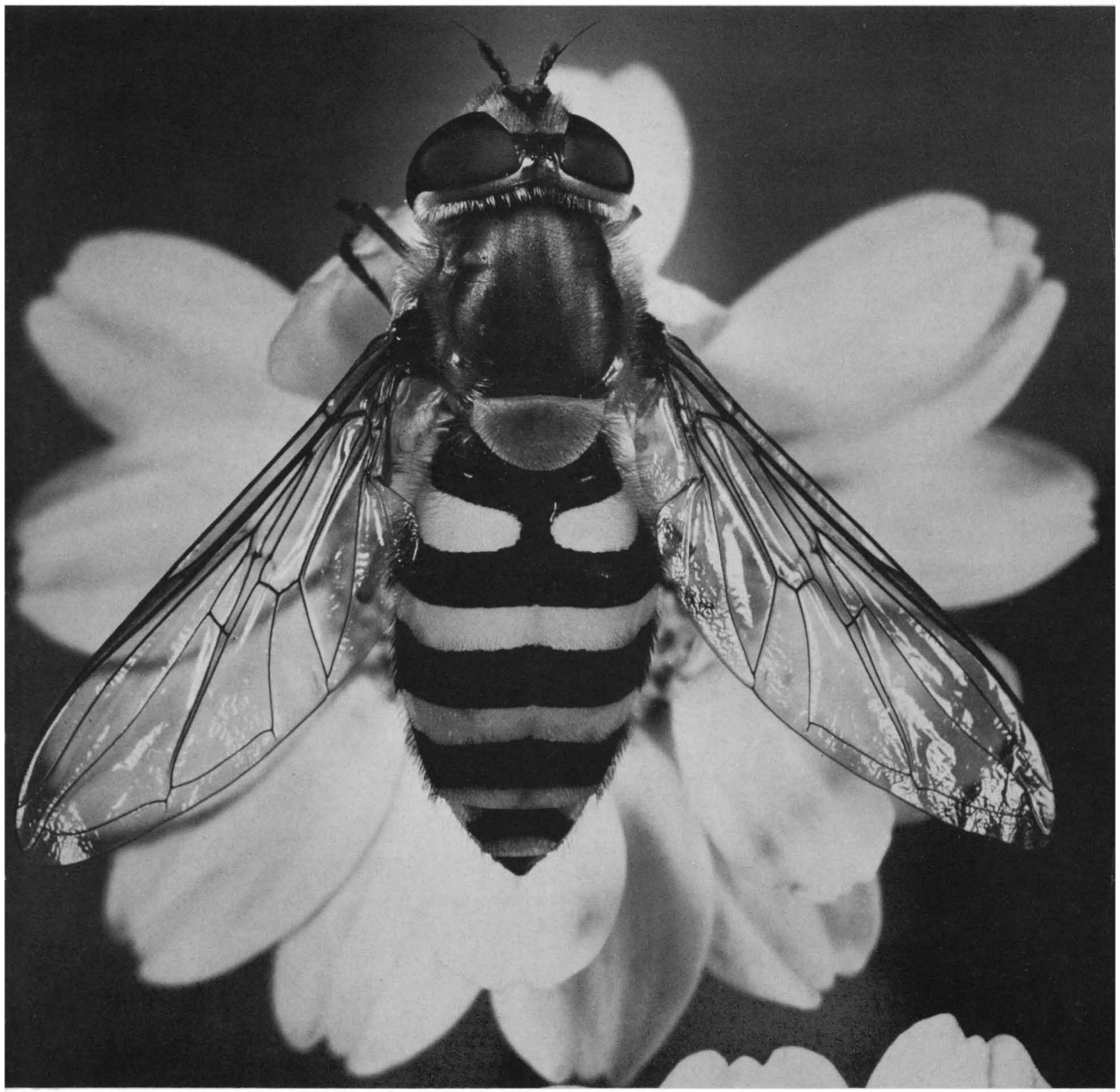
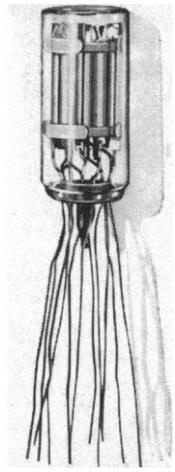
SCIENCE 11 December 1964
Vol. 146, No. 3650
AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



HOVER FLY

shown actual size



RCA-8571
WORLD'S SMALLEST PHOTOMULTIPLIER

• RUGGED
• VERY FAST TIME RESOLUTION CHARACTERISTICS
• SENSITIVE

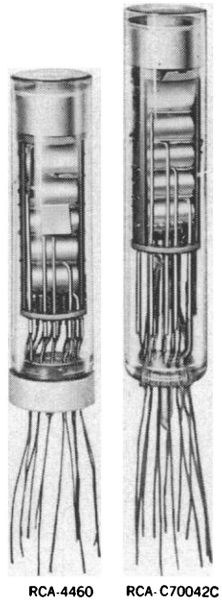
INCREASES YOUR PAYLOAD VERSATILITY AND CAPABILITY FOR EXPERIMENTS IN SPACE OR UNDERGROUND EXPLORATION

RCA-8571 is the smallest photomultiplier in the world. Its ½"-diameter size enables scientists to conduct more experiments in the same payload in critical applications involving high mechanical stress. Capable of withstanding extreme shock and vibration, this new, developmental tube becomes a premier product in a rugged and miniaturized line of RCA Photomultipliers for exploration thousands of feet underground or thousands of miles in space.

The RCA line also includes developmental type C70042C, the first ¾"-diameter photomultiplier with an S-20 spectral response. Having a flat faceplate and a curved photocathode, this 10-stage tube is especially recommended for use in laser detection to 8000 angstroms.

RCA-4460 is a ruggedized version of the successful RCA-7767, and is designed to meet specifications of MIL-E-5272C for equipment mounted on the structures of missiles launched by high-thrust engines.

These tubes have all been successfully employed at the low-light levels generally encountered in underground geological explorations and space environments.



RCA-4460 RCA-C70042C

To suit particular design or experimental needs, each of these types is available in potted versions or with semiflexible leads. Call your RCA Representative for complete details. For technical data, write: Commercial Engineering, Section L116Q-2, RCA Electronic Components and Devices, Harrison, N.J.

Type	Diameter	Cathode Spectral Response	Spectrum Range in Å	Maximum Response in Å	TYPICAL CHARACTERISTICS AT 25°C					
					Approx. Cathode Quantum Eff. %	Anode Volts	Radiant Sensitivity Amp/Watt	Current Amplification	EADCI** *Watts	ENI*** *Watts
8571	½"	S-4	3000-6200	4000	9	1000	4.3×10^{4}	1.5×10^{6}	2.5×10^{-13} Max.	
C70042C	¾"	S-20	3000-8000	4200	19	1500	2.6×10^{3}	4×10^{6}	2.3×10^{-13}	5.9×10^{-15}
4460	¾"	S-11	3000-6500	4400	14	1250	6×10^{3}	1.25×10^{5}	1×10^{-13}	3.7×10^{-15}
C70102B	¾"	S-1	4200-11000	8000	.37	1250	1.2×10^{3}	5×10^{6}	3.2×10^{-9}	1.4×10^{-13}

*Values of Radiant Sensitivity, EADCI and ENI are given at the wavelength of maximum response. A variety of window materials are available in extending the usable spectrum into the UV.
**Equivalent Anode Dark Current Input ***Equivalent Noise Input

ALSO AVAILABLE THROUGH YOUR AUTHORIZED RCA INDUSTRIAL TUBE DISTRIBUTOR

The Most Trusted Name in Electronics

11 December 1964
Vol. 146, No. 3650

SCIENCE

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AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

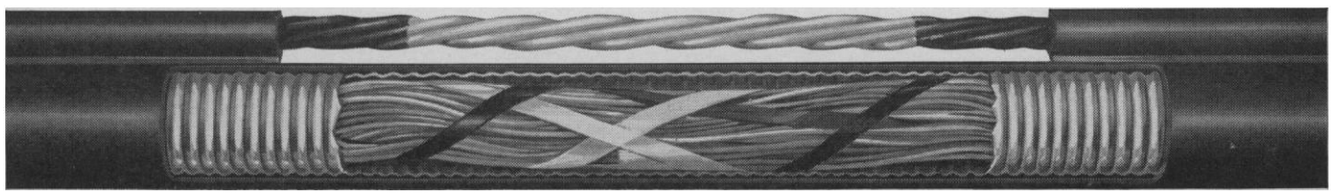
COVER

Hover flies (*Syrphus ribesii*) may be recognized by a longitudinal, false vein in the wings between the radius and the media. Many are brightly colored and resemble bees, bumble bees, and wasps. They feed upon nectar and pollen of flowers and are of value as pollinators of many plants. See review of *The Amazing World of Insects*, page 1451. [Macmillan Company and A. Oosthoek Publishing Company]

Report from

BELL LABORATORIES

"UNDULATED" CORE MAKES SELF-SUPPORTING CABLE PRACTICAL



ABOVE: Drawing of new self-supporting cable structure shows "undulated" core of telephone wires encased in aluminum and polyethylene sheath members. Edges of corrugated aluminum sheath are butted along top of cable. Polyethylene sheath extends over steel strand on top to provide built-in cable support. BELOW: Photographs show, left to right, older-type ring-supported cable, present lashed cable, and new self-supporting cable.

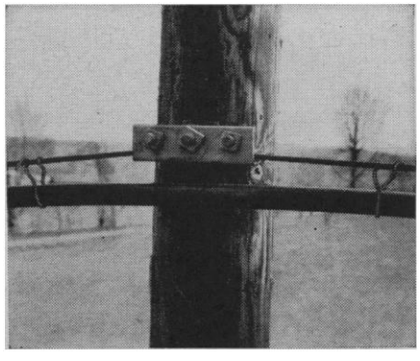
Telephone cables strung along pole lines need mechanical support. Heretofore, this support has been provided by a separate, strong steel strand from which the cable is suspended—either by wire rings or by a lashing wire wound helically around the strand and cable.

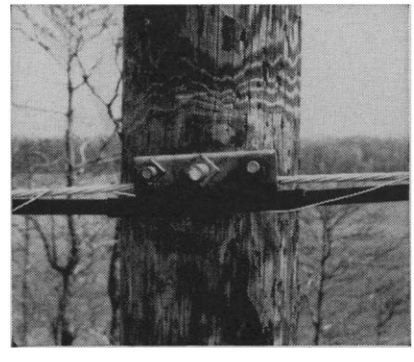
For ease of installation it is desirable to design the cable and strand into a single self-supporting structure. But in such designs the cable sheath and its core of telephone wires, as well as the strand, may be placed under tension when suspended between poles. With the wires under tension, craftsmen have no readily available slack wire, which is needed in making connections for bringing service to a customer's house.

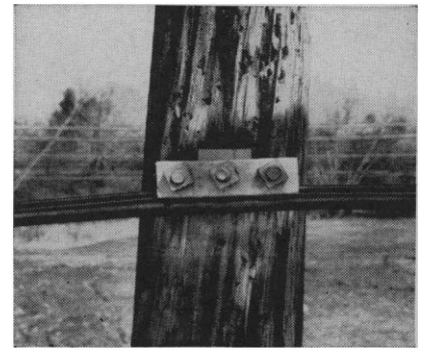
To solve this problem Bell Laboratories engineers, working in close cooperation with engineers of the Western Electric Company, manufacturing unit of the Bell System, "built the slack into the cable." The slack is provided by an undulation incorporated into the core of telephone wires. To help prevent the polyethylene cable sheath from tightening around the wires during manufacture, the longitudinal edges of a corrugated aluminum sheath member are butted up against each other, rather than overlapped as in other cables.

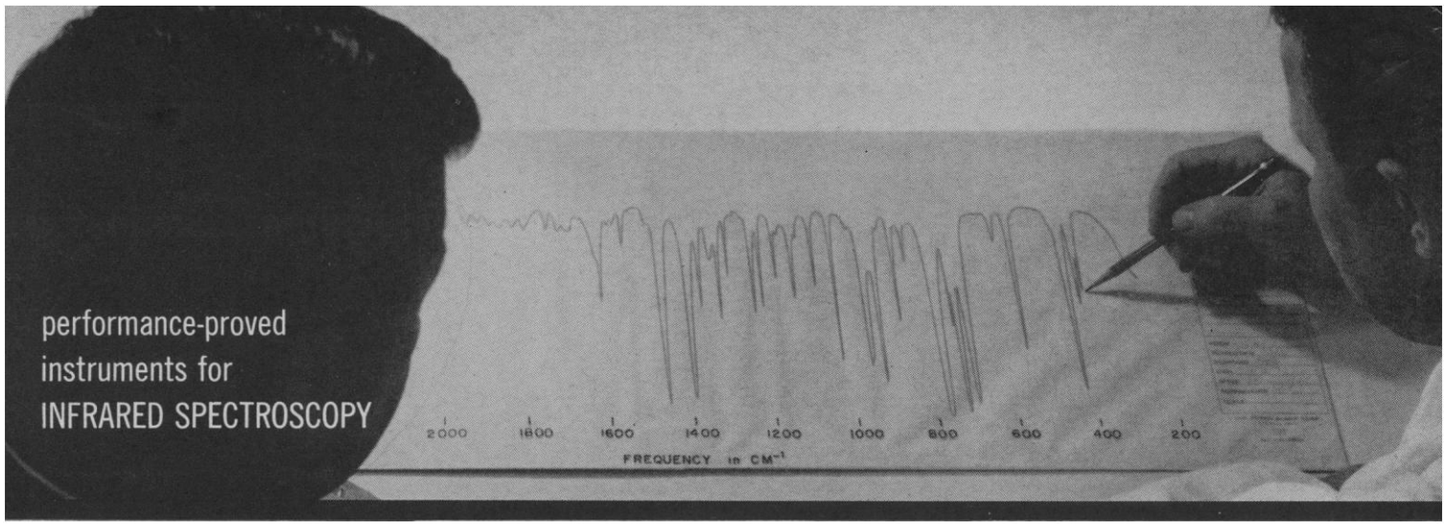
The new cable permits both efficient and economical construction methods. It is rapidly raised, tensioned, and clamped to poles. Craftsmen easily pull slack wire from the cable and, using plastic "ready access" terminals, make the required connections.

Bell Telephone Laboratories
Research and Development Unit of the Bell System









Spectrum above shows excellent performance of Model 521 beyond 400 cm^{-1} in a scan of indene.

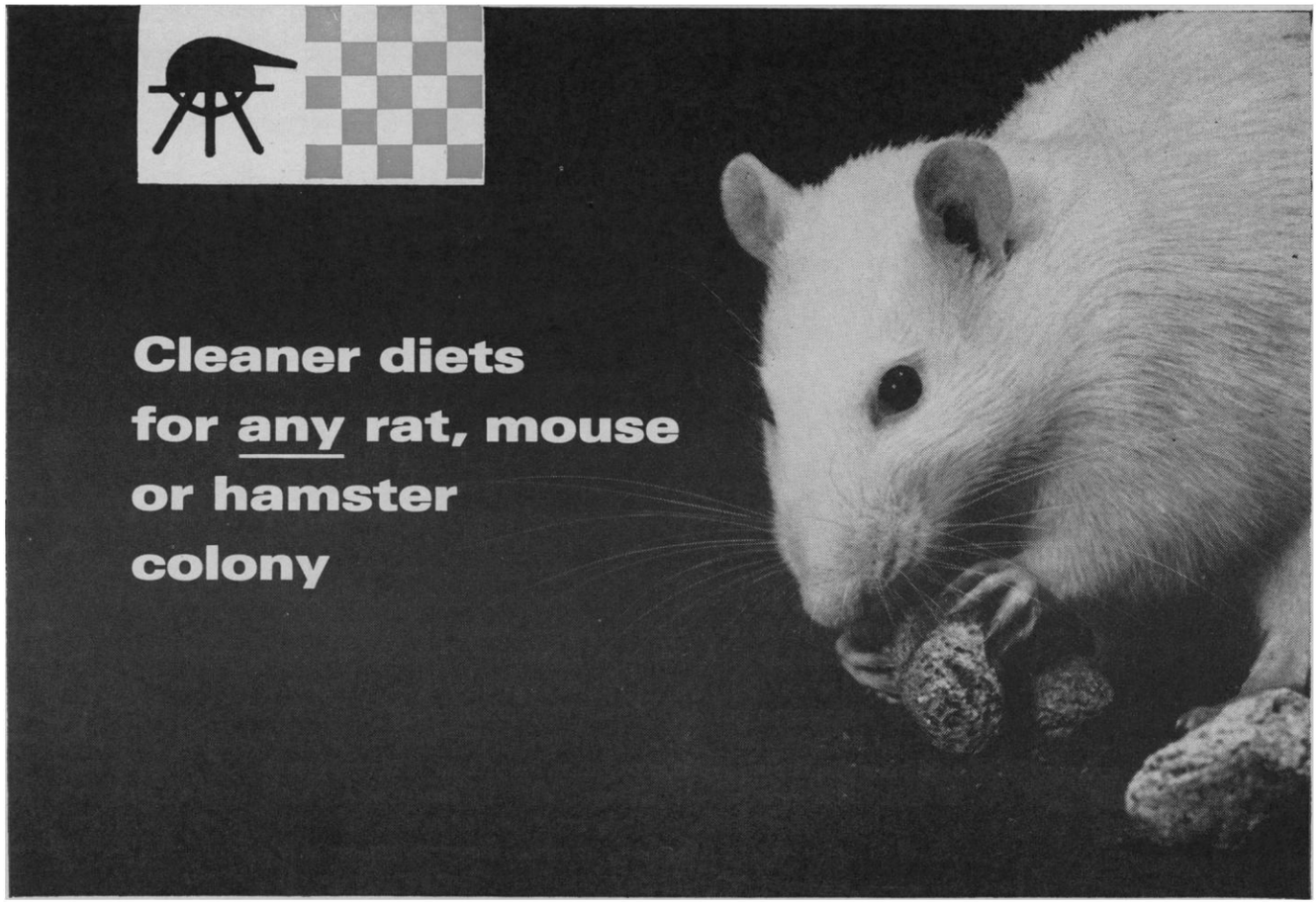
GET PROVEN, WIDE CONTINUOUS SCANNING RANGE WITH THE PERKIN-ELMER MODEL 521 SPECTROPHOTOMETER

Stretch your analytical spectrum from fundamental to far infrared with Perkin-Elmer's laboratory-tested Model 521 Grating Infrared Spectrophotometer. The Model 521 gives a continuous scanning range from 4000 to 250 cm^{-1}. Spectra are recorded on convenient-sized chart paper without gaps or overlaps.

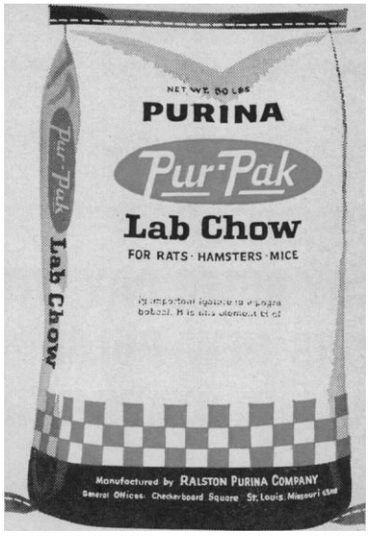
The filter-grating monochromator—a Perkin-Elmer first—has a short-path, fast f/4.5 optical system. This sophisticated system maintains energy levels and permits full-range analysis of extremely small samples in low concentrations.

The Model 521's low-frequency coverage gives important analytic information about the presence and nature of many organic bonds and structural groups: ethers, esters, ketones, organic acids, carbon-halogen and out-of-plane aromatic carbon-hydrogen bonds, and many polyatomic inorganic anions. Metal-oxygen, metal-sulfur, sulfur-X and phosphorus-X absorptions also occur in the lower frequencies...well beyond the range of conventional KBr fore-prism instruments.

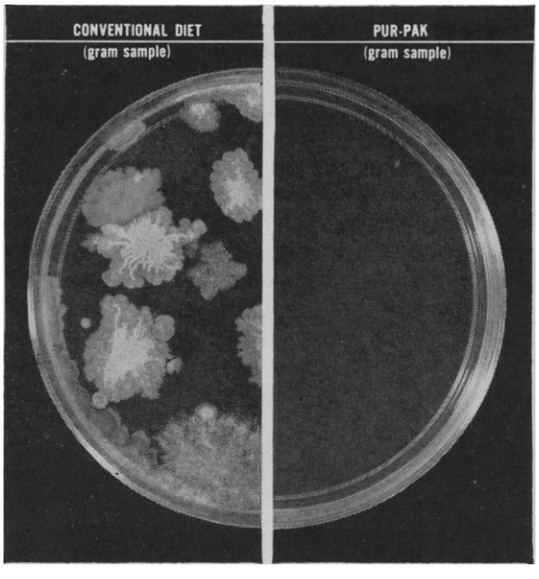
The Model 521 Interchange is available as a separate unit, and is compatible with Model 221 or 421 Spectrophotometers. For more information, write to Instrument Division, Perkin-Elmer Corporation, 910 Main Avenue, Norwalk, Connecticut.



Purina® Pur-Pak™



Some breeders and experimenters think Pur-Pak is only for SPF colonies. Not so.

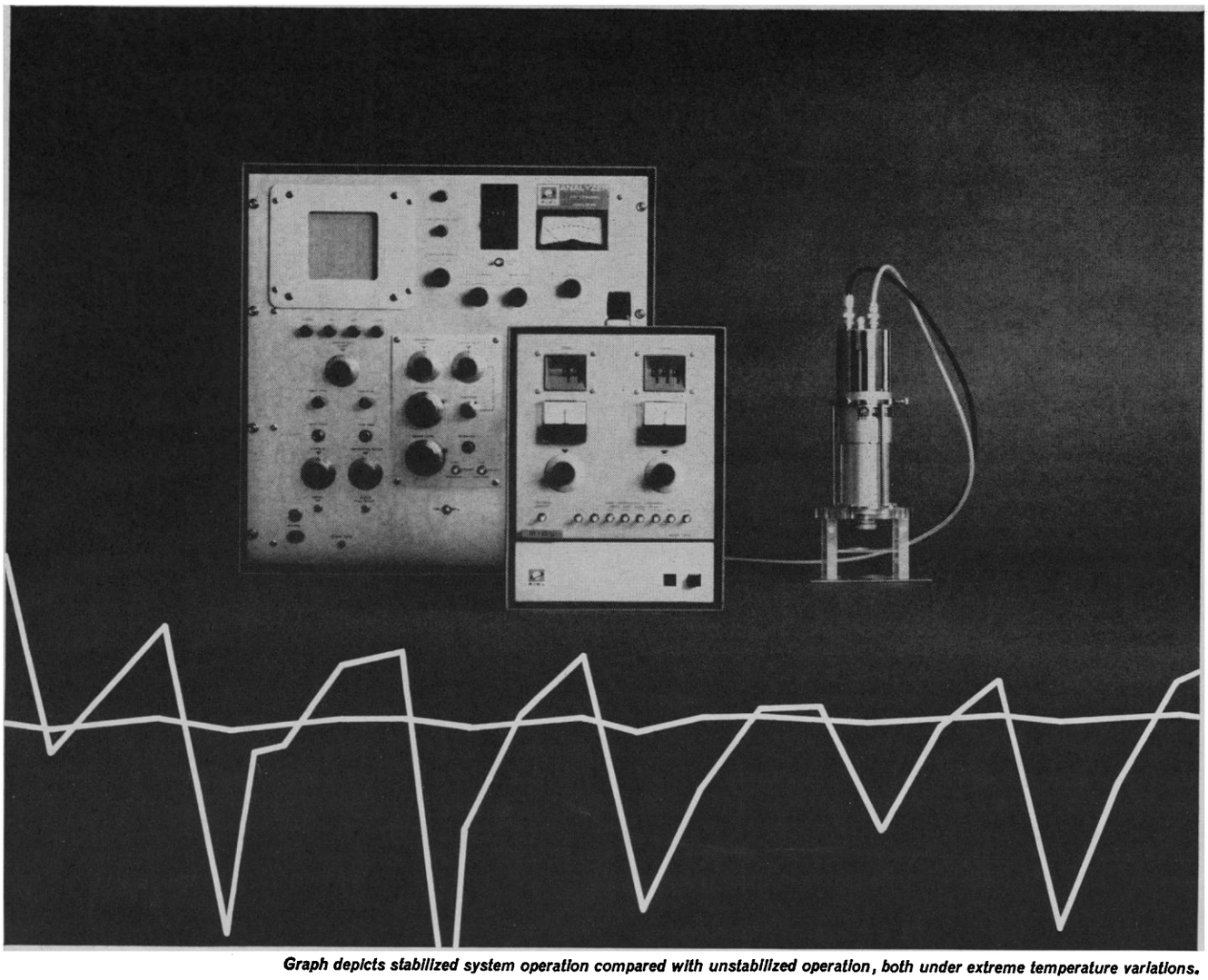


Purina Pur-Pak diets are pasteurized. This makes them safer and cleaner for all breeder and maintenance colonies of rats, mice and hamsters.

Pur-Pak is the product of choice for any colony kept under normally clean conditions. It is the first feed pressure-processed to reduce chances of introducing disease into the colony from diet sources.

Although the cost is a little more, expected increases in experimental accuracy and reduction in research failures due to disease will more than pay the slight additional yearly cost.

For more information, consult your Purina salesman or dealer (look under "Feed—Retail" in the Yellow Pages). Or write H. A. Graff, Ralston Purina Co., Checkerboard Square, St. Louis, Mo. 63199.



Graph depicts stabilized system operation compared with unstabilized operation, both under extreme temperature variations.

REPRODUCIBLE CONDITIONS DAY AFTER DAY WITH THIS NEW PULSE HEIGHT STABILIZER

Now you can eliminate multichannel analyzer system gain and zero drift. The new RIDL 39-6 Digital Pulse Height Stabilizer allows you to use an analyzer system without recalibration over an extended period of time regardless of independant drifts in the detector, H. V. supply, amplifier, and ADC. The 39-6 limits drift to 0.1% over the dynamic range of the experiment.

With the 39-6, instrument conditions in the system can be reproduced from experiment to experiment. It can be used with scintillation, proportional, and solid state detectors. Comparison of data from the same system can be made with assurance that the over-all system conditions are identical. Stabilization is effected on experiment peaks stored in the analyzer, or on peaks supplied from external sources such as light, an alpha source imbedded in the crystal, or from a pulse generator. External peaks will not store in analyzer (if desired).

System stabilization is continuous throughout all operating modes of the analyzer. The Model 39-6 monitors the output of the analyzer ADC which functions continuously during Accumulate, Stand-by, and Readout.

The Model 39-6 provides digital selection of two effective channels. The lower channel number, selected with two digital indicating switches, determines the control point for ADC zero intercept correction. The higher channel number, selected with three digital switches, is set to an energy peak (or the pulse generator amplitude); this determines the control point for system gain correction. Both channel selections are obtained easily with a calibration step prior to system operation.

To find out more about the unusual stabilizing capability of the 39-6, and the many ways it can enhance the value of your RIDL analyzer (Models 34-8, 34-12, or 34-12B) see your RIDL sales representative, or write for literature, and specifications. NUC:R-4-228

RIDL

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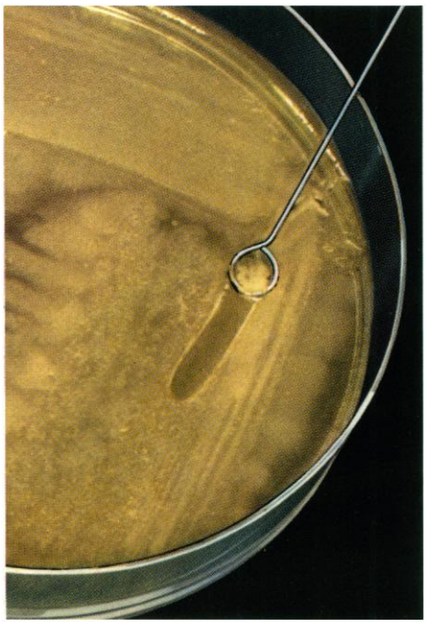
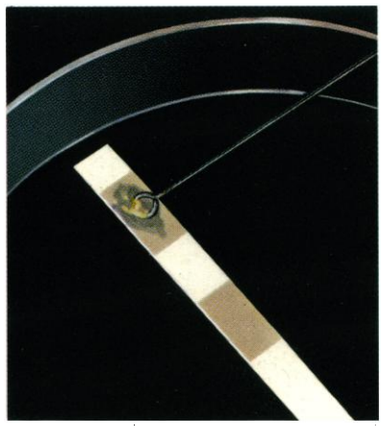
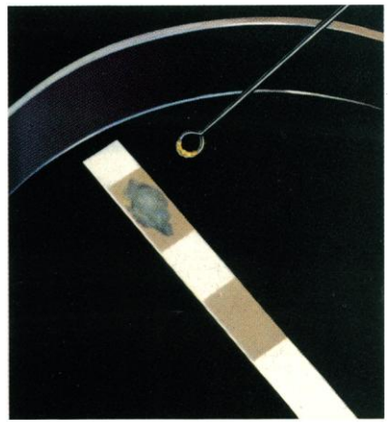
Scientists and engineers interested in challenging career opportunities are invited to contact our personnel director.



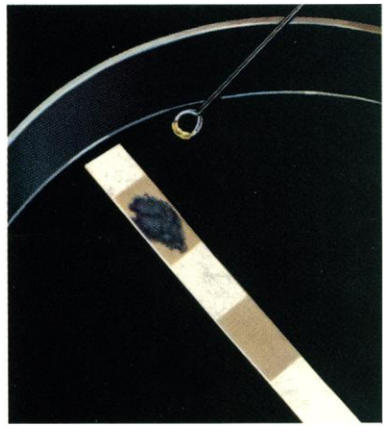
1 Pick up a loopful of pure culture

2 Rub it on the reagent zone





3 Color begins to develop...within seconds



POSITIVE in 30 seconds

Identify *PSEUDOMONAS* with **PathoTec™-CO***

cytochrome oxidase test paper

New PathoTec test papers for identification of pathogenic organisms eliminate preparation of reagents and/or media. Tests are much simpler to perform. Reactions are much more rapid. Reagents are stable indefinitely under refrigeration.

Clip out and return the coupon for more information on PathoTec-CO, or for information on the other PathoTec tests:

PathoTec-LD 3-6 hour lysine decarboxylase test for presumptive identification of *Salmonella*

PathoTec-PD 5-10 minute phenylalanine deaminase test for *Proteus*

PathoTec-U 2 hour urease test to differentiate *Proteus* from Providence group

GENERAL DIAGNOSTICS DIVISION
WARNER-CHILCOTT DIV. MORRIS PLAINS, N. J.

*U.S. PAT. NO. 3122480

General Diagnostics:
Please have your representative call. I would like more information on

☐ PathoTec-CO ☐ PathoTec-LD
☐ PathoTec-PD ☐ PathoTec-U
☐ Diagnostic Plasma/Warner-Chilcott for coagulase testing

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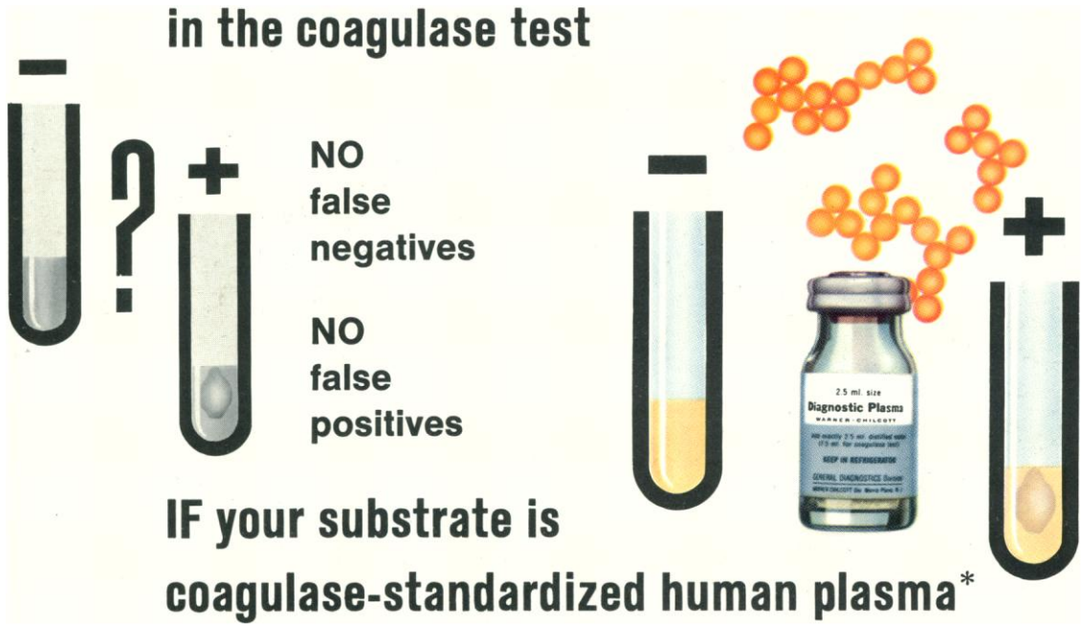
S1



With nonhuman plasma you may get false positive results because of "species differences in coagulase activators and strain differences in coagulase production."[1] Tompsett[2] used human plasma in differentiating between *Staphylococci* with negative and positive clumping factor—because rabbit plasma gave coagulase positive reactions in **all** of them.

With human plasma over four hours old (as blood bank plasma is very likely to be) **you may get false negative results.** In a comparison study,[3] lyophilized human plasma* detected 122 strains of proven pathogenic *Staphylococci* by positive coagulase reactions; pooled plasma over 4 hours old detected only 91. With plasmas of dubious age it is possible that, even within a 24-hour period, no clot will form. On the other hand, the coagulase-producing organism may also produce staphylokinase[4,5] which, within a 24-hour period, may cause a formed clot to lyse.

Diagnostic Plasma/Warner-Chilcott gives results identical to those obtained with freshly drawn human plasma.[6,7] It is standardized against strongly positive, weakly positive and negative coagulase-producing *Staphylococci*. From vial to vial, lot to lot, Diagnostic Plasma/Warner-Chilcott contains optimal concentrations of clotting factors. Results are usually visible within one hour,[7] always within three hours.

Ask your General Diagnostics representative about Diagnostic Plasma/Warner-Chilcott—the ideal substrate for the coagulase test. Or return the handy coupon for more information.

When ordering,
specify *DIAGNOSTIC PLASMA/WARNER-CHILCOTT

Diagnostic Plasma/Warner-Chilcott is available in boxes of:
10 vials, 2.5 ml. size (15 coagulase tests per vial)
10 vials, 0.5 ml. size (3 coagulase tests per vial)

Fill in your requests on the reverse side; cut out and return this coupon to:

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WARNER-CHILCOTT
201 TABOR ROAD
MORRIS PLAINS, NEW JERSEY

1. Rammelkamp, C. H., Jr., and Lebovitz, J. L.: Ann. New York Acad. Sc. *65*:144, 1956.
2. Tompsett, R., in Finland, M., and Savage, G. M.: Antimicrobial Agents and Chemotherapy, Ann Arbor, Braun-Brumfield, 1961, pp. 67-73.
3. Waller, E. J.: Hosp. Topics *35*:111, 1957.
4. Lack, C. H.: J. Clin. Path. *10*:208, 1957.
5. Lack, C. H., and Wailling, D. G.: J. Path. Bact. *68*:431, 1954.
6. Turner, F. J., and Schwartz, B. S.: J. Lab. & Clin. Med. *52*:888, 1958.
7. Boyd, H.: Am. J. Med. Tech. *22*:232, 1956.

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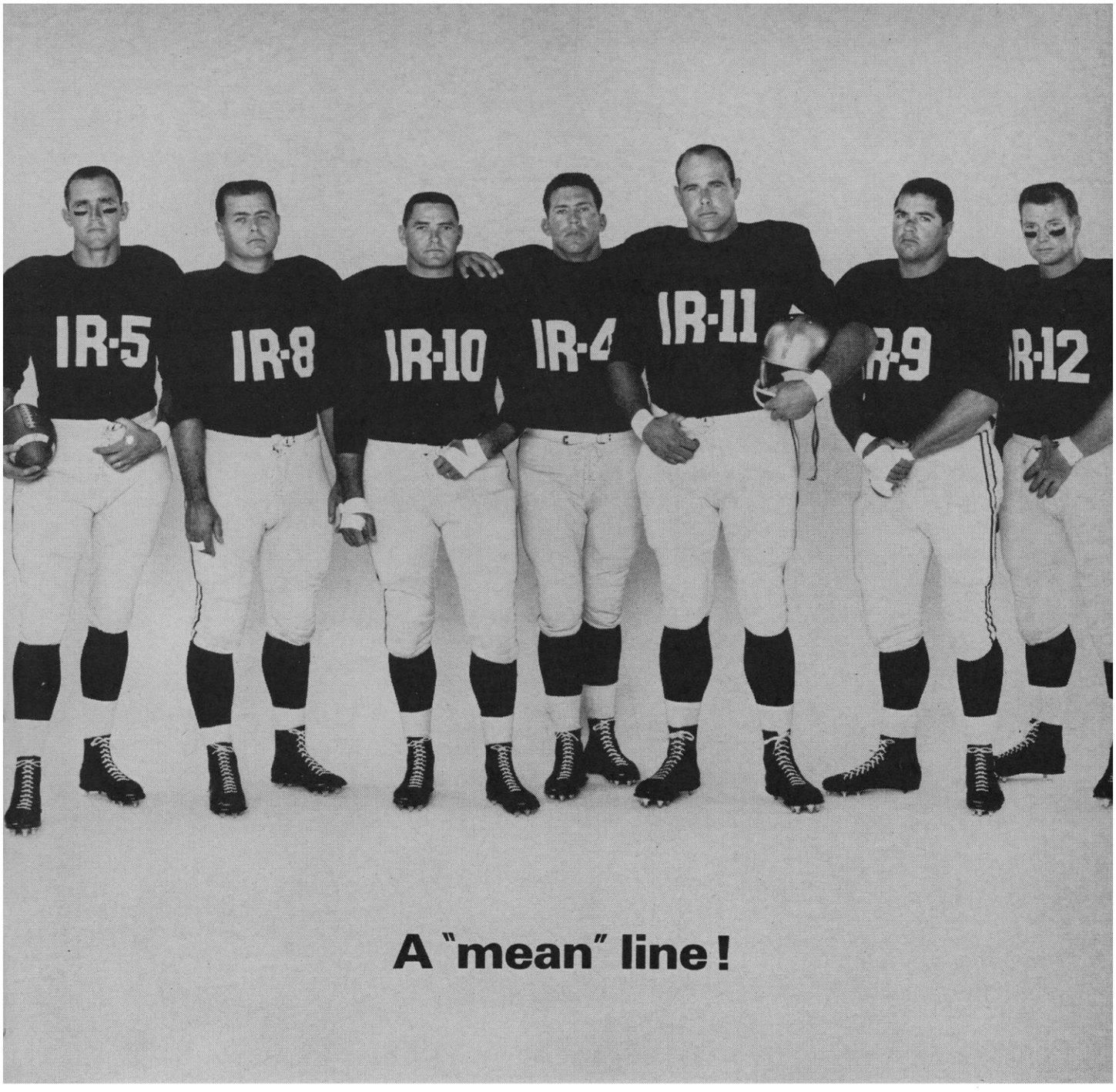

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It's tough to beat seven all-star infrared spectrophotometers. They take all the punishment you care to give, and still deliver with speed and precision.

No matter how you judge performance, Beckman IR spectrophotometers are winners. They work harder for more seasons—and with greater precision. All have flatbed recorders for wide range, single-chart spectra, with faster, easier operation.

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There's a Beckman IR spectrophotometer to match every requirement. For extremely high resolution with double-beam accuracy the familiar IR-4 and IR-9 or the wide range IR-12 are your choice. For double-beam performance to explore the far infrared to 300 microns it's the champion IR-11. For routine investigations or quality control at low cost you can't beat the IR-5A, the IR-8, or the IR-10.

Get to know these seven all-Americans better. Ask your local Beckman Sales Engineer or write for Data File LIR-165.

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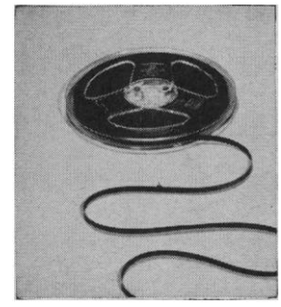
KEEP OUT

Which Polyester Film is better?

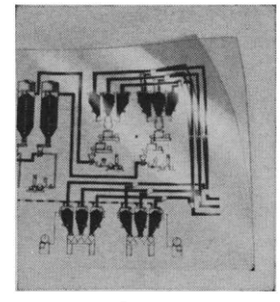
There are compelling reasons to switch to Celanar polyester film. For magnetic tape. Packaging. Engineering reproduction. Metalizing. Stationery and office supplies. And electrical applications.

Celanar gives you more meaningful service for the price you pay.

Case in point: The purer the polyester film, the better it processes. To make certain new Celanar is the purest you can buy, Celanese produces it in a sealed-off "White Room" clean enough for surgery. It is by far the most modern in the industry.



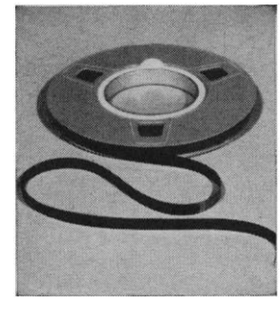
Another case in point: Many of our customers felt that undetected environmental changes which might occur in shipment of polyester film could adversely affect their processing operation. As a result, we started shipping new Celanar with temperature recording flags. To the best of our knowledge, the other supplier doesn't.



Other unique examples of the meaningful service that makes Celanar your best polyester film buy include the fact that Celanar is *protected against dust contamination* by use of non-fibrous plastic cores. That it is periodically *shipped with Impact Recorders* to protect you against accepting film jolted and damaged in transit. That its splice-free roll lengths are *tailored to its customers' specifications.*

This is the kind of meaningful service you would expect from Celanese Plastics—whose operating philosophy is that the customer, not the supplier, is always right. Celanese Plastics Company, 744 Broad Street, Newark 2, N. J.

Celanese® Celanar®



Celanar® Polyester Film

To ensure maximum purity, new Celanar is produced in a unique, hospital-clean, sealed-off "White Room"—the most modern in the industry. And that's just one of six meaningful service advantages you get when you switch to new Celanar polyester film.

Celanese

Disinfect, Deodorize and Clean animal cages with Mikro-Spray as easily as you now hose them down!

A unique device for the in-place cleaning of animal cages and animal rooms, the MIKRO-SPRAY system injects detergent germicides into your waterline at a rate exactly proportional to the flow of water.

Any surface or object that can be washed with water can be cleaned, disinfected and deodorized with the MIKRO-SPRAY just as easily and far more effectively. In fact, MIKRO-SPRAY hooks right into your existing waterline system. It is available in both wall-hung and portable models, which dispense one of two powerful detergent germicides (whichever one is best suited for your needs) in a rate exactly proportional to your flow of water. And gives you your safest, most sanitary, in-place cage cleaning ever, with no mopping or rinsing needed!

The first of these two detergent germicides, MIKRO-QUAT, is a quaternary ammonium detergent germicide. Completely harmless to animals, it disinfects and deodorizes for a full twenty-four hours. It is recommended for normal in-place cage cleaning requirements.

The second, MIKRO-KLENE, is an iodophor detergent germicide that gives you the ultimate in disinfection results. It is recommended for use in cages where animals are being used for experimentation with dangerous infectious diseases and a fast, positive bacterial kill is required. Like MIKRO-QUAT, it is completely harmless to animals.

Use of the MIKRO-SPRAY system, of course, is not limited to just in-place cage cleaning. It is equally effective in disinfecting and deodorizing cage racks, walls and floors of the cage room and for general clean-up duties in the incinerator and waste disposal room. Send coupon today for new manual on environmental sanitation, including complete details on application of MIKRO-SPRAY system.

ECONOMICS LABORATORY, INC.

Economics Laboratory, Inc., Dept. 142F
250 Park Avenue, N.Y., N.Y. 10017

Please send me full details on the disinfecting, deodorizing, and cost-cutting effects of the MIKRO-SPRAY in-place cage cleaning system.

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ORGANIZATION_____

ADDRESS_____

CITY_____ STATE_____ ZIP_____

The horse is a mammal

2,4-Dinitroso-1,3-naphthalenediol (EASTMAN 9503) has demonstrated, bare-eyed, the presence of 10^{-9} g. of iron in one of those acrylamide gel discs that make up the characteristic disc-electrophoretic fingerprint of a protein mix. The reagent was devised by a very smart man we know. He and a buddy thought up disc electrophoresis in the first place.

Last winter he vacationed on Bimini, which has the Lerner Marine Laboratory as one of its charms. After a quick snooze in the sun, he sought exercise first in skin-diving and then in phylogeny. He had his disc-electrophoresis kit along. An amazing observation resulted from a colleague's offer of octopus serum. The protein pattern resembled the mammalian serum pattern even more than the uncanny octopus eye resembles the mammalian eye.

Excited by this new evidence of interphyletic convergence, our smart friend upon his return home prepared to clinch it by proving that the disc corresponding to the iron-bearing protein transferrin in mammals would in the mollusk's serum respond selectively to a sufficiently sensitive reagent for iron. Of iron reagents there are plenty; none he could find, however, performed as well under the special conditions encountered in disc-staining as the one named above, which he extrapolated from the literature, his experience, and the sheer force of reason. After he told us what it was, we made him some that he found better than his own product.

This is now offered by Distillation Products Industries, Rochester, N. Y. 14603 (Division of Eastman Kodak Company), which also offers the other compounds needed in disc electrophoresis, as well as all the other EASTMAN *Organic Chemicals needed in numberless other endeavors. Separately and without charge, the same organization continues to offer the authors' description of the theory of disc electrophoresis and their illustrated directions for the procedure, now supplemented for iron. Ours has been a proud role in publicizing their method around the world.*

It is therefore distressing to have to report that no publication on cephalopod phylogeny is in immediate prospect from our friend. Not only is he smart but also frank, lucky, and grateful to have learned in time of some misbegotten horse serum that he was confusing with the colleague's octopus samples.

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The Great Teachers

The advantage that the researcher has over the teacher in gaining repute outside his own institution has been increased in recent years by the large amounts of external money available for research, the national review system under which much of that money is granted, and the emphasis given to research by federal agencies and universities. Recent reports, comments, and editorials from a variety of sources have warned that a better balance must soon be restored. Teaching, of course, may best be combined with research, but the inevitable increase in college enrollment, the need to provide an excellent education for the next generation of teachers and researchers, and widening acceptance of the importance of full development of talent all call for more emphasis on good teaching.

In the short run, various means can be used to increase the number of teachers, but the basic problem cannot be solved unless the status of teaching is enhanced in the eyes of present and prospective faculty members and the supporters of higher education. One point is clear: the status of teaching is not going to be enhanced by lowering the status of research. Any attempt in that direction would deservedly fail. A second point is clear: if great teaching is to be rewarded, the great teachers must be identified. And here there is a problem for those who contend that the quality of teaching is unmeasurable.

Given enough time, students, measurements, and statistical analysis, we might determine the qualitative improvement in the streams of students who pass through the classes of different teachers. But this approach is impracticable; any realistic effort to identify the outstanding teachers must depend upon the judgment of qualified observers. Three kinds of judges have been used. Judgments are frequently made by faculty colleagues, but the man being judged often can make the just complaint that his colleagues know little about what goes on in his classroom. Administrative officers also pass judgment on teaching quality, but a spy from the president's office is seldom welcome in the classroom. Sometimes student ratings are used. Some teachers rebel at the idea of being graded by their students, but others testify that students discriminate well and that, if given the responsibility, they judge on quality and not on popularity.

Yet the fact must be faced: if the prestige of teaching is to be enhanced, there must be agreement on who the good teachers are. As a start, it should be possible on any campus to collect independent ratings, preferably on firsthand evidence rather than on hearsay. If it turns out that there is reasonably high consistency in the judgments, good; the point has been made that the ablest teachers can be identified. If there is no satisfactory consistency, that is another story, but at least the effort would be good local propaganda for calling attention to the importance of teaching.

The teacher who wishes for enhanced status must therefore make a choice. He can cooperate in efforts to see if the ablest teachers can be identified reliably. If that turns out to be the case, then rewards, privileges, and other means of enhancing prestige can follow. Or he can insist that good teaching is essentially a private and unmeasurable affair. But he cannot hold this view, plead that the ablest teachers be given special recognition, and also honor consistency.

—DAEL WOLFLE

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27–29. American **Philosophical** Assoc., Boston, Mass. (L. E. Hahn, Dept. of Philosophy, Southern Illinois Univ., Carbondale 62903)

27–30. American **Statistical** Assoc., Chicago, Ill. (D. C. Riley, ASA, 810 18th St., NW, Washington, D.C. 20006)

28–30. American **Economic** Assoc., annual, Chicago, Ill. (H. F. Williamson, AEA, 629 Noyes St., Evanston, Ill.)

28–30. American **Geophysical** Union, Seattle, Wash. (W. W. Kellogg, Rand Corporation, 1700 Main St., Santa Monica, Calif.)

28–30. **Linguistic** Soc. of America, New York, N.Y. (A. A. Hill, Post Office Box 8120, University Station, Austin, Tex.)

28–30. Western Soc. of **Naturalists**, Univ. of Washington, Seattle. (I. A. Abbott, Hopkins Marine Station of Stanford Univ., Pacific Grove, Calif.)

January

5–7. **Glass Formation, Phase Equilibria, Nucleation and Crystal Growth**, symp., Sheffield, England. (D. Hawksworth, Soc. of Glass Technology, Thorton, 20 Hallam Gate Rd., Sheffield 10)

5–8. **Solid State Physics**, 2nd annual conf., H. H. Wills Physics Laboratory, University of Bristol, England. (Administrative Assistant, Inst. of Physics and Physical Soc., 47, Belgrave Square, London, S.W.1)

6–8. **Industrial Electronics and Control Instrumentation**, 13th annual conf., Philadelphia, Pa. (E. Weiss, Sun Oil Co., Marcus Hook, Pa.)

6–9. **Psychopharmacological** Conf., Czechoslovak Medical Soc., Psychiatry Section, Jesenik Spa. (M. Vojtechovsky, Budejovicka 800, Pavilion A1, Prague, Czechoslovakia)

8–9. **Orthopaedic** Research Society, New York, N.Y. (R. A. Calandruccio, 869 Madison Ave., Memphis, Tenn.)

9–14. American Acad. of **Orthopedic Surgeons**, annual, New York, N.Y. (H. K. Hart, AAOS, 29 E. Madison, Chicago 2, Ill.)

10–16. The **New Science**, symp., Colorado Springs, Colo. (F. A. Sondermann, Colorado College, Colorado Springs)

11–14. **Civilian and Military Uses of Aerospace**, conf., New York, N.Y. (I. B. Laskowitz, New York Acad. of Sciences, 2 E. 63 St., New York)

12–14. **Reliability and Quality Control**, symp., Miami, Fla. (H. D. Hulme, Westinghouse R&D Center, Bldg. 601-1346, Churchill Boro, Pittsburgh, Pa.)

12–15. **Crustacea**, symp., Cochin, India. (Marine Biological Assoc. of India, Marine Fisheries P.O., Mandapam Camp, S. India)

14. American **Genetic** Assoc., Washington, D.C. (W. R. Singleton, Biology Bldg., Univ. of Virginia, Charlottesville)

18–20. **Solar Radiation Simulation**, intern. conf., Los Angeles, Calif. (H. F. Sander, Inst. of Environmental Science, 34 S. Main St., Mount Prospect, Ill.)

19. **Cor Pulmonale**, New York Heart Assoc., annual medical conf., New York, N.Y. (NYHA, 10 Columbus Circle, New York 10019)

19–20. **Die Design and Press Tooling** Conf., American Soc. of Tool and Manufacturing Engineers, Hartford, Conn. (M. Zapico, Asst. Conf. Director, ASTME, 10700 Puritan Ave., Detroit 38, Mich.)

20–22. **Instrumentation**, College Station, Tex. (P. T. Eubank, Chemical Engineering Dept., Texas A&M Univ., College Station)

20–23. National Soc. of **Professional Engineers**, New Orleans, La. (P. H. Robbins, 2029 K St., NW, Washington, D.C.)

22. **Bibliographical** Soc. of America, New York, N.Y. (Mrs. H. C. Ralph, P.O. Box 397, Grand Central Station, New York 10017)

22–1. **Earthquake Engineering**, 3rd world conf., Auckland and Wellington, New Zealand. (Administrative Secretary, Third World Conf. on Earthquake Engineering, P.O. Box 5180, Wellington)

22–23. **Blood**, annual symp., Detroit, Mich. (W. H. Seegers, Dept. of Physiology and Pharmacology, Wayne State Univ. College of Medicine, Detroit)

22–23. **Hydrocarbon Analysis**, symp., American Soc. for Testing and Materials, Houston, Tex. (ASTM, 1916 Race St., Philadelphia 3, Pa.)

25–26. **Fundamental Phenomena in the Material Sciences**, 3rd annual symp., Boston, Mass. (D. B. Fay, Ilikon Corp., Natick Industrial Centre, Natick, Mass.)

25–26. **Viruses of Laboratory Rodents**, symp., Atlanta, Ga. (R. Holdenried, Natl. Cancer Inst., NIH, Bethesda, Md. 20014)