

SCIENCE

LETTERS	Least Publishable Unit: <i>R. W. Buddemeier; J. Roth</i> ; Startling Punctuation: <i>N. P. Christy; G. B. Kolata</i> ; Guinea Worm Disease: <i>D. R. Hopkins and W. H. Foegen</i>	494
EDITORIAL	Affordable Science	497
ARTICLES	An Ice-Free Cretaceous? Results from Climate Model Simulations: <i>E. J. Barron, S. L. Thompson, S. H. Schneider</i>	501
	Brain, Lung, and Heart Functions During Diving and Recovery: <i>P. W. Hochachka</i>	509
	National Science Foundation Budgets: Fiscal Years 1981, 1982, and Beyond: <i>L. M. Branscomb</i>	514
NEWS AND COMMENT	Ambitious Energy Project Loses Luster	517
	Military Plans for Shuttle Stir Concern	520
	Afghanistan: The Politics of a Tragicomedy	521
	Attempts to Safeguard Technology Draw Fire	523
	<i>Briefing: Meltdown Too Hot for Maryland Science Center; The Perils of Isabelle: Under the Budget Ax; Edwards Hears Criticism from Synfuels Industry; College Students Fail Global Awareness Test</i>	524
	The Containment of Research	526
RESEARCH NEWS	Micromainframe Is Newest Computer on a Chip	527
	<i>Meeting Highlights: Magma Chambers in the Laboratory; More Deep-Sea Hot Springs in the Pacific; Rifts Propagating in the Pacific</i>	528
	Tale of the Orphaned Genes	530
AAAS NEWS	Questions of Science Literacy Addressed by Rutherford/AAAS; 1982 Exhibit; Energy and Health to Be Discussed in Berkeley; Short Courses at Pacific Division, Annual Meeting	532
BOOK REVIEWS	Evolution and Ecology of Zooplankton Communities, <i>reviewed by E. L. Mills</i> ; Ball Lightning and Bead Lightning, <i>R. E. Orville</i> ; The Nature of Thought, <i>K. Oatley</i> ; A History of Computing in the Twentieth Century, <i>N. Stern</i> ; Books Received	534

Downloaded from <http://science.sciencemag.org/> on November 15, 2019

BOARD OF DIRECTORS	FREDERICK MOSTELLER Retiring President, Chairman	D. ALLAN BROMLEY President	E. MARGARET BURBIDGE President-Elect	ELOISE E. CLARK EDWARD E. DAVID, JR.	NANCIE L. GONZALEZ DAVID A. HAMBURG
CHAIRMAN AND SECRETARIES OF AAAS SECTIONS	MATHEMATICS (A) Ralph P. Boas Ronald Graham	PHYSICS (B) Maurice Goldhaber Rolf M. Sinclair	CHEMISTRY (C) Robert W. Parry William L. Jolly	ASTRONOMY (D) Owen Gingerich Donat G. Wentzel	ENGINEERING (M) Michael Michaelis Donald E. Marlowe
	PSYCHOLOGY (J) George A. Miller Meredith P. Crawford	SOCIAL, ECONOMIC, AND POLITICAL SCIENCES (K) James G. March Gillian Lindt	HISTORY AND PHILOSOPHY OF SCIENCE (L) Harry Woolf Diana L. Hall	INFORMATION, COMPUTING, AND COMMUNICATION (T) George W. Tresselt Madeline M. Henderson	
DIVISIONS	ALASKA DIVISION		PACIFIC DIVISION		SOUTHWESTERN AND ROCKY MOUNTAIN DIVISION
	John Bligh President	T. Neil Davis Executive Secretary	Beatrice M. Sweeney President	Alan E. Leviton Executive Director	Sam Shushan President M. Michelle Balcomb Executive Officer

SCIENCE is published weekly on Friday, except the last week in December, by the American Association for the Advancement of Science, 1515 Massachusetts Avenue, NW, Washington, D.C. 20005. Second-class postage (publication No. 484460) paid at Washington, D.C., and at an additional entry. Now combined with *The Science Monthly*. Copyright © 1981 by the American Association for the Advancement of Science. Domestic individual membership and subscription (51 issues): \$43. Domestic institutional subscription (51 issues): \$80. Foreign postage extra: Canada \$24, other (surface mail) \$27, air-surface via Amsterdam \$55. First class, airmail, school-year, and student rates on request. Single copies \$2 (\$2.50 by mail); back issues \$3 (\$3.50 by mail); classroom rates on request. **Change of address:** allow 6 weeks, giving old and new addresses and seven-digit account number. **Postmaster:** Send Form 3579 to *Science*, 1515 Massachusetts Avenue, NW, Washington, D.C. 20005. *Science* is indexed in the *Reader's Guide to Periodical Literature* and in several specialized indexes.

REPORTS	Control of Equatorial Ocean Currents by Turbulent Dissipation: <i>W. R. Crawford and T. R. Osborn</i>	539
	Regression of Aflatoxin B ₁ -Induced Hepatocellular Carcinomas by Reduced Glutathione: <i>A. M. Novi</i>	541
	Changes in DNA During Meiosis in a Repair-Deficient Mutant (<i>rad 52</i>) of Yeast: <i>M. A. Resnick et al.</i>	543
	Mutation Caused by Human Phagocytes: <i>S. A. Weitzman and T. P. Stossel</i>	546
	Transformation of Paralytic Shellfish Toxins as Demonstrated in Scallop Homogenates: <i>Y. Shimizu and M. Yoshioka</i>	547
	Tritiated Thymidine Incorporation Does Not Measure DNA Synthesis in Ribavirin-Treated Human Cells: <i>J. C. Drach et al.</i>	549
	Ctenidial Autotomy in <i>Corbicula fluminea</i> in Response to Massive Granulomas: <i>J. C. Britton et al.</i>	551
	Purified Reduced Nicotinamide Adenine Dinucleotide: Responses to Lactate Dehydrogenase Isozymes from Three Cell Sources: <i>A. E. Kaplan et al.</i>	553
	Excitation of <i>Limulus</i> Photoreceptors by Vanadate and by a Hydrolysis- Resistant Analog of Guanosine Triphosphate: <i>A. Fein and D. W. Corson</i>	555
	Isoguanosine: Isolation from an Animal: <i>F. A. Fuhrman et al.</i>	557
	Tyrosine Increases Blood Pressure in Hypotensive Rats: <i>L. A. Conlay, T. J. Maher, R. J. Wurtman</i>	559
	Cadmium-113 Nuclear Magnetic Resonance Studies of Bovine Insulin: Two-Zinc Insulin Hexamer Specifically Binds Calcium: <i>J. L. Sudmeier et al.</i>	560
	Evidence for Endomycorrhizae in Pennsylvanian Age Plant Fossils: <i>C. A. Wagner and T. N. Taylor</i>	562
	Alternative Male Strategies: Genetic Differences in Crickets: <i>W. H. Cade</i>	563
	Energetics of Honeybee Swarm Thermoregulation: <i>B. Heinrich</i>	565
	Different Proteins Associated with 10-Nanometer Filaments in Cultured Chick Neurons and Nonneuronal Cells: <i>G. S. Bennett et al.</i>	567
	Drug Discrimination Learning in Lead-Exposed Rats: <i>H. Zenick and M. Goldsmith</i>	569
	Eusociality in a Mammal: Cooperative Breeding in Naked Mole-Rat Colonies: <i>J. U. M. Jarvis</i>	571
	Male Vole Urine Changes Luteinizing Hormone-Releasing Hormone and Norepinephrine in Female Olfactory Bulb: <i>D. E. Dluzen et al.</i>	573
	Age Determination for the Shanidar 3 Neanderthal; <i>D. D. Thompson and E. Trinkaus</i>	575
	<i>Technical Comments: Terminal Cretaceous Extinctions and the Arctic Spillover Model: D. L. Clark and J. A. Kitchell; S. Gartner; Food Colors and Behavior: R. L. Brunner, C. V. Vorhees, R. E. Butcher; B. Weiss</i>	577

IA J. HARRISON TER E. MASSEY	RUSSELL W. PETERSON HARRIET ZUCKERMAN	WILLIAM T. GOLDEN Treasurer	WILLIAM D. CAREY Executive Officer
BIOLOGY AND GEOGRAPHY (E) C. A. Simon Thomas Dutro, Jr.	BIOLOGICAL SCIENCES (G) John A. Moore Walter Chavin	ANTHROPOLOGY (H) Alan R. Beals Priscilla Reining	INDUSTRIAL SCIENCE (P) John Diebold Robert L. Stern
MEDICAL SCIENCES (N) Leon D. Bogdonoff I. M. Lowenstein	AGRICULTURE (O) Martin A. Massengale Coyt T. Wilson	GENERAL (X) Herman Pollack S. Fred Singer	
STATISTICS (U) Stephen E. Fienberg Glaser	ATMOSPHERIC AND HYDROSPHERIC SCIENCES (W) Julius London Glenn R. Hilst		

COVER

Antarctic Weddell seal (*Leptonychotes weddelli*) initiating a dive under the ice shelf near Ross Island, Antarctica. The length of diving depends on regulated blends of anaerobic and aerobic metabolism in different tissues and organs. See page 509. [R. Davis, Scripps Institution of Oceanography, La Jolla, California]

Science

212 (4494)

Science 212 (4494), 494-579.

ARTICLE TOOLS

<http://science.sciencemag.org/content/212/4494.citation>

PERMISSIONS

<http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

Science (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. The title *Science* is a registered trademark of AAAS.

Copyright © 1981 The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works.