FREEZE-DRYING?

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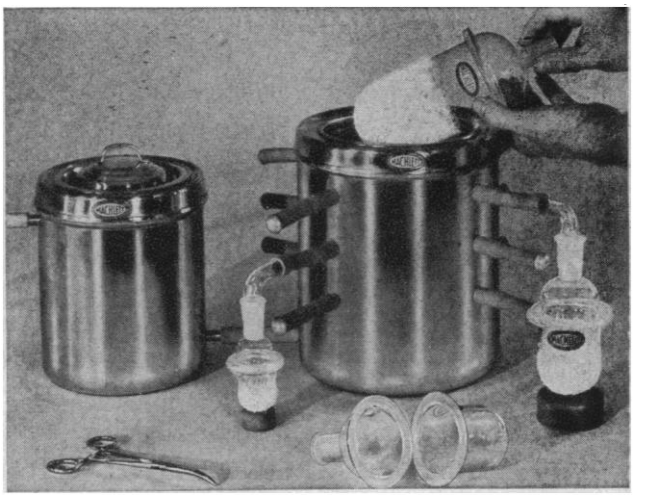
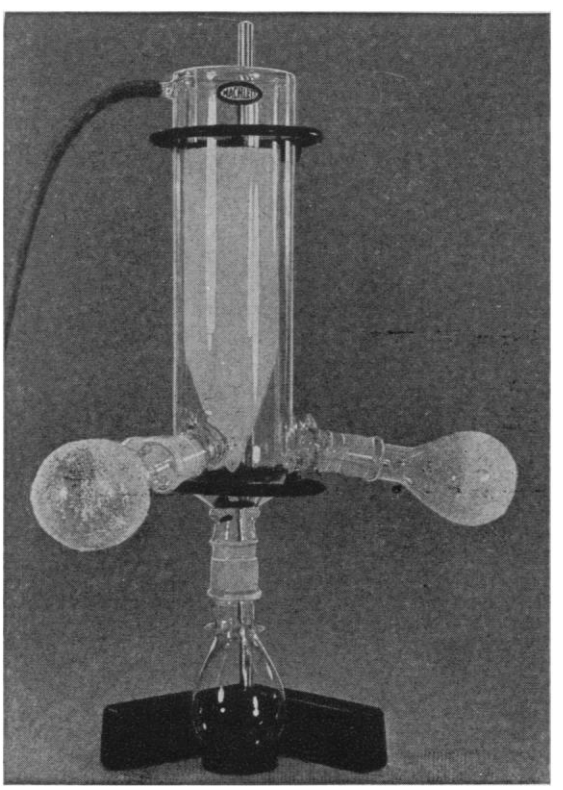
MACHLETT



New VirTis Stainless Steel Apparatus

A completely self-contained unit, this new freeze-drying apparatus does not require the conventional dry ice chamber, or condenser, etc. The inner 2.8 liter cooling chamber holds enough dry ice and solvent for unattended overnight operation. And, furthermore, because of its large capacity, it lends itself readily to shell freezing (see illustration).

Freeze-drying unit and trap are expertly made of polished 18-8 stainless steel and hence can be autoclaved after use with infectious materials.



The apparatus is fitted with 12 take-off taps capable of removing a minimum of 100 ml of water.

For added simplicity, freeze-drying flasks are designed with a wide mouth to facilitate easy removal of dried materials.

R36-693 Stainless Steel Drying Unit, without stainless steel trap and glass flasks $130.00

R36-683A Stainless Steel Trap 35.00

SPECIALLY DESIGNED FREEZE-DRYING FLASKS

R36-693B Flask, 25 ml	$ 8.00
R36-693C Flask, 50 ml	8.60
R36-693D Flask, 100 ml	8.80
R36-693E Flask, 250 ml	12.50
R36-693F Flask, 500 ml	14.00
R36-693G Adapters for flasks	2.50

Machlett All-Glass Freeze-Drying Apparatus

This economical self-contained unit is ideally suited for average freeze-drying operations.

Standing only 21″ high, this unit has a built-in dry ice and solvent chamber and three conveniently located ground, standard taper drying ports around its lower periphery. Standard size for joints is ₹ 34/45, but special sizes can be ground to your specifications.

R36-695 Machlett All-Glass Freeze-Drying Unit complete as illustrated with four flasks, 100, 200, or 250 ml capacity $64.00

R36-695A Machlett Freeze Drying Unit Only	$42.00
R36-695B Freeze Drying Flasks 100, 200 or 250 ml	3.00
R36-699F Support Stand and rings	10.00

All prices F.O.B. New York, N. Y.

For further information write for Bulletin FD

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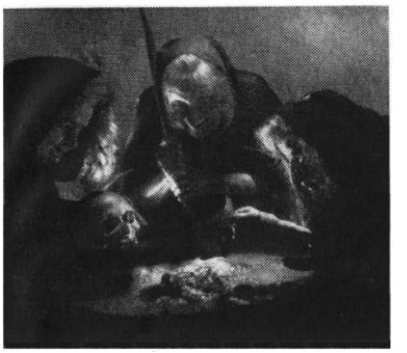
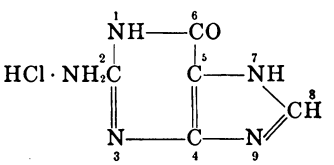


In Act IV, Scene 1 of *Macbeth* the weird sisters gather 'round the cauldron to work a reaction and catalog such items of medieval biochemistry as eye of newt and baboon's blood. Reminds us in a way of certain chemical spare parts of the life process to be found in various brown stock bottles in our own stockrooms.

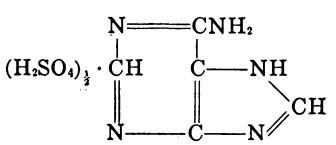
For example, our various modifications of purine:

Guanine Hydrochloride (Eastman 1606), which takes its name from the Spanish word for the droppings of seafowl, crops up (without the convenient HCl handle, of course) in many situations where the substance of flora and fauna is chemically disassembled. We can obtain this 2-amino-6-oxypurine either from fish scales found at the bottoms of barrels



that stand picturesquely on old New England wharves or as a by-product from the isolation of adenine. It is of some commercial importance as an ingredient of pearly lacquers.

Adenine itself we might obtain from glandular tissue or from tea, but we choose to make it from the nucleic acid in brewer's yeast. We



sell it as *Adenine Sulfate* (Eastman 1645).

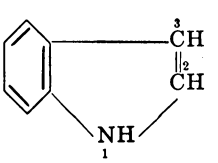
In nature the enzyme adenase deaminates adenine to 6-oxypurine and when this takes on water it becomes 2,6-dihydroxypurine, otherwise known as *Xanthine*, which is present in muscles, spleen, and urine and which we carry in highly purified crystalline form as Eastman 1644. One more oxygen in the 8 position of the purine structure gives *Uric Acid*, one of the principal constituents of kidney stones, available from us as purified crystals (Eastman 544).

When a pair of methyl groups attach themselves at the 3 and 7 positions of the xanthine molecule, it rises in the esthetic scale and becomes *Theobromine*. This contains no bromine, of course, but gets its name from a combination of Greek roots implying "food for the gods" because it is the principal alkaloid of chocolate. With us it's Eastman 1690.★

One more methyl group, attached at the 1 position through the metabolism of certain semi-tropical shrubbery, brings us to the beloved alkaloid *Caffeine* (Eastman 355)★ and the end of our present line of purines.

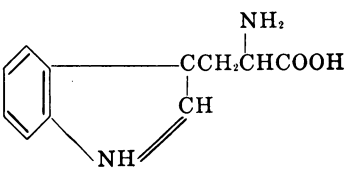
Or take our indoles:

Indole (Eastman 2773), the parent compound, is found in jasmine, orange blossoms, and feces. When a methyl group clings at the 3 position, you have *Skatole*, the most fundamentally unpleasant of all the stenches we keep in bottles. (As a precaution in case of accident, we have assigned *Skatole* to



a chemist who happens to be olfactorily totally blind and deaf—a valuable man.) Despite its central role in scatology, *Skatole* is also a fixative in fine perfumery. Where in the misty seas between psychophysics and psychoanalysis lies the explanation of this dichotomy, we know not.

Both indole and skatole are breakdown products of the essential amino acid L-(-)-*Tryptophane*. This, too, we



stock as Eastman 2025. (At less than half the price we can also supply DL-*Tryptophane* (Eastman 5578).)

One aspect of indole chemistry that would surely have interested the sisters is represented by *3-Indoleacetic Acid* (Eastman 4271), *3-Indolepropionic Acid* (Eastman 2530), and *3-Indolebutyric Acid* (Eastman 4275)—auxins all. They would have enjoyed using them to confound a bean sprout trying to get itself properly pointed between light and darkness. Whether they would have had similar interest in *1,3-Dimethylindole* (Eastman 5331) and *3-(2-Aminoethyl)indole Hydrochloride* (Eastman 2954) is open to speculation.

Whether or not these purified purines and indoles can serve your purposes as analytical standards or as weapons for deep probing into the nature of life, there are more than 3500 other compounds you can order from the catalog of Eastman Organic Chemicals. If you haven't a copy, write *Distillation Products Industries*, Eastman Organic Chemicals Department, Rochester 3, N. Y.

★Though *Theobromine* and *Caffeine* have pharmaceutical uses (as diuretics, among other applications), we sell them for chemical purposes exclusively and only on written assurance that they will not be used or resold as drugs or food.

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Miscellaneous Publications

The Amphibians and Reptiles from Rancho La Brea. Transactions, Vol. XI, No. 14. Bayard H. Brattstrom. 27 pp. Illus. ***West American Razor-Clams of the Genus*** Ensis. Volume XI, No. 15. S. Stillman Berry. 11 pp. Illus. ***Notices of New West American Marine Mollusca.*** Vol. XI, No. 16. S. Stillman Berry. 23 pp. Illus. San Diego, Calif.: San Diego Society of Natural History, 1953.

Annual Report, 1951. Central Laboratories for Scientific and Industrial Research. Hyderabad–Deccan, India: Osmania Univ. Press, 1953. 57 pp.

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Artículos Científicos Publicados en América Latina, 1950. Vol. 3. Montevideo, Uruguay: Centro de Cooperación Científica de la UNESCO para América Latina, 1952. 323 pp.

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Current Biological Research in the Alaskan Arctic. Univ. Ser., Biological Sciences, Vol. XI. Ira L. Wiggins, Ed. Stanford, Calif.: Stanford Univ. Press, 1953. 55 pp. Illus. $1.00.

Driver Characteristics and Accidents. Highway Research Board Bull. 73. 54 pp. Illus. 90¢. ***Traffic-Accident Studies.*** Bull. 74. 53 pp. Illus. 90¢. Washington 25, D. C.: National Academy of Sciences, National Research Council, 1953.

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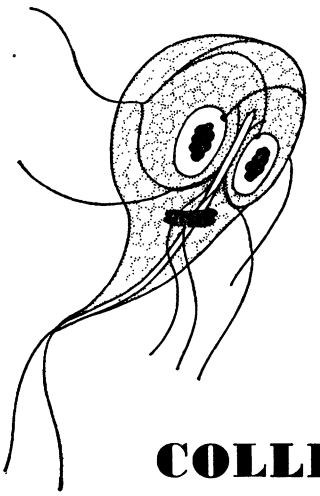
First International Seaweed Symposium, 1952. Held in Edinburgh July 14–17, 1952. Inveresk, Midlothian, Scotland: Institute of Seaweed Research, 1953. 129 pp. Illus. 10s 6d.

Graphs of the Compton Energy-Angle Relationship and the Klein-Nishina Formula from 10 Kev to 500 Mev. National Bureau of Standards Circ. 542, 1953. Ann T. Nelms. 89 pp. Illus. 55¢. ***Probability Tables for the Analysis of Extreme-Value Data.*** Applied Mathematics Ser., No. 22, 1953. 32 pp. Illus. 25¢. Order from: Government Printing Office, Washington 25, D. C.

The Mayflies, or Ephemeroptera, of Illinois. Bulletin, Vol. 26, Art. 1. B. D. Burks. Urbana: Illinois Natural History Survey, 1953. 216 pp. Illus.

Production and Marketing of Wood Piling and Poles in the Northeast. Station Paper No. 57. Myron D. Ostrander. 23 pp. Illus. ***Increasing the Efficiency of Airphoto Forest Surveys by Better Definition of Classes.*** S. P. No. 58. C. Allen Bickford. 9 pp. ***Use of Aerial Photographs in Estimating Forest Drain.*** S. P. No. 59. C. Allen Bickford. 10 pp. Upper Darby, Pa.: Northeastern Forest Experiment Station, 1953.



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Meetings & Conferences

January

23–28. American Meteorological Soc., New York City. (K. C. Spengler, 3 Joy St., Boston 8, Mass.)

25–27. American Soc. of Heating and Ventilating Engigineers, 60th annual, Houston, Tex. (A. V. Hutchinson, 62 Worth St., New York 13.)

25–27. Conf. on High Energy Nuclear Physics, 4th annual, Rochester, N.Y. (R. E. Marshak, Dept. of Physics, Univ. of Rochester.)

25–29. Inst. of the Aeronautical Sciences, annual, New York City. (S. P. Johnston, 2 E. 64 St., New York 21.)

28. American Federation for Clinical Research, annual, Portland, Ore. (I. S. Edelman, San Francisco Hospital, San Francisco 10, Calif.)

28–30. American Physical Soc., New York City. (K. K. Darrow, Columbia Univ., New York 21.)

28–30. American Assoc. of Physics Teachers, New York City. (R. F. Paton, Univ. of Illinois, Urbana.)

28–30. High Speed Computer Conf., Baton Rouge, La. (L. Megginson, Louisiana State Univ., Baton Rouge.)

29–30. American Geophysical Union, Los Angeles, Calif. (J. P. Marble, 3221 Macomb St., NW, Washington, 8, D.C.)

29–30. Conf. on Protein Metabolism, 10th, New Brunswick, N.J. (W. H. Cole, Rutgers Univ., New Brunswick.)

29–30. Western Soc. for Clinical Research, 7th annual, Portland, Ore. (H. N. Hultgren, Stanford Hospital, San Francisco 15, Calif.)

February

1–5. American Soc. for Testing Materials, Spring, Washington, D.C. (R. J. Painter, 1916 Race St., Philadelphia 3, Pa.)

4. Instrument Soc. of America, Regional Conference, 9th annual, New York City. (L. Butzman, 103 Park Ave., New York, N.Y.

4–6. American Soc. for Quality Control, Textile Quality Control Conf., 4th annual, Raleigh, N.C. (D. Shainin, 70 E. 45 St., New York, N.Y.)

4–6. Inst. of Radio Engineers Conf. and Electronic Show, Tulsa, Okla. (D. R. Davis, P.O. Box 7221, Tulsa.)

5–6. Chicago Ophthalmology Soc., annual clinical, Chicago, Ill. (F. W. Newell, 950 E. 59 St., Chicago 37.)

7. Assoc. for Research in Ophthalmology, Midwest Section annual, Chicago, Ill. (F. W. Newell, 950 E. 59 St., Chicago 37.)

8–9. Conf. on Marine Corrosion Problems, Berkeley, Calif. (Dept. of Conferences and Special Activities, Univ. of California, Berkeley.)

13–14. American Educational Research Assoc., Atlantic City, N.J. (F. W. Hubbard, 1201 16 St., NW, Washington, D.C.)

14–16. National Soc. of College Teachers of Education, Atlantic City, N.J. (C. E. Eggertsen, School of Education, Univ. of Michigan, Ann Arbor.)

12–25. Latin American Cong. of Oto-Rhino-Laryngology, 3rd, Caracas, Venezuela. (V. Marquez Reverson, Centro Medico, Caracas.)

15–18. American Inst. of Mining and Metallurgical Engineers, New York City. (E. H. Robie, 120 E. 41 St., New York 17.)

19–25. International Management Cong., 10th, São Paulo, Brazil. (P. S. M. Phillips, Management House, Hill St., London W. 1, Eng.)