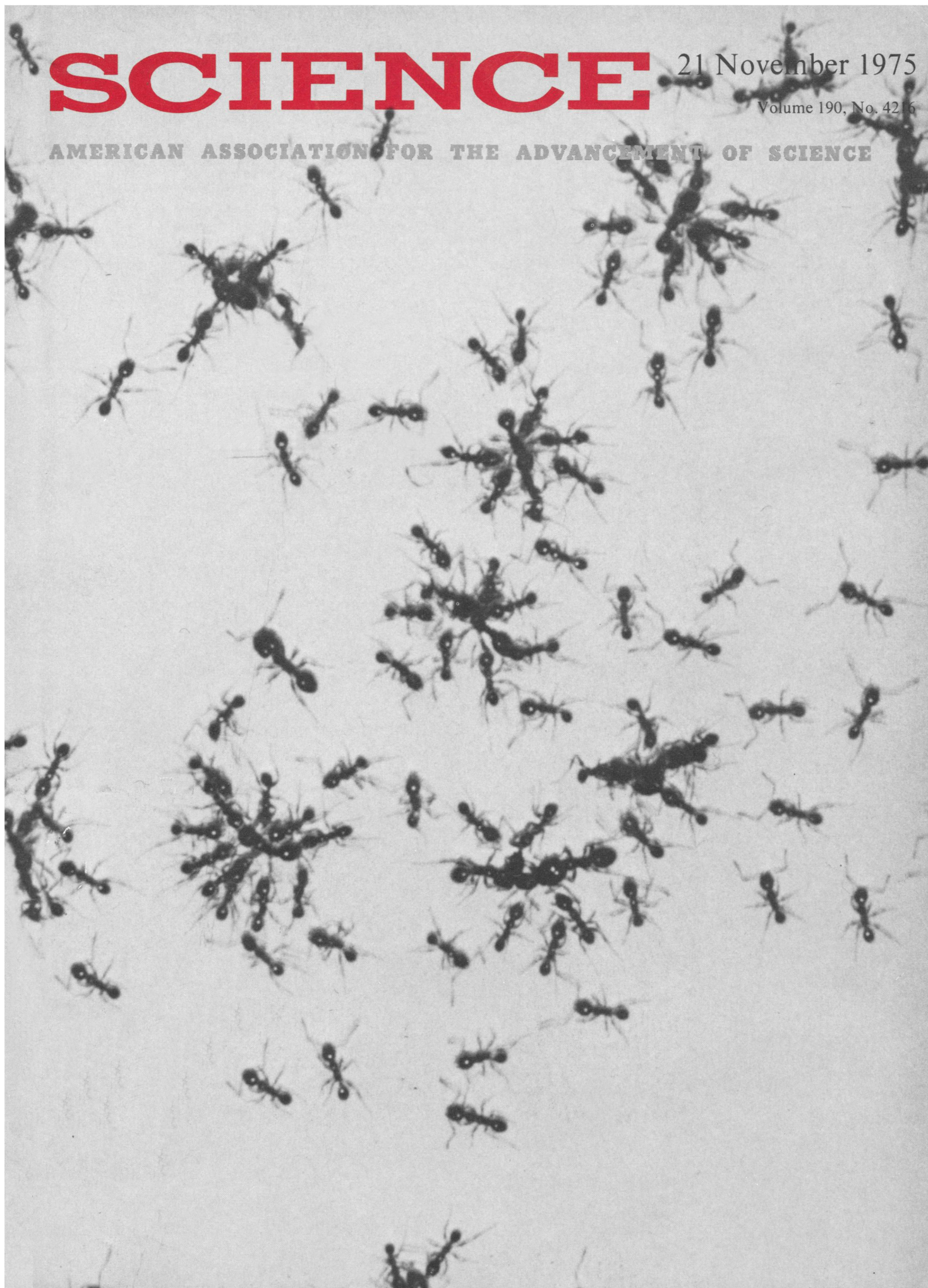


SCIENCE

21 November 1975

Volume 190, No. 4216

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



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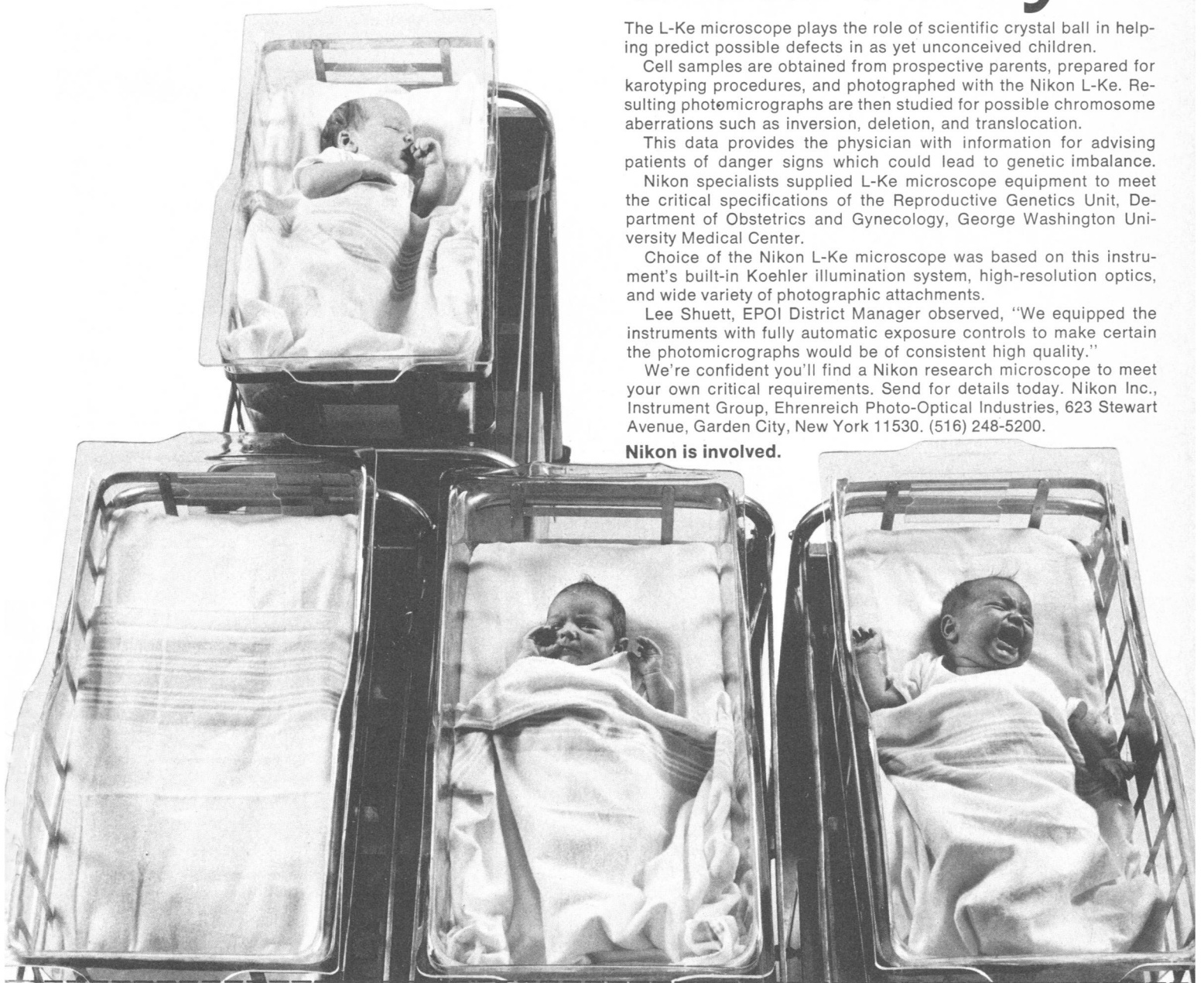
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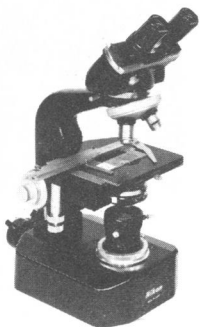
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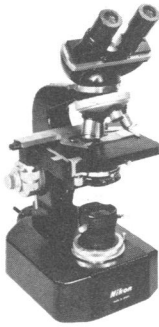
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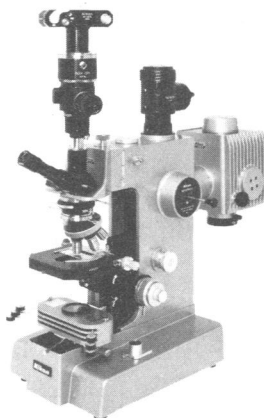
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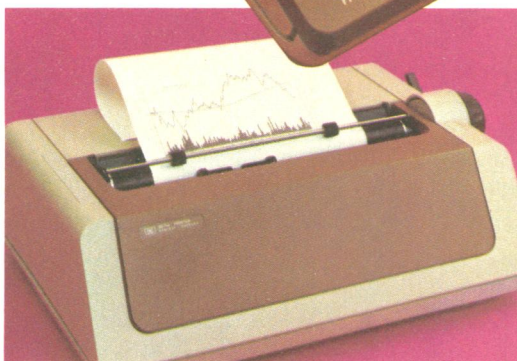
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COVER

During a territorial battle, minor workers of the ant, *Pheidole dentata*, surround and pinion invading workers of a second, larger species of ant, *Tetramorium caespitum*. This action is the initial tactic used by the *Pheidole* colonies against most species of invading ants. See page 798. [A. H. Coleman, Harvard University, Cambridge, Massachusetts]

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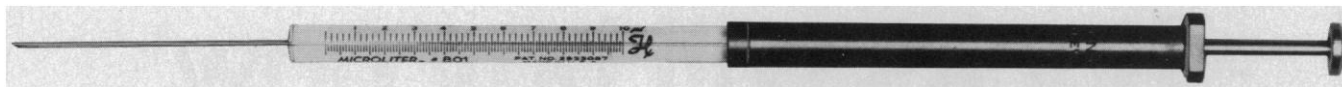
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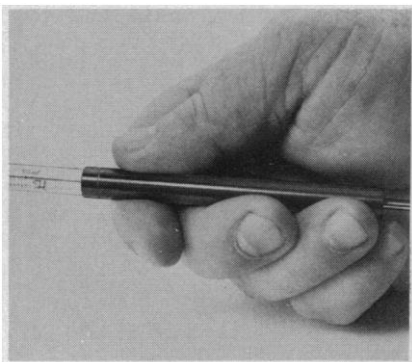
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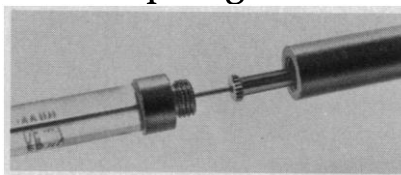


It is really comfortable to hold and convenient to use a syringe with a metal handle. The weight balances nicely in your hand and allows you to hold the syringe without the heat of your body affecting the sample.

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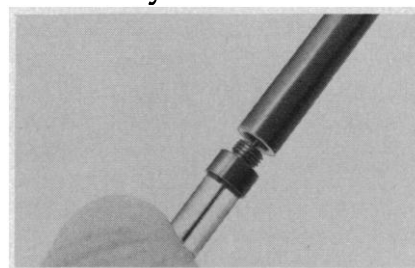
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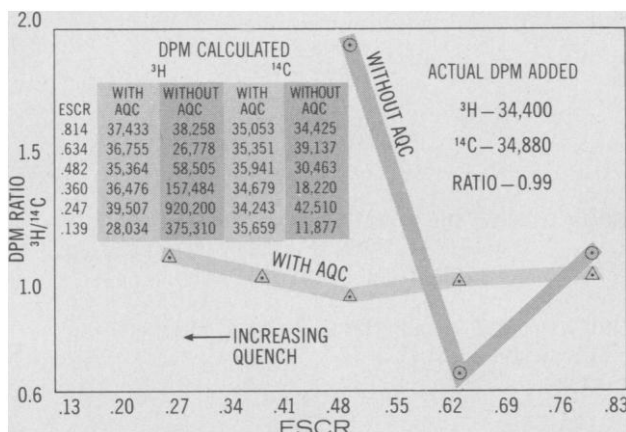
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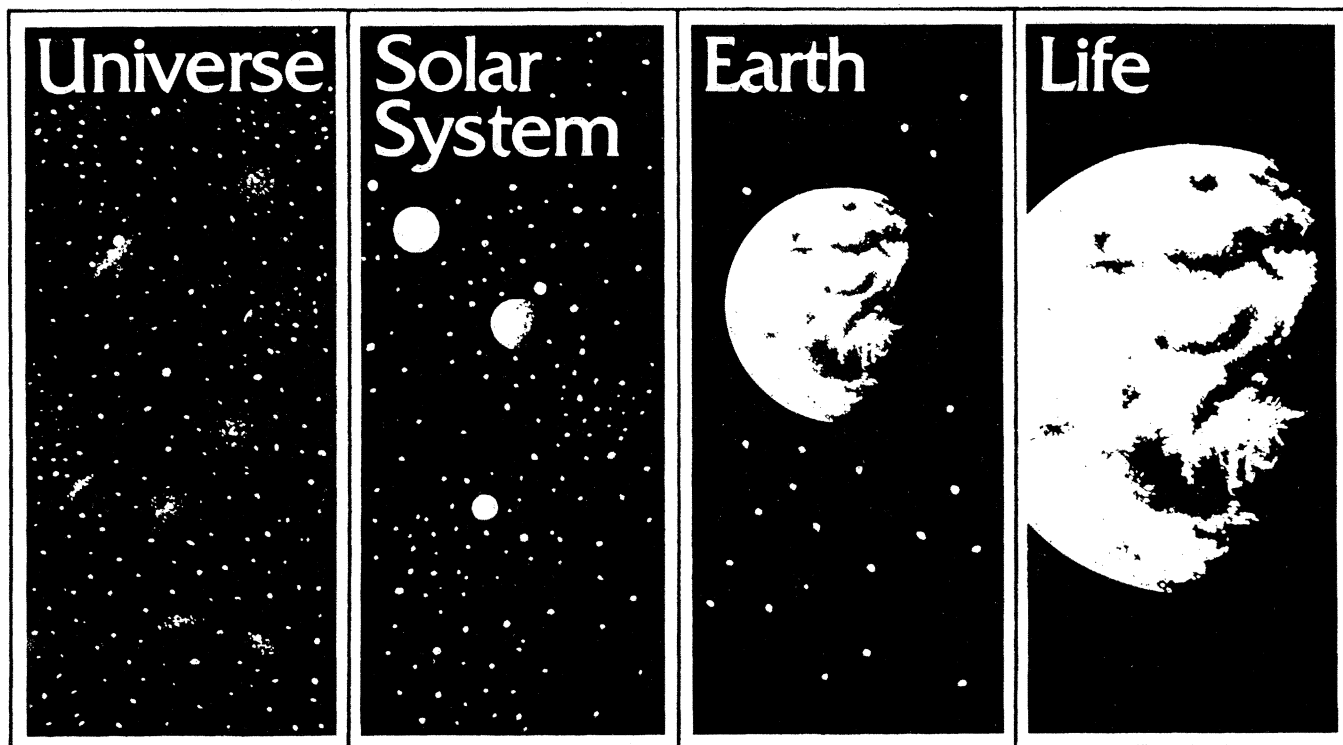
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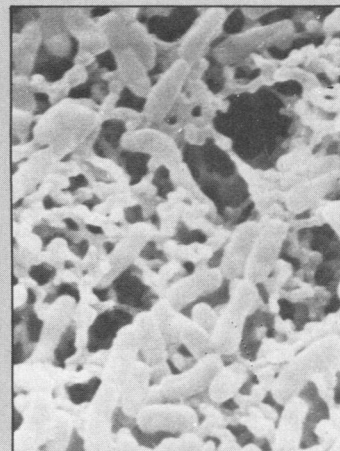
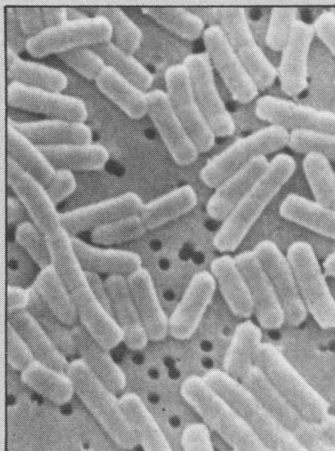
Quite a contrast to the rough, tortuous paths of the 0.45 μm pore size cellulosic filter at the right. The differences in filter thickness—10 μm for the Uni-Pore vs. 150 μm for the cellulosic filter—means lower and more uniform tare weights for Uni-Pore filters.

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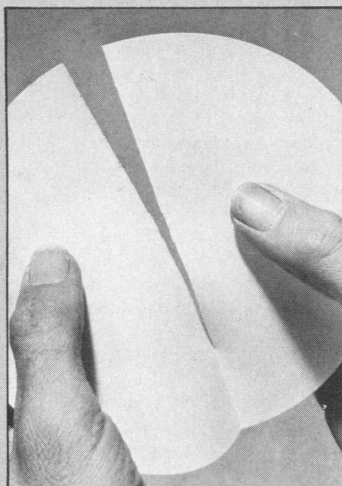
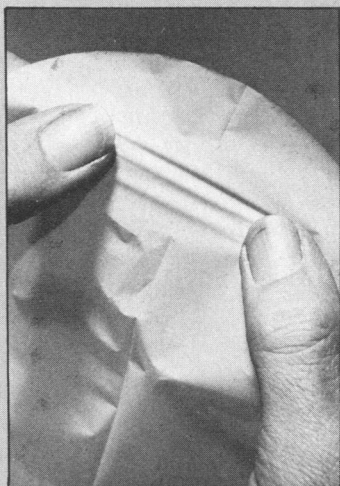
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Scanning electron micrographs of *Bacillus subtilis*, 5000X, on 0.4 μm pore size polycarbonate membrane on the left and a standard 0.45 μm pore size cellulosic membrane on the right.



Uni-Pore membranes can be bent and folded without damage as shown in photo on the left. Cellulosic membranes crack and break under the same treatment as shown in photo on the right.

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LETTERS

Availability of Grant Applications

A year ago, the District of Columbia Court of Appeals ruled that, since "a non-commercial scientist's research design is not literally a trade secret or item of commercial information," scientists' grant applications to governmental agencies [for example, the National Institutes of Health (NIH), the National Institute of Mental Health (NIMH), and the National Science Foundation] are not exempt from disclosure under the Freedom of Information Act (News and Comment, 15 Nov. 1974, p. 614). This decision raises important questions for the scientific community. For example, if scientists generally avail themselves of their legal right to obtain copies of their colleagues' grant applications, will applicants include less information in their applications, thus making it more difficult for study sections to evaluate them? Will colleagues with shared scientific goals tend to become secretive competitors, and will meaningful scientific exchange be reduced?

NIH has received several hundred requests for copies of grant applications, including recently two from members of the NIH intramural scientific staff. These latter two requests, together with the more general implications of the court decision, prompted the Inter-Assembly Council of the Assemblies of Scientists of NIH and NIMH (1) to transmit the following memorandum to the intramural scientific research staffs of NIH and NIMH. (It should be emphasized that the intramural staff are not involved in the grants process, either as applicants or administrators, and that, before the court decision, they did not have, nor seek, grant applications.)

As you know, applications for Research Grants have always been considered by the National Institutes of Health and the National Institute of Mental Health to be privileged documents. No scientist, either in or out of government, has had access to them other than the members and consultants of the relevant scientific review panels. Now, as required by the Freedom of Information Act, NIH and NIMH will make available upon proper request any and all approved and funded Grant Applications after informing the principal investigator and the applicant institution in the course of deleting any potentially patentable material. Renewal applications will similarly be made available prior to approval since they are considered to be continuations of previously approved and funded grants.

The Inter-Assembly Council of the Assemblies of Scientists of the National Institutes of Health and National Institute of Mental Health, while fully recognizing the legal right of scientists to make such a request, strongly urges that NIH and NIMH Intramural scientists voluntarily continue to act according to past practice and not request copies of Grant Applications. We advocate this policy because we fear

the effectiveness of the Peer Review system may be diminished and biomedical research impeded if applicants believe their Grant Applications will be widely circulated.

This recommendation is subject to revision should professional scientific societies adopt appropriate guidelines.

We suggest that all scientists adopt a similar policy and urge the professional scientific societies to consider the ethical questions raised by, and the practical consequences of, the availability of grant applications under the Freedom of Information Act (1).

EDWARD D. KORN

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Notes

1. The intramural research scientists of all but one of the constituent institutes of NIH and NIMH have organized themselves into assemblies of scientists (roughly analogous to faculty senates); the Inter-Assembly Council consists of approximately 75 delegates from these Institute assemblies.

Earthquake Damage

The article by Page, Blume, and Joyner "Earthquake shaking and damage to buildings" (22 Aug., p. 601) gives an excellent description of earthquake damage that might be expected in the San Francisco area of California. However, potential earthquake damage in other parts of the country where construction is also governed by the Uniform Building Code cannot be inferred from Page *et al.*'s discussion of the Bay area. Unfortunately, the code is not applied as uniformly as its name implies. For example, Indiana has recently adopted the Uniform Building Code without its earthquake requirements, in spite of the fact that (indeed because) a part of the state is in zone 3, the zone of highest risk of damage. Different parts of the country may have compensating design criteria, such as those that relate to lateral loads due to winds. However, the general lack of appreciation of the dynamic character and damage that can be caused by seismically induced loads may result in a rather grim picture should large earthquakes like the Mississippi Valley (New Madrid) earthquakes of 1811-1812 or the Charleston, South Carolina, earthquake of 1886 reoccur in areas where seismic code provisions are not applied.

ANSHEL J. SCHIFF

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We share the concern that extensive and serious earthquake damage may occur in seismically active parts of the country in which the Uniform Building Code has

been adopted but without the earthquake design provisions. A small part of Indiana lies within the zone of highest risk of earthquake damage, as defined in the Seismic Zone Map of the United States contained in the Uniform Building Code. The map, however, is based primarily on the maximum seismic intensities in the historical record without regard to the frequency of occurrence. Indiana is shown in the same zone as coastal California, but the frequency of damaging earthquakes has been much higher in coastal California. Some future edition of the code will likely contain an improved seismic zone map. In the meantime, adoption and enforcement of reasonable earthquake regulations, perhaps less stringent than those applied in California, could greatly reduce potential earthquake damage in areas of known earthquake occurrence outside the western United States.

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Mirror Making

Nicholas Wade's article "Zen and the art of big mirror making" (News and Comment, 10 Oct., p. 132) admirably conveys the consistent dependence of optical astronomy upon the judgments and manual skills of craftsmen. However, there are two statements in the article that are misleading. Glass-ceramics are described as "materials whose thermal coefficient of expansion is magically near zero," and Corning's material is called "Ultra Low Expansion Quartz." Neither statement is correct. The Corning material is prepared by flame hydrolysis from halides of titanium and silica in such proportions that the condensate is a true solution of TiO_2 in SiO_2 (1). Quartz plays no part in this process, either as a raw material or as a characterization of the final product, which is completely amorphous, that is, a glass and not a glass-ceramic.

"Magically" near-zero thermal expansion coefficients are not an intrinsic property of glass-ceramics, many of which have high expansion coefficients; nor is a near-zero coefficient unusual or unexpected in glasses. Indeed, data from the University of Arizona Optical Sciences Center (2) indicate that, between 0° and 300°C , the ex-

pected dimensional change of a ULE[®] glass mirror will be less than one-third the dimensional change in a Cer-Vit mirror, since the measured excursions in this temperature range are, respectively, $9 \times 10^{-8}/^\circ\text{C}$ and $32 \times 10^{-8}/^\circ\text{C}$.

DORIS L. EVANS
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Cholesterol in Eggs

Although to our knowledge no evidence is available in the scientific literature, recent releases in the popular press infer that eggs laid by the Araucana fowl ("Easter egg chicken") are lower in cholesterol than eggs routinely available to the consumer. As a result, individuals have been eating Araucana eggs in an effort to lower their intake of dietary cholesterol.

At a recent meeting of the technical committee of the Southern Regional Poultry Breeding Project, data on the cholesterol content of eggs laid by various populations of Araucana fowl were discussed. In no instance was the cholesterol content of Araucana eggs found to be lower than that of eggs laid by strains of domestic fowl. We believe that these data, the result of independent studies at six separate laboratories, provide evidence to disprove the myth that low cholesterol levels are found in eggs from the Araucana fowl.

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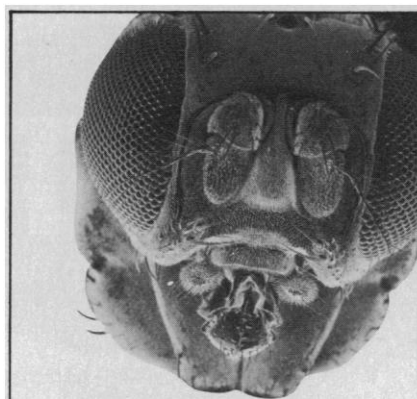
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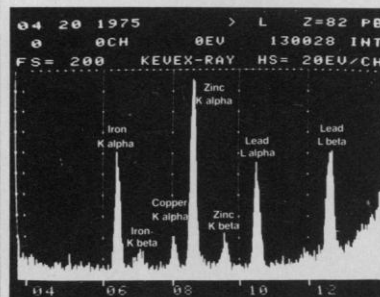
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Budget Priorities: Science a Big Loser?

This is the season for falling leaves, quick frosts, and budget making. In the bastions of the Old Executive Office Building close by the White House, the lights burn late as President Ford's next budget is painfully assembled. Secrecy reigns, as it always has.

But for budget watchers there are ominous clues to what may happen. Policy-makers in the Administration, confronted by spectacular deficits and promised tax reduction, are striving desperately to stem the rise in spending. In ranking priorities when shares of the budget must be rationed, federal agencies tend to see science as "soft" and discretionary—a view too often echoed in the White House and the Executive Office. Thus, as the Office of Management and Budget passes sentence on the agencies' requests, funds for scientific research now stand in jeopardy. The early signs say, in fact, that science is in a good deal of trouble. Basic research, for which federal support has already declined by nearly 20 percent since 1967, is in the most trouble, and matters have been made worse by the punishment meted out to the National Science Foundation's current research budget by Congress.

If scientists have difficulty understanding politics, it is little wonder. A few weeks ago, at the presentation of the National Medals of Science in the East Room, this year's Honors List heard glowing tributes to science. And a few weeks hence there will be a bill-signing ceremony heralding the triumphant return of a Science Adviser to the White House. The budgetary earthquake will soon follow. Medals and advisers may prettify science, but they do not compensate for weakened research capacity and crippled potential.

At this early stage in decision-making on the new budget, not everything is clear. However, indications are that research which is not mission-related—that is, directly and closely germane to agency assignments—will suffer. University-based research is likely to be squeezed out in favor of work in government research and development centers. All this may be meant to be a strategy for maximizing research efficiency and payoff on the budget dollar. It may also be seen as a way to inject more conservatism into the selection of research projects. If this is how the script is being written, its emphasis is on management criteria at the expense of scientific choice. For much of this, science can thank the political critics who have spent so much time ambushing and ridiculing research projects with titles that are easy to burlesque.

Science cannot expect to be exempted from all the consequences of the government's fiscal crises. But neither is it right for government to walk away from its commitment to science, much less be taken in by its detractors.

If the impact on science of the Administration's budget strategy is to be lightened, time becomes a factor. It will be too late when the final decisions are locked into the Budget Message. By then, the lines will have been drawn between the Administration and the Congress. Now is the time to forestall a major mistake after which it could take a decade for a depleted research enterprise to recover and rebuild.

Cutting back federal expenditures by \$28 billion, which is Mr. Ford's objective, may indeed make it possible to reduce taxes by the same amount. But with 75 percent of government's expenditures already "relatively uncontrollable," it will take a meat-ax to do it. Scientific research is an inviting target. Unless it is defended promptly and effectively, the United States as a learning society faces a stricken future.—WILLIAM D. CAREY, *Executive Officer, AAAS, 1776 Massachusetts Avenue, NW, Washington, D.C. 20036*



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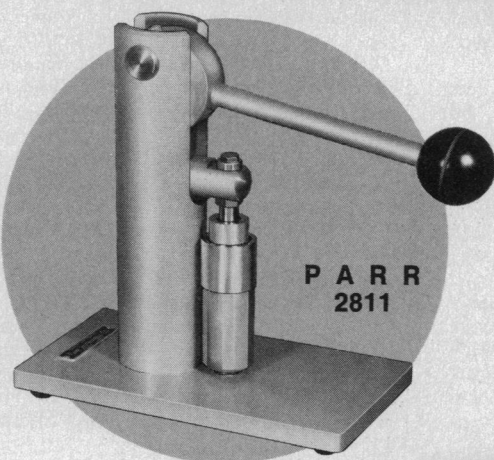
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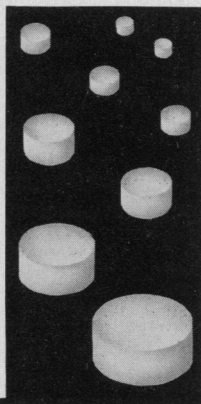
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