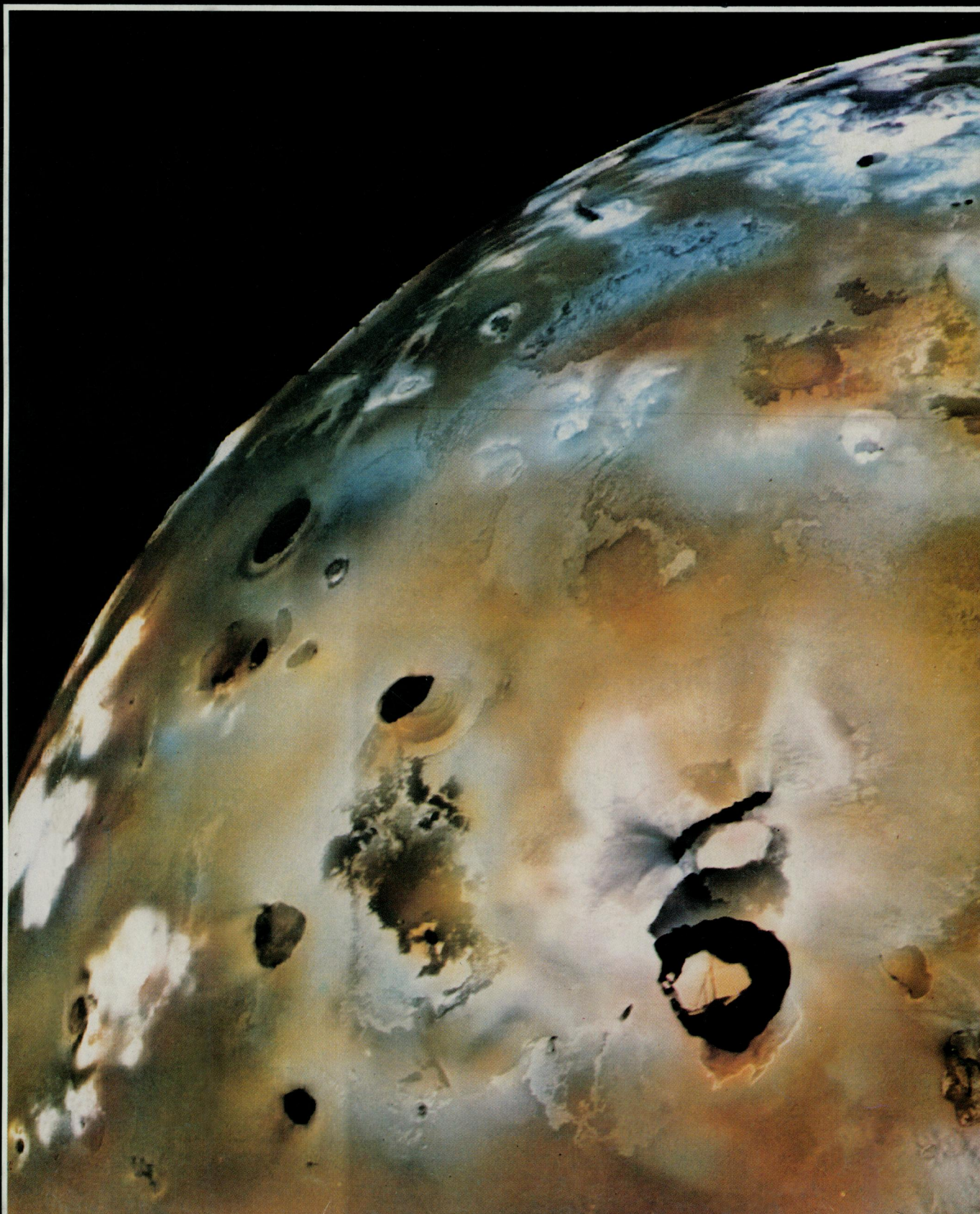


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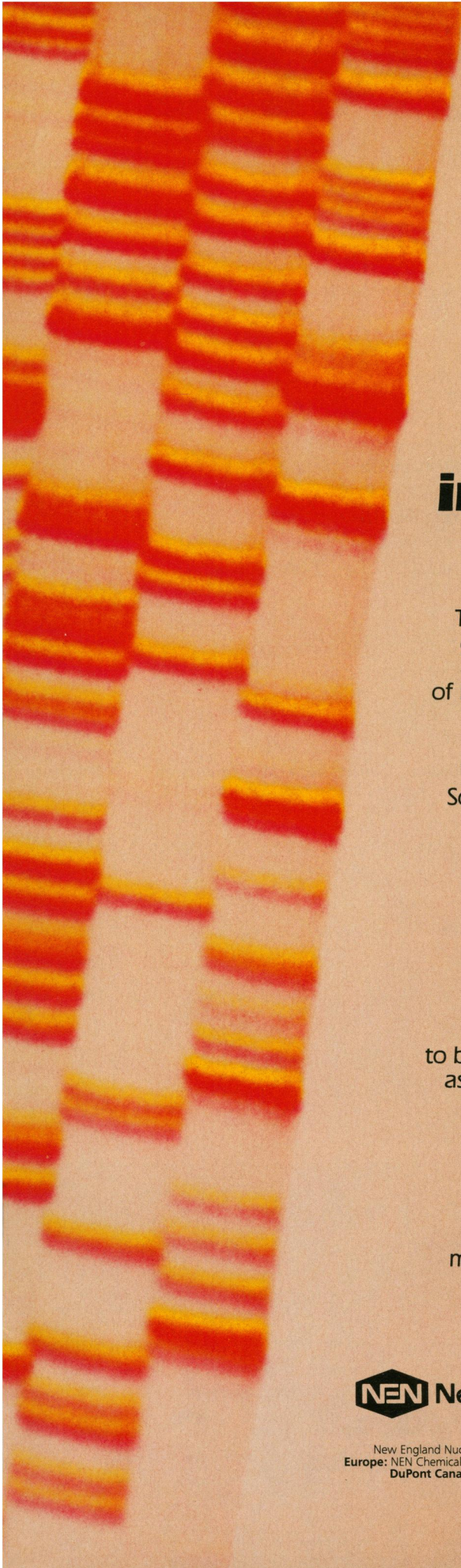
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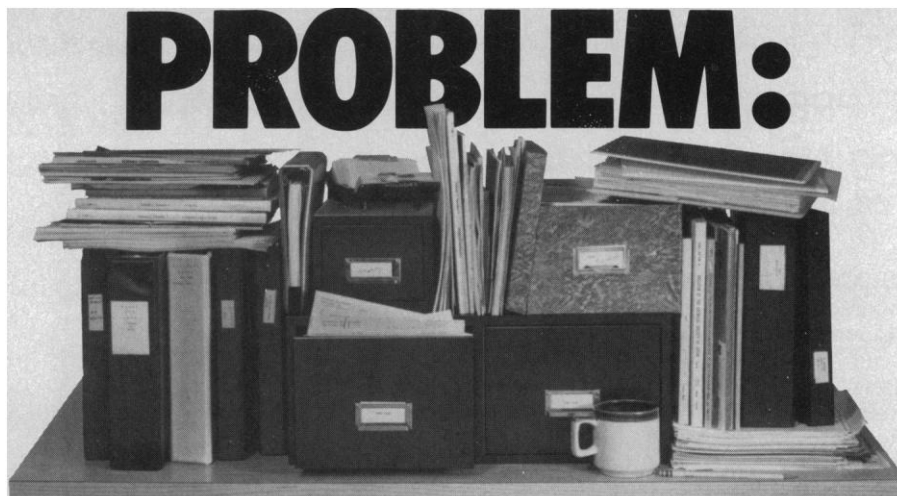
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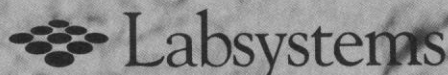
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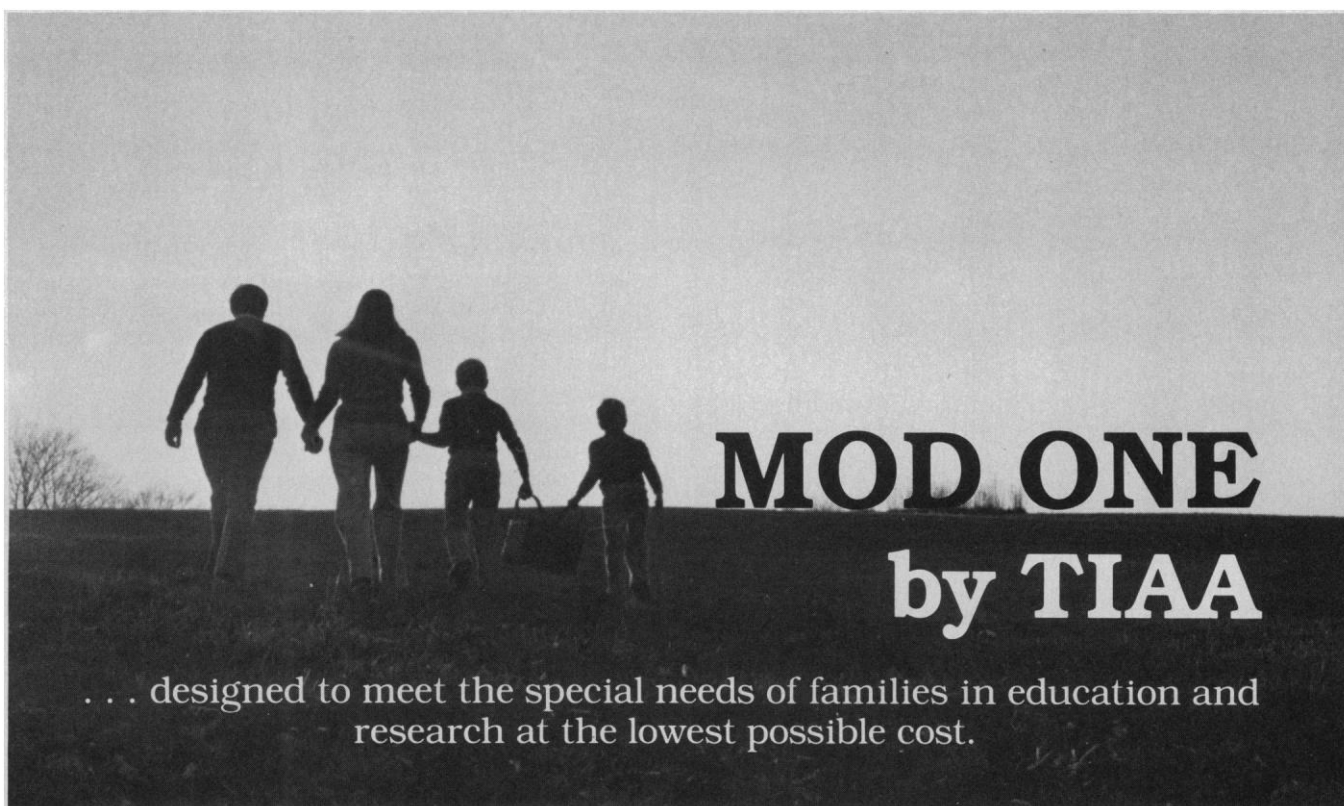
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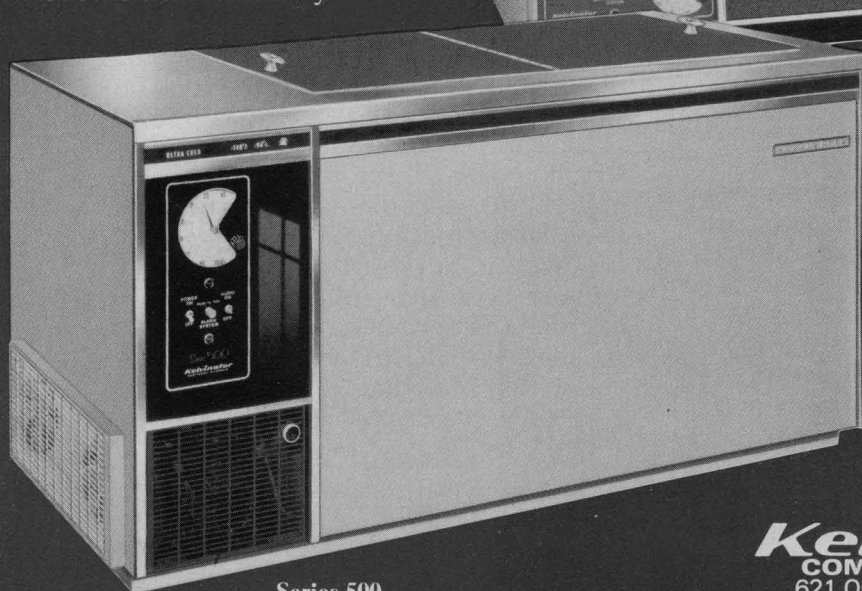
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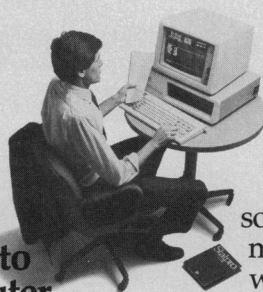
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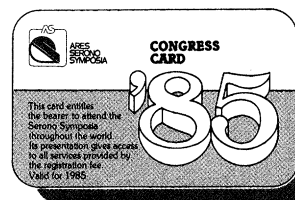
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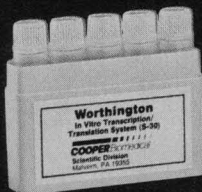
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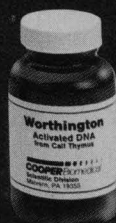
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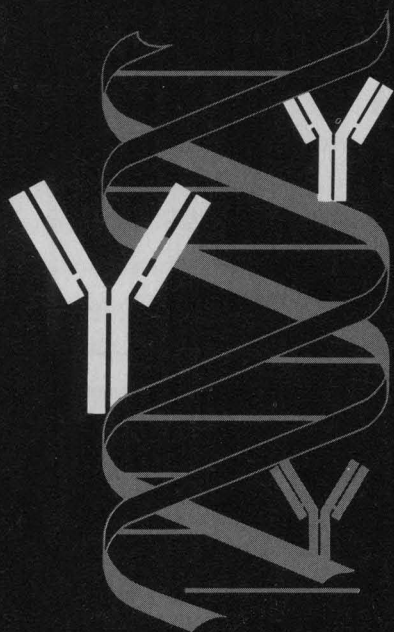
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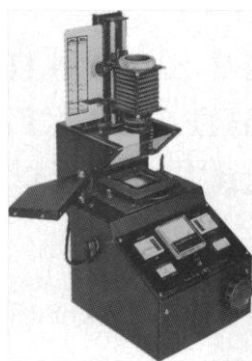
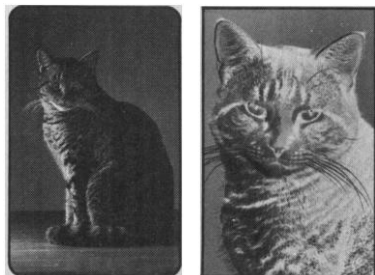
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was sentenced to 6 months in the camp prison, where conditions are even worse.

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I appeal to you, his scientific colleagues, to save my husband by raising your voices. Keep striving to better his situation.

Inna Begun's is but one still, silent voice calling for humane treatment for her husband. More voices are needed to persuade Soviet authorities to ease their long-standing oppression of this man. We urge you to join with us in championing his cause.

MARK KAC

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A Manual Twitch

We note with interest the report by Evert Lagerweij *et al.* (14 Sept., p. 1172) suggesting that use of a twitch to grasp the upper lip of a horse increases the horse's tolerance of pain. We have for several years been conducting research among the Turkana tribe of northwest Kenya and have observed what may be another example of this "variant of acupuncture."

The Turkana are nomadic pastoralists who derive a substantial portion of their diet from blood drawn from their herd animals. Camels (*Camelus dromedarius*) are bled by tightening a thong around the neck and puncturing the distended jugular vein with several twists of a chisel-like metal blade. The bleeding stops when the thong is released. Inducing a fully grown camel to sit still for such an operation would seem to be a formidable task, but Turkana of both sexes routinely bring camels to their knees (literally) by grasping both lips firmly, one with each hand. The beasts do bellow, but are otherwise surprisingly passive during what is surely a painful procedure. This manual twitch is also employed during branding. The Turkana also bleed their cattle, but do not employ the same technique.

We have no physiological evidence to demonstrate that grasping the camels' lips causes analgesia and sedation, but it may well be that the potential to respond

to "acupressure" on the lip is present in mammals other than horses. It is clear that this restraining technique has been discovered by African herders as well as by Western farmers.

PAUL W. LESLIE

Department of Anthropology,
State University of New York,
University Center at Binghamton,
Binghamton 13901

J. TERRENCE MCCABE

Department of Anthropology,
University of Georgia, Athens 30602

Prenatal Learning

Gina Kolata's article "Studying learning in the womb" (Research News, 20 July, p. 302) recalls to my mind the famous legend from the great Indian epic *The Mahabharatha*. Lord Krishna, the legend says, was teaching the great Pandava warrior Arjuna how to enter the *Padmavyuha*, a military formation perfected by the Kauravas, with whom the Pandavas were at war. Arjuna's wife Subhadra, who was in an advanced state of pregnancy, was also present. As Krishna proceeded with his instructions, Arjuna answered with a "Hm." After some time Krishna realized that the acknowledging answer was not coming from Arjuna, who had dozed off, but from the womb of Subhadra. Krishna, who was reluctant to impart this knowledge to anyone other than his favorite Arjuna, suddenly stopped talking. Years later during the Mahabharatha War, a young Abhimanyu, the son of Arjuna and Subhadra, could break into the *Padmavyuha* with ease by drawing on his knowledge acquired during his prenatal stage. But since he had been denied the knowledge of how to get out of the *Padmavyuha*, Abhimanyu fell fighting inside the formation.

All of which makes one wonder whether all "modern" research is all that modern!

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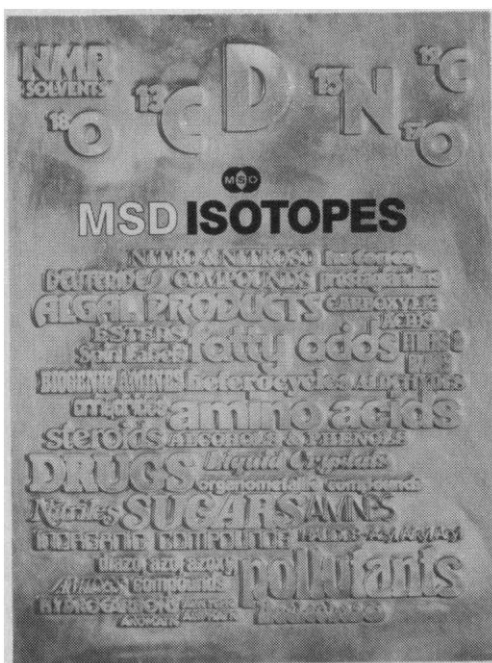
Erratum: In the report "A candidate magnetic sense organ in the yellowfin tuna, *Thunnus albacares*" by M. M. Walker *et al.* (18 May, p. 751), the standard error given on page 752 (3rd column, first full paragraph) for the sizes of the magnetite particles was instead the standard deviation. Use of the term "standard error" implies a far greater variance in the sizes of the particles than actually existed and could lead to the conclusion that the published electron micrograph is not typical but presents a biased sample of the particles.

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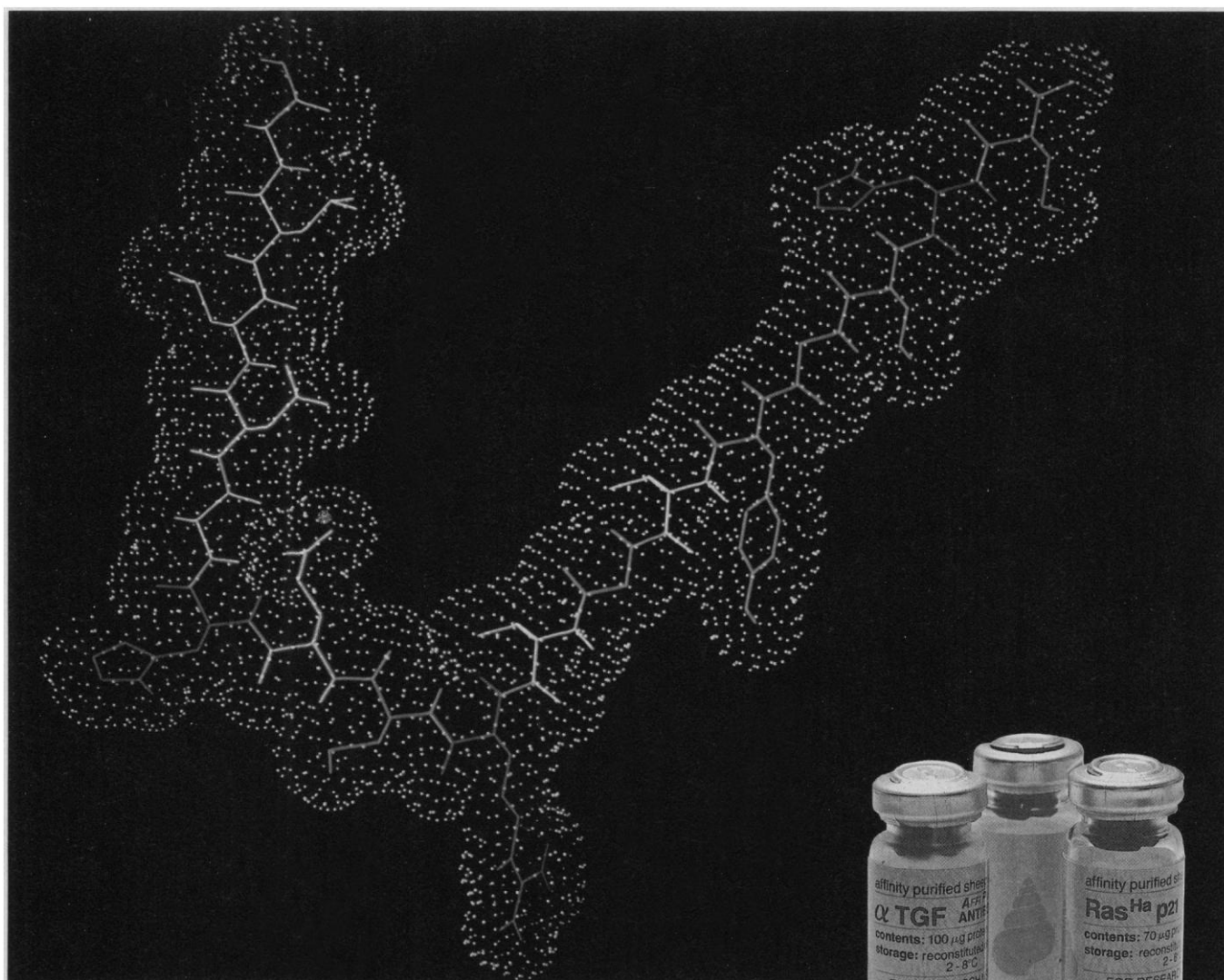
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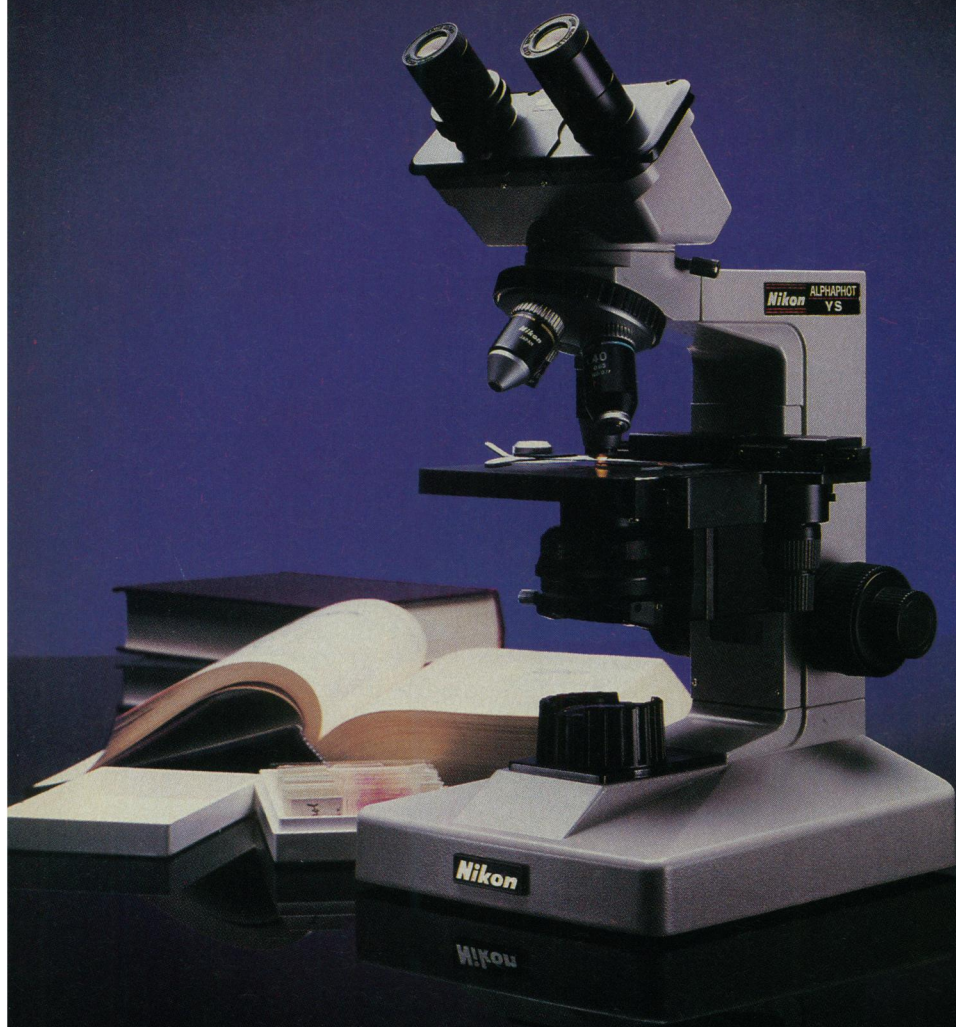
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Science and Two-Armed Diplomats

Members of Congress often complain that we need more one-armed scientists, experts who do not muddy their testimony with caveats, "on the one hand . . . on the other hand." In debates on national policies, major technological choices and genuine technical uncertainty do cause political frustration. But in our foreign policies involving science, there are different problems. Diplomats rarely know much about science and technology, so they do not wrestle with technical choices and uncertainties. Constructively, Secretary of State George P. Shultz recently cabled U.S. diplomatic posts a message designed to press science and technology more powerfully into the management of U.S. foreign policy. He knows that we need two-armed diplomats.

"Foreign policy decisions in today's high technology world are driven by science and technology," Schultz said. Highly visible are debates on nuclear arms and controlling/restraining proliferation of nuclear weapons. Ongoing negotiations also focus on agriculture, population, and health; information and telecommunications; and the human rights of scientists. Moreover, our worldwide interests demand that our diplomats deal with such sweeping topics as energy, oceans, space, the environment, technical aid to developing countries, and technological exports to the East. Brisk confrontations emerge on issues such as acid rain and the impacts on research of withdrawal from Unesco. At the negotiating table, decisions affect international cooperation and competition in science.

So Secretary Shultz surely is correct. His mandate, emphasized in 1979 legislation, is that the State Department has "primary responsibility for coordination and oversight . . . on all major science and technology agreements and activities between the United States and foreign countries." Taking this responsibility seriously, Secretary Shultz said in his recent cable that "in foreign policy we simply must be ahead of the S&T power curve." Yet the State Department is not there.

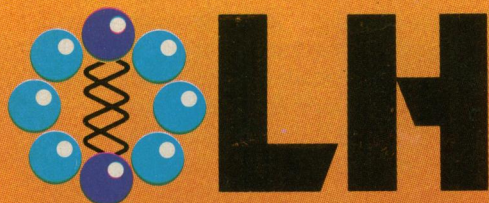
The incentives within the diplomatic personnel system do not help. Qualitatively, political and economic officers are on top; science officers, where available, are on tap. Quantitatively, we have 30 science attachés and counselors serving abroad among approximately 4000 full-time foreign-service officers. The career-long retraining of our able diplomats—so impressive in many fields—does not require even short tutorials on the technical fields so crucial to American foreign policy.

There are other problems. One is the propensity of the government to use science and technology as last-minute exchange chips for diplomatic agreements when there is an impasse in negotiations on other subjects. Even worse, with our chronic neglect of the technical dimensions of much foreign policy, frequently we are forced to make hasty decisions on major choices which should have received longer range and more subtle planning.

We need sharply improved institutional structures in Washington. Beyond the State Department, many others are involved with international science—for example, the White House, the National Academy of Sciences, the National Academy of Engineering, the National Science Foundation, and most mission agencies. Congress is frustrated with the increasingly complex issues. The time is ripe for the academies to create a more coherent organization for science and technology in foreign policy.

What does all this mean for the technical communities in the United States? To fulfill the initiative of Secretary Shultz will take time, greater resources, and the vigorous participation of many professionals. The R&D community must tune in to the varied international opportunities and responsibilities for science, engineering, and medicine. We must help our diplomats by taking their problems—our problems—seriously.—RODNEY W. NICHOLS, *Executive Vice President, Rockefeller University, New York 10021*

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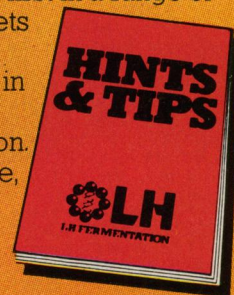
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Although it is too late to submit suggestions for symposia for this Annual Meeting, contributed papers can be sent in up to 18 January 1985. Instructions for abstracts are given below and a sample is shown.

The contributed paper sessions are of the **POSTER type only**. 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.

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