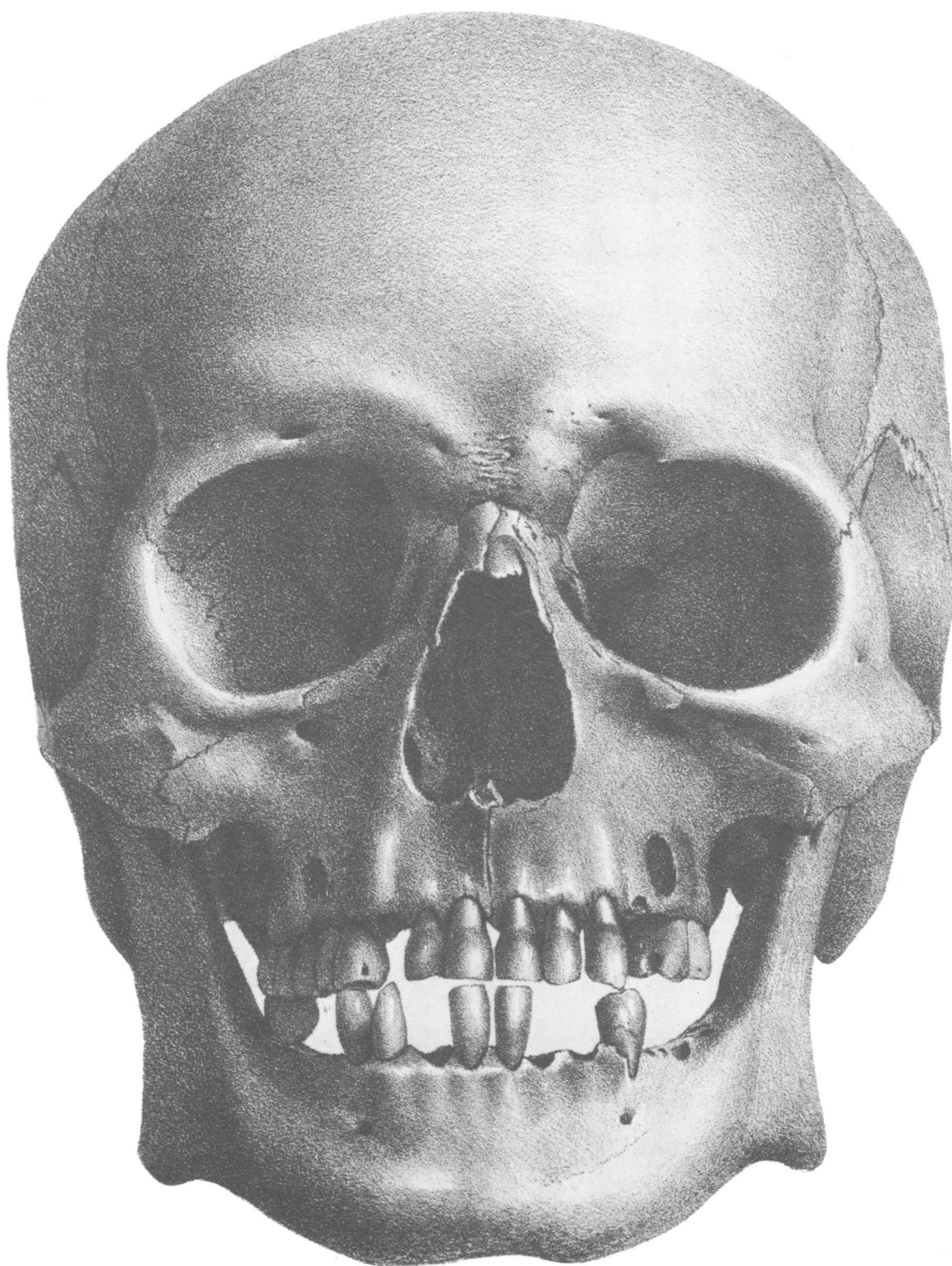


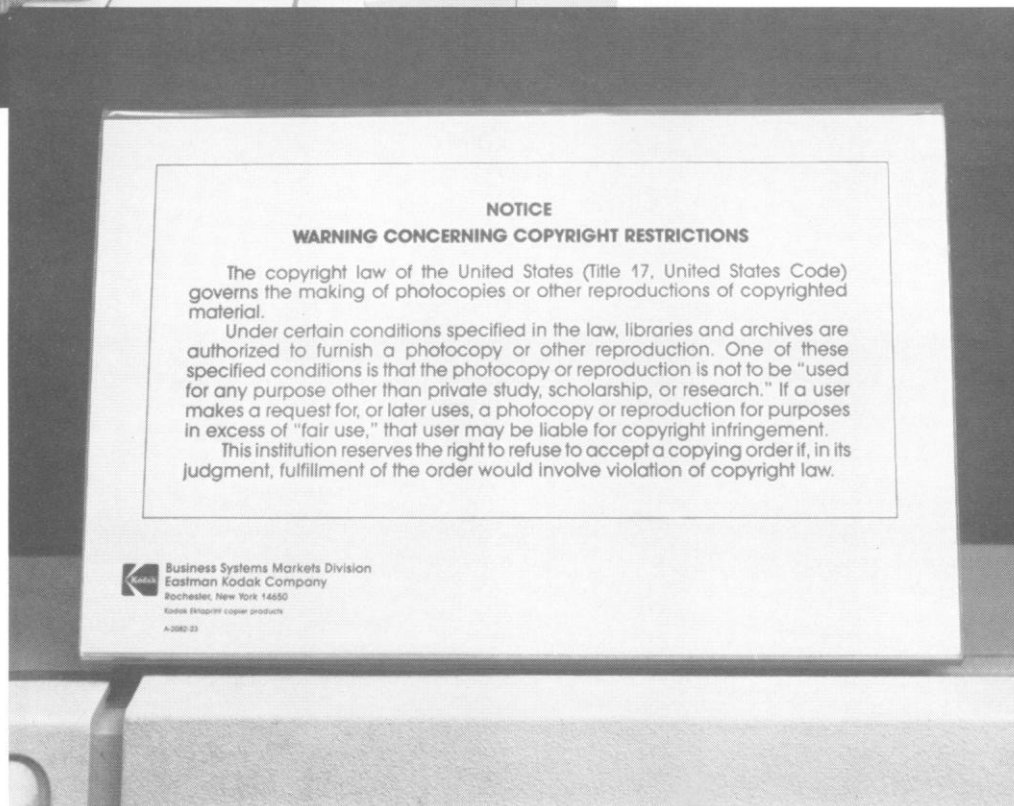
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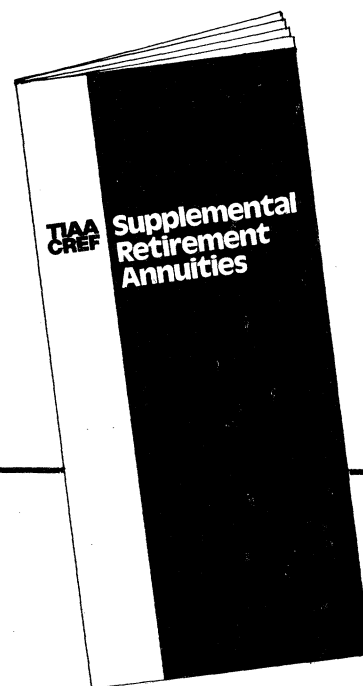
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## COVER

Skull of an Araucanian Indian. See page 503. [Lithograph by John Collins, printed in Morton's *Crania Americana*, 1839]

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## The Federal Regulatory Machine

Detailed government control of many aspects of society continues to expand. It is on an exponential growth curve that must be abandoned if further decay of the health of the economy is to be avoided. At least part of this country's loss of competitive ability in world trade must be attributed to the drain of the tens of billions of dollars wasted on excessive mandated paper work. Probably more lethal and harder to combat are inefficiencies and delays stemming from government regulatory agencies.

Growth of the government's role is indicated in many ways. One is the greatly increased number of employees; another is the expansion in funds spent by federal, state, and local governments. In 1929, this amounted to 9 percent of the gross national income. By 1960, the fraction was about 17 percent, and by 1976, 28 percent. In monetary terms the contrast is even more striking. Since 1929 there has been about a 125-fold increase in the federal budget. Further indications of government trends are the number of pages in the *Congressional Record*, the total number of words in legislation enacted by Congress, the pages devoted to the regulations printed in the *Federal Register*, and the number of regulatory agencies. And the tendency to expand is accelerating.

The trend toward increased government complexity has not gone unnoticed and indeed seems to be resented by a substantial fraction of the public. An earlier belief that the federal government could cure any social ill has been replaced by the view of many that most federal programs are relatively ineffective and consist mainly in "throwing money at problems."

Nevertheless, the congressional mill grinds on, turning out more complex, ill-fated legislation. When bills are drafted, the objectives are set forth in eloquent, unassailable phrases. The nitty-gritty of the matter, though, is something else. It is detailed, complex, fuzzy, and usually contains provisions that only a Solomon could implement.

What Congress seems to disregard are the limitations of the people who will implement the legislation. Mere mortals must interpret the vague language of bills and translate it into regulations that must be administered. Today, as many as 100,000 federal employees are engaged in regulatory activities. Few are geniuses, few are saints. Like many other humans, they seek to excel, they wish to be important, they wish to extend their influence and authority. When dealing with those outside the government, they don the robes of federal power. All too often a person of modest attainments is in a position to make decisions involving hundreds of millions of dollars. In this situation there are basically three choices. One can say yes, by which action one abdicates power. One can say no, which might be appealed and lead to a stink. The safe course is to ask for more information. If sufficiently diligent in this respect, the regulator will be overwhelmed with hundreds of pages to read and will obviously require assistance to perform the chores. Thus, the way can be prepared for a promotion and higher pay.

We have created a regulatory machine that is unmanageable by the President and his Cabinet officers. The situation today is much worse than that which on one occasion faced President Johnson. There was a leak of information that annoyed and concerned him. In vain, he ordered a great effort made to identify the culprit. To a friendly visitor he later exclaimed, "If I could find the son of bitch I'd fire him."

Congress had the wisdom to create an Office of Technology Assessment, designed to attempt to foresee adverse and beneficial consequences of new technology. Congress should take a leaf from this book and make searching studies of the consequences, both retrospective and prospective, of its actions. No major piece of legislation should be enacted without detailed realistic consideration of the mechanism of implementation and a study of its direct and indirect impact on the economy. Were Congress to do this, it might often find that drastic changes in the terms of its bills were indicated.—PHILIP H. ABELSON

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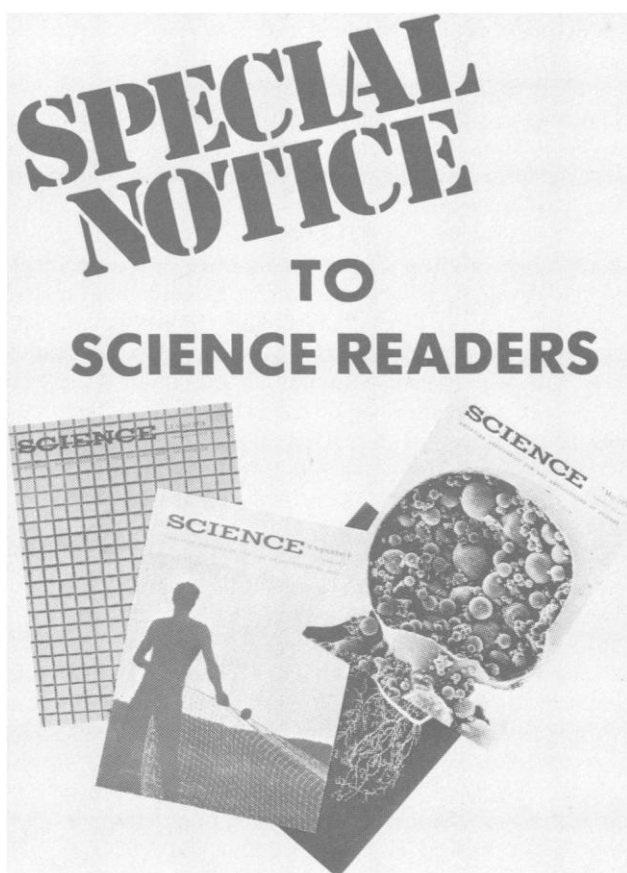
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Annual Meeting  
Houston  
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## Call for Contributed Papers

### Poster Sessions Only. Deadline: 5 September 1978

Following our newly established tradition of the two recent Annual Meetings, AAAS will again have contributed paper sessions at its forthcoming Annual Meeting in Houston (3-8 January 1979). However, because the next Annual Meeting is some 6 weeks earlier in the year than the one just past, we will have less time to prepare for it and therefore we will be unable to schedule slide sessions. The Houston Meeting will have poster sessions only. All abstracts must be submitted according to the instructions given below, not later than 5 September 1978. Abstracts which fail to meet the requirements as

indicated below will be returned. *All contributions must be submitted (and signed) by a AAAS member or fellow* (although this person need not be one of the authors). Contributors will be informed about where and when they will make their presentations in late October 1978. Contributed paper sessions will be of the poster session type only; in such sessions each contributor will have a bulletin board on which to place text and graphic material (of oversized nature) for an extended period of time so that he can discuss his work at length with all interested parties (see *Science*, 28 June 1974, page 1361).

### 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.*

Send the *original* together with two copies of your abstract to:

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Announcing the 3rd AAAS  
Colloquium on

## Research & Development in the Federal Budget and in Industry

June 20-21, 1978

*The third annual AAAS report on R&D in the federal budget for FY 1979 and including a special section on R&D in industry and its impact on the economy will be the subject of an*

**AAAS  
Science & Public Policy  
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*The AAAS R&D analysis project, sponsored by the AAAS Committee on Science and Public Policy and initiated in 1976, has resulted in two well-received books on research and development in the federal budgets for FY 1977 and FY 1978, and two highly successful colloquia in June of 1976 and 1977, attended by 200-250 AAAS members, government officials, and others. \*The June 20-21, 1978 colloquium will offer a forum for constructive discussion of current issues in federal and industry R&D with officials of the Executive and Legislative branches and from industry and universities. **Research & Development: AAAS Report III** by Willis H. Shapley and Don I. Phillips will be available in book form for the June 1978 colloquium.*

*Specific topics this year will be the impact of the first complete Carter budget on R&D, trends and problems of R&D in industry, and the impact of R&D on the economy. For information and reservations, write to*

**Ms. Patricia S. Curlin  
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\*Research and Development in the Federal Budget: FY 1977 and Research and Development in the Federal Budget: FY 1978 (\$5.50 each; AAAS members, \$4.95) and the 1976 and 1977 Colloquium Proceedings (\$5.25 each; AAAS members, \$4.75) may be purchased from AAAS.

### AAAS NEWS

(Continued from page 524)

dual presentations reflecting the information and perspectives of "North" and "South." In some areas, the lead of the United States in amount of energy research was apparent, but it also was clear that in converting research into production facilities the Latin Americans and Canadians had made notable progress.

Attendees found especially interesting the developments in Brazil which have led to the production of alcohol for motor fuel, charcoal from eucalyptus for steelmaking, and the potential use of palm oils for diesel fuel. Another matter attracting wide interest was the impressive asset enjoyed by countries which already possess well-developed hydroelectric systems. Looking toward the eventual commercialization of solar energy, these countries should be able to accommodate solar power to existing storage and distribution capabilities.

Perhaps the major achievement of the symposium resulted from five workshops on solar energy, biomass, efficient utilization of energy, small units, and nuclear energy. Comprised of about 20 experts each, the workshops surmounted difficulties of multiple languages and perspectives in finding common areas of agreement. Their reports, not intended to be exhaustive nor final blueprints for action, contained useful new information as well as reasonable prescriptions. The achievements of the workshops pointed up the critical need for hemispheric communication at the expert level in an atmosphere of mutual respect.

Proceedings of the symposium will be published in July 1978 by the SBPC (Sociedade Brasileira para o Progresso da Ciencia), Caixa Postal 11008, 01000 São Paulo, S.P., Brazil. Reports and recommendations of the five workshops will be published in the May-June issue (vol. 3, No. 3) of *Interciencia*, the trilingual IA journal, available at \$2.50 a copy from Interciencia, Apartado 51842, Caracas 105, Venezuela.

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**For more information about the activities and publications described in AAAS News, write to the appropriate office, AAAS, 1776 Massachusetts Avenue, NW, Washington, D.C. 20036, unless otherwise indicated.**

### Environmental Health

### Theme of First NYAS

### Science Week

Environmental health hazards—their scientific basis and public control—will be the theme of the first Science Week sponsored by the New York Academy of Sciences (NYAS), 21-30 June in New York City.

An outgrowth of the Academy's concern with the relationship between science and society, the event will feature international conferences, workshops, debates, continuing medical education courses, and field trips relating to the general theme.

Three international scientific conferences will convene at the New York Hilton Hotel during Science Week. "Health Hazards of Asbestos Exposure" will take place on 24, 25, and 27 June, simultaneously with "Health Effects of Halogenated Aromatic Hydrocarbons." The third conference, "Public Control of Environmental Health Hazards," is scheduled for 28-30 June. Nearly 200 experts in relevant fields, including representatives of foreign countries, will participate in the three conferences.

Two plenary sessions with addresses by noted speakers and a day of workshops and field trips also will be on the schedule. Two evening debates (Sunday, 25 June, and Thursday, 29 June, at the New York Hilton) will address resolutions regarding exposure to confirmed occupational human carcinogens and government's responsibility in compensating for occupational and environmental disease.

An additional feature of Science Week will be three 3-day courses on "Health Effects of Asbestos Exposure," "Chemical Carcinogenesis (Occupational and Environmental)," and "Health Effects of Chlorinated Hydrocarbons."

Monday, 26 June, will be devoted to 16 workshops on the problems related to asbestos and halogenated aromatic hydrocarbons. The workshops will be held at various universities and medical centers in Manhattan.

For further information about Science Week—the program, registration fees, housing reservations, and social and cultural events—contact the New York Academy of Sciences, 2 East 63 Street, New York, N.Y. 10021 (telephone 212/838-0230).

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