

# science news

Are social scientists  
exploiting the Indian?

Montana fights  
to protect  
its environment



A Science Service Publication  
Vol. 100/Oct. 2, 1971/No. 14  
Incorporating Science News Letter

**Watson Davis, 1896-1967**  
Publisher: E. G. Sherburne Jr.

Managing Editor: Kendrick Frazier

## DEPARTMENTS

**Aerospace:** Everly Driscoll

**Behavioral Sciences:** Robert J. Trotter

**Earth Sciences:** Louise Purrett

**Environmental Sciences:** Richard H. Gilluly

**Medical Sciences:** Joan Lynn Arehart

**Physical Sciences:** Dietrick E. Thomsen

Copy Editor: Nadine Clement

Production: E. Cherry Doyle

Production Assistant: Esther Gilgoff

Books: Margit Friedrich

Advertising: Scherago Associates, Inc.

Copyright © 1971 by Science Service, Inc.,  
1719 N Street, N.W., Washington, D.C. 20036.  
Republication of any portion of SCIENCE NEWS  
is strictly prohibited.

**SUBSCRIPTION DEPARTMENT**  
231 WEST CENTER STREET  
MARION, OHIO 43302

Subscription rate: 1 yr., \$7.50; 2 yrs., \$13.50;  
3 yrs., \$19.50. Special trial offer: 39 weeks,  
\$3.97. Single copy, 25 cents. \$1.00 per year for  
foreign postage. Change of address: Four to  
six weeks' notice is required. Please state  
exactly how magazine is to be addressed. In-  
clude zip codes.

Printed in U.S.A. Second class postage paid at  
Washington, D.C. Established as Science News  
Letter® in mimeograph form March 13, 1922.  
Title registered as trademark U.S. and Cana-  
dian Patent Offices. Indexed in last Science  
News of June and December, in Reader's Guide  
to Periodical Literature, Abridged Guide and  
the Engineering Index. Member of Audit Bu-  
reau of Circulation. UNSOLICITED MANU-  
SCRIPTS will not be returned unless accom-  
panied by a stamped, self-addressed envelope.

Published every Saturday by SCIENCE SER-  
VICE, Inc., 1719 N St., N.W., Washington, D.C.  
20036. 202-667-2255. Cable Address: SCIEN-  
SERV.

**ADVERTISING STAFF**  
Director: EARL J. SCHERAGO  
Advertising Sales Manager:  
RICHARD L. CHARLES  
Sales Director:  
FRED W. DIEFFENBACH  
Production Manager  
BONNIE F. SEMEL

Address all advertising to Scherago Associates,  
11 W. 42nd St., New York, N.Y. 10036.

Sales: New York, N.Y. 10036: Herbert L. Burk-  
lund, 11 W. 42 St. (212-PE-6-1858); Scotch  
Plains, N.J. 07076: C. Richard Callis, 12 Unami  
Lane (201-889-4873); Medfield, Mass. 02052:  
Richard M. Ezequille, 4 Rolling Lane (617-444-  
1439); Chicago Ill. 60611: John P. Cahill, Room  
2107, 919 N. Michigan Ave. (312-DE-7-4973);  
Beverly Hills, Calif. 90211: Winn Nance, 111 N.  
La Cienega Blvd. (213-657-2772).

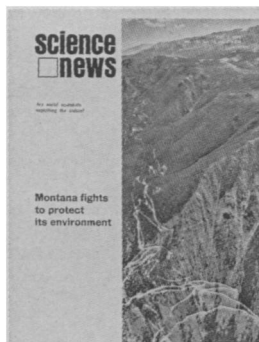
## OF THE WEEK

- 223 The search for extraterrestrial intelligence
- 224 NRC sets up auto emissions group
- 225 Dating the dawn of seafaring  
Aspirin and birth defects  
Oversight hearings on NBS
- 226 Pessimistic report on the cities  
A gene's role in biological rhythms  
Scientists seed Hurricane Ginger
- 232 **Physical Sciences:** Orion's molecules; Binary black hole; Superheavy  
nuclei geography; Magellanic X-rays; Heaviest natural isotope
- 233 **Earth Sciences:** Australian glaciation; Earthquakes and geysers; Bar-  
bados sediment slide
- Behavioral Sciences:** The retirement boom; Environment and epilepsy;  
Abrupt methadone withdrawal

## IN SCIENCE FIELDS

- 234 **Sociology:** Ethics of Indian studies
- 235 **Environment:** Montana resists the developers

- 220 Films of the Week
- 222 Letters to the Editor  
Books of the Week



The Beartooth Mountains in Montana are threatened with mining developments that scar the forested mountainsides as in this photo of mining company developments along Nye Creek in an area called the Stillwater complex. Local witnesses at Senate hearings in Montana vigorously opposed the developments. See p. 235. (Photo: U.S. Forest Service)

## SCIENCE SERVICE

Institution for the Popularization of Science founded 1921; a non-profit corporation

**Board of Trustees**—Nominated by the American Association for the Advancement of Science: **Wallace R. Brode** (Treasurer), American Chemical Society, Washington, D.C.; **Bowen C. Dees**, The Franklin Institute, Philadelphia, Pa.; **Athelstan Spilhaus**, Woodrow Wilson International Center for Scholars, Washington, D.C. Nominated by the National Academy of Sciences: **Gerald F. Tape**, Associated Universities, Washington, D.C.; **Allen V. Astin**, National Bureau of Standards, Washington, D.C.; **Frederick Seitz**, Rockefeller University, New York, N.Y. Nominated by the National Research Council: **Leonard Carmichael**, National Geographic Society, Washington, D.C.; **Jacob Rabinow**, Control Data Corp., Rockville, Md.; **Glenn T. Seaborg** (President), U.S. Atomic Energy Commission, Washington, D.C. Nominated by the Journalistic Profession: **Gordon B. Fister**, Call-Chronicle Newspapers, Allentown, Pa.; **Julius Duscha**, Washington Journalism Center, Washington, D.C.; **O. W. Riegel** (Secretary), Washington and Lee University, Lexington, Va. Nominated by the E. W. Scripps Trust: **Milton Harris**, Washington, D.C.; **Edward W. Scripps II** (Vice President and Chairman of the Executive Committee), Edward W. Scripps Trust, New York, N.Y.; **John Troan**, Pittsburgh Press, Pittsburgh, Pa.

Director: E. G. Sherburne Jr.; Assistant Director: Dorothy Schriver; Staff: Youth Division: Owen Basil; Things of Science: Ruby Yoshioka.



Encourage your talented  
graduating seniors to enter the

**1971-72  
SCIENCE TALENT  
SEARCH**

for the Westinghouse Science  
Scholarships and Awards .

**Competition Deadline**

**Midnight, December 15, 1971**







Get your students to start working on an independent research project NOW . . . in the physical sciences, engineering, mathematics, biological sciences or behavioral sciences . . . to enter in the

## **WESTINGHOUSE SCIENCE TALENT SEARCH<sup>®</sup>**

Hundreds of students will receive recommendations and other assistance towards a college education . . . 300 Honorable Mentions will be recommended to colleges, universities and technical schools . . . 40 Winners will share \$67,500 in scholarships and awards



**To: WESTINGHOUSE SCIENCE TALENT SEARCH**

**1719 N Street, N.W., Washington, D.C. 20036**

Please send me information about how to enter our students in the annual Science Talent Search for the Westinghouse Science Scholarships and Awards.

Name ..... Position .....

Name of School .....

School Street Address .....

City and State ..... Zip .....

*Just fill in card and mail — No postage needed.*



*No Postage Stamp  
Necessary if Mailed  
in the United States*

---

**BUSINESS REPLY MAIL FIRST CLASS PERMIT No. 64-R WASHINGTON, D.C.**

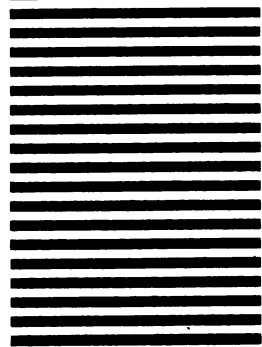
---

*Postage will be paid by*

**SCIENCE SERVICE**

**1719 N Street, N.W.**

**Washington, D.C. 20036**



# science and mathematics teachers



encourage your students to enter the



## WESTINGHOUSE SCIENCE TALENT SEARCH

PHYSICS  
CHEMISTRY  
BIOLOGY  
MATHEMATICS  
ASTRONOMY  
GEOLOGY  
HUMAN ENGINEERING  
PSYCHOLOGY  
ANTHROPOLOGY  
METEOROLOGY  
ZOOLOGY  
SOCIOLOGY  
ARCHITECTURE  
BIOCHEMISTRY  
GEOMETRY  
SOCIAL PSYCHOLOGY  
ELECTRICAL ENGINEERING  
MOLECULAR BIOLOGY  
ECOLOGY  
PERCEPTION  
CALCULUS  
ARCHAEOLOGY  
CIVIL ENGINEERING  
SOCIAL ANTHROPOLOGY  
MOLECULAR GENETICS  
GEOCHEMISTRY  
SOLID STATE PHYSICS  
OPTICS  
TRANSPORTATION  
LIMNOLOGY  
EDUCATIONAL PSYCHOLOGY  
ABSTRACT ALGEBRA  
CELLULAR BIOLOGY  
BOTANY  
THERMODYNAMICS  
AERONAUTICAL ENGINEERING  
BACTERIOLOGY  
PHYSICAL ANTHROPOLOGY  
OCEANOGRAPHY  
ENVIRONMENTAL SCIENCE  
PLANT PHYSIOLOGY

- 40 Winners will share \$67,500 in Westinghouse Science Scholarships and Awards.
- 300 Honorable Mentions will be brought to the attention of all colleges, universities and technical schools in the U.S.A.
- Hundreds of students automatically will receive recommendations and other assistance toward a college education in schools within states holding State Science Talent Searches.
- For all students, a sense of accomplishment and a measure of self-evaluation that comes from finishing a hard assignment.

### ABOUT THE SCIENCE TALENT SEARCH

More than 9,000 students have been members of the Winners and Honors Groups in the past 30 years. Because of their standing in this oldest and most prestigious competition of its kind, they have been offered scholarships from institutions seeking quality students with proven ability in science. Many winners in the Science Talent Search are offered summer employment in scientific laboratories and other tokens of early acceptance into the world of science. Such benefits also come frequently to members of the Honors Group and to those who place in State Science Talent Searches.

### ANSWERING YOUR QUESTIONS

**Who May Compete?** Any boy or girl who is in his last year of secondary school (public, private, parochial) in the United States but excluding U.S. possessions, who is expected by the certifying school official to complete college entrance qualifications before October 1, 1972, and who has not competed in any previous Science Talent Search is eligible to enter this competition.

**How Can Students Compete?** Teachers or other school officials should request entry materials for the outstanding science and mathematics students of the school.

**What Is A Completed Entry?** A project report of about 1,000 words which presents evidence of research ability in science; a Personal Data Blank filled in by student, teachers and principal; national test scores and high school transcript.

Judging is based primarily on the student's report on an independent research project in the physical sciences, engineering, mathematics, biological sciences (excluding live vertebrate experimentation), or behavioral sciences.

**What Is The Deadline?** Midnight, December 15, 1971.

**Get your students to start working on projects NOW**

RURAL SOCIOLOGY  
PARASITOLOGY  
PALEONTOLOGY  
MINERALOGY  
COMPUTERS  
SOIL MECHANICS  
BIOCHEMICAL ENGINEERING  
CULTURAL ANTHROPOLOGY  
MATHEMATICAL BIOLOGY  
ASTROPHYSICS  
GENETICS  
GEOPHYSICS  
NUMBER THEORY  
MECHANICAL ENGINEERING  
BIOMEDICAL ELECTRONICS  
AERODYNAMICS  
URBAN SOCIOLOGY  
PROTOZOOLOGY  
ETHOLOGY  
TOPOLOGY  
QUANTUM MECHANICS  
METALLURGY  
INDUSTRIAL PSYCHOLOGY  
STATISTICS  
MICROBIOLOGY  
LOGIC  
BIOMETRY  
CELLULAR CHEMISTRY  
CELL PHYSIOLOGY  
BIOPHYSICAL CHEMISTRY  
BIOENERGETICS  
INVERTEBRATE NEUROPHYSIOLOGY  
CHEMICAL ENGINEERING  
SYSTEMATIC BIOLOGY  
COMPLEX ANALYSIS  
PETROLOGY  
BIOCHEMICAL ENGINEERING  
FLUID MECHANICS  
ELECTRONICS  
PROBABILITY  
NUCLEAR ENERGY

send for entry materials from **SCIENCE SERVICE**

1719 N Street, N.W., Washington, D.C. 20036