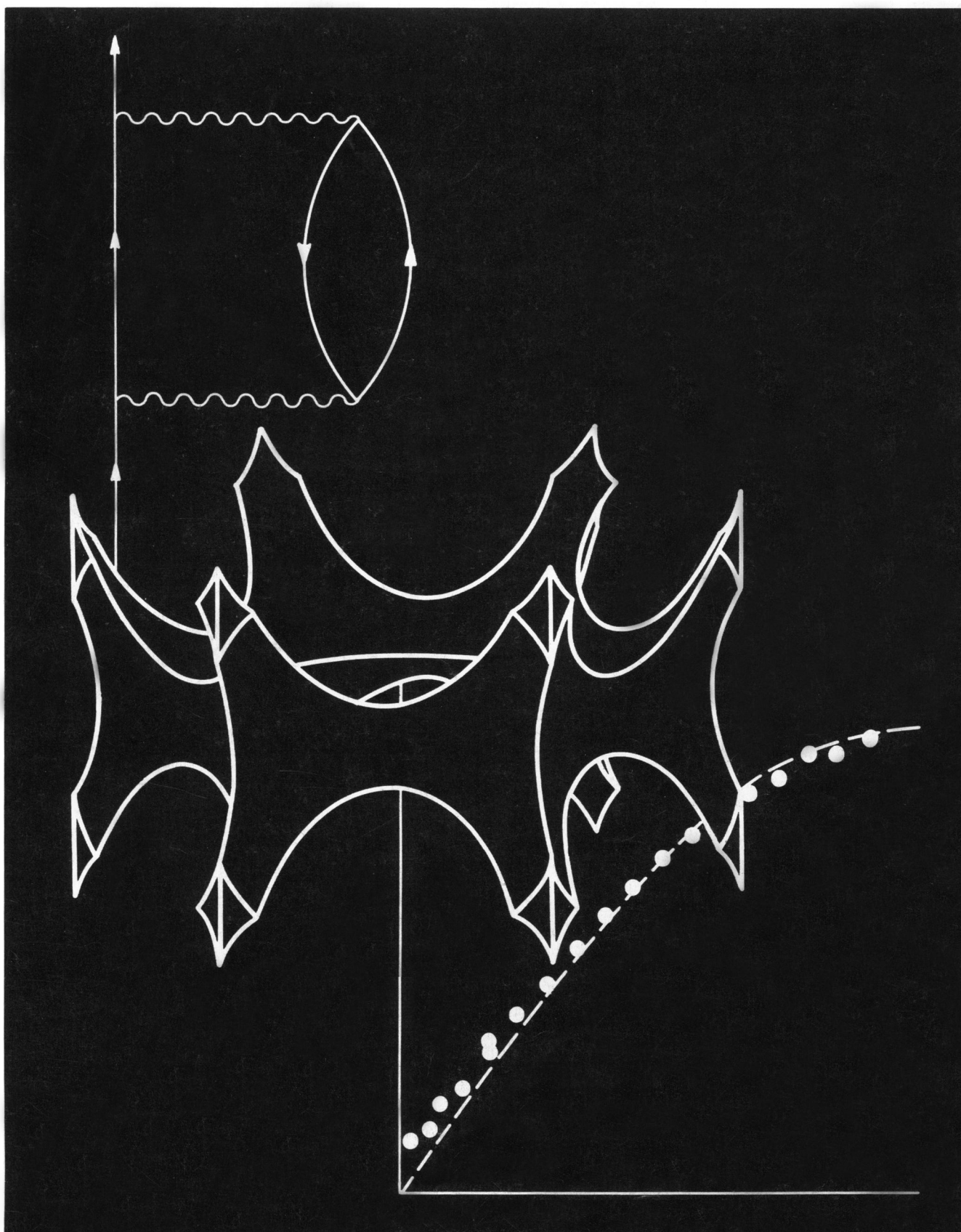


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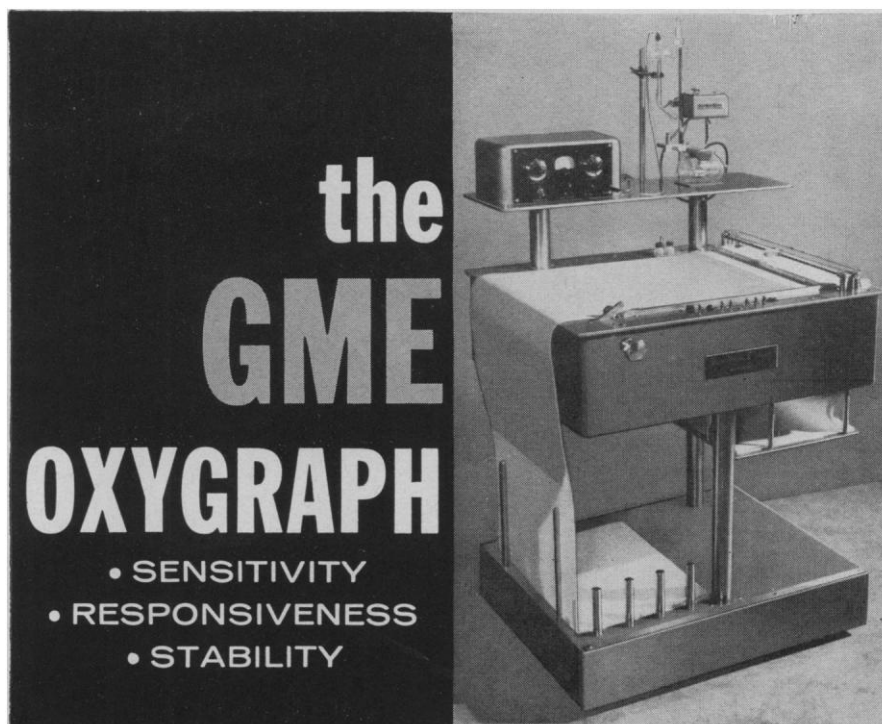
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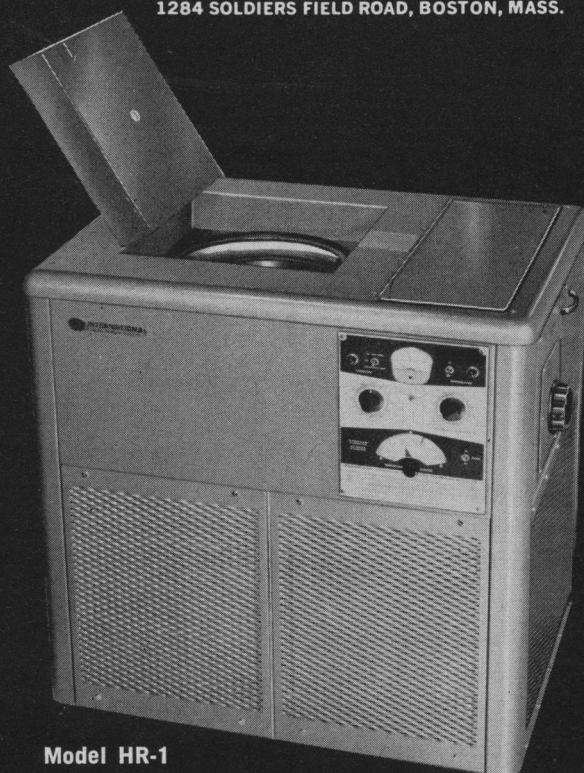
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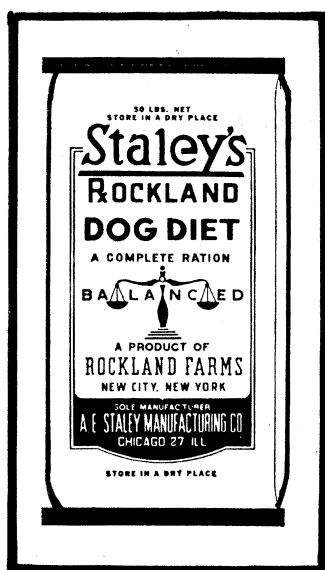
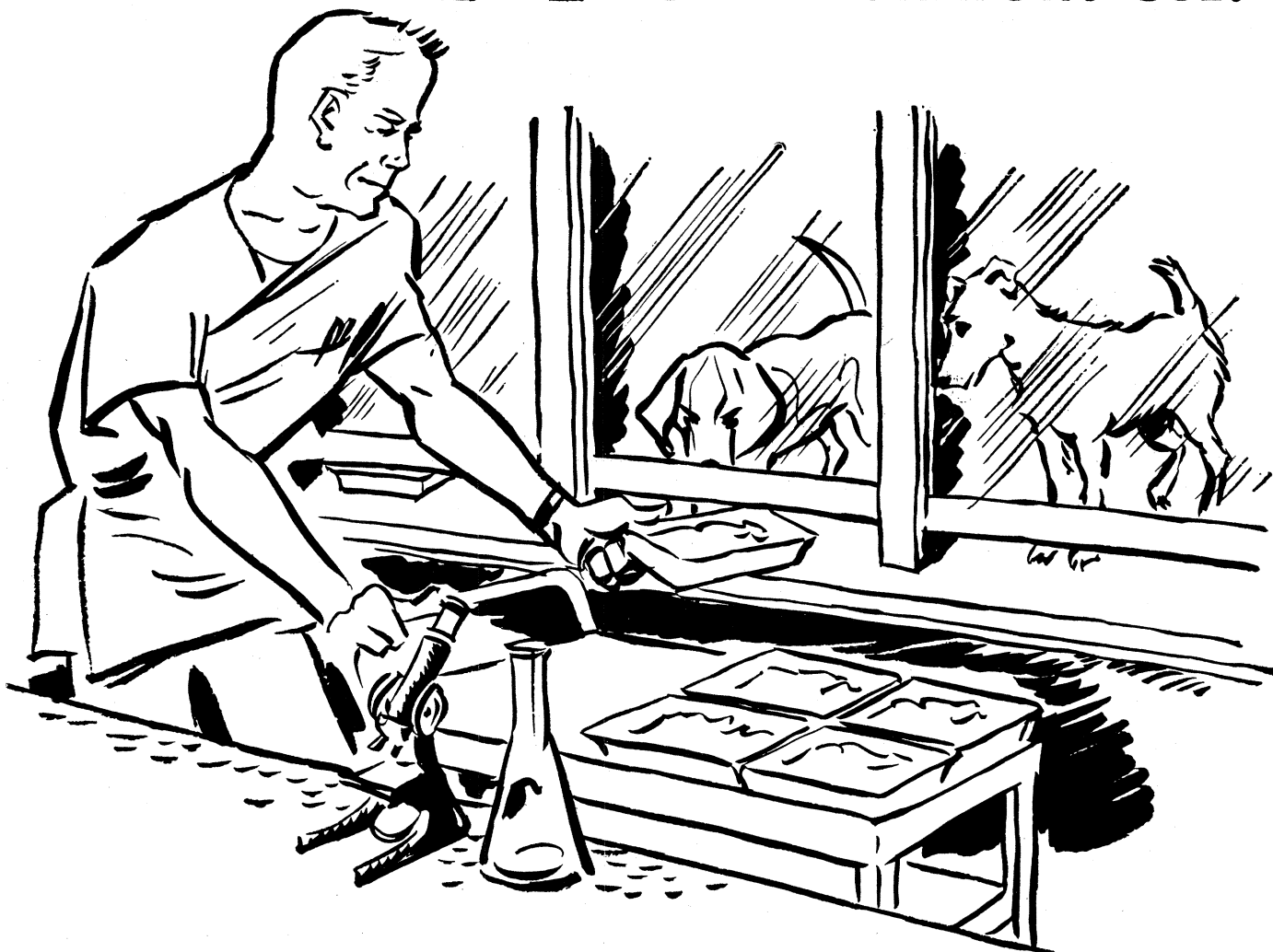
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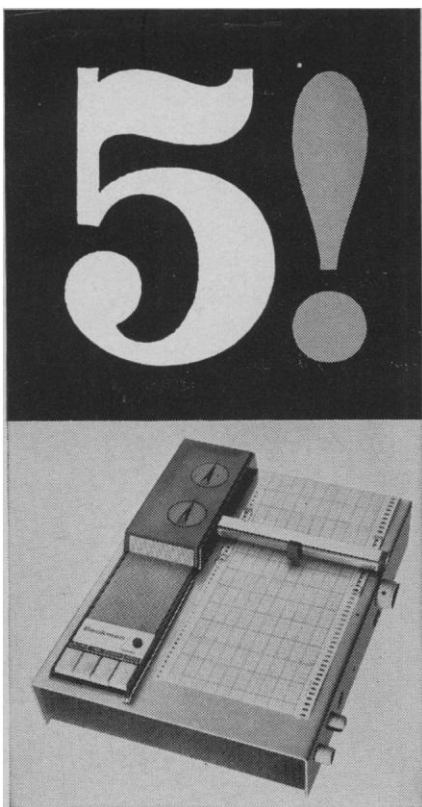
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Letters

Sensory Deprivation

In their article, "Sensory deprivation and hallucinations" [*Science* **133**, 1808 (1961)], Vernon, Marton, and Peterson attribute the beginnings of such research to the 1954 McGill studies. It should be noted that hallucinations resulting from the use of shaped ping-pong balls to achieve diffuse, homogeneous illumination were reported by Hochberg, Triebel, and Seamon [*J. Exptl. Psychol.* **41**, 153 (1951)], and reprinted in Beardslee and Wertheimer, Eds., *Readings in Perception* (Van Nostrand, Princeton, N.J., 1958), pp. 61-69: "Color adaptation under conditions of homogeneous visual stimulation (*Ganzfeld*)." This paper described investigations undertaken to measure the fading and blink-restored recovery of the illuminating color, which apparently surprised Vernon *et al.* The occurrence of some form of hallucinatory experience for 5 out of 11 subjects was described as an incidental phenomenon.

As pointed out in that paper, it is necessary to paste back the subjects' eyelashes in order to achieve a homogeneous visual field. If Vernon *et al.* had taken that precaution they might have gotten more frequent reports of hallucinations.

HOWARD E. GRUBER

Department of Psychology,
University of Colorado, Boulder

We greatly appreciate the interest Gruber has shown in our work. He is quite correct in relating the technique of homogeneous visual stimulation to Hochberg *et al.*, and it was obviously their technique which we tried to copy. That is, we copied most of their technique; we did not paste the upper eyelashes to the upper eyelids, for several reasons. In the first place, we found it easily possible to so fit the eyecaps that the eyelashes did not hit them; we also found that eyelashes did not prevent the achievement of a homogeneous visual field for any of our subjects; and finally, we felt that to paste the eyelashes back for a 48-hour period would lead to unnecessary subject discomfort.

Gruber states that Hochberg *et al.* found recovery of the illuminating color resulting from blinking. This is precisely what they *did not* find. Instead they report: "... brief blinking during and after adaptation had no ap-

parent effects. . . ." They did find, however, a brief restoration of the illuminating color in five of ten subjects following deliberate left-right eye movements. But they attach little importance to that finding, since, in the absence of a fixation point, eye movements must have continuously occurred.

JACK A. VERNON

Department of Psychology, Princeton
University, Princeton, New Jersey

Alpha Blocking

Aside from a certain querulous tone, I can find little to object to in the report by Stern *et al.* [*Science* **134**, 388 (11 Aug. 1961)] commenting on an earlier report by Wolff and me on a study of cerebral function [*ibid.* **131**, 1617 (1960)]. On close reading of both communications, the observations of Stern *et al.* seem to cast doubt primarily in our somewhat parsimonious interpretation of our original findings. Stern and his associates merely replicate the question originally asked long ago by Knott and Henry as to whether or not the alpha blocking to sound before the appearance of light when the two are paired really constitutes a conditioned reflex. In the second paragraph of our report we stated: "Such a phenomenon has been known as a temporary cerebral connection or a conditioned cerebral response (it being understood that the phenomenon does not fulfill the criteria for Pavlovian conditioning)."

We have been engaged in studying the presence or absence of this phenomenon in health and disease, but have not been concerned with the interpretation of the phenomenon either as a "conditioned reflex" or as an "adaptation to a complex stimulus." The term *conditioned cerebral response* has for some years been commonly used by neurophysiologists studying this phenomenon and is understood by those familiar with the field to imply a phenomenon which is different from Pavlovian conditioning, whether or not it implies "adaptation to a complex stimulus." The term was thus used by us because of its common acceptance by investigators in this field, and it was clearly stated not to imply classic Pavlovian conditioning.

CHARLES E. WELLS

School of Medicine, Vanderbilt
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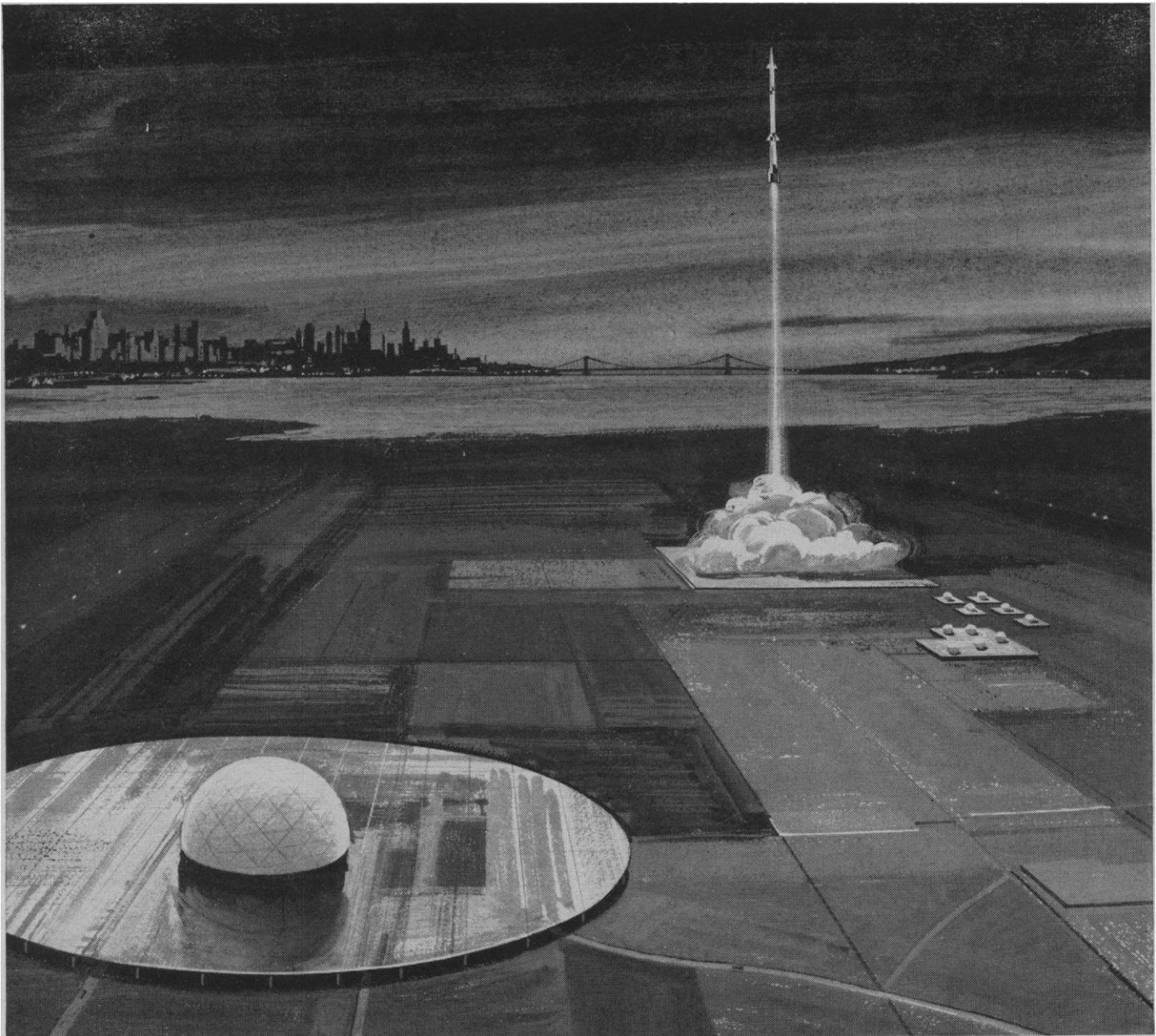
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Tricks with Numbers

Most people know that it is a fallacy to compare absolute numbers instead of rates or percentages. The fact that California annually leads the nation in motor vehicle deaths does not necessarily mean that it is the most dangerous state to drive in. Nevada, for example, with a much lower absolute number, usually leads the nation in motor vehicle deaths per hundred thousand population. Thus, in 1958, this rate for Nevada was 43 and for California, 26.

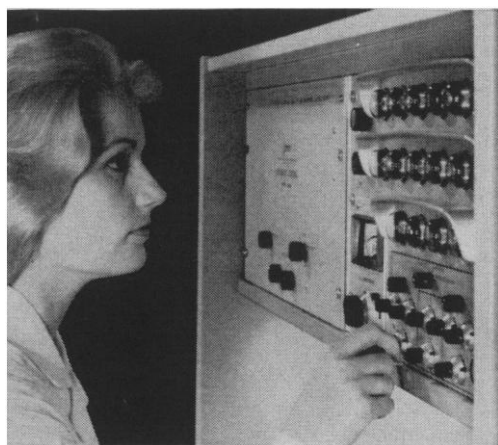
In one field of practical concern, that of consumer credit, the customer usually has no way to determine what his true credit rates are and no standard by which to compare different schemes. Consider a one-year loan that is to be paid back in monthly installments. One method is the "add-on" plan. The borrower signs a note for \$105 and receives \$100. The true annual interest rate on the declining balance is 9.10 percent, not 5 percent. Then there is the "discount" plan. The borrower signs a note for \$100 and receives \$95; this makes his annual interest rate 9.58 percent. But rates as low and as relatively straightforward as these are unusual. To take an actual case, a man signed a note for \$114 to obtain a \$100 loan. The charges were: interest and discount, \$6.93; investigation fee, \$2.00; insurance fee, \$2.00; bank service fee, \$2.78. On an annual basis he was paying at the rate of 24.8 percent. Another plan is to determine interest on declining balances. This plan is used by credit unions and many "small loan" companies, but rarely by banks. The customer knows that his money costs him 1 percent or more per month, and he can readily compute his annual rate by multiplying by 12.

The practices are far more diverse in installment buying than they are for personal loans. The rates vary with number of installments and length of loan, with service and insurance charges, and with differences between cash price and credit price. The ordinary customer simply cannot compute the rate he is paying for his credit. Interest charges range from about 12 percent to well over 100 percent in extreme cases, but the true rates are not ordinarily disclosed.

To remedy this lack of standardization, Senator Douglas and 21 of his colleagues have introduced a "Truth in Lending Act" (S. 1740), which is now in committee. The main feature of the bill is the requirement that the percentage that the finance charge bears to the total amount to be financed be expressed as "a simple annual rate on the unpaid balance of the obligation" (as is now done on many, but not all, personal loans and rarely if ever on installment credit).

The bill is opposed by the following, among others: The American Bankers Association, the Chamber of Commerce of the United States, and the National Retail Furniture Association. It is favored by the Federal Reserve System, the AFL-CIO, the President's Council of Economic Advisers, and the Credit Union National Association, to name a few. Opponents of the bill argue that it invades states' rights, that it is unnecessary, that if passed it would be detrimental to the economy, and that simple interest would be too difficult to calculate. Those who favor it deny that any of these arguments have validity. On the positive side they point to the benefit that would accrue to the customer if he could shop for credit as he can for goods. The statement of the simple annual interest rate would permit a customer to compare the true costs of different forms of credit and to act rationally on that basis. On balance, we favor any step that encourages rational decisions.—G.DuS.

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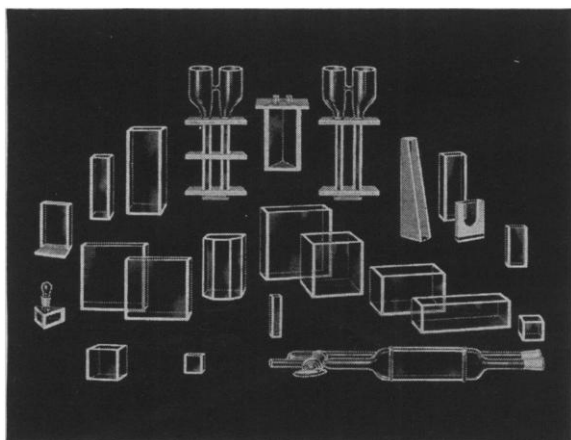
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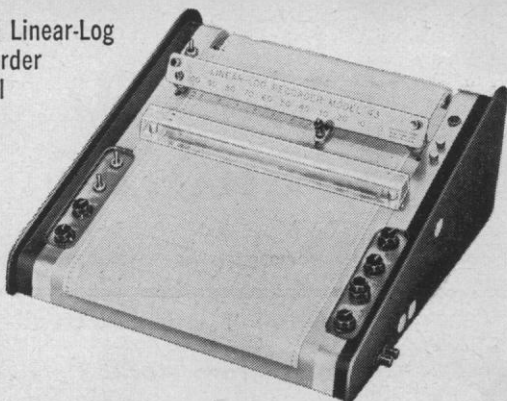
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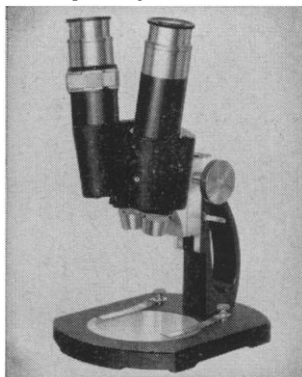
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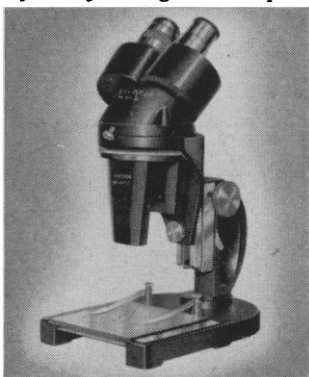
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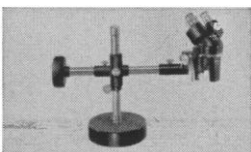
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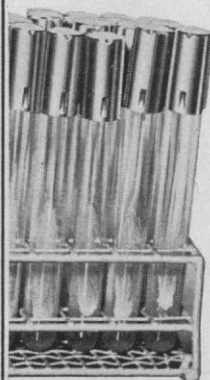
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31-2. Interscience Conf. on Antimicrobial Agents and Chemotherapy, 1st, American Soc. for Microbiology, New York, N.Y. (ASM, 19875 Mack Ave., Detroit 36, Mich.)

November

1. Rheumatic Fever, symp., New Haven, Conn. (E. A. Sillman, Connecticut Heart Assoc., 65 Wethersfield Ave., Hartford 14, Conn.)

1-3. Alkaline Pulping, 15th conf., Houston, Tex. (Technical Assoc. of the Pulp and Paper Industry, 360 Lexington Ave., New York 17)

1-3. Experimental Mechanics, 1st intern. congr., New York, N.Y. (Soc. for Experimental Stress Analysis, P.O. Box 168, Central Sq. Station, Cambridge 39, Mass.)

1-3. High Magnetic Fields, intern. conf., Cambridge, Mass. (H. H. Kolm, Lincoln Laboratory, Massachusetts Inst. of Technology, Lexington 73)

1-3. Transplantation, CIBA Foundation symp. (by invitation), London, England. (CIBA Foundation, 41 Portland Pl., London, W.1)

1-4. American Soc. of Tropical Medicine and Hygiene, Washington, D.C. (R. B. Hill, 3575 St. Gaudens Rd., Miami 33, Fla.)

1-4. Society of Economic Geologists, Cincinnati, Ohio. (E. N. Cameron, Science Hall, Univ. of Wisconsin, Madison 8)

2-3. Cancer Chemotherapy, clinical symp., Washington, D.C. (T. P. Waalkes, Chemotherapy Natl. Service Center, NIH, Bethesda 14, Md.)

2-4. American Soc. for Cell Biology, 1st, Chicago, Ill. (H. Swift, Dept. of Zoology, Univ. of Chicago, Chicago 37)

2-4. Geochemical Soc., Cincinnati, Ohio. (F. R. Boyd, Jr., Geophysical Laboratory, 2801 Upton St., NW, Washington 8)

2-4. Geological Soc. of America, Cincinnati, Ohio. (F. Betz, Jr., GSA, 419 W. 117 St., New York 27)

2-4. Inter-Society Cytology Council, annual, Memphis, Tenn. (P. A. Younge, 1101 Beacon St., Brookline 46, Mass.)

2-4. National Assoc. of Geology Teachers, Cincinnati, Ohio. (D. J. Gare, Principia College, Elsah, Ill.)

2-4. Paleontological Soc., Cincinnati, Ohio. (H. B. Whittington, MCZ, Harvard Univ., Cambridge 38, Mass.)

2-4. Society for Industrial and Applied Mathematics, Washington, D.C. (Chairman, Program Committee, SIAM, P.O. Box 7541, Philadelphia 1, Pa.)

2-5. Mathematical Models in the Social and Behavioral Sciences, conf., Cambria, Calif. (F. Massarik or P. Ratoosh, Mathematical Models Conf., Graduate School of Business Administration, Univ. of California, Los Angeles 24)

3-4. Central Soc. for Clinical Research, Chicago Ill. (J. F. Hammarsten, Veterans Administration Hospital, 921 N.E. 13 St., Oklahoma City 4, Okla.)

4. Society for the Scientific Study of Sex, New York, N.Y. (H. G. Beigel, 138 E. 94 St., New York 28)

5-8. American Speech and Hearing Assoc., Chicago, Ill. (K. O. Johnson, 1001 Connecticut Ave., NW, Washington 6)

5-9. Society of Exploration Geophysicists, 31st annual intern., Denver, Colo. (C. C. Campbell, Box 1536, Tulsa 1, Okla.)

5-11. Stomatology of Peru, intern. congr., Lima, Peru. (A. Rojas, Avenue Pershing 155, San Isidro, Lima)

5-15. Japanese Chemical Engineers Soc., 25th anniversary congr., Tokyo and Kyoto, Japan. (Kagaku-Kogaku Kyokai, Shunichi Uchida, 609 Kojunsha Bldg. No. 4, 6-Chome, Ginza, Chou-Ku, Tokyo)

5-18. Latin American Phytotechnical Meeting, 5th, Buenos Aires, Argentina. (U. C. Garcia, Rivadavia 1439, Buenos Aires)

6-8. Association of Military Surgeons of the U.S., 68th annual, Washington, D.C.

(R. E. Bitner, AMSUS, 1726 Eye St., NW, Washington 6)

6-8. Cell in Mitosis, 1st annual symp., Detroit, Mich. (L. Levine, Dept. of Biology, Life Sciences Research Center, Wayne State Univ., Detroit 2)

6-9. Atomic Industrial Forum-9th Hot Laboratories and Equipment Conf., Chicago, Ill. (O. J. Du Temple, American Nuclear Soc., 86 E. Randolph St., Chicago)

6-9. Southern Medical Assoc., Dallas, Tex. (R. F. Butts, 2601 Highland Ave., Birmingham 5, Ala.)

8. American Acad. of Arts and Sciences, Brookline, Mass. (J. L. Oncley, 280 Newton St., Brookline 46)

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cal Engineering, conf., London, England. (Secretary, Institution of Electrical Engineers, London W.C.2)

8-11. Acoustical Soc. of America, Cincinnati, Ohio. (W. Waterfall, American Inst. of Physics, 335 E. 45 St., New York 17)

8-11. Institute of Management Sciences, San Francisco, Calif. (W. Smith, Inst. of Science & Technology, Univ. of Michigan, Ann Arbor)

8-11. Plasma Physics, American Physical Soc., 3rd annual, Colorado Springs, Colo. (F. Ribe, Los Alamos Scientific Laboratory, P.O. Box 1663, Los Alamos, N.M.)

9-10. Operations Research Soc. of America, 20th, San Francisco, Calif. (P. Stillson, 115 Grove Lane, Walnut Creek, Calif.)

9-11. Gerontological Soc., Pittsburgh, Pa. (R. W. Kleemeier, Washington Univ., Skinker and Lindell, St. Louis 30, Mo.)

9-12. Pacific Coast Fertility Soc., Palm Springs, Calif. (G. Smith, 909 Hyde St., San Francisco 9, Calif.)

9-20. Photography, Cinematography, and Optics, 3rd intern. biennial, Paris, France. (Comité Francais des Expositions, 15 rue de Bellechasse, Paris 7)

12-17. Bahamas Conf. on Medical and Biological Problems in Space Flight, Nassau, Bahamas. (I. M. Wechsler, P.O. Box 1454, Nassau)

13-14. Exploding Wire Phenomenon, 2nd intern. conf., Boston, Mass. (W. G. Chace, Thermal Radiation Laboratory, CRZCM, Geophysics Research Directorate, Air Force Cambridge Research Laboratories, Bedford, Mass.)

13-16. Magnetism and Magnetic Materials, 7th annual intern. conf., Phoenix, Ariz. (P. B. Myers, Motorola, Inc., 5005 E. McDowell Rd., Phoenix 10)

13-17. American Public Health Assoc., 89th annual, New York, N.Y. (APHA, 1790 Broadway, New York)

13-17. Gulf and Caribbean Fisheries Inst., 14th annual, Miami Beach, Fla. (J. B. Higman, Marine Laboratory, Univ. of Miami, 1 Rickenbacker Causeway, Virginia Key, Miami 49)

13-18. European Conf. on the Control of Communicable Eye Diseases, Istanbul, Turkey. (World Health Organization, Palais des Nations, Geneva, Switzerland)

14-16. American Meteorological Soc., Tallahassee, Fla. (Executive Secretary, AMS, 45 Beacon St., Boston 8, Mass.)

14-17. Corrosion in Nuclear Technology, symp., Paris, France. (European Federation of Corrosion, Société de Chimie Industrielle, 28 rue St. Dominique, Paris 7^e)

14-18. Puerto Rico Medical Assoc., Santurce. (J. A. Sanchez, P.O. Box 9111, Santurce)

15-17. Eastern Analytical Symp., New York, N.Y. (A. Rekus, EAS, Research Dept., Baltimore Gas & Electric Co., Pratt St., Baltimore, Md.)

15-18. Society of Naval Architects and Marine Engineers, annual, New York, N.Y. (W. N. Landers, SNAME, 74 Trinity Pl., New York 6)

16-18. American Psychiatric Assoc., Milwaukee, Wis. (J. D. McGucken, 756 N. Milwaukee St., Milwaukee 2)

16-18. Etiology of Myocardial Infarction, intern. symp. (by invitation), Detroit, Mich. (T. N. James, Section on Cardiovascular Research, Henry Ford Hospital, Detroit)

16-18. Southern Thoracic Surgical Assoc., Memphis, Tenn. (H. H. Seiler, 517 Bayshore, Blvd., Tampa 6, Fla.)

16-19. American Anthropological Assoc., Philadelphia, Pa. (S. T. Boggs, 1530 P St., NW, Washington, D.C.)

17-18. Southern Soc. for Pediatric Research, Atlanta, Ga. (W. G. Thurman, Dept. of Pediatrics, Emory Univ. School of Medicine, Atlanta)

17-31. National Soc. for Crippled Children and Adults, annual conv., Denver, Colo. (NSCCA, 2023 W. Ogden Ave., Chicago 12, Ill.)

19-22. International College of Surgeons, Western regional, San Francisco, Calif. (W. F. James, 1516 Lake Shore Drive, Chicago 10, Ill.)

22-27. Automation and Instrumentation, 5th conf., Milan, Italy. (Federezione delle Società Scientifiche e Tecniche di Milano, via S. Tomaso 3, Milan)

22-1. Radioisotopes in Animal Biology and the Medical Sciences, conf., Mexico City, D.F. (International Atomic Energy Agency, 11 Kärntner Ring, Vienna 1, Austria)

23-25. Central Assoc. of Science and Mathematics Teachers, Chicago, Ill. (J. Kennedy, Indiana State Teachers College, Terre Haute)

24-25. American Soc. of Animal Production, Chicago, Ill. (C. E. Terrill, Animal Husbandry Research Div., U.S. Dept. of Agriculture, Beltsville, Md.)

(See issue of 15 September for comprehensive list)



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