

MECHANISMS OF HARD TISSUE DESTRUCTION

Editor: Reidar F. Sognnaes, Dean, School of Dentistry, Center for the Health Sciences, University of California at Los Angeles

AAAS Symposium Volume No. 75, 1963. 776 pages, 430 illus., one color plate, references, indexes. \$13. AAAS members' cash orders, \$11.

Contents

- C. M. Yonge: Rock-Boring Organisms*
T. F. Goreau and W. D. Hartman: Boring Sponges as Controlling Factors in the Formation and Maintenance of Coral Reefs
M. R. Carriker, D. B. Scott and G. N. Martin, Jr.: Demineralization Mechanism of Boring Gastropods
R. F. Sognnaes: Dental Hard Tissue Destruction with Special Reference to Idiopathic Erosions
C. R. Barnicoat: Attrition of the Hypsodont Tooth
A. I. Darling: Microstructural Changes in Early Dental Caries
E. Johansen: Ultrastructural and Chemical Observations on Dental Caries
J. A. Gray and M. D. Francis: Physical Chemistry of Enamel Dissolution
P. H. Keyes and H. V. Jordan: Factors Influencing the Initiation, Transmission, and Inhibition of Dental Caries
W. V. Mayer and S. Bernick: Effect of Hibernation on Tooth Structure and Dental Caries
I. Reichborn-Kjennerud: Dento-Alveolar Resorption in Periodontal Disorders
S. N. Bhaskar: Bone Remodeling during Dental Eruption and Shedding
R. J. Goss: The Deciduous Nature of Deer Antlers
F. C. McLean and R. E. Rowland: Internal Remodeling of Compact Bone
M. R. Urist, N. S. MacDonald, M. J. Moss and W. A. Skoog: Rarefying Disease of the Skeleton: Observations Dealing with Aged and Dead Bone in Patients with Osteoporosis
J. Jowsey: Microradiography of Bone Resorption
R. W. Young: Histophysical Studies on Bone Cells and Bone Resorption
N. M. Hancox and B. Boothroyd: Structure-Function Relationships in the Osteoclast
J. T. Irving and C. S. Handelman: Bone Destruction by Multinucleated Giant Cells
L. F. Bélanger, J. Robichon, B. B. Migicovsky, D. H. Copp and J. Vincent: Resorption without Osteoclasts
G. Nichols, Jr.: In vitro Studies of Bone Resorptive Mechanisms
B. K. Forscher and D. V. Cohn: In vitro Carbohydrate Metabolism of Bone: Effect of Treatment of Intact Animal with Parathyroid Extract
C. M. Dowse, M. W. Newman, K. Lane and W. F. Neuman: Metabolic Action of Parathyroid Hormone on Rat Calvaria
P. Goldhaber: Some Chemical Factors Influencing Bone Resorption in Tissue Culture
G. N. Jenkins and C. Dawes: The Possible Role of Chelation in Decalcification of Biological Systems
C. M. Lapiere and J. Gross: Animal Collagenase and Collagen Metabolism

British Agents: Bailey Bros. & Swinfen, Ltd., Warner House, 48 Upper Thames Street, London E.C.4

**American Association for the
Advancement of Science**
1515 Massachusetts Avenue, NW
Washington, D.C. 20005

CHIEF CLINICAL MICROBIOLOGIST

• Philadelphia General Hospital

SALARY OPEN

Requires a doctorate in microbiology and five years postdoctorate experience in medical microbiology, including three years in a supervisory capacity.

CHIEF CLINICAL CHEMIST

• Philadelphia General Hospital

SALARY \$13,156-\$14,374

Requires a doctor's degree in biochemistry or physiological chemistry and five years postdoctorate experience in clinical chemistry involving clinical chemical analysis, interpretation and research, including three years supervising such activities.

Philadelphia General Hospital, the nation's 6th largest hospital, is closely affiliated with five area medical schools and has over 30,000 admissions and newborns and over 350,000 out-patients and emergency visits each year. A total of over \$5,000,000 has been committed for research at P.G.H. during the next five years. Opportunities for research will be available for both these laboratory directors.

TOXICOLOGIST

• Philadelphia Medical
Examiner's Office

SALARY \$9,672-\$11,526

Requires a doctor's degree in the physical, medical or biological sciences including courses or experience in toxicology or pharmacology and three years recent experience in chemical analysis utilizing advanced techniques, performance of analysis and interpretation of results.

The Medical Examiner's Office is responsible for investigating all deaths of an indeterminate nature which occur in a city of 2 million. The toxicologist will assist the chief toxicologist and supervise the laboratory which receives about 6,000 toxicology requests a year.

All applicants must be United States Citizens. Excellent Fringe Benefits. Send detailed resume to

JOSEPH GOLDBERGER
Director of Recruiting

500 Municipal
Philadelphia,



Services Bldg.
Pa. 19107

PERSONNEL PLACEMENT

CLASSIFIED: Positions Wanted. 25c per word, minimum charge \$4. Use of Box Number counts as 10 additional words. Payment in advance is required.

COPY for ads must reach SCIENCE 2 weeks before issue date (Friday of every week).

DISPLAY: Positions Open. Rates listed below—no charge for Box Number. Rates net. No agency commission allowed for ads under 4 inches. No cash discount. Minimum ad: 1 inch. Ads over 1 inch will be billed to the nearest quarter inch. Frequency rate will apply only to repeat of same ad. No copy changes. Payment in advance is required except where satisfactory credit has been established. Send copy for display advertising to SCIENCE, Room 1740, 11 West 42 St., New York 36.

Single insertion \$65.00 per inch
4 times in 1 year 60.00 per inch

For PROOFS on display ads, copy must reach SCIENCE 4 weeks before date of issue (Friday of every week).

Replies to blind ads should be addressed as follows:

Box (give number)
SCIENCE
1515 Massachusetts Ave., NW
Washington, D.C. 20005

POSITIONS WANTED

Air Hygiene-Physiologist. Teaching/research position desired. Box 75, SCIENCE. X

Anatomist. Associate professor, medical school, long experience all branches, seeks short-term teaching position beginning September. Box 73, SCIENCE. X

Electrical Engineering summer position desired. M.I.T. junior. Instrumentation, circuits, high-speed photography. Programming knowledge: FAP, MAD, Fortran; operation of IBM 7040, 1620. Box 72, SCIENCE. X

Information Scientist-Translator. Ph.D., German, Dutch, French, Polish, Russian. Part or full time. Box 66, SCIENCE. X

Microbiologist, Ph.D. University of Illinois, 1963, seeks research and/or teaching in microbiology or sanitary engineering on the West Coast. Box 76, SCIENCE. X

Microbiologist, Ph.D. 1965. Publications, patent. Biosynthesis antibiotics, radioactive labeled compounds; physiology; strain improvement; fermentations. Research institute/industry/university. Box 67, SCIENCE. X

Organic Chemist, Ph.D.; 15 years' teaching and research experience. Seeks new challenge, medicinal organic chemistry background. Box 60, SCIENCE. 2/26

Ph.D. Soil Science (fertility), 1953, seeks academic or industrial appointment in U.S. or Canada. Box 78, SCIENCE. X

Physiological Psychologist, Ph.D. Research or research and teaching. Box 77, SCIENCE. X

Physiologist-Zoologist, Ph.D. Interests in mammalian, endocrine, general physiology, radiobiology; university-college teaching, research. Experienced. Box 63, SCIENCE. X

Psychophysiologist Ph.D., comparative electrophysiology postdoctoral fellowship; available for research appointment. (b) **Organic Chemist Ph.D.**, directed research and synthesis of new drug products; seeks administrative industrial position. Write Woodward Medical Personnel Bureau, 185 North Wabash Avenue, Chicago 60601. X

Research Assistant, half-time, New York. Experience includes scientific editing, translation, drafting. Box 69, SCIENCE. X

Rheologist-Biorheologist, with heat transfer experience. Teaching, research, industrial background. Multilingual. Desires challenging academic or industrial position. Box 65, SCIENCE. X

Translator, B.S.Chem. German-English. Prompt service. Box 74, SCIENCE. 3/5

Virologist Ph.D., expects to graduate in August 1965. Experience in biochemical alterations in tissue culture due to virus infection. Seeks teaching and/or research position. Box 68, SCIENCE.

POSITIONS WANTED

Ecologist Ph.D. Environmental biology, animal behavior, vertebrate zoology; 9 years of teaching and research. Desires challenging academic position. Publications, textbook in press. Box 64, SCIENCE. X

Microbiologist, Ph.D. Specialty: medical mycology and bacteriology. Several years of experience. Desires academic position with research opportunity and/or supervision of clinical microbiology. Box 55, SCIENCE. 2/26

Organic Chemist, Ph.D. 1958; 7 years of research experience; desires teaching/research position. Box 71, SCIENCE. X

Parasitologist, Ph.D., 14 years of research experience with 18 publications; 4 years of teaching experience. Desires research/teaching position. Box 70, SCIENCE. X

Ph.D. with 10 years of teaching, research, and applied experience in health physics, radiation dosimetry, and electronics. Desire responsible position with research opportunities. Box 57, SCIENCE. 2/26

POSITIONS OPEN

(a) **Biochemist/Physiologist**, wound healing basic research; leading drug mfr; E; \$15,000. (b) **Research Scientists**, chemical-biological warfare project; W; \$12,000 to \$20,000. (c) **Bacteriologist**, direct product testing dept; research inst; E; \$15,000. (d) **Endocrinologist**, D.V.S. or Ph.D., product develop. drug mfr; MidW; \$12,000. (e) **Parasitologist**, veterinary product R&D; expanding mfr; MidW; \$12,000. Write Woodward Medical Personnel Bureau, 185 N. Wabash, Chicago 60601. Professional Placement Service for 68 Years

RESEARCH OPPORTUNITY

Immediate vacancy with medical college located in northwestern Philadelphia for chemist or biochemist to assist with research project in lipid metabolism. Position requires M.S. or B.S. degree with previous research experience. Salary dependent on background and qualifications. Excellent benefit program. Write
Box 58, SCIENCE 2/26; 3/5

FISHERIES RESEARCH BOARD OF CANADA PHYSICIST OR BIOPHYSICIST

With at least M.Sc. and experience in ultrasonics and electronics to initiate study into physical methods of detecting certain parasites in fish flesh. Initial assignment to Ottawa Laboratory of National Research Council. Salary \$7000 to \$12,000 depending on qualifications. Applications to **Chairman, Fisheries Research Board of Canada**, Ottawa 8, Ontario, Canada. X

INSTITUTE FOR COMPUTER ANALYSIS OF SYSTEMS AND PROCESSES, INC.

188 NEEDHAM ST., NEWTON, MASS. 02164
Telephone No.: AC 617 969-9190

Analog computer analysis of systems and processes in biology, medicine, chemistry, engineering, economics, industry.

Mathematical formulation, quantitative synthesis of functional systems, kinetic analysis.

SERVICES SUB-CONTRACTS LONG AND SHORT-TERM RESEARCH CONTRACTS*

*Scientists are invited to send proposals for cooperative research in applied and basic sciences for application of contracts.

POSITIONS OPEN

Positions Open

GRADUATE ASSISTANTSHIPS IN BIOCHEMISTRY: Teaching and research appointments leading to Ph.D. Available for academic year 1965-1966. Wide variety of research projects. Excellent facilities in a modern building. Generous stipend plus tuition and fees for 12 months. Apply by April 1, 1965 to **Dr. Richard Abrams**, Department of Biochemistry and Nutrition, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, Pennsylvania 15213.

INHALATION TOXICOLOGY INDUSTRIAL HYGIENE

Group supervisor for inhalation toxicology and industrial hygiene chemistry. Initiate, supervise, performance of and coordinate these functions with overall activity of Environmental Health Laboratory dealing with a variety of agricultural and industrial chemicals. Please address replies to **Employment, American Cyanamid Company**, Box 400, Princeton, New Jersey.

An Equal Opportunity Employer

SPACE FOR CANCER RESEARCH

A tax-exempt, nonprofit Institute directed by its scientific staff is expanding its present program. Current research is in cancer chemotherapy. Established investigators with supported programs in cancer research, desiring affiliation, are invited to join and form a nucleus for other divisions. Reply to **John B. Field, M.D., Ph.D., Scientific Director**, Western Institute for Cancer and Leukemia Research, P.O. Box 696, Los Angeles 34, California. X

JUNIOR AND SENIOR GEOLOGISTS

Applications are solicited by the government of the Province of New Brunswick for positions as Junior and Senior Geologists in expanding geological survey work beginning April 1, 1965. Fields of specialization—groundwater, petrology, structure, stratigraphy, metallic and industrial minerals. Research facilities available. Salary commensurate with qualifications and experience. Address résumé to **Director, Mines Branch, Dept. of Lands and Mines, Province of New Brunswick, Fredericton, N.B. Canada.**

UNIVERSITY OF ALBERTA Edmonton, Alberta, Canada

ASSISTANT PROFESSOR—BACTERIOLOGY

Applications are invited for the post of Assistant Professor in the Department of Bacteriology. Applicants should have completed postgraduate training and have developed a personal research interest. The successful applicant will be required to teach both undergraduate and postgraduate students and to initiate and develop an active research program in either a medical or a nonmedical field. Facilities for investigation in either field are available. After 4 years academic staff will be considered for appointment without term. The commencing salary is \$8500 or higher depending on qualifications and experience. The appointees may be eligible for a removal grant.

Further details may be obtained from **Chairman, Department of Bacteriology, University of Alberta, Edmonton, Alberta, Canada.** X

Senior Research Bacteriologist

Pharmaceutical Research Department has opening for Ph.D. Microbiologist to develop small animal test systems for screening compounds for antibacterial activity. Experience or training in Chemotherapy desirable.

Modern laboratories situated in rural Central New York State.

Forward résumé to: John E. Wedge, Professional Employment Manager

THE NORWICH PHARMACAL COMPANY
NORWICH, NEW YORK 13815

An equal opportunity employer

POSITIONS OPEN

BIOMEDICAL ENGINEER

B.S. in electrical engineering or physics with M.S., Ph.D., or experience in biophysical science and computer technology for clinical pharmacology unit. Position involves providing technical assistance in the acquisition, development, and use of electronic instrumentation to facilitate automation and analysis of data from clinical pharmacologic and laboratory procedure.

An equal opportunity employer. Please send complete résumé to:

**TECHNICAL EMPLOYMENT COORDINATOR
THE UPJOHN COMPANY
Kalamazoo, Michigan**

BIOCHEMISTS—Ph.D.

Expanding R&D activities have made several research opportunities available for Ph.D.'s broadly trained in biochemistry with 0 to 5 years postdoctoral experience. Duties will involve aiding in the planning, initiating and supervising of research investigations in the areas of neurobiochemistry, enzymology or lipid metabolism. Additional experience in physiology is desirable.

PHYSIOLOGIST— PHARMACOLOGIST—Ph.D.

Seeking a Ph.D. with broad training in pharmacological/physiological disciplines with 0 to 5 years' experience. Research opportunities include investigations in a variety of areas including analgesics, anti-inflammatory agents, nasal decongestants, respiratory physiology and gas-intestinal physiology-pharmacology. A knowledge of the principles of statistical evaluation of biological data is highly desirable.

Please send résumé including salary requirements to: **Cyrus M. Greenberg, Ph.D., Director of Scientific Employment, SMITH KLINE & FRENCH LABORATORIES, 1570 Spring Garden Street, Philadelphia, Pa. 19101. An Equal Opportunity Employer.**



The Department of Psychiatry in the Yale University School of Medicine is offering a program of training supported by a USPHS grant to provide intensive experience in developing research skills in areas which could lead to investigative careers in mental health. The candidate may choose laboratory training in the areas of his choice (pharmacology, neurochemistry, neurophysiology) as well as specialized research areas in psychology, and so forth; training in clinical psychiatry is provided when required. Applicant will be accepted from candidates with the M.D. or Ph.D. degree. Nonmedical students (from physics, psychology, biology, pharmacology, and so forth) will be offered sufficient clinical training to provide relevant experience for his research interests. The training program is conceived of as being primarily tutorial in nature. Stipends are currently \$6000 and \$7000 for the first and second years, respectively, although appointments are made yearly. In special instances support for regular or special fellowship awards may be provided. Inquiries may be addressed to **Mrs. Eleanor G. Himel, Administrative Assistant, Biological Science Program, Department of Psychiatry, School of Medicine, Yale University, 333 Cedar Street, New Haven, Connecticut.** X

UNIVERSITY OF THE WEST INDIES

Lecturer or Assistant Lecturer in Pharmacology

Applications are invited for the post of Lecturer or Assistant Lecturer in Pharmacology. The duties of the post will be to instruct students in pharmacology reading for the medical degrees of the University of the West Indies, and to do research in pharmacology. Duties to be assumed 1 October 1965.

Salary scales: Assistant Lecturer (medically qualified) £1350 to £1500, (nonmedical) £1200 to £1350; Lecturer (medically qualified) £1650 to £2450, (nonmedical) £1450 to £2290. Child allowance (limited to three children) £150 for the first child, £100 for the second child, and £50 for the third child. F.S.S.U. housing allowance of 10 percent of salary, or, if available, unfurnished accommodation will be let by the University at 10 percent of salary. Up to five full passages on appointment, on normal termination, and on study leave (once every 3 years). Appointment for 3 years in the first instance.

Detailed applications (10 copies) giving full particulars of qualifications and experience, date of birth, and the names of three referees should be sent, as soon as possible, by persons living in the Americas and the Caribbean area to the Registrar, University of the West Indies, Kingston 7, Jamaica, and by all other persons to the Secretary to the Senate Committee on Higher Education Overseas, University of London, Senate House, London W.C. 1. Further particulars may be obtained similarly. X

POSITIONS OPEN

DEPARTMENT OF BIOLOGY UNIVERSITY OF WATERLOO, ONTARIO

Inquiries are invited from students expecting to obtain Honors degrees in biological subjects in 1965 who wish to proceed to higher degrees in a Canadian university. The department expects to have available a number of teaching fellowships (value \$2200 per annum) and possibly other monies for support of graduate students. Applicants should write, before 20 March, to **Dr. H. B. Noel Hynes, Department of Biology**, giving full particulars of themselves. X

PHARMACOLOGIST

M.S. degree with 3 to 5 years' experience in pharmaceuticals, animal health or other field related to medicinals and their uses. Position requires ability to develop new products and formulations in field of animal health, opportunity to assist actively in the formation of a new group. Address:

Box 59, SCIENCE

FELLOWSHIPS

Applications are invited from U.S. citizens for fellowships in Steroid Research. Postdoctoral, \$6000 plus dependent allowance. Predoctoral, \$3600. Write **Dr. D. S. Layne, Worcester Foundation for Experimental Biology, Shrewsbury, Massachusetts**, or **Dr. K. B. Eik-Nes, Department of Biochemistry, College of Medicine, University of Utah, Salt Lake City.** X

TRAINEESHIPS FOR GRADUATE WORK IN PHARMACOLOGY

A 4-year program of course work and research training leading to the Ph.D. degree is offered. U.S. citizens only. Research in fundamental mechanisms of drug action. Starting annual stipend \$2400 plus tuition and \$500 per dependent. Early application for September 1965 strongly advised. Write: **Department of Pharmacology, School of Medicine, State Univ. of New York at Buffalo, 122 Capen Hall, Buffalo, N.Y. 14214.** 2/26, 3/12

NEW ZEALAND DEPARTMENT OF AGRICULTURE SENIOR RESEARCH FELLOWSHIPS

Applications are invited for awards to be taken up in 1965 for research at various departmental research centers at the direction of the Director, Agricultural Research. Facilities and equipment are available for all scientific disciplines applicable to soil science, plant and animal nutrition, and animal physiology and pathology, including physics, chemistry, biochemistry, statistics, biology, veterinary sciences, and bacteriology. Excellent facilities are also available for handling domestic animals for research purposes.

General Qualifications: Ph.D. degree or equivalent. Applicants without Ph.D. degree will be considered where they have a distinguished record of scientific research. A good working knowledge of English is required. There is no age limit or restriction regarding nationality of applicants, but successful candidates must meet New Zealand immigration requirements.

Salary: Emoluments range from £NZ1695 to £NZ2135 a year, with an additional £NZ250 a year for a married man. These amounts are subject to taxation in New Zealand.

Tenure: Fellowships will be awarded for an initial period of between 6 months and 1 year, but may be extended to a total period of 3 years.

Travel: A grant will be paid equivalent to the cost of return rail and sea fares at tourist-class rates between home and research institution in New Zealand. A further amount of two-thirds of this travel grant may be paid to a married Fellow who is accompanied by his wife.

In New Zealand reasonable traveling expenses will be paid in furtherance of research work.

Applications: Applications are required to be submitted on forms available from the Director, Agricultural Research, Ruakura Agricultural Research Center, Hamilton, New Zealand. Applicant must supply names of two persons to whom references can be made. Applications, with a recent photograph and supporting documents, must reach New Zealand 3 months after the date of this advertisement. Late or incomplete applications will not be accepted. If possible, successful candidates will be notified within 6 weeks of the closing date.

Information: Information about work at Ruakura Agricultural Research Center, Wallaceville Animal Research Center, Invermay Research Station, Winchmore Irrigation Research Station, and Horticultural Research Center, Levin, at which the Fellowships are tenable, is obtainable on request from the Director, Agricultural Research, Ruakura Agricultural Research Center, Private Bag Hamilton, New Zealand. X

FELLOWSHIPS

The Department of Biology, University of Waterloo, Ontario, Canada, invites applications for faculty appointments from microbiologists and zoologists with particular interest in neurophysiology. Appointments will date from 1 July 1965. Salaries offered range from \$6000 to \$9700 according to qualifications. Applications should be submitted to **Dr. H. B. Noel Hynes, Chairman, Department of Biology**, before 15 March 1965, together with names of two referees. X

Applications are invited for PREDOCTORAL TRAINEESHIPS IN BIOCHEMISTRY. The stipend for first-year Trainees is \$2,400 plus tuition and a \$500 allowance for each dependent. No services are required of first-year Trainees other than successful progress toward the Ph.D. degree. During subsequent years a very limited amount of teaching experience is included as part of the training program. Traineeships awards may be made only to U.S. citizens. Inquiries should be addressed to: **Director of Graduate Studies, Department of Biochemistry, Medical Center, University of Kentucky, Lexington, Ky. 40506.**

The Market Place

BOOKS • SERVICES • SUPPLIES • EQUIPMENT

BOOKS AND MAGAZINES

WRITERS

M. Y. publisher wants books on all subjects, fiction, nonfiction. No fee for professional opinion. FREE: Brochures that show how your book can be published, publicized, sold; tips and article reprints on writing, publishing, contracts. Write Dept. 758

EXPOSITION 386 Park Ave. So., N.Y. 16

PROFESSIONAL SERVICES

WASHOE PINES RANCH

Challenging and refreshing outdoor summer for alert boys and girls, 9 to 11, 12 to 14.

Explore western and natural history in the Eastern Sierra and Great Basin.

Riding, swimming, experimental ecology, crafts. Field work to deserts, mountains, lakes, wild life refuges, and a National Park.

Six-week session, 18 July to 29 August.

Dr. and Mrs. Richard G. Miller, Box 621, Route 1, Carson City, Nevada. 702-882-1728.

SUPPLIES AND EQUIPMENT

• HYPOPHYSECTOMIZED RATS

Shipped to all points via Air Express
For further information write

**HORMONE ASSAY LABORATORIES, Inc.
8159 South Spaulding Ave., Chicago 29, Ill.**

NYLON CAGE SIGNS

EASY TO INSTALL—WON'T RUST OR SHATTER

Removable cards show special instructions—group numbers—type of feeding or care required

COLOR SELECTION FOR EASY IDENTIFICATION

Write for your free

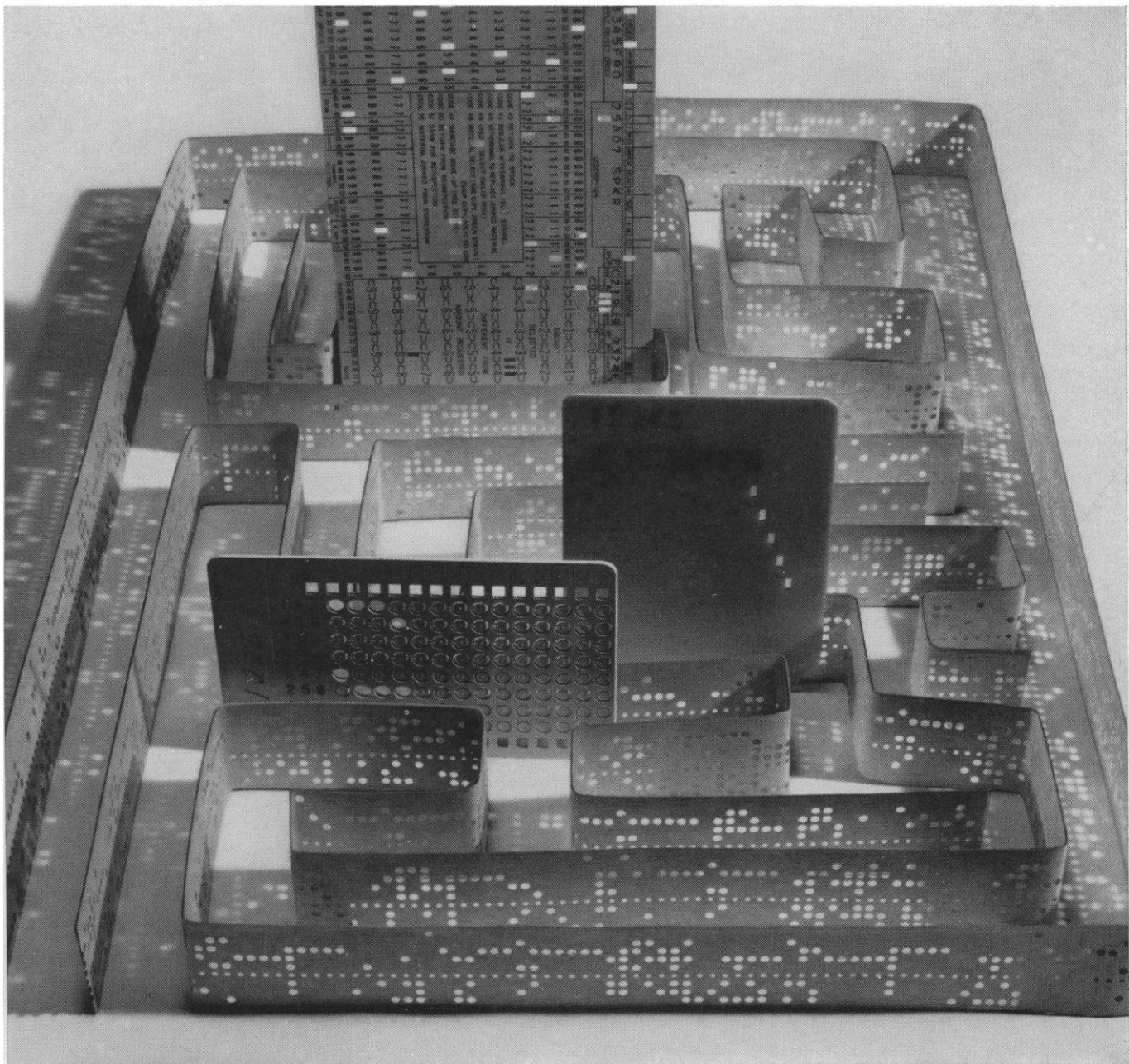
LINE-O-VISION™

sign

HOLLISTER
INCORPORATED

835 N. Orleans St., Chicago 10, Ill.

THE SCIENCE OF PRODUCTION. When producing advanced, complex communications equipment on a vast scale to exact standards, science is needed on the production line as well as in the laboratory. That's why Western Electric engineers took the scientific approach in developing a new production planning and control system in several of its multi-product plants. A computerized file contains details of all equipment and materials used by a plant. Requirements for a product are put on punched tape or cards and fed into the computer which converts them into efficient control information: it predicts the time needed for every aspect of manufacture, schedules equipment, allocates manpower, and processes all documents. By continually improving manufacturing methods, Western Electric engineers and production people help the Bell telephone companies, coast-to-coast, bring America the finest in communications at low cost.



Western Electric
Manufacturing & Supply Unit of the Bell System



two heads really are better than one...

when two persons can see the same magnified image simultaneously through a Dual Viewing Microstar.[®] Each viewer enjoys the same superb flat field, high-quality image that is available only with the AO Series 10 Microstar. An illuminated, transparent arrow is superimposed on the field of view. It can be freely positioned to pinpoint any

minute detail for both observers. Applications are limitless. It's specially suited for consultations, training and advanced teaching because it offers simultaneous viewing and critical resolution that is impossible to achieve by projection methods. The Dual Viewing Microstar gives you a new method of effective communication.

©REGISTERED TRADE MARK AMERICAN OPTICAL COMPANY


AMERICAN OPTICAL COMPANY
INSTRUMENT DIVISION • BUFFALO, NEW YORK 14215

Dept. N4

Gentlemen: Please send complete information on the AO Dual Viewing Microstar.

Name _____

Address _____

City _____

State _____

Zip Code _____