

## EPIDEMIOLOGY OF MENTAL DISORDER

AAAS Symposium  
Volume No. 60

Edited by Benjamin Pasamanick

A symposium organized by the American Psychiatric Association to commemorate the centennial of the birth of Emil Kraepelin; cosponsored by the American Public Health Association.

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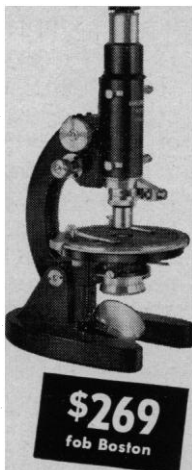
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## New Products

*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.*

**Chromatogram scanner** is a miniature apparatus designed for teaching purposes but capable of modest research applications. The scanner uses a standard end-window Geiger-Müller detector and collimators to scan continuous strips of paper up to 1 in. wide. It also accepts flow counters. The apparatus is also available as part of a complete chromatogram scanning system that includes a miniaturized recorder and a rate meter-demonstrator. (Atomic Accessories, Inc., Dept. Sci489, 811 W. Merrick Rd., Valley Stream, N.Y.)

**Phase and amplitude of the microwave electromagnetic field** over the aperture of an antenna is measured by the model APA-1 system. Operating frequency range is 2 to 40 kMcy/sec with sensitivity -80 dbm at 13 kMcy/sec. The lower frequency limit can be extended to 30 kMcy/sec. The probe is controlled from the operating console to measure the radio-frequency field over an antenna aperture. Phase accuracy and stability are said to be better than  $\pm 5$  deg over a 40-db dynamic range, and amplitude is measured to  $\pm 0.5$  db over the same range. The system can also be employed to make phase-amplitude measurements in closed wave-guide systems. (Scientific-Atlanta, Inc., Dept. Sci534, 2162 Piedmont Rd., NE, Atlanta, Ga.)

**Serial-type memory device** utilizes a quartz delay line to store 65 bits of information at a 10-Mcy/sec counting rate with access time less than 4  $\mu$ sec. The device is completely transistorized. (Andersen Laboratories, Inc., Dept. Sci546, 501 New Park Ave., West Hartford 10, Conn.)

**High-frequency transfer voltmeter** is designed to measure a-c voltages from 1 to 50 v at frequencies from 25 c to 30 Mcy/sec. The voltmeter consists of a transfer unit and a set of five probes each capable of use over a 2-to-1 range of voltage. The transfer unit houses a galvanometer, batteries, controls, and accurate dividers. Each probe contains a stable measuring resistor and a thermocouple. The voltage to be measured is applied to the probe producing a d-c output from the thermocouple.

This output is compared with a stable d-c source by null detection in the galvanometer. The probe is then connected to a d-c source, and the voltage is varied until the same thermocouple output is obtained as indicated by a null response of the galvanometer. The d-c input voltage is then measured with an accurate voltmeter. Accuracy of frequency response is said to be  $\pm 0.1$  percent from 25 cy to 10 Mcy/sec and  $\pm 0.5$  percent from 10 to 30 Mcy/sec. (Ballantine Laboratories, Inc., Dept. Sci549, Boonton, N.J.)

**Miniature d-c potentiometer**, model PC, is a self-contained instrument measuring 9 by 4.25 by 1.75 in. Measuring range is 0 to 5.100 volts with continuous resolution over a 100-division slide wire; accuracy is said to be  $\pm 0.05$  percent. Current ranges from 0 to 1 amp and additional voltage ranges to 500 v can be obtained when the instrument is used in combination with the manufacturer's model PC-S, plug-in range extension unit of the same shape and size. Accuracy of the latter is also  $\pm 0.05$  percent. Provision is made for mechanical and electrical zeroing of the galvanometer and readjustment of the reference source if necessary. (Sensitive Research Instrument Corp., Dept. Sci492, 310 Main St., New Rochelle, N.Y.)

**Electronic level** uses a pendulum and a pair of variable-inductance transducers to detect deviations from vertical. Indication is provided by a center-zero meter that may be located as much as 300 ft from the level. Response time is about 1 sec. The instrument is transistorized and battery operated. (Engis Equipment Co., Dept. Sci550, 431 S. Dearborn St., Chicago 5, Ill.)

**Magnetic-tape certifier** can be used with any tape transport at its normal speed and packing density. All channels are inspected simultaneously in a push-button controlled operation. When the start button is pushed, the tape moves until a drop-out occurs. After the tape is checked within the inspection area provided in the transport, it can be advanced or rejected. (Cybetronics, Inc., Dept. Sci544, 235 High St., Waltham 54, Mass.)

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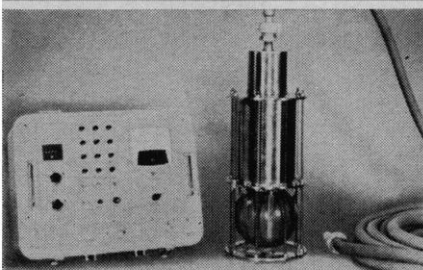
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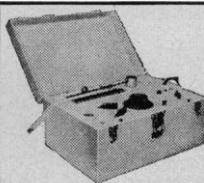
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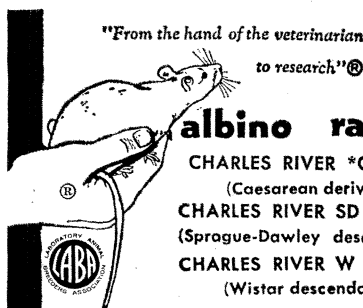
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**ASSISTANT RESEARCH PHARMACIST**—Major activities will be in the field of pharmaceutical product development and will include the preparation of pharmaceutical dosage forms based on basic concepts from the Product Development Committee. Must have a recent B.S. in pharmacy and some product development or manufacturing experience.

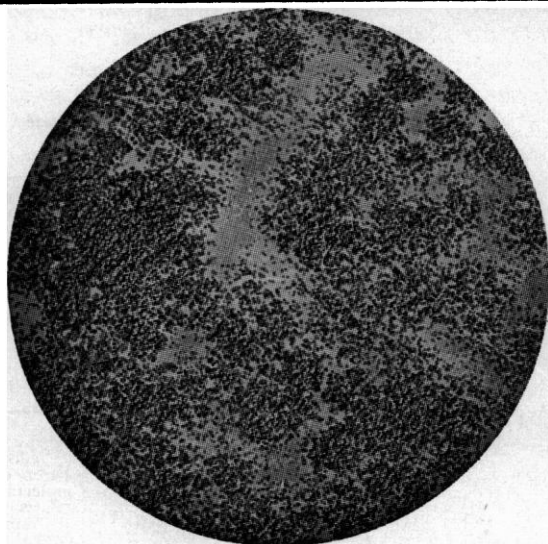
**ASSISTANT RESEARCH PHARMACIST**—Will work in pharmacy laboratory dispensing experimental products for investigative purposes. Must possess B.S. in pharmacy. State of Indiana registration and previous industrial or retail pharmacy experience will be helpful.

**ASSISTANT RESEARCH CHEMIST**—Principal responsibilities will involve analyzing active constituents of new pharmaceutical products during development stages and assist in working out assay procedures to facilitate studying new formulations under accelerated aging conditions. Must possess B.S. in chemistry or pharmacy. Industrial experience in a control laboratory of pharmaceutical or chemical firm is desirable.

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### \*ASPERGILLUS NIGER

Microphotograph of Miles-Ames strain of *Aspergillus niger* used in the production of citric acid.

This is another example of the contributions Miles-Ames scientists are making in advanced pharmaceutical areas. Working in modern facilities, including a new \$3,000,000 Research Center, and supported by the most up-to-date laboratory equipment obtainable, the Miles-Ames Professional Staff is expanding its studies in Biology, Biochemistry, Chemistry, Enzymology, Microbiology, Immunology, Pharmacology and Physiology. The continuing objective of these investigations is the development of new and more effective pharmaceutical products through creative research.

Inquiries may be directed in complete confidence to:

**DR. R. A. McCracken**, Coordinator of Management Recruitment

(Personal discussions can be arranged at your convenience, including Saturdays, in Elkhart, Indiana.)

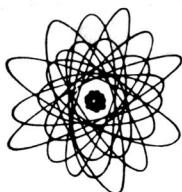
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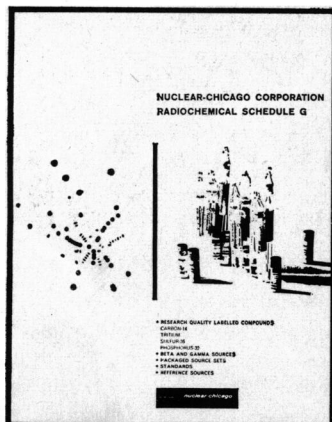


# NUCLEAR REVIEWS

from  
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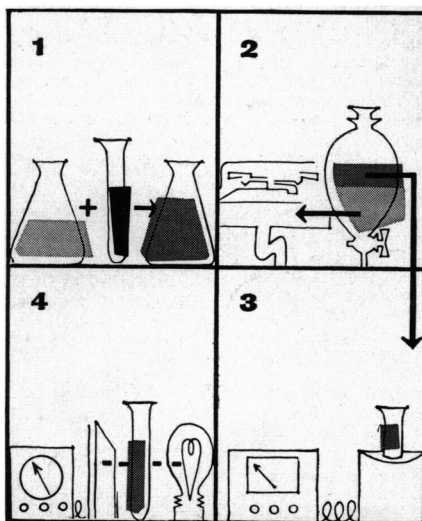
Just published, our *Radiochemical Schedule G* represents the handiest reference you can have on your desk for ordering radioactive chemicals, sources, or standards. For your convenience, 261 carbon-14 compounds have been listed under family classification, as well as alphabetically. Complete listings are presented on 78 tritium, 46 phosphorous-32, and 79 sulfur-35 compounds. An extensive selection of beta and gamma sources are offered individually or in economical packaged sets. Sixteen certified radioactivity standards are available for instrument calibration and for determining absolute counting efficiencies. With this 28-page manuscript, you will have at your fingertips the most up-to-date compilation of radioactive chemicals, sources, and standards available from any single supplier. Write for your copy today.



## ISOTOPES MAKE THIS PROBLEM EASY

Let's say you are a chemist and have a particularly tough analytical problem in which quantitative separation of the desired material ("A") is difficult, time-consuming, or impossible because of certain interfering materials in the crude sample. When you try to remove these interfering materials, an unknown and variable amount of the sought compound may be lost.

*Radioisotopic yield determination* can tell you how much of the sought compound is lost in purification, and provide you with a correction factor which is the missing link in the analysis. The technique is simple, inexpensive, and precise. The four drawings tell the story.

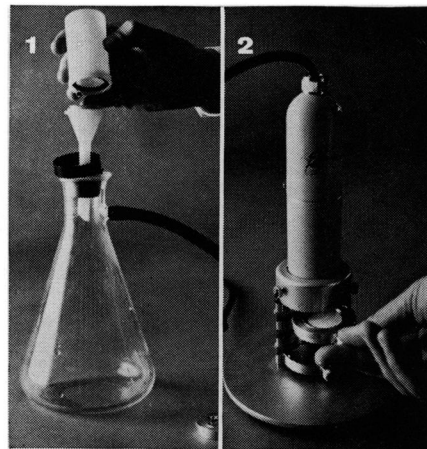


1) Mix a minute, known amount of *radioactive* compound "A" with the crude sample. 2) Purify the sample to remove all interfering substances. A substantial loss of the sought compound is permissible. It is not necessary to end up with pure compound "A." 3) Measure the radioactivity in the original and purified samples to determine the loss in the purification process. 4) Determine the amount of "A" in the purified sample. Any method of analysis may be used. Apply the correction factor from step 3 to obtain the amount of sought compound "A" in the original crude sample.

For complete details on the use of radioactivity in yield determination problems, and in other routine chemical techniques, write for a free copy of our newly published 28-page booklet *Analytical Procedures with Radioactive Isotopes*.

## SIMPLE SAMPLES

Student preparation of samples for radiochemistry experiments has been tedious and troublesome. But now a unique chimney funnel used with a porous steel sample disc on which the radioactive precipitate is deposited makes it easy for any student to prepare reproducible samples in minutes.



1) The disc is placed in the lower portion of the funnel. A suspension of radioactive material is added and the liquid phase filtered off. 2) The disc with its radioactive deposit is removed, dried and counted in a standard G-M tube mount. The disc is easily cleaned and may be used repeatedly.

Of course, if it is your intention to perform classroom radiochemistry experiments, you will need equipment other than just our chimney funnel. We recommend our Model 4001 complete classroom nuclear laboratory — a training system supplied with specially prepared texts outlining 33 experiments which readily integrate radiochemistry into your curriculum without disrupting existing course plans.

Each Model 4001 Training System (price \$965) is shipped complete with scaler, timer, mount, geiger tube, radionuclide set, two sample preparation sets (including funnels and discs), solid source set, radionuclide certificate book, nine experiment manuals and instructor notes manual. For full information, ask for the Model 4001 brochure.



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