

## Forthcoming Events

### April

1-3. American Soc. of Internal Medicine, San Francisco, Calif. (R. L. Richards, 350 Post St., San Francisco 8.)

1-3. American Soc. for the Study of Sterility, Cincinnati, Ohio (H. H. Thomas, 920 S. 19 St., Birmingham 5, Ala.)

1-4. Bahamas Medical Conf., Nassau. (B. L. Frank, P.O. Box 4037, Fort Lauderdale, Fla.)

2. Paleontological Research Institution, Ithaca, N.Y. (Miss R. S. Harris, 126 Kelvin Pl., Ithaca.)

2-6. American College of Obstetrics and Gynecologists, Cincinnati, Ohio. (D. F. Richardson, 79 W. Monroe St., Chicago 3.)

3-6. American Surgical Assoc., White Sulphur Springs, W.Va. (W. A. Altemeier, Cincinnati General Hospital, Cincinnati, Ohio.)

3-7. International Anesthesia Research Soc., Washington, D.C. (A. W. Friend, E. 107 St. and Park Lane, Cleveland 6, Ohio.)

3-8. Nuclear Cong., New York, N.Y. (P. Lange, Engineers Joint Council, 29 W. 39 St., New York.)

4-5. Solar Energy, symp., Gainesville, Fla. (J. C. Reed, Mechanical Engineering Dept., Univ. of Florida, Gainesville.)

4-6. American Inst. of Electrical Engineers, Houston, Tex. (N. S. Hibsham, 145 N. High St., Columbus 15, Ohio.)

4-6. American Inst. of Mining, Metallurgical and Petroleum Engineers (43rd Natl. Open Hearth Steel Conf. and Blast Furnace, Coke Oven and Raw Materials Conf.), Chicago, Ill. (E. O. Kirkendall, AIME, 29 W. 39 St., New York 18.)

4-6. American Oil Chemists' Soc., Dallas, Tex. (Mrs. L. R. Hawkins, AOCS, 35 E. Wacker Drive, Chicago 1, Ill.)

4-6. Chemical and Petroleum Instrumentation Symp., 3rd natl., Rochester, N.Y. (Director, Technical & Educational Services, ISA, 313 Sixth Ave., Pittsburgh 22, Pa.)

4-7. Atomic Exposition, New York, N.Y. (Atomic Exposition, 117 S. 17 St., Philadelphia, Pa.)

4-8. American College of Physicians, annual, San Francisco, Calif. (M. Ross, American Psychiatric Assoc., 1700 18 St., NW, Washington 9.)

4-8. American Meteorological Soc., 3rd applied meteorology conf., Santa Barbara, Calif. (H. G. Houghton, AMS, Dept. of Meteorology, Massachusetts Inst. of Technology, Cambridge 39.)

4-8. American Soc. of Mechanical Engineers, New York, N.Y. (D. B. MacDuggall, ASME, 29 W. 39 St., New York.)

4-9. American College of Physicians, San Francisco, Calif. (E. R. Loveland, 4200 Pine St., Philadelphia 4.)

5-7. Instrument Soc. of America (Natl. Chemical and Petroleum Symp.), Rochester, N.Y. (H. S. Kindler, ISA, 313 Sixth Ave., Pittsburgh 22, Pa.)

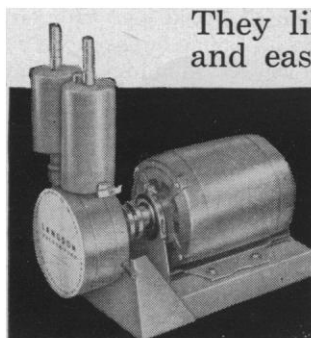
5-7. Naval Structural Mechanics, 2nd symp., Providence, R.I. (E. H. Lee, Brown Univ., Providence.)

5-14. American Chemical Soc., natl., Cleveland, Ohio. (A. T. Winstead, ACS, 1155 16 St., NW, Washington 6.)

(See issue of 19 February for comprehensive list)

4 MARCH 1960

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## New Products

*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. All inquiries concerning items listed should be addressed to the manufacturer. Include the department number in your inquiry.*

■ **LIGHT SCREEN** for actuation of chronographs and for the triggering light source of shadowgraph systems in ballistic studies has a field plane size 6 by 6 in. In operation a light beam is reflected back and forth between two 6-in.-long parallel mirrors spaced 6 in. apart. Interruption of any portion of the field by a projectile 1 mm in diameter or larger produces a change in current in a multiplier phototube detector. With a potential of 625 volts applied to the detector, a 1-in. diameter projectile produces an output signal of 1 volt across a 1000-ohm load resistor. (Avco Corporation, Dept. Sci333, 201 Lowell St., Wilmington, Mass.)

■ **SORPTION METER** for measurement of surface area of materials and for study of adsorption phenomena operates by passing a known helium-nitrogen mixture through the sample cooled by liquid nitrogen and observing the change in composition. The change in the mix-

ture's nitrogen concentration is measured by a thermal-conductivity detector and inscribed as a peak on a potentiometer-recorder chart. A second peak is recorded by warming the sample and measuring the nitrogen released. The peaks are proportional to nitrogen adsorbed and desorbed. A one-point comparison with a standard can be accomplished in 10 minutes. (Perkin-Elmer Corp., Dept. Sci389, Norwalk, Conn.)

■ **SOLAR FURNACE** is available for mobile or stationary mounting and is furnished either assembled or in kit form. Diameter of the furnace is 6 in., and temperatures up to 6741°F are said to be obtainable with heat flux densities up to 365 cal/cm<sup>2</sup> sec. (Waltham Precision Instrument Co., Dept. Sci381, 221 Crescent St., Waltham 54, Mass.)


■ **PHOTOELECTRIC MODULATORS** are nonmechanical, solid-state devices with chopping frequency variable from d-c to 400 cy/sec. Switch action may be single pole, single throw, or double pole, single throw. Sensitivity is said to be 1 μV, dynamic range 60 db. Operating temperature range is -20° to +100°C. Life is said to exceed 5000 hr. (Cambridge Electronics Corp., Dept. Sci369, Box 301, Marshfield Hills, Mass.)

■ **PULSE PATTERN GENERATOR** is a fully transistorized instrument that provides a pattern of any length from 1 to 100 pulses with pulse rate continuously variable from 10 to 15,000 per second when an internal oscillator is used, and from 0 to 100,000 per second when driven externally. Each pulse position provides a mark or space condition as selected by 100 individual switches. Output level for the mark is variable from zero to +10 volts, and the level for the space is variable from zero to -10 volts. Rise and fall times are each 1 μsec. (Data Products Co., Dept. Sci-395, 7320 Westmore Rd., Rockville, Md.)

■ **TORQUEMETER** is available with ranges from 0.1 oz in. to 500 oz in. Accuracy is said to be ±2 percent of full scale. Measurements are independent of shaft speed between 50 and 24,000 rev/min, and of direction of shaft rotation. Up to five pickups may be used with a single indicator. (Metron Instrument Co., Dept. Sci397, 432 Lincoln St., Denver 3, Colo.)

■ **pH ELECTRODE ADAPTER** for use with the manufacturer's vibrating-reed electrometer is said to permit measurement of changes of pH as small as 0.0005 units. The adapter provides for connec-

# METROHM

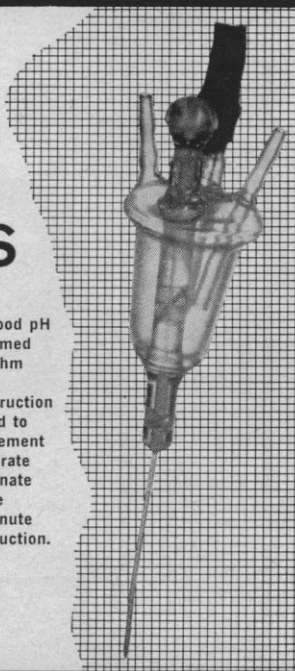


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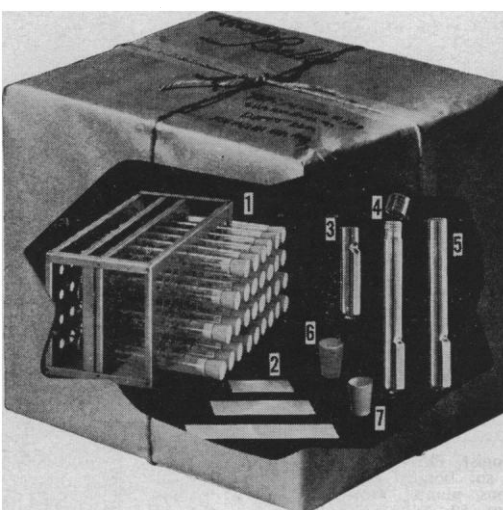
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tion of three sets of glass and calomel electrodes with switch selection of any set. A fourth switch allows electrometer zeroing. Guard positions between each switch position isolate electrode connections. (Applied Physics Corp., Dept. Sci385, 2724 South Peck Rd., Monrovia, Calif.)

■ **PULSE GENERATOR** featuring a pulse rise time of less than 2.5  $\mu\text{sec}$  has two independent outputs. Pulse widths from 2.5 to 25  $\mu\text{sec}$  and repetition rates from 10 cy to 10 Mcy/sec may be controlled externally. A fast flexible gating input is available for complex pulse-time and pulse-amplitude selection. A positive 15-volt trigger output may be used to initiate timing cycles or to trigger an oscilloscope. (E-H Research Laboratories, Dept. Sci401, 1922 Park Blvd., Oakland 6, Calif.)

■ **RESISTORS** are said to maintain accuracy of  $\pm 0.1$  percent at temperatures from  $-65^\circ$  to  $+185^\circ\text{C}$ . Twenty-three models range from printed-circuit types of 0.10-watt rating and 35 kohm maximum resistance, to axial-lead types of 2-watt rating and 3.5 Mohm resistance and lug types of 2.25-watt rating and 7 Mohm resistance. (Hamby Corp., Dept. Sci402, 7241 Eton Ave., Canoga Park, Calif.)

■ **MERCURY-ARC LAMP** is a high-pressure mercury-arc point source for operation on d-c. The lamp is rated at 100-watt input power. Spot size is 0.012 by 0.012 in. Luminous flux output is 2200 lu and average brightness is 140,000  $\text{ca}/\text{cm}^2$ . A power supply is available, or standard wet-cell batteries may be used. (PEK Labs, Inc., Dept. Sci399, 4024 Transport St., Palo Alto, Calif.)

■ **DIGITAL COMPUTER** for educational use is a stored-program, single-address machine. Logical interconnections between plug-in modules are effected with removable plugboard patch panel. Alternative patch panels convert the machine from a general-purpose computer into a digital differential analyzer with 20 integrators. The machine's memory uses four magnetostrictive delay lines providing a total of 128 words with average access time 192  $\mu\text{sec}$ . Word size is 12 bits plus sign. Input is manual with octal keyboard, and output is provided by indicator lights, oscilloscope display, or both. Other input and output devices are optional. (Computer Control Co., Dept. Sci379, 2251 Barry Ave., Los Angeles 64, Calif.)

JOSHUA STERN  
National Bureau of Standards,  
Washington, D.C.

## PERSONNEL PLACEMENT

**CLASSIFIED:** Positions Wanted, 25¢ per word, minimum charge \$4. Use of Box Number counts as 10 additional words. Payment in advance is required. **Positions Open**, \$33 per inch or fraction thereof. No charge for box number.

**COPY** for classified ads must reach SCIENCE 2 weeks before date of issue (Friday of every week).

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4 times in 1 year	38.00 per inch
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26 times in 1 year	34.00 per inch
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For PROOFS on display ads, copy must reach SCIENCE 4 weeks before date of issue (Friday of every week).

Replies to blind ads should be addressed as follows:

Box (give number)  
Science  
1515 Massachusetts Ave., NW  
Washington 5, D.C.

### POSITIONS WANTED

**Woman Biologist**, Ph.D., 38, desires college teaching position in a senior college beginning June or September. Broad background in the biological sciences with botany major and zoology and biochemistry minors; 8 years of full-time college teaching experience. Box 47, SCIENCE. 3/25; 4/15

**Honorable Mention Westinghouse**, 1959. Completed 1 year engineering, 2 years of college mathematics. Experience: Summer 1959, student trainee, David Taylor Model Basin, Washington, D.C. Can type. Available June–September. Will travel. Health excellent (6'2"). Box 48, SCIENCE. X

**Plant Biologist**, Ph.D., desires full-time research, or nearly so: botany and physiology economic and noxious plants; growth hormones; ethnobotany. Box 50, SCIENCE. X

**Psychosomatics**. Productive physiologist, extensive experience: renal, cardiovascular, conditioned reflex techniques, seeks opportunity to develop laboratory for interdisciplinary investigation of psychovisceral-behavioral interactions. Efficient organizer, excellent teacher, linguist, expert in scientific Russian. Box 51, SCIENCE. X

**Virologist**, Ph.D., desires responsible academic or industrial research position, preferably West Coast. Experienced tissue culture, human and animal virus vaccine development, public health. Box 37, SCIENCE. 3/4

### POSITIONS WANTED

(a) **Young Physiologist**, Ph.D. in June 1960, with Army electronics training; desires basic research position. (b) **Bacteriologist** Ph.D., biochemistry minor; public health and university teaching experience, virology research; prefers academic or research appointment. (c) **Pharmacology** Ph.D., physiology minor; military research in environment physiology, stress, optics, radiation effects, biomathematics; available for research or administrative appointment. S3-1 Medical Bureau, Inc., Science Division, Burneice Larson, President, 900 North Michigan Avenue, Chicago. X

### POSITIONS OPEN

**Assistant Bibliographer**, for science information publication. Master's degree in one of the biological sciences or its equivalent required, plus competency in one or more languages. Located on East Coast. Please send complete résumé of education, experience, and salary required to Box 49, SCIENCE. X

**Bacteriologist**. \$7938–\$9138 annually. Position open in clinical bacteriology at large suburban Detroit hospital near University of Michigan and Wayne State University. Well-equipped laboratory available for research, liberal annual and sick leave, retirement plan plus social security. Ph.D. required. Contact Dr. S. E. Gould, Director of Pathology, Wayne County General Hospital, Eloise, Michigan. 3/11; 3/18

**Bacteriology-Immunology**. Technologists with B.S., M.S., or equivalent experience wanted for research. Participation in teaching program also involved. Permanence, advancement assured. Salaries open. Dr. T. Rosebury, Dept. of Bacteriology, Washington University School of Dentistry, St. Louis, Missouri. X

## Enzyme Chemist

To originate and supervise research and development work directed towards therapeutic enzymes. Background in biochemistry and microbiology as well as several years of industrial experience required.

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**Anatomy Department, Dalhousie University, Halifax, Nova Scotia**. Applications are invited for two positions at the rank of **Assistant Professor** in the Department of Anatomy. Experience in the teaching of gross anatomy is essential and a willingness to undertake some teaching in neuroanatomy, histology, or embryology desirable. The successful candidates will be expected to participate in the active research program of the department, for which good facilities are available. Applicants with a medical degree will be preferred although those with an honors degree in medical science or biology will receive special consideration. The salary for a medical graduate with minimum qualifications will be \$6500. The salary will depend upon qualifications and experience. Applications should be made to Professor R. L. deC. H. Saunders at the above address. 3/4; 4/1; 5/6; 6/3

**Biochemist**, interested in immunology and hypersensitivity research. Opportunity for independent research and possible academic affiliation. Contact Dr. L. H. Crip, U.S. Veterans Administration Hospital, Pittsburgh 40, Pa. Salary \$9000–\$10,000. X

(a) **Chemist**, Ph.D. (b) **Physics teacher**, M.S. Both positions offer unusual opportunity in a growing college in the Southeast. Salary dependent upon training and experience. Send résumé to Box 42, Collegeboro, Georgia. X

**RESEARCH ORGANIC CHEMIST, M.S. or Ph.D.** Pharmaceutical experience in synthetics and natural products desired. Eastern United States. Write listing education, work experience, and salary desired.

Box No. 52, SCIENCE

(a) **Chief Microbiologist**, Ph.D. or M.D., to direct active department of large university hospital, \$9000–\$13,000 year with increases; East. (b) **Anatomy Associate Professor** with teaching, research, and administrative ability, Southwest. (c) **Fermentation Development Supervisor**, capable chemist with supervising-administrative experience; large pharmaceutical firm, \$10,000–\$12,000 year; East. (d) **Biochemist**, Ph.D., with hospital teaching and supervising experience; \$9000 year increasing to \$12,000; South. (e) **Pharmacologist**, Ph.D. or M.D., to head cardiovascular research division of important pharmaceutical firm, \$10,000 year up; East. (f) **Pathologist**, Ph.D., M.D., or D.V.M. degree, with clinical experience for biological research laboratories, \$10,000 year up; South. (g) **Biochemist**, Ph.D. or M.S. degree, for clinical studies of human brain, midwestern hospital. (Please write for details; also many other positions available through our nationwide service.) S3-1 Medical Bureau, Inc., Science Division, Burneice Larson, President, 900 North Michigan Avenue, Chicago. X

## POSITIONS OPEN

**Medical Technician**, male or female, B.S. preferred, research laboratory. Paraffin sectioning, H and E plus special staining. Some experience required. Dr. J. Christensen, St. Barnabas Medical Center, High St., Newark, N.J. 3/11, 18

**Microbiology and Plant Biochemistry Graduate Assistantships**, \$2100-\$2300 per year, free tuition. D. B. Johnstone, Hills Building, University of Vermont, Burlington, Vt. 3/4

**Physical Biochemist**, prospective or recent Ph.D., as collaborator in studies of protein denaturation at Massachusetts Institute of Technology. Excellent salary, appointment renewable for several years. Early availability is very desirable. Write to Dr. J. Steinhart, Room 20D-101, Massachusetts Institute of Technology, Cambridge 39. 3/4

**Physiologist** (2), Ph.D., to teach cellular or mammalian physiology and elementary physiology or zoology. **Embryologist**, with background in biochemistry or physiology, also desired. September 1960. Assistant or associate professor. Apply to Chairman, Department of Zoology, Louisiana State University, Baton Rouge. X

**Postdoctoral Traineeships in Metabolism and Nutrition**. Postdoctoral traineeship in the field of metabolism and clinical nutrition are available in the Department of Biochemistry and Nutrition, University of Pittsburgh. The program is primarily for physicians who have had a minimum of an internship and who are interested in clinical investigation. The stipends begin at \$5500 per annum, and appointments may be made for a period of 1 to 3 years beginning 1 July 1960. Please apply to Dr. Robert E. Olson, Professor and Head, Department of Biochemistry and Nutrition, University of Pittsburgh, Pittsburgh 13, Pa. 3/11

**Research Associate**, M.S. or Ph.D. Major in chemistry. Warburg orientation desirable. Departmentalized research laboratory in large general hospital. Immediately available. Write Dr. Robert C. Grauer, Director, Singer Research Laboratory, Allegheny General Hospital, Pittsburgh 12, Pa. 3/4

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(a) **Virologist-Tissue Culturist**. Requires Ph.D. trained, experienced virus isolation, cultivation cell cultures for tumor virus research; new building, newly organized eastern research group. (b) **Biochemist**. M.S., Ph.D., to head department, large Chicago hospital. (c) **Pharmacologist**. Ph.D. to establish evaluation program associated with toxicity studies in new drug screening, report to director, pharmacologic research; Midwest subsidiary prominent pharmaceutical company. (d) **Biochemist**. Supervise department in new, superbly equipped laboratory, 200-bed fully approved hospital; Philadelphia suburban area. (e) **Bacteriologist**. Degree, 1 year experience for diagnostic microbiology division, state health department; southeastern university center. (Please write for an analysis form. Our 64th year: Founders of the counselling service to the medical profession, serving medicine with distinction over half a century.) Science Division, Woodward Medical Bureau, Ann Woodward, Director, 185 North Wabash, Chicago. X

**Virologist-Tissue Culturist**, Ph.D. Training and/or experience in the isolation of viruses as well as the cultivation of cell cultures for research on problems relating to tumor viruses. Ample salary, new building, and newly organized research group in East. Box 15, SCIENCE. 3/4

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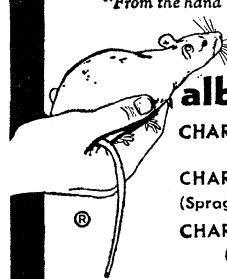
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## **Republic Aviation Accelerates Space Environment and Life Sciences Research Under Direction of Dr. Norman Lee Barr**

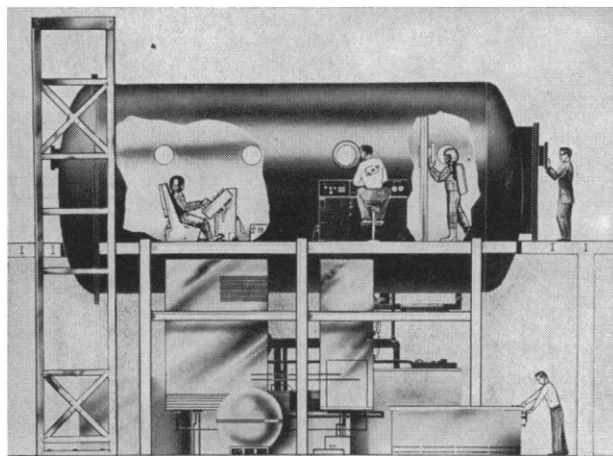
### **A Number of New Positions for Research Supervisors and Participating Scientists Now Available on Space/Human Factors Problems**

Dr. Barr is one of the few scientists in the country who has conducted live experiments under actual space flight and re-entry conditions. (Dr. Barr directed the Navy project which launched monkeys Able and Baker on their successful 1500 mile trip through space at an altitude of 300 miles.)

As Chief of Republic's Space Environment and Life Sciences Laboratory, Dr. Barr will direct research into all aspects of space environments, artificial and natural, and the problems of adapting these environments to the support of human life and its function. With the opening of Republic's new \$14,000,000 R&D Center (scheduled for late spring), current programs will be expanded and new programs initiated.



Formerly Director of Aviation and Space Medicine Research for the U.S. Navy, Dr. Barr joined Republic as Chief of Space Environment and Life Sciences Research in November 1959.



Rendering of the space chamber which will be part of the research facilities of the Space Environment and Life Sciences Laboratory in the new Center. This chamber will be capable of taking a human being 150 miles up into simulated ionospheric conditions. In the test shown above, peripheral vision and mobility of the space-suited man is measured, as he responds to various test sequences set up by engineers at outer control panel.

*Research programs in which M.D.'s (high altitude experience preferred) and other scientists may engage include:*

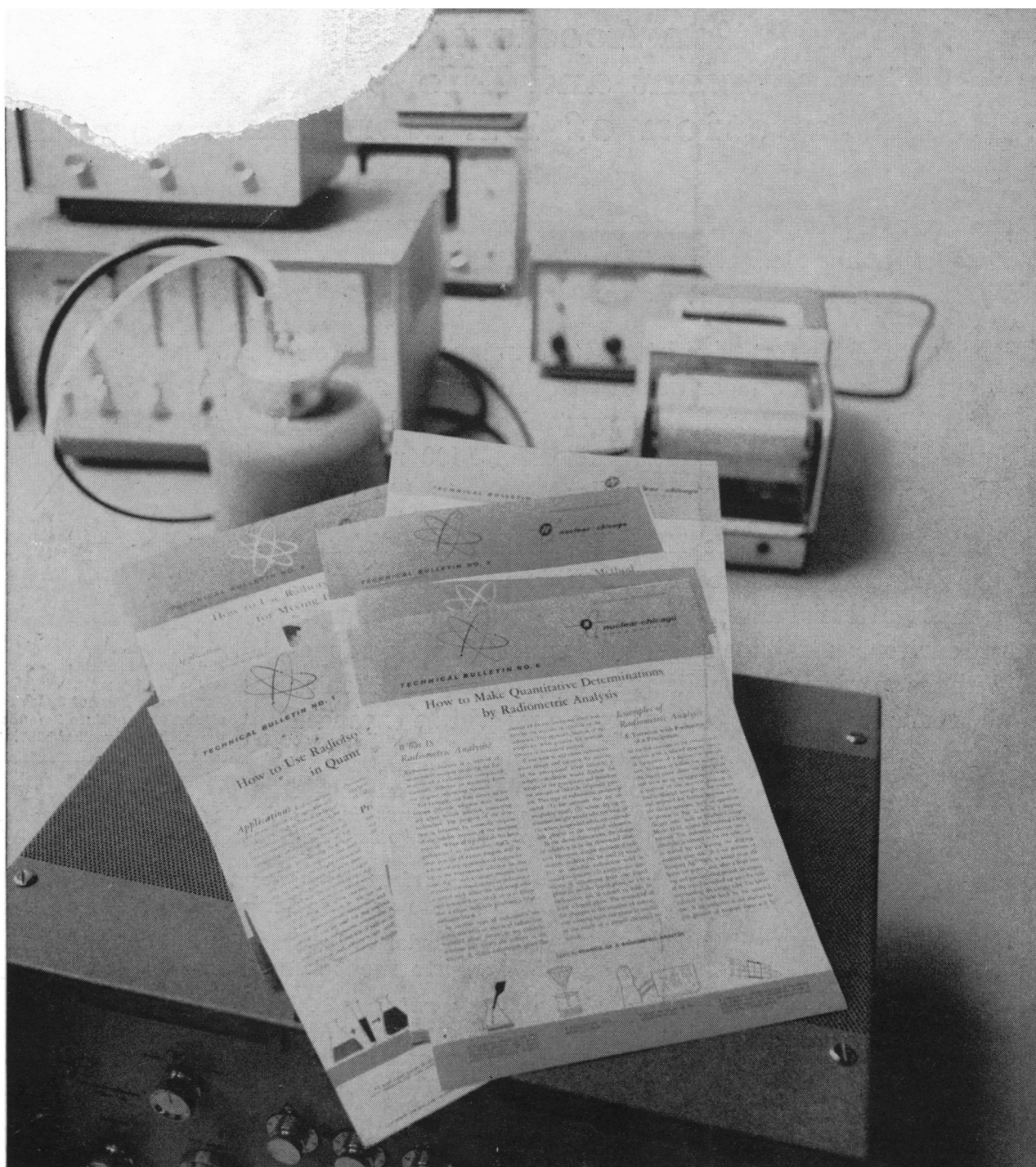
- **Studies in low-pressure plant growth for lunar base applications**
- **Conversion of normally indigestible plant fibers into meat substitutes and sugars**
- **Conversion of human wastes into food, water, and support for man and new plant life in a continuing cycle**
- **Control of disease agents in a space vehicle**
- **Investigations of the physiological and psychological reactions of man under ionospheric conditions**

*Scientists and M.D.'s who share Republic's conviction of the urgent need to develop a self-sufficient, closed, environmental system capable of maintaining an astronaut in a state of essential physical health and efficiency, are invited to write to Dr. Norman Lee Barr.*



**REPUBLIC AVIATION**

Farmingdale, Long Island, New York



Nestled in with the Nuclear-Chicago instruments in the above photograph you will find six bulletins we have prepared to help familiarize you with various ways radioactivity is being used in research today. These four-page bulletins describe, in a concise and stimulating way, common analytical and process applications of radioisotopes, procedures that offer great advantages over time consuming, expensive and often inaccurate non-isotopic analytical methods\*. We will be glad to send you all six of these bulletins without obligation. Just write us for Technical Bulletins Nos. 1 through 6.



\*The applications described in these bulletins are, No. 1: How to Use Radioisotopic Yield Determination in Quantitative Analysis. No. 2: How to Use Radioisotopic Analysis for Mixing Evaluation. No. 3: How to Use the Radioisotopic Derivative Method in Quantitative Analysis. No. 4: How to Use Radioactivity in Paper Chromatography. No. 5: How to Evaluate an Analytical Method with the Aid of Radioisotopes. No. 6: How to Make Quantitative Determinations by Radiometric Analysis.