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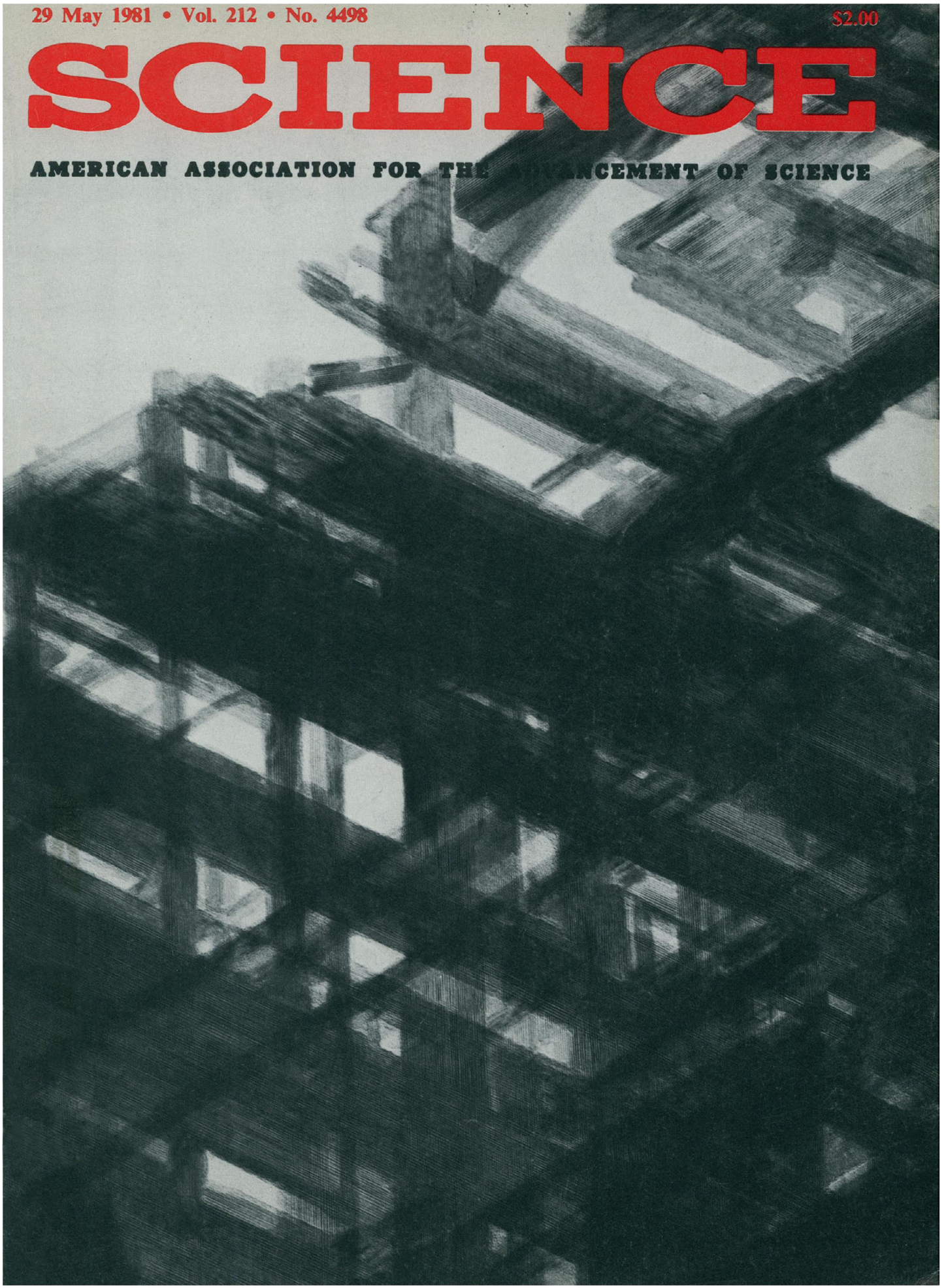

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COVER

Transmission electron micrograph showing overlapping fibers of todorokite, a constituent of deep-sea manganese nodules and manganese ore deposits. The fine lines visible along the fibers result from long tunnels in the todorokite structure. Valuable metal atoms such as copper and iron are possibly situated in the tunnel walls of marine todorokites (about × 517,000). See page 1024. [S. Turner and P. R. Buseck, Arizona State University, Tempe]

50 Below and Still Red Hot

In Toronto this past January, some of the hottest ideas in science were presented at the 1981 AAAS Annual Meeting and Exhibit. Joseph MacInnis, Northrop Frye, Freeman Dyson, Frederick Mosteller, Paul Warnke, John Slaughter, Philip Morrison, John Roberts, and Richard Westfall are just some of the speakers we've got on tape. Listen to them and other noted speakers as they address the following topics.

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LETTERS

Depression Study

We were generally pleased with Gina Bari Kolata's description of the Psychotherapy of Depression Collaborative Research Program at the National Institute of Mental Health (NIMH), (Research News, 24 Apr., p. 432). There were, however, some omissions and misidentifications: the directors of training in cognitive behavioral therapy, interpersonal psychotherapy, and pharmacotherapy are, respectively, Brian Shaw, University of Western Ontario (A. T. Beck and his staff conducted the initial 2-week training institute); Myrna Weissman, Yale School of Medicine; and Jan Fawcett, Rush Presbyterian–St. Luke's Medical Center.

The principal investigators at the three research sites are Stanley Imber, University of Pittsburgh; Stuart Sotsky, George Washington University; and John Watkins, University of Oklahoma. In addition to us, other NIMH staff centrally involved in planning this program include Suzanne W. Hadley and Joseph H. Autry.

IRENE ELKIN WASKOW
Psychotherapy of Depression Collaborative Research Program, National Institute of Mental Health, Rockville, Maryland 20857
MORRIS P. PARLOFF
Psychotherapy Research Branch, National Institute of Mental Health

Kolata's article on the clinical trial of psychotherapies, currently conducted by NIMH, seems accurate enough. However the trial itself warrants some comment.

In the first place, a problem arises because the condition being treated is identified simply as depression. There are many varieties of depression. One of the commonest is the simple anguished response to an unpleasant reality, and another is true melancholic illness. These are two syndromes that differ in many ways, but especially in the patient's resilience. Faced with a significant improvement of the noxious reality, the patient with depression of the first kind improves promptly, but the melancholic patient does not respond at all. Moreover there are mixtures, in which the two varieties are combined in various proportions.

Psychotherapeutic intervention often succeeds with the first kind, because the entry of the therapist into the patient's world changes his reality, and it is more effective if the therapist can actually help the patient to change the reality, or to change his perception of it.

In the case of melancholic depression, psychotherapy is a most inefficient tool. Drug therapy works far more efficiently and sooner. Electric shock therapy too, though it currently enjoys bad repute, can sometimes literally save lives.

Even when melancholia is treated with medication, psychotherapy plays an important role. . . . But psychotherapy for melancholia becomes most valuable after the drug therapy has begun to take effect.

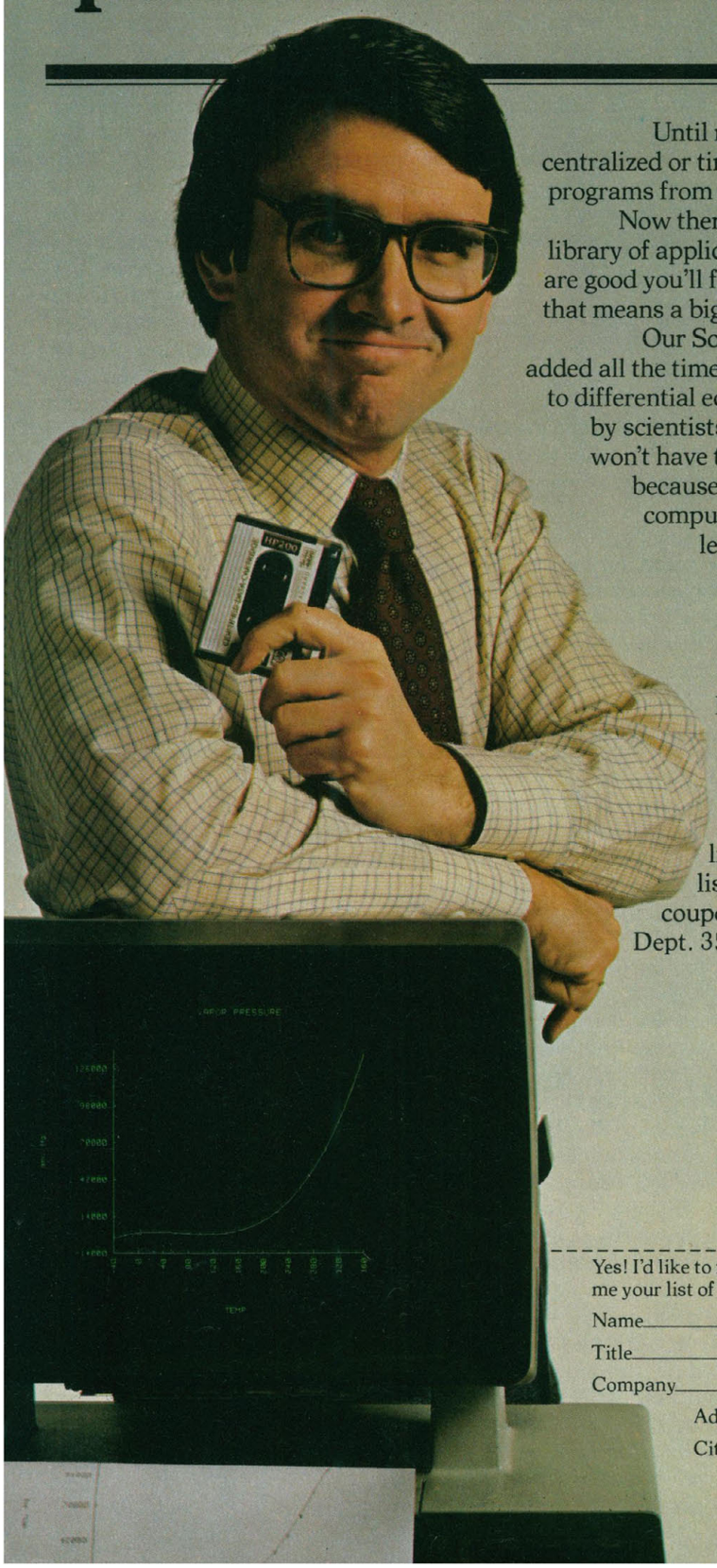
The NIMH project, as described, fails to distinguish among the varieties of depression, the differing functions of psychotherapy in each of these varieties, and at the several stages in the treatment and recovery process. The conception of the project reflects the view of the institutional psychiatrist who deals with patients in statistically significant numbers, with correspondingly insignificant personal attention to individuals. This contrasts with the understanding of the private practitioner who, intensively and laboriously, and using all the tools available, helps the individual patient escape from illness.

MORTIMER OSTOW
5021 Iselin Avenue, Riverdale, New York 10471

. . . The topic of psychotherapy, as Freud discovered, evokes strong emotional reactions. Two extreme positions may be discerned: Therapists are either expected to produce "cures" of severe and long-standing disorders in a few sessions or the changes they are able to achieve with more promising cases are brushed aside as trivial. There is little purpose in assigning blame for the prevailing confusion, but it is clear that we need more adequate specification of what psychotherapy under particular circumstances can do and what it cannot do. Thus, any efforts to shed light on these issues are most welcome. For this fundamental reason, I strongly support the NIMH collaborative depression study. Moreover, the scientific community as well as the public can feel gratified that this ambitious project is being directed by a group of exceptionally well-qualified scientists. . . .

The reader should not conclude that we know next to nothing about psychotherapy, its modus operandi, or its benefits. Over the last 30 years there has emerged a large research literature whose sophistication has shown steady increments. In these developments, NIMH again has played a significant role by insisting on increasingly rigorous

Chances are, the most frustrating part of your scientific problem has already been solved.



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29 May 1981, Volume 212, Number 4498 **SCIENCE**

President Reagan, Science, and Engineering

In his first 4 months in office President Reagan has demonstrated considerable political acumen. He has focused major public attention on budget cutting, an issue he could win on. The recent victory in the House of Representatives' vote on budget cuts makes it seem likely that the White House will be a dominant factor in budget decisions for years to come. Other victories are likely to follow. Twenty-five years of Democratic Congresses have left some easy targets in such areas as federal paperwork, federal regulations, and excessive taxation. Mr. Reagan's actions to date indicate that he intends to move energetically toward goals he enunciated during his campaign. It is quite possible that he will continue to perform in a way that most presidents before him have avoided. Ordinarily, promises made during a campaign are quickly forgotten, but Mr. Reagan may turn out to be one of the exceptional presidents who reaches many of his announced goals. But sooner or later, the President is likely to run out of easy triumphs; for example, his proposed cure for the nation's economic problems is questionable. In view of the record to date, it seems worthwhile to examine the President's positions with respect to science and engineering.

For the longer term, if this nation is to enjoy security and to compete economically, it must foster a strong scientific and engineering competence. Of this the Reagan camp seems unaware. The 32,000-word 1980 Republican platform made no mention of medical research. One tiny paragraph (about 40 words) was devoted to research on renewable energy. Another paragraph (about 50 words) contained the following: "America's technological advantage has always depended upon its interaction with our civilian science and technology sector." A search of the *New York Times* index for pre- or postelection treatment of science or technology by Mr. Reagan drew a blank. During the campaign, substantial efforts were made by publications to elicit information concerning attitudes toward science and engineering. Comments published in the 27 October 1980 issue of *Chemical and Engineering News* were brief and not particularly responsive. The material submitted by the Reagan camp for publication in the October issue of the engineering journal *Spectrum* was an insult to the profession. Some questions were unanswered. Responses were uninformative.

Our search for documentary information included the Republican National Committee and the White House Press Information Office. Neither had anything positive to contribute. A call to Representative Don Fuqua (D–Fla.), chairman of the House Committee on Science and Technology, provided no insight about Reagan. A call to the office of Senator Harrison Schmitt (R–N.M.) also yielded no further information about Reagan. However, Schmitt, the former astronaut who holds a Ph.D. degree in geology and is chairman of the Science, Technology, and Space Subcommittee of the Commerce, Science, and Transportation Committee, sent us a copy of a letter he had written to Budget Director David Stockman in which he staunchly defended scientific research. Other congressmen who have been supportive are James G. Martin (R–N.C.), who holds a Ph.D. degree in chemistry, and Don Ritter (R–Pa.), who has a Ph.D. in metallurgy.

Others in influential positions whose opinions have not yet been openly manifested are industrial scientists and engineers. Today some of these people are found among top management in many of the most successful companies. They are aware of the nation's needs for higher education, especially that in the sciences. A very distinguished group of them has formulated a constructive program for meeting the nation's scientific and technological needs. The document was submitted to the White House early this year. The authors have received assurances that their report was favorably received, but as yet it has not been publicly released.

The Reagan camp has so far chosen to ignore the scientific and engineering community. For the short run, it may be able to afford to do so. But for the long term, it can ill afford to lose support among those who advance this nation's technological strength.—PHILIP H. ABELSON

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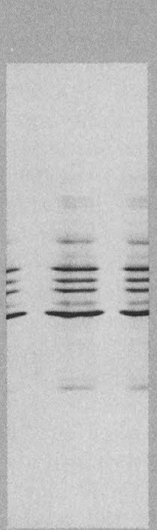

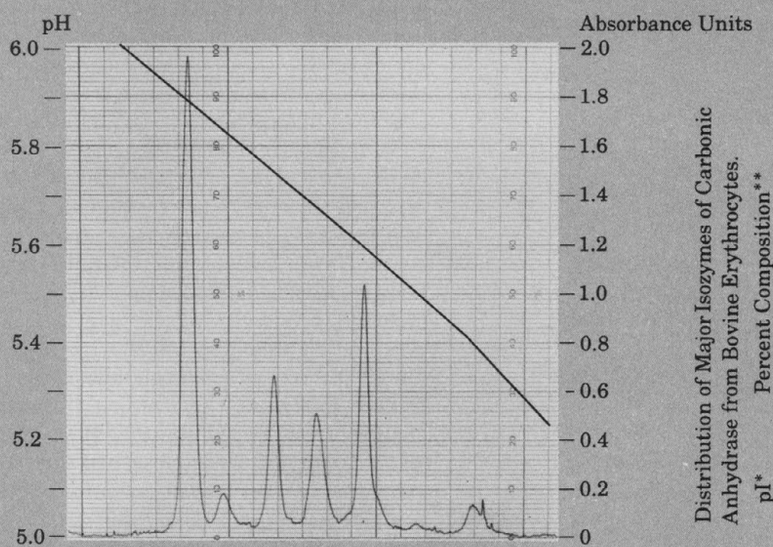

Distribution of Major Isozymes of Carbonic Anhydrase from Bovine Erythrocytes.

pI*	Percent Composition**
5.90	41.9 ± 0.5 %
5.75	17.6 ± 0.8
5.67	15.6 ± 0.6
5.60	24.9 ± 0.6

* at 10°C ** mean values based on five scans of a single sample

Laser densitometric analysis of the four major isozymes of carbonic anhydrase

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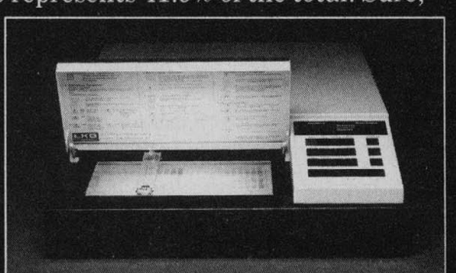

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Annual Meeting

Washington

3-8 January 1982

Call for Contributed Papers

Poster Sessions Only—Deadline: 4 September 1981

The next Annual Meeting of the AAAS will be in Washington, D.C., at the Washington Hilton and Capital Hilton hotels, 3-8 January 1982. Plan to attend; information about the Meeting, as well as Housing and Registration forms, will appear in the 18 September issue of *Science*.

Although it is too late to submit suggestions for symposia for this Annual Meeting, contributed papers can be sent in up to 4 September 1981. Instructions for abstracts are given below and a sample is shown.

The contributed paper sessions are of the POSTER type. In such sessions each contributor will have a bulletin board on which to place text and graphic material (of an oversized nature) for an extended period of time so that the work can be discussed with all interested parties (see *Science*, 28 June 1974, page 1361).

Please note that all contributions must be submitted and signed by a AAAS member or fellow, although this person need not be one of the authors.

Instructions for Contributors

Type abstracts, using a clean (new) ribbon, on ordinary white bond paper (8.5 by 11 inches; 21.5 by 28 cm) according to the format shown on the right (the example is reduced to about one-half of the linear dimension; your abstract will be printed *directly from your copy* at about two-thirds of its linear dimensions). Indicate at the top of the page the letter of the AAAS Section which comes closest to your subject matter (a full list will be found at the bottom of the contents page of any issue of *Science*), as well as two or three words which give the subspecialty involved.

It is very important to keep your abstract within the limits of a 5-inch (12.7-cm) square. If it is too wide, it will be returned; if it is too long, it may be arbitrarily cut. Note that your original will be our camera-ready copy, so type and letter as neatly as possible.

At the bottom of the page, left side, type the name and address of the person who should be contacted regarding the abstract (that is, the person we should notify of where and when the presentation should be made). On the right side, type the name and affiliation of the AAAS member or fellow who is submitting the abstract and have this person sign the abstract. *The privilege of submitting a contributed-paper abstract for the Annual Meeting is limited to AAAS members or fellows, but this person need not be one of the authors.*

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