Instructions for Contributors

The Editors of Science

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All papers submitted are considered for publication. The author's membership or lack of membership in the AAAS is not a factor in selection. Papers are accepted with the understanding that they have not been published, submitted, or accepted for publication elsewhere. Authors will usually be notified of acceptance, rejection, or need for revision in 4 to 5 weeks (Reports) or 6 to 10 weeks (Articles).

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Choose the active voice more often than you choose the passive, for the passive voice usually requires more words and often obscures the agent of action. Use first person, not third; do not use first person plural when singular is appropriate. Use a good general style manual, not a specialty style manual. The University of Chicago style manual, the style manual of the American Institute of Physics, and the Style Manual for Biological Journals, among others, are appropriate.

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Journal: H. Smith, Am. J. Physiol. 98, 279
(1931).

Book: F. Dachille and R. Roy, Modern Very
High Pressure Techniques (Butterworth, London, 1961), pp. 163-180.

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Do not submit more than one illustration (table or figure) for each 4 manuscript pages unless you have planned carefully for grouping. With such planning, many illustrations can be accommodated in one article. Consult the editorial office for help in planning.

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Letters concerning technical papers in *Science* are published as Technical Comments at the end of the Reports section. They may add information or point out deficiencies. Reviews are obtained before acceptance.

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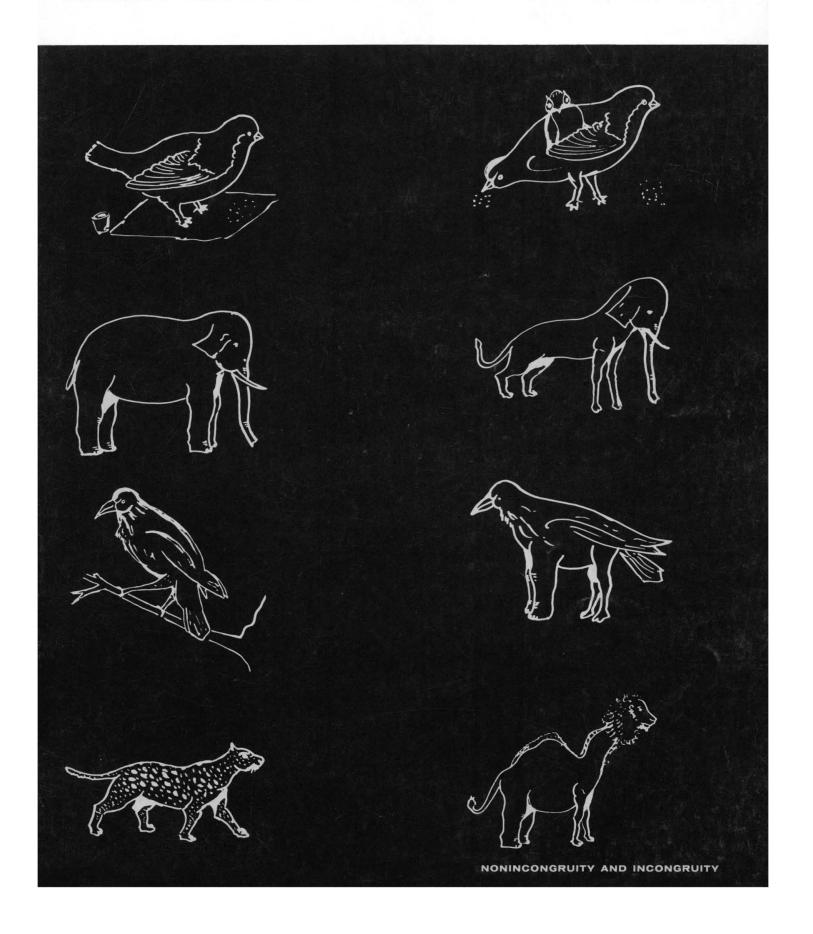
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Particularly good photographs suitable for use on the cover are desired if they can be published in connection with any type of paper.

SCIENCE 1 July 1966 Vol. 153, No. 3731

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



WORLD ERADICATION OF INFECTIOUS DISEASES by E. Harold Hinman, Jefferson Medical College, Philadelphia. Dr. Hinman is internationally known for his work in this field . . . the author of more than eighty papers on medical entomology, malaria control and eradication, etc. His present work considers the origins of eradication efforts, the nature of such programs, their progress to date, and the future outlook for their success and for extension of such attack to other infectious diseases of man. May '66, 240 pp., 4 il., 5 tables, (Amer. Lec. Living Chemistry edited by I. Newton Kugelmass), \$8.50

NEW THOMAS PUBLICATIONS IN SCIENCE AND MEDICINE

- of Relationships Between Tested Intelligence and Personality by Alice E. Moriarty, The Menninger Foundation, Topeka. In essence, this text shows how to make tests more useful clinically and places in new perspective the age-old controversy of IQ constancy. The author reviews and analyzes a series of structured tests on a sample of sixty-five normal children . . . examining dynamic aspects of ongoing intellectual development and considering possible psychological implications of constancy and change in human cognitive functioning. June '66, 232 pp., 13 tables, \$8.50
- ALCOHOLISM: Group Psychotherapy and Rehibilitation by Hugh Mullan and Iris Sangiuliano, both of New York City. With contributions by Ruth Fox, Esther J. Griffing, and Rose Wolfson. A systematic, truly cooperative approach to the treatment of alcoholism for both treatment center and private practitioner. The authors describe a broad treatment and rehabilitation program which meets the patient's needs and makes use of all community services that might contribute to his recovery. June '66, 352 pp., 11 il., 5 tables, (Amer. Lec. Clinical Psychiatry edited by Howard P. Rome), \$12.00
- COMPUTERS IN PSYCHOPHYSIOLOGY compiled and edited by Herbert Zimmer, Hunter College of the City University of New York. (16 Contributors) In the present work the author has collected accounts of representative systems . . . all applicable to psychophysiologic problems and capable of generating data in digital form. With one exception the systems included here produce data in a format suitable as input to a general purpose computer by means of either paper tape or magnetic tape. July '66, about 196 pp. (63/4 x 93/4), about 64 il.

TEACHING THE CULTURALLY DIS-ADVANTAGED PUPIL compiled and edited by John M. Beck and Richard W. Saxe, both of Chicago Teachers College South, Ill. (19 Contributors) '65, 352 pp., 11 il., \$10.50

CLOSING THE GAP BETWEEN MEDICINE AND PSYCHIATRY by Wilfred Dorfman, Brunswick Hospital Center, Amityville, N. Y. Jan. '66, 228 pp., \$8.50

ALCOHOLISM: Mechanism and Management by Max Hayman, University of California at Los Angeles. June '66, 332 pp., 6 il., (Amer. Lec. Living Chemistry), \$10.50

SURGERY OF THE DIGESTIVE SYSTEM IN THE RAT by René Lambert, Médecin des Hopitaux de Lyon, France. Translated by Brian Julien, Hopital Bichat, Paris. '65 520 pp., 154 il., \$18.50

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LONG-TERM RESULTS OF PSYCHIATRIC OUT-PATIENT TREATMENT by B. E. Mc-Laughlin, Univ. of North Dakota, Grand Forks. '65, 96 pp., \$4.75

PROGESTAGEN THERAPY by Maxwell Roland, New York Fertility Institute, New York City. In collaboration with Norman Applezweig, Martin J. Clyman, Albert Decker, and William B. Ober. '65, 104 pp. (8½ x 11), 108 il. (39 in color), 14 tables, (Amer. Lec. Living Chemistry), \$9.00

The Seventh STAPP CAR CRASH CONFER-ENCE – Proceedings edited by Derwyn M. Severy, Univ. of Calif. at Los Angeles. (77 Contributors) '65, 628 pp., 394 il., 46 tables, \$22.00

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COVER

Examples of "incongruity," the possession by a stimulus pattern of characteristics that a human subject will generally have learned to regard as incompatible. Such pictures have been used in experiments on autority and used in experiments on curosity and other motivational effects of "collative" stimulus properties. See page 25. [S. E. Burgess]

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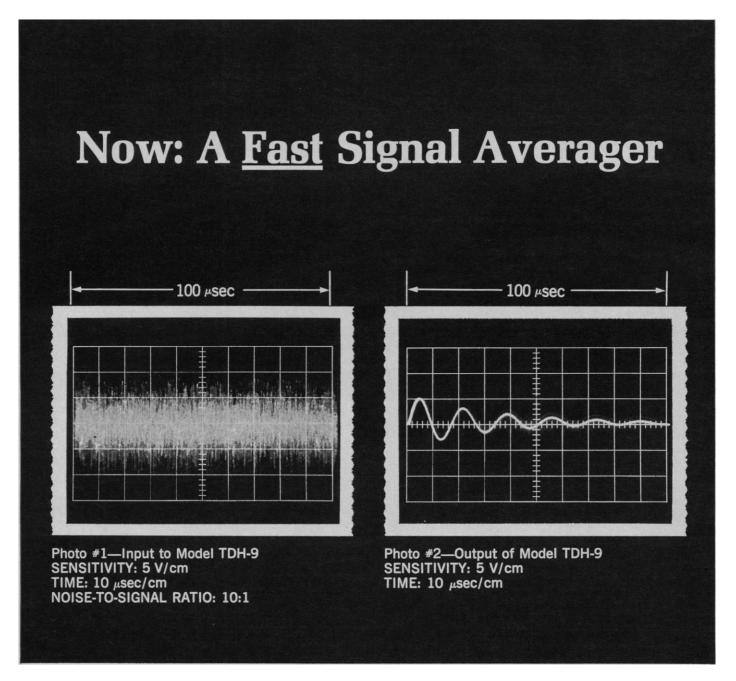
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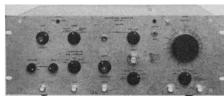
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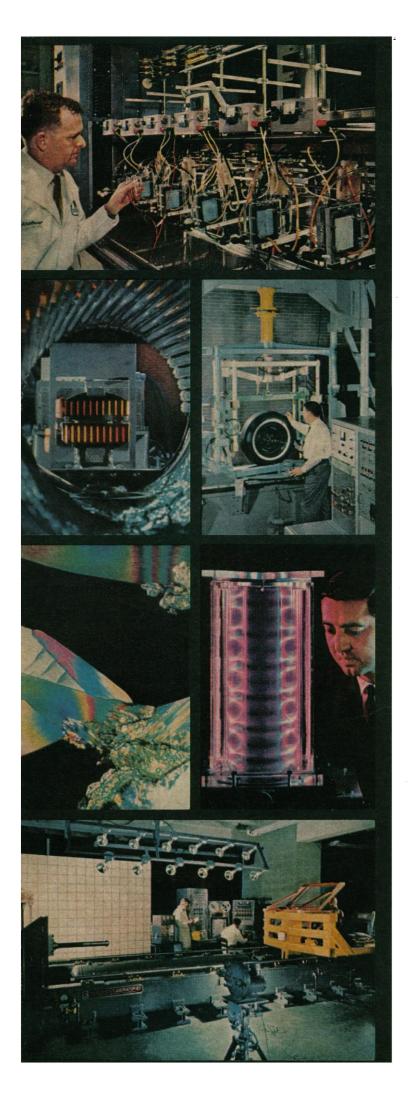
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SCIENCE, VOL. 153



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Pressure on Basic Research

For two decades basic research has been living largely on society's good will; there have been no major miracles. Although research has made significant advances that in sum have more than justified its support, few of its spokesmen have bothered to do a good job of showing that basic research is currently paying off. Results of this lack of diligence are now evident.

There have been significant changes in the government's attitude toward basic research. President Johnson has called on the National Institutes of Health to plan for "specific results in the decline in death and disabilities" from cancer and heart and other diseases. Much basic research has been done in these areas, the President said, but the "time has now come to zero in on the targets." Congressman Daddario is pushing the National Science Foundation toward applied work (Science, 24 June). Key spokesmen of other major agencies, such as the Department of Commerce and the Defense Department, have called for greater emphasis on applied work and, by implication, less on basic research.

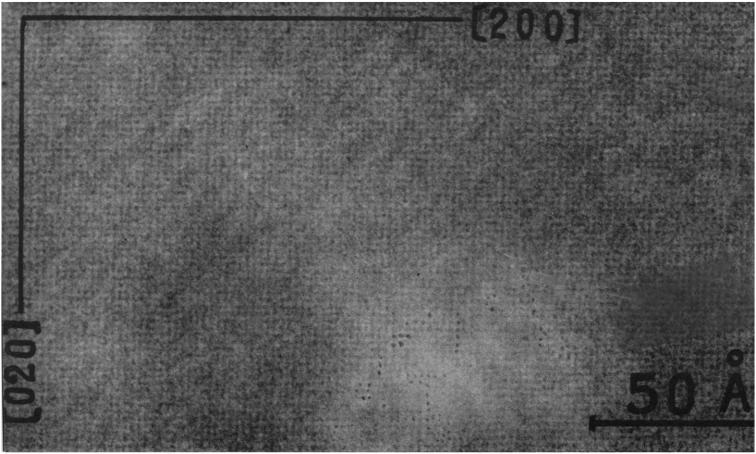
Two current factors could place added pressure on basic research. One is Medicare, and the other is a shortage of personnel for applied research. Washington fears that there may not be enough doctors available when the new law goes into effect on 1 July. Why not cut back on medical research to meet the crisis? This would make good political eyewash, although it would add barely 1 percent to the nation's supply of practicing physicians. There is an acute shortage of physical scientists to fill jobs in industry. Why not cut funds for support of basic research by the National Science Foundation? Such a move might increase the applied research manpower pool by as much as 1 percent.

At a time when those who understand the value of basic research should be united, such unity does not exist. Outside the university one finds considerable antipathy toward the academic establishment. Within it, professors have looked down on nonuniversity research, have regarded its practitioners as inferiors, and have attempted to curtail their activities. Most university science graduates must eventually find employment in nonacademic posts. When they do they accept for themselves what they have been taught is a second-class status. As a result they can have deep loyalty neither to their alma mater nor to their employer.

These campus attitudes are unrealistic and destructive. Important research is being done in industry, in government laboratories, and elsewhere. In many areas of physical science, work at industrial laboratories is unsurpassed. In many aspects of biomedical investigation, work at the National Institutes of Health is in the forefront. Similar statements could be made about other governmental and nonprofit research establishments and the national laboratories.

In the present situation major blunders could be made, weakening the entire fabric of science, medicine, and technology. In downgrading basic research, the government could repeat the unhappy experience of the petroleum industry. In 1958 many geologists were dismissed in an economy move. In the next few years, enrollment in geology departments dropped to a small fraction of its former level. Today, the industry wishes to employ far more graduates than are available or will be forthcoming in the next several years.

Attitudes toward basic research are in transition. Industry, currently aloof, could find its vital interests severely damaged while it sat watching. The academic community has some fence-mending to do and should get about doing it.—PHILIP H. ABELSON



No. 5 in a Series

ADVANCES IN ELECTRON MICROSCOPY

The very high resolution electron micrograph of the (200) and (020) planes of gold crystal (2.04 Angstroms) was taken on the Hitachi Perkin-Elmer HU-11B Electron Microscope at the Hitachi Central Research Laboratory in Japan. It represents a severe test of all parameters of electron microscope design.

Experimental Conditions

- 1. The (001) direction of the gold crystal film was aligned to the optical axis of the electron microscope.

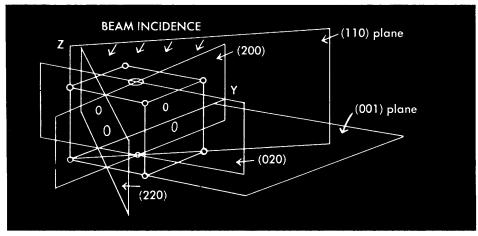
 2. The illuminating system was tilted within the (110) plane to satisfy the Bragg condition against the (220) plane. With this orientation, chromatic aberration is reduced for the (200) and (020) spacings as well as the (220) spacing.
- 3. The perpendicular lattice images (200) and (020)

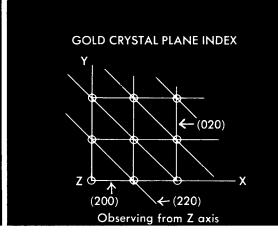
were observed simultaneously when the above conditions were satisfied. Because the spherical aberration, electronic and thermal drift and astigmatism are very small, the resolution shown in the micrograph is very high.

Gold Crystal Lattice Planes	Spacing
(200)	2.04 A
(020)	2.04 A
(220)	1.43 A

This is the highest resolution yet achieved on an electron microscope. Another example of Hitachi Perkin-Elmer leadership in electron microscopy. Complete information on the HU-11B as well as a glossy print of the above micrograph can be obtained by writing to: The Perkin-Elmer Corporation, Distributor Products Dept., 723 Main Avenue, Norwalk, Conn.

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Forthcoming Events

August

1-6. Upper Mantle, symp., Copenhagen, Denmark. (H. C. Smith, Upper Mantle Commission, Geological Survey of Canada, Ottawa, Ont.)

1-7. International Union of Scientific Psychology, 18th congr., Moscow, U.S.S.R. (Secretary-General, Dept. of Psychology, Univ. of Moscow, Marx Ave. 18, Moscow)

2-4. Vaso-Active Polypeptides, symp., Ribeirao Prêto, Brazil. (M. Rocha e Silva, Dept. of Pharmacology, Faculty of Medicine, Ribeirao Prêto)

2-5. Synaptic Mechanisms, symp., Rio de Janeiro, Brazil. (C. Chagas, Inst. of Biophysics, Natl. Faculty of Medicine, Avda. Pasteur 458, Rio de Janeiro)

Avda. Pasteur 458, Rio de Janeiro) 3-8. International Geographical Union, Latin American regional conf., Mexico City, Mexico. (A. Bassols Batalla, Mexican Soc. of Geography and Statistics, Justo Sierra 19, Mexico City 1)

3-10. Nutrition, 7th intern. congr., Hamburg, West Germny. (U. Ritter, 1st Medical Clinic of the University, Martinistr. 52. Hamburg 20)

4-11. Psychology, 18th intern. congr., Moscow, U.S.S.R. (A. R. Luria, Univ. of Moscow, 13 Frunze Str., Moscow G. 19)

7-12. Latin American Assoc. of **Physiological Sciences**, 7th mtg., Mar del Plata, Argentina. (V. G. Foglia, Paraguay 2155 7th flr., Buenos Aires, Argentina)

8-10. Society for **Cryobiology**, annual mtg., Boston, Mass. (I. Wodinsky, A. D. Little Co., 30 Memorial Dr., Cambridge, Mass.)

8-11. Biometry and Statistics in Food, Population, and Health Research, mtg., Mexico City, Mexico. (General Secretariat, Intern. Union of Biological Sciences, Dept. of Zoology, Univ. of Washington, Seattle)

8-12. Heat Transfer, 3rd intern. conf., Chicago, Ill. (T. F. Irvine, College of Engineering, State Univ. of New York, Long Island Center, Stoney Brook)

8-12. National Medical Assoc., 71st annual session, Chicago, Ill. (J. T. Givens, 2400 Corprew Ave., Norfolk, Va.)

8-13. Anesthesiology, 2nd European congr., Copenhagen, Denmark. (H. Poulson, Dept. of Anesthesia, University Hospital, Aarhus, Denmark)

10-11. European Assoc. for Animal Production, study commissions, mtgs., Edinburgh, Scotland. (K. Kállay, Corso Trieste 67, Rome, Italy)

10-12. Applications of X-ray Analysis, 15th annual conf., Denver, Colo. (J. B. Newkirk, Metallurgy Div., Denver Research Inst., Univ. of Denver, Denver 80201)

11-18. Animal Production, 9th intern. congr., Edinburgh, Scotland (Congress Secretary, 5 Hope Park Sq., Edinburgh 8)

14-17. Cryobiology, intern. conf., Sapporo, Japan. (Z. Yosida, Inst. of Low Temperature Science, Hokkaido Univ., Sapporo)

14-17. Soil Conservation Soc. of America, Albuquerque, N.M. (H. W. Pritchard, 7515 NE Ankeny Rd., Ankeny, Iowa)

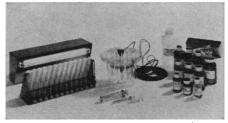
14-18. Canadian Pharmaceutical Assoc., 59th conv., St. John, New Brunswick.



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14-19. American Inst. of Biological Sciences, 17th annual, Univ. of Maryland, College Park. (AIBS, 3900 Wisconsin Ave., Washington, D.C.)

The following societies will meet in conjunction with the AIBS. Additional information is available from AIBS or from the program chairmen listed below.

American **Bryological** Soc. (W. B. Schofield, Dept. of Botany, Univ. of British Columbia, Vancouver, Canada)

American Fern Soc. (I. Knobloch, Dept. of Botany and Plant Pathology, Michigan State Univ., East Lansing)

American Fisheries Soc. (L. E. Cronin, Natural Resources Inst., Administration Bldg., Univ. of Maryland, College Park)

American Genetic Assoc. (S. Burhoe, American Univ. Graduate School, Washington, D.C.)

American Microscopical Soc. (R. M. Cable, Dept. of Biological Sciences, Purdue Univ., Lafayette, Ind.)

American Soc. for Horticultural Science (A. H. Thompson, Dept. of Horticulture, Univ. of Maryland, College Park)

American Soc. of **Plant Physiologists** (R. S. Loomis, Dept. of Agronomy, Univ. of California, Davis)

American Soc. of **Plant Taxonomists** (L. R. Heckard, Dept. of Botany, Univ. of California, Berkeley)

American Soc. of **Professional Biologists** (A. Dickman, 1415 W. Erie Ave., Philadelphia, Pa.)

American Soc. of **Zoologists** (L. E. De-Lanney, Wabash College, Crawfordsville, Ind.)

Animal **Behavior** Soc. (E. M. Banks, Dept. of Zoology, Univ. of Illinois, Urbana)

Biometric Soc.—ENAR (J. Meade, Univ. of Arkansas Medical School, Fayetteville)

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Natl. Assoc. of **Biology** (W. K. Stephenson, Earlham College, Richmond, Ind.)

Nature Conservancy (Local Representa-

tive: W. Van Eck, Dept. of Agronomy and Genetics, West Virginia Univ., Morgantown)

Phi Sigma (Local Representative: R. G. Stross, Dept. of Zoology, Univ. of Maryland, College Park)

Phycological Soc. of America (B. C. Parker, Dept. of Botany, Washington Univ., St. Louis, Mo.)

Society for Industrial Microbiology (J. Coats, Upjohn Co., Kalamazoo, Mich.)

Society of **Protozoologists** (R. W. Hull, Dept. of Biological Sciences, Florida State Univ., Tallahassee)

Tomato Genetics Cooperative (Local Representative: F. Angell, Dept. of Horticulture, Univ. of Maryland, College Park)

Wildlife Disease Assoc. (C. Herman, Patuxent Wildlife Disease Assoc., Laurel Md.)

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