9-13. Eastern Joint Computer Conf., Washington, D.C. (H. H. Goode, Dept. of Electrical Engr., Univ. of Michigan, Ann Arbor.)

9-22. Southeast Asia Soil Science Conf., 1st, Manila, Philippines. (I. G. Valencia, Bureau of Soils, P.O. Box 1848, Manila.)

13-14. Association for Research in Nervous and Mental Disease, 37th annual, New York, N.Y. (R. J. Masselink, 700 W. 168 St., New York 32.)

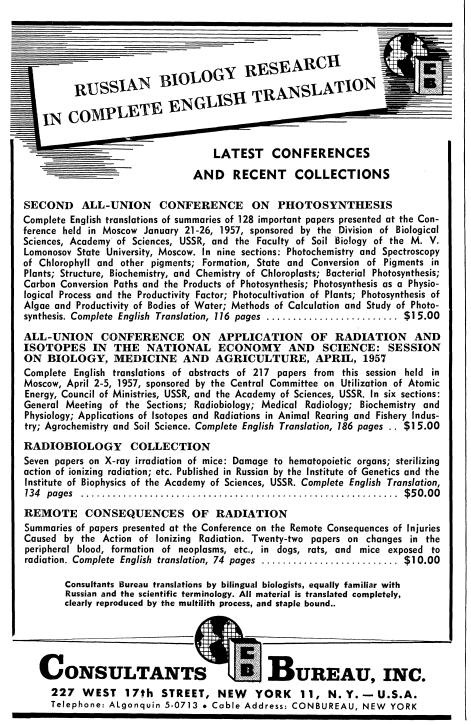
17-19. Nuclear Sizes and Density Distributions Conference, Stanford, Calif. (R. Hofstadter, Stanford Univ., Stanford, Calif.) 19-21. American Physical Soc., Stanford, Calif. (W. A. Nierenberg, Univ. of California, Berkeley 4.)

26-27. Northwest Scientific Assoc., annual, Spokane, Wash. (W. B. Merriam, Geography Dept., State College of Washington, Pullman.)

26-30. American Assoc. for the Advancement of Science, annual, Indianapolis, Ind. (R. L. Taylor, AAAS, 1515 Massachusetts Ave., NW, Washington 5.)

27. Association for Symbolic Logic., Cambridge, Mass. (J. Barlaz, Rutgers Univ., New Brunswick, N.J.)

(See issue of 20 September for comprehensive list)



EQUIPMENT NEWS

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Science does not assume responsibility for the accuracy of the information. All inquiries concerning items listed should be addressed to Science, Room 740, 11 W. 42 St., New York 36, N.Y. Include the name(s) of the manufacturer(s) and the department number(s).

■ PROJECTING MICROSCOPE, manufactured in Switzerland, displays image on a 7-in.diameter ground-glass screen. Magnifications are selectable from 7 to 2000. The image may be seen through an eyepiece as well as on the ground-glass screen without making any changes in the instrument. Features and accessories include bright- and dark-field illumination by transmitted or reflected light, polarizing equipment, mechanical stages, and photographic attachments. Available models include a comparing projector for direct comparison of two specimens on the same screen. Projection onto an outside screen for classroom demonstration can also be accomplished. (Alfred Hofmann and Co., Dept. S653)

• CAPACITANCE MEASURING DEVICE is used with the manufacturer's pressure and displacement transducers. Frequency response is ± 5 percent from 0 to 15 kcy/ sec. Capacitance is sensed by its effect on the resonance of a tuned circuit of which it is a component. The device is designed to plug into the Tektronix-530 and -540 series oscilloscopes. (Photocon Research Products, Dept. S656)

GAS PURIFIER, automatic in operation, delivers hydrogen with an oxygen content of less than 1 part per million and a dew point better than -100° F. Water is removed by two drying towers that are alternately switched into the gas stream. Oxygen is removed by catalytic reaction with hydrogen at room temperature. The equipment can be used with nitrogen, argon, helium, carbon dioxide, and saturated hydrocarbons. (Baker and Co., Inc., Dept. S658)

HIGH-VOLTAGE SOURCE provides an adjustable potential from 0 to 15 kv. Two voltage ranges, 0 to 1.5 kv and 0 to 15,-000 kv, as well as two current ranges, 0 to 100 μa and 0 to 500 μa, are provided. Input may be 115 v a-c or 24 to 30 v d-c. Insulation resistance can be read to approximately 5000 Mohm. (Harvey-Wells Electronics, Inc., Dept. S647)

DUAL-PEN RECORDER is of the self-balancing potentiometer type. Chart width of 5 in. is shared by two pens. The span of each pen is adjustable between 25 and 75 percent of full chart width.



DECAPITATOR for RATS and MICE

A simple, rugged device for the instant decapitation of rats and mice.

Description

- Stainless steel blades and fittings
- Cast aluminum base
- Can be totally immersed for cleaning
- Easily disassembled
- Can be permanently mounted on bench
- Maximum opening $1\frac{1}{2}$ " square

THE HARVARD APPARATUS CO., INC.

Dover, Massachusetts, U.S.A.

(A nonprofit institution)



In appreciation

of the

friendship and patronage

which have brought

widespread recognition

of our efforts at producing

Fine Biochemical Preparations,

we are pleased to announce the

SIGMA Research Assistance Program (PART I) Approximately 100 purines, pyrimidines, and miscellaneous compounds of continuous research interest may be requested routinely gratis by non-profit research institutions anywhere in the world.

It will not be necessary to make your requests through your purchasing department. However the following basic rules will apply:

- 1. This offer is limited to the official list of "Research Assistance" compounds (copy on request) and for the package sizes indicated thereon.
- $2 \cdot \underbrace{\text{Orders will be honored only if submitted}}_{\text{Blank.}}$

We will be pleased to supply you with official list and order form.

PHONE COLLECT:

DAN BROIDASt. LouisDay:Night:PRospect 1-5750WYdow

St. Louis, Missouri Night: WYdown 3-6418



3500 DeKalb St., St. Louis 18, Mo., U.S.A. MANUFACTURERS OF THE FINEST BIOCHEMICALS AVAILABLE Sensitivity is 10 mv full scale when the pen spans are adjusted to one-half of chart width. Full-scale response under these conditions is 0.25 sec. Linearity is within 0.5 percent. The chart may be driven from an external shaft, a selsyn, or a synchronous motor. Change gears provide six chart speeds. Transistors and semiconductor diodes have been used instead of vacuum tubes. (Mt. Sopris Instrument Corp., Dept. S641)

• WHEATSTONE BRIDGE has a range of 0.01 ohm to 1111 Mohm with limit of error of $\pm (0.05$ percent ± 0.001 ohm) up to 100 Mohm and ± 0.5 percent above 100 Mohm. The measuring circuit is guarded against effects of static, leakage and humidity. Plug and back connections are eliminated by a single multiplier dial. (Leeds and Northrup, Dept. S595)

• FREQUENCY DEVIATION METER provides direct read-out of deviation of frequency, in the range 1 to 10,000 cy/sec, in parts per million ± 1 count. The instrument includes a preset counter section and a display counter section. The preset counter is set to a count corresponding to the reference frequency. The preset counter is used to gate a 1-Mcy/sec signal into the display counter. Deviations of the input frequency from nominal result in deviations of the gate from 1 sec. These deviations of gate time are measured by corresponding variations in the count displayed by the 1-Mcy/sec counter. Long-term stability is 3 parts per million, per week. (Computer Measurements Corp., Dept. S630)

■ MAGNETIC-FIELD METER measures static magnetic fields with an accuracy of ±1 percent. The most sensitive range is 1 moer full scale; the least sensitive is 1 oer full scale. Four probes are supplied. Operation is on 115-v, 60-cy/sec power. (Magnaflux Corp., Dept. S643)

DIGITAL RECORDER works directly from the manufacturer's counters to record counts up to five times per second. The device also acts as a digital-to-analog converter, furnishing a current or a voltage proportional to the count for input into strip-chart recorders. The analog output corresponds to any three consecutive digits of the count. Digit capacity is either 6 or 11 digits per line. Data are printed out on 3-in. roll or folded paper. (Hewlett-Packard Co., Dept. S652)

ZONE-MELTING APPARATUS is automatic in operation for purification of solid materials by the zone-melting technique. The apparatus holds a glass or quartz

Your key to a new world of enjoyment An incomparable portable telescope by America's leading manufacturer of astronomical instruments. Although it weighs only 45 pounds its sturdy construction, fork-type mounting and integral electric drive mark it as an instrument of professional quality. 9*0/1*7 Complete with Electric Drive, Slow Motions, Right Ascension and Declination Circles, Heavy Duty Tripod and Finder Telescope. Magnifications of 35X, 70X, 105X and 210X. ONLY \$198.50 f.o.b. Pittsburgh, Pa. er, Subsidiary of AMERICAN OPTICAL COMPANY 6592 HAMILTON AVENUE . PITTSBURGH 6, PA.

tube inside of which is placed the material to be purified. A moving table holds either induction heating coils or electric resistance heating rings which surround the tube. The table moves at a constant rate adjustable from 0.36 to 9 in./hr. Adjustable stops limit table travel and actuate a rapid-return mechanism, making multiple-pass zone-melting automatic. (Research Specialties Co., Dept. S640)

MAGNETIC CORE TEST JIG provides a means of applying either positive or negative current driving pulses to the core being tested. Circuits are incorporated to permit direct viewing on an oscilloscope of the current pulse at the point of application and also of the output pulse induced by switching of the core. (Burroughs Corporation, Dept. S646)

■ MASS SPECTROMETERS for the analysis of inorganic solids are offered in two models. Type M55 is designed for measurement of isotopic ratios. Excitation in this instrument is provided by the surface-ionization technique in which the sample is heated as a coating on a tungsten filament. Type M57 is designed for general analysis of solids; spark excitation is used to ionize the sample. It is a double-focusing instrument of the Mattauch type. The mass spectrum is recorded photographically. Concentrations down to 0.1 ppm can be estimated. (Metropolitan-Vickers Electrical Co., Ltd., Dept. S645)

■ SELF-BALANCING INDICATOR is available in potentiometer type for thermocouple thermometry and in a-c-bridge type for resistance thermometry. Up to 48 points for thermocouples and 36 for resistance bulbs are accommodated. Thirty scale ranges cover temperatures from -400° to +3000°F for thermocouples and -100° to +600°F for resistance thermometers. Full-scale response time is 4 sec. Accuracy is 0.25 percent of full scale. (Thermo Electric Co., Inc., Dept. S633)

TRANSFER-FUNCTION ANALYZER tests servo-mechanisms under conditions where the output may be nonlinear. Information necessary for the plotting of phase and gain diagrams is provided on two meter dials. Frequency range is 0.5 cy to 1 kcy/sec. (Solartron, Dept. S648)

DIGITAL FLOW INDICATOR gives a direct reading in gallons per minute or gallons per hour. The instrument can be adjusted to specific gravity changes to give readings in mass flow. Measurement of the ratio of two flows can also be made. (Potter Aeronautical Corp., Dept. S651) JOSHUA STERN

National Bureau of Standards

SCIENCE, VOL. 126

PRODUCTS INSTRUMENTATION FOR RESEARCH, MATERIALS CONTROL AND PRODUCTION

Norelco

X-ray Diffraction Equipment

X-ray Diffractometers

X-ray-Spectrographs

X-ray Thickness Plating Gauges

X-ray Absorption Apparatus

X-ray Crystal Analysis Units

X-ray Tubes and Rectifiers

X-ray Cameras, Sample Spinners, Pole Figure Devices and Accessories

Autrometer—24 Channel automatic Element Analyzer

X-ray Custom Built Equipment for Special Applications

Geiger, Proportional, Scintillation and Flow Type Detectors

Electronic Circuits for High Speed Detectors with Pulse Height Analyzers

Decade Scalers and Ratemeters

Electronic Timers

Line Voltage Regulators

Radio Compass Controls

Electronic Testing Equipment

Electron Microscopes

Electron Diffraction Equipment

Emission Microscopes

High Voltage Generators

Contact Microradiographic Equipment

Gas Liquefier

High Pressure Equipment

Industrial X-ray Equipment

Industrial X-ray Fluoroscopes

Industrial Image Intensifiers with Closed Circuit Television



X-RAY MICROGRAPHS

PROVIDES THRU-FOCUS STUDIES OF OPAQUE, SEMI-OPAQUE AND TRANSPARENT MATERIALS APPLICATIONS: Metals, Alloys, Biology, Botany, Paints, Pigments, Textiles





A contact microradiograph of a 5 micron section through decalcified bone. Magnification 250 X.

This inexpensive laboratory tool provides research and routine investigative data on specimens which because of varying degrees of opacity, cannot be examined by microscopic means. The CMR (Contact Microradiographic Unit) may be used as a complement to microscopy for critical studies of internal structures of materials which are opaque to the light microscope.

Because specimens need no special preparation or treatment, data provided by the CMR can be used to verify artefacts and matrix distortion. Specimens in the order of 50 microns or greater, are placed in contact with an ultra-fine grain film and exposed to X-rays of selected long wave radiation. The straight-line penetration characteristics of X-rays provide an ultra-sharp thru-focus of the superimposed structures of the specimen. The resultant 1:1 micrographs can be photographically enlarged 400-500x.

The entire unit can be operated from a standard A.C. outlet in a safelighted darkroom without the need for protective provisions.

PHILIPS ELECTRONICS, INC.

Instruments Division

750 SOUTH FULTON AVENUE, MOUNT VERNON, N. Y.

In Canada: Scientific and Industrial Division, Philips Industries Limited, 11 Brentcliffe Road, Leaside, Toronto 17, Ont.





America's Newest Phase Microscope

Outstanding Features:

- Advanced styling and design...Convenient and versatile
- Interchangeable bodies...Trinocular, binocular, monocular
- Wide selection of objectives...Bright, dark, B-minus contrasts
- Choice of condensers...Standard or long working distance
- Focusable stage ... Variable Autofocus ... Constant eye level
- Wide selection of mechanical stages...Micro-Glide, graduated, ungraduated
- Top quality optics...Outstanding contrast and resolution

Phase microscopy permits the effective study, count and measurement of living or unstained transparent microscopic specimens such as cells, tissues, protozoa, yeast, mold, bacteria,

American Optical Company

Instrument Division • Buffalo 15, N.Y.

e 🥤	
Plus-	DU

MULTIPLE QUICK-CHANGE NOSEPIECE ... for convenient interchange of other phase, achromatic or apochromatic objectives.

Millard Fillmore Hospital, Buffalo, N.Y.

spores, emulsions, replicas, plastics, fibers and crystals. If you need to examine your material more effectively, we invite you to investigate the new AO Spencer Phasestar.

Dept. Gentle	V-2 emen:							
Please	e send	Phas	estar	Brochu	re SE	6		
Name_							 	
Addres	s						 	
e						Zone _	 State	