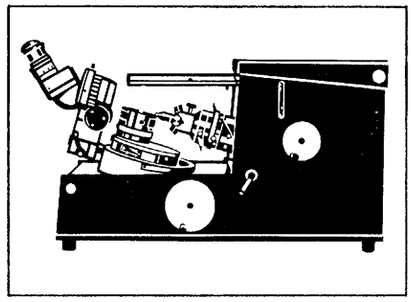
SCIENCE

7 February 1969

Vol. 163, No. 3867

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

The Pyramitome
—newest of the LKB microtomes.



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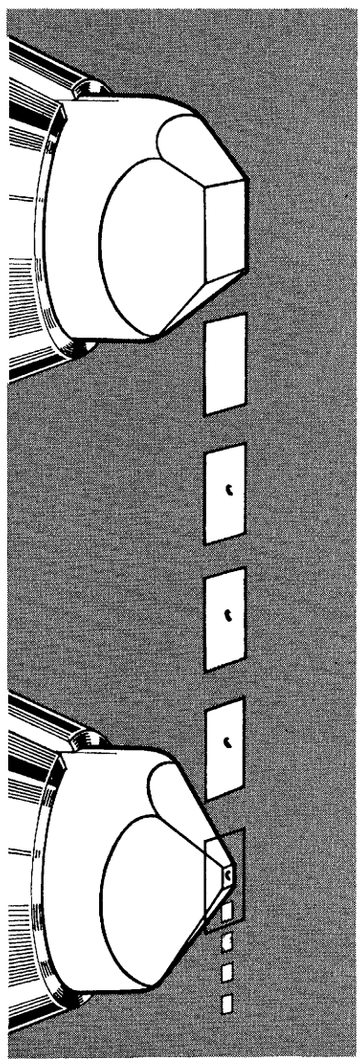

◀ Diagramatic representation of large survey sections for light microscopy and small ultrathin sections of area of interest for examination in the electron microscope.

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7 February 1969
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SCIENCE

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AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

COVER

Eaglet and an egg (which never hatched) were photographed in April 1965 in a nest on the Muskegon River in Michigan. The chipped, flaked condition of the egg is ascribed to a calcium deficiency attributable to residues of DDT or its metabolites in the parent. University of Wisconsin wildlife ecologist Joseph J. Hickey, who calls DDT a "chemical of extinction," introduced this photograph at DDT hearings last month in Madison. See page 548. [Robert Harrington, Michigan Department of Natural Resources]

New Nikon attachment equips S-series microscopes for specialized polarization work

Affixed to any S-series Nikon microscope, the new Nikon Polarizing Attachment extends its capabilities to include the observation and study of rocks, minerals, plastics, textiles, chemicals, biological and other materials under polarized light. The outfit consists of a Bertrand lens and analyzer equipped with ¼-wave plate, tint plate and Sénarmont-type compensator; a condenser and polarizer; a calibrated, circular, rotating centerable stage with clips; 5x and 10x wide-field,high-eyepoint oculars; eyepiece micrometer; filters; 4x, 10x and 40x strain-free parfocal objectives; and a hardwood instrument case.

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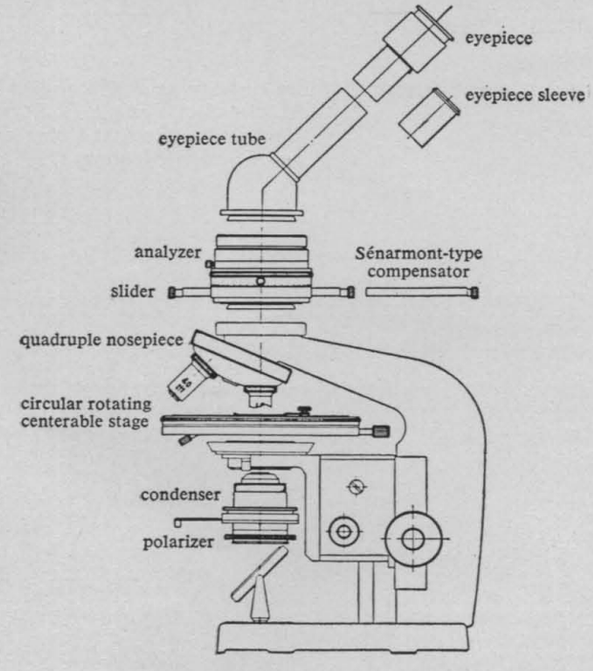
For complete details, write: Nikon Incorporated, Instrument Division, Garden City, N.Y. 11530.



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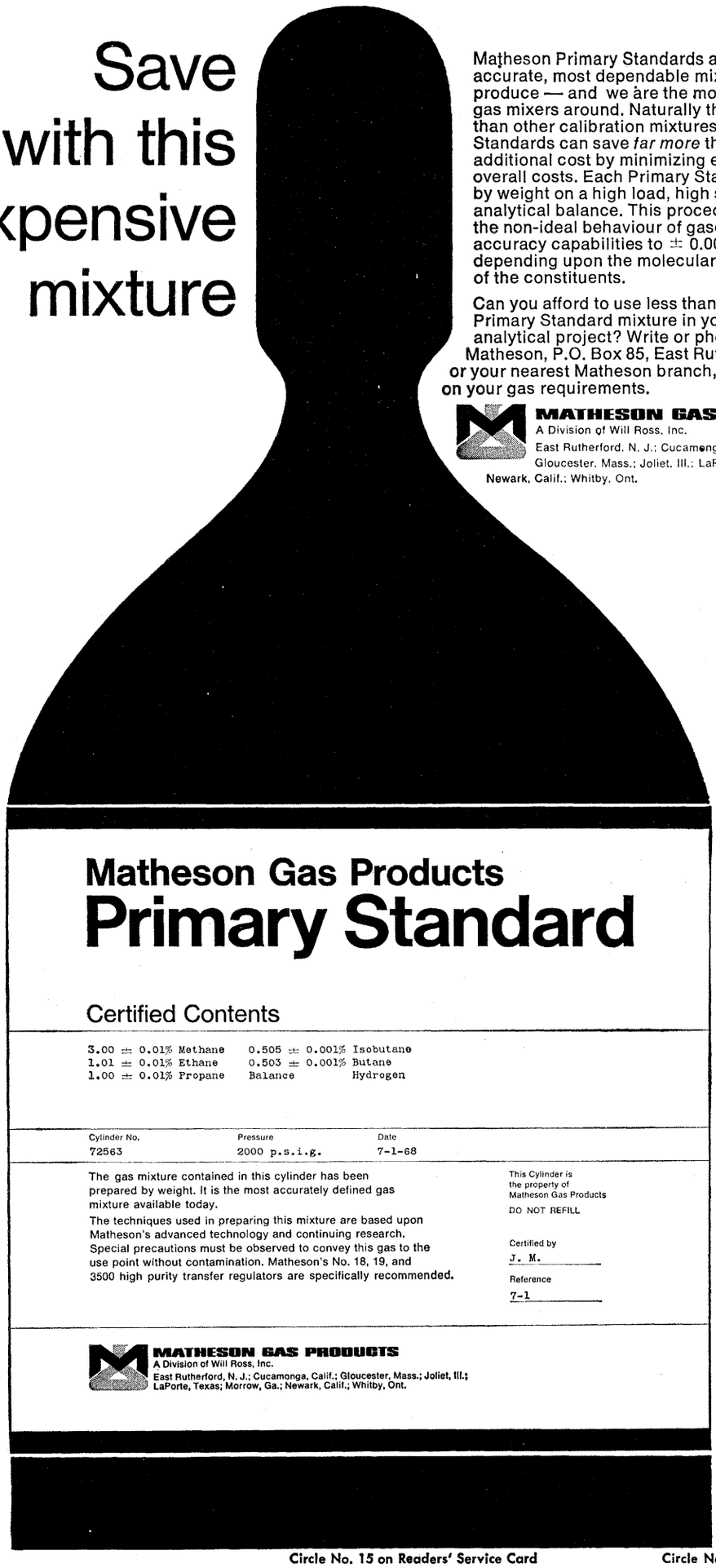

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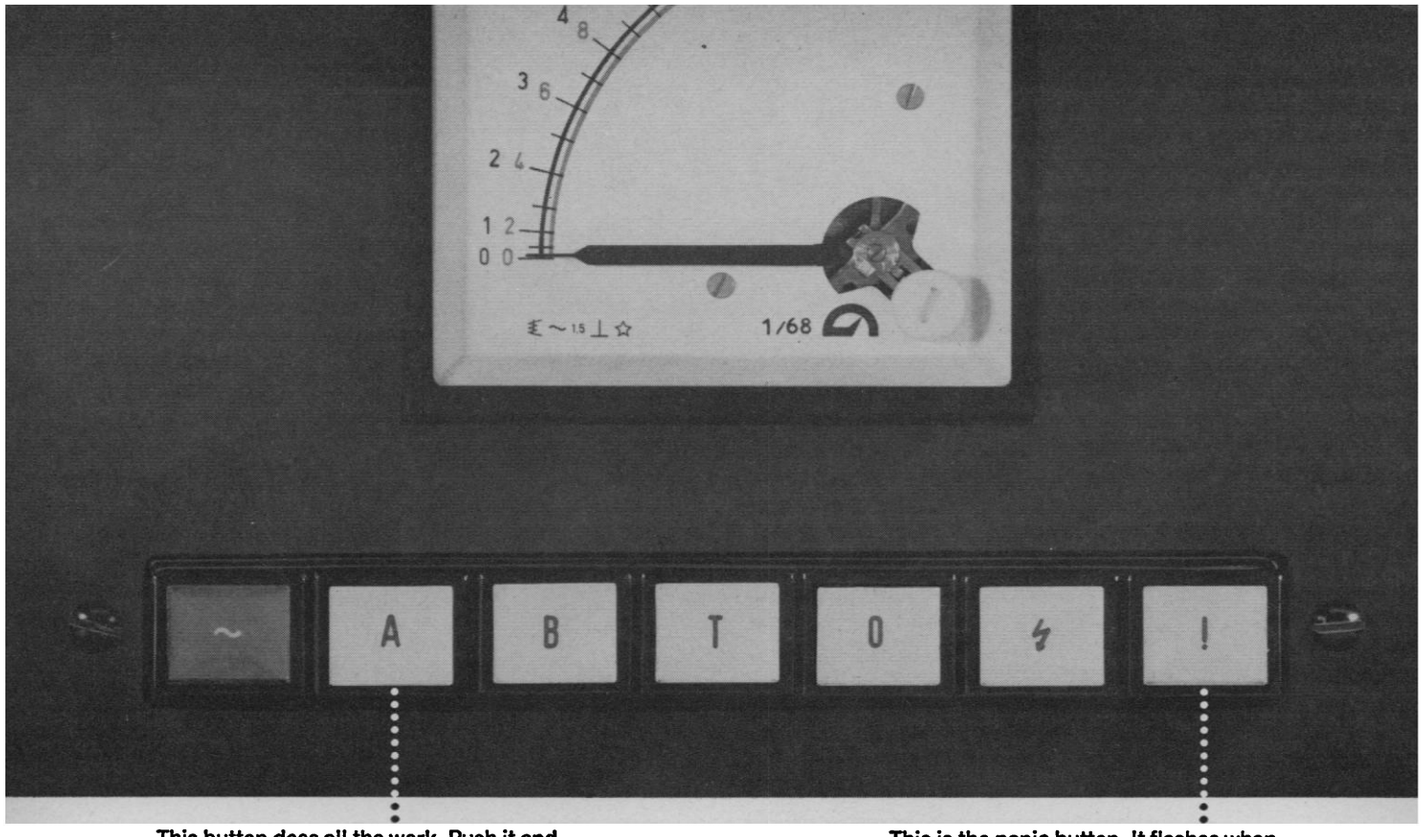

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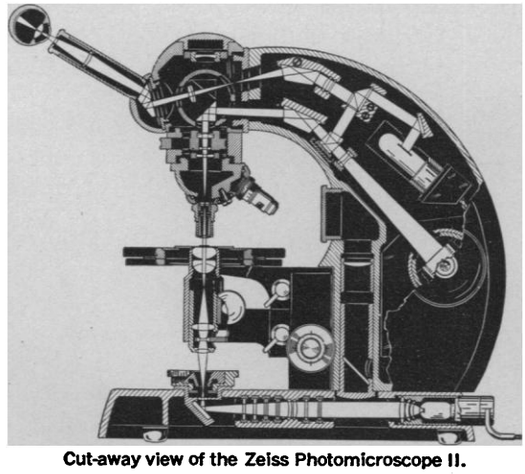

Cut-away view of the Zeiss Photomicroscope II.

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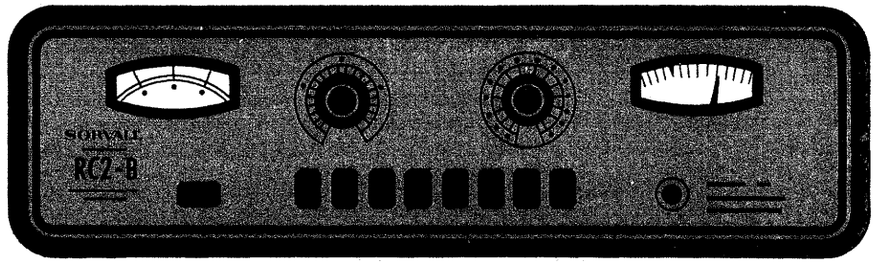

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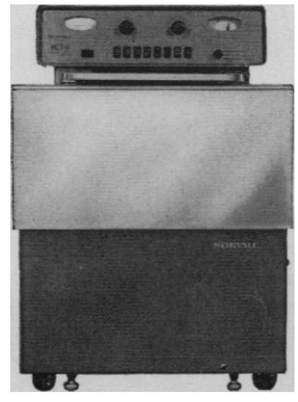
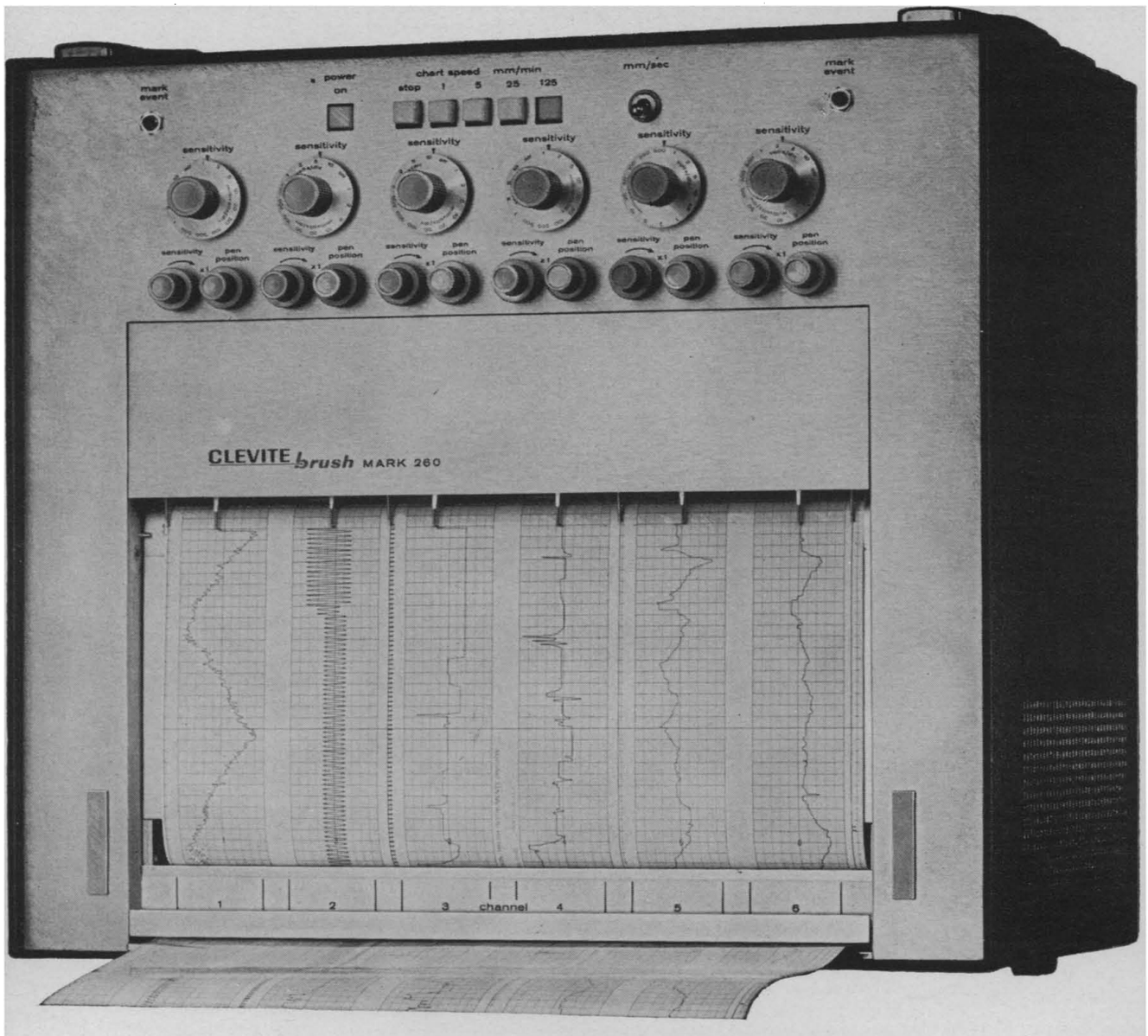


For additional information, ask for Bulletin SC-2RC2-PB.



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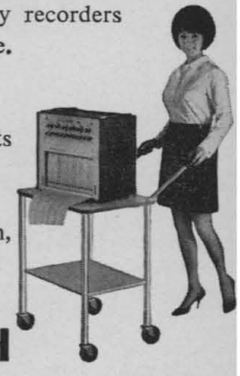

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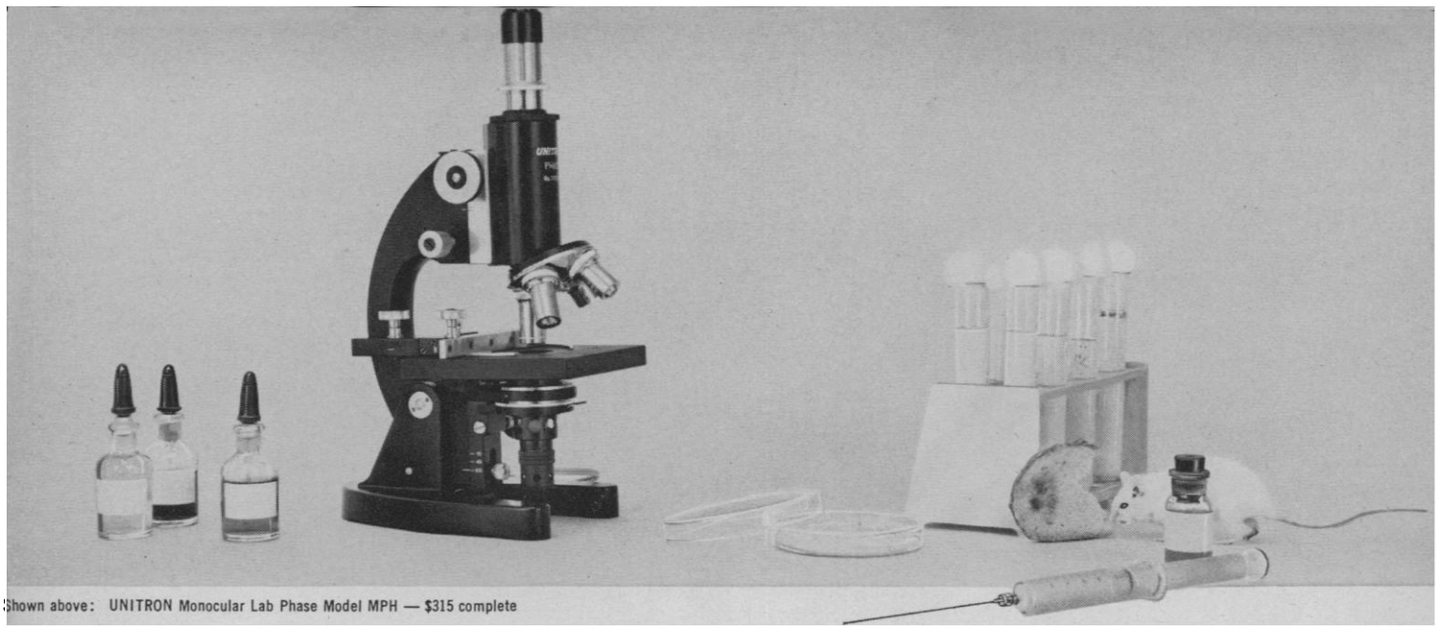

Shown above: UNITRON Monocular Lab Phase Model MPH — $315 complete

There are 3 microscopes in this picture

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Most lab microscopes are used for ordinary *brightfield* studies.

So is UNITRON's MPH.

Some lab microscopes can also be used for *darkfield.*

So can UNITRON's MPH.

Still other lab microscopes offer *phase contrast* to aid in the study of *living, unstained* material.

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Until now, no lab microscope has provided all 3 for the price of 1.

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That's not all. UNITRON's MPH gives you more than just the advantages of 3 specialized microscopes. It unites them in "Continuous-Transition Microscopy." With a turn of the condenser knob, you change from *brightfield* to *darkfield* to *phase contrast,* all in rapid succession. Operation is so easy, it's almost automatic. There are no accessories to attach and no time-consuming adjustments to make. Everything has been factory-centered for you. Even the light source is built-in and permanently aligned

Have cost and complexity kept you in the dark about phase? If so, you're in for a treat. UNITRON phase contrast will impress you all the more if you've tried to study *unstained, living* material with ordinary brightfield microscopes. There's no need to close the iris to pinhole size, reducing resolution and detail. Gone are those ghostly artificial images.

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UNITRON prices include everything but the specimens. In addition to all the special features of our phase models, you'll find everything else you expect in a good lab microscope. Four achromatic objectives (including high-power oil-immersion), mechanical stage, focusable substage condenser with iris diaphragm and filter system, fitted cabinet, etc. These, and all the other features we've described, are standard equipment with UNITRON. *There are no hidden extras to buy*

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Teachers will be interested to learn that UNITRON even offers *student phase models* for as little as $99. To introduce phase to the student lab, and to other areas where it has been a stranger, UNITRON has published a fully illustrated 64-page booklet, *Understanding and Using the Phase Microscope.* The text includes a special chapter of experiments written by Professor Julian D. Corrington of the University of Miami. Other subjects are covered, including the optical theory of microscopes in general. The booklet normally sells for $1.00 but we will be glad to send a free copy to any interested teacher or researcher

Ask for a free 10-day trial. Please specify whether you want to try Model MPH or BPH. A phase booklet is shipped with each microscope . . . or, you may request the booklet separately.

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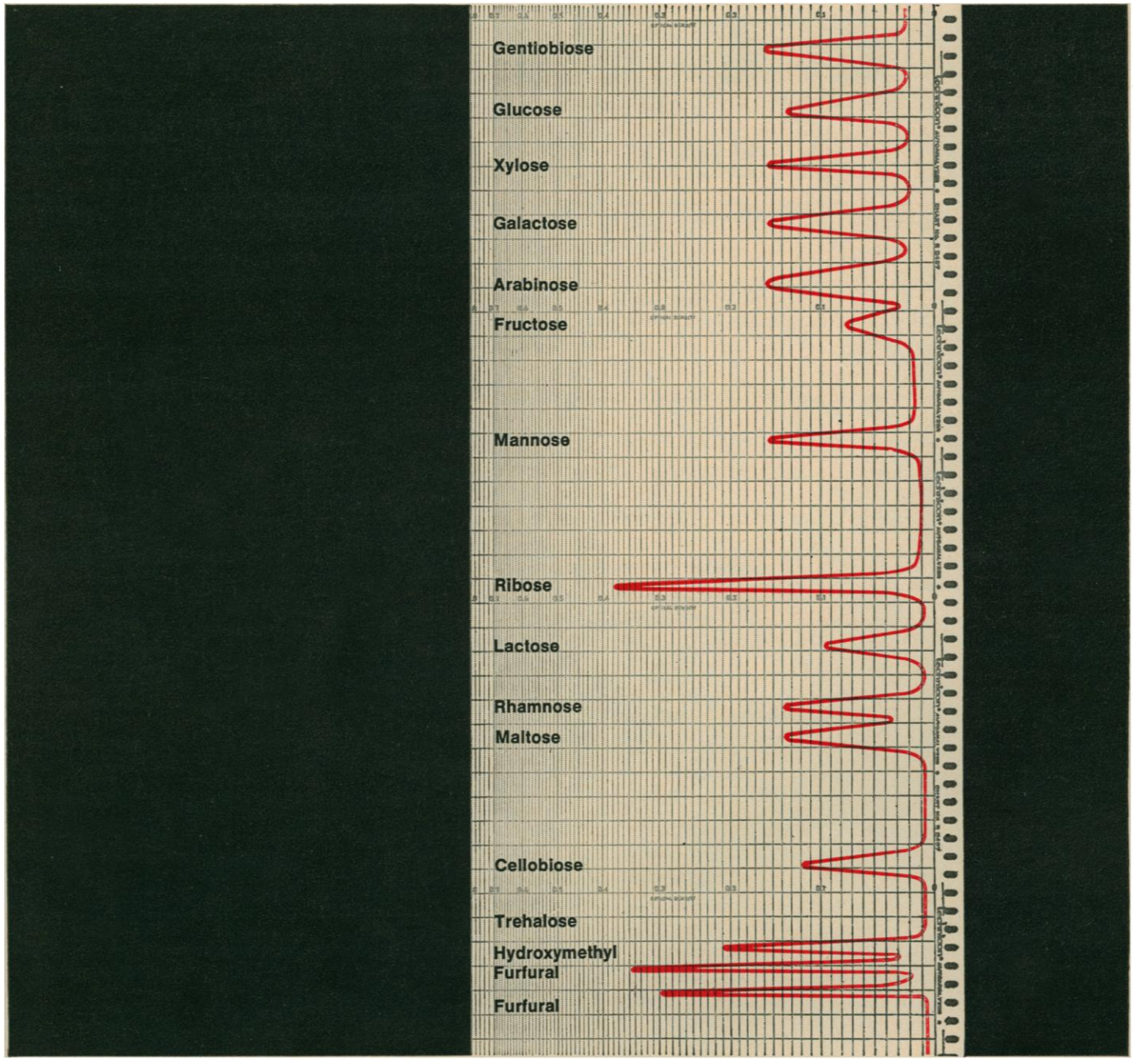

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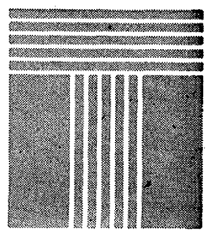

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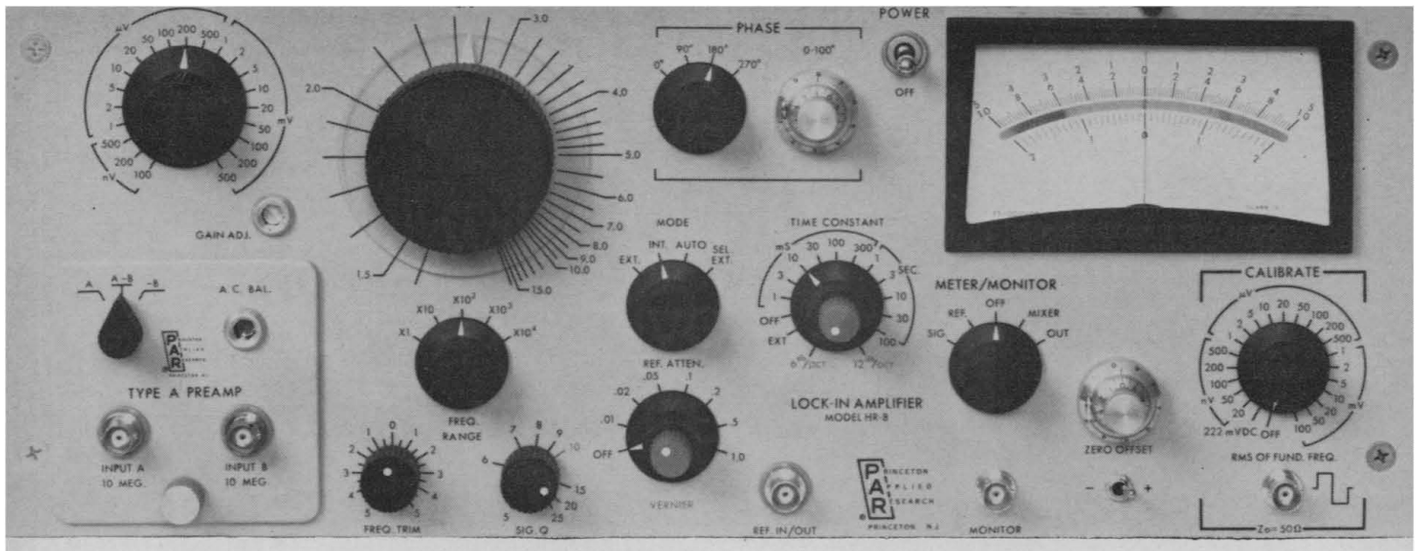

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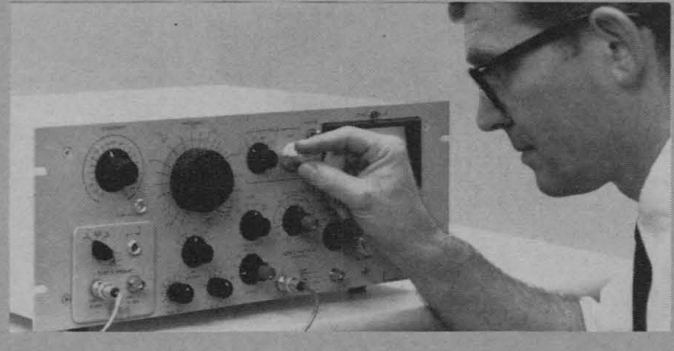

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Price of the Model HR-8 with a high impedance preamplifier is $2,350. For complete technical details, or for assistance with a specific problem in low-level signal recovery, write or call Princeton Applied Research Corporation, P. O. Box 565, Princeton, New Jersey 08540. Telephone: (609) 924-6835.

PRINCETON APPLIED RESEARCH CORPORATION

tions which would support large fish populations introduced to fit the new environment. The introduction of Coho salmon into the Great Lakes has had amazing success and has been a tremendous boon to the local economy.

3) *Wintering for waterfowl.* Ice-free areas in a lake during winter months would concentrate the waterfowl of the entire lake, increase survival, and create tourist attractions.

4) *Deicing of waterways.* In the Great Lakes the harbors and their approaches are ice-covered long before ice extends into the deeper portions of the lakes. Keeping these critical areas free of ice by discharging heated water through perforated pipes on or near the lake bottom would prolong the navigation season.

5) *Water quality improvement.* One could envision the use of excess heat to purify water by processes similar to those used in desalinization.

6) *Industrial and domestic usage.* Almost unlimited applications could be considered, some from a theoretical, and others from a practical standpoint. Examples can be mentioned, such as hydronic heating of homes and offices, and systems for keeping streets and highways free of ice and snow.

The need for positive solution of problems related to nuclear power sources requires a national institution which would not only conduct research but would also build pilot installations and advise power companies on their specific problems. Such an institute could be supported by the power industry, if every licensee were required by law to contribute to it.

"Thermal pollution" is not the most desirable name for this subject because of the connotation attached to "pollution." "Thermal enrichment" was recently proposed as a substitute. However, if enrichment would imply only improvement of water quality, then "thermal change" might be more appropriate.

L. BAJORUNAS
17689 Goldwin Southfield, Michigan

Freedom To Breed

"The tragedy of the commons" by Garrett Hardin (13 Dec., p. 1243) neatly misses the mark, ironically exemplifying the contrasting view.

If each person in a collection of rational individuals is intelligently motivated to pursue a course leading to collective tragedy, then human experience teaches that tragedy is prevented by the emergence of a social order requiring the submission of individual desires for the common good. This has been the fundamental motivation for the evolution of government.

Hardin calls for a party external to society to regulate individuals' activities. He is in fact playing the role of a rational member of the group by expressing a need for collective behavior.

JORDAN D. LEWIS
Battelle Development Corporation, 505 King Avenue, Columbus, Ohio

Hardin's skill in the presentation of insidious arguments is awesome. Before reading this article, I would have admitted that a gunfight between cops and robbers illustrated the meaning of mutual coercion. Now I am convinced that the tribal immolation of a tribesman, however unwilling a victim he may be, is an instance of mutual coercion, mutually agreed upon by the majority of the people affected. By his very membership in the tribe, the victim has mutually agreed with his fellows in his coerced self-sacrifice. We may be close to solving the dilemma of dissent within our society. We need not actually forbid a citizen to dissent as long as he wants to; we need merely make it increasingly expensive for him to do so. We need not prohibit dissent, but only mutually agree upon what carefully biased options to offer dissenters. Dissenters could be licensed on payment of fee in money or blood, a truly new solution to a new problem.

ROBERT E. DRURY
New York State Agricultural Experiment Station, Cornell University, Geneva 14456

. . . Hardin, like most advocates of coercion or other negative sanctions, has a one-sided view of human history. Voluntary checks on natality are a universal culture trait, and are usually intensified when density becomes oppressive. The delay in the operation of these voluntary population balancing factors, which has led to our current population growth rates, may well be associated with political and economic colonialism.

"Technology" by itself will not solve our difficulties (and no one has said that it would), but the coitus-independent methods of birth control and new agricultural developments have vastly improved our chances to surmount them, if we would only make them

available. A proper understanding of cultural evolution can point the way to policies which increase people's freedom to act rationally and do not involve dictating by the old and the affluent to the young and the poor.

STEVEN POLGAR
Department of Anthropology, University of North Carolina, Chapel Hill 27514

Hardin's suggestion that "Freedom to breed is intolerable" is debatable. We have never really had "freedom to breed" in the sense that *not* breeding has so far not yet been freely allowed. In those countries in which abortion has been legalized, the birth rate has dropped sharply, alarmingly in some cases, even though abortion is an inefficient, distasteful, and time-consuming birth control measure. If, in addition, contraceptive methods of all sorts were available free to anyone, with free medical assistance if desired; and if the lost work time involved were compensated adequately, so that a poor person really lost nothing financially by getting involved in birth control; then it seems probable that the birth rate might drop low enough to stabilize the population for several generations. . . .

ROBERT H. GOOD
California State College, Hayward

Moscow Meetings

Pener's letter (29 Nov.) regarding his exclusion from the 13th International Congress on Entomology in Moscow last August is most disturbing. I trust that explanations and assurances will be forthcoming from those concerned. I urge that, until adequate guarantees become available, individual scientists, organizations, and agencies reexamine their plans to meet or participate in meetings under such auspices. Last October I attended the Fifth International Symposium on the Chemistry of Cement in Tokyo and was pleased to hear that an invitation had been tendered to hold the Sixth Symposium in Moscow. If there is to be a significant likelihood that scientists from Israel will not be as free to participate there as they were in Tokyo or at the previous symposia in Washington or London, I trust that this planned activity will be rescheduled so as to avoid any such discrimination. . . .

BRYANT MATHER
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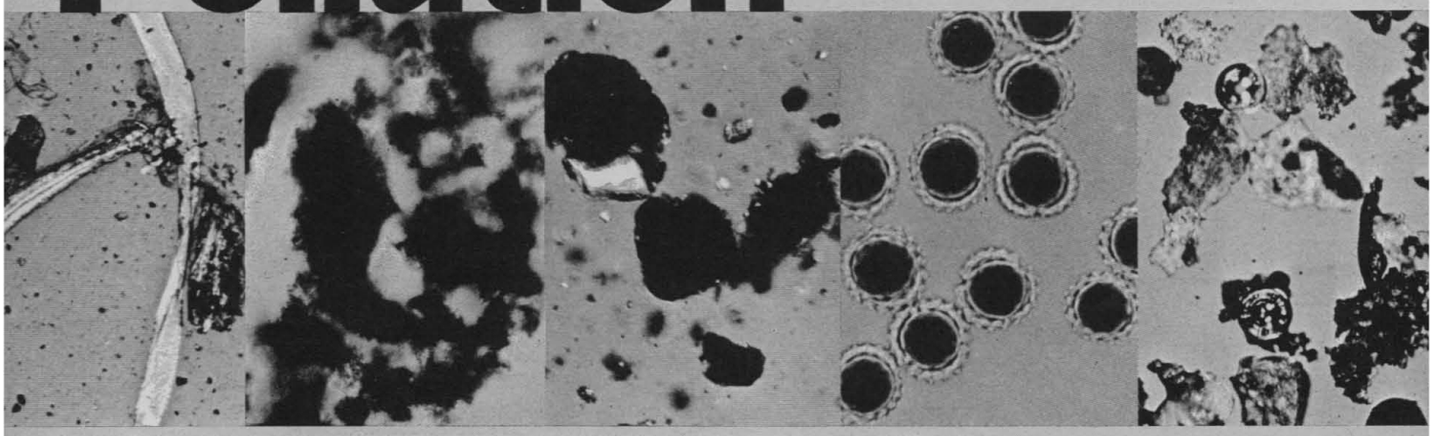
Pollution



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7 February 1969, Volume 163, Number 3867

SCIENCE

The Next Objective in Space

The moon-circling flight of Apollo 8 at Christmas was one of man's truly great adventures in exploration. The spectacular docking maneuver of Soyuz 4 and Soyuz 5 and the change from one spaceship to the other by two Soviet cosmonauts further demonstrate how far we of the earth have come in the conquest of space. In a few months, if all goes well, American astronauts will set foot on another world.

Manned exploration of the moon will provide answers to age-long speculation about its nature. Perhaps even more important than what we find will be the fact that we have done it. The event will mark the successful attainment of a goal that demanded technological attainments of unprecedented complexity and difficulty. Our sights were set upon this goal nearly a decade ago by President Kennedy. I was, I confess, one who feared he had asked the impossible.

When this moment of success comes, our nation will have an unparalleled opportunity to take a bold step in another direction in space. Richard M. Nixon can place his stamp of identity on an equally inspiring objective. He can call upon our nation and the world to exploit man's presence in space and his new-found skills in space for the benefit of earth and its peoples. He can call for commitment of the principal thrust of our future space efforts to research and engineering programs designed to explore the earth; to improve the communications links among continents; to study the earth's resources of oil, minerals, forest, and water; to plot the changing, global patterns of the oceans and the air, so that we may better understand, predict, and conserve our atmospheric and oceanic environment.

In making such a commitment, President Nixon will have still another challenging opportunity. By aiming the skills of space toward earth-oriented and peaceful uses, not only can he serve the tangible interests of people in every corner of the globe but he can call for the attainment of this goal through a world-cooperative research and engineering effort in which nations in many stages of development can participate. By this step he will greatly advance international understanding. Everyone will benefit if the Soviets, Americans, and others conduct peaceful space research in concert, with joint planning and joint execution. It is a rare chance for initiative.

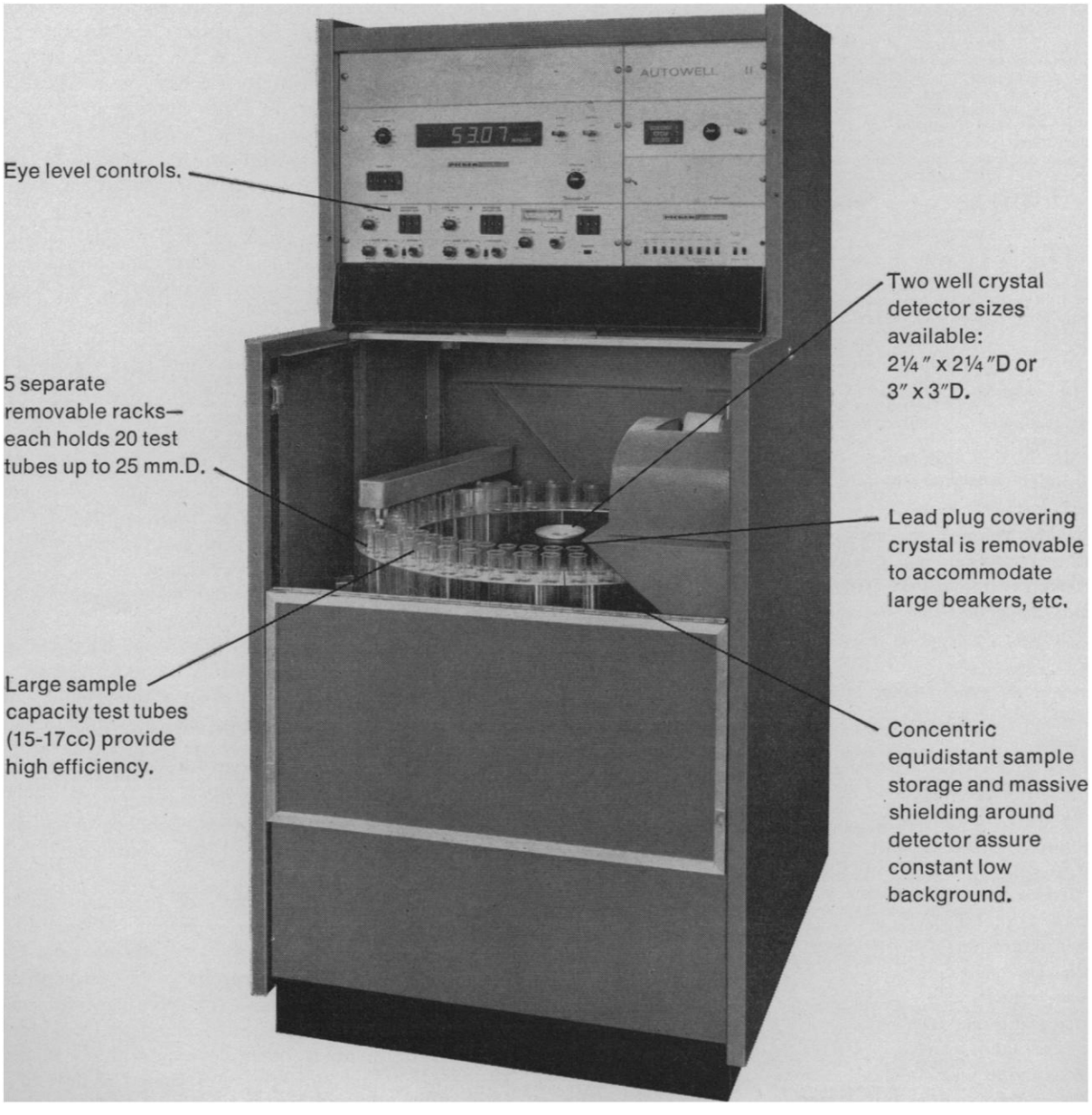
Weather forecasting provides one example of the earth-oriented use of space science with great potential human benefit. A fiendishly difficult and challenging problem lies before us—to understand the complex forces that drive the global winds and produce the yet-unpredictable long-term changes of weather and climate. To solve this problem without space satellites of new and sophisticated character is unthinkable. Such satellites, coupled with many other devices, will be required, to monitor the world's winds and clouds and to chart the flow of ocean currents. Supercomputers, a hundred times more powerful than today's best, will be essential to handle the satellite output and to bridge the void between a collection of millions of measurements and a program of systematic research aimed at finding a sound theoretical framework for vastly improved world weather forecasting.

We will not solve this problem unless we can somehow inspire atmospheric scientists of all the world to commit themselves to the goal. The problem, by its very nature, is global. Global cooperation is essential to its achievement. Space technology is perhaps the most important single component of the technology development needed for success. What better use could be found for our incredible talents in space?

After the moon, the earth!

—WALTER ORR ROBERTS, *President, University Corporation for Atmospheric Research, Boulder, Colorado*

Anatomy of an automatic gamma counting system.



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in relation to the purpose of this research effort in contraceptive development.

2) The scientific personnel who would conduct the investigation and the qualifications they have for undertaking this work.

3) Facilities currently or potentially available.

4) Consultants needed and/or any collaborative effort planned.

Responses received will be evaluated by the Center for Population Research in accordance with the following criteria: (i) understanding of the factors involved in this research program, (ii) qualification of the personnel who will undertake the investigation, and (iii) the potential of the organization to work effectively in this area.

To insure full consideration, the information requested should be furnished in 12 copies to Philip A. Corfman, M.D., Director, Center for Population Research, National Institute of Child Health and Human Development, Bethesda, Maryland 20014.

National Meetings

March

2–7. Pittsburgh Conf. on **Analytical Chemistry and Applied Spectroscopy**, Inc., 20th, Cleveland, Ohio. (W. M. Hickam, 1969 Pittsburgh Conf., Westinghouse Research Labs., Pittsburgh, Pa. 15235)

3–5. National Conf. on **Underwater Technology**, 3rd, San Diego, Calif. (J. T. Quirk, Ocean Engineering Div., U.S. Naval Civil Engineering Lab., Port Hueneme, Calif. 93041)

3–6. American Assoc. of **Junior Colleges**, Education Material and Equipment Exposition, Atlanta, Ga. (American Junior College Exposition, P.O. Box 1016, Alexandria, Va. 22313)

3–6. **Physiological Concepts of Clinical Disease**, Dallas, Tex. (American College of Physicians, Philadelphia, Pa.)

3–7. Symposium on **Arthritis and Related Disorders**, New York, N.Y. (Office of the Recorder, New York Univ. Post-Graduate Medical School, 550 First Ave., New York 10016)

4–6. National **Space** Mtg. of the Inst. of Navigation, Houston, Tex. (R. H. Battin, M.I.T. Instrumentation Lab., 75 Cambridge Parkway, Cambridge, Mass. 02139)

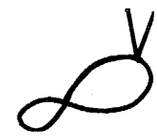
4–7. **Offshore Exploration** Conf., 4th, San Diego, Calif. (OECON IV, P.O. Box 88, Palos Verdes Estates, Calif. 90274)

5–7. **Fundamental Cancer Research**, 23rd symp., Houston, Tex. (D. E. Anderson, Univ. of Texas, M. D. Anderson Hospital and Tumor Inst., Houston)

5–7. **Particle Accelerator** Conf., Washington, D.C. (E. H. Eisenhower, Center for Radiation Research, Natl. Bureau of Standards, Washington, D.C. 20234)

9–11. American Assoc. of **Pathologists and Bacteriologists**, San Francisco, Calif. (K. M. Brinkhous, Dept. of Pathology, Univ. of North Carolina School of Medicine, Chapel Hill 27514)

9–14. American Soc. of **Photogrammetry**, Washington, D.C. (G. L. Loelkes, 8608 Cherry Valley Lane, Alexandria, Va. 22309)



Whales may have the most highly developed brains on this planet. The folds, fissures, and gyri of the whale's brain are far more complicated than those of the human brain and those of other animals. This extreme degree of convolution along with the presence of as many as two voice boxes used for communication plus a third vocalizer used for sonar suggests the existence of high intelligence. Even though the large whales of millions of years ago managed to survive with 2 pound brains, there has been much evolution since then resulting in brains as large as 19 pounds. The sperm whale's brain is six times the size of the human brain. The awareness and consciousness of life of these creatures may greatly exceed that of other mammals.

Scientists are now studying the small whales, the dolphins, because they believe there is a possibility of communicating with them. In the future there may be communication with the larger whales, resulting in a profound insight into an advanced nonhuman mind.

Whales and dolphins lack manual dexterity which prevents them from building an effective defense against the men and machines of the whaling industry. The International Whaling Commission was formed in 1948 to prevent the extinction of the whale. However, the greedy shortsighted whaling industry has succeeded in destroying the effectiveness of the commission by having some of the member nations insist upon catch limits that are far too high for these mammals to replace. At the last annual meeting of the commission, Japan, which has the largest whaling industry, tried to have the allowed kill increased.

At the present time the whaling industry is rapidly wiping out the finback, sperm, and sei whale species by shooting time bombs in them and by poisoning them with curare for the petty purpose of making cheap soap, margarine, dog food, and fertilizer. The other five species of large whale are almost extinct. An example is the blue whale which numbered about 100,000 individuals when the whaling commission was founded. After the allowed slaughter had reduced the number to about 600, the whaling commission finally banned the killing of this whale. However, some countries that don't belong to the whaling commission plus some that do, have taken hundreds since the ban.

Obviously a terrible crime is being committed. Some suggestions to halt the genocide are: a law prohibiting the sale or use of products derived from the bodies of whales, an offer by the U.S. to pension off the whaling industry, and boycotts against the goods of companies and countries that are mainly responsible for the killing of whales. In addition to these suggestions, the use of force against the whaling industry might be of help.

By writing to representatives and editors, more people will be informed of the need for action to save the whales.

MDS

10–12. **Flight Test, Simulation, and Support** Conf., 3rd., Houston, Tex. (J. C. McLane, Jr., Structures and Mechanics Div., Engineering and Development Directorate, NASA Manned Spacecraft Center, Houston 77058)

10–12. Society of **Toxicology**, Williamsburg, Va. (J. F. Borzelleca, Dept. of Pharmacology, Medical College of Virginia, Richmond 23219)

10–13. Conference on **Electric Fields in the Magnetosphere**, Houston, Tex. (J. W. Freeman, Jr., Dept. of Space Science, Rice Univ., P.O. Box 1892, Houston 77001)

10–13. American **Nuclear** Soc., Idaho Falls, Idaho. (J. E. Kunze, General Electric Co., P.O. Box 2147, Idaho Falls 83401)

10–14. National Assoc. of **Corrosion Engineers**, 25th, Houston, Tex. (Publication Director, 980 M & M Bldg., No. 1, Main St., Houston)

11–14. **Optical Soc. of America**, San Diego, Calif. (M. E. Warga, The Society, 2100 Pennsylvania Ave., NW, Washington, D.C. 20037)

13–14. Symposium on **Automated, High-Resolution Analyses in the Clinical Lab.**, Oak Ridge, Tenn. (Oak Ridge Natl. Lab., P.O. Box X, Oak Ridge 37830)

13–15. Conference on **Nuclear Isospin**, 2nd, Asilomar, Calif. (S. D. Bloom, Lawrence Radiation Lab., P.O. Box 808, Livermore, Calif. 94550)

14–15. American **Burn** Assoc., Atlanta, Ga. (J. A. Boswick, Cook County Hospital, 1835 W. Harrison, Chicago, Ill. 60612)

15–19. American Acad. of **Allergy**, Bal Harbour, Fla. (J. O. Kelly, 756 N. Milwaukee St., Milwaukee, Wis. 53202)

16–20. American Inst. of **Chemical Engineers**, 64th, New Orleans, La. (R. M. Persell, U.S. Dept. of Agriculture, Southern Utilization R&D Div., Box 19687, New Orleans 70119)

16–20. American Soc. of **Mechanical Engineers**, Cleveland, Ohio. (The Society, 345 E. 47 St., New York 10017)

17. **Chemiluminescence** Conf., Desert Hot Springs, Calif. (H. W. Schneider, Box 433, North Palm Springs, Calif.)

18–19. Central States Section of the **Combustion** Inst., Minneapolis, Minn. (B. Schukraft, Inst. of Gas Technology, 3424 S. State St., Chicago, Ill. 60616)

20. **Biomedical Engineering**, Cincinnati, Ohio. (D. Hershey, Dept. of Chemical Engineering, Univ. of Cincinnati, Cincinnati)

20–22. American Acad. of **Facial Plastic and Reconstructive Surgery**, New Orleans, La. (J. R. Anderson, 111 Tulane Ave., New Orleans 70112)

23–29. American **Crystallographic** Assoc., Seattle, Wash. (W. L. Kehl, Gulf Research and Development Co., P.O. Box 2038, Pittsburgh, Pa. 15230)

24–25. **Laser Safety** Conf. and Workshops, 2nd, Cincinnati, Ohio. (L. Goldman, Laser Lab., Children's Hospital Research Foundation of the Medical Center of the Univ. of Cincinnati, Cincinnati)

24–27. American **Physical** Soc., Philadelphia, Pa. (W. W. Havens, Jr., The Society, 335 E. 45 St., New York 10017)

24–28. **Desalination: Methods and Applications**, Berkeley, Calif. (Continuing Education in Engineering, Univ. Extension, Univ. of California, 2223 Fulton St., Berkeley 94720)

25–27. American **Laryngological, Rhinological and Otological** Soc., Inc., New Orleans, La. (V. R. Alfaro, 917 20th St., NW, Washington, D.C. 20006)

26–28. National **Business Aircraft** Mfg. and Engineering Display, Wichita, Kan. (A. J. Favata, SAE Headquarters, 2 Pennsylvania Plaza, New York 10001)

26–28. Symposium on the **Engineering Aspects of Magnetohydrodynamics**, 10th, Cambridge, Mass. (J. Klepeis, Arrangements Committee, Avco Everett Research Lab., 2385 Revere Beach Parkway, Everett, Mass. 02149)

26–28. **George H. Hudson** Symp., 4th, Plattsburgh, N.Y. (M. H. Tourin, State Univ. College of Arts and Sciences, Plattsburgh 12901)

27–28. **Technical Writing** Inst., Lubbock, Tex. (M. Miles, Technical Writing Inst., Dept. of English, Texas Technological College, Lubbock 79409)

27–29. **Geological** Soc. of America, South-Central Section, Lawrence, Kans., "Basement Rocks of the Mid-Continent" and "Paleo-Environmental Implications of Palynology." (W. M. Merrill, Dept. of Geology, Univ. of Kansas, Lawrence 66044)

28–29. American **Otological** Soc., Inc., New Orleans, La. (W. H. Bradley, 1100 E. Genesee St., Syracuse, N.Y.)

28–30. American **Psychosomatic** Soc., Inc., 26th, Cincinnati, Ohio. (H. Weiner, 265 Nassau Rd., Roosevelt, N.Y. 11575)

30–2. American **Orthopsychiatric** Assoc., New York, N.Y. (M. F. Langer, Room 1313, 1790 Broadway, New York 10019)

31–2. **Advances in Water Quality Improvement**–Physical and Chemical Processes, Austin, Tex. (Center for Research in Water Resources, Univ. of Texas, Rt. 4, Box 189, Austin 78757)

31–2. **Metals Engineering** Conf., Washington, D.C. (R. J. Cepluch, Hartford Steam Boiler Inspection and Insurance Co., 56 Prospect St., Hartford, Conn. 06102)

31–2. American Assoc. of **Thoracic Surgery**, San Francisco, Calif. (T. B. Ferguson, Suite 311, 7730 Carondelet Ave., St. Louis, Mo. 63110)

International and Foreign Meetings

March

2–6. International Soc. of **Anesthesia Research**, 43rd, Bal Harbour, Fla. (B. B. Sankey, 3645 Warrensville Center Rd., Cleveland, Ohio 44122)

3–6. Symposium on **Protein Structure and Function**, St. Marguerite, P.Q., Canada. (T. H. G. Michael, Chemistry Inst. of Canada, 151 Slater St., Ottawa 4, Ont.)

7–12. International Acad. of **Pathology**, 58th, San Francisco, Calif. (P. K. Mostofi, % Armed Forces Inst. of Pathology, Washington, D.C. 20305)

9–22. International Postgraduate Congr. for **Practical Medicine**, Daves, Switzerland. (W. Brune, Kongressburo der Bundesarztekammer, Haedenkampstr. 1 5000 Koln-Lindenthal, Germany)

10–12. International Conf. on **Urban Transportation**, 4th, Pittsburgh, Pa. (G. R. Schaefer, WABCO Mass Transit Center, Westinghouse Air Brake Co., Pittsburgh)

12–13. Conference on **Safety on Construction Site**, London, England. (Institu-

tion of Civil Engineers, Great George St., London, S.W.1)

17–18. International Symp. of **High-speed Testing: The Rheology of Solids**, Boston, Mass. (R. H. Supnik, % Plas-Tech Equipment Corp., 4 Mercer Rd., Natick, Mass. 01760)

20–23. International Assoc. for **Dental Research**, 47th, Houston, Tex. (A. D. Frechette, 211 E. Chicago Ave., Chicago, Ill. 60611)

24–27. International Convention of Inst. of **Electrical and Electronics Engineers**, New York, N.Y. (The Convention, 345 E. 47 St., New York 10017)

25–28. **Autoclaved Building Products**, 2nd intern. symp., Hanover, Germany. (Secretary, Second Intern. Symp. 1969, "Haus der Kalksandstein-industrie," Postfach 66, 3 Hanover-Herrenhausen)

25–28. **Liquefied Natural Gas**, London, England. (Conference Dept., Inst. of Mechanical Engineers, 1 Birdcage Walk, Westminster, London, S.W.1)

27–28. International Congr. for **Heating, Ventilating, Air Conditioning**, 19th, Frankfurt am Main, Germany. (S. Ausschuss, Kongress fur Heizung, Luftung, Klimatechnik, Kongressburo, Konigstr. 5, 4 Dusseldorf 1, Germany)

31–4. International Symp. on **Concrete Bridge Design**, 2nd, Chicago, Ill. (American Concrete Inst., P.O. Box 4754, Redford Sta., 22400 W. Seven Mile Rd., Detroit, Mich. 48219)

April

7–11. Federation of European **Biochemical** Societies, 6th, Madrid, Spain. (Secretariat, Centro de Investigaciones Biologicas, Velazquez, 144, Madrid 6)

8–11. International Symp. on **Laboratory Animals**, Washington, D.C. (B. F. Hill, Charles River Breeding Labs., Inc., Wilmington, Mass.)

9–12. **British Medical** Assoc., clinical mtg., Valletta, Malta. (British Medical Assoc. House, Tavistock Sq., London, W.C.1, England)

14–17. **Cleft Palate**, intern. congr., Houston, Tex. (B. J. McWilliams, Cleft Palate Research Center, Univ. of Pittsburgh, 313 Salk Hall, Pittsburgh, Pa. 15213)

15–17. **Civil Engineering Problems of the South Wales Valleys**, Cardiff, England. (Institution of Civil Engineers, Great George St., London, S.W.1, England)

15–18. International **Magnetics** Conf., Amsterdam, Netherlands. (T. Holtwijk, Philips Research Labs., Eindhoven, Netherlands)

17–18. British Inst. of **Radiology**, London, England. (British Inst. of Radiology, 32 Welbeck St., London, W.1)

19–27. Yugoslav Seminar and Exhibition of **Regulation, Measuring and Automation-Jurema** 1969, 14th, Zagreb. (Jurema, Unska U1, P.O.B. 123, Zagreb)

21–23. Canadian Inst. of **Mining and Metallurgy**, 71st, Montreal, Canada. (Executive Director, The Institute, Suite 906, 1117 St. Catherine St. W., Montreal 2, P.Q.)

21–25. **Switching Techniques for Telecommunication Networks**, London, England. (Conference Dept., Institution of Electrical Engineers, London, W.C.2)

BOOKS RECEIVED

(Continued from page 561)

Electromechanical Dynamics. Herbert W. Woodson and James R. Melcher. In three parts. Part 1, Discrete Systems, $11. Part 2, Fields, Forces, and Motion, $11. Part 3, Elastic and Fluid Media, $15. lx + 849 pp., appendices, illus. Wiley, New York, 1968.

Engineering Properties of Rocks. I. W. Farmer. Spon, London, 1968 (U.S. distributor, Barnes and Noble, New York). x + 182 pp., illus. $5.75.

"Ethno-Pedagogy." A Manual in Cultural Sensitivity, with Techniques for Improving Cross-Cultural Teaching by Fitting Ethnic Patterns. Henry G. Burger. Southwestern Cooperative Educational Laboratory, Albuquerque, N.M., ed. 2, 1968. Free to qualified requesters. SWCEL Publication No. 2-0768.

Evolution and Environment. A Symposium Presented on the Occasion of the One Hundredth Anniversary of the Foundation of Peabody Museum of Natural History at Yale University. New Haven, Conn., 1966. Ellen T. Drake, Ed. Yale University Press, New Haven, 1968. xvi + 478 pp., illus. $15. Mrs. Hepsa Ely Silliman Memorial Lectures.

Evolutionary Trends in Heteroptera. Part 1, Eggs, Architecture of the Shell, Gross Embryology and Eclosion. R. H. Cobben. Centre for Agricultural Publications and Documentation, Wageningen, Netherlands, 1968. viii + 476 pp., illus. Dfl 55.

Exercise Physiology. Harold B. Falls, Ed. Academic Press, New York, 1968. xiv + 474 pp., illus. $17.50.

Experiments in Physical Science. Allen D. Weaver and James F. Glenn. Brown, Dubuque, Iowa, ed. 2, 1968. xii + 308 pp., illus. Spiral bound, $4.95.

Experiments in Physiology and Biochemistry. Vol. 1. G. A. Kerkut, Ed. Academic Press, New York, 1968. xvi + 408 pp., illus. $18.50.

Fields and/or Particles. D. K. Sen. Ryerson Press, Toronto; Academic Press, New York, 1968. x + 142 pp. $7.50.

The First Civilizations. The Archaeology of Their Origins. Glyn Daniel. Crowell, New York, 1968. 208 pp., illus., + plates. $8.95.

Fluid Mechanics for Civil Engineers. N. B. Webber. Spon and Science Paperbacks, London, 1968 (U.S. distributor, Barnes and Noble, New York). xvi + 344 pp., illus. Cloth, $11; paper, $6. Reprint of the 1965 edition.

Food Composition Table for Use in Africa. Woot-Tsuen Wu Leung, with the cooperation of Félix Busson and Claude Jardin. Nutrition Program, Health Services and Mental Health Administration, Bethesda, Md., 1968. x + 308 pp. Paper.

For Science and National Glory. The Spanish Scientific Expedition to America, 1862–1866. Robert Ryal Miller. University of Oklahoma Press, Norman, 1968. xiv + 194 pp. + plates. $5.95.

Foundation Analysis and Design. Joseph E. Bowles. McGraw-Hill, New York, 1968. xii + 660 pp., illus. $16.50.

Foundations of Mathematics. William S. Hatcher. Saunders, Philadelphia, 1968.

xiv + 336 pp., illus. $12.75. Saunders Mathematics Books.

Four Seasons in the Woods. Written and illustrated by Henry B. Kane. Knopf, New York, 1968. iv + 60 pp., illus. $3.50.

From Sea to Shining Sea. A Report on the American Environment—Our Natural Heritage. The President's Council on Recreation and Natural Beauty, Washington, D.C., 1968 (available from Superintendent of Documents, Washington, D.C.). 304 pp., illus. Paper, $2.50.

Galen on the Usefulness of the Parts of the Body. Peri Chreias Morion. De Usu Partium. Translated from the Greek with an introduction and commentary by Margaret Tallmadge May. Cornell University Press, Ithaca, N.Y., 1968. 2 vols., xvi + 804 pp., boxed. $25. Cornell Publications in the History of Science.

Georg Simmel. The Conflict in Modern Culture and Other Essays. Translated, with an introduction by K. Peter Etzkorn. Teachers College Press, New York, 1968. xii + 140 pp. $5.

A Glossary of Genetics and Cytogenetics. Classical and Molecular. Rigomar Rieger, Arnd Michaelis, and Melvin M. Green. Third edition (first English edition). Springer-Verlag, New York, 1968. 508 pp., illus. $16.50.

Gondwanaland Revisited: New Evidence for Continental Drift. American Philosophical Society, Philadelphia, 1968. Paper, $1. Proceedings of the American Philosophical Society, Vol. 112, No. 5 (pp. 307–53).

An Historical Introduction to the Economic Geography of Great Britain. Wilfred Smith. Praeger, New York, 1968. xxxiv + 230 pp., illus. $6.50. Praeger Surveys in Economic Geography.

History of Science. An Annual Review of Literature, Research and Teaching. Vol. 6, 1967. A. C. Crombie and M. A. Hoskin, Eds. Heffer, Cambridge, England, 1968. vi + 186 pp., illus. 42s.

Hummingbirds and Their Flowers. Karen A. Grant and Verne Grant. Columbia University Press, New York, 1968. x + 118 pp., illus., 30 plates. $17.50.

Hypodynamics and Hypogravics. The Physiology of Inactivity and Weightlessness. Michael McCally, Ed. Academic Press, New York, 1968. xiv + 306 pp., illus. $15.

Identification and Individuality. Instincts Fundamental to Human Behavior. John T. Flynn. Beekman, New York, 1968. viii + 84 pp. $4.95. Monograph Series.

Information Theory of Choice-Reaction Times. D. R. J. Laming. Academic Press, New York, 1968. x + 174 pp., illus. $10.

Introduction to Archaeology. Robin Place. Philosophical Library, New York, 1968. xii + 168 pp., illus., 24 plates. $6.

An Introduction to Computers in Information Science. Susan Artandi. Scarecrow, Metuchen, N.J., 1968. viii + 143 pp., illus. $4.

Life on a Little-Known Planet. Howard Ensign Evans. Illustrations by Arnold Clapman. Dutton, New York, 1968. 320 pp. $7.95.

Local-Level Politics. Social and Cultural Perspectives. Marc J. Swartz, Ed. Aldine, New York, 1968. x + 438 pp. $9.75.

Man's Rise to Civilization as Shown by the Indians of North America from Primeval Times to the Coming of the Indus-

trial State. Peter Farb. Dutton, New York, 1968. xx + 332 pp., illus. $8.95.

Mathematical Models of Arms Control and Disarmament. Application of Mathematical Structures in Politics. Thomas L. Saaty. Wiley, New York, 1968. xii + 196 pp., illus. $10.95. Publications in Operations Research, No. 14.

Mathematical Structures of Language. Zellig Harris. Interscience (Wiley), New York, 1968. x + 230 pp., illus. $11.95. Interscience Tracts in Pure and Applied Mathematics, No. 21.

Mellor's Modern Inorganic Chemistry. G. D. Parkes, Ed. Wiley, New York, ed. 6, 1968. xxii + 1028 pp., illus., 21 plates. $7.

The Origins and Growth of Archaeology. Glyn Daniel. Crowell, New York, 1968. xiv + 298 pp., illus. $8.95.

Other Minds. John Wisdom. University of California Press, Berkeley, 1968. x + 266 pp. Paper, $2.25. Reprint of the 1965 edition.

Pebbles on the Hill of a Scientist. Florence B. Seibert. Published by the author, 470 Third Street South, St. Petersburg, Fla., 1968. x + 166 pp., illus. $5.50.

The People Vs. the System. A Dialogue in Urban Conflict. Proceedings of the Community Service Workshop, Chicago, 1966–1967. Sol Tax, Ed. Acme, Chicago, 1968. xii + 516 pp. Paper, $8.50.

Research in Optical Spectroscopy. Present Status and Prospects. A report of the Committee on Line Spectra of the Elements, National Research Council. National Academy of Sciences, Washington, D.C., 1968. viii + 36 pp. Paper, $1.95. NAS-NRC Publication No. 1699.

A Revision of the Genus Thrips Linnaeus in the New World with a Catalogue of the World Species (Thysanoptera: Thripidae). Adrian G. Gentile and Stanley F. Bailey. University of California Press, Berkeley, 1968. viii + 96 pp., illus. Paper, $3.50. University of California Publications in Entomology, vol. 51.

The Sun and Its Influence. An Introduction to the Study of Solar-Terrestrial Relations. M. A. Ellison. Third edition, revised by Patrick Moore. Elsevier, New York, 1968. xvi + 240 pp., illus. $5.50.

Supplement to CODEN for Periodical Titles. (Including Non-Periodical Titles and Deleted CODEN). An aid to the storage and retrieval of information and to communication involving journal references. Prepared and maintained for the American Society for Testing and Materials Special Committee on Numerical Reference Data by the Science Information Services, Franklin Institute Research Laboratories. Jennifer G. Blumenthal and Marta Karaman, Eds. ASTM, Philadelphia, 1968. viii + 472 pp. $45; 20 percent discount to members.

Taxonomy and Phylogeny of Old World Primates with References to the Origin of Man. Proceedings of a Round Table, Turin, Italy, 1967. Rosenberg and Sellier, Turin, 1968. xii + 324 pp., illus. $16.

Telliamed. Or Conversations between an Indian Philosopher and a French Missionary on the Diminution of the Sea. Benoit de Maillet. Translated and edited from the French edition (Amsterdam, 1748) by Albert V. Carozzi. University of Illinois Press, Urbana, 1968. xiv + 466 pp., illus. $10.