SCIENCE NEWS®

A Science Service Publication Vol. 108/December 20-27, 1975/No. 25-26 Incorporating Science News Letter

OF THE WEEK

Helios: Data delay	388
Mapping genes	388 389
Monkey mothers Quark theory	390
Color center	390
Loch Ness "Nessie"	391
Sanquine report	392
Doctors flunk test	392
Bacterial chemotaxis	392 392
Corporate talksat	392
RESEARCH NOTES	
Biomedicine	399
Astronomy	399 402
Energy	402
ARTICLES	
Nuclear-attack debate	393
Mind-body link	394
DEPARTMENTS	
Books	386
Stars_	409
New Products	409
READER SURVEY	
Comments by subscribers	387
Statistics on subscribers	396
REVIEW OF THE YEAR	403
SEMIANNUAL INDEX	411

Publisher E. G. Sherburne Jr. Editor Kendrick Frazier

Senior Editor and

Physical Sciences Dietrick E. Thomsen

Senior Editor and

Behavioral Sciences
Biomedical Sciences
Biology/Chemistry
Science and Society
Space Sciences
Contributing Editor/

Robert J. Trotter
Janet L. Hopson
John H. Douglas
Jonathan Eberhart

Mathematics
Copy Editor
Art Director
Assistant to the Editor
Advertising

Michelle Galler Riegel
Dale Appleman
Susan Strasburger
Margit Friedrich
Associates, Inc.
11 W. 42nd St.
New York, N.Y. 10036
Fred W. Dieffenbach

Copyright © 1975 by Science Service, Inc., 1719 N St., N.W., Washington, D.C. 20036. Republication of any portion of SCIENCE NEWS is prohibited.

Sales Director

Editorial and Business Offices 1719 N Street, N.W. Washington, D.C. 20036

Subscription Department 231 West Center Street Marion, Ohio 43302

Subscription rate: 1 yr., \$10; 2 yrs., \$18; 3 yrs., \$25. (Add \$2 a year for Canada and Mexico, \$3 for all other countries.) Change of address: Four to six weeks' notice is required. Please state exactly how magazine is to be addressed. Include zip code.

Printed in U.S.A. Second class postage paid at Washington, D.C. Title registered as trademark U.S. and Canadian Patent Offices.

Published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington, D.C. 20036. (202-785-2255). Cable SCIENSERV. Telex 64227.

FROM THE EDITOR

AYear-End Report on Science News

We often wish during the year to have a chance to talk to you, our readers, about SCIENCE NEWS. We like to share our ideas, problems, policies and enthusiasms with you, but when we get to a specific instance, I usually sigh and decide that a better use of our limited space is to print additional news of the world of science. That, after all, is what you are paying for when you subscribe. But this expanded year-end issue gives us the opportunity, at last, to talk to you about not just science but SCIENCE NEWS.

It has been a good year. Our circulation, for instance, continues upward. The unofficial paid circulation for this issue is 120,540, up 11,425 (10.5 percent) over a year ago and up 24,628 (25.7 percent) over two years ago. Official figures by the Audit Bureau of Circulations for the six months ending June 30, 1975, showed that although Science News is the smallest of 10 science or science-oriented publications audited by ABC, our circulation is growing at a faster rate than all but two of them: Smithsonian and Psychology Today, and they are for far more general audiences. So the word about Science News seems to be getting around. We seem to be not only keeping our present readers but also gaining reasonable numbers of new readers (we'd like even more), and this at a time when the majority of periodicals are suffering circulation declines. We are pleased, not because we care a whit about circulation races but because we think we are putting out a good magazine here and we get our rewards from signs that you and increasing numbers of other people seem to agree.

A small, focused magazine like ours thrives according to how well it meets the needs of its readers for the type and quality of information and perspective they want. If the editorial staff and the readers are in tune with each other, something very special happens. An intangible, almost personal, relationship or rapport develops that brings satisfaction to both.

It was partly to see how well we were progressing toward achieving this kind of bond with our readers (and partly to find out more about you) that we conducted a survey of subscribers, from a randomly selected sample, this past year. It was the first reader survey we'd done since 1967, an interval of considerable change everywhere, including at SCIENCE NEWS. Nine out of ten members of our editorial staff are new since then, for example.

We sent out a test questionnaire in March. The first indication that we have especially loyal readers was not long in coming. We received nearly a 25 percent response—quite good by ordinary standards but remarkable considering the embarrassing fact that our mailers had failed to include the stamped, self-addressed return envelope in the package. (We apologize to all recipients of that questionnaire for the omission and we thank all of you who went to the trouble to address and affix postage to your own envelope.)

In July, the questionnaire, slightly modified and this time with a return envelope, was sent to 2,794 individual subscribers. We received back 1,384 completed returns, a gratifyingly high reponse rate of 49.7 percent. To me, a one-out-of-two response rate by busy people to a lengthy questionnaire is a clear sign in itself that our readers care a great deal about SCIENCE NEWS. The content of the responses verifies that.

Many of the respondents asked us to report on the results of the survey. The statistical results, describing in some detail the composition of our readership—who you are, by occupation, education and so forth—are reported and discussed in the article on page 396. This statistical information is important to us for many practical reasons. But here I want to share with you samples of the nonstatistical response, the comments (all anonymous) written in at the end of the questionnaire where we invited you to tell us what you think of SCIENCE NEWS.

Whenever I've had a bad day I can leaf through our compilation of those comments and be instantly cheered. To me they show two main things: the enthusiasm you, our readers, have for Science News and the close sense of identification you seem to have with the publication. It's as though each of you has the feeling Science News is written specifically for your needs—and that's just what we strive for.

None of us here are particularly presumptuous sorts, and we are certainly not given to extravagance in our news columns. So it is with a mixture of pride and a certain reluctance at seeming self-congratulatory that we are sharing some of those comments with you now. That's the only way we can convey the flavor of the response. (Don't worry about any of us becoming complacent; we're not that type either.)

"SCIENCE News is the most readable, informative magazine devoted to science that I've ever read or run across. . . . Keep up the good work."

"Out of about 20 magazines I receive per month, Science News is the only one I read cover to cover consistently. I find it an invaluable reference in my work."

(Continued on page 398)

DECEMBER 20 & 27, 1975

387

. . . Year-End Report

"Thank you for SCIENCE NEWS! It is the most interesting thing I read. . . . I like the general overall tone. . . . Things are presented honestly, accurately and without sensationalism on a high level without pedantry. Style is not so formal as to be dull nor so informal as to be superficial; you've achieved a beautiful balance."

"Best, single English-language source of science news published. A must for anyone wishing to keep abreast of new research results. Well written and accurate."

"I recommend SN to every scienceoriented person I encounter. It is a beautiful combination of information, frequency, good layout and price."

"You have done a superior job in putting together this magazine."

Readers' enthusiasm was expressed in a variety of ways. One said SCIENCE NEWS "is worth its weight in gold." Another said he and his friends are aficionados of SCIENCE NEWS. "We cherish each magazine and collect them." Many called us "excellent." Others used such calm, dispassionate terms as "wonderful," "fantastic," "terrific," "my favorite magazine" or simply, "I love it!"

Some called us a valuable national resource: "You are providing a unique service to the scientific and, moreover, intellectual community of the nation." Some praised our "scientific approach: skeptical but open-minded" and "not popularized or glamorized too much."

Scientists told us how it is valuable to them: "I subscribe because I feel it is important for the scientist to avoid becoming entirely wrapped up in his own specialty and to keep aware of happenings in other fields." Another said we provide "the most informative and concise way for me to keep abreast of developments in my field and in other fields of interest." He added he "does his journal-hopping through Science News." Another reader said, "SCIENCE News is my editor. I use it to sort data. I don't have the time to read every journal in every field." A theoretical elementary particle physicist told us we are "very quick to pick up and report the latest developmements" in his field and that we do "an excellent job."

Nonscientist scholars praised our role as culture crosser. "My field is 17th century metaphysical poetry, but I fear the intellectual stultification such specialization can cause. Your magazine is a practical and intriguing way to avoid that problem." An instructor of freshman English and literature says he uses SCIENCE News material in both courses and often refers his students to the magazine.

Others like the way we place science in its cultural context: "I feel that it is the only magazine which captures the spirit of science as a unified cultural activity rather than as a bunch of specialists in pursuit of their own 'butterflies.' 'Another said, "I find the humanistic breath put into many of your articles refreshing." A scientist said, "Personally, as one who is concerned about the role of the scientist in society, I am pleased that Science News does not forget (as others often do) that science is a human endeavor."

Our writers received many compliments. "Well written" was a phrase stated over and over. "Your writers are generally concise and lucid as well as readable and interesting," said one reader. Another appreciated our writers' sense of humor. A professor of radiology expressed pleasure that our articles are "clearly and succinctly presented without the sterile verbosity" of journal articles. A microbiologist said material in his field is "presented clearly with economy of language that is beautiful to behold!"

Still others respect our judgment, reliability and tone. One said he appreciates our "dependable, careful reporting," another praised our "balance," another said we are precise and accurate in conveying "not only the facts but also the 'tenor' and implications of events and activities." Another said, "I'm forever quoting from you."

This was one of my very favorite comments: "SCIENCE NEWS is just about the best damned magazine this side of the pearly gates. The reasons: 1) easily read and not loaded with a double whammy of technical jargon and differential equations, 2) interesting, 3) lets a person have enough information to go deeper into the subject if he desires." I like that directness. I'd like to meet that man some day. Preferably this side of the pearly gates.

What's especially pleasing about these comments is not just that you seem to like what we're doing for you but that you like it for the right reasons. The specific qualities you say you appreciate are exactly those we have been striving to achieve.

Well, enough of that. You can see why a day can be quickly brightened by a quick read through the pages of praise from this survey. We are human, and we like encouragement as much as anyone else. Just as valued, however, are the suggestions and criticisms mentioned by survey respondents.

In general, the volume of criticism was small compared with the praise, and the critical comments tended to be mild, almost genteel. Only one of you was moved to profanity—mild at that—in complaining about what the reader perceived to be ideological bias on a certain emotional issue. This comes up from time to time. We are not an issue-oriented publication, but we do often have to deal with issues. Where feelings run strong, it is difficult to please everybody. We do rigorously try to avoid ideological partisanship, of any

kind. We think we do pretty well at that; judging from your comments, many of you seem to agree.

One persistent criticism is that some of the advertising carried does not measure up to the editorial quality of the magazine. We share that concern, and are trying to do something about it. The survey, with the hard evidence it provides about the quality of our audience, is one step. Other measures are under discussion.

A number of you said you would like to see SCIENCE News expanded, but that view seemed to be in the minority. Dozens of you remarked that you liked the size just the way it is: The conciseness saves you valuable time and allows you to read every issue all the way through.

Many of you reminded us of your desire to have as complete as possible references with our stories. We have been trying to improve on that count for the past year. There is a limit to how far we can go, however. There's a harsh tradeoff between more references or more news.

Some cautioned against letting our feature articles become too long. In general I agree, although some subjects require lengthier treatment than others.

Many of you suggested areas of science vou'd like to see more coverage on. I think nearly every area was probably mentioned, reflecting the diverse interests of our readers. These suggestions have been very helpful. The number of requests by survey respondents for more coverage of computer sciences had much to do with our deciding to prepare the three-part series on computers that ran in September and October. I have prepared a list of no fewer than 23 areas I would like to have us cover more thoroughly (among them: animal behavior, archaeology, zoology, botany, materials science and communications technology), so you can see we are not being complacent.

All in all, the survey was a rewarding-I almost want to say a beautifulexperience. It verifies something we'd been sensing for a long time—that you care about SCIENCE NEWS, that you feel a close sense of identification with it and that it is providing a needed service to you. Many of you urged us to keep it just the way it is; not to change at all. Be assured that we are not contemplating major change. We do seem to be on the right path. But we did want to know more about you and how you feel about SCIENCE NEWS. The results have left us with good feelings in our editorial bones as 1975 draws to a close. Thank you, and have a good new year.

—KENDRICK FRAZIER P.S. We realize that the survey was sent to only about one of every 33 of you. This is easily a large enough sample to be statistically valid. But none of you is a statistic. Needless to say, we welcome, even desire, your opinions or comments, now or anytime, about anything to do with SCIENCE NEWS.