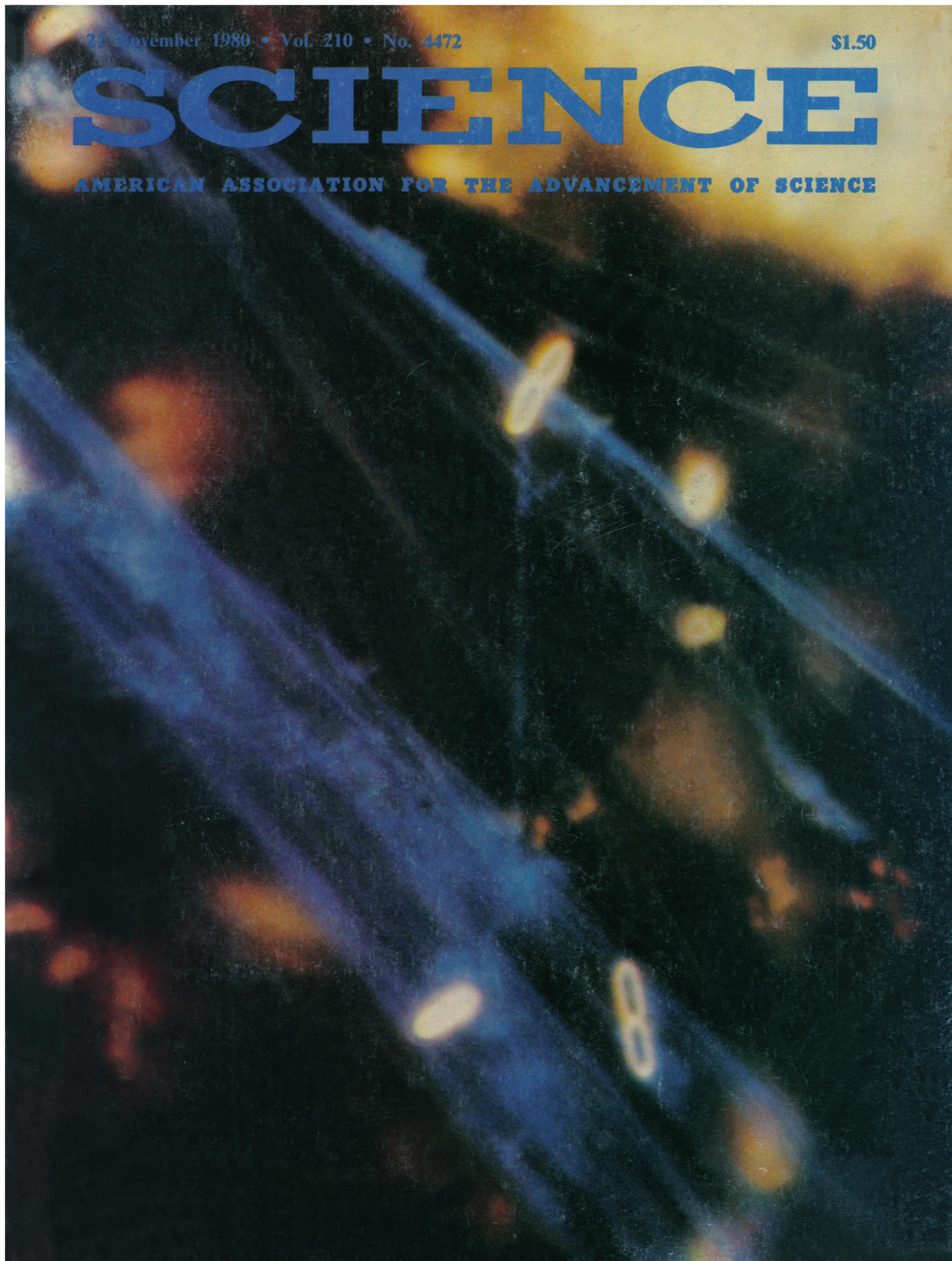


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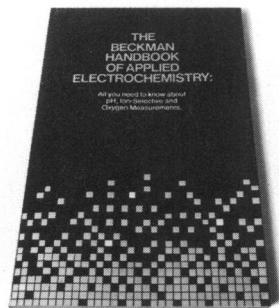
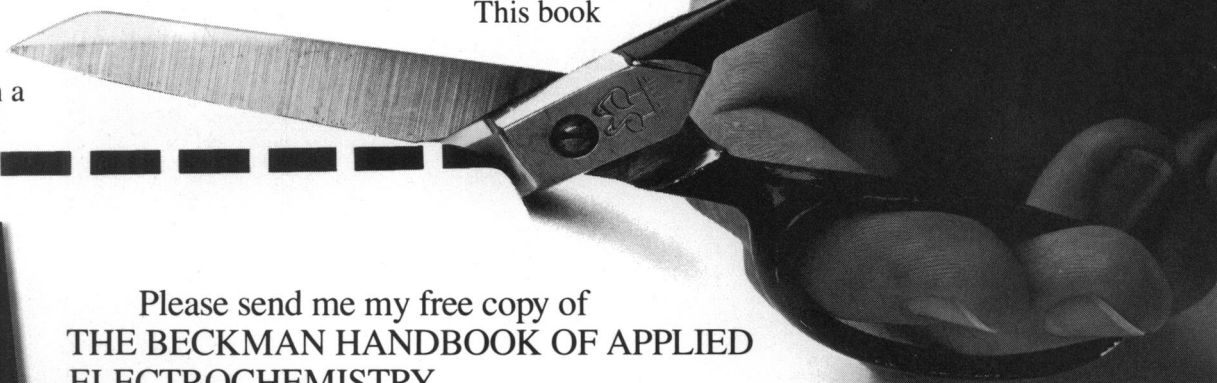
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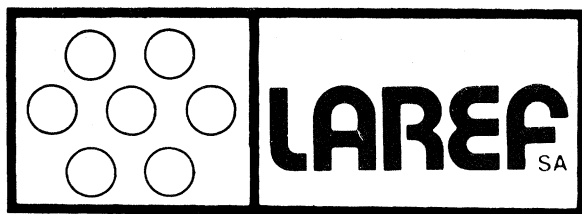
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Dark-field fluorescence photomicrograph of cellulose ribbons synthesized by *Acetobacter xylinum* and then stained with the fluorescent brightener, Calcofluor White ST (about $\times 7100$). A cellulose product with altered morphology and crystallinity is produced when Calcofluor White is added during cellulose synthesis. See page 903. [C. Haigler and R. M. Brown, Department of Botany, University of North Carolina, Chapel Hill]

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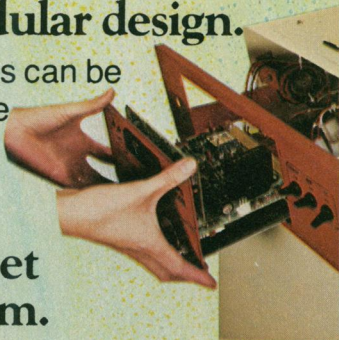
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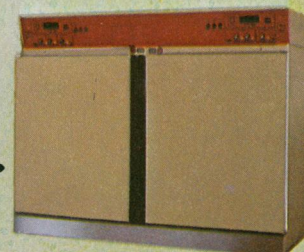
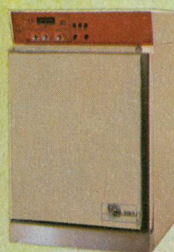
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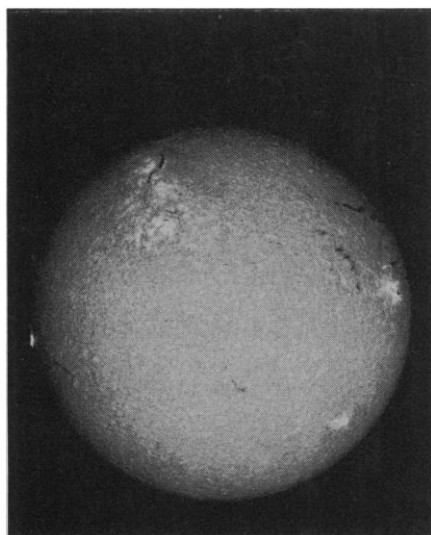
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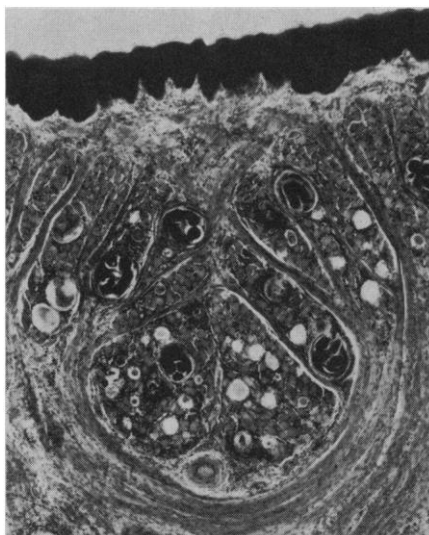
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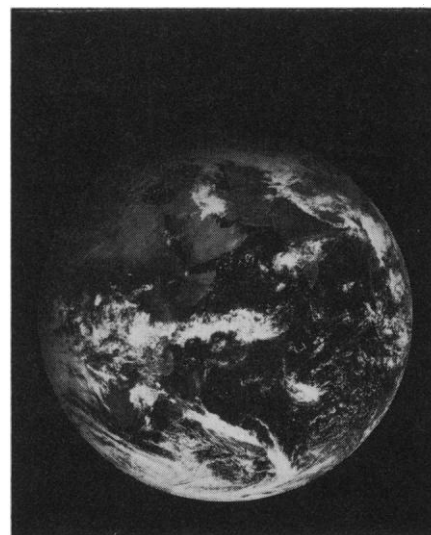
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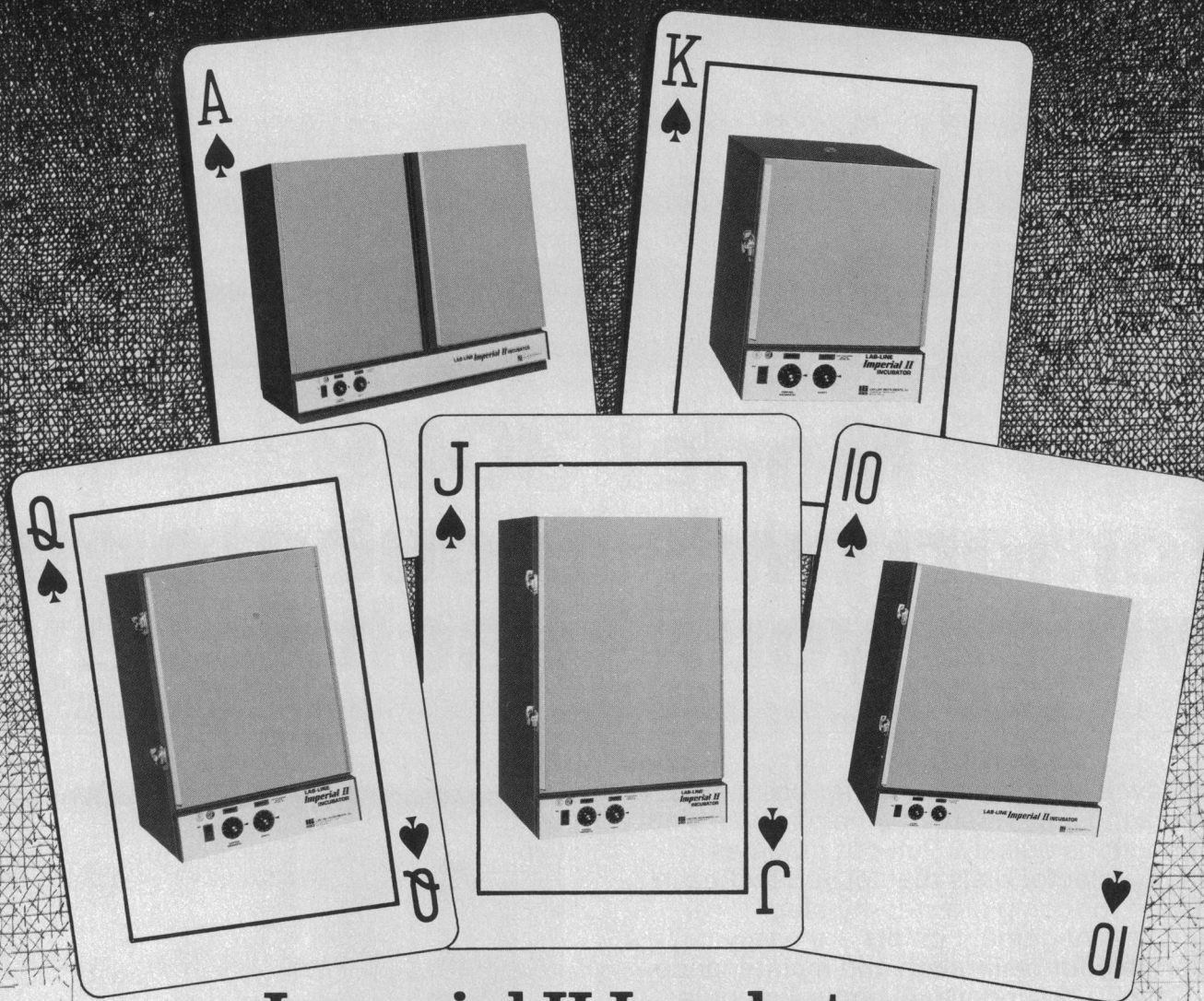


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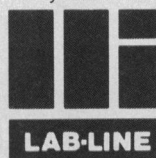
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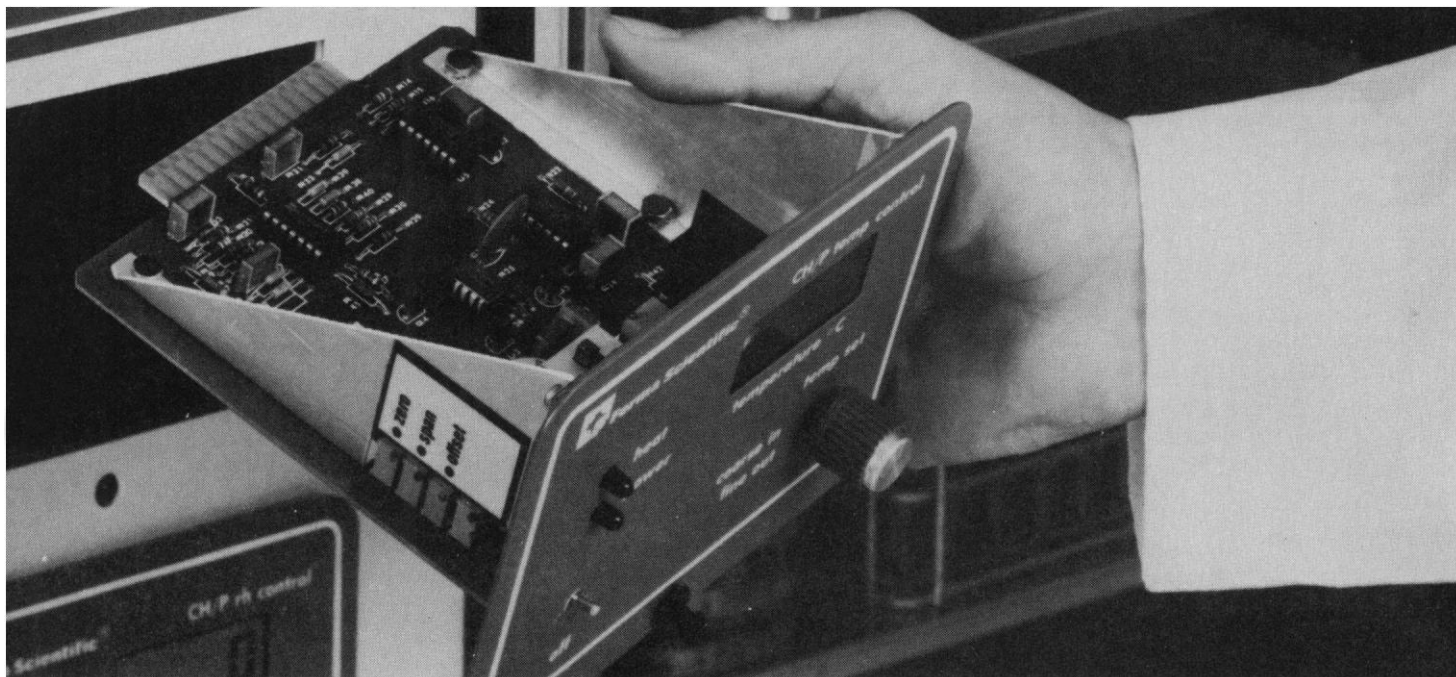
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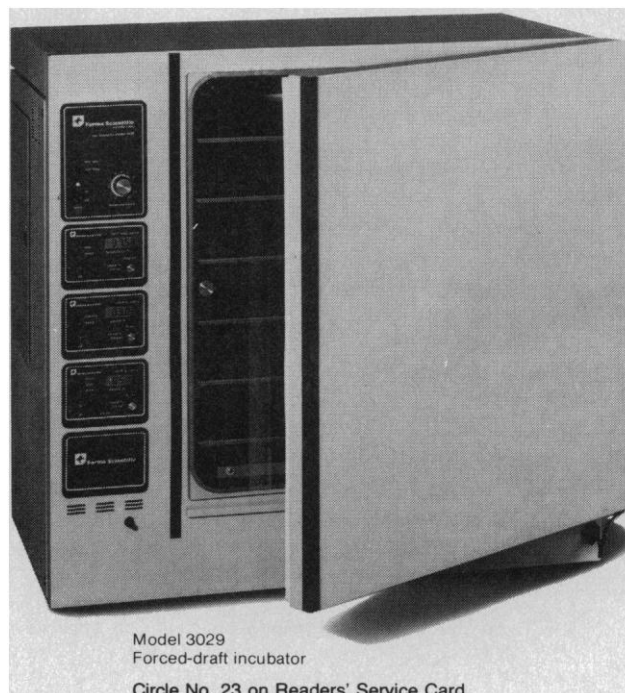
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Science Policy: New Directions?

The meanings of the presidential transition for the course of public policies for science and engineering are far from self-evident. An administration that gave its best efforts to strengthening science and searching for solutions to the ills of technological innovation has been turned out of office. Where these matters stand on the agenda of the President-elect and his advisers remains to be seen.

Political transitions carry discontinuities in their wake, and these are to be taken in stride. As often as not, discontinuity has a constructive side. Four years ago a similar transfer of power took place, and the legacy of the Ford administration in renewing support for basic scientific research became the foundation on which President Carter constructed a consistent and in many ways exceptional commitment to advancing the frontiers of science. Until there is contrary evidence, no reason exists to expect less from a Reagan administration.

Doubtless the incoming President will have a different approach to policy management and the organization of the presidential office. Of some importance to the scientific and engineering communities is the choice of a presidential science adviser and the roles assigned to the Office of Science and Technology Policy. Because scientific and technological missions are scattered widely throughout government rather than centralized, the science adviser must be skillful in injecting balance and rationality into an intrinsically Balkanized and competitive system. It is a large order, and it cannot be done solely through refereeing conflicts. In addition, the tumultuous daily traffic of large and small crises, augmented by the stream of normal White House staff work, cuts into the ability of the science adviser to anticipate new problems, keep in touch with the scientific and engineering communities, and shape long-term goals and objectives. Reorganizing the scientific and technical agencies of the government is no answer to this syndrome. But part of the answer is for the President to recognize the enlarged dimension of science and technology in the affairs of the nation and the world and to take a fresh look at the imbalance between his expectations of the science office and the inadequacy of its resources.

Much has been accomplished in the past 4 years because of the convergence of views between President Carter and Frank Press. The interaction between the science adviser and the Office of Management and Budget has never been as effective or less adversarial. Consistency in the funding of basic science as budgetary "investment" has, in itself, been remarkable. The role of the science adviser in helping to rationalize regulatory hysteria in the interests of productivity and reduction of uncertainty has been striking. The same can be said for the care with which new terms of scientific and technical cooperation have been worked out or initiated with the People's Republic of China and countries of the Third World. These and other accomplishments add up to commendable performance indeed.

Much unfinished business remains for the new administration. The condition of science and engineering education in the United States has deteriorated seriously. The postwar comity between the federal government and the research universities has become unhinged. The demands of the developing nations for a decent share of the benefits of Western science and technology cannot go unanswered much longer. The policy of holding scientific exchanges hostage to the quarrel with the Soviet Union has netted nothing. American vulnerability to minerals blackmail has never been greater, with disastrous implications for both the nation's economy and its national security. The need for an effective strategic arms limitation agreement dwarfs all other issues in the near term.

If discontinuity has its troubling side, it also offers opportunities for new directions for the beneficial uses of science and technology. As the countdown to 20 January begins, it is well to remember that the time constants do not heed elections.—WILLIAM D. CAREY

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