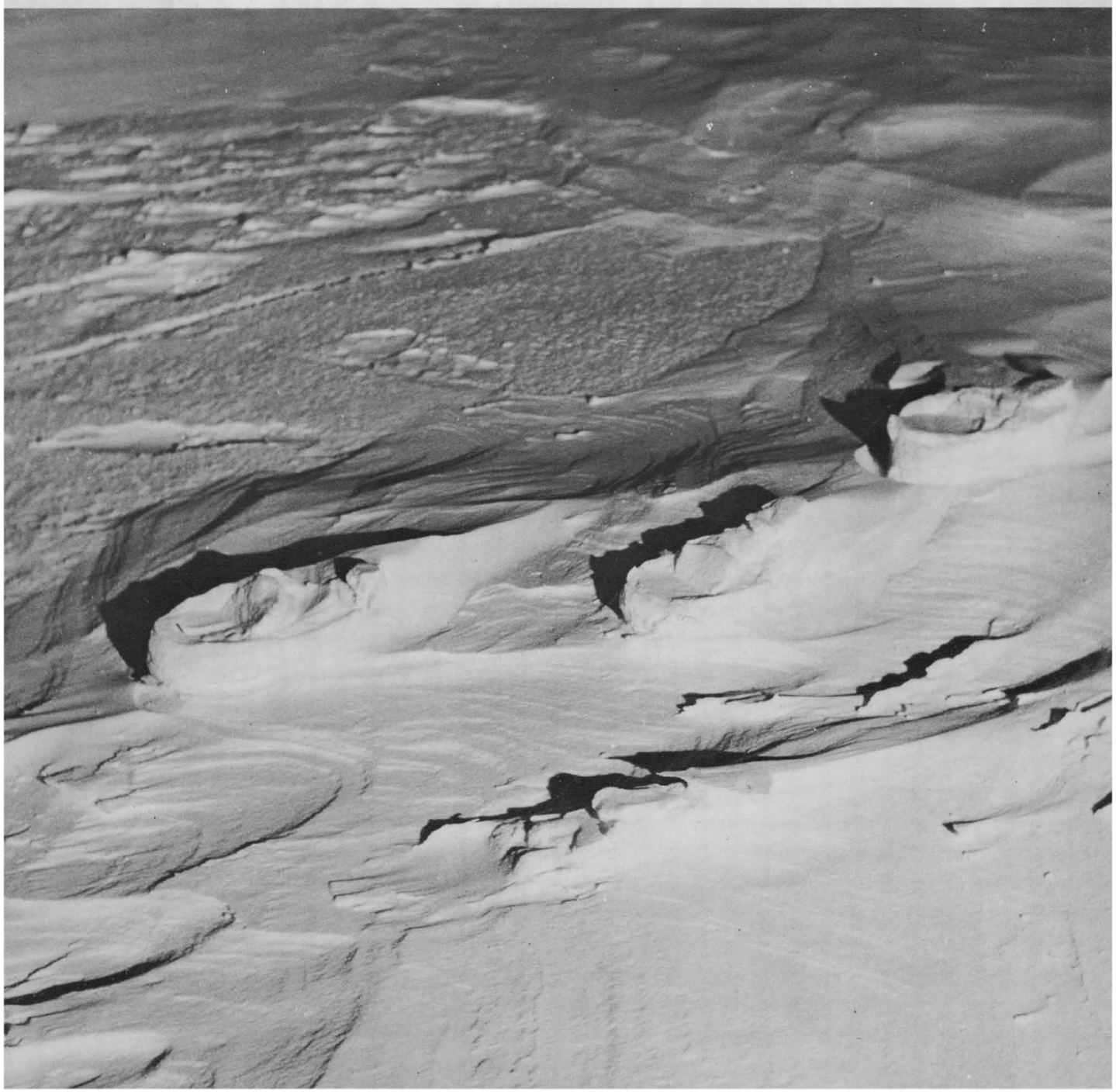
SCIENCE

6 July 1962

Vol. 137, No. 3523

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



IBM® computers are helping scientists at several universities probe one of the most intriguing mysteries of life—the puzzle of just how physical characteristics are passed along the family tree. Hopefully, this kind of research may lead to earlier diagnosis and treatment of many hereditary diseases.

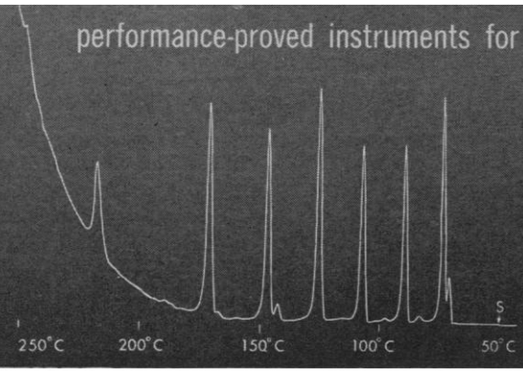
Scientists would like to know, for example, if a gene that causes a particular hereditary disease travels along with a gene for a normal trait, such as eye color or blood type. So far, they have been able to trace certain inherited traits back as many as nine generations. This problem is so complex that a single step may require as many as a *million* separate calculations.

In this and other areas of science, business, and government, IBM computers are helping to find answers to problems too complex for ordinary solutions.

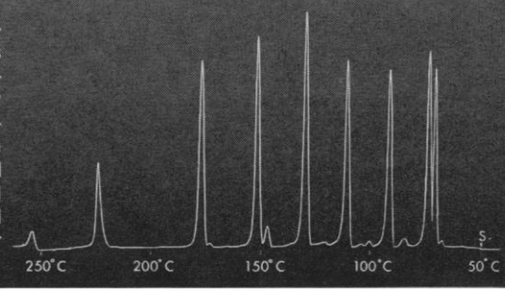
What traits did he inherit from his great-great-great-great-great-great-grandfather?

SCIENCE is published weekly by the AAAS, 1515 Massachusetts Ave., NW, Washington 5, D.C. Second-class postage paid at Washington, D.C., and additional mailing office. Annual subscriptions: $8.50; foreign postage, $1.50; Canadian postage, 75¢.

performance-proved instruments for GAS CHROMATOGRAPHY



Chromatogram (left) shows conventional single-column analysis of chlorinated hydrocarbons. Unstable baseline is caused by column substrate bleeding at elevated temperature. At right, same sample and conditions, with good stability and definition of final peak, because of differential effect of dual-column/detector feature of Model 800.



NEW CHROMATOGRAPH'S DIFFERENTIAL FLAME IONIZATION DETECTOR ADDS SENSITIVITY TO BASELINE STABILITY

Perkin-Elmer's new Model 800 is the first gas chromatograph to give you a differential flame ionization detector. Combined with dual columns and a highly-accurate linear temperature programmer, it provides high sensitivity and range with maximum baseline stability, particularly in the analysis of trace components at high temperatures.

Dual columns can completely cancel out the effects of column substrate bleeding during either programmed or isothermal analyses, allowing full use of the ionization detector's inherent sensitivity. Dual injection ports permit you to use either column independently.

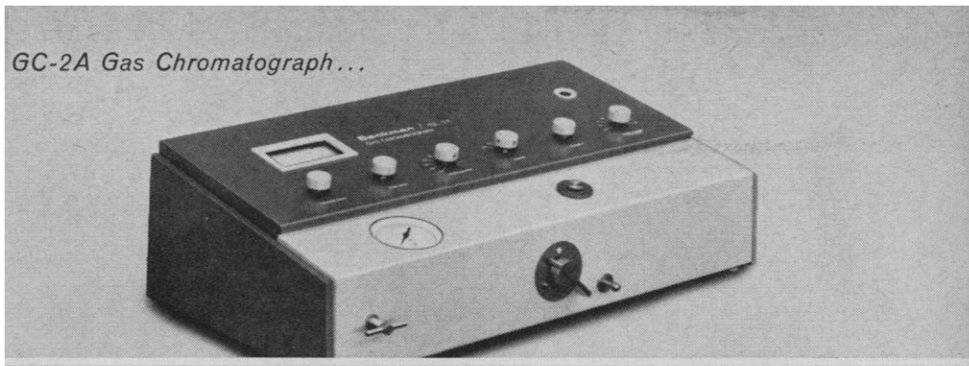
A high-velocity circulating air oven, combined with a precision programming system, allows seventeen linear heating rates from 0.5 to 50°C per minute; top oven temperature is 400°C.

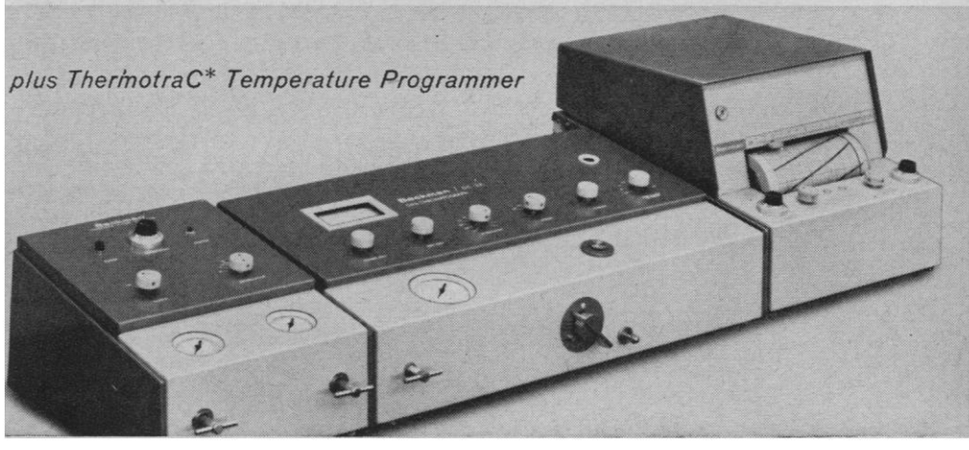
For more information on the Model 800 gas chromatograph, write to Instrument Division, Perkin-Elmer Corporation, 910 Main Avenue, Norwalk, Connecticut.

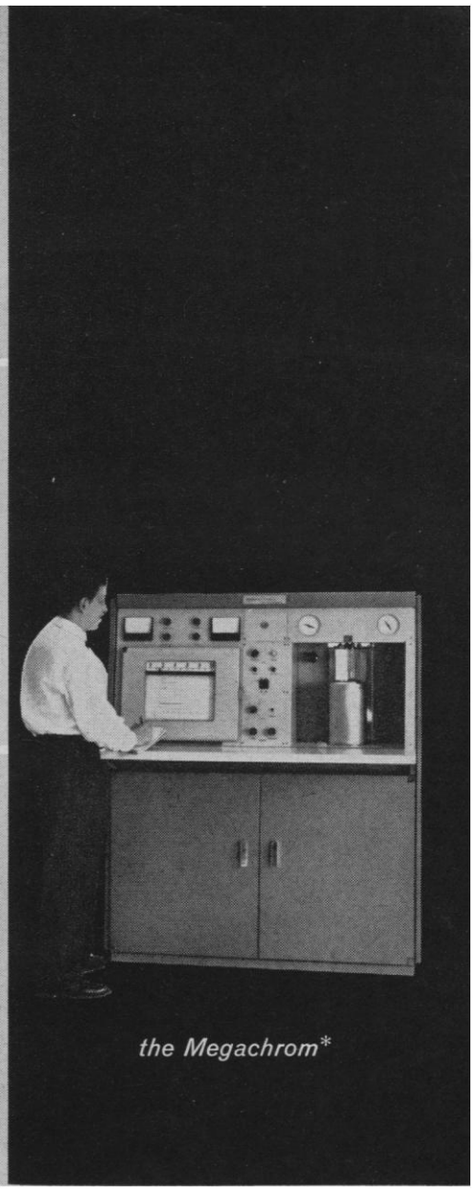
6 July 1962, Volume 137, Number 3523

SCIENCE

Cover Snow erosion on Arctic Drifting Station Charlie (77°N) in early December 1959. Snow had fallen a few days before. The wind, after a change in direction or velocity, can cut away a foot or more of hard-packed snow in a few hours. Illumination by Coleman lantern. [V. P. Hessler, College, Alaska]







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The Beckman GC-2A is the most sensitive of commercial gas chromatographs. It provides thermal conductivity detection with a sensitivity ten times greater than that of previously available instruments. Used with the Beckman Flame Ionization Detector, parts per billion sensitivity is obtained. Or add the ThermotraC, most precise of temperature programmers, for an infinite variety of linear, non-linear, and step-function programs. Other GC-2A accessories include Dual Column Valves, Stream Splitter Kit, Temperature Readout, Fraction Collection System, Micro Liquid Sampler, more than 250 analytical columns, and a wide selection of preparative columns. These accessories may also be used with the earlier Beckman Model GC-2.

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6 July 1962, Volume 137, Number 3523

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Air Conservation

The AAAS Committee on Science in the Promotion of Human Welfare has given the following charge to its newly appointed Air Conservation Commission (see p. 27):

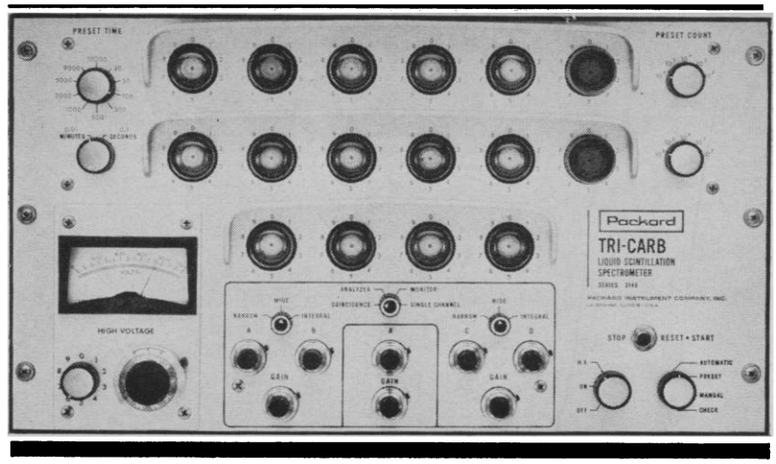
"Man's existence has always depended upon the delicate equilibrium of the constituents of the atmosphere. At the present pace of technological change, and because of the growing magnitude of industrial and other operations, widespread alterations in these constituents are occurring. We now possess the capacity to determine whether the atmosphere shall be used in such a way as to preserve its ability to sustain life, or whether man's atmospheric environment shall continue to deteriorate, to the detriment of his health and his way of life. The future of mankind depends upon the wisdom with which we conserve our atmospheric resources.

"The present state of knowledge about atmospheric pollution and its control provides a basis for predicting consequences for our air resources of certain patterns of human activity, such as transportation systems, industrial operations, energy production, and weapons testing. Given this knowledge, policy decisions on matters like land utilization, fuel usage, and urban organization become imperative in conserving our air resources. A sound public policy, suitably implemented, can protect health and economic values, and can encourage technological progress.

"The American Association for the Advancement of Science's Committee on Science in the Promotion of Human Welfare has developed recommendations concerning the role of the scientific community and its members in issues of public policy involving scientific considerations. Among other things, it concluded that the scientific community should 'provide for the public and its social and political agencies, objective statements of the facts and of the consequences of alternative policies that are required for informed decisions on the relative merits of proposed courses of action.'

"In order to encourage the application of scientific objectivity and the fund of scientific information to the problems associated with air conservation, the resources of the scientific community may be applied to these problems in several ways: (i) to assemble and transmit facts relevant to the formulation of public policy decisions; (ii) to predict from these facts the consequences of alternative public policies; (iii) to assess the assumptions and limits of error underlying these facts and predictions; (iv) to determine which additional facts are needed to arrive at reliable predictions; (v) to periodically evaluate the consequences of public policies in light of available facts.

"The American Association for the Advancement of Science Committee on Science in the Promotion of Human Welfare hereby convenes an Air Conservation Commission to marshal the resources of the scientific community in the manner mentioned above. This Commission is charged with responsibility to define the issues and the consequences which may be anticipated from these alternatives, so far as available facts permit. The Commission's findings shall be reported through appropriate channels of the American Association for the Advancement of Science to the scientific community at large."—*AAAS Committee on Science in the Promotion of Human Welfare*



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Kodak reports on:

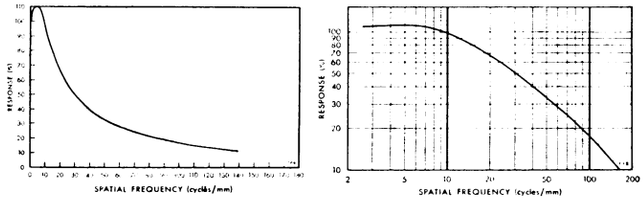
modulation transfer curves for film . . .
magic lanterns, old and new . . . phenolphthalein reborn

No snow job

Flip through one of those magazines that point high on the taste-making hierarchy. Look at the photographs in the ads. Very potent. Here dangles the carrot that powers the economic machine. Here, in an extremely important function of photography in today's world, a subjective attitude by the viewer is intended.

At the same time and with no less skill, success, or importance for today's world, photography is being wrung as dry as possible of subjectivity.

Hopped up on information theory, habituated to the tube-handbook way of life, harried by urgent need to watch some vane flutter fifty miles high in the sky, heavy-footed engineers are trampling on the nuances where the grapes of art are stored. Curves they want, not adjectives. Curves they shall have. Like these for KODAK ROYAL-X Pan Recording Film:



53 sets of them. They have just been published in "Modulation Transfer Data for KODAK Films," a pamphlet obtainable free from Eastman Kodak Company, Special Sensitized Products Division, Rochester 4, N. Y.

This is not a snow job. We have thought it worthwhile to go to a great deal of trouble to obtain these data from actual measurements on actual film. The resolving power, which was never very objective, is now merely a point on the curve.

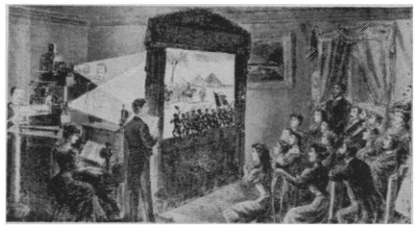
Much work still lies ahead. Publication of these modulation transfer curves for KODAK films may hasten the advent of modulation transfer curves for lenses. In the meantime, it is possible to work backward by measuring the over-all modulation transfer function and "dividing" it by the function the pamphlet gives for the film. As a simpler expedient to aid in distinguishing the feasible from the unfeasible, one can use the modulation transfer function for a perfect (i.e. diffraction-limited) lens. It's included with the pamphlet.

A review paper on all this entitled "Methods of Appraising Photographic Systems" has been much in demand by scientists, perhaps troubled as to the validity of their experimental assumptions. If you ask for the curves but not for the review paper, we shall assume that you already have it or are too well informed to need it.

1917 must have been a great year

The honest old lantern slide plate has gone into hiding under an alias and can be located only by asking a photo supply dealer for KODAK Projector Slide Plates. It had sinned by defying the modern attitude. You can appreciate our embarrassment.

The emulsion we put on this product has undergone no significant improvement since 1917. Not that we haven't tried. Lord, how we've tried! Yet every "improved" lantern-slide emulsion we come up with shows some characteristics that we are afraid the customers wouldn't like as well as they like the unimproved vintage of 1917. Considering the combined scientific might of the laborers we employ in the vineyard and considering that the customers are also largely scientists and engineers professionally dedicated to progress, the situation strikes us as a dirty shame.



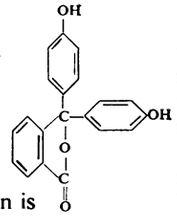
The customers use the product either to present their latest discoveries to colleagues at scientific meetings by means of a device that our forefathers called a magic lantern—hence "lantern slides"—or they use them in an even more magical device called an electron microscope. How we hunger to advertise that we deserve some credit for the light this instrument has shed on the molecular machinery of the cell!

Keep watching. We do not propose to give up our attempts to earn such credit.

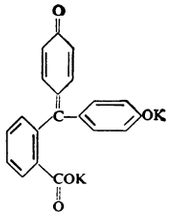
Meanwhile, to make amends for allowing various committees to talk us into replacing the well understood designation "lantern slide," by the vague and ambiguous word combination "projector slide," we now put a very thin but effective anti-abrasion coating of plain gelatin over the good old emulsion.

Plain and salted

You need not admit that you have forgotten or never knew that the structural formula of phenolphthalein is



which, with a drop or two of KOH added, turns its famous magenta and becomes



With the carboxyl esterified instead of salted and the other two rings brominated, you have *Tetrabromophenolphthalein Ethyl Ester Monopotassium Salt* (EASTMAN 7083).

We also offer the free indicator acid, *Tetrabromophenolphthalein Ethyl Ester* (EASTMAN 6810). It is an indicator for non-aqueous titrations just as the potassium salt is an indicator for aqueous media. EASTMAN 6810 exhibits different colors with different bases. Maybe that's nice and maybe it isn't. It has another property which you may find more interesting. If brought into contact with native proteins, a blue color—apparently an adsorption compound—appears. This blue color, unlike the blue of the alkali salts of this indicator, does not turn yellow with application of dilute acetic acid. The same effect is obtained with concentrated alkaloids of high molecular weight but not with mere amino acids, di- and tripeptides, or peptones. This is the basis of the spot test for proteins to be found in Feigl's *Spot Tests*, Volume II, p. 293 (Elsevier, 1954).

The procedure given there is based on the potassium salt because, says the book, the ester is not usually available. If that's all that outdates the book, it's a mighty good book indeed.

Actually we have found it a little harder to make pure EASTMAN 7083 than pure EASTMAN 6810 but both, along with 3900 other EASTMAN Organic Chemicals, are available from Distillation Products Industries, Rochester 3, N. Y. (Division of Eastman Kodak Company).

This is another advertisement where Eastman Kodak Company probes at random for mutual interests and occasionally a little revenue from those whose work has something to do with science

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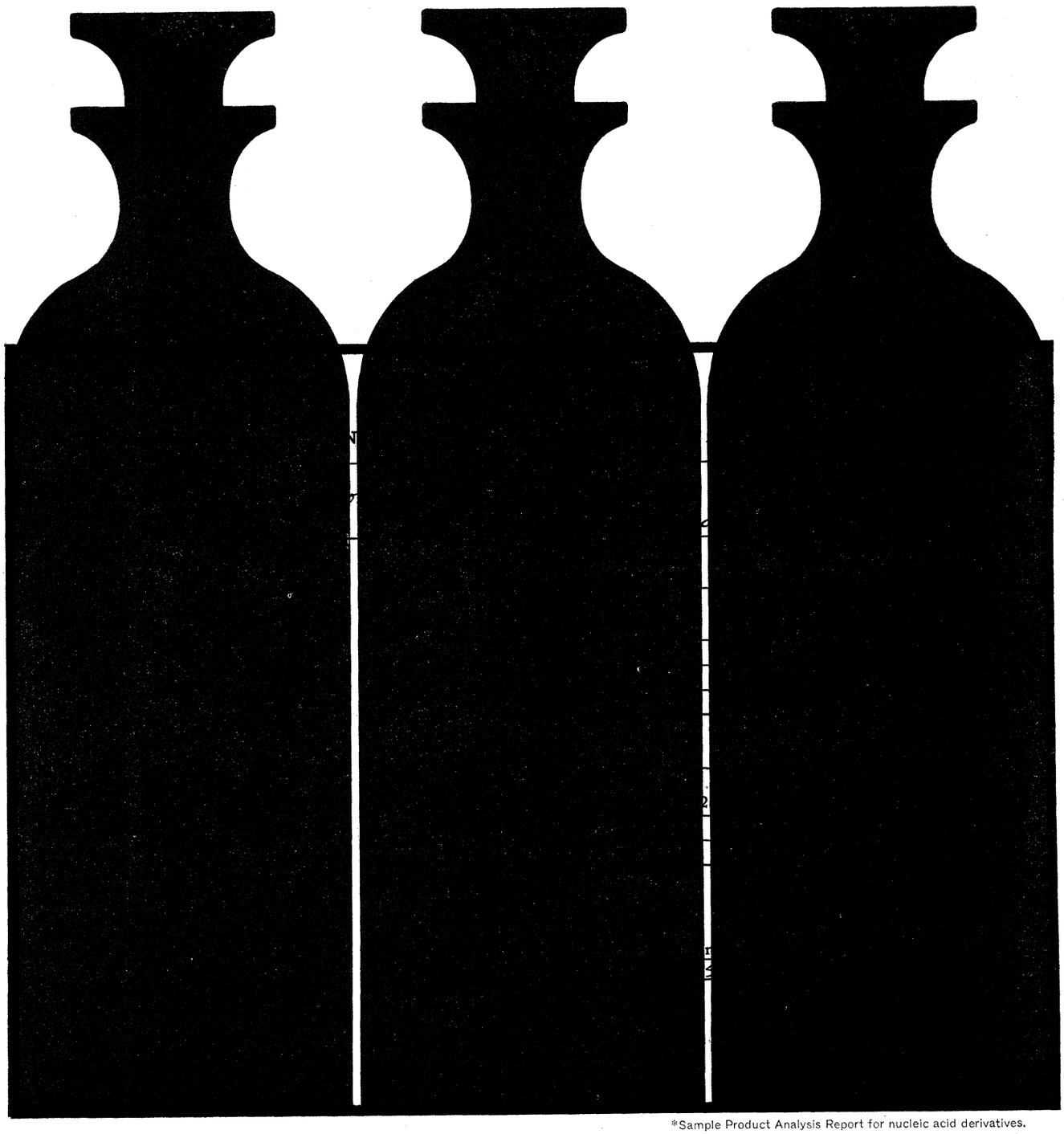

*Sample Product Analysis Report for nucleic acid derivatives.

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New Products

Ion gage and gage-control unit is furnished with either a conventional glass envelope or as a bakable, nude, gage mounted on a flange with ceramic insulators. X-ray limit of the nude gage is said to be lower than 2×10^{-11} mm-Hg. Pressures between 10^{-4} and 2×10^{-9} may be read directly from the logarithmic scale of the gage control unit, and pressures between 10^{-4} and 2×10^{-11} can be read from linear scales. The grid supply provides a stabilized current output that can be varied between 50 μa and 10 ma for use with most ionization gages. Recorder output terminals, electron bombardment degassing of both grid and collector, filament protection circuit, and external relay circuit are additional features.—J.S. (Varian Associates, Dept. S271, 611 Hansen Way, Palo Alto, Calif.)

Electronic **analog multiplier** operates on the quarter-square principle. The device accepts two input voltages, x and y, and produces a single output voltage, $xy/20$. It employs direct-coupled low-drift chopper-stabilized amplifiers and is said to have a solution time approximating 8 μsec. For performing correlation, convolution, and Fourier analyses of time-varying signals, the units can be modified so that the output is integrated with respect to time. By time sharing, a number of multiplication channels can be provided. Division can be performed by altering interconnections of the basic modules or by using the multiplier with an inverse-function generator. Operating as a modulator, the device permits generation of amplitude-modulated signals. It can provide instantaneous indication of power consumption and may be used to correct calibration for variations in recording system transducer reference signals.—J.S. (Intectron, Inc., Dept. S244, 2300 Washington St., Newton Lower Falls, Mass.)

Freeze dryer "cold hand" for preparation of tissues for examination by light or electron microscopy consists of a vacuum chamber containing an eight-place specimen carrier. The chamber immersed in a Dewar of refrigerant provides optimum geometry for rapid removal and trapping of water from the specimens. The specimen carrier is arranged so that the tissue blocks when dry can be dropped into plastic or paraffin embedding medium without breaking the vacuum. The carrier is raised to embedding temperature by means of internal heaters controlled by thermocouples. Vacuum pumps, gages, and accessories are provided.—R.L.B. (Canal Industrial Corp., Dept. S218, 4935 Cordell Ave., Bethesda 14, Md.)

Ultrasonic translator converts signals in the frequency range 35,000 to 45,000 cy/sec to corresponding signals in the audio range. The instrument uses solid-state circuitry and is portable and battery operated. The translated signals are available for input into tape recorders or other data-recording devices. One application suggested by the manufacturer is the detection of leaks. A 0.006-inch leak in a pressure system carrying 100 lb/in.^{2} is said to be detected at a distance of 50 feet. Direction and focus to the source of noise are provided by aiming the probe and by estimating the volume of the output sound. The nature of the source of noise is said to be recognizable in the translated signal so that an air leak is easily recognized as such.—J.S. (Delcon Corp., Dept. S247, 943 Industrial Ave., Palo Alto, Calif.)

Aerosol analysis kit for **air contamination monitoring** contains all the materials and special equipment required for 150 tests involving the monitoring of airborne particulate contamination levels. The kit provides means for determining contamination levels in open atmospheres, clean rooms, and other manufacturing assembly areas. It meets the requirements of ASTM specification, "Proposed Method of Test for the Determination of Airborne Particulate Contamination in Manufacturing Areas," based on the microscopic particle count method. The kit provides 100 aerosol field monitors with type AA black, grid-marked Millipore filters and 50 monitors with type AA white filters. Other items are an aerosol adapter, a set of five limiting orifices, vacuum-pressure pump, forceps, microscope stage micrometer, and microscope reticule. Also furnished is the Millipore manual, "Detection and Analysis of Contamination," which outlines SAE and ASTM specifications and many other contamination procedures. Price is $207.—R.L.B. (Millipore Filter Corp., Dept. S255, Bedford, Mass.)

Events recorder monitors and records up to 50 events with simultaneous time indication. Maximum recording rate is 10 events per channel. The recorder functions only when an event signal occurs, so that the chart advances only after a print command has been fulfilled. In operation, the input signal defining an event is converted to a pulse. This, when synchronized with an internal timing pulse, serves to open the recording gates. The timed event is scaled to 1–2–4–8 code in groups of 0.1, 1, and 10 seconds and 1 and 10 minutes. Full time range is 100 minutes with the maximum recording rate. The record is printed on a dry electrosensitive paper that requires no development. Chart width is 12-3/16 inches. All components are solid state.—J.S. (Weston Instruments Div., Daystrom, Inc., Dept. S246, Newark, N.J.)

Broad-band ultrasonic generator (model IU-250-BB) is capable of furnishing ultrasonic power at frequencies from 20 to 1000 kcy/sec at power levels from zero to 250 watts. The generator is contained in a console that provides coarse and fine adjustment of frequency and power. Frequency can be varied during the course of experiments.—J.S. (International Ultrasonics, Inc., Dept. S250, Cranford, N.J.)

The material in this section is prepared by the following contributing writers:

Robert L. Bowman (R.L.B.), Laboratory of Technical Development, National Heart Institute, Bethesda 14, Md. (medical electronics and biomedical laboratory equipment).

Joshua Stern (J.S.), Basic Instrumentation Section, National Bureau of Standards, Washington 25, D.C. (physics, computing, electronics, and nuclear equipment).

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Address inquiries to the manufacturer, mentioning *Science* and the department number.

Spain. (A. Damen, IPSF, Spaargarenstraat 26, Oegstegeest-Leiden, Netherlands)

25–26. International Chiropractors Assoc., annual, Davenport, Iowa. (G. R. Price, 741 Brady St., Davenport)

25–31. Environmental Control of Plant Growth, intern. symp., Canberra, Australia. (L. T. Evans, C.S.I.R.O., Div. of Plant Industry, P.O. Box 109, Canberra City, A.C.T., Australia)

26. American Assoc. of Electromyography and Electrodiagnosis, annual, New York, N.Y. (M. K. Newman, 16861 Wyoming Ave., Detroit 21, Mich.)

26–29. American Inst. of Chemical Engineers, natl. mtg., Denver, Colo. (F. H. Poettmann, Ohio Oil Co., P.O. Box 269, Littleton, Colo.)

26–29. Soil Conservation Soc. of America, Washington, D.C. (H. W. Pritchard, 838 Fifth Ave., Des Moines 14, Iowa)

26–31. American Inst. of Biological Sciences–American Assoc. for the Advancement of Science, Pacific Div., Corvallis, Ore. (AIBS, 2000 P St., NW, Washington 6, D.C.)

The following 27 meetings are being held under AIBS auspices during the annual meeting in Corvallis:

American Bryological Soc. (R. O. Belkengren, Dept. of Botany & Plant Pathology, Oregon State Univ., Corvallis)

American Fern Soc. (L. Dennis, Dept. of Botany & Plant Pathology, Oregon State Univ., Corvallis)

American Fisheries Soc. (J. H. Wales, Fish & Game Management, Oregon State Univ., Corvallis)

American Microscopical Soc. (H. K. Phinney, Dept. of Botany & Plant Pathology, Oregon State Univ., Corvallis)

American Phytopathological Soc. (E. K. Vaughan, Dept. of Botany & Plant Pathology, Oregon State Univ., Corvallis)

American Soc. for Horticultural Science. (S. B. Apple, Jr., Dept. of Horticulture, Oregon State Univ., Corvallis)

American Soc. of Human Genetics. (J. D. Mohler, Dept. of Zoology, Oregon State Univ., Corvallis)

American Soc. of Limnology & Oceanography. (J. Pattullo, Dept. of Oceanography, Oregon State Univ., Corvallis)

American Soc. of Plant Physioligists. (H. J. Evans, Dept. of Botany & Plant Pathology, Oregon State Univ., Corvallis)

American Soc. of Plant Taxonomists. (K. L. Chambers, Dept. of Botany & Plant Pathology, Oregon State Univ., Corvallis)

American Soc. of Zoologists. (A. W. Pritchard, Dept. of Zoology, Oregon State Univ., Corvallis)

Biometric Soc. (L. D. Calvin, Statistical Laboratory, Oregon State Univ., Corvallis)

Botanical Soc. of America. (L. E. Jones, Dept. of Botany and Plant Pathology, Oregon State Univ., Corvallis)

Ecological Soc. of America. (W. W. Chilcote, Dept. of Botany & Plant Pathology, Oregon State Univ., Corvallis)

Genetics Soc. of America. (R. Bogart, Dept. of Dairy & Animal Husbandry, Oregon State Univ., Corvallis)

Mycological Soc. of America. (C. M. Leach, Dept. of Botany & Plant Pathology, Oregon State Univ., Corvallis)

National Assoc. of Biology Teachers. (S. E. Williamson, Dept. of Science Education, Oregon State Univ., Corvallis)

Nature Conservancy. (R. M. Storm, Dept. of Zoology, Oregon State Univ., Corvallis)

Phi Sigma Soc. (W. H. Brandt, Dept. of Botany & Plant Pathology, Oregon State Univ., Corvallis)

Phycological Soc. of America. (H. K. Phinney, Dept. of Botany & Plant Pathology, Oregon State Univ., Corvallis)

Plant Phenolics Group of America. (H. Aft, Forest Products Laboratory, Oregon State Univ., Corvallis)

Society for Industrial Microbiology. (R. Bogart, Dept. of Dairy and Animal Husbandry, Oregon State Univ., Corvallis)

Society for the Study of Evolution, (W. F. Stephen, Dept. of Entomology, Oregon State Univ., Corvallis)

Society for the Study of Development and Growth. (A. W. Pritchard, Dept. of Zoology, Oregon State Univ., Corvallis)

Society of General Physiologists. (E. J. Dornfeld, Dept. of Zoology, Oregon State Univ., Corvallis)

Society of Protozoologists. (S. E. Knapp, Dept. of Veterinary Medicine, Oregon State Univ., Corvallis)

Tomato Genetics Cooperative. (W. A. Frazier, Dept. of Horticulture, Oregon State Univ., Corvallis)

The following nine meetings are being held under AAAS auspices during the annual meeting of the Pacific Division:

American Meteorological Soc. (L. D. Calvin, Statistical Laboratory, Oregon State Univ., Corvallis)

American Nature Study Soc. (R. E. Storm, Dept. of Zoology, Oregon State Univ., Corvallis)

American Soc. of Ichthyologists & Herpetologists, Western Div. (R. E. Storm, Dept. of Zoology, Oregon State Univ., Corvallis)

American Soc. of Limnology & Oceanography, Pacific Div. (J. Pattullo, Dept. of Oceanography, Oregon State Univ., Corvallis)

Institute of Food Technologists. (C. E. Samuels, Dept of Food & Dairy Technology, Oregon State Univ., Corvallis)

Oregon Acad. of Science. (F. A. Gilfillan, Dean of Sciences, Oregon State Univ., Corvallis)

Oregon Marine Biological Soc. (J. H. Wilson, Public Health Service, Portland, Ore.)

Society of Systematic Zoology. (J. D. Lattin, Dept. of Entomology, Oregon State Univ., Corvallis)

Western Soc. of Soil Science. (T. L. Jackson, Dept. of Soils, Oregon State Univ., Corvallis)

26–31. International Commission for Uniform Methods of Sugar Analysis, session, Berlin, Germany. (F. Schneider, Langer Kamp 5, Braunschweig, Germany)

26–1. International Federation of Information Processing Societies, annual, Munich, Germany. (I. L. Auerbach, Auerbach Electronics Corp., 1634 Arch St., Philadelphia 3, Pa.)

26–1. Radiology, intern. congr., Montreal, Canada. (C. B. Peirce, Suite 204, 1555 Summerhill Ave., Montreal 25)

26–2. History of Science, intern. congr., Ithaca, N.Y. (26–31 Aug.), and Philadelphia, Pa. (31 Aug.–2 Sept.). (Secretary, Intern. Congr. of the History of Science, Cornell Univ., Ithaca)

27–28. Culture Collections, conf., Ottawa, Ont., Canada (by invitation). (S. M. Martin, Div. of Applied Biology, Natl. Research Council, Ottawa 2)

27–28. Scandinavian Neurosurgical Soc., annual, Odense, Denmark. (B. Broager, Neurokirurgisk Afdeling, Bispebjerg Hospital, Copenhagen, Denmark)

27–29. American Physical Soc., Seattle, Wash. (H. A. Shugart, Univ. of California, Berkeley 4)

27–29. Ballistic Missile and Space Technology, symp., Los Angeles, Calif. (C. T. Morrow, Aerospace Corp., P.O. Box 95085, Los Angeles 45)

27–29. Mathematical Assoc. of America, summer mtg., Vancouver, B.C. (H. L. Alder, MAA, Dept. of Mathematics, Univ. of California, Davis)

27–29. Metallurgy of Semiconductor Materials, conf., Philadelphia, Pa. (Amer. Inst. of Mining, Metallurgical, and Petroleum Engineers, 345 E. 47 St., New York 17, N.Y.)

27–30. American Assoc. of Clinical Chemists, Santa Monica, Calif. (G. F. Lanchantin, Cedars of Lebanon Hosp., Los Angeles, Calif.)

27–30. American Astronomical Soc., New Haven, Conn. (H. J. Smith, Yale Observatory, 135 Prospect St., New Haven)

27–30. American Soc. for Pharmacology and Experimental Therapeutics, Nashville, Tenn. (H. G. Mandel, George Washington Univ. School of Medicine, 1337 H St., NW, Washington 5, D.C.)

27–30. British Orthopaedic Assoc.–Scandinavian Orthopedic Assoc., Copenhagen, Denmark. (A. Monberg, Orthopedic Service, St. Joseph Hospital, Copenhagen)

27–31. American Congr. of Physical Medicine and Rehabilitation, annual, New York, N.Y. (G. Gullickson, Jr., 30 N. Michigan Ave., Chicago 2, Ill.)

27–31. Space Technology and Science, intern. symp., Tokyo, Japan. (F. Tamaki, Inst. of Industrial Science, Univ. of Tokyo, Shin-Ryudo-cho 10, Minato-ku, Tokyo)

27–1. Application of Automatic Control in Prosthetics Design, intern. symp., Opatija, Yugoslavia. (Yugoslav Committee for Electronics and Automation, Terazije 23, Belgrade)

27–1. Combustion, intern. symp., Ithaca, N.Y. (Combustion Symp. Office, Upson Hall, Sibley School of Mechanical Engineering, Cornell Univ., Ithaca)

27–1. International Council of the Aeronautical Sciences, congr., Stockholm, Sweden. (Mr. Bergquist, Flugtechniska Föreningen, Bromma 11, Stockholm)

27–2. Chemistry of Natural Products, intern. symp., Prague, Czechoslovakia. (Symposium Secretariat, P.O. Box 159, Prague 6, Dejvice)

27–8. International Dairy Federation, annual, Copenhagen, Denmark. (IDF, 10 rue Ortélius, Brussels 4, Belgium)

28–31. American Mathematical Soc., summer meeting, Vancouver, B.C. (AMS, 190 Hope St., Providence 6, R.I.)

28–31. American Physiological Soc., Buffalo, N.Y. (R. G. Daggs, APS, 9650 Wisconsin Ave., Washington 14, D.C.)

28–31. Catholic Intern. Federation of Hospital Institutions, congr., Evian, France. (A. A. M. Sanders, Carel van Bylandtlaan 8, The Hague, Netherlands)

(See issue of 22 June for comprehensive list)