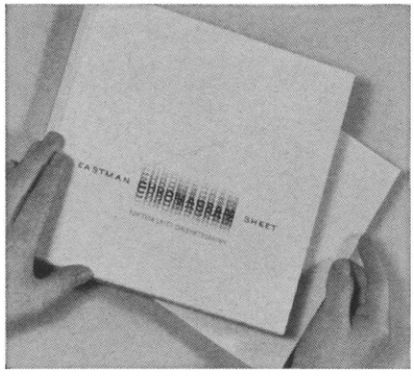

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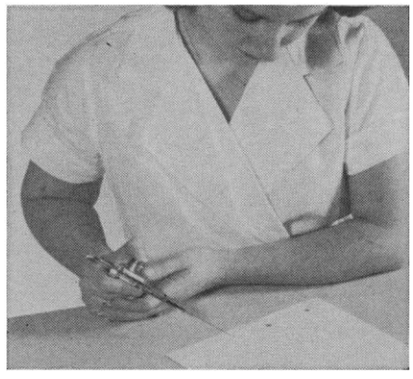

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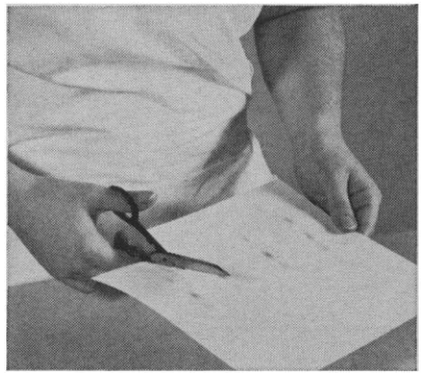

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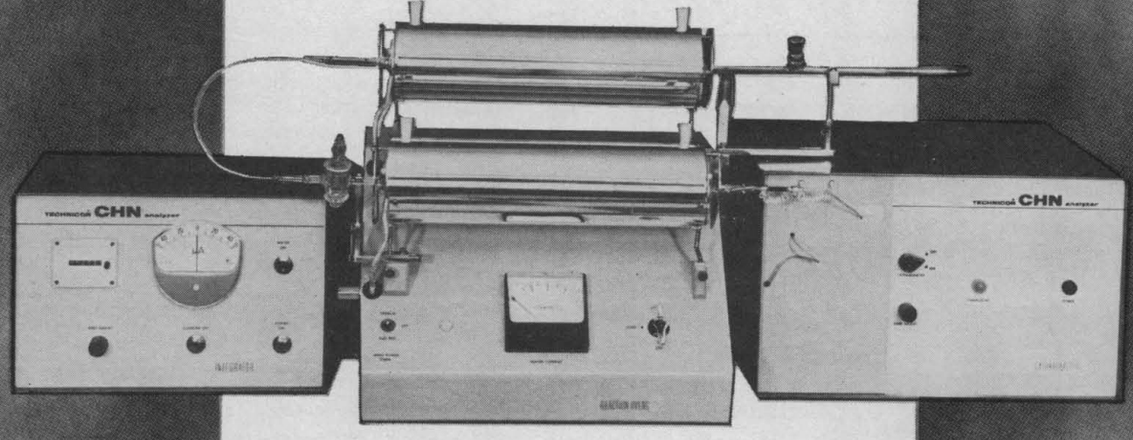

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QRC40-4	0-40	0-4	± 0.005% or ± 1 mv	1 mv	0-4	± .05% or ± 2 ma	1 ma	5¼†	315
QRC40-8	0-40	0-8	± 0.005% or ± 1 mv	1 mv	0-8	± .05% or ± 4 ma	2 ma	3½	450
QRC40-15	0-40	0-15	± 0.005% or ± 1 mv	1 mv	0-15	± .05% or ± 8 ma	4 ma	5¼	575

†Half rack.

are artifacts of the process by which they selected "industry" stones from the "environment" population, since the principal criterion of selection was smallness of angle.

DAVID SOUTH
5550 Dorchester Avenue, Chicago 37, Illinois

1) We are pleased that our article interested geologists in the problem of recognizing the traces of early man. The two geologists who visited the Leupp Site told us that we were dealing with a uniform brown chert and that there was no reason to believe that the Leupp Site differed in its geological history from other hilltops in the area. Not satisfied with this information, or with what we could find in the geological literature, we investigated further. Our simultaneous measurement of *in situ* rock and ambient temperatures was meant to be suggestive. That the investigation was meant in this way can be seen in the brief and cautious statement about it. We also did a hydration study, not reported in the article. Ideally, all causes of natural fracture relevant to a suspected site should be considered. The problem is to identify the relevant factors and to determine specifically the type and amount of resulting fracture. The intense cooperation of geologists would be most welcome.

2) We direct South's attention to our summary statement on page 247: "The procedure is intended to be used where isolation of an 'industry' has already been made, or can be made, on the basis of criteria other than the small angles of the stones in question." In our application of the procedure, a museum collection of a proposed "industry" already existed. The several collectors of the museum specimens had gathered widely scattered individual stones each of which met some typological notion of utility. These stones were classified by them into such categories as "scrapers," "hand axes," and "choppers" (see our reference *13*). We sampled the entire population of a gravel pavement on a hilltop where the proposed "industry" was said to exist. Then, using the museum-type specimens, we designated any stone in our field collection as belonging to the "industry" if it fitted into one of the typological categories (see p. 247). The original collectors of the "industry" did not collect angles of an "industry" (a population, not a typological concept), nor did we.

We stress our acceptance of Barnes's work as a point of departure. Barnes interpreted his findings as globally significant; that is, his work led to the conclusion that on a statistical basis nature does not simulate human workmanship. In some particular instance, however, the context in which an "industry" is said to exist may be biased. For this reason, we introduced the idea of examining the immediate context in which the industry is said to be found. Figure 6 shows the "industry" and its "environment" at Leupp.

ROBERT ASCHER
Cornell University, Ithaca, New York
MARCIA ASCHER
Ithaca College, Ithaca

Academic Degrees and Vested Interests

Thanks to John Walsh for his excellent treatment (News and Comment, 19 Feb., p. 844) of the potential intrusion of quasi-educational federal agencies into the academic preserve of degree-granting. Since he has done this spadework, I wish he would now enlarge the radius of his investigations to determine how many of the rules surrounding earned degrees are truly safeguards against diploma mills and substandard education, and how many are protection of academic vested interests which date back to the medieval universities.

We have all heard of absurd cases —perhaps apochryphal in detail but true in fundamentals—where the validity of graduate credits has been questioned because the student's high school or undergraduate records were faulty in some minor particular. Does it really matter by what path—conventional or unconventional—an educated man or woman attains educational status? Is there not a need for some sort of examining university, performing a function like that of the original University of London? Is there any reason why a candidate should not appear before a panel of competent examiners, demonstrate his grasp of the fundamentals in his field, present already published and paid-for scholarly work in lieu of a problematically valuable thesis, and get his degree without anybody's knowing or caring whether he ever warmed a seat in the eighth grade?

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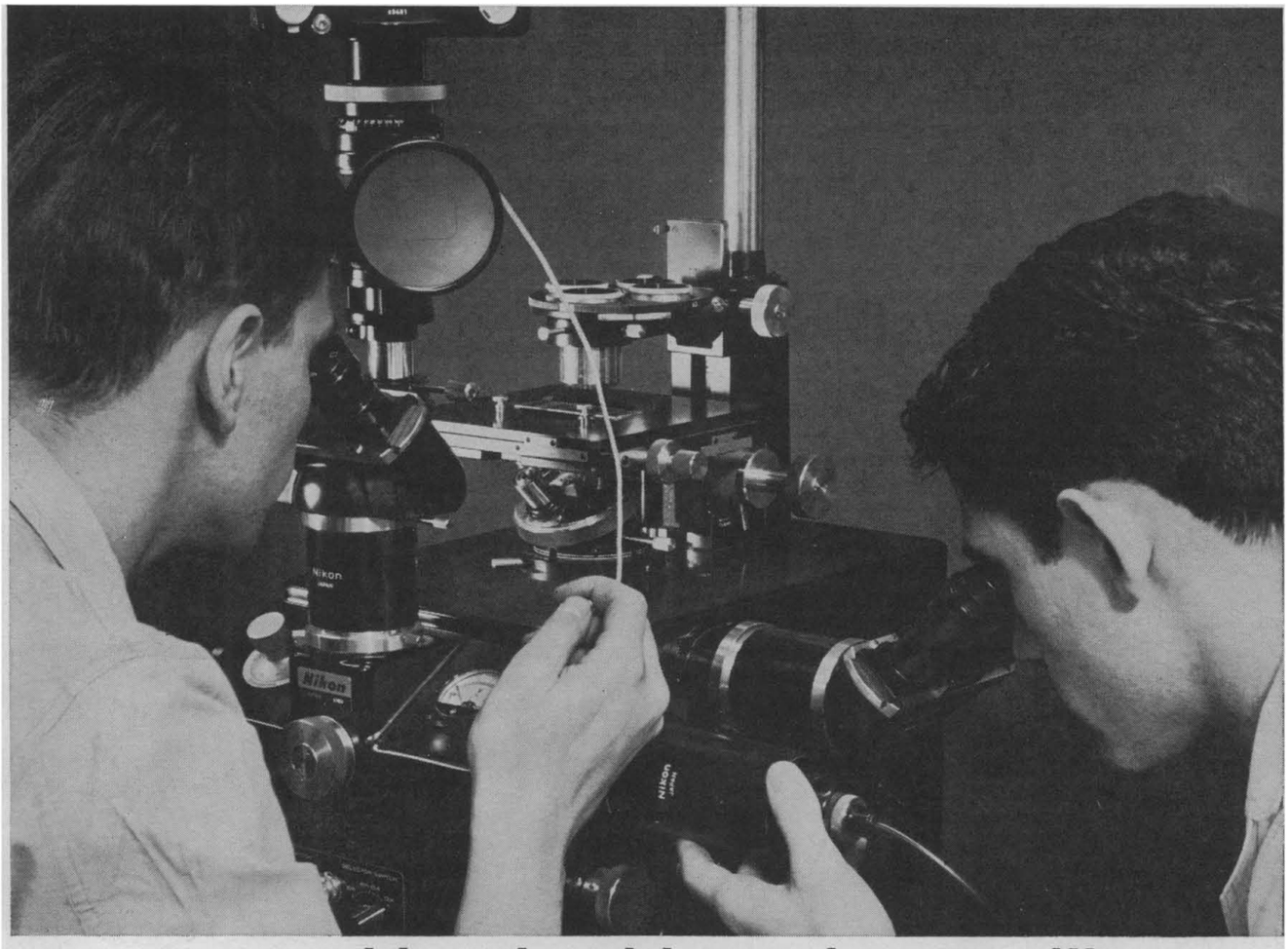

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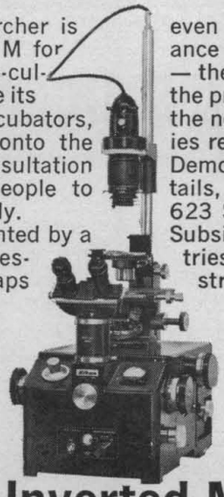
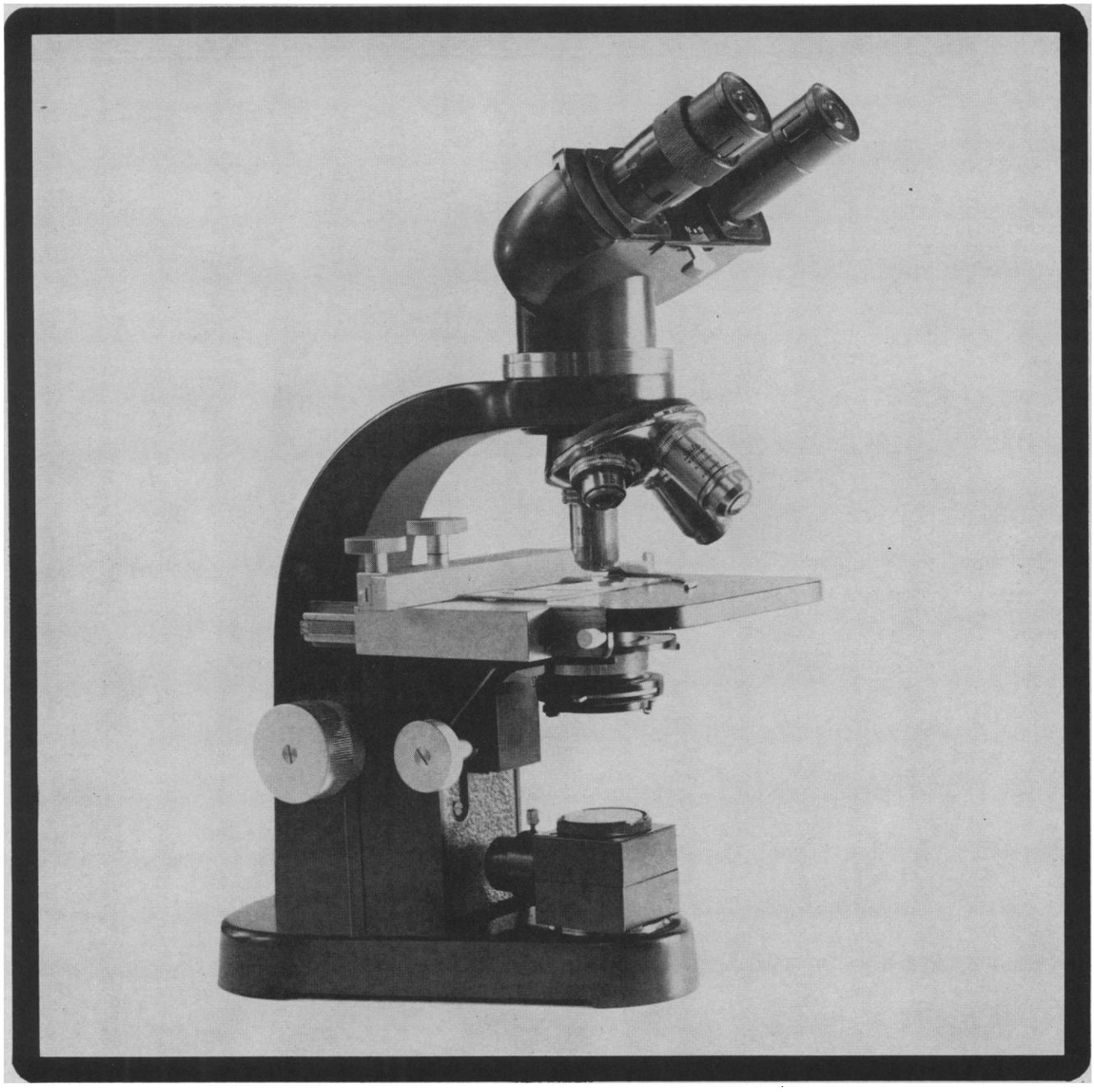


Nikon M Inverted Microscope



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SCIENCE

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Biomedical Science and Its Administration

The committee charged with examining the National Institutes of Health has now made its report (*Science*, 26 March, p. 1556). The committee carried out its investigations diligently, and has prepared a well-written and well-organized document. Those who have had an opportunity to evaluate NIH will agree that "the activities of the National Institutes of Health are essentially sound and that its budget of approximately one billion dollars a year is, on the whole, being spent wisely. . . ." Many will also applaud the committee's statement, "We suspect that there are few, if any, one billion dollar segments of the Federal budget that are buying more valuable services for the American people than that administered by the National Institutes of Health."

There are additional laudatory comments; for example: "The NIH method of selecting recipients of its extramural grants . . . is an exceedingly good one. . . . admiration was almost as widespread among those whose applications had been rejected as among those who had succeeded in getting support."

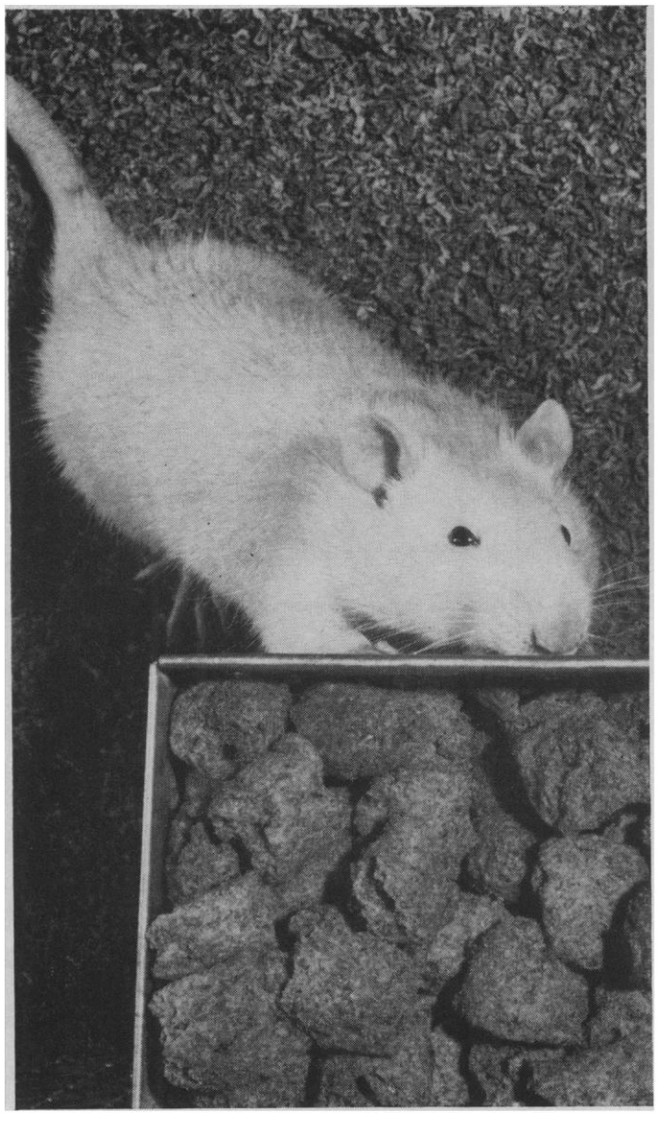
However, the text goes on: "The early favorable remarks are not to be discounted, in this report, as simply a polite but meaningless preparation for the presentation of the seriously intended critical conclusions." But, a close reading of the report leaves me with much that impression.

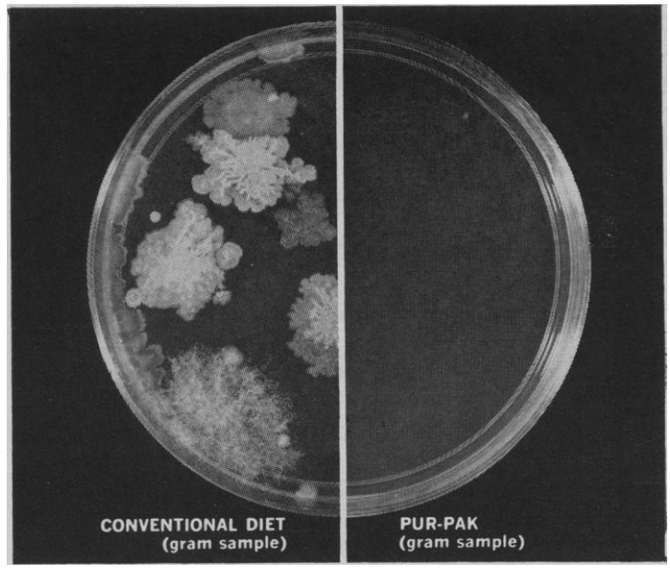
The committee recommends many changes in the NIH administration of biomedical science, some of them far-reaching. The principal recommendation immediately affecting grantees is an increase in the role of university administrators. This is in line with a pattern already established. The more drastic recommendations center around the Institutes and their management. "A new advisory group should be established to assist the Office of the Director of NIH in the making of major plans and policies. . . ." In effect, the review committee seems to be saying that a full-time Director cannot be trusted to make plans. He must lean on a part-time advisory group. Yet at the same time the report recommends that the Director be given increased responsibilities in the management of the Institutes.

Fair-minded scientists will be distressed with the part of the report that deals with intramural activities. In many fields the Bethesda laboratories are world leaders, and they have fostered men who are now distinguished professors. Yet the report comes close to suggesting liquidation of this excellent establishment. "We recommend, as an early agenda item for the Policy and Planning Council, consideration of the amount of independent, university-like research that NIH should conduct intramurally. If reductions are decided on they should be carefully executed. . . ." This language has already produced apprehension among the intramural staff at NIH. A decrease in the budget at NIH would hasten the departure of many of the best men in all programs.

There is injustice in this situation. Fifteen years ago the intramural and extramural research programs were of equal magnitude. Since that time, both programs have been expanded, but the extramural activity has grown about five times more. It was the rate of increase in extramural support that drew criticism in Congress. It was this program that provided ammunition for the Fountain committee. It was criticism of the extramural program which led to appointment of the Wooldridge committee. No substantial fault had been found previously in the intramural program. Yet when the report comes out, it is the intramural activity that appears to be most threatened.—PHILIP H. ABELSON

(Copies of the Wooldridge report, "Biomedical Science and Its Administration," are available for $1 from the U.S. Government Printing Office, Washington, D.C. 20402.)





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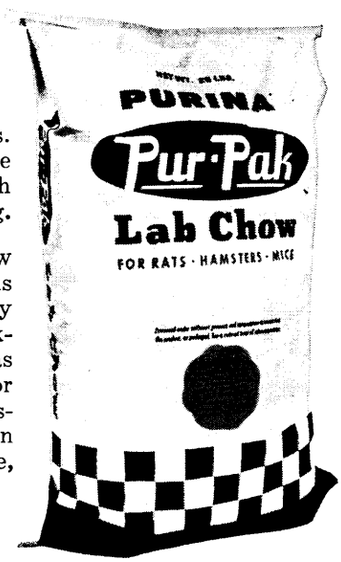

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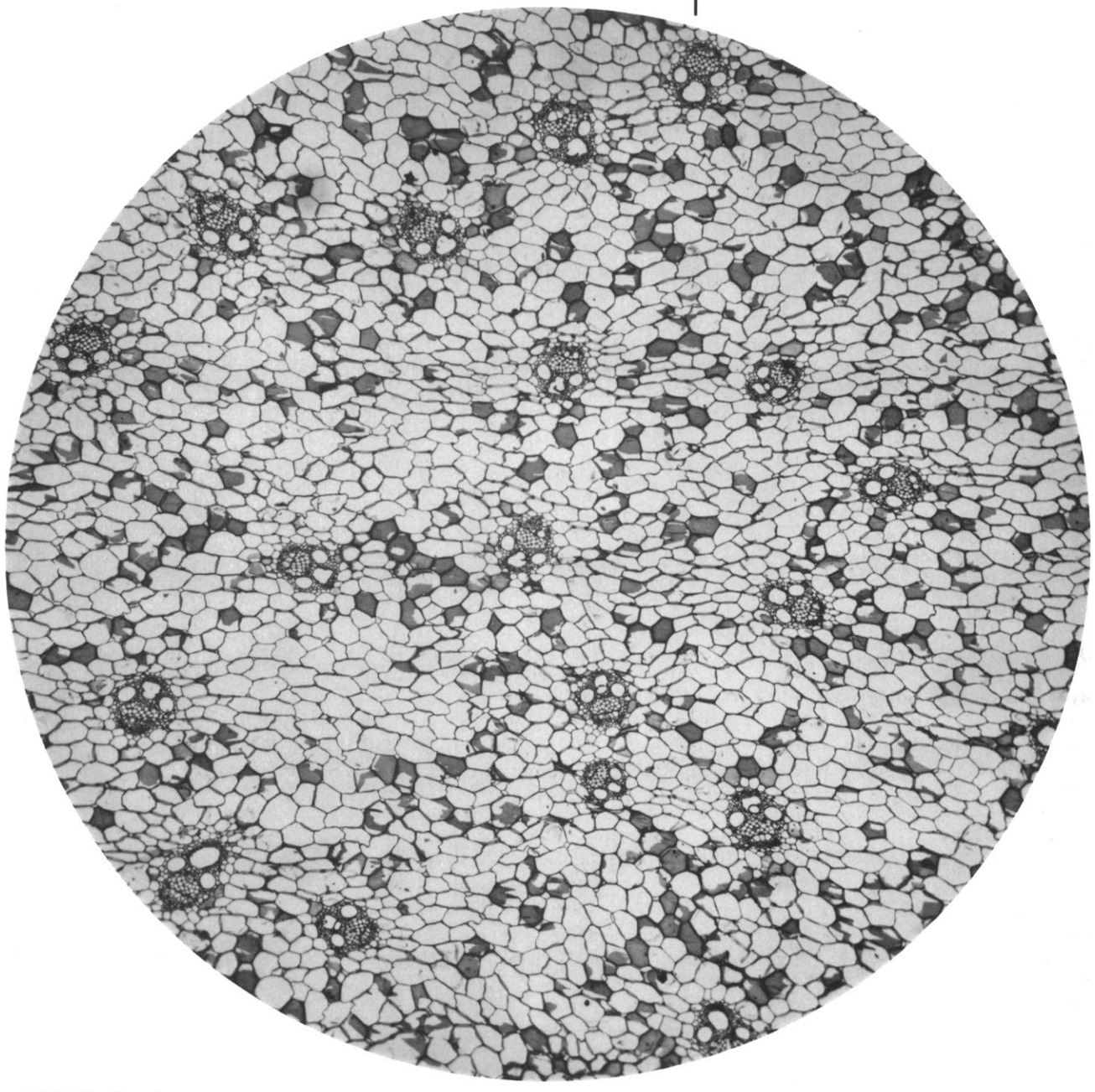

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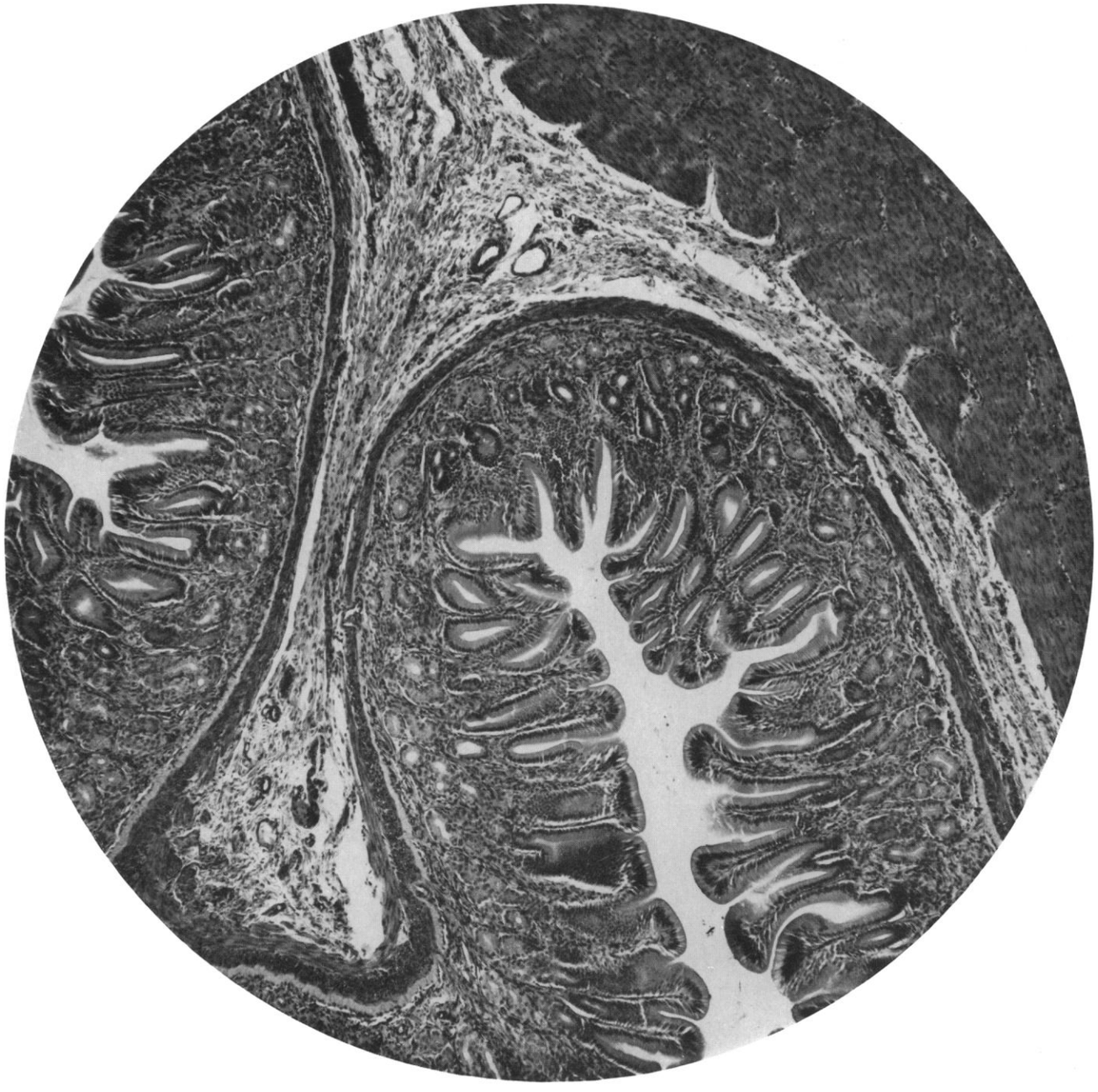

SUBJECT: *Intestine, Cat*
MAGNIFICATION: *100X*
OBJECTIVE: *10X Flat Field*

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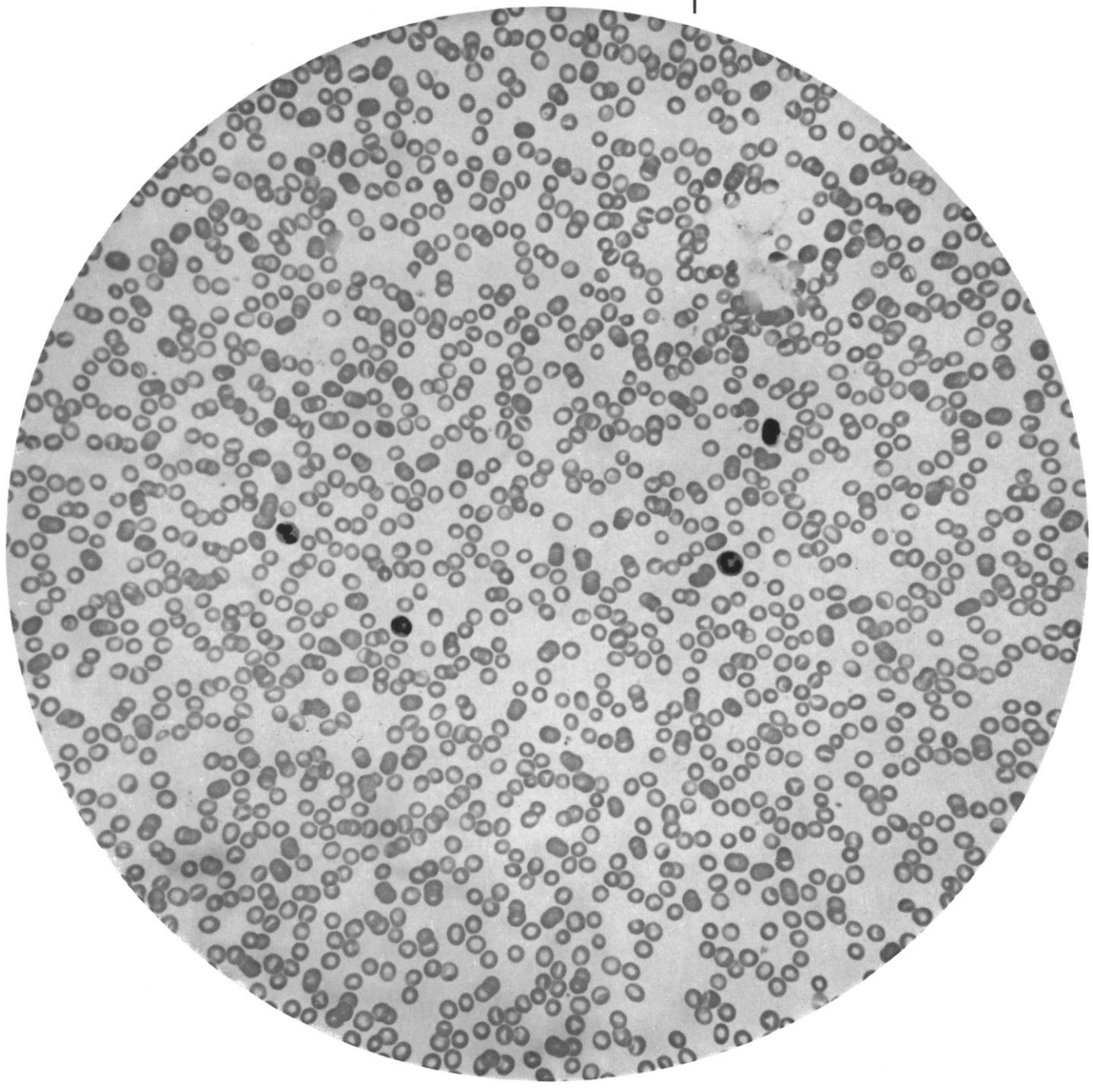

SUBJECT: *Human Blood Smear*
MAGNIFICATION: *400X*
OBJECTIVE: *40X Flat Field*

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SUBJECT: *Drosophila Chromosomes, Salivary Gland*
MAGNIFICATION: *1000X*
OBJECTIVE: *100X Flat Field*

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nevertheless depends almost entirely upon private funding and receives contributions from foundations, individuals, and corporations. The annual general operating budget for 1965 is approximately $150,000. In addition, $100,000 is sought in 1965 for projects and studies previously mentioned.

The organization includes *Board of Trustees*: acting chairman, Frank Fremont-Smith; honorary vice president, Warren Weaver; secretary, George C. Anderson; treasurer, Charles D. Halsey. *Trustees*: Kenneth E. Appel; Allen D. Fischbach, Fowler McCormick, the Rev. Samuel H. Miller, Lawrence Morris, Mrs. Godfrey S. Rockefeller, Mrs. Edwin S. Webster, Jr.; Dean Witter, Jr. *Director*: George C. Anderson; and *Director of Program*: Harry C. Meserve.

HARRY C. MESERVE
Academy of Religion and Mental Health, New York, New York

Conference of Biological Editors

The Conference of Biological Editors was elected as an affiliate of the AAAS at the Association's 131st annual meeting, Montreal, Canada, December 1964. The Conference is a nonprofit association founded in New Orleans in 1957. The objects of the Conference are cooperation among editors, effective publication of continuing journals, and development of policies concerning communication in the biological sciences.

Membership is open to individuals who hold the principal responsibility for the editorial management of serial publications such as journals, reviews, monograph series, abstract journals and services, indexes, microcards, and similar media devoted to the periodic dissemination of biological knowledge. Most of the 165 members are, or have been, editors of primary biological journals.

The activities of the Conference include an annual meeting (usually of 2 days' duration). Some sessions of the annual meeting are in the form of small panel discussions of questions and data papers prepared by standing and ad hoc committees.

These committees include: (i) Committee on Form and Style, which has prepared the *Style Manual for Biological Journals*. The manual is now in its second edition and accepted in whole or in part as the standard of form by approximately 175 biological journals; (ii) Committee on Review Articles, which strives toward coordination of efforts of publications devoted to reviews; (iii) Committee on Journal Exchange, which is exploring, among other matters, possible mechanisms to enhance the direct exchange of primary publications; (iv) Committee on Cooperation with Foreign Biologists, which together with the Executive Board and special committees has planned and carried out two conferences with biological editors from other regions (Latin America and Europe). These conferences are leading to formation of sister organizations of editors in these regions and to the possibility of further international standardization and upgrading of publications and international redactorial services; (v) Committee on Publication Costs, which explores all manner of economic problems of journal publication; (vi) Committee on Graduate Training in Scientific Writing, which is working on ways to insure the inclusion of training in communication skills in biology programs; (vii) Committee on Editor Cooperation with Indexing and Abstracting Publication, which has defined the problems and already has seen some improvement in the acceptance of responsibility by primary journals for secondary diffusion of information; (viii) Committee on New Forms of Publication, which has participated in experiments, such as the *Journal of Wildlife Diseases*, in microcard, microprint, and other new forms; and (ix) Committee on Editorial Policy, which is concerned with procedural and ethical questions.

The executive secretary prepares and distributes an occasional informal newsletter. Since the average term of editors is about 6 years, there is considerable turnover and the executive secretary would welcome inquiries concerning membership from qualified individuals. The way is open to convey to others the results of some past work and to explore new ways of meeting the challenge of burgeoning biological literature.

The present officers of the Conference are: chairman, Gabriel Lasker (Wayne State University); vice-chairman, Carlton M. Herman (U.S. Fish and Wildlife Service, Patuxent Research Refuge, Laurel, Maryland); and executive secretary, Robert E. Gordon (University of Notre Dame).

ROBERT E. GORDON
Department of Biology, University of Notre Dame, Notre Dame, Indiana

Society for the Scientific Study of Religion

The Society for the Scientific Study of Religion was one of four societies elected at the 130th AAAS annual meeting in December 1963, as an affiliate of the Association. The society was founded in 1948 by two scholars, one religious and the other a social scientist. Students of religion needed a society to stimulate studies of a scientific nature. At the same time, certain social scientists felt that the study of religion by their disciplines needed encouragement. For many years meetings were held twice a year in the Boston and the New York areas, usually at Harvard and at Columbia universities. But recently, with the establishment of the *Journal for the Scientific Study of Religion*, membership has grown and broadened both in the United States and in foreign countries so that an annual, longer meeting has been instituted. In 1964 this meeting was held in Washington, D.C.; in 1965 it will be held in New York, and in 1966 probably in Chicago. Programs include contributed papers, and invited symposia and addresses. Most of the membership is divided between students of religion, psychology, and sociology. There is a small representation from the biological and physical fields.

Local meetings have on occasions been sponsored by interested members in such cities as Chicago, Minneapolis, and San Francisco. Programs have been held in conjunction with the American Psychological Association and the American Sociological Society. Past presidents have included Talcott Parsons, James Luther Adams, and Richard V. McCann (Harvard); Prentiss L. Pemberton (Colgate-Rochester Seminary); Horace M. Kallen (New School for Social Research); and Horace L. Friess (Columbia University). Officers for 1964–65 are: president, Walter Houston Clark (Andover Newton Theological School); vice president, Paul W. Pruyser (Menninger Foundation); secretary, Allan W. Eister (Wellesley College); and treasurer, James E. Dittes (Yale University). Editor of the *Journal* is Prentiss L. Pemberton, 1100 South Goodman Street, Rochester 20, New York. The Society is governed by a Council which, in addition to the officers, includes Peter L. Berger, Isidor Chein, William G. T. Douglas, Horace L. Freiss, Horace M. Kallen, Noël Mail-

loux, Benjamin Nelson, and Talcott Parsons.

Membership is open to qualified scholars elected by the Council. Information about the Society and details concerning the annual meeting, usually held on the last Friday and Saturday of October, may be obtained from the executive secretary, Samuel Z. Klausner, Society for the Scientific Study of Religion, 1424 Sixteenth Street, NW, Washington, D.C. 20036.

SAMUEL Z. KLAUSNER
Society for the Scientific Study of Religion, Washington, D.C.

Forthcoming Events

April

18–22. Association of American **Geographers**, annual, Columbus, Ohio. (E. Taafee, Dept. of Geography, Ohio State Univ., Columbus)

18–24. **Tsunami Run-up**, U.S.–Japan cooperative science program meeting, Sapporo, Japan. (Office of Intern. Science Activities, Natl. Science Foundation, Washington, D.C.)

19–21. Nondestructive Evaluation of **Aerospace and Weapons System Components and Materials** (unclassified), San Antonio, Tex. (J. R. Barton, Southwest Research Inst., 8500 Culebra Rd., San Antonio 6)

19–21. **Biomedical Sciences Instrumentation**, 3rd natl. symp., Instrument Soc. of America, Dallas, Tex. (D. R. Stearn, ISA, 530 William Penn Place, Pittsburgh, Pa. 15219)

19–21. Mechanics, Physics, and Chemistry of **Solid Propellants**, Purdue Univ., Lafayette, Ind. (A. C. Eringen, School of Aeronautics, Astronautics and Engineering Sciences, Purdue Univ., Lafayette)

19–22. Modern Trends in **Activation Analysis**, intern. conf., Texas A&M Univ., College Station. (R. E. Wainerdi, Texas A&M Univ., College Station)

19–22. American **Geophysical** Union, annual, Washington, D.C. (W. E. Smith, AGU, 1145 19th St., NW, Washington, D.C. 20036)

19–22. **Nuclear Magnetic Resonance**, 2nd annual workshop, Washington, D.C. (A. J. Rosen, Dept. of Chemistry, Georgetown Univ., Washington, D.C.)

20–22. **Frequency Control**, 19th annual symp., Atlantic City, N.J. (Director, U.S. Army Electronics Laboratories, Headquarters, U.S. Army Electronics Command, Fort Monmouth, N.J. 07703)

20–22. **Great Plains**, symp., North Dakota State Univ., Fargo. (S. W. Russell, North Dakota State Univ., Fargo)

20–22. **Physics of Solids at High Pressures**, 1st intern. conf., Tucson, Ariz. (C. T. Tomizuka, Dept. of Physics, Univ. of Arizona, Tucson 85721)

20–22. Photochemical Aspects of **Air Pollution**, symp., Cincinnati, Ohio. (A. P. Altshuller, Taft Sanitary Engineering Center, 4676 Columbia Parkway, Cincinnati 45226)

20–22. **System Theory**, symp., Polytechnic Inst. of Brooklyn, Brooklyn, N.Y. (J. Fox, Polytechnic Inst. of Brooklyn, 333 Jay St., Brooklyn 1)

20–23. American Assoc. of **Anatomists**, annual, Miami, Fla. (R. T. Woodburne, Dept. of Anatomy, Univ. of Michigan, Ann Arbor 48104)

20–23. American **Meteorological** Soc., spring meeting, Washington, D.C. (K. C. Spengler, 45 Beacon St., Boston 8, Mass.)

20–23. U.S. Natl. Committee, Intern. **Scientific Radio Union**/Inst. of **Electrical and Electronics Engineers**, spring meeting, Washington, D.C. (A. T. Waterman, Stanford Electronics Laboratories, Stanford Univ., Stanford, Calif.)

21. **Oral Cancer**, 3rd annual symp., Poughkeepsie, N.Y. (M. A. Engelman, 1 East Academy St., Wappingers Falls, N.Y. 12590)

21–22. **Mathematical Geodesy**, symp., Turin, Italy. (A. Marussi, Univ. of Trieste, Trieste, Italy)

21–23. American Inst. of **Chemists**, 42nd annual, Richmond, Va. (R. E. Anderson, Albemarle Paper Manufacturing Co., Richmond 23217)

21–23. **Cognitive Processes and Clinical Psychology**, 3rd symp., Univ. of Colorado, Boulder. (R. Jessor, Dept. of Psychology, Univ. of Colorado, Boulder)

21–23. **Combustion** Inst., western states section, spring meeting, Hollywood, Calif. (A. S. Gordon, Forrestal Research Center, Princeton Univ., Princeton, N.J.)

21–23. Instititute of **Environmental Sciences**, 11th annual, Chicago, Ill. (IES, 34 Main St., Mount Prospect, Ill. 60057)

21–23. Engineering Aspects of **Magnetohydrodynamics**, 6th symp., Pittsburgh, Pa. (E. Reshotko, Div. of Electrical Engineering, Case Inst. of Technology, Cleveland, Ohio 44106)

21–23. Support for **Manned Flight**, conf., Dayton, Ohio. (G. L. Schwarz, Headquarters, AF Logistics Command (MCO), Wright-Patterson Air Force Base, Ohio)

21–23. **Marine Sciences Instrumentation**, 3rd natl. symp., Instrument Soc. of America, Univ. of Miami, Miami, Fla. (H. A. Cook, Airpax Electronics, Inc., P.O. Box 8488, Fort Lauderdale, Fla.)

21–23. **Nonlinear Magnetics**, 3rd intern. conf. (INTERMAG), Washington, D.C. (E. W. Pugh, I.B.M. Components Div., Dept. 231, Bldg. 703-2, Poughkeepsie, N.Y. 12602)

21–23. **Ophthalmological** Soc. of the United Kingdom, annual, London, England. (Joint Secretariat, 47 Lincoln's Inn Fields, London, W.C.2)

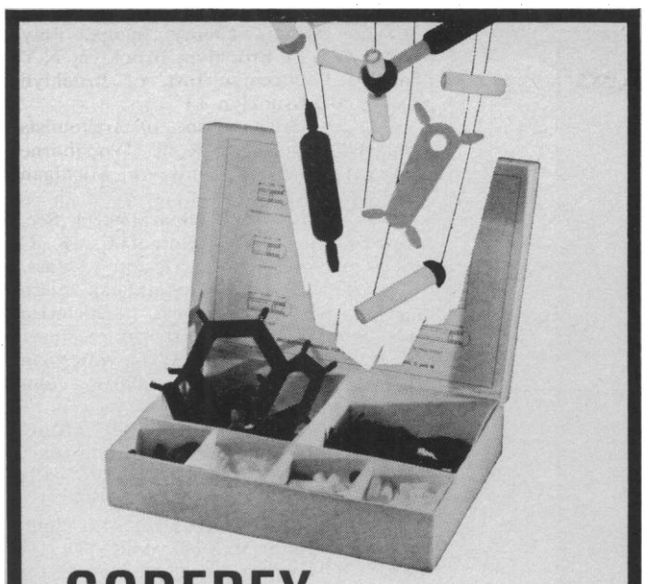
21–23. **Optimization Techniques**, symp., Pittsburgh, Pa. (Inst. of Electrical and Electronics Engineers, Box A, Lenox Hill Station, New York, N.Y.)

21–23. **Pulse Radiolysis**, symp., Manchester, England. (M. Ebert, Paterson Laboratories, Christie Hospital and Holt Radium Inst., Withington, Manchester 20)

21–24. Federation of European **Biochemical** Societies, Vienna, Austria. (The Secretariat, Alserstr. 4, Vienna 9)

21–24. British **Paediatric** Assoc., Scarborough, England. (E. W. Hart, Hospital for Sick Children, Great Ormond St., London, W.C.1, England)

21–2. **Industrial Chemistry**, 26th intern. congr., Paris, France. (Soc. of In-



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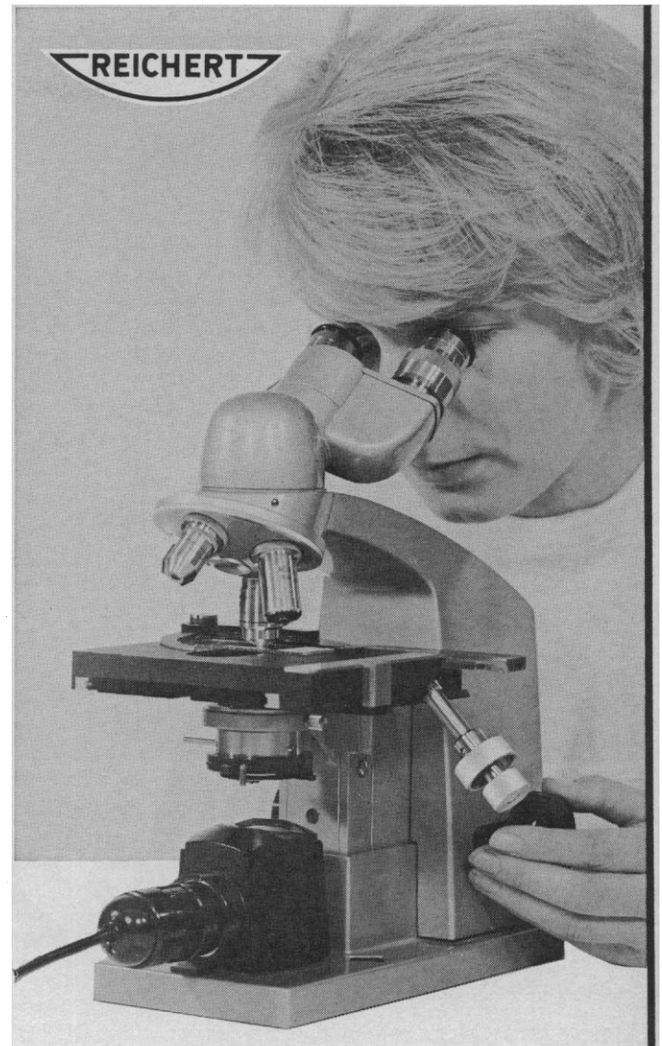

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dustrial Chemistry, 28 rue St. Dominique, Paris 7)

22–23. **Nondestructive Testing** of Materials, intern. conf., Vienna, Austria. (Firma Gebr. Böhler & Co., A.G., Kapfenberg, Austria)

22–23. Chemistry of **Polymerization Processes**, symp., London, England. (W. R. Moore, Dept. of Chemical Technology, Bradford Inst. of Technology, Bradford 7, Yorkshire, England)

22–24. Eastern **Psychological** Assoc., 36th annual, Atlantic City, N.J. (M. A. Iverson, Queens College, Flushing, N.Y.)

22–24. Role of the **Solvent in Chemical Kinetics**, E. A. Moelwyn-Hughes symp., Univ. of Arkansas, Fayetteville. (A. Fry, Dept. of Chemistry, Univ. of Arkansas, Fayetteville 72701)

22–24. **Wildflower Pilgrimage**, 15th annual, Great Smoky Mountains Natl. Park. (E. E. C. Clebsch, Dept. of Botany, Univ. of Tennessee, Knoxville)

23–24. **Georgia** Acad. of Science, Oglethorpe Univ., Atlanta. (J. T. May, School of Forestry, Univ. of Georgia, Athens)

23–24. **Information Retrieval**, 2nd annual natl. colloquium, Univ. of Pennsylvania, Philadelphia. (Inst. for Scientific Information, 325 Chestnut St., Philadelphia 19106)

23–24. **Iowa** Acad. of Science, Univ. of Dubuque, Dubuque. (G. W. Peglar, Dept. of Mathematics, Iowa State Univ., Ames)

23–24. **Mississippi** Acad. of Sciences, Biloxi. (C. Q. Sheely, Mississippi State Univ., State College)

23–24. **Ohio** Acad. of Science, annual, Ohio Univ., Athens. (J. H. Melvin, 505 King Ave., Columbus, Ohio 43201)

23–24. **Parasitism**, colloquium, Oregon State Univ., Corvallis. (J. E. McCauley, Dept. of Oceanography, Oregon State Univ., Corvallis 97331)

23–24. **Population** Assoc. of America, annual, Chicago, Ill. (A. J. Coale, PAA, Office of Population Research, 5 Ivy Lane, Princeton, N.J.)

23–24. **South Dakota** Acad. of Science, Black Hills State College, Spearfish. (T. Van Bruggen, Botany Dept., Univ. of South Dakota, Vermillion)

23–24. **West Virginia** Acad. of Science, Fairmont State College, Fairmont. (J. B. Hickman, 8 Mineral Industries Bldg., West Virginia Univ., Morgantown)

25–26. **Pi Gamma Mu**, natl. social science honor soc., St. Paul, Minn. (E. B. Urquhart, 1719 Ames St., Winfield, Kan.)

25–28. American **Oil Chemists** Soc., Houston, Tex. (C. W. Hoerr, Durkee Foods, 2333 Logan Blvd., Chicago, Ill.)

25–28. Southeastern **Psychiatric** Assoc., annual, Southern Pines, N.C. (H. Brackin, Jr., 1918 Church Ave., Nashville 3, Tenn.)

25–29. American Assoc. of **Cereal Chemists**, Kansas City, Mo. (E. J. Bass, Intern. Milling Co., Inc., 1423 S. 4th St., Minneapolis, Minn. 55404)

25–29. American Soc. for **Microbiology**, annual, Atlantic City, N.J. (R. W. Sarber, ASM, 115 Huron View Blvd., Ann Arbor, Mich.)

25–29. International College of **Surgeons**, North American Federation, Las Vegas, Nev. (Secretariat, 1516 Lake Shore Dr., Chicago, Ill. 60610)

26–27. European Days of **Chemical Engineering**, Paris, France. (Societé de Chimie Industrielle, 28, rue St. Dominique, Paris 7)

26–27. **Electroanesthesia**, 2nd symp., Univ. of Tennessee, Knoxville. (C. E. Short, UT-AEC Agricultural Research Laboratory, 1299 Bethel Valley Rd., Oak Ridge, Tenn.)

26–27. **Environmental Health Problems**, 2nd AMA congr., Chicago, Ill. (Dept. of Environmental Health, AMA, 535 North Dearborn St., Chicago, Ill. 60610)

26–28. **Error in Digital Computation**, symp., Madison, Wis. (L. B. Rall, U.S. Army Mathematics Research Center, Univ. of Wisconsin, Madison 53706)

26–28. **National Acad. of Sciences**, 102nd annual, Washington, D.C. (Office of the Home Secretary, NAS, 2101 Constitution Ave., Washington 20418)

26–29. **Aerospace Medical** Assoc., 36th annual, New York, N.Y. (Gen. J. M. Talbot, Headquarters USAF, AFMSPA, Washington, D.C. 20333)

26–29. Mechanisms and Therapy of **Cardiac Arrythmias**, 14th Hahnemann symp., Philadelphia, Pa. (L. Dreifus, Dept. of Medicine, Hahnemann Medical College and Hospital, Philadelphia)

26–29. Society of **Economic Paleontologists and Mineralogists**, New Orleans, La. (D. M. Curtis, Shell Oil Co., Box 127, Metairie, La.)

26–29. American Assoc. of **Petroleum Geologists**, 39th annual, New Orleans, La. (G. Atwater, 424 Whitney Bldg., New Orleans)

26–29. American **Physical** Soc., Washington, D.C. (K. K. Darrow, APS, Columbia Univ., New York 10027)

26–1. **Geodetic Uses of Satellites**, conf., Athens, Greece. (Intern. Organizations Staff, Bureau of Intern. Commerce, U.S. Dept. of Commerce, Washington, D.C.)

28–30. **Hypnosis and Psychosomatic Medicine**, intern. congr., Paris, France. (H. C. Harding, 2050 NW Lovejoy, Portland 9, Ore.)

28–30. National Soc. for **Prevention of Blindness**, Houston, Tex. (J. W. Ferree, 16 E. 40 St., New York 10016)

28–1. **Biometric** Soc., Florida State Univ., Tallahassee. (E. L. LeClerg, 6804 40th Ave., University Park, Hyattsville, Md.

28–1. American **College Health** Assoc., Miami Beach, Fla. (R. E. Boynton, 5518 Merrick Dr., Coral Gables, Fla.)

29–30. **Space Navigation and Communications**, natl., Houston, Tex. (P. Schrock, Inst. of Navigation, 711 14th St. NW, Washington, D.C. 20005)

29–30. Association for **Symbolic Logic**, Chicago, Ill. (T. Hailperin, Dept. of Mathematics, Lehigh Univ., Bethlehem, Pa. 18015)

29–31. Southwestern Assoc. of **Naturalists**, annual, New Orleans, La. (H. Dundee, Tulane Univ., New Orleans)

29–1. American Assoc. of **Endodontists**, Detroit, Mich. (E. C. Van Valey, 9 Rockefeller Plaza, New York 10020)

29–1. American Assoc. for **History of Medicine**, Philadelphia, Pa. (J. B. Blake, Natl. Library of Medicine, 9600 Wisconsin Ave., Bethesda, Md.)

29–1. American Acad. of **Neurology**, annual, Cleveland, Ohio. (AAN, 7100 France Ave. S., Minneapolis, Minn. 55410)

29–1. Midwestern **Psychological** Assoc., 27th annual, Chicago, Ill. (F. A. Mote, Psychology Bldg., Madison, Wis. 53706)

29–1. American **Philosophical** Assoc., western div., Chicago, Ill. (L. E. Hahn, Dept. of Philosophy, Southern Illinois Univ., Carbondale)

29–2. Protides of the **Biological Fluids**, 13th colloquium, Bruges. Belgium. (P.O.B. 71, Bruges 1)

29–2. Association of **Clinical Scientists**, New York, N.Y. (R. P. MacFate, ACS, 300 N. State St., Chicago, Ill. 60610)

29–2. **Pan American Medical** Assoc., 40th annual congr., Grand Bahama Island. (PAMA, 745 Fifth Ave., New York 10022)

29–2. **Roentgen**, 46th German congr., Nuremberg, Germany. (A. Jakob, c/o Strahleninstitut der Städt, Krankenanstalten, Flurstr. 17, 85 Nuremberg)

30–1. **Colorado-Wyoming** Acad. of Science, annual, Univ. of Denver, Denver, Colo. (C. Norton, Dept. of Botany and Plant Pathology, Colorado State Univ., Fort Collins)

30–1. **Indiana** Acad. of Science. Culver. (C. F. Dineen, St. Mary's College. Notre Dame, Ind. 46556)

30–1. **Nebraska** Acad. of Sciences, Lincoln. (C. B. Schultz, Morrill Hall 101, Univ. of Nebraska, 14th and U St., Lincoln 68508)

30–2. Society of **Biological Psychiatry**, New York, N.Y. (G. N. Thompson, 2010 Wilshire Blvd., Los Angeles, Calif.)

30–2. Academy of **Psychoanalysis**, annual, New York, N.Y. (A. H. Rifkin, 125 E. 65 St., New York 10021)

30–2. American **Psychosomatic** Soc., annual, Philadelphia, Pa. (APS, 265 Nassau Rd., Roosevelt, N.Y. 11575)

30–3. American **Psychoanalytic** Assoc., 52nd annual, New York, N.Y. (APA, 1 E. 57 St., New York 10022)

May

1–2. Academy of **Psychoanalysis**, New York, N.Y. (A. H. Rifkin, AP, 125 E. 65 St., New York 10021)

1–2. American **Psychosomatic** Soc., 22nd annual, Philadelphia, Pa. (E. Meyer, 265 Nassau Rd., Roosevelt, N.Y.)

1–4. Southern **Surgeons'** Club, 22nd annual, Louisville, Ky. (H. M. Carney, 619 Main St., Texarkana, Ark.-Tex.)

1–5. American Assoc. of **Medical Record Librarians**, Chicago, Ill. (Mrs. M. J. Waterstraat, 840 N. Lake Shore Dr., Chicago 60610)

1–6. American **Ceramic** Soc., 67th annual, Philadelphia, Pa. (ACS, 4055 N. High St., Columbus, Ohio 43214)

2. American Federation for **Clinical Research**, Atlantic City, N.J. (J. E. Bryan, 2000 P St., NW, Washington, D.C. 20036)

2–5. American Assoc. of **Plastic Surgeons**, Boca Raton, Fla. (R. M. McCormack, 260 Crittenden Blvd., Rochester, N.Y. 14620)

2–6. **Southwestern and Rocky Mountain Div., AAAS**, Flagstaff, Ariz. (M. G. Anderson, P.O. Box 97, University Park, N.M.)

2–6. **Arizona** Acad. of Science, Flagstaff. (H. B. Whitehurst, Arizona State Univ., Tempe)

2–6. **Student American Medical** Assoc., 15th annual, Chicago, Ill. (SAMA, 333 N. Michigan Ave., Chicago 60601)

2–8. **Stereochemistry**, conf., Bürgenstock, Switzerland. (A. Dreiding, Organisch-Chemisches Inst., Universität Zurich, Rämistr. 76, Zurich 7, Switzerland)

2–8. **Endodontia**, 3rd intern. symp., Barcelona, Spain. (J. N. Ferrero, Intern. Soc. of Endodontia, Via Layetana, Tapineria 10, 2° Barcelona 2)

3–5. **Automation Theory**, congr., Paris, France. (Comité de la Théorie, Assoc. Française de Régulation et d'Automatisme, 19, rue Blanche, Paris 19e)

3–5. **Industrial Research** Inst., Boca Raton, Fla. (The Institute, 100 Park Ave., New York 10017)

3–5. **Terrestrial Radioecology**, symp., Richland, Wash. (F. P. Hungate, Biology Dept., Battelle Memorial Inst., Pacific Northwest Laboratory, Richland 99352)

3–6. **Microbiology**, intern. congr., Parma, Italy. (The Congress, c/o Ente Provinciale per il Turismo, Piazza Duomo 5, Parma)

3–7. **Industrial Hygiene**, conf., Houston, Tex. (American Industrial Hygiene Assoc., 14125 Prevost, Detroit, Mich. 48227)

3–7. Molecular Basis of **Infectious Heredity**, U.S.–Japan cooperative science program seminar, Honolulu, Hawaii. (Office of Intern. Science Activities, National Science Foundation, Washington 25)

3–7. **Legal and Social Medicine**, intern. French-language congr., Coimbra, Portugal. (L. A. Duarte-Santos, Inst. de Medicina Legal de Coimbra)

3–7. American **Psychiatric** Assoc., 121st annual, New York, N.Y. (APA, 1700 18th St., NW, Washington, D.C.)

3–15. **Psychotherapy** Week, 15th, Lindau, Germany. (Secretary, Adalbert Stifter-Str. 31, Munich 27, Germany)

3–18. **Energy Policy** in Developing Countries, seminar, Bréau, France. (P. de Seynes, United Nations, New York, N.Y.)

4–6. **Genetics** Soc. of Canada, annual, Banff, Alberta. (C. O. Person, Dept. of Genetics, Univ. of Alberta, Edmonton)

4–6. Society for **Pediatric Research**, Philadelphia, Pa. (W. B. Weil, Jr., J. H. Miller Health Center, Univ. of Florida, Gainesville)

4–7. **Rubber Chemistry and Technology**, rubber chemistry div., American Chemical Soc., Miami Beach, Fla. (G. N. Vacca, Bell Telephone Laboratories, Murray Hill, N.J.)

4–7. **Industrial Communications** Assoc., 18th annual conf., Pittsburgh, Pa. (H. C. Granger, Pittsburgh Plate Glass Co., Pittsburgh 15222)

4–21. World **Health** Assembly, 18th annual, Geneva, Switzerland. (WHO, Palais des Nations, Geneva)

5. Association of American **Physicians**, annual, Atlantic City, N.J. (E. A. Stead, Jr., Duke Hospital, Durham, N.C.)

5–7. **Electronic Components**, conf., Washington, D.C. (B. Schwartz, IBM Components Div., Poughkeepsie, N.Y. 12602)

5–7. American Assoc. of **Genitourinary Surgeons**, Biloxi, Miss. (H. M. Spence, 4105 Live Oak, Dallas 21, Tex.)

5–7. **Microwave Theory and Techniques**, 10th symp., Clearwater, Fla. (J. E. Pippin, Sperry Microwave Electronics Co., Box 1828, Clearwater)

5–7. Society for **Experimental Stress Analysis**, spring natl. meeting, Denver, Colo. (D. H. Fietz, 70 Kalamath St., Denver 4)

5–8. **Programmed Instruction**, 3rd natl. conv., Philadelphia, Pa. (H. M. Shafer, Graduate School of Education, Univ. of Pennsylvania, Philadelphia 19104)

5–8. **Pulp and Paper Instrumentation**, 6th intern. symp., Instrument Soc. of America, Green Bay, Wis. (ISA, 530 William Penn Place, Pittsburgh 19, Pa.)

5–8. **Virginia** Acad. of Science, Richmond. (R. C. Berry, The Academy, P.O. Box 8203, Richmond)

5–9. **Laboratory Medicine**, congr., German Soc. of Specialists for Diagnostic Laboratories, Bad Kissingen. (W. Albath, 8700 Wurzburg, Katharinengasse 3, Germany)

6–7. Conference of **Biological Editors**, Philadelphia, Pa. (R. E. Gordon, Dept. of Biology, Univ. of Notre Dame, Notre Dame, Ind.)

6–7. **Cellulose**, 5th conf., State Univ. of New York, Syracuse. (Cellulose Research Inst., State Univ. College of Forestry, Syracuse Univ., Syracuse 13210)

6–7. **Operations Research** Soc. of America, 27th natl., Boston, Mass. (J. H. Engel, Operations Evaluation Group, Center for Naval Analysis, 1401 Wilson Blvd., Arlington, Va.)

6–8. Society for American **Archaeology**, Univ. of Illinois, Urbana. (E. M. Davis, Dept. of Anthropology, Univ. of Texas, Austin 78712)

6–8. **Business Aircraft**, conf., Soc. of Automotive Engineers, Wichita, Kan. (M. J. Gordon, Commercial Engineering Dept., Beech Aircraft Corp., Wichita)

6–8. **Human Factors in Electronics**, 6th natl. symp., Inst. of Electrical and Electronics Engineers, Boston, Mass. (J. Senders, Bolt, Beranek and Newman, Inc., 50 Moulton St., Cambridge, Mass.)

6–8. **Kansas** Acad. of Science, Kansas State Univ., Manhattan. (R. J. Robel, Dept. of Zoology, Kansas State Univ., Manhattan)

6–8. **Medical Women's Federation**, annual, Cardiff, South Wales. (General Secretary, Tavistock House North, Tavistock Sq., London, W.C.1, England)

6–8. American **Pediatric** Soc., Philadelphia, Pa. (C. D. Cook, Yale Univ. Medical School, New Haven, Conn.)

6–8. **Purification of Materials**, conf., New York, N.Y. (Research Information Office, L. G. Hanscom Field, Bedford, Mass. 01731)

7–8. **Minnesota** Acad. of Science, Gustavus Adolphus College, St. Peter. (P. R. O'Connor, School of Chemistry, Univ. of Minnesota, Minneapolis 55406)

7–8. **North Carolina** Acad. of Science, Univ. of North Carolina, Chapel Hill. (J. A. Yarbrough, Meredith College, Raleigh, N.C.)

7–8. **North Dakota** Acad. of Science, Grand Forks. (B. G. Gustafson, General Extension Div., Univ. of North Dakota, Grand Forks)

7–9. **Minerals**, 10th annual symp., Grand Junction, Colo. (R. G. Beverly, P.O. Box 28, Grand Junction)

7–9. **Wisconsin** Acad. of Sciences, Arts and Letters, annual, Madison. (H. H. Clark, Dept. of English, Univ. of Wisconsin, Madison)

7–13. **Scientific Management**, intern. committee, Indo-Pacific Council, 2nd regional conf., Tokyo, Japan. (Intern. Management Assoc. of Japan, Seisanei Bldg., No. 18-5, 1-chome, Hachimandori, Dhibuya-ku, Tokyo)

8. **Legal Essentials for Pharmaceutical Sales Staff**, seminar, George Washington Univ., Washington, D.C. (Food Law Inst., 205 E. 42 St., New York 10017)

9–13. **Electrochemical** Soc., San Francisco, Calif. (ES, 30 E. 42 St., New York 10017)

9–13. American Assoc. of **Orthodontists**, annual, Dallas, Tex. (J. E. Brophy, 7477 Delmar Blvd., St. Louis, Mo. 63130)

9–13. American **Urological** Assoc., New Orleans, La. (W. P. Didusch, 1120 N. Charles St., Baltimore 1, Md.)

10–11. **Passive Gravity-Gradient Stabilization**, symp., Moffett Field, Calif. (B. Tinling, Theoretical Guidance and Control Branch, NASA Ames Research Center, Moffett Field 94035)

10–12. **Aerospace Electronics**, natl. conf., Dayton, Ohio. (Inst. of Electrical and Electronics Engineers, 1414 E. 3 St., Dayton 2)

10–12. Canadian **Nuclear** Assoc., intern. conf., Quebec. (General Manager, CNA, 19 Richmond St. W., Toronto, Ont.)

10–12. **Organic Crystals**, intern. symp., Chicago, Ill. (Secretary of the Symposium, Univ. of Chicago, 5640 S. Ellis Ave., Chicago 60637)

10–12. **Quality Control**, 1st Pan American congr., Mexico, D.F. (E. R. Ott, c/o Statistics Center, Rutgers Univ., New Brunswick, N.J. 08903)

10–13. National **Geriatrics** Soc., New York, N.Y. (W. Spigler, 1355 Cheltenham Ave., Philadelphia, Pa.)

10–13. Southwestern **Surgical** Congr., 17th annual, Hot Springs, Ark. (Central Office, 301 Pasteur Medical Bldg., Oklahoma City, Okla. 73103)

10–14. **Pulsed Neutron Research**, Karlsruhe, Germany. (J. H. Kane, Intern. Conferences Branch, U.S. Atomic Energy Commission, Washington, D.C. 20545)

10–14. Specific **Tumor Antigens**, Sukhumi, Georgia, U.S.S.R. (Acad. of Medical Sciences of the U.S.S.R., 14, Solyanka, Moscow)

10–21. Committee on **Space Research**, 8th plenary meeting, Buenos Aires, Argentina. (Secretariat, 55 Boulevard Malesherbes, Paris 8e, France)

11–13. **Vectorcardiography**, intern. conf. New York, N.Y. (E. C. Meilman, Long Island Jewish Hospital, New Hyde Park, N.Y. 11040)

11–14. **Gas Chromatography**, 5th symp., Berlin, Germany. (Unterkommission für Gaschromatographie, Sektion Chemie, Deutsche Akademie der Wissenschaften zu Berlin, Permoserstr. 15, Leipzig 05, Germany)

12. Institution of **Metallurgists**, annual, London, England. (Institution, 4 Grosvenor Gardens, London, S.W.1)

12–13. Control of **Water Quality**, natl. forum, American Soc. for Testing and Materials, Philadelphia, Pa. (ASTM, Committee D-19 on Industrial Water, 1916 Race St., Philadelphia 19103)

12–24. **Power Instrumentation**, 8th natl. symp., New York, N.Y. (H. H. Johnson, 4 Irving Pl., New York 10013)

13. Society for **Personnel Administra-**

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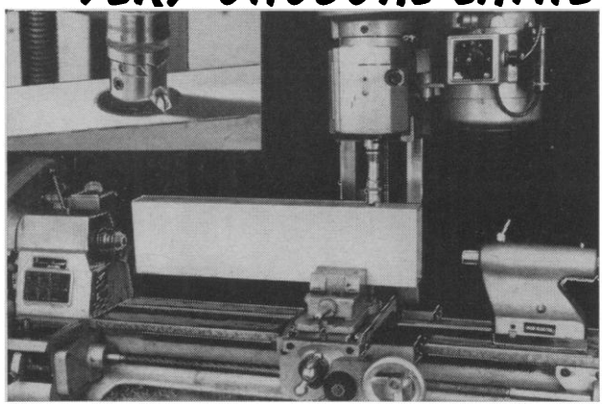

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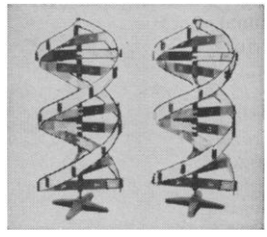

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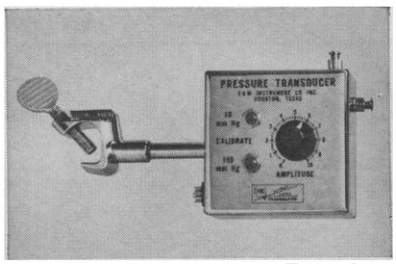

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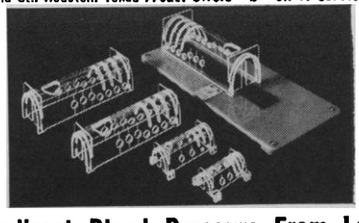

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tion, 4th annual conf., Catholic Univ., Washington, D.C. (H. G. Vavra, SPA, 1221 Connecticut Ave., NW, Washington, D.C.)

13–14. American Inst. of **Mining, Metallurgical, and Petroleum Engineers**, New England regional conf., Hartford, Conn. (AIMMPE, 345 E. 47 St., New York 10007)

13–14. Canadian Council of **Professional Engineers**, annual, Charlottetown, Prince Edward Island. (CCPE, 116 Albert St., Ottawa 4, Ontario)

13–14. **Signal Transmission and Processing**, symp., New York, N.Y. (L. E. Franks, Bell Telephone Laboratories, 1600 Osgood St., North Andover, Mass. 01845)

13–15. American Inst. of **Industrial Engineers**, 16th annual, Chicago, Ill. (W. J. Jaffe, Dept. of Industrial Engineering, Newark College of Engineering, Newark, N.J. 07102)

13–15. **Powder Metallurgy**, 3rd intern., Eisenach, East Germany. (Gesellschaft Deutscher Berg- und Hüttenleute, Wallstr. 68, Berlin C.2, East Germany)

13–19. **Space Science**, 6th intern. symp., Buenos Aires, Argentina. (COSPAR Secretariat, 55, Boulevard Malesherbes, Paris 8e, France)

14–15. Association of **University Radiologists**, annual, Seattle, Wash. (A. R. Margulis, AUR, Dept. of Radiology, Univ. of California Medical Center, San Francisco)

16–19. American Inst. of **Chemical Engineers**, 56th natl., San Francisco, Calif. (A. E. Aronson, A. B. Dick Co., 5700 W. Touhy Ave., Chicago 48)

16–20. Institute of **Food Technologists**, annual, Kansas City, Mo. (C. L. Wiley, Suite 1350, 170 W. Adams St., Chicago, Ill. 60603)

16–21. **Mass Spectrometry**, 13th annual conf., St. Louis, Mo. (H. M. Rosenstock, Natl. Bureau of Standards, Washington, D.C. 20234)

17–18. Canadian **Aeronautics and Space** Inst., annual, Vancouver, B.C. (H. C. Luttman, 77 Metcalfe St., Ottawa 4, Ont.)

17–19. **Application of Computing Methods to Reactor Problems**, conf., Argonne, Ill. (B. J. Toppel, Reactor Physics Div., Argonne Natl. Laboratory, 9700 S. Cass Ave., Argonne)

17–19. American College of **Physicians**, Far East session, Tokyo, Japan. (Session Coordinator ACP, USAF Hospital Tachikawa, APO 323, San Francisco, Calif.)

17–21. American Soc. of **Civil Engineers**, Minneapolis, Minn. (W. H. Wisely, ASCE, 345 E. 47 St., New York 10017)

17–21. **Nondestructive Testing in Nuclear Technology**, symp., Bucharest, Rumania. (P. Ghelardoni, Div. of Scientific and Technical Information, Intern. Atomic Energy Agency, Kärntner Ring 11, Vienna 1, Austria)

17–21. Society of **Photographic Scientists and Engineers**, annual conf., Cleveland, Ohio. (W. E. Granshaw, Eastman Kodak Co., 4605 Mackall Rd., South Euclid 21, Ohio)

18–20. **Aerospace Fluid Power Systems and Equipment**, conf., Los Angeles, Calif. (Soc. of Automotive Engineers, 485 Lexington Ave., New York 10017)

18–20. **Power Sources**, 20th conf., U.S. Army Electronics Research and Development Laboratories, Atlantic City, N.J.

(H. W. Schwarz, PSD, Fort Monmouth, N.J. 07703)

18–20. **Telemetering**, intern. conf., Washington, D.C. (J. D. Cates, ITC/USA/65, White Sands Missile Range, N.M.)

19. **Memorial Hospital of Long Beach**, symp., Long Beach, Calif. (G. X. Trimble, Memorial Hospital, 2801 Atlantic Ave., Long Beach 90801)

19–21. **Atherosclerosis**, Czechoslovak-Italian symp., Prague, Czechoslovakia. (T. Zemplenyi, Thomayerova nemocnice, Prague-Krc, Czechoslovakia)

19–21. **Computer Applications**, power industry conf., Clearwater, Fla. (G. W. Stagg, American Electric Power Service Corp., 2 Broadway, New York 10008)

19–21. **Gamete Transport, Fertilization, and Preimplantation Mechanisms**, conf., Vanderbilt Univ., Nashville, Tenn. (Dept. of Obstetrics and Gynecology, Vanderbilt Univ. School of Medicine, Nashville 37203)

19–21. **Mathematical and Quantitative Linguistics**, intern. conf., New York, N.Y. (Y. Gentilhomme, 11, rue Linne, Paris 5e, France)

19–22. Society of **Technical Writers and Publishers**, 12th annual conv., New York, N.Y. (H. Adler, Data Communication, Inc., 404 Park Ave. South, New York 10016)

19–22. Southern **Textile Research** conf., 5th annual, Hildon Head Island, S.C. (W. H. Martin, Inst. of Textile Technology, Charlottesville, Va.)

20. Institution of **Mining and Metallurgy**, annual, London, England. (The Institution, 44 Portland Pl., London, W.1)

20–21. **Chemical Engineering**, conf., Sydney, Australia. (Secretary, Inst. of Engineers, Australia, Science House, Gloucester and Essex St., Sydney)

20–21. **Electrical Conduction** at Low Temperatures, European symp., London, England. (Administration Assistant, Inst. of Physics and the Physical Soc., 47 Belgrave Sq., London, S.W.1)

20–21. **Fiber** Soc., Atlanta, Ga. (L. Rebenfeld, Box 625, Princeton, N.J.)

20–21. Medical Diagnostic Applications of **Ultrasound**, conf., Pittsburgh, Pa. (C. Moses, Univ. of Pittsburgh School of Medicine, Pittsburgh 15213)

20–22. American **Cleft Palate** Assoc., annual, New York, N.Y. (C. O. Wells, Parker Hall, Columbia, Mo.)

20–22. **Diabetology**, Paris, France. (M. Rathery, Hôtel-Dieu, 1, Pl. du Parvis Nôtre-Dame, Paris 4e)

20–22. American **Gynecological** Soc., New York, N.Y. (C. J. Lund, 260 Crittenden Blvd., Rochester 20, N.Y.)

20–25. **Intersexuality in Fishes**, Sarasota, Fla. (E. Clark, Cape Haze Marine Laboratory, 9501 Blind Pass Rd., Sarasota)

21–22. **Surface Physics**, 3rd annual symp., Pullman, Wash. (E. E. Donaldson, Dept. of Physics, Washington State Univ., Pullman)

21–22. **Women of Science**, symp., Bennington, Vt. (H. W. Toolan, Putnam Memorial Hospital Inst. for Medical Research, Bennington)

21–23. **Exfoliative Cytology**, 2nd intern. congr., Paris, France. (Intern. Acad. of Cytology, 5841 Maryland Ave., Chicago, Ill. 60637)

23–24. American **Laryngological** Assoc., annual, Colorado Springs, Colo. (L. G. Richards, 12 Clovelly Rd., Wellesley Hills 82, Mass.)

23–26. **Administrative Management** Soc., 46th intern. conf., Minneapolis, Minn. (R. C. Walter, 32 W. 40 St., New York 10018)

23–26. **Radiation Research**, 13th annual, Philadelphia, Pa. (A. C. Upton, Biology Div., Oak Ridge Natl. Laboratory, Oak Ridge, Tenn.)

23–26. **Social Medicine**, intern. conf., Berlin, Germany. (Secretariat, Deutsche Gesellschaft für Sozialmedizin, Alsterglacis 3, Hamburg 13, Germany)

24–26. **Hygiene and Preventive Medicine**, 4th intern. congr., Vienna, Austria. (Vienna Academy of Medicine, Alserstr. 4, Vienna 9)

24–26. **Standardization of Pharmaceutical Preparations**, 2nd intern. congr., Leipzig, East Germany. (J. Richter, Deutsches Inst. für Arzneimittelwesen, Grosse Seestr. 4, Berlin-Weissensee, East Germany)

24–27. **Thyroid**, 5th intern. conf., Rome, Italy. (T. Winship, American Thyroid Assoc., 110 Irving St., NW, Washington, D.C. 20010)

24–28. Australian Inst. of **Metals**, annual conf., Brisbane. (Secretary, AIM, P.O. Box 107, North Quay, Brisbane)

24–28. International **Planned Parenthood** Federation, Western Pacific regional conf., Seoul, Korea. (T. Katagiri, IPPF Western Pacific Regional Office, No. 2, 1-chome, Sadohara-cho, Ichigaya, Shinjuku, Tokyo, Japan)

24–28. **Radioisotope Sample Measurement Techniques** in Medicine and Biology, intern. symp., Vienna, Austria. (J. H. Kane, Intern. Conferences Branch, Div. of Special Projects, U.S. Atomic Energy Commission, Washington, D.C. 20545)

24–29. International Federation for **Information Processing**, congr., New York, N.Y. (AFIP, 345 E. 47 St., New York 10017)

24–1. **Cloud Physics**, intern. conf., Tokyo and Sapporo, Japan. (H. Hatakeyama, Japan Meteorological Agency, Otemachi Chiyoda-ku, Tokyo)

25. American **Iron and Steel Inst.**, annual, New York, N.Y. (G. S. Rose, 150 E. 42 St., New York 10017)

25–26. American **Otological** Soc., Colorado Springs, Colo. (J. A. Moore, 525 E. 68 St., New York 10021)

25–27. Armed Forces **Communications and Electronics** Assoc., 19th annual conv., Washington, D.C. (AFCEA, 1725 Eye St., NW, Washington 20006)

25–27. American Astronautical Soc./ Aerospace Electrical Soc., **Space Electronics** symp., Los Angeles, Calif. (L. T. Isaacs, Douglas Aircraft Corp., Long Beach, Calif.)

25–28. American Assoc. for **Contamination Control**, 4th annual, Miami Beach, Fla. (W. T. Maloney, AACC, 6 Beacon St., Boston, Mass. 02108)

25–29. Structure and Control of the **Melanocyte**, conf., Sofia, Bulgaria. (N. Anchev, c/o Oncological Inst., Sofia)

25–29. American Assoc. on **Mental Deficiency**, 89th annual, Miami Beach, Fla. (J. E. Horner, AAMD, Oregon Fairview Home, 2250 Strong Rd., SE, Salem, Ore.)

26–28. Canadian **Botanical** Assoc.,

Carleton University, Ottawa, Ont. (R. L. Taylor, Plant Research Inst., C.E.F., Ottawa, Canada)

26–28. **Cineradiography**, 3rd symp., Antwerp, Belgium. (S. Masy, Steenweg op Waver 256, Heverle, Belgium)

26–28. **Peaceful Uses of Space**, 5th natl. conf., St. Louis, Mo. (G. W. Ferguson, Fleishman-Hillard, Inc., 407 N. 8 St., St. Louis 63101)

26–28. **Analysis Instrumentation** and Chemical and Petroleum Instrumentation, 1st ISA intern. symp., Montreal, Quebec, Canada. (E. J. Minnar, ISA, 530 William Penn Pl., Pittsburgh, Pa. 16219)

26–29. Biological Characterization of **Human Tumors**, intern. symp., Abbaye de Royaumont, France. (W. Davis, c/o Chester Beatty Research Inst., Fulham Rd., London, S.W.3, England)

26–29. Electrochemical Aspects of **Molecular Biology**, symp., Jena, East Germany. (H. Berg, Inst. für Mikrobiologie und Experimentelle Therapie, Deutsche Akademie der Wissenschaften zu Berlin, Beuthenbergstr. 11, Jena)

27–29. American **Gastroenterological** Assoc., Montreal, Quebec, Canada. (D. Cayer, 2240 Cloverdale Ave., Winston-Salem, N.C.)

27–29. American **Ophthalmological** Soc., Hot Springs, Va. (S. D. McPherson, Jr., 1110 W. Main St., Durham, N.C.)

27–29. American Assoc. of **Physical Anthropologists**, annual, Pennsylvania State Univ., University Park. (F. E. Johnston, Dept. of Anthropology, Univ. of Pennsylvania, Philadelphia 4)

27–30. **Neuro-Ophthalmology and Neurogenetics**, intern. congr., Albi, France. (M. Amalric, Congrès Intern. de Neuro-Ophthalmologie et Neuro-Génétique, B.P. 79, Albi, Tarn, France)

27–30. German Bunsen Soc. for **Physical Chemistry**, 64th general assembly, Innsbruck, Austria. (Deutsche Bunsen-Gesellschaft für Physikalische Chemie, Varrentrappstr. 40–42, 6 Frankfurt am Main, Germany)

27–11. World **Meteorological** Organization, 17th executive committee session, Geneva, Switzerland. (WMO, 41 avenue Giuseppe Motta, Geneva)

28–1. Canadian Assoc. of **Geographers**, annual, Vancouver, B.C. (Local Arrangements Committee, Dept. of Geography, Univ. of British Columbia, Vancouver 8)

30–2. Recent Advances in **Adrenal Steroid Metabolism**, symp., Montreal, Quebec, Canada. (Chemical Inst. of Canada, 48 Rideau St., Ottawa 2)

30–2. Canadian **Dental** Assoc., conv., Quebec. (L. Bernier, 1024, avenue des Erables, Quebec)

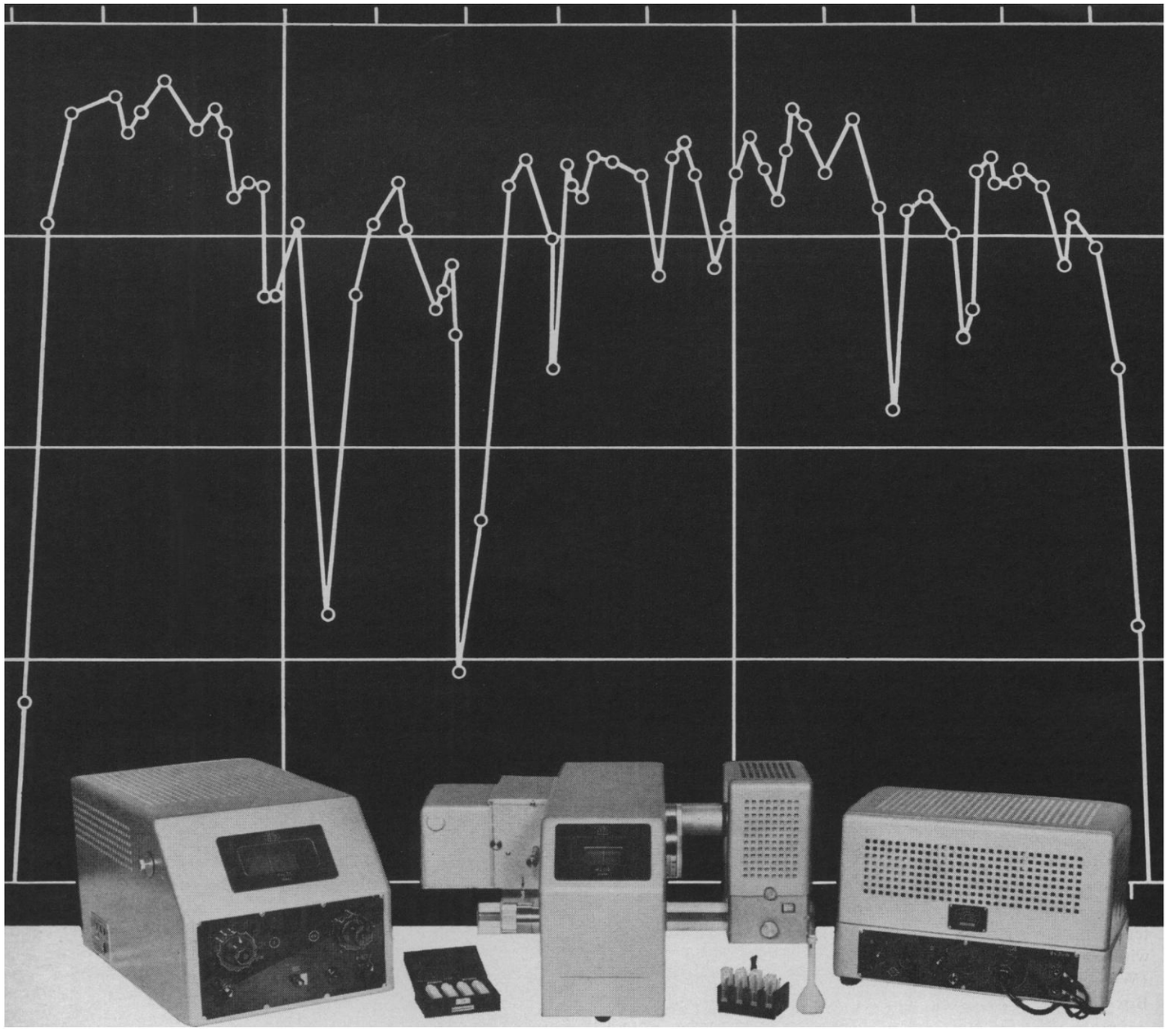
30–2. American **Thoracic** Soc., Chicago, Ill. (F. W. Webster, 1790 Broadway, New York 10019)

30–2. National **Tuberculosis** Assoc., Chicago, Ill. (S. Wicker, 1790 Broadway, New York 10019)

30–3. **Medical Library** Assoc., annual, Philadelphia, Pa. (MLA, 919 N. Michigan Ave., Chicago 11, Ill.)

31–2. **Chemical** Inst. of Canada, 48th conf., Montreal, Quebec. (Chemical Inst. of Canada, 48 Rideau St., Ottawa 2)

31–2. Canadian **Museums** Assoc., annual, Ottawa, Ontario. (Mrs. H. Downie, Royal Ontario Museum, Univ. of Toronto, 100 Queen's Park, Toronto 5)



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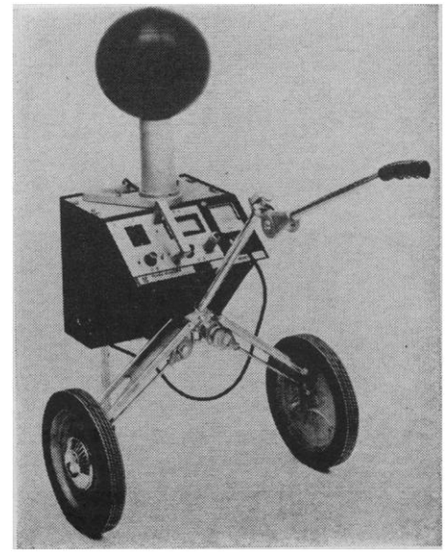
Thyroid phantom, simulating the thyroid gland and neck, for providing an anatomically correct object for isotope scanning. Apart from use with isotope scanners and scintillation cameras, authenticity makes it valuable in demonstrating and illustrating the physiology of the neck structure and thyroid gland. Model 1709 contains AEC license-exempt quantities of 9.5 μc barium-133 and 0.5 μc cesium-137 uniformly distributed throughout the gland replica except for a ½-inch artifact in one lobe for simulating a cold spot. Structure embedded in plastic, with a rounded front surface; the plastic approximates the gamma-ray scattering qualities of the neck. A plaque, indicating serial number, date of loading, and activity is embedded in the base for permanent reference. Dimensions: 4.5 by 6 by 4 inches deep (11 by 15 by 10 cm).—D.J.P. Nuclear-Chicago Corp., 359 E. Howard Ave., Des Plaines, Ill.)

Circle 2 on Readers' Service card

Baseline drift corrector, Aerograph model 450, for the automatic correction of gas-chromatographic baseline drift; increases baseline stability and usable column temperature for both single- and dual-column instruments, and permits accurate integration of peaks. A miniature analog computer with logic, memory, and integrating circuits, the instrument maintains a stable baseline and distinguishes random drift from true chromatographic peaks. It senses positive and negative drift and distinguishes between short-term noise, drift, and peaks, between peak shoulders and shifted baseline, and between valleys of unresolved peaks and baseline. Connected between chromatograph and recorder, the instrument has three basic circuits: the slope detector, the logic, and the corrector. The first measures positive or negative slopes and signals the logic circuit when the slope exceeds a preset value. The logic circuit determines when a peak is emerging and generates switching signals for the corrector circuit. The corrector circuit maintains the baseline at zero when no peak is emerging, corrects the baseline during a peak (if desired), and returns the baseline to zero after the peak. Two modes of operation: In the "flat corrected" mode, the emergence of a peak stops baseline correction, so that peak and baseline drift are recorded together; at the end of the peak, the unit re-zeros the baseline. In the "slope-corrected" mode, a correction for baseline drift is made while the peak is emerging; this correction is made on the basis of an average baseline drift which is stored in the memory and recalled when a peak begins; a "damping" control permits selection of the time interval over which this average drift is computed and stored. The "peak-sensitivity" control determines what rate of slope is defined as a peak; lesser slopes are corrected to a stable baseline. Correction-delay time can be set to prevent re-zeroing the recorder pen during the valley between "rabbit ears," flat shoulders, and extended flat peaks. Noise-rejection control permits use with baseline noise as high as 4 percent of full scale without triggering the slope detector. A reliable means of correcting for baseline drift is in great demand in the field of chromatography. This instrument appears to be a clever, sophisticated approach to the solution of the problem; it incorporates up-to-date methods and concepts and is reasonably priced. Dimensions: 15 by 10 by 5 inches high (33 by 25 by 13 cm). List: $995.—D.J.P. (Wilkens Instrument & Research, Inc., 2700 Mitchell Drive, Walnut Creek, Calif.)

Circle 3 on Readers' Service card

Neutron dosimeter systems, for monitoring areas around reactors, accelerators, or isotopic-neutron sources, give a close approximation of total-body dose for all neutrons in the energy range from thermal to about 10 Mev. The 9140 Nemo Spherical Neutron Dosimeter series comprises five systems composed of the following: 9145 detector assembly, 9146 rate-



The material in this section is prepared by Denis J. Prager (D.J.P.), Laboratory of Technical Development, National Heart Institute, Bethesda 14, Md. (medical electronics and biomedical laboratory equipment).

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Neither *Science* nor the writer assumes responsibility for the accuracy of the information. A Readers' Service card for use in mailing inquiries concerning the items listed is included on pages 147 and 281. Circle the department number of the item in which you are interested on this card.

meter operated by battery or a-c power, 9147 strip-chart recorder, 9148 decade scaler, and 9149 mobile-instrument carrier. The 9145 detector assembly contains a 4- by 8-mm Li^6I (Eu) crystal surrounded by a 10-inch (25-cm) spherical polyethylene moderator. Scintillation crystal is coupled to a magnetically shielded photomultiplier through a lucite light pipe. The 9146 has four switch-selected scales ranging from 1 to 1000 mrem/hr, full scale. The high sensitivity of the detector assembly and proper choice of time constants permit meaningful readings $\geqq$ 0.2 mrem/hr on the lowest scale. A fast, six-digit register can scale individual events from the detector assembly for very accurate dose determinations in the range below 0.5 mrem/hr; such may be found at the boundaries of restricted areas. The 9147, compact and a-c–operated, yields a continuous time-indexed recording of dose history; chart speed, 1 inch/hr. The 9148 is a completely transistorized 10^7-capacity scaler with three electronic decades and a four-digit register; it permits long-term integrated dose measurements where rapidly varying dose rates preclude use of a ratemeter. The 9149 is a ruggedly constructed cart for transporting the components of the 9140 system; the 12-inch diameter wheels enable the system to negotiate stairs, cables, and such; it supports the 9140 assembly in a shadow-free configuration at abdominal level.—D.J.P. (Texas Nuclear Corp., 9101 Highway 183, P.O. Box 9267, Allandale Station, Austin, Texas 78756)

Circle 4 on Readers' Service card

Differential thermal analysis system, Fisher model 260 Thermalyzer, a low-cost, automatically programmed system capable of detecting thermal changes of 0.01 cal. Sample requirement: 50 to 200 mg. Method is based on the fact that, when heated, most materials undergo changes in crystal structure, physical state, or chemical composition. Absorption or evolution of heat that accompanies such changes can be measured and recorded to provide a thermogram that is unique for the material. In differential thermal analysis, the sample and a standard are heated simultaneously and their thermograms are compared. The instrument provides an automatically programmed furnace and read-out system for handling two samples and two standards at a time. The programmer unit automatically

feeds power to the furnace at a rate that linearly increases temperature of furnace and samples to a preset maximum of 500° or 1200°C. Three heating rates: 5°, 10°, or 25°C per minute. Resistance furnace is controlled by a proportional controller (in the programmer unit) that increases power to the furnace; feed-back signal from a control thermocouple in the furnace. A dial continually shows the temperature ±2 percent. The sample holder, a metal block with an insulated handle, holds the control thermocouple and four quartz crucibles (two for the sample, two for the standard). Three sets of thermocouples are supplied: iron-constantan for temperatures up to 350°C; Chromel-Alumel for up to 850°C; and Platinel for the full 1200°C range. The thermocouples plug into a terminal block on the sample holder. Output for 1-mv potentiometric recorders. Zero-suppressors for two recorders are built into the programmer. List: $995. —D.J.P. (Fisher Scientific Co., 415 Fisher Building, Pittsburgh, Pa. 15219)

Circle 5 on Readers' Service card

Chemical standards kits, for use in gas chromatography, contain ten individual chemical standards, and five calibration mixtures within a homologous series. Quantitative kits have chemicals of greater purity. Supplied with each kit are retention data for all compounds in the kit, chromatograms of the five calibration mixtures on three liquid phases, and references to the literature on analysis with the type of compounds in the kit (each reference details operating conditions). For use in identifying unknown peaks, determining detector and instrument responses, teaching gas chromatography, and determining Kovats indexes. Currently available are:

Kit No. 11: Alcohols, C_1-C_6	$40
Kit No. 12: Alcohols, C_5-C_{16}	40
Kit No. 13: Alcohols, C_3-C_6, branched	45
Kit No. 21: Hydrocarbons, C_6-C_{16}	40
Kit No. 22: Hydrocarbons, C_1-C_6, branched	40
Kit No. 23: Hydrocarbons, C_4-C_5, unsaturated	45
Kit No. 24: Hydrocarbons, C_7-C_{12}	50
Kit No. 25: Hydrocarbons, aromatics	40
Kit No. 31: Amines, mono	45
Kit No. 32: Amines, di- and tri-	45
Kit No. 41: Ketones, C_4-C_8	45
Kit No. 42: Ketones, branched	45

Quant Kits are $20 extra.—D.J.P. (Wilkens Instrument & Research, Inc., 2700 Mitchell Drive, Walnut Creek, Calif.)

Circle 6 on Readers' Service card

NEW BOOKS

(Continued from page 219)

Theodore Morgan; "On the economics of 'imperialism'" by Bernard Semmel; and "The economics of disarmament and coexistence" by Emile Benoit.

The Economics of Health. Herbert E. Klarman. Columbia Univ. Press, New York, 1965. 208 pp. $3.95.

Educational Anthropology: An Introduction. George F. Kneller. Wiley, New York, 1965. 181 pp. Illus. Paper, $2.45; cloth, $4.50.

The Evolution and Growth of Human Behavior. Norman L. Munn. Houghton Mifflin, Boston, ed. 2, 1965. 606 pp. Illus. $8.50.

Foundations of Behavioral Research. Educational and psychological inquiry. Fred N. Kerlinger. Holt, Rinehart, and Winston, New York, 1964. 758 pp. Illus.

Frameworks for Dating Fossil Man. Kenneth P. Oakley. Aldine, Chicago, 1964. 365 pp. Illus. $8.75.

The Fusion of Psychiatry and Social Science. Harry Stack Sullivan. Norton, New York, 1964. 382 pp. Illus. $7.50.

Handbook of Middle American Indians. vol. 1, *Natural Environment and Early Cultures*. Robert C. West, Ed. Univ. of Texas Press, Austin, 1964. 578 pp. Illus. $15. Fourteen papers contributed by Luís Aveleyra Arroyo de Anda, Albert Collier, Gordon F. Ekholm, Jorge A. Vivó Escoto, Carl L. Hubbs, Richard S. MacNeish, Manuel Maldonado-Koerdell, Paul C. Mangelsdorf, René F. Millon, Gunnar I. Roden, Rayfred L. Stevens, L. C. Stuart, Jorge L. Tamayo, Philip L. Wagner, Robert C. West, and Gordon R. Willey.

Human Learning. Studies extending conditioning principles to complex behavior. Arthur W. Staats, Ed. Holt, Rinehart, and Winston, New York, 1964. 538 pp. Illus. $8.50. Forty-nine papers grouped under the following subject headings: Child Learning (7 papers); Verbal Behavior (6 papers); Communication and Other Functions of Language (9 papers); Problem Solving (5 papers); Attitude Learning and Human Motivation (4 papers); Social Interaction, Attitude Function, Group Cohesiveness, and Social Power (6 papers); Personality (6 papers); and Behavioral Treatment (6 papers).

Introducing Social Change. A manual for Americans overseas. Conrad M. Arensberg and Arthur H. Niehoff. Aldine, Chicago, 1964. 224 pp. $4.95.

Knowing the Gururumba. Philip L. Newman. Holt, Rinehart, and Winston, New York, 1965. 128 pp. Illus. Paper, $1.50.

The Lost Universe. Gene Weltfish. Basic Books, New York, 1965. 528 pp. $12.50.

The Lugbara of Uganda. John Middleton. Holt, Rinehart, and Winston, New York, 1965. 112 pp. Illus. Paper, $1.50.

Memory: A Contribution to Experimental Psychology. Hermann Ebbinghaus. Translated from the German (Leipzig, 1885) by Henry A. Ruger and Clara E. Bussenius. With a new introduction by Ernest R. Hilgard. Dover, New York,

1964 (reprint of 1913 edition). 141 pp. Illus. Paper, $1.50.

Models, Measurement, and Marketing. Peter Langhoff, Ed. Prentice-Hall, Englewood Cliffs, N.J., 1964. 224 pp. Illus. $9.25. Nine papers contributed by Peter Langhoff, C. West Churchman, Harold W. Kuhn, Martin Kenneth Starr, Sebastian B. Littauer, Alfred A. Kuehn, William J. Baumol, Paul E. Green, and Guy-Robert Detlefsen.

Motivation, Nebraska Symposium, 1964. David Levine, Ed. Univ. of Nebraska Press, Lincoln, 1964. 294 pp. Illus. Paper, $2.50; cloth, $5.50. Six papers: "The motivational relevance of hypnosis" by Ernest R. Hilgard; "Psychological complexity as a basis for a theory of motivation and choice" by Edward L. Walker; "The free behavior situation" by Frank A. Logan; "The assessment of human motives by means of personality scales" by Allen L. Edwards; "The interruption of behavior" by George Mandler; and "Crime, cognition, and the autonomic nervous system" by Stanley Schachter and Bibb Latané. Comments on most of the papers are also included.

The Natural History of Aggression. Proceedings of a symposium (London), October 1963. J. D. Carthy and F. J. Ebling, Eds. Published for the Institute of Biology by Academic Press, New York, 1964. 167 pp. $5. Fourteen papers by Stanislav Andreski, John Burton, James Fisher, Derek Freeman, K. R. L. Hall, L. Harrison Matthews, Denis Hill, Arnold Klopper, James Laver, Konrad Lorenz, Cecily de Monchaux, Anthony Storr, Thelma Veness, and D. I. Wallis.

Naturalistic Behavior of Nonhuman Primates. C. R. Carpenter. Pennsylvania State Univ. Press, University Park, 1964. 464 pp. Illus. $9.50. Seventeen papers: "A field study of the behavior and social relations of howling monkeys" [*Comp. Psychol. Monogr.* **10**, No. 2 (1934)]; "Behavior of red spider monkeys in Panama" [*J. Mammal.* **16**, No. 3 (1935)]; "An observational study of two captive mountain gorillas" [*Human Biol.* **9**, No. 2 (1937)]; "A survey of wild life conditions in Atjeh, North Sumatra, with special reference to the orang-utan" [*Communications*, No. 12 (1938)]; "A field study in Siam of the behavior and social relations of the gibbon" [*Comp. Psychol. Monogr.* **16**, No. 5 (1940)]; "The menstrual cycle and body temperature in two gibbons" [*Anat. Rec.* **79**, No. 3 (1941)]; "Rhesus monkeys for American laboratories" [*Science* **92**, No. 2387 (1940)]; "Notes on results of a test for tuberculosis in rhesus monkeys" [*Puerto Rico J. publ. Hlth. trop. Med.* (1941)]; "Sexual behavior of free ranging rhesus monkeys: specimens, procedures and behavioral characteristics of estrus" [*J. Comp. Psychol.* **33**, No. 1 (1942)]; "Sexual behavior of free ranging rhesus monkeys: periodicity of estrus, homosexual autoerotic and non-conformist behavior" [*J. Comp. Psychol.* **33**, No. 1 (1942)]; "Societies of monkeys and apes" [*Biol. Symposia* **8** (1942)]; "Characteristics of social behavior in non-human primates" [*Trans. N.Y. Acad. Sciences* **4**, No. 8 (1942)]; "Social behavior of non-human primates" [*Colloques Int. Cent. Natn. Rech. scient.* **34** (1952)]; "Grouping behavior of howl-

ing monkeys" [*Extrait Arch. Ned. Zool.* **10** (1953)]; "Tentative generalizations on the grouping behavior of non-human primates" [*Human Biol.* **26** (Sept. 1954)]; "Field studies of a primate population" [*Roots of Behavior: Genetics, Instinct, and Socialization in Animal Behavior* (1962)]; "Appendix: Territoriality: A review of concepts and problems" [*Behavior and Evaluation* (1958)].

Navaho Indian Ethnoentomology (*Publ. Anthrop. Univ. New Mex.*, No. 12). Leland C. Wyman and Flora L. Bailey. Univ. of New Mexico Press, Albuquerque, 1964. 158 pp. Illus. Paper, $3.

New Directions in the Study of Language. Eric H. Lenneberg, Ed. M.I.T. Press, Cambridge, Mass., 1964. 204 pp. Illus. $5. Seven papers: "The early growth of language capacity in the individual" by Leonard Carmichael; "Anthropological aspects of language: animal categories and verbal abuse" by Edmund Leach; "A biological perspective of language" by Eric H. Lenneberg; "Language and psychology" by George A. Miller; "Discussion and further comments" by Frieda Goldman-Eisler; "Three processes in the child's acquisition of syntax" by Roger Brown and Ursula Bellugi; and "Imitation and structural change in children's language" by Susan M. Ervin.

The New Military: Changing Patterns of Organization. Morris Janowitz, Ed. Russell Sage Foundation, New York, 1964. 369 pp. Illus. $6.50. Ten papers; the contributors are Morris Janowitz, Kurt Lang, Oscar Grusky, John P. Lovell, Maury D. Feld, Roger W. Little, Richard W. Seaton, Mayer N. Zald and William Simon, Albert D. Biderman, and Moshe Lissak.

New Perspectives in Organization Research. W. W. Cooper, H. J. Leavitt, and M. W. Shelly II, Eds. Wiley, New York, 1964. 630 pp. Illus. $12.50. Some 29 papers given at a conference on research in organizations, sponsored by the U.S. Office of Naval Research at Carnegie Institute of Technology, Pittsburgh, Pa. and at a seminar on the social science of organizations, sponsored by the Ford Foundation at the University of Pittsburgh (June 1962). The papers are divided into five parts: General Perspectives; Behavioral Science Perspectives; Interdisciplinary Perspectives; Management Science Perspectives; and Conclusion: Perspectives for Further Research.

No More for Ever: A Saharan Jewish Town. With appendices on physical anthropology, demography, and social structure. Lloyd Cabot Briggs and Norina Lami Guède. Peabody Museum, Cambridge, Mass., 1964. 120 pp. Illus. Paper, $5.65.

Panic Behavior. Discussion and readings. Duane P. Schultz. Random House, New York, 1964. 154 pp. Paper, $1.95.

Political and Sociological Theory and Its Applications. George E. G. Catlin. Univ. of Michigan Press, Ann Arbor, 1964. 128 pp. $3.95.

Political Succession in the USSR. Myron Rush. Columbia Univ. Press, New York, 1965. 239 pp. $5.95.

Population Problems. Warren S. Thompson and David T. Lewis. McGraw-Hill, New York, ed. 5, 1965. 607 pp. Illus. $8.95.

Process and Pattern in Culture. Essays in honor of Julian H. Steward. Robert A. Manners, Ed. Aldine, Chicago, 1964. 446 pp. $8.75.

Progress in Experimental Personality Research. vol. 1. Brendan A. Maher. Academic Press, New York, 1964. 378 pp. Illus. $9.50. Seven papers: "Input dysfunction in schizophrenia" by P. H. Venables; "A theory of verbal behavior in schizophrenia" by Loren J. Chapman, Jean P. Chapman, and Glenn A. Miller; "The effect of the experimenter on the results of psychological research" by Robert Rosenthal; "Personality and conditioning" by S. H. Lovibond; "Repression-sensitization as a dimension of personality" by Donn Byrne: "Interpersonal perception" by Victor B. Cline; and "Stimulus functions in projective techniques" by Douglas T. Kenny.

Psychobiological Approaches to Social Behavior. P. Herbert Leiderman and David Shapiro, Eds. Stanford Univ. Press, Stanford, Calif., 1964. 221 pp. Illus. $6.75. Nine papers: "The sensitivity of psychoendocrine systems to social and physical environment" by John W. Mason and Joseph V. Brady; "Plasma lipid responses to leadership, conformity, and deviation" by Kurt W. Back and Morton D. Bogdonoff; "Physiological measurement in social psychological research" by Harold B. Gerard; "Muscular tension: Physiological activation or psychological act?" by Murray Horwitz, David C. Glass, and Agnes M. Niyekawa; "Physiological covariation and sociometric relationships in small peer groups" by Howard B. Kaplan, Neil R. Burch, and Samuel W. Bloom; "Acts and activation: A psychophysiological study of social interaction" by David Shapiro and P. Herbert Leiderman; "A proposed program of research in sociopharmacology" by Henry L. Lennard; "The interaction of cognitive and physiological determinants of emotional state" by Stanley Schachter; and "Experimental exploration of the et-epimeletic or care-soliciting behavioral system" by J. P. Scott and F. H. Bronson.

Psychological Tests and Personnel Decisions. Lee J. Cronbach and Goldine C. Gleser. Univ. of Illinois Press, Urbana, ed. 2, 1965. 361 pp. Illus. $7.95.

The Psychology of Character Development. Robert F. Peck, Robert J. Havighurst, Ruth Cooper, Jesse Lilienthal, and Douglas More. Wiley, New York, 1964. 287 pp. Paper, $1.45 (reprint of 1960 edition).

The Psychology of Crime. David Abrahamsen. Wiley, New York, 1964. 372 pp. Paper, $1.95 (reprint of 1960 edition).

A Reconstruction of the Basic Jemez Pattern of Social Organization, with Comparisons to Other Tanoan Social Structures (*Pub. Anthrop. Univ. New Mex.*, No. 11). Florence Hawley Ellis. Univ. of New Mexico Press, Albuquerque, 1964. 69 pp. Illus. Paper, $2.

Research in Infant Behavior: A Cross-Indexed Bibliography. Yvonne Brackbill, Ed. Williams and Wilkins, Baltimore, 1964. 293 pp. $6.25. Contains bibliographic references, an author index, and the following subject indexes: "Sensation and perception" by William C. Spears; "Motor behavior" by Dorothy A. Wright; "Learning and conditioning" by Yvonne

Brackbill; "Language, vocalization, and communication" by Raymond H. Starr, Jr.; "Cognitive development" by Almeda Allen Williams; "Social behavior and social variables" by Darrell K. Adams; and "Emotion and personality development" by Charlotte B. Loring.

Road Belong Cargo. A study of the Cargo Movement in the southern Madang District, New Guinea. Peter Lawrence. Humanities Press, New York, 1964. 309 pp. Illus. $6.50.

Scientific Psychology: Principles and Approaches. Benjamin B. Wolman and Ernest Nagel, Eds. Basic Books, New York, 1965. 638 pp. Illus. $12.50. Thirty papers by Abram Amsel, Heinz L. Ansbacher, David Malet Armstrong, Richard Chatham Atkinson, Peter A. Bertocci, William Bevan, Robert C. Calfee, Robert Denoon Cumming, Frederick Barton Davis, Morton Deutsch, W. Horsley Gantt, Jean-Blaise Grize, Mary Henle, Otto Klineberg, Tadeusz Kotarbiński, Lawrence Schlesinger Kubie, Benoit Mandelbrot, Charles Morris, Arne Naess, Ernest Nagel, Richard Stanley Peters, Jean Piaget, Karl Harry Pribram, Anatol Rapoport, Gregory Razran, Benbow F. Ritchie, Michael Scriven, John Perry Seward, Geoffrey James Warnock, and Benjamin B. Wolman.

Social Science Research on Latin America. Report and papers of a seminar (Stanford, Calif.), 1963. Charles Wagley, Ed. Columbia Univ. Press, New York, 1964. 352 pp. $4. Seven papers: "The contribution of geography to Latin American studies" by James J. Parsons; "Latin American historiography: Status and research opportunities" by Stanley J. Stein; "Anthropology in Latin America" by Arnold Strickon; "The state of research on Latin America: Political science" by Merle Kling; "Economic research in Latin America" by Carlos Massad; "Research on Latin America in sociology" by Rex Hopper; and "The study of Latin American law and legal institutions" by Kenneth L. Karst.

Spectral Analysis of Economic Time Series. C. W. J. Granger. Princeton Univ. Press, Princeton, N.J., 1964. 317 pp. Illus. $8.50.

A Study of a Biased Friendship Net. T. J. Fararo and Morris H. Sunshine. Youth Development Center, Syracuse Univ., Syracuse, N.Y., 1964. 134 pp. Illus. Paper, $2.

System and Process in International Politics. Morton A. Kaplan. Wiley, New York, 1964. 315 pp. Illus. Paper, $1.65 (reprint of 1957 edition).

Therapeutic Group Analysis. S. H. Foulkes. International Universities Press, New York, 1964. 320 pp. Illus. $7.50.

The Threat of Impending Disaster. Contributions to the psychology of stress. George H. Grosser, Henry Wechsler, and Milton Greenblatt, Eds. M.I.T. Press, Cambridge, Mass., 1964. 347 pp. Illus. $8.75. Fifteen papers by Claus Bahne Bahnson, George W. Baker, Albert D. Biderman, Lester Grinspoon, Thomas P. Hackett, Sheldon J. Korchin, Gladys Engel Lang, Kurt Lang, Richard S. Lazarus, Robert Jay Lifton, Roy W. Menninger, James G. Miller, George E. Ruff, John P. Spiegel, Avery D. Weisman, Harry B. Williams, and Stephen B. Withey.

Understanding Ourselves and Others. Kurt Haas. Prentice-Hall, Englewood Cliffs, N.J., 1965. 384 pp. Illus. $9.25.

Mathematics, Physical Sciences, and Engineering

Advanced Methods of Crystallography. G. N. Ramachandran, Ed. Academic Press, New York, 1964. 289 pp. Illus. $10.50. Nine papers: "Image methods in crystal-structure analysis" by M. J. Buerger; "Fourier syntheses for partially known crystal structures" by G. N. Ramachandran; "The use of anomalous scattering in crystal structure analysis" by S. Ramaseshan; "Group theory and crystal properties" by S. Bhagavantam; "Diffuse x-ray reflections from crystals" by W. A. Wooster; "Elementary theory of neutron scattering by crystals" by I. Waller; "Diffuse disorder scattering by crystals" by H. Jagodzinski; "Aberrations and line broadening in x-ray powder diffractometry" by A. J. C. Wilson; and "Imperfections in crystals and their effect on x-ray diffraction by crystals" by Leonid V. Azároff.

Advances in Space Science and Technology. vol. 6. Frederick I Ordway, III, Ed. Academic Press, New York, 1964. 462 pp. Illus. $15. Five papers: "Gravity" by Bryce S. DeWitt; "Integration of payload and stages of space carrier vehicles" by Geoffrey K. C. Pardoe; "Navigational instrumentation for space flight" by Saul Moskowitz and Paul Weinschel; "Space-related technology: Its commercial use" by Robert H. Waterman, Jr., and Lloyd G. Marts; and "Progress in rocket, missile, and space carrier vehicle testing, launching, and tracking technology: pt. 1, Facilities in the United States" by Mitchell R. Sharpe, Jr., and M. Lowther.

Analysis and Synthesis of Linear Time-Variable Systems. Allen R. Stubberud. Univ. of California Press, Berkeley, 1964. 116 pp. Illus. $4.75.

Astrophysics and Space Science: An Integration of Sciences. Allen J. McMahon. Prentice-Hall, Englewood Cliffs, N.J., 1965. 460 pp. Illus. $15. Prentice-Hall Space Technology Series.

Basic Concepts of Elementary Mathematics. William L. Schaaf. Wiley, New York, ed. 2, 1965. 404 pp. Illus. $6.95.

Behavior and Properties of Refractory Metals. T. E. Tietz and J. W. Wilson. Stanford Univ. Press, Stanford, Calif., 1965. 431 pp. Illus. $13.50.

Bibliography and Index of Fossil Dinoflagellates and Acritarchs (*Mem. Geol. Soc. Am.*, No. 94). Charles Downie and William Antony S. Sarjeant. Geological Soc. America, New York, 1964. 186 pp. Illus.

The Chemical Foundations of Molecular Biology. Robert F. Steiner. Van Nostrand, Princeton, N.J., 1965. 480 pp. Illus. $12.

The Chemistry of Alkenes. Saul Patai, Ed. Interscience (Wiley), New York, 1964. 1325 pp. Illus. $37. Fourteen papers: "Wave mechanics and the alkene bond" by C. A. Coulson and E. Theal Stewart; "Elimination reactions in solution" by William H. Saunders, Jr.; "Olefin-forming eliminations in the gas phase" by Allan Maccoll; "Alkene-forming condensation reactions" by Thomas I. Cro-

well; "Detection and determination of the alkenes" by Edward J. Kuchar; "Alkene complexes of some transition metals" by Michael Cais; "Alkene rearrangements" by Kenneth Mackenzie; "Nucleophilic attacks on carbon-carbon double bonds" by Saul Patai and Zvi Rappoport; "Reactions of alkenes with radicals and carbenes" by John I. G. Cadogan and Michael J. Perkins; "Allylic reactions" by Robert H. DeWolfe and William G. Young; "Cycloaddition reactions of alkenes" by Rolf Huisgen, Rudolf Grashey, and Jürgen Sauer; "Conjugated dienes" by Michael Cais; "Cumulenes" by Herbert Fischer; and "Ketenes" by Richard N. Lacey.

The Chemistry of Natural Products. vol 3. Special lectures, presented at the Third International Symposium (Kyoto, Japan), April 1964. Butterworth, Washington, D.C., 1964. 199 pp. Illus. $11. Eleven papers: "History of Japanese natural product research" by S. Sugasawa; "Chemistry of some dimeric indole alkaloids" by G. Büchi; "Some studies in the biogenesis of plant products" by D. H. R. Barton; "The structure of tetrodotoxin" by R. B. Woodward; "Intramolecular rearrangements in peptide systems: hydroxy- and amino-acyl incorporation into peptides" by M. M. Shemyakin and V. K. Antonov; "High resolution mass spectrometry of natural products" by K. Biemann; "Specification of the stereospecificity of some oxido-reductases by diamond lattice sections" by V. Prelog; "Progress in the synthesis of polycyclic natural products" by G. Stork; "Peptides of *Amanita phalloides*" by Th. Wieland; "Isotope labelling and mass spectrometry of natural products" by C. Djerassi; and "Recent advances in x-ray analysis of natural product structures" by J. Monteath Robinson.

Circuits with Periodically-Varying Parameters. Including modulators and parametric amplifiers. D. G. Tucker. Van Nostrand, Princeton, N.J., 1965. 189 pp. Illus. $6.75.

A Collection of Problems of Mechanics. I. V. Meshcherskii. Translated by R. Romicki. Pergamon Press, London; Macmillan, New York 1965. 530 pp. Illus. $12.50.

College Chemistry. Paul R. Frey. Prentice-Hall, Englewood Cliffs, N.J., ed. 3. 1965. 767 pp. Illus. $8.95.

The Colloid Chemistry of Palygorskite. F. D. Ovcharenko, E. G. Kukovskii, S. P. Nichiporenko, N. V. Vdovenko, V. Yu. Tretinnik, N. N. Kruglitskii, and A. A. Panasevich. Translated from the Russian edition by D. Winograd. Israel Program for Scientific Translations, Jerusalem; Davey, New York, 1964. 109 pp. Illus $5.

Data Transmission. William R. Bennett and James R. Davey. McGraw-Hill, New York, 1965. 368 pp. Illus. $14.50.

Deformation Twinning. Proceedings of a conference (Gainesville, Fla.), March 1963. R. E. Reed-Hill, J. P. Hirth, and H. C. Rogers, Eds. Gordon and Breach, New York, 1964. 476 pp. Illus. Paper, $11.50; cloth, $25. Twenty-six papers presented at a conference sponsored by the Metallurgical Society, American Institute of Mining, Metallurgical, and Petroleum Engineers, and the University of Florida College of Engineering.

Design of Liquid, Solid, and Hybrid Rockets. Robert L. Peters. Hayden, New York, 1965. 247 pp. Illus. $24.

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