

## Forthcoming Events

### May

21-25. American Assoc. on Mental Deficiency, Hartford, Conn. (T. L. McCulloch, Letchworth Village, Thiells, N.Y.)

22-24. American Inst. of Chemists, annual, Akron, Ohio. (L. Van Doren, AIC, 60 E. 42 St., New York 17.)

22-24. American Soc. for Quality Control, annual, Detroit, Mich. (L. S. Eichelberger, A. O. Smith Corp., Milwaukee 1, Wisc.)

22-25. International Scientific Radio Union, national spring mtg., Washington, D.C. (J. Hagen, U.S.A. National Committee URSI, National Acad. of Sciences,

2101 Constitution Ave., NW, Washington 25.)

23-25. Acoustical Soc. of America, New York, N.Y. (W. Waterfall, ASA, 57 E. 55 St., New York 22.)

25-26. International Cong. for the Study of the Bronchi, Lisbon, Portugal. (F. Lopo de Carvalho, 138 rua de Junqueira, Lisbon.)

25-28. International Cong. of Acupuncture, 9th, Vienna, Austria. (Austrian Assoc. for Acupuncture, 57 Schwenderstrasse, Vienna.)

26-30. Special Libraries Assoc., annual, Boston, Mass. (Miss M. E. Lucius, SLA, 31 E. 10 St., New York 3.)

27-29. American Gynecological Soc.,

Hot Springs, Va. (A. A. Marchetti, 3800 Reservoir Rd., NW, Washington 7.)

27-29. Cerebrospinal Fluid, Production, Circulation and Absorption, CIBA symp. (by invitation), London, England. (G. E. W. Wolstenholme, 41 Portland Pl., London, W.1.)

29-2. American College of Chest Physicians, annual, New York, N.Y. (M. Kornfeld, ACCP, 112 E. Chestnut St., Chicago 11, Ill.)

30-31. American Geriatrics Soc., New York, N.Y. (R. J. Kraemer, Greenwood, R.I.)

30-31. Rheology of Elastomers, conf., Welwyn Garden City, Herts., England. (N. Wookey, British Soc. of Rheology, 52, Tavistock Rd., Edgware, Middlesex, England.)

30-1. American Acad. of Dental Medicine, 11th annual, Boston, Mass. (R. Diamond, 100 Boylston St., Boston.)

30-1. American Malacological Union, Pacific meetings, Santa Barbara, Calif. (Miss M. C. Teskey, P.O. Box 238, Marinette, Wis.)

30-1. American Ophthalmological Soc., Hot Springs, Va. (M. C. Wheelen, 30 W. 59 St., New York 19.)

30-1. Endocrine Soc., 39th annual, New York, N.Y. (H. H. Turner, 1200 N. Walker St., Oklahoma City 3, Okla.)

31-2. American Soc. for the Study of Sterility, New York, N.Y. (H. Thomas, 920 S. 19 St., Birmingham 5, Ala.)

31-2. Social Medicine, internatl. cong., Vienna, Austria. (T. Antome, Spitalgasse 23, Vienna 9.)

31-2. Society for Applied Anthropology, annual, East Lansing, Mich. (W. F. Whyte, New York State School of Industrial and Labor Relations, Cornell Univ., Ithaca, N.Y.)

### June

1-2. American Diabetes Assoc., 17th annual, New York, N.Y. (ADA, 1 E. 45 St., New York 17.)

1-2. Soc. for Investigative Dermatology, annual, New York, N.Y. (H. Beerman, 255 S. 17 St., Philadelphia 3, Pa.)

1-9. International Cong. on Medicine and Surgery, Turin, Italy. (Secretariat, Minerva Medica, Corso Bramante 83-85, Turin.)

2-6. Air Pollution Control Assoc., golden anniversary, St. Louis, Mo. Jointly with American Meteorological Soc., American Soc. of Heating and Air Conditioning Engineers, American Inst. of Chemical Engineers, and American Soc. of Mechanical Engineers. (H. C. Ballman, APCA, 4440 Fifth Ave., Pittsburgh 13.)

2-7. Society of Automotive Engineers, summer, Atlantic City, N.J. (Meetings Division, SAE, 29 West 39 St., New York 18.)

2-8. International Cong. of Photobiology, 2nd Turin, Italy. (G. Matli, Istituto di Fisica dell'Universita di Torino, Via Pietro Giuria 1, Corso Massimo d'Azeglio 46, Turin.)

3-5. American Soc. of Refrigerating Engineers, Miami Beach, Fla. (R. C. Cross, ASRE, 234 Fifth Ave., New York 1.)

3-5. Chemical Inst. of Canada, 40th annual, Vancouver, B.C. (CIC, 18 Rideau St., Ottawa 2, Ont.)

(See issue of 19 April for comprehensive list)

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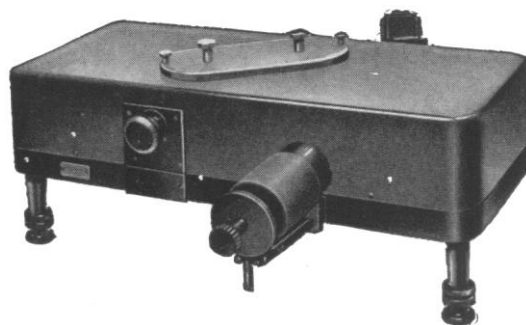
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## LETTERS

The editors take no responsibility for the content of the letters published in this section. Anonymous letters will not be considered. Letters intended for publication should be typewritten double-spaced and submitted in duplicate. A letter writer should indicate clearly whether or not his letter is submitted for publication. For additional information, see Science 124, 249 (1956) and 125, 16 (4 Jan. 1957).

### Reference Citations

The citation of references in scientific papers should enable the reader to locate the specific point in the referent article quickly and efficiently. The usual method of citing a reference does not accomplish this purpose, for, ordinarily, only the first page of the article or the inclusive pages are given in the reference. Only in the case of books is the page number given. When a highly specific point is made, which may be buried in a table, footnote, or paragraph, it frequently becomes a very difficult task to locate and verify the information, especially when the paper is long or involved. We have run into this difficulty, especially in citations for enzymatic inhibitors, activators, melting points and other physical constants, and data and procedures which may be incidental to the main subject of the paper.

It is, therefore, suggested that when a highly specific point is referred to in a paper, the usual reference be given in whatever style the journal requires, followed by a more specific citation in parentheses. The following hypothetical example will illustrate this point. A. N. Jones and J. A. Smith, *J. Biol. Chem.* 89, 54 (1984) (p. 56), (56), or (56, Table III), or (56, paragraph 2), and so forth.

The attention of editors of scientific journals to this matter is recommended.

MORRIS N. GREEN

Newton Centre, Massachusetts

HERBERT N. SCHLEIN

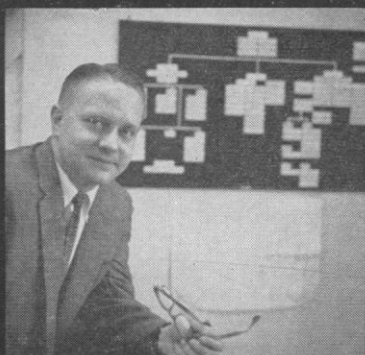
West Roxbury, Massachusetts

When authors of papers supply the information, Science does just what Green and Schlein ask for, although not exactly in the form that they suggest.

### Tools for Communication

Language is our box of tools for thinking and for communication. The tools (words) ought to be kept sharp (precisely defined). The invention of new tools (words and symbols) for new uses (concepts), and for the old ones too, is to be encouraged. The sooner an inconvenient tool is replaced by a more effective one, the better.

I have a pet aversion, namely, the term *milligrams percent*, meaning milligrams of solute in 100 milliliters of solu-



## qualifications?

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tion. *Percent and per mille and parts per million* are easy and have convenient symbols: %, ‰, and ppm. It is true that it is inconvenient to write 0.015%, or 0.15‰, or concentration of  $1.5 \times 10^{-4}$ , or 150 ppm. To write *15 mg percent*, which is present custom in our clinical laboratories, seems to me not much of an improvement. *Fifteen milligrams percent* does run off the tongue quite smoothly. *One hundred fifty parts per million*, however, runs just as smoothly and is only 12 percent longer.

Now I have an invention. It is to use, instead, the East Indian word for 100,000, namely, *lac*. *Fifteen milligrams percent* then becomes *15 per lac*.

R. R. NEWELL

Stanford University School of Medicine,  
San Francisco, California

### Insect Control by Radiation

In the article "Current status of insect control by radiation" [*Science* 124, 1011 (1956)], Charles C. Hassett gives a table of costs per ton for a 50,000-roentgen dose from various sources in which some of the data appear to be misleading. In particular, I think that the figures given for electron accelerators are a little unrepresentative and, in this connection, I would like to call attention to data given by Wolfgang Huber [*Western Canner and Packer* (Aug. 1956)]. Huber shows that, for a dose of 50,000 roentgens (approximately 0.05 Megarep) at 50-percent utilization, machines are available that can treat more than 100 tons per hour at a cost of 40¢ per ton or less.

I should also like to point out that there appears to be a discrepancy in Hassett's stated cost of the cobalt-60 irradiation unit: "\$10 per ton (5¢ per pound)."

M. C. CROWLEY-MILLING

Accelerator Laboratory,  
Metropolitan-Vickers Electrical  
Company, Manchester, England

The article by Huber, referred to by M. C. Crowley-Milling, appeared after my article had been written and submitted for clearance; hence, it could not be included in my discussion. The data cited actually reinforced my conclusions: that these machines will soon make large-scale radiation economically feasible.

With reference to Crowley-Milling's second point, the manuscript submitted to *Science* shows the correct values: "\$10 per ton (0.5¢ per pound)." This typographic error unfortunately passed both *Science's* proof reading and mine.

CHARLES C. HASSETT

Entomology Branch,  
Chemical Warfare Laboratories,  
Army Chemical Center, Maryland



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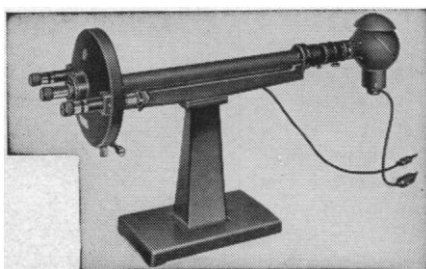
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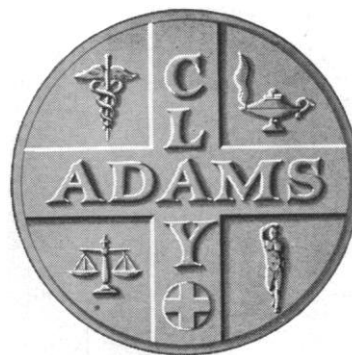
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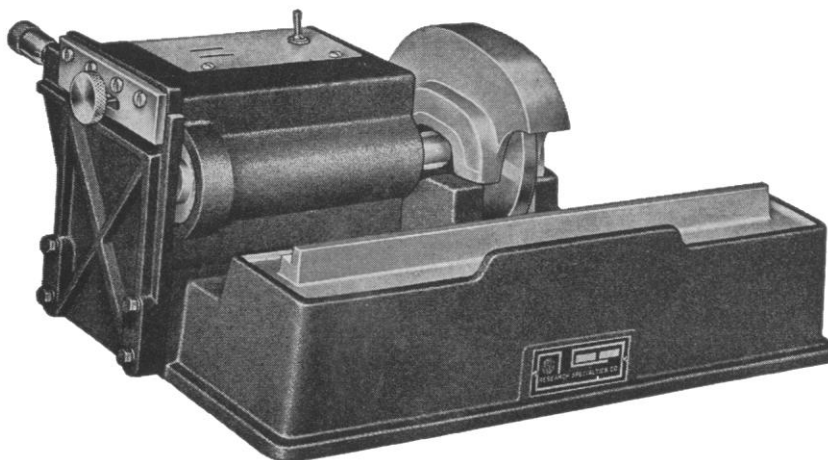
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## EQUIPMENT NEWS

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).

■ **CENTRIFUGE** is provided with a sealed rotor cover that prevents escape of contents. The seal is made by an O ring. The new cover may be used with existing centrifuges made by the same manufacturer. (Ivan Sorvall, Inc., Dept. S289)

■ **VACUUM GAGE** of Pirani type covers a range of pressures from 1 to 2000  $\mu$ Hg. Up to four gage stations are accommodated by a single instrument. The Pirani tube operates at a maximum temperature of 250°C, and deposits on the filament do not change its emissivity. Operating voltage is automatically regulated. A special circuit permits operation as a leak detector at pressures from 1  $\mu$  to 10 mm-Hg. (Consolidated Electro-dynamics Corp., Dept. S284)

■ **ION-EXCHANGE RESINS** of analytic grade are described in a folder that contains, in addition to prices, data which must be considered in selecting specific ion-exchange resins. The effects of functional groups, cross linkage, and particle size are discussed. (Bio-Rad Laboratories, Dept. S269)

■ **PULSE GENERATOR** output is variable from 1 to 10 v by a ten-turn potentiometer and a step-type attenuator. Drift rate is less than 0.005 per cent/hr or 0.02 percent/day. Repetition rate is fixed at 60 pulses/sec. Rise time is 7 msec. (Franklin Electronics, Inc., Dept. S286)

■ **ANTENNA HORNS** for frequencies ranging from 1000 to 40,000 Mc/sec are offered in standard or special designs. Beam width and antenna gain can be provided to individual specifications. Silver and rhodium are used for all internal electric working surfaces. (J. V. M. Engineering Co., Dept. S271)

■ **SPRING-LOADED THERMOCOUPLE** is designed for applications where pressure contact is required for efficient temperature measurement. The tip of the thermocouple is held against the work surface by an Inconel-X spring that can stand temperatures up to 900°F. The spring accommodates motion caused by expansion and contraction. (Minneapolis-Honeywell Regulator Co., Dept. S292)

■ **DIGITAL INDICATOR** provides digital indication of analog quantities by means of an electronic null-balance servo system that drives a set of geared number wheels. Numbers are 7/16 in. high. Non-linear inputs are linearized by a tapped slidewire. (Performance Measurements Co., Dept. S287)

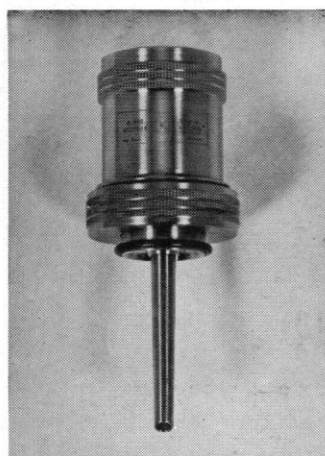
■ **DELAY CABLE** has a flexible, low-loss, magnetic core. Delay is 1.0  $\mu$ sec/ft, impedance 1700 ohm, and insertion loss 0.3 db for a delay of 1.0  $\mu$ sec. The operating temperature range is from -40° to +85°C. Diameter is 0.28 in. Cali-

brated lengths can be furnished with delays from a fraction of a microsecond to 100  $\mu$ sec. (Columbia Technical Corp., Dept. S273)

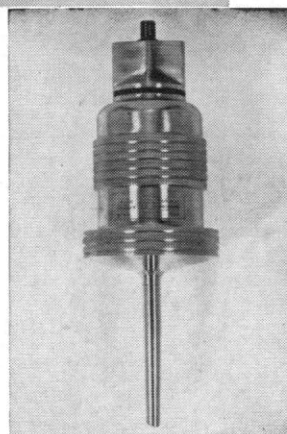
■ **GLASS DISPERSION** in isopropyl alcohol is designed for use in coating metal which is to be heated. The glass forms a continuous film that inhibits oxidation and surface contamination. The dispersion is designed for use in forging of alloy steels, titanium, and other metals. (Acheson Colloids Co., Dept. S288)

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**Pharmacologist; 8 years,** professor and head of pharmacognosy department, state university; 4 years, director of research, pharmaceutical company. Medical Bureau, Burneice Larson, Director, 900 North Michigan Avenue, Chicago. X

**Physiologist-Endocrinologist. M.S., male, 29;** have equivalent Ph.D. training, including 2 years of medical school. Experienced in teaching and research; publications; member, Sigma Xi. Desire research position and/or teaching. Box 129, **SCIENCE**. 5/3

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**Biophysicist, Ph.D.** preferred, for fundamental research in cardiac electrophysiology. University of Tennessee. Write Dr. Daniel A. Brody, 858 Madison Ave., Memphis 3, Tennessee. 5/3, 10, 17

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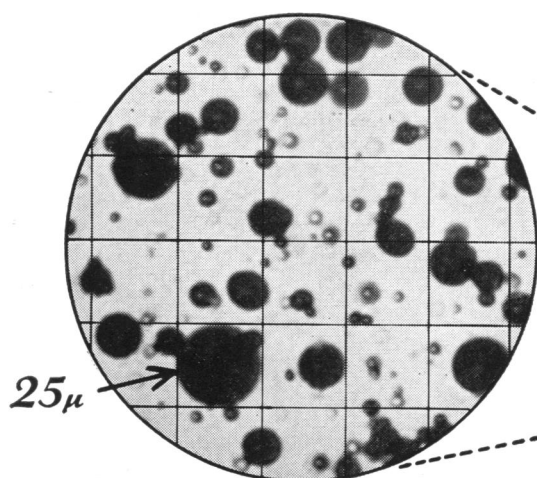
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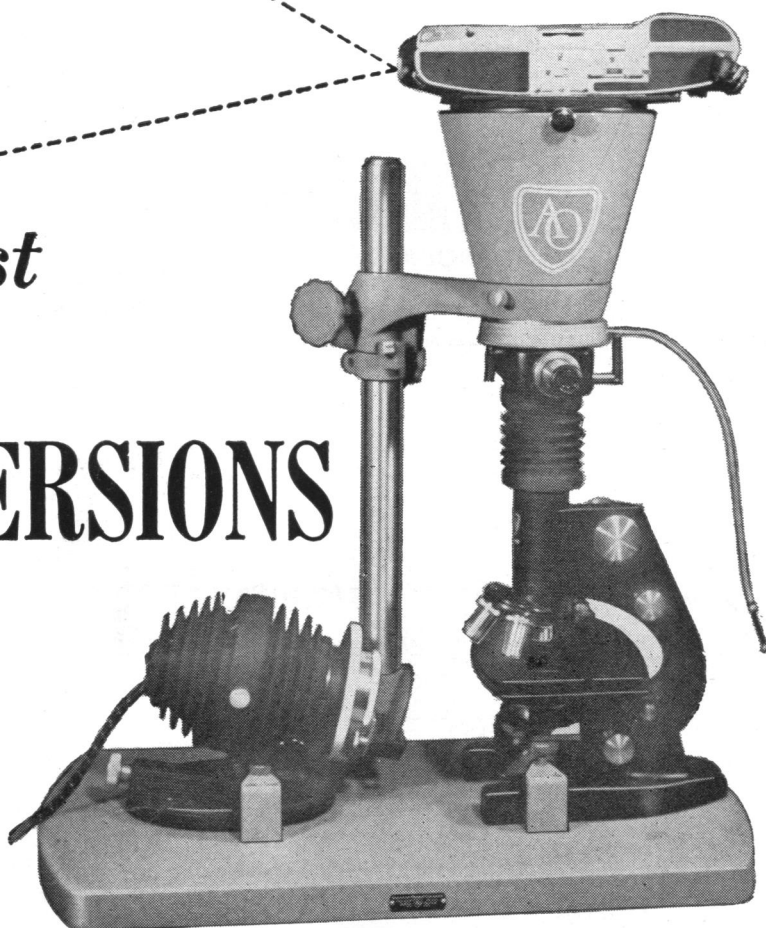


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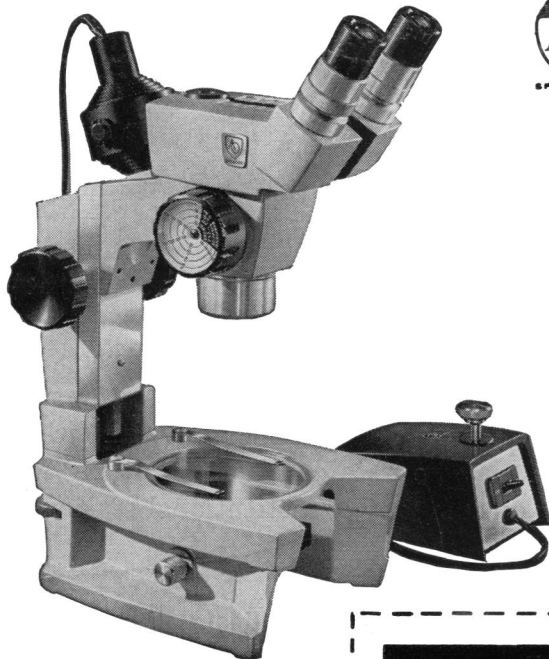
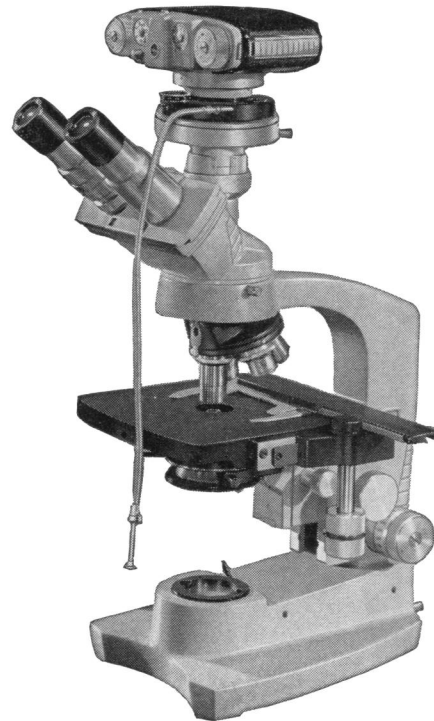
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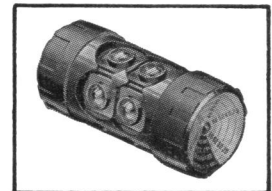
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