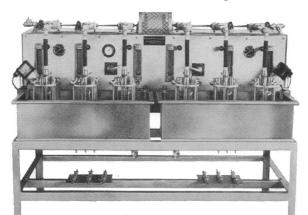
FERMENTOR DRIVE ASSEMBLY

For laboratory and pilot plant application

• Aerobic or Anerobic Fermentations • Tissue Cultures • Other Metabolic Studies in Submerged Cultures



Holds 6 FERMENTORS—stainless steel with pyrex jars of capacities 5, 7.5 or 14 liters each; readily removable for autoclaving; special leak-proof, non-freezing ball bearing agitator housings.

Stainless steel baths, thermostatically controlled within $\pm 1/2$ °C. Twin drives afford wide range of agitation and aeration rates. Machine available with automatic anti-foam addition system. Single and 3-fermentor drive assemblies also available.

Write for Bulletin FS-SI NEW BRUNSWICK SCIENTIFIC CO. PRECISION LABORATORY APPARATUS P.O. BOX 606 • NEW BRUNSWICK, N. J.

AAAS SYMPOSIUM VOLUMES

6" x 9", illustrated, clothbound

The Species Problem, 404 pp., 1957	\$8.75			
Atomic Energy and Agriculture, 460 pp., 1957	9.50			
The Beginnings of Embryonic Development, 408				
pp., 1957	8.75			
Alcoholism, 220 pp., 1957	5.75			
Tranquilizing Drugs, 205 pp., 1957	5.00			
Venoms, 480 pp., 1956	9.50			
The Future of Arid Lands, 464 pp., 1956	6.75			
Water for Industry, 140 pp., 1956	3.75			
Psychopharmacology, 175 pp., 1956	3.50			
Luminescence of Biological Systems, 466 pp., 1955	7.00			
Advances in Experimental Caries Research, 246				
pp., 1955	6.75			
Antimetabolites and Cancer, 318 pp., 1955	5.75			
Monomolecular Layers, 215 pp., 1954	4.25			
Fluoridation as a Public Health Measure, 240 pp.,				
1954	4.50			
Industrial Science, 160 pp., paperbound, 1952	2.00			
7 ½″ x 10½″, double column, illustrated, clothbound				

Centennial, 319 pp., 1950	5.00
Mammary Tumors in Mice, 231 pp., 1945	3.50

AAAS, 1515 Mass. Ave., NW, Washington 5, D.C.



Reticles • Precise Photography • Precision Patterns on Glass and Metal • Photoelectric Readout Devices • Optical Coincidence Reading Systems • Precision Circular, Cylindrical and Linear Dividing • Electroforming of Precise Patterns • Precision Grids • Engineering and Surveying Instruments • Hydrological and Meteorological Instruments • Paper Testing Instruments • Optical Instruments • Standard Weights and Measures

W. & L. E. GURLEY, 538 FULTON STREET, TROY, N.Y.



What it is . . . What to use . . . How to do it . . .

For free 24-page book, ask for Bulletin S-200

BRANSON ULTRASONIC CORPORATION 35 Brown House Rd. • Stamford, Conn.

AMERICAN-LINCOLN ANIMAL CAGES and INCUBATORS

• American-Lincoln animal cages of all types ranging from single units to large four

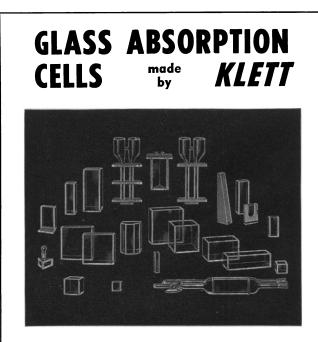


compartment sizes. Special cages, spare pans, racks, etc., built to order. Incubators for egg embryo and container work used by America's leading scientific institutions.

Write for New Catalog

AMERICAN-LINCOLN INCUBATOR CO.

> Dept. AS NEW BRUNSWICK, N.J.



Makers of Complete Electrophoresus Apparatus

Klett Manufacturing Co. 179 East 87 Street, New York, New York Specify



. . . the only complete line of microbiological reagents and media

Culture Media Microbiological Assay Media Tissue Culture and Virus Media Serological and Diagnostic Reagents Bacterial Antisera and Reagents Sensitivity Disks Unidisks Peptones Hydrolysates Amino Acids Enzymes Enrichments Dyes Indicators Carbohydrates Biochemicals

Over **60** years' experience in the preparation of Difco products assures UNIFORMITY STABILITY

ECONOMY

Complete Stocks Fast Service 24-hour Shipment

Difco Manual and other descriptive literature available on request

DIFCO LABORATORIES DETROIT 1, MICHIGAN



Aloe-Narda Ultrasonic Cleaning Equipment is Fast / Low Cost / Efficient

The right generator plus the proper transducerized tank furnishes the ideal ultrasonic system for cleaning almost anything you can think of . . . Glassware, hot lab apparatus, medical instruments, electronic components, optical and technical mechanisms . . . and so on. Whatever the problem, these ultrasonic systems can be the answer to doing it faster, cheaper, and more efficiently.

Operation is simple and easy. Just plug into any 115V, 60 cycle outlet. Fill the tank. Add detergent. Flip the switch. Immediately, swift precision cleaning economies are yours. Excellent for other purposes too — like brightening, polishing, decontaminating, pickling, deburring, plating and degassing.

To determine the exact model you need, write for prices and more details, now.

aloe scientific DIVISION OF A. S. ALOE COMPANY 5655 Kingsbury • St. Louis 12, Missouri Fully-Stocked Divisions Coast to Coast





Equipment

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. A coupon for use in making inquiries concerning the items listed appears on page 922.

• OVEN operates at temperatures up to 300° F. Chamber size is 3 by 36 by 48 in. Air is circulated by a 1500 ft³/min fan operated by a 1 hp three-phase motor. A 7-day timer and a circular chart recorder are provided. (Pereny Equipment Co., Dept. 412)

• COLD-JUNCTION COMPENSATOR is applicable to thermocouple devices. In use, the measuring thermocouple is connected to the input terminals of the compensator, the measuring device to the output terminals. When a selector switch is set for the type of thermocouple, a temperature-sensitive Wheatstone bridge in the compensator produces the necessary compensating voltage. Compensation accuracy is $\pm 1^{\circ}$ F in ambient levels from 32° to 120°F. The instrument weighs 6 lb and measures 53% by 8 by 5 9/16 in. (Technique Associates, Inc., Dept. 405)



Improved samplingPROCEDURES WITHBAIRD-ATOMIC'SFLAME PHOTOMETER

Papers recently published are available on newly developed sampling techniques using the standard, B-A Flame Photometer. These papers are:

FCA-1 Procedures for Calcium Determinations

FPK-1 Sodium and Potassium Determinations from the same dilution.

More B-A Flame Photometers are in use than all other makes combined because:

- SIMPLICITY of operation allows very rapid work 80 or more determinations can be made in an hour.
- REPRODUCIBILITY within ±½ of 1%, normal operation.
- HIGH SENSITIVITY of the instrument permits detection of as little as 0.004 mEq/L.
- 10 TIMES GREATER ACCURACY with B-A's Multilayer interference filters than with standard filters.

Send for the papers on the new techniques and procedures using B-A's Flame Photometer.

Baird • Atomic, Inc.

33 UNIVERSITY RD., CAMBRIDGE 38, MASS.



• ACCELEROMETERS are capable of continuous operation at temperatures from -100° to $+500^{\circ}$ F with accuracy ± 5 percent of reading. Bender-type piezoelectric elements are used with resonant frequencies as high as 30 kcy/sec and senstivities up to 10 mv/g. Ranges covered are 0.01 to 1000 g and 3 to 10,000 cy/sec. (Gulton Industries Inc., Dept. 391)

DIGITAL BAROMETER is a null-balancing electromechanical instrument that provides five-place readings of atmospheric pressure. The instrument operates on the weigh-beam principle in which transfer of barometer fluid from one column to another causes an unbalance moment that actuates a servo motor to restore equilibrium. Resolution is 1 in 30,000; repeatability, 0.002 in.-Hg. Outputs other than digital are available. (Dynametrics Corporation, Dept. 400)

■ PRESSURE TRANSDUCER uses provingring principle and a four-arm straingage bridge. The transducer will handle most gases and also extremely corrosive liquids. Pressure ranges are 300 to 10,-000 lb/in.² gage. Linearity is 0.25 percent, hysteresis 0.5 percent. Ambient temperature may be -65° to 250°F. Natural mechanical frequency for the 300 lb/in.² range is 2500 cy/sec. (Taber Instrument Corp., Dept. 404)

FLOW-METERING SYSTEMS provide rate and totalizing indication and introduce pressure drops less than 2.5 lb/in². Impeller-type transmitters are used to sense flow. The transmitters are available in stainless steel or aluminum alloy with temperature range from less than -350° F to greater than $+300^{\circ}$ F. Accuracy is ± 1 percent over the range 3 to 600 gal/min. (Revere Corp. of America, Dept. 407)

■ VACUUM FURNACE produces a uniform horizontal hot zone 6 in. in diameter by 12 in. long. Continuous operation to 2200°F is permissible. Vacuum is produced by a 4-in. pumping system with capacity of 720 ft/min³ at 10⁻⁴ mm-Hg. The four standard loading and cooling arrangements available include provision for a continuous work-exchanger loading and cooling zone. (General Vacuum Corp., Dept. 408)

• MERCURY-VAPOR PUMP is a metal, water-cooled three-stage pump with a speed of 40 liter/sec of air in the 3×10^{-4} to 2×10^{-2} mm-Hg range. Ultimate pressure of 10^{-8} mm-Hg can be attained with a cold trap at -63 °C. Peak speed of 52 liter/sec occurs at 10 μ -Hg. (Consolidated Eletrodynamics Corp., Dept. 413)

JOSHUA STERN National Bureau of Standards

APPLICATION FOR HOTEL RESERVATIONS 125th AAAS MEETING Washington, D.C., December 26-31, 1958

The list of hotels and their rates and the reservation coupon below are for your convenience in making your hotel room reservation in Washington. Please send your application, *not* to any hotel directly, but to the AAAS Housing Bureau in Washington and thereby avoid delay and confusion. The experienced Housing Bureau will make assignments promptly; a confirmation will be sent you in two weeks or less.

As in any city, single-bedded rooms at minimum rates may become scarce; double rooms for single occupancy cost more; for a lower rate, share a twin-bedded room with a colleague. Most hotels will place comfortable rollaway beds in rooms or suites at \$2.00 to \$2.50 per night. Mail your application *now* to secure your first choice of desired accommodations. All requests for reservations must give a definite date and estimated hour of arrival, and also probable date of departure.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

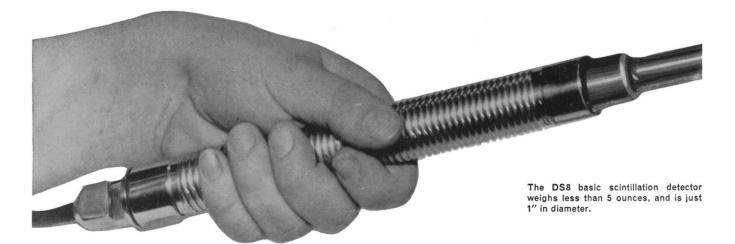
Rates for Rooms with Bath

Hotels with an asterisk have sessions in their public rooms. For a list of headquarters of each participating society and section, see page 151, *Science*, July 18.

Hotel	Single	Double Bed	Twin Bed	Suite
*Dupont Plaza	\$10.00-11.00	\$13.00-14.00	\$13.00-14.00	\$21.00-27.00
*Sheraton-Park	8.00-12.00	12.00-14.50	11.00-16.00	20.00-60.00
*Shoreham	all 9.00	all 12.00	all 12.00	20.00-50.00
*Statler	all 10.00	all 14.00	all 14.00	24.00-30.00
*Washington	7.00- 8.00	11.00-12.50	11.00-12.50	24.50-45.00
*Willard	10.00-12.50	13.00-17.00	14.00-18.00	25.00-35.00
Roosevelt	7.00- 9.00		10.00-12.00	18.00-24.00
Sheraton-Carlton	12.00-17.00		17.00-21.00	
Windsor Park	all 9.00	all 14.00	all 14.00	13.00-18.00

	THIS IS YOUR HOUSIN	G RESERVATION COUPON
AAAS Housing Bureau 1616 K Street, N.W. Washington 6, D.C.		Date of Application
Please reserve the following accord	nmodations for the 125th Meeti	ng of the AAAS in Washington, D.C., Dec. 26-31, 1958:
	TYPE OF ACCOMM	IODATION DESIRED
Single Room	Desired Rate	Maximum Rate
Double-Bedded Room	Desired Rate	Maximum Rate Number in party
Twin-Bedded Room	Desired Rate	Maximum Rate
		Maximum Rate
• • • • • • • • • • • • • • • • • • • •	•••••	• • • • • • • • • • • • • • • • • • • •
• • • • • • • • • • • • • • • • • • • •	•••••	• • • • • • • • • • • • • • • • • • • •
First Choice Hotel	Second Choice Hotel	Third Choice Hotel
DATE OF ARRIVAL	(These must be indicated-add	DEPARTURE DATE
NT 1 3 673		
NAME(Individual re	equesting reservation)	(Please print or type)
ADDRESS		· · · · · · · · · · · · · · · · · · ·
(Street)	(City and Z	Cone) (State)

Mail this now to the Housing Bureau. Rooms will be assigned and confirmed in order of receipt of reservation.



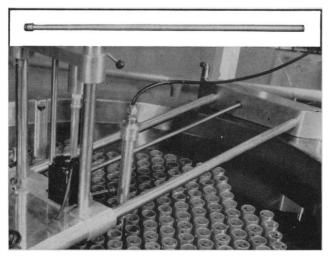
Versatile New Scintillation Probe Detects Fast or Slow Neutrons, Gammas, and Betas

Completely new, the Nuclear-Chicago Model DS8 Scintillation Probe provides precision detection of fast or slow neutrons, gamma and beta radiation. Utilizing a unique new 10 stage, $\frac{3}{4}''$ photomultiplier tube and a completely transistorized electronic circuit, the probe is completely water tight and corrosion proof. A resolution time in the microsecond region permits its use in extremely high radiation fields.

Two neutron probes are offered for flux measurements in reactors or subcritical assemblies. The neutron sensitive volume is confined to the very ends of the 42" probes so that "point" measurements may be made easily. Probe housings are quickly removed to permit substitution of slow neutron or fast neutron sensitive phosphors. These long probes can also be supplied with sodium iodide crystals for gamma detection.

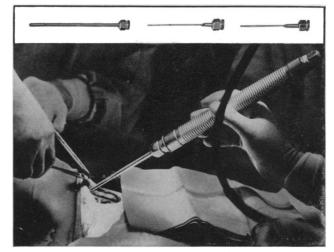
Three needle probes with 2.5 mil wall thicknesses are available for beta and gamma detection. They are unequalled for measuring radiation in almost inaccessable areas where highest resolution is essential.

For more than 12 years we have been designing and manufacturing high quality, dependable instruments for detecting and measuring radioactivity. We will be glad to furnish you complete information on this new DS8 Scintillation Probe or on other Nuclear-Chicago instrumentation or our Research Quality Radiochemicals.



Shown here being used with Nuclear-Chicago Model 9000 Subcritical Training Reactor to measure slow neutron flux at various points in the lattice, neutron probes are 42" long and are available in two diameters, 3/4" and 11/32",

Fine Instruments - Research Quality Radiochemicals



Shown here in use during thyroid surgery, Model DS8 is offered with three beta-gamma sensitive needle probes 2 mm, 3 mm and 6 mm in diameter, 10 cm to 15 cm in length. All probes are easily interchanged by loosening a simple hand nut.

nuclear - chicago

WEST ERIE STREET . CHICAGO 10, ILLINOIS