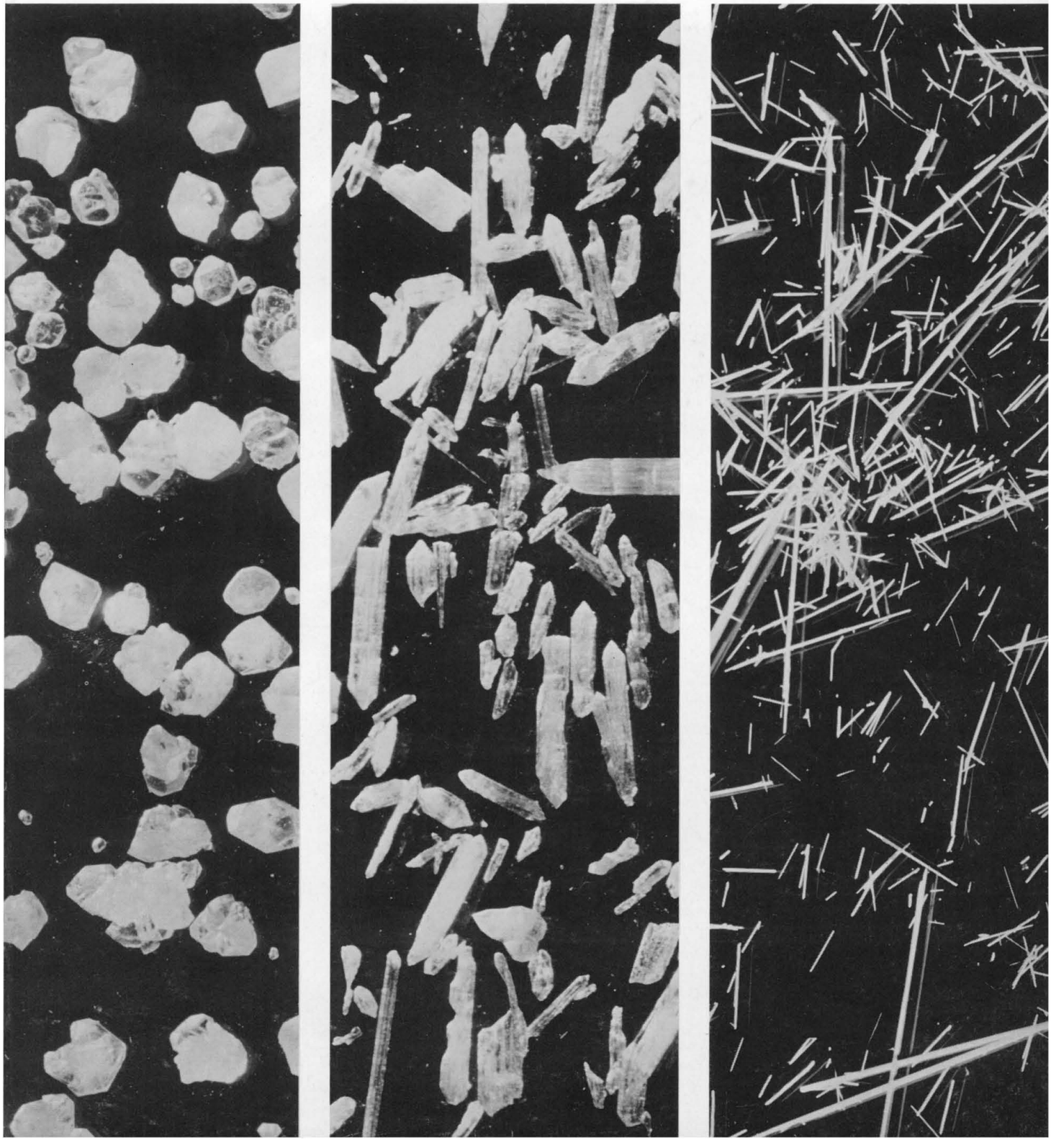
SCIENCE

21 September 1962

Vol. 137, No. 3534

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



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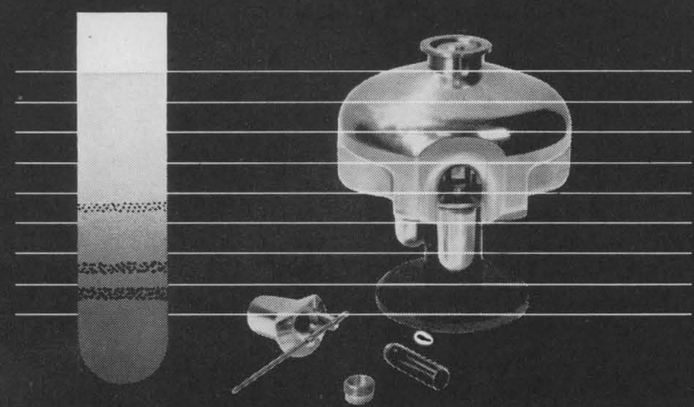

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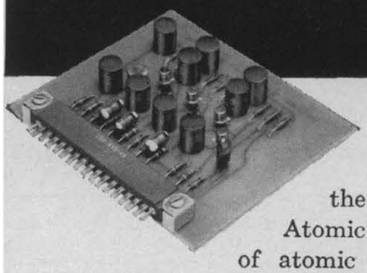

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The bile acids of man. From left to right, cholic acid, deoxycholic acid, and chenodeoxycholic acid. These acids do not exist as such in bile, but are combined in peptide linkage with glycine or taurine. The resulting conjugated acids are excellent detergents and have an important role in fat absorption. [Alan F. Hofmann, Department of Physiological Chemistry, University of Lund, Lund, Sweden]

23 NEW

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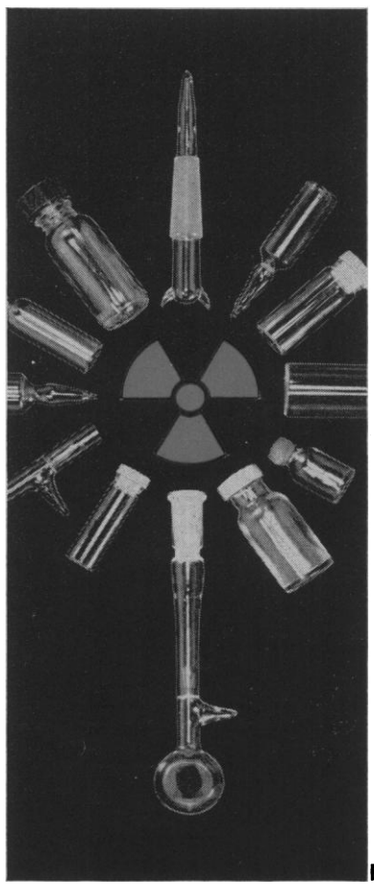

COMPOUND	Specific Activity mc/mM*	PRICE 50 μc†	PRICE 100 μc
Acetyl-1-C^{14} Coenzyme A ($40/10μc)	15.9	$150.	$300.
Aniline-C^{14} (u.l.) • HCl	1.4	35.	$44.
DL-Arginine-5-C^{14} • HCl	4.9	50.	75.
Benzhydrazide-7-C^{14} (methanol soln.)	21.3	15.	20.
Bis (2-Ethylhexyl) phthalate-carboxyl-C^{14}	—	in process	
Dimethyl-C^{14} Hydrazine (unsym., aqu. soln.)	1.7	—	150.
DL-Glutamic-5-C^{14} Acid	4.7	40.	60.
Hippuric-1-C^{14} Acid	5.0	—	34.
p-Hydroxyphenylethylamine-1-C^{14}	1.8	40.	50.
DL-Lysine-6-C^{14} • HCl	6.8	40.	70.
D-Mannitol-1-C^{14}	1.3	40.	60.
D-Mannose-1-C^{14}	2.0	40.	55.
DL-Methionine-carboxyl-C^{14}	3.2	30.	39.
Methyl-C^{14} Mercaptan	2.0	($100/0.5 mc)	
β-Methyl-C^{14} thiogalactoside	1.9	50.	80.
Nitrobenzene-C^{14} (u.l.)	2.5	—	44.
Oleic-1-C^{14} Acid	2.6	30.	40.
DL-Ornithine-5-C^{14} • HCl	4.0	40.	60.
Phenol-C^{14} (u.l.)	1.6	40.	60.
Phenylisothiocyanate-H^3	89.7	($20/250μc, $45/1.0mc)	
Propionamide-1-C^{14}	1.9	30.	36.
di-n-Propyl-1-C^{14} amine • HCl	1.2	—	50.
Tyramine-1-C^{14} (See p-Hydroxyphenylethylamine-1-C^{14})	—	—	—
p-Xylene-methyl-C^{14}	2.1	—	60.

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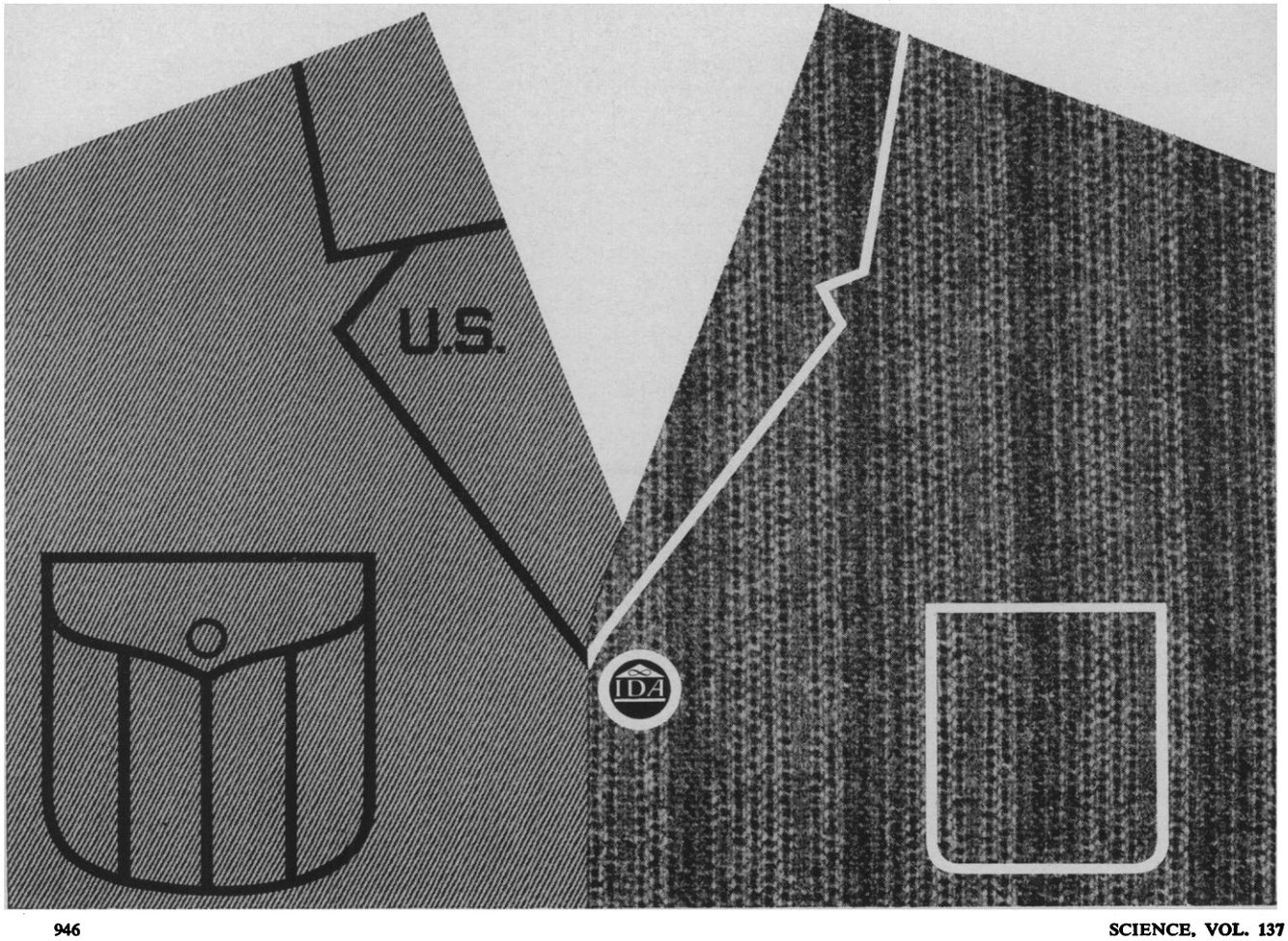

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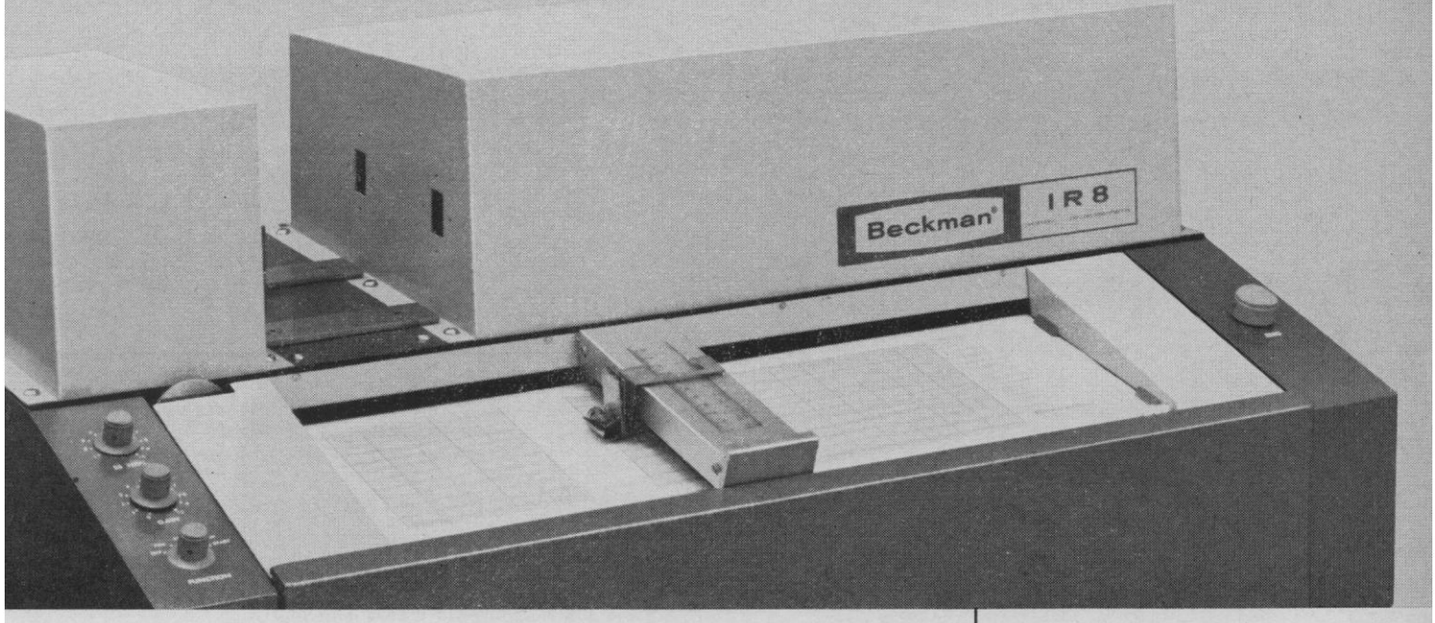

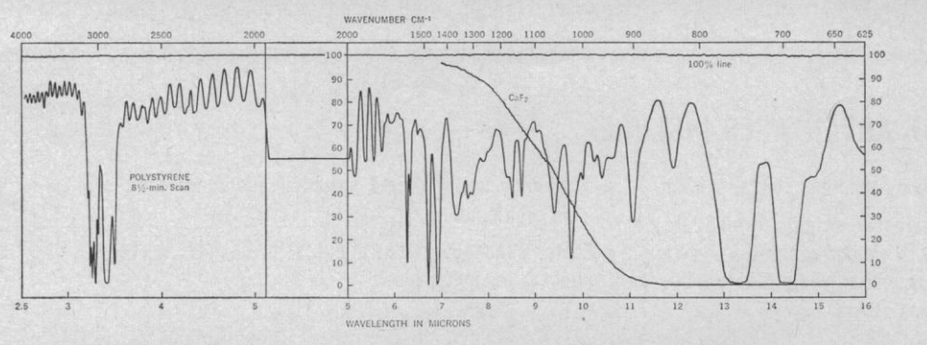

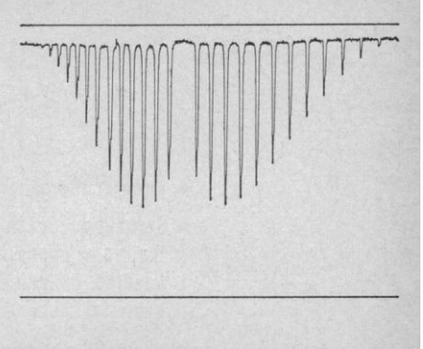

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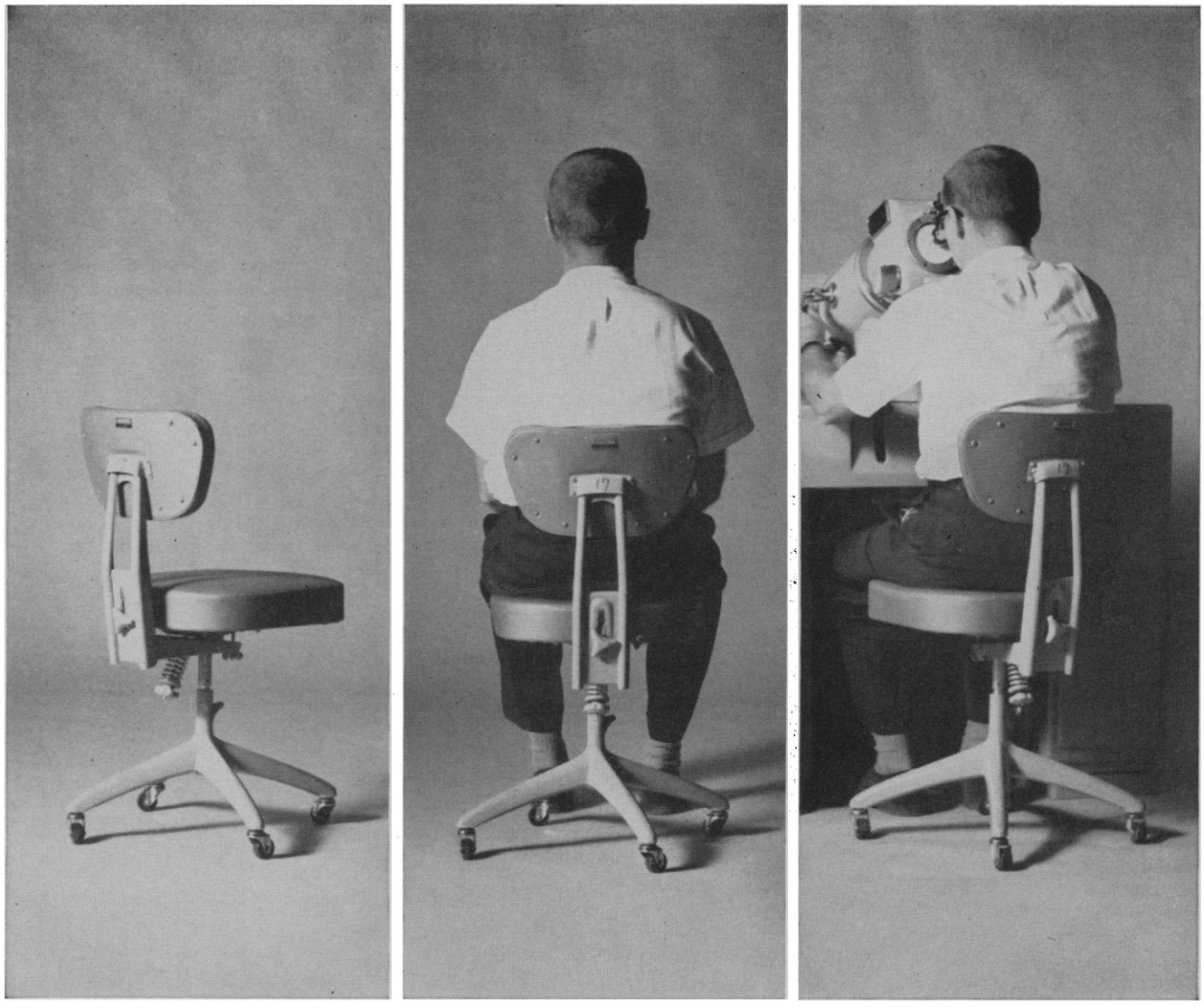

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dustrial management cannot always recruit—even with the weapons of more generous salary and bonus arrangements—the supervision over research that is meaningful. This is implied by the famous, humbling statement that many of us involved in research administration keep framed at our desks —a statement by the late C. E. K. Mees, long-time director of research of Eastman Kodak Company.

Research is a gamble. It cannot be conducted according to the rules of efficiency engineering. Research must be lavish of ideas, money and time.

The best advice is, don't quit easily, don't trust anyone's judgment but your own, especially don't take any advice from any commercial person or financial expert and finally, if you really don't know what to do, match for it. The best person to decide what research work shall be done is the man who is doing research. The next best is the head of the department. After that you leave the field of best persons and meet increasingly worse groups.

The first of these is the research director, who is probably wrong more than half the time. Then comes a committee, which is wrong most of the time. Finally, there is the committee of company vice presidents, which is wrong all the time.

ALLEN KENT
Center for Documentation and Communication Research, Western Reserve University, Cleveland, Ohio

Sex Conversion in the Copepod

Vacquier [*Science* **135**, 724 (1962)] reports that application of high hydrostatic pressures to larval stages of the copepod *Tigriopus* resulted in a shift in the sex ratio toward females, and says "At this stage of the work it is impossible to distinguish between selective effects . . . and sex conversion." In this he is mistaken, his data being quite adequate to demonstrate conversion.

At pressure of 1 atmosphere there were 142 surviving males out of a sample of 175 individuals of both sexes. Thus, no more than 33, or 19 percent, could have been females. This is clearly discordant with a finding of 96 surviving females out of a sample of 225 exposed to pressure of 600 atmospheres, the random sampling probability being less than 0.001. It is also discordant with a finding of 75 surviving females out of a sample of 253 exposed to pressure of 550 atmospheres, the random sampling probability being less than 0.02. In view of the fact that these comparisons involve not the actual number but the maximum number of females the 1-atmosphere sample could have had, there is no reason to doubt "conversion." Whether the conversion is morphological or functional is another matter. Also, it can be doubted whether sampling was random with respect to sex in making up the lots for the experiment. If sampling was not random, any conclusion regarding the sex ratio would be affected equally.

H. W. NORTON
College of Agriculture, University of Illinois, Urbana

Government Regulations

The editorial on needless obstacles to government service [*Science* **137**, 89 (1962)] requires clarification of the statement that government employees must not receive compensation from any outside source. The point intended must have been that government employees must not accept outside compensation for activities performed as part of their government service, or some such qualification.

The main point of the editorial—that the government sometimes hamstrings its recruitment programs, and that certain types of restriction on employment subsequent to government service are undesirable—is strengthened considerably through full examination of the conflict-of-interest practices and regulations.

One part of the regulation forbids any government employee from aiding in the filing of a claim against the government if he stands to gain by the claim or if the claimant is his child or wife. If taken literally, this forbids a government employee from helping his wife fill out her income tax refund claim. Although the regulations are supposed to be interpreted strictly, it seems hard to imagine that this restriction is intended. But the damage done by unforeseen and unprovided-for restrictions may be more serious than the evils which the regulations are meant to correct. Even worse is the lessening of regard for good regulations which is caused by the tendency to ignore masses of poorly planned instructions which cannot be either understood or applied and which say much more than they mean, and therefore usually mean little to the persons concerned.

[*Name withheld by request*]

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Momentous Innovation

The men who created the modern foundation—Mr. Carnegie, John D. Rockefeller, and others—accomplished considerably more than a demonstration of their own generosity. In fashioning a distinctively new type of philanthropic institution, for general instead of specific purposes, they made a genuinely creative contribution to American life.

The modern foundation joins two great American traditions. One is the tradition of private giving for public purposes. In 1834 de Tocqueville remarked on the spirit of mutual helpfulness that characterized the American community, and in 1888 James Bryce wrote, "In works of active beneficence, no country has surpassed, perhaps none has equalled the United States."

The other great American tradition nourishing the modern foundation is that of searching creatively for solutions to the problems of mankind, a search which Americans have pursued with notable energy, optimism, and imaginativeness.

The contribution of Mr. Carnegie, Mr. Rockefeller, and the other early philanthropists was to bring these two traditions together and to devise an instrument capable of serving both. The modern foundation as we know it is an impressive social invention. Wealth is nothing new in the history of the world. Nor is charity. But the idea of using private wealth imaginatively, constructively, and systematically to attack the fundamental problems of mankind *is* new.

One of the most remarkable innovations of the creators of the modern foundation was their early decision to leave the conventional tasks of charity to those organizations that had originally borne them and to forge for the new foundation a new role with respect to human welfare. Briefly, they proposed to concern themselves with the fundamental problems of man rather than with palliative measures. They set themselves the task, not of caring for the ill, but of preventing and curing illness; not of feeding the hungry, but of discovering improved methods of growing food; not of protecting the ignorant, but of discovering ways to diminish ignorance. This philosophy is now so familiar it is difficult to recall how imaginative and forward-looking it was at the time. The establishment of institutions charged wholly with a creative concern for the fundamental problems of human life was a momentous innovation.—["Fifty Years in Review," 1961 Annual Report, Carnegie Corporation of New York]

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Those who do, have attempted to identify unusual spectra, have learned a great deal about attenuated total reflection — a development of far-reaching importance to infrared spectroscopists, and have read provocative editorials such as the following excerpt from a discussion of this year's Ohio State Symposium on Molecular Spectroscopy:

> *"Columbus used to be the calm and relaxed meeting place where the theoretical academician, the practical industrial spectroscopist, and the hungry instrument maker met—the first to point the direction, the second to find the broad application, and the third to provide the tools . . However, this happy mixture of interests has gradually disappeared . . Could it be that industry has forsaken Columbus because the academician has ceased to be leader in the field of Molecular Spectroscopy? . . The academic spectroscopist might do well to pause and consider the significance of the growing divergence of his work and that of the industrial spectroscopist."*

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Meetings

Forthcoming Events

October

22–24. **Aerospace and Navigational Electronics,** conf., Baltimore, Md. (Inst. of Radio Engineers, Office of the Technical Secretary, 1 E. 79 St., New York 21)

22–26. Advances in **Radioisotope Scanning,** symp., Oak Ridge, Tenn. (R. M. Kniseley, Oak Ridge Inst. of Nuclear Studies, Oak Ridge)

22–26. **Diabetes,** Buenos Aires, Argentina. (C. A. Campos, Sociedad Argentina de Diabetes, Santa Fe 1171, Buenos Aires)

22–26. Society of **Motion Picture and Television Engineers,** convention, Chicago, Ill. (C. S. Stodter, 55 W. 42 St., New York 35)

23–25. **Occupational Therapists,** intern. congr., Philadelphia, Pa. (M. T. Cardwell, 963 Avenue Rd., Toronto 7, Ont., Canada)

23–27. American Soc. of **Oral Surgeons,** New Orleans, La. (L. W. Peterson, 117 N. Meramec St., Clayton 5, Mo.)

23–1. **Care of Children in Institutions,** Geneva, Switzerland. (World Health Organization, Palais des Nations, Geneva)

24–25. **Computer** Applications, symp., Chicago, Ill. (R. S. Hollitch, Armour Research Foundation, Illinois Inst. of Technology, 35 W. 33 St., Chicago 16)

24–26. Design of Experiments in **Army Research,** Development, and Testing, Washington, D.C. (by invitation only). (F. G. Dressel, Army Research Office, Box CM, Duke Station, Durham, N.C.)

24–26. Society for **Experimental Stress Analysis,** annual, Milwaukee, Wis. (B. E. Rossi, 21 Bridge Square, Westport, Conn.)

24–27. International Assoc. of **Milk and Food Sanitarians,** annual, Philadelphia, Pa. (H. L. Thomasson, Box 437, Shelbyville, Ind.)

24–28. **Angiology,** intern. conf., Darmstadt, Germany. (Sekretariat, c/o Medizinische Klinik, Bismarckstr. 28, Darmstadt)

25. **New Mexico Acad. of Science,** Albuquerque. (K. G. Melgaard, P.O. Box 546, Mesilla Park, N.M.)

25–27. **Electron Devices,** Washington, D.C. (Inst. of Radio Engineers. Office of the Technical Secretary, 1 E. 79 St., New York 21)

25–27. International Assoc. of **Milk and Food Sanitarians,** Inc., Philadelphia, Pa. (K. K. Jones, Food & Drug Div., Indiana State Board of Health, Indianapolis)

26. Reliability in **Space Vehicles,** Los Angeles, Calif. (Inst. of Radio Engineers, 1435 La Cienga Blvd., Los Angeles)

26–27. Association of **Clinical Scientists,** applied seminar, Washington, D.C. (F. W. Sunderman, 1025 Walnut St., Philadelphia 7, Pa.)

26–27. Society for the Scientific Study of **Religion,** annual, New York, N.Y. (J. E. Dittes, 409 Prospect St., New Haven 11, Conn.)

26–28. American **Heart** Assoc., scientific sessions, Cleveland, Ohio. (AHA, 44 E. 23 St., New York 10)

27. American **Mathematical** Soc., Hanover, N.H. (AMS, 190 Hope St., Providence 6, R.I.)

27–28. International College of **Dentists**, Miami Beach, Fla. (H. O. Westerdahl, 4829 Minnetonka Blvd., Minneapolis 16, Minn.)

27–28. Science and Technology in **Israel and the Middle East**, conf., New York, N.Y. (B. Dibner, American Technion Soc., 1000 Fifth Ave., New York 28)

27–30. American Soc. of **Safety Engineers**, Chicago, Ill. (A. C. Blackman, ASSE, 5 N. Wabash Ave., Chicago 2)

27–1. **Metallurgical** Soc., New York, N.Y. (MS, 345 47 St., New York 17)

28. American College of **Dentists**, Miami Beach, Fla. (O. W. Brandhorst, 4236 Lindell Blvd., St. Louis, Mo.)

28. International **Dairy** Soc., annual, Atlantic City, N.J. (G. W. Weigold, 1145 19th St., NW, Washington 6)

28–31. **Systems and Procedures** Assoc. of America, intern. meeting, Boston, Mass. (D. E. Tisdale, 817 Penobscot Blvd., Detroit 26, Mich.)

28–2. **Dairy Industries Supply** Assoc., trade show, Atlantic City, N.J. (T. L. Jones, 1145 19 St., NW, Washington 6)

28–2. **Mushroom**, intern. congr., Philadelphia, Pa. (Organizing Committee Secretary, Box 373, Kennett Square, Philadelphia)

29. **Vacuum Microbalance** Techniques, symp., Los Angeles, Calif. (Cahn Instrument Co., 15505 Minnesota Ave., Paramount, Calif.)

29–30. **Large Rockets**, natl., Sacramento, Calif. (Inst. of the Aerospace Sciences, 2 E. 64 St., New York 21)

29–31. Domestic and Industrial **Water Supply**, conf., Klagenfurt, Austria. (Österreichischer Wasserwirtschaftsverband, Graven 17, Vienna I, Austria)

29–31. Dynamics of **Manned Lifting Planetary Entry**, symp., Philadelphia, Pa. (A. C. Harrison, Room 1308M, General Electric Co., Valley Forge Space Technology Center, Box 8555, Philadelphia 1)

29–31. **Entomological** Soc. of Canada —Entomological Soc. of Manitoba, annual, Winnipeg, Manitoba. (L. L. Reed, K. W. Neatby Bldg., Carling Ave., Ottawa, Ont., Canada)

29–31. Society of **Rheology**, Baltimore, Md. (J. C. Miller, Union Carbide Plastics Co., Bound Brook, N.J.)

29–1. American **Dental** Assoc., Miami Beach, Fla. (H. Hillenbrand, 222 E. Superior St., Chicago 11, Ill.)

29–2. American Soc. for **Metals**, natl. congr. and intern. exposition, New York, N.Y. (M. A. Scheil, A. O. Smith Corp., Milwaukee, Wis.)

29–2. Basic **Environmental Problems of Man in Space**, symp., Paris, France. (A. R. Weiller, Intern. Acad. of Astronautics, 12 rue de Gramont, Paris 2e)

29–2. National **Safety** Council, annual congr., Chicago, Ill. (R. L. Forney, NSC, 425 N. Michigan Ave., Chicago 11)

29–19. International North Pacific **Fisheries** Commission, Seattle, Wash. (INPFC, 209 Wesbrook Bldg., Univ. of British Columbia, Vancouver 8, B.C., Canada)

30–31. **Spaceborne Computer** Engineering Technology, natl. conf., Anaheim, Calif. (W. C. Chambliss, California Computer Products, Inc., 8714 E. Cleta St., Downey, Calif.)

31–2. **Antimicrobial Agents and Chemotherapy**, interscience conf., Chicago, Ill. (American Soc. for Microbiology, 19875 Mack Ave., Detroit 36, Mich.)

31–3. American **Vacuum** Soc., annual symp., Los Angeles, Calif. (G. H. Bancroft, Consolidated Vacuum Corp., 1775 Mt. Read Blvd., Rochester 3, N.Y.)

31–3. **Neurological Surgeons,** congr., Houston, Tex. (E. Weiford, 4706 Broadway, Kansas City 12, Mo.)

31–3. Non-Proprietary Names for **Pharmaceutical Preparations**, Geneva, Switzerland. (World Health Organization, Palais des Nations, Geneva)

November

1–2. Alkaline **Pulping** Conf., Savannah, Ga. (Technical Assoc. of the Pulp and Paper Industry, 360 Lexington Ave., New York 17)

1–2. **Chemtronics**, conf., New York, N.Y. (E. C. Torkelson, Bell Telephone Laboratory, 463 West St., New York)

1–2. **Educational** Conf., annual, New York, N.Y. (A E. Traxler, Educational Records Bureau, 21 Audubon Ave., New York 32)

1–2. **Kidney**, annual conf., Princeton, N.J. (National Kidney Disease Foundation, 145 E. 35 St., New York 16)

1–2. **Medical Practice** Management, 1st annual conf., Las Vegas, Nev. (Soc. of Professional Business Consultants, 420 Madison Theatre Bldg., Detroit 26, Mich.)

1–2. **Product Engineering** and **Production**, natl. conf., San Francisco, Calif. (H. R. Traver, Hewlett-Packard Co., 1501 Page Mill Rd., Palo Alto, Calif.)

1–3. American **Chemical** Soc., annual southeastern regional meeting, Gatlinburg, Tenn. (F. A. Griffitts, Maryville College, Maryville, Tenn.)

1–3. Delayed Effects of **Captivity**, intern. medical congr., Brussels, Belgium. (R. Laumond, Intern. Confederation of Former Prisoners of War, 46 rue Copernic, Paris 16e, France)

2–3. American **Geophysical** Union, regional meeting, Seattle, Wash. (F. A. Richards, Dept. of Oceanography, University of Washington, Seattle)

2–3. **Fat** as a Tissue, intern. research conf., Philadelphia, Pa. (Division of Research, Medical Science Bldg., Lankenau Hospital, Philadelphia 51)

4–7. **Engineering in Biology and Medicine**, annual conf., Chicago, Ill. (Program Committee, P.O. Box 1475, Evanston, Ill.)

4–9. American Acad. of **Ophthalmology** and **Otolaryngology**, Las Vegas, Nev. (W. L. Benedict, 15 Second St., SW, Rochester, Minn.)

4–10. Interamerican **Red Cross** Conf., San Juan, Puerto Rico. (American Natl. Red Cross, 17 St. between D and E Sts., NW, Washington, D.C.)

5–7. American Soc. for **Cell Biology**, annual, San Francisco, Calif. (ASCB, Box 2982, Duke Univ. Medical Center, Durham, N.C.)

5–7. Protection against **Radiation** Hazards in Space, symp., Gatlinburg, Tenn.

(E. P. Blizard, Oak Ridge Natl. Laboratory, P.O. Box X, Oak Ridge, Tenn.)

5–9. American Inst. of Mining, Metallurgical, and Petroleum **Engineers**, fall meeting, Chicago, Ill. (Executive Secretary, AIME, 345 E. 47 St., New York 17)

5–9. German **Ceramics** Soc., annual, Baden-Baden. (Deutsche Keramische Gesellschaft, Menzenbergerstr. 47, Bad Honnef am Rhein, Germany)

5–9. **Metallurgical** Congr., intern., Chicago, Ill. (C. Wells, American Soc. for Metals, 7301 Euclid Ave., Cleveland, Ohio)

5–9. Practical Applications of Short-Lived **Radioisotopes** Produced in Small Research Reactors, seminar, Vienna, Austria. (Intern. Atomic Energy Agency, 11 Kärntner Ring, Vienna 1)

5–17. World **Meteorological** Organization, South-West Pacific Regional Assoc., Noumea, New Caledonia. (Secretariat, WMO, Geneva, Switzerland)

7–10. **Acoustical** Soc. of America, Seattle, Wash. (W. Waterfall, Amer. Inst. of Physics, 335 E. 45 St., New York 17)

7–10. **Corrosion** of Metals, symp., Kanpur, India. (Defense Research Laboratory, Kanpur)

7–10. Fetal and Infant **Liver** Function and Structure, conf., New York, N.Y. (E. T. Minor, New York Acad. of Sciences, 2 E. 63 St., New York 21)

7–10. **Geological** Soc. of America, Houston, Tex. (F. Betz, Jr., GSA, 419 W. 117 St., New York, N.Y.)

8–9. **Operations** Research Soc. of America, Philadelphia, Pa. (G. D. Shellard, New York Life Insurance Co., 51 Madison Ave., New York 10)

8–10. American Soc. of **Cytology** (formerly Inter-Soc. Cytology Council), annual, St. Louis, Mo. (P. A. Younge, 1101 Beacon St., Brookline 46, Mass.)

8–10. **Gerontological** Soc., Miami Beach, Fla. (R. W. Kleemeier, Dept. of Psychology, Washington Univ., St. Louis, Mo.)

8–13. International Office of **Epizootics**, American regional conf., Mexico City, Mexico. (R. Vittoz, 12 rue du Prony, Paris 17°, France)

9–8. Dec. United Nations **Educational, Scientific, and Cultural** Organization, general conf., Paris, France. (UNESCO, Place de Fontenoy, Paris 7°)

11–16. World **Medical** Assoc., general assembly, New Delhi, India. (L. H. Bauer, 10 Columbus Circle, New York 19)

11–17. **Veterinary** Medicine, Pan American congr., Mexico City, Mexico. (J. Santivanez, P.O.B. 1697, Coral Gables 34, Fla.)

11–22. **Plastics**, intern. fair and convention, Göteborg, Sweden. (Interfair, Inc. AB, Intern. Trade Fair, S. Tullgatan 4, Malmö C, Sweden)

12–13. **Genetics** Symp., Columbia, Mo. (Director, Postgraduate Medical Education, M176 Medical Center, Univ. of Missouri, Columbia)

12–14. **Paleontological** Soc., Houston, Tex. (H. B. Whittington, MCZ, Harvard Univ., Cambridge 38, Mass.)

12–15. **Magnetism** and Magnetic Materials, conf., Pittsburgh, Pa. (Inst. of Radio Engineers, Office of the Professional Groups Secretary, 1 E. 79 St., New York 21)

(See 14 September issue for comprehensive list)