



A New Concept in Ion Exchangers

DEAE-Sephadex®

Introduction of ionic groups into SEPHADEX, a hydrophilic insoluble product derived from cross-linking the polysaccharide, dextran, makes possible an entirely new series of ion exchangers. The SEPHADEX ion exchangers have

- High capacity
- Low nonspecific adsorption

SEPHADEX ion exchangers make possible the purification, separation and fractionation of a wide range of low molecular weight, complex organic compounds, proteins, and related nitrogenous substances with high yields.

A diversity of types, both anionic and cationic, are available to meet specific requirements. Have you investigated—

DEAE-Sephadex

<i>Active group character capacity</i>	dimethylaminoethyl anionic, medium basic 3-4 meq/g
--	--

DEAE-SEPHADEX is prepared in two types with different porosities: A-25, highly cross-linked and with a large capacity for smaller molecules (less than M.W. 10,000), and A-50, which has a far greater binding capacity than A-25 for large size molecules—particularly useful for purification of proteins, enzymes, and related nitrogenous compounds.

DEAE-SEPHADEX A-25 and A-50 are available in the following sieve fractions: Coarse, Medium, and Fine.

 PHARMACIA FINE CHEMICALS, INC.
501 FIFTH AVENUE
NEW YORK 17, NEW YORK

☐ Send me information on
SEPHADEX Ion Exchangers.

Name _____

Company _____

Address _____

schemes make use of regular grids in time and in space. The nonlinear terms in the equations result in the transfer of energy from lower harmonics to higher harmonics. At a certain point in the calculation the harmonics have no place to go in the specified mesh and are folded back into the existing mesh. As a result, energy at high frequency (or high wave number) appears under the guise of low frequencies. This is the problem familiar to time-series workers as "aliasing." The mislabeling of the energy can lead to "instability," as was first noted by Norman Phillips. Smoothing techniques which lower energy present in the higher harmonics do not always provide a solution, though they can insure ordinary "numerical stability." The characteristic of many nonlinearities is the interaction over large frequency intervals. The arbitrary destruction of higher harmonics removes possible interaction and can result in major distortions of the field.

The six working sessions were supplemented by a banquet at the IBM Thomas J. Watson Research Center at which Lloyd Berkner, chairman of the organizing committee, presented an eloquent description of the progress in geophysics and space physics during the past decade. It is clear that geophysics and computer technology have proceeded at a very rapid rate and that without the development of the computer technology much of the present-day geophysics would be impossible. It is also becoming apparent that the requirements of geophysics are of such a magnitude that they are bound to influence further developments in computers. It is an open question whether the computers will develop faster than geophysics or geophysics will outstrip the services of the projected computers.

GORDON J. F. MACDONALD

*Institute of Geophysics and
Planetary Physics, University of
California, Los Angeles 24*

Forthcoming Events

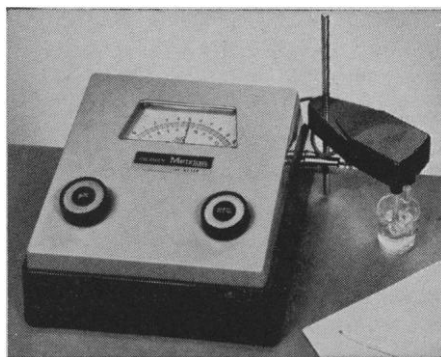
January

14-16. Radiation Research, intern. conf., Natick, Mass. (Army Quartermaster Research and Engineering Center, Natick)

14-18. Association of Surgeons of West Africa, Ibadan, Nigeria. (V. A. Ngu, University College Hospital, Ibadan)

14-19. Atomic and Molecular Quantum Theory, symp., Sanibel Island, Fla. (D. W. Smith, Chemistry Dept., Univ. of Florida, Gainesville)

COLEMAN



Metrion® pH Meter

**... premium
performance
without
price penalty**

The Coleman Metrion® pH Meter offers you performance levels usually available only with laboratory pH meters priced in the \$300-and-up range.

ACCURACY—to ± 0.05 pH with reproducibility of ± 0.02 pH.

VERSATILITY—covers the full 0-14 pH range on overlapping duplex scales.

ELECTRODES—uses any of the full line of Coleman electrodes; adapts to electrodes of other manufacture.

TEMPERATURE CORRECTION—calibration control simultaneously provides accurate correction for temperature effect.

SAMPLE SIZE—requires only 4 ml of sample using Coleman screwbase electrodes.

STABILITY—fully stabilized against line voltage changes from 95 to 125 volts.

PRICE—only \$139.00

Ask for Bulletin SB-257A
and a demonstration.



COLEMAN INSTRUMENTS, INC.
MAYWOOD, ILLINOIS

15-15 Feb. World Meteorological Organization, Working Group on **Meteorological Transmissions**, Paris, France. (WMO, 41 Avenue Giuseppe Motta, Geneva, Switzerland)

15-17. Association of **American Colleges**, annual, Atlantic City, N.J. (T. A. Distler, AAC, 1818 R St., NW, Washington 9)

15-17. **Sesame**, intern. conf., Maracay, Venezuela. (D. G. Langham, Sesamum Foundation, Milford, Conn.)

15-19. **Immunopathology**, intern. symp., La Jolla, Calif. (by invitation). (Science Information Div., National Foundation, 800 Second Ave., New York 17)

17-19. **Engineers' Training**, conf., Strasbourg, France. (Council of Europe, Avenue de l'Europe, Strasbourg)

17-19. Royal College of **Physicians and Surgeons** of Canada, annual, Edmonton, Alberta. (J. H. Graham, RCPSC, 74 Stanley Ave., Ottawa 2, Ont., Canada)

18-19. **Blood**, annual symp., Detroit, Mich. (G. F. Anderson, Dept. of Physiology and Pharmacology, Wayne State Univ., 1401 Rivard St., Detroit 7)

21-23. Chemistry and Biochemistry of **Seed Proteins**, intern. conf., New Orleans, La. (C. H. Fisher, Southern Utilization Research and Development Div., Agricultural Research Service, U.S. Dept. of Agriculture, P.O. Box 19687, New Orleans 19)

21-23. Institute of the **Aerospace Sciences**, annual, New York, N.Y. (IAS, 2 E. 64 St., New York 21)

21-24. American **Meteorological Soc.**, annual, New York, N.Y. (R. L. Pfeffer, Lamont Geological Observatory, Columbia Univ., Palisades, N.Y.)

21-24. Advances in **Gas Chromatography**, intern. symp., Houston, Tex. (A. Zlatkis, Chemistry Dept., Univ. of Houston, Houston)

22. Infectious Diseases of the **Heart and Circulation**, conf., New York, N.Y. (C. A. R. Connor, New York Heart Assoc., 10 Columbus Circle, New York 19)

22-24. **Reliability and Quality Control**, natl. symp., San Francisco, Calif. (L. W. Ball, Boeing Co., P.O. Box 3707, Seattle 24, Wash.)

23-25. **Elevated Temperature Mechanics**, intern. conf., 3rd Navy Structural Mechanics Symp., New York, N.Y. (by invitation). (A. M. Freudenthal, 624 Mudd Bldg., Columbia Univ., New York 27)

23-26. American Assoc. of **Physics Teachers**, New York, N.Y. (R. P. Winch, Williams College, Williamstown, Mass.)

23-26. American Group **Psychotherapy** Assoc., annual, Washington, D.C. (AGPA, 1790 Broadway, New York 19)

24-27. American **Mathematical Soc.**, annual, Berkeley, Calif. (AMS, 190 Hope St., Providence 6, R.I.)

25-6. International College of **Surgeons**, West Indies congr., aboard S.S. *Santa Rosa*. (Secretariat, 1516 Lake Shore Dr., Chicago 10, Ill.)

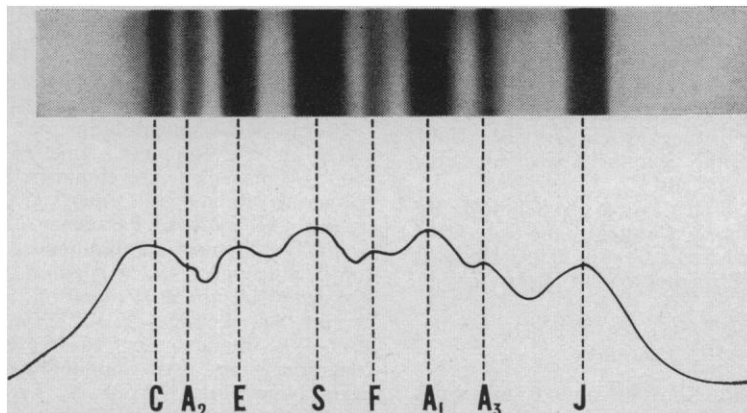
26. Association for **Symbolic Logic**, Berkeley, Calif. (T. Hailperin, Dept. of Mathematics, Lehigh Univ., Bethlehem, Pa.)

26-28. **Mathematical Assoc. of America**, annual, Berkeley, Calif. (H. M. Gehman, Univ. of Buffalo, Buffalo 14, N.Y.)

27-1. American Inst. of **Electrical En-**

NEW FROM CANALCO

HEMOGLOBIN ANALYSIS



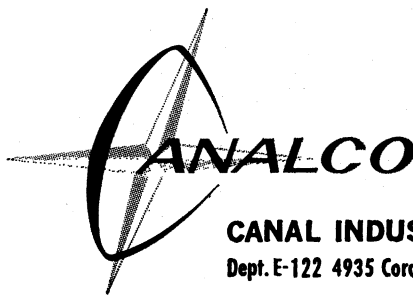
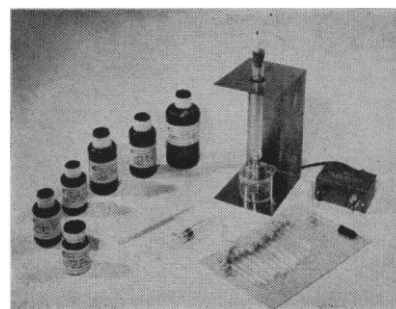
Photographic and densitometric presentation of a combined sample of pre-purified major hemoglobin types.

IN 1/2 HOUR by DISC Electrophoresis

Sharp separation of hemoglobin fractions are revealed (including the hard-to-find A₂ and Fetal). Unstained columns provide immediate qualitative determination of most major types . . . giving prompt clues to the various traits, pathological anemias, and thalassemia. Microdensitometric quantitation of stained and unstained columns adds diagnostic accuracy.

TRIAL KIT AVAILABLE.
Complete equipment,
chemicals and accessories
for 100 experiments,
with full procedural in-
structions . . . **\$66.00***

*f.o.b. Bethesda, Maryland



CANAL INDUSTRIAL CORPORATION
Dept. E-122 4935 Cordell Avenue, Bethesda 14, Maryland

gineers, winter general meeting, New York, N.Y. (R. S. Gardner, AIEE, 33 W. 39 St., New York 18)

28-2. **American Library Assoc.**, Chicago, Ill. (D. H. Clift, ALA, 50 E. Huron St., Chicago 11)

28-2. **Body Composition**, conf., New York, N.Y. (J. Brozek, Dept. of Psychology, Lehigh Univ., Bethlehem, Pa.)

30-1. **Military Electronics**, natl. winter convention, Los Angeles, Calif. (F. P. Adler, Space Systems Div., Hughes Aircraft Co., Culver City, Calif.)

31-1. **American Soc. for Engineering Education**, college-industry conf., Atlanta, Ga. (W. L. Collins, Univ. of Illinois, Urbana)

31-1. **Society of Rheology**, annual western regional meeting, Emeryville, Calif. (T. L. Smith, Stanford Research Inst., Menlo Park, Calif.)

31-2. **Western Soc. for Clinical Research**, annual, Carmel-by-the-Sea, Calif. (H. R. Warner, Latter-day Saints Hospital, Dept. of Physiology, Salt Lake City 3, Utah)

February

4-8. **Rice Genetics and Cytogenetics**, symp., Los Baños, Laguna, Philippines. (Inter. Rice Research Inst., Manila Hotel, Manila, Philippines)

4-9. **Recent Trends in Iron and Steel Technology**, symp., Jamshedpur, India. (Secretary, Indian Inst. of Metals, 31 Chowringhee Rd., Calcutta, India)

4-20. **Application of Science and Tech-**

nology for the Benefit of Less Developed Areas, U.N. conference, Geneva, Switzerland. (Science Conference Staff, Agency for International Development, 826 State Dept. Annex 1, Washington 25)

5-14. **International Radio Consultative Committee**, Plan Subcommittee for Asia, New Delhi, India. (V. Barthoni, 128 rue de Lausanne, Geneva, Switzerland)

6-9. **American College of Radiology**, Chicago, Ill. (F. H. Squire, Presbyterian-St. Luke's Hospital, 1753 W. Congress St., Chicago 12)

8-18. **United Nations Committee on Industry and Natural Resources in Asia and the Far East**, Bangkok, Thailand. (S. Santitham, Rajadamnern Ave., Bangkok)

10-15. **Management Function in Research and Development**, conf., Pasadena, Calif. (Management Development Section, Industrial Relations Center, California Inst. of Technology, Pasadena)

10-16. **Planned Parenthood**, intern. conf., Singapore. (V. Houghton, Intern. Planned Parenthood Federation, 69 Eccleston Sq., London, S.W.1, England)

11-14. **American Soc. of Heating, Refrigerating, and Air-Conditioning Engineers**, New York, N.Y. (R. C. Cross, 345 E. 47th St., New York 17)

11-14. **Industrial Lubrication**, intern. conf. and exhibit, London, England. (E. V. Paterson, Scientific Lubrication, 217a Kensington High St., London W.8)

11-15. **Quantum Electronics**, intern. symp., Paris, France. (Secrétariat, Troisième Congrès International d'Electro-

nique Quantique, 7 rue de Madrid, Paris 8°)

12-14. **Lysozymes**, symp. (by invitation), London, England. (Ciba Foundation, 41 Portland Pl., London W.1)

13-15. **Electrochemistry**, 1st Australian conf., part I, Sydney, Australia. (F. Gutmann, Physical Chemistry Dept., Univ. of New South Wales, Kensington, N.S.W., Australia)

13-16. **National Soc. of College Teachers of Education**, Chicago, Ill. (E. J. Clark, Indiana State College, Terre Haute)

14-15. **American Soc. for Quality Control**, Textile and Needles Trades Div., annual conf., Clemson, S.C. (H. F. Littleton, c/o Charles H. Bacon Co., Lenoir City, Tenn.)

15-14 Apr. **Aeronautics and Space**, intern. exhibition, São Paulo, Brazil. (Santos Dumont Foundation, Avenida Ipiranga N°. 84, São Paulo)

16-23. **Caribbean Dental Convention**, Port of Spain, Trinidad. (A. V. Awon, 43-45 Frederick St., Port of Spain)

17-21. **Technical Assoc. of the Pulp and Paper Industry**, annual, New York, N.Y. (TAPPI, 360 Lexington Ave., New York 17)

18-20. **American Standards Assoc.**, natl. conf., New York, N.Y. (ASA, 10 E. 40 St., New York 16)

18-20. **Biophysical Soc.**, annual, New York, N.Y. (A. Mauro, Rockefeller Inst., New York)

18-20. **Electrochemistry**, 1st Australian conf., part II, Hobart, Tasmania. (J. N. Baxter, Chemistry Dept., Univ. of Tasmania, Hobart)

18-25. **Expert Committee on Food Additives**, FOA/WHO, Rome, Italy. (Intern. Agency Liaison Branch, Office of the Director General, Food and Agriculture Organization, Viale delle Terme di Caracalla, Rome)

19-22. **Radiochemistry**, inter-American conf., Montevideo, Uruguay. (Pan American Union, Washington 6)

20-22. **Fundamental Cancer Research**, annual symp., Houston, Tex. (L. Dmochowski, Section of Virology and Electron Microscopy, M. D. Anderson Hospital, Houston 25)

20-22. **Solid-State Circuits**, intern. conf., Philadelphia, Pa. (F. J. Witt, Bell Telephone Laboratories, Inc., Murray Hill, N.J.)

20-23. **National Assoc. for Research in Science Teaching**, Washington, D.C. (J. D. Novak, Biological Science Dept., Purdue Univ., Lafayette, Ind.)

20-24. **Diseases of the Chest**, intern. Congr., New Delhi, India. (M. Kornfeld, American College of Chest Physicians, 112 E. Chestnut St., Chicago 11, Ill.)

21-22. **American Soc. for Quality Control**, regional conf., Las Vegas, Nev. (S. R. Wood, Dept. 61, Bldg. 160, Aerojet-General Corp., Azusa, Calif.)

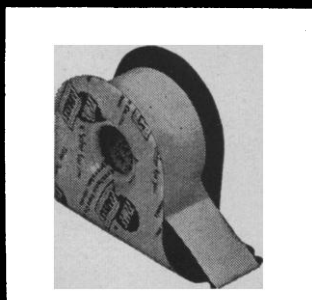
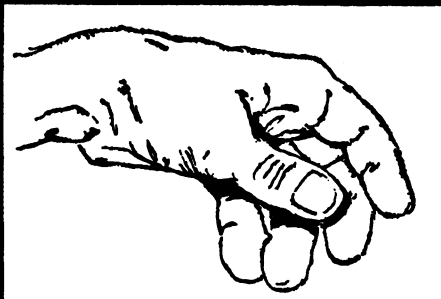
22-23. **American Psychopathological Assoc.**, annual, New York, N.Y. (F. A. Freyhan, c/o St. Elizabeths Hospital, Washington 20, D.C.)

23-28. **American Soc. for Testing and Materials**, annual, Atlantic City, N.J. (H. H. Hamilton, 1916 Race St., Philadelphia 3, Pa.)

(See 23 November issue for comprehensive list)

INNOCENT GUILT!

... hands ... spreaders of hepatitis ... cross-infection



Minimize cross-infection with "no-lick" Time Tapes and Labels. Every dressing, every collection of specimen, blood, sputum, etc., requires hand service. Eliminate contact by using satin finish, vinyl coated Time Tapes or Labels. Labels will accept any pen or pencil marking or may be pre-printed to your specifications.



Write for samples and catalog today!

PROFESSIONAL TAPE CO., INC.

Dept. N.S.P. 365-AH Burlington, Riverside, Illinois