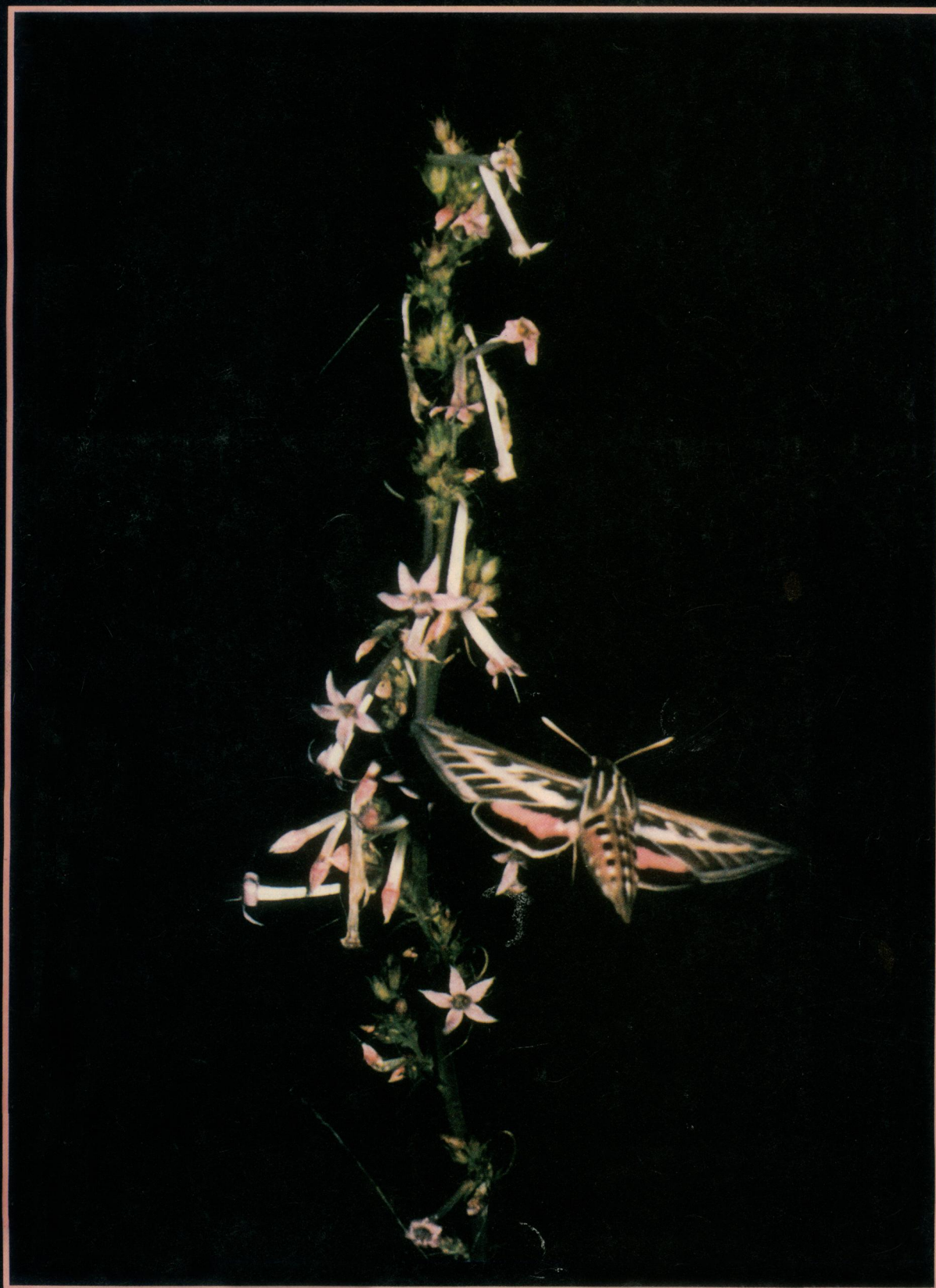


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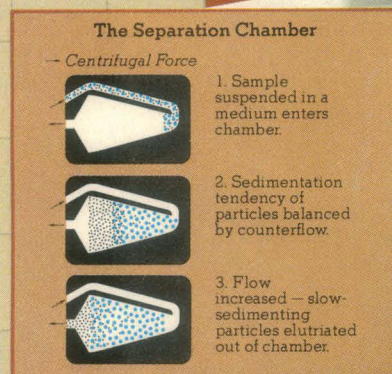
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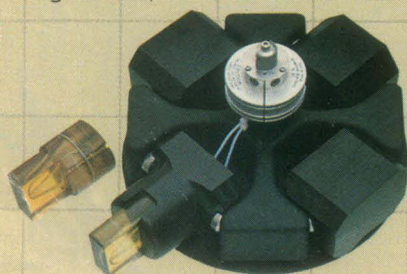
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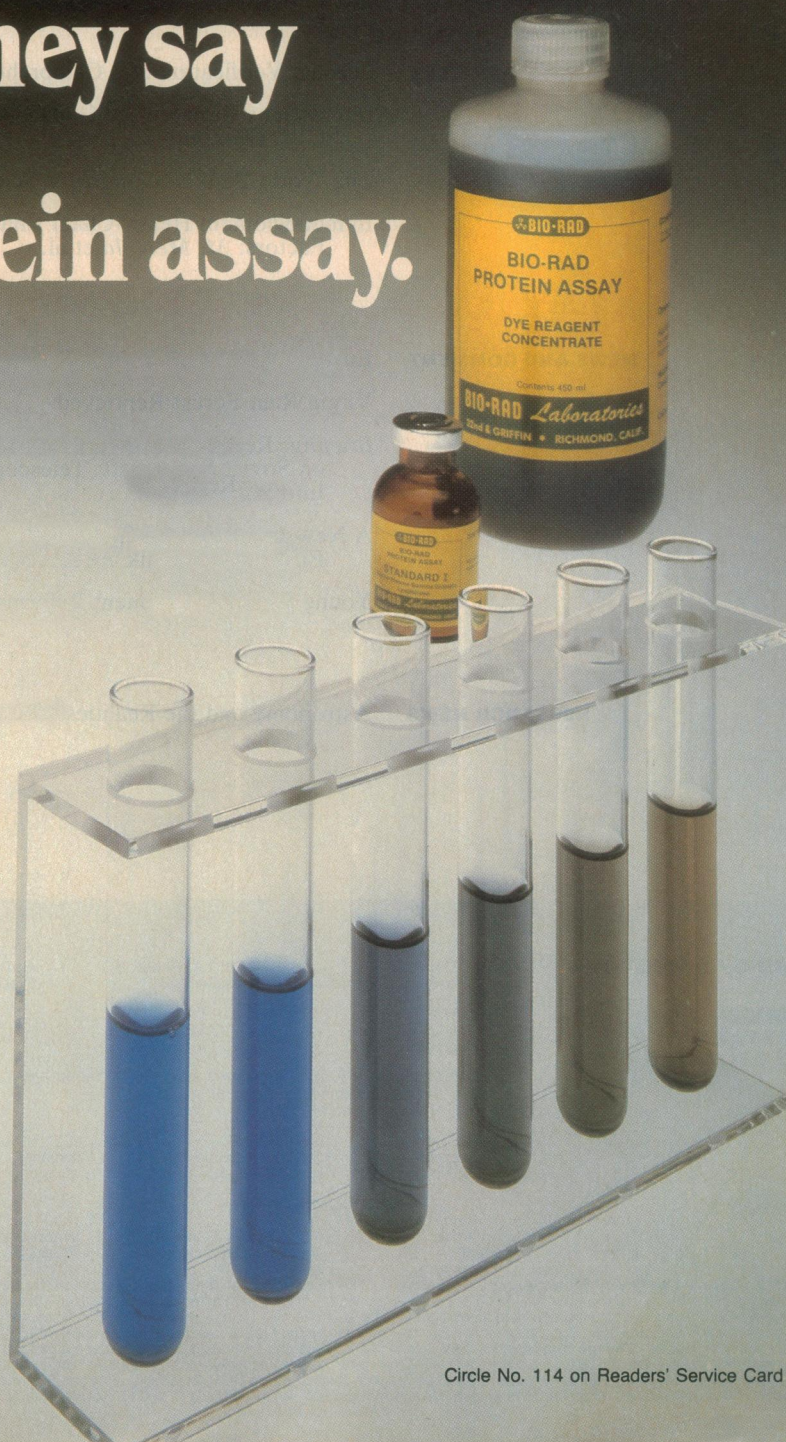
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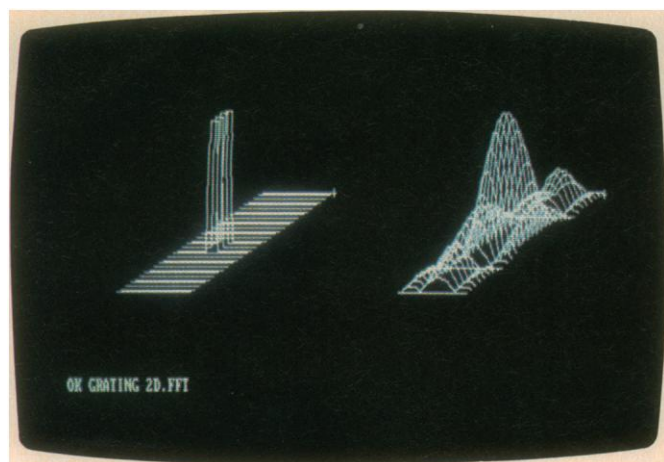
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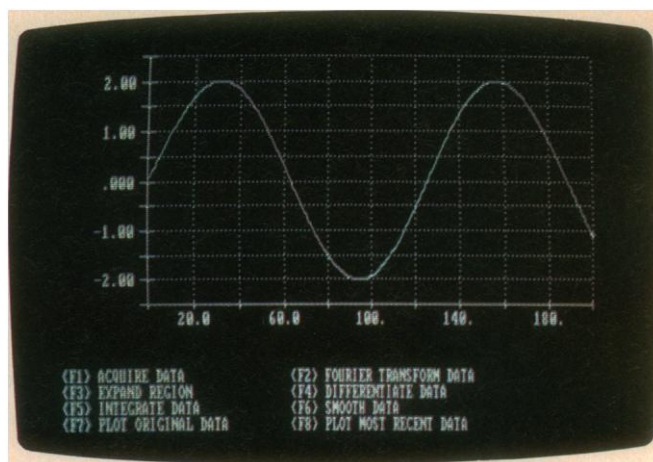
## COVER

Hawkmoth, the white-lined sphinx (*Hyles lineata*), visiting a light pink individual of scarlet gilia (*Ipomopsis aggregata*) during a nocturnal foraging bout. Individual plants and populations of scarlet gilia shift from darker to lighter corolla colors during the flowering season, permitting plants to track different floral color preferences of the changing pollinator species. See page 315. [Ken N. Paige, Department of Biological Sciences, Northern Arizona University, Flagstaff 86011]





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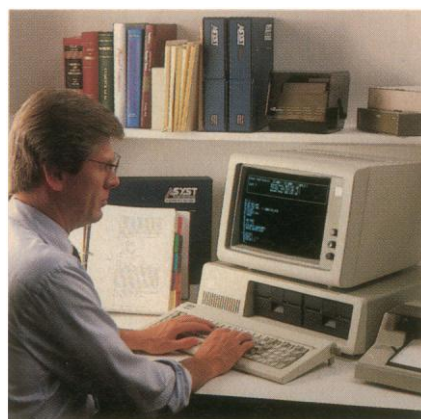
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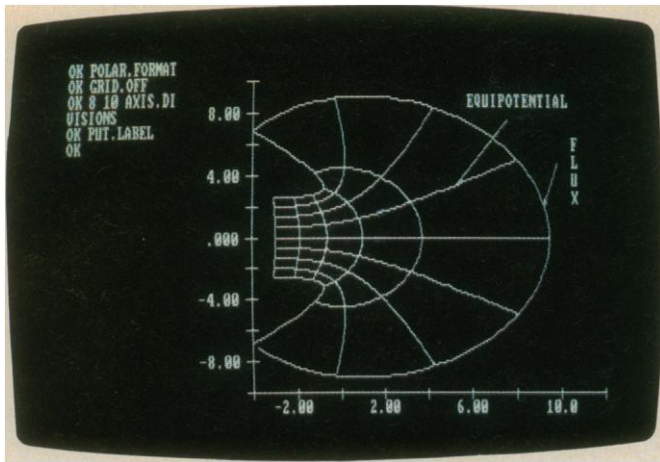
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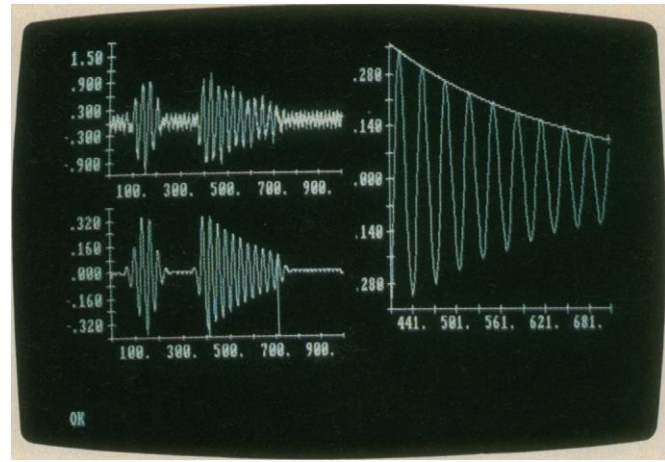
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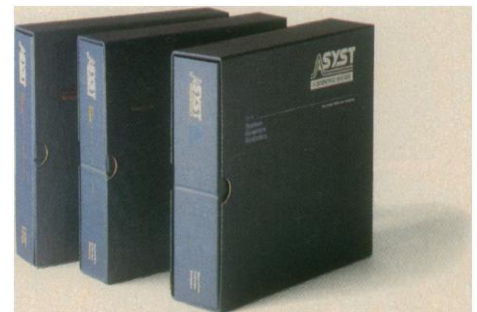
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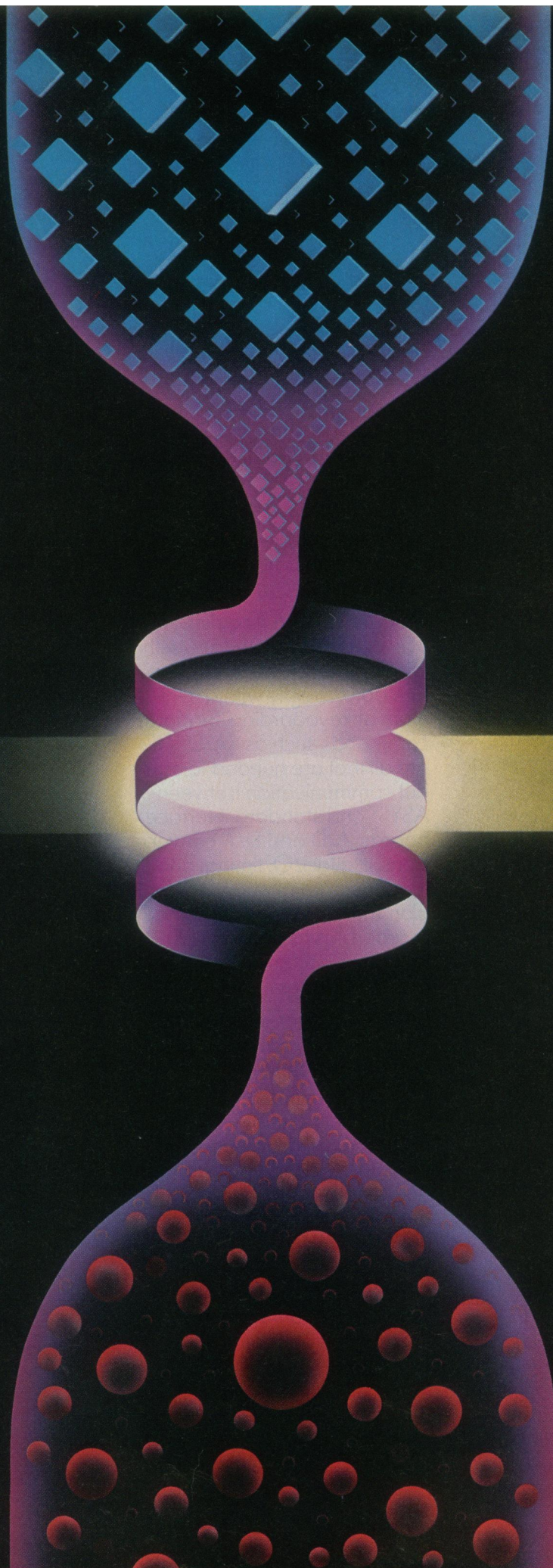
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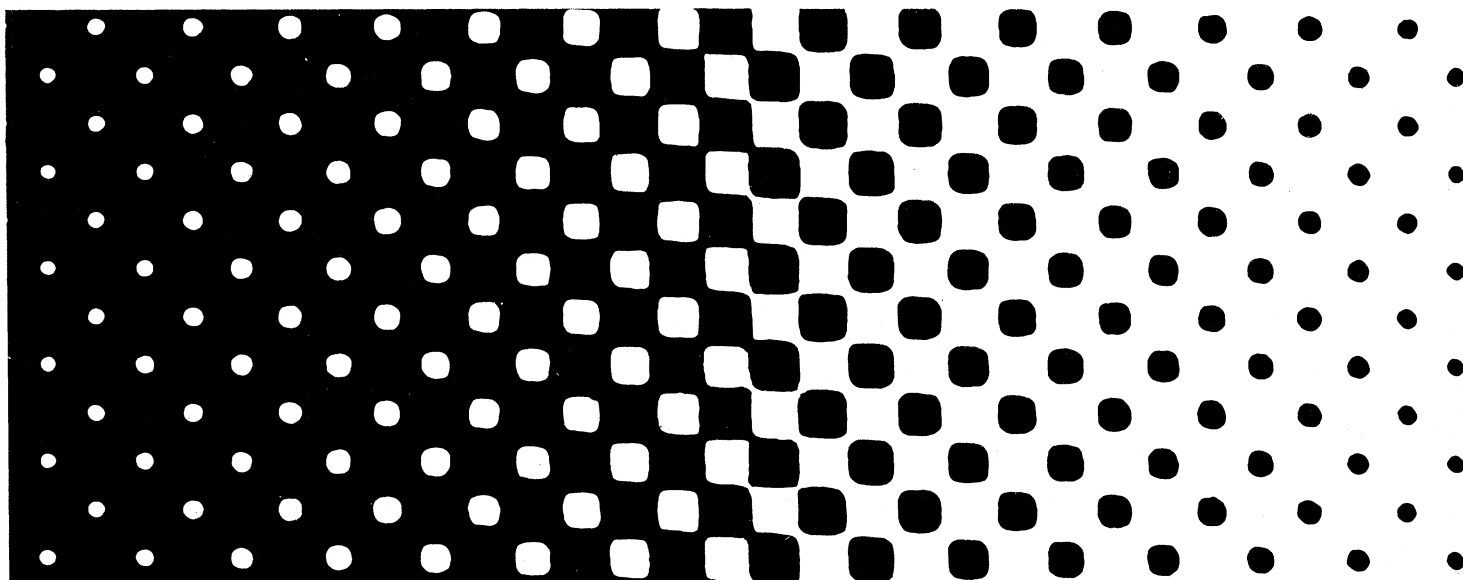
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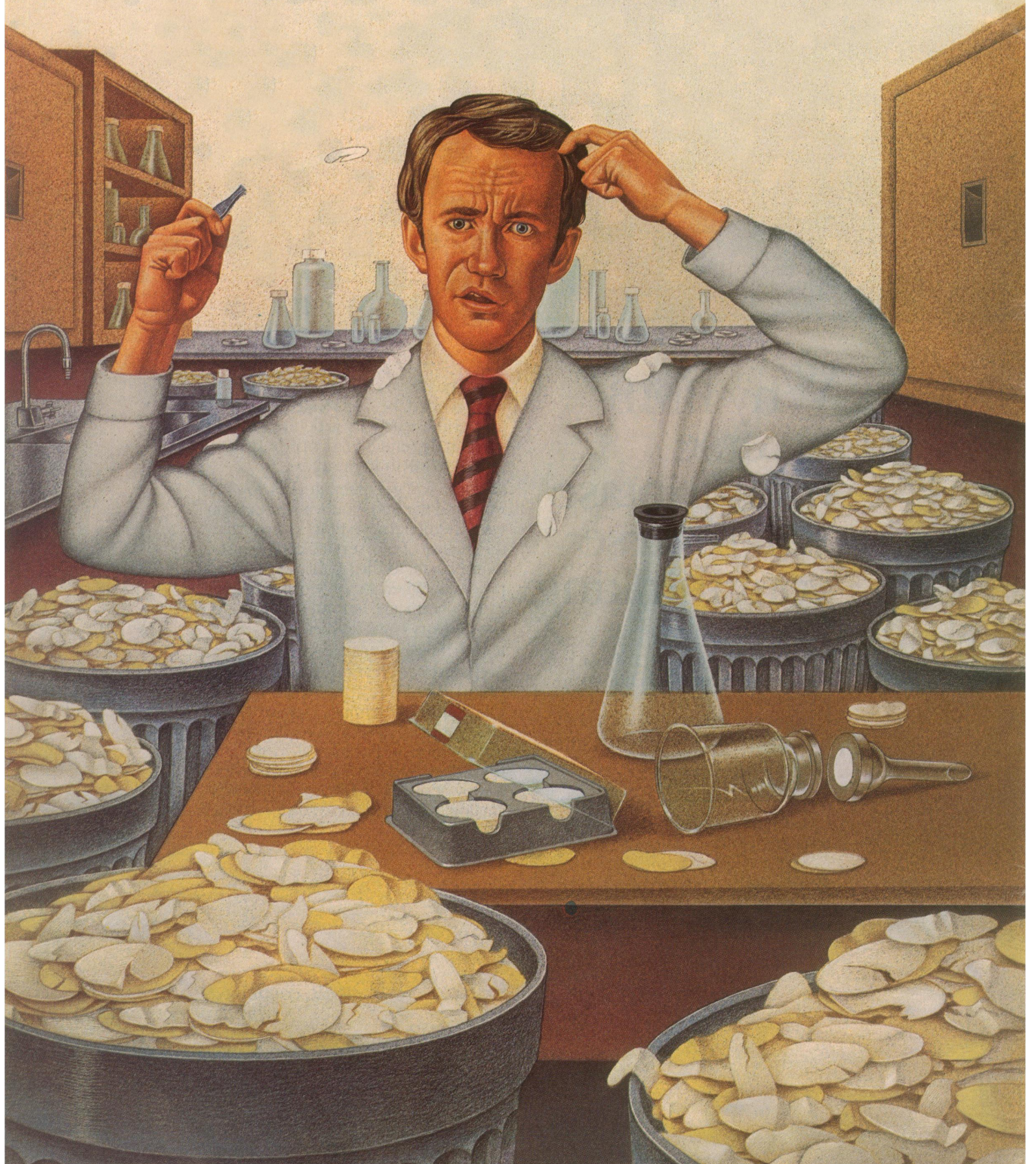
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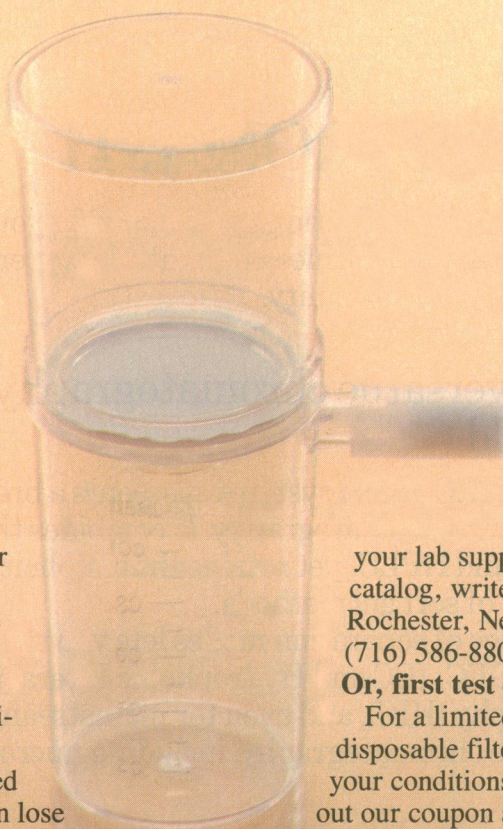


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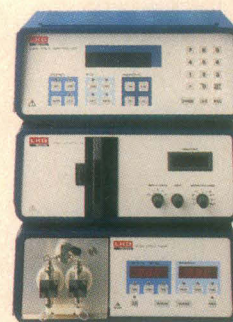
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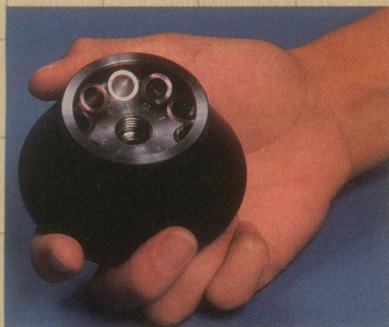
Operates at ambient  
temperature or in a cold room

Rotor is air driven by laboratory  
compressed air or separate  
compressor

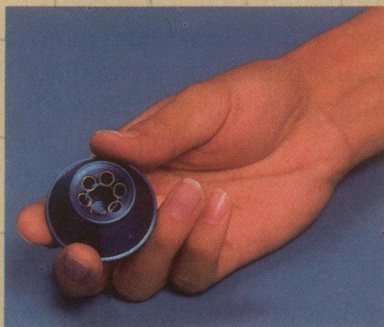
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rotors for EM and lipemic serum  
clarification; batch rotor

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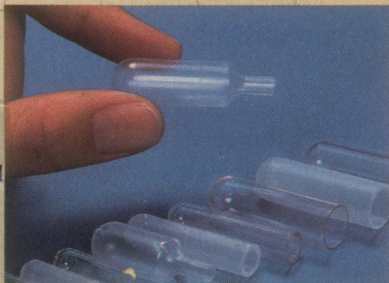
Choice of 5 tubes and 4 tube  
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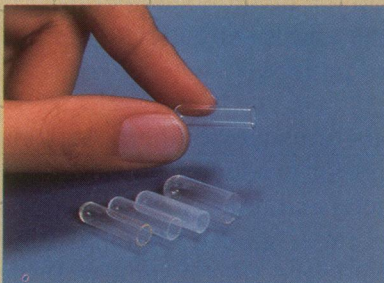
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## SCIENCE / SCOPE

Satellite images have led to the discovery of a large Mayan city hidden for centuries by the jungles of Mexico's Yucatan peninsula. Scientists uncovered over 100 possible ancient sites by studying false-color images provided by Landsat earth resources satellites. Jungles typically are made to appear bright red in these pictures. The ruins appeared pink or light red, because foliage had not grown as densely over the sites as it had in the neighboring jungle. The Landsat images also revealed the existence of vast farmed fields that may prompt new theories of how the ancient civilization was able to feed itself. The imaging instruments aboard the Landsat satellites, called multispectral scanners, were built by the Santa Barbara Research Center, a Hughes Aircraft Company subsidiary.

Mexico is a step closer to its own domestic communications system after taking delivery of a satellite control facility. The system will consist of two Hughes HS 376 satellites and the control facility, which will monitor the spacecraft as they are maneuvered into geosynchronous orbit 22,300 miles above the equator. The facility is being installed in Iztapalapa, a suburb of Mexico City. Upon completion, a Hughes support team will remain for 18 months to train Mexican engineers and technicians. The program, called Morelos, is named after a Mexican patriot of the early 19th century. The satellites are scheduled for launch from the space shuttle in May and November.

A high-frequency tactical Manpack radio used by all branches of the U.S. military is proving its reliability in the field, operating on average more than 4,000 hours between failures. The AN/PRC-104 high-frequency radio makes extensive use of large-scale integrated circuits, conservatively rated components, and proven military equipment packaging techniques. Should it need repairing or maintenance in the field, an operator can replace any of the three basic subsystems in seconds. The average repair time in the field is less than 20 minutes. In production at Hughes for the U.S. Army, Marines, and Air Force, the radio is available for international needs.

Improvements to a "super cooler" used with infrared sensors in space will extend the life and boost the efficiency of the device. The cooler, vital to defense applications and geological surveys, is a Vuilleumier cycle cryogenic refrigerator. It is designed to chill sensors near absolute zero to increase their sensitivity to thermal radiation. These coolers are ideal for use in space because the low internal forces required by this kind of cooling cycle cause little wear on bearings and seals. Hughes is working under a U.S. Air Force contract to extend the unattended operating life of the cooler beyond five years. The cooler will use less power, so smaller and fewer batteries are needed to power the device during eclipse periods—a saving of hundreds of pounds.

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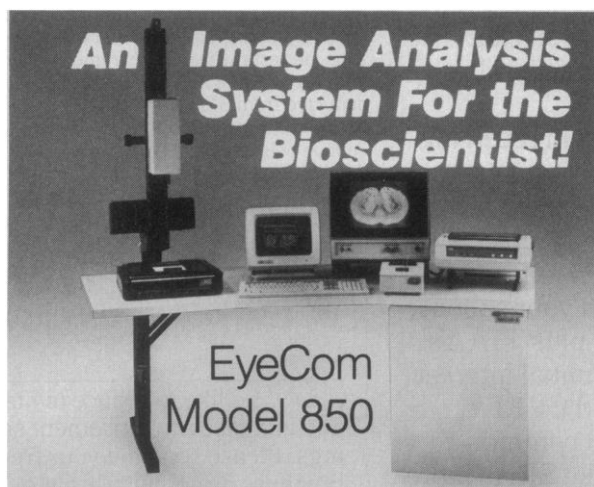
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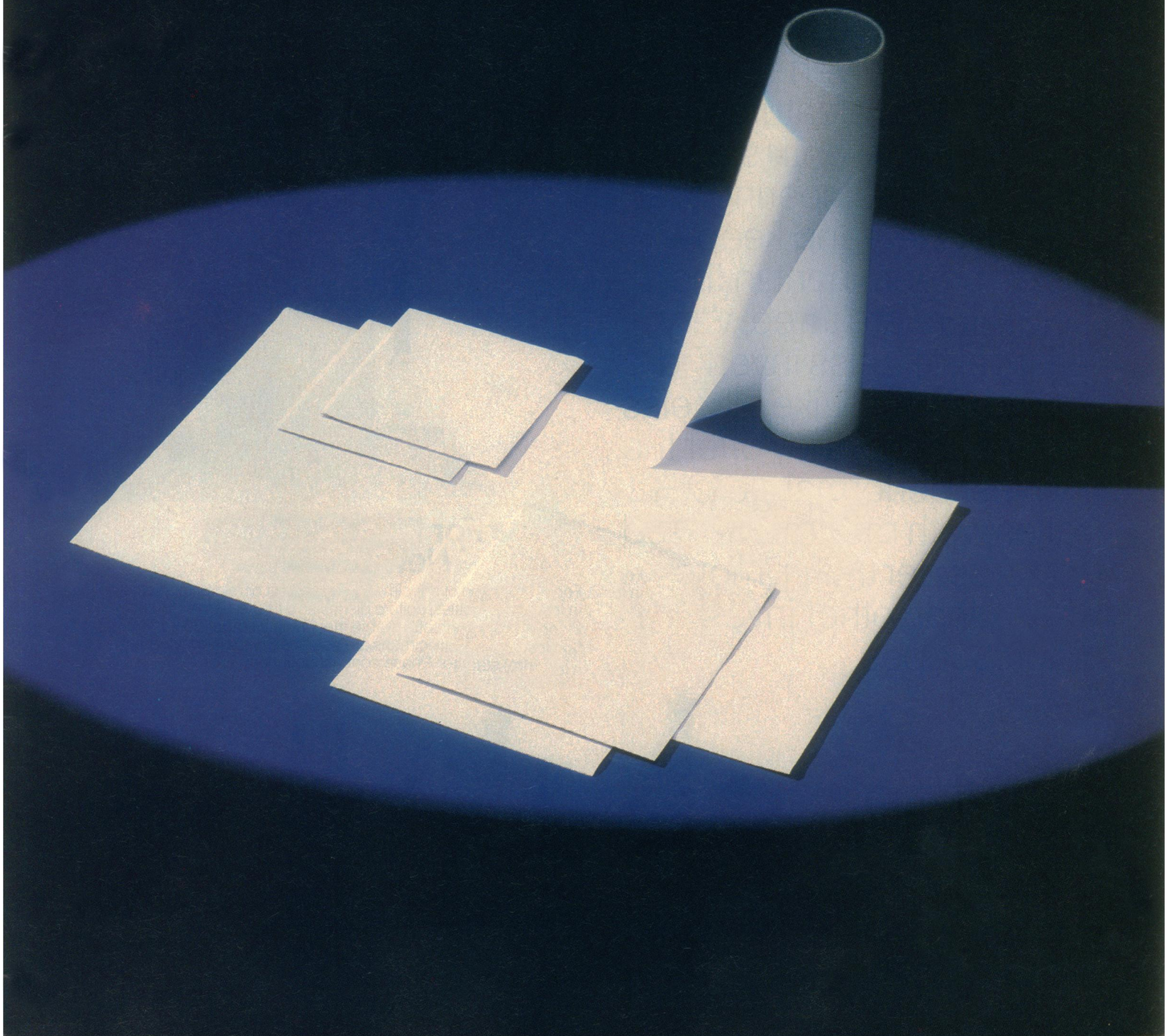
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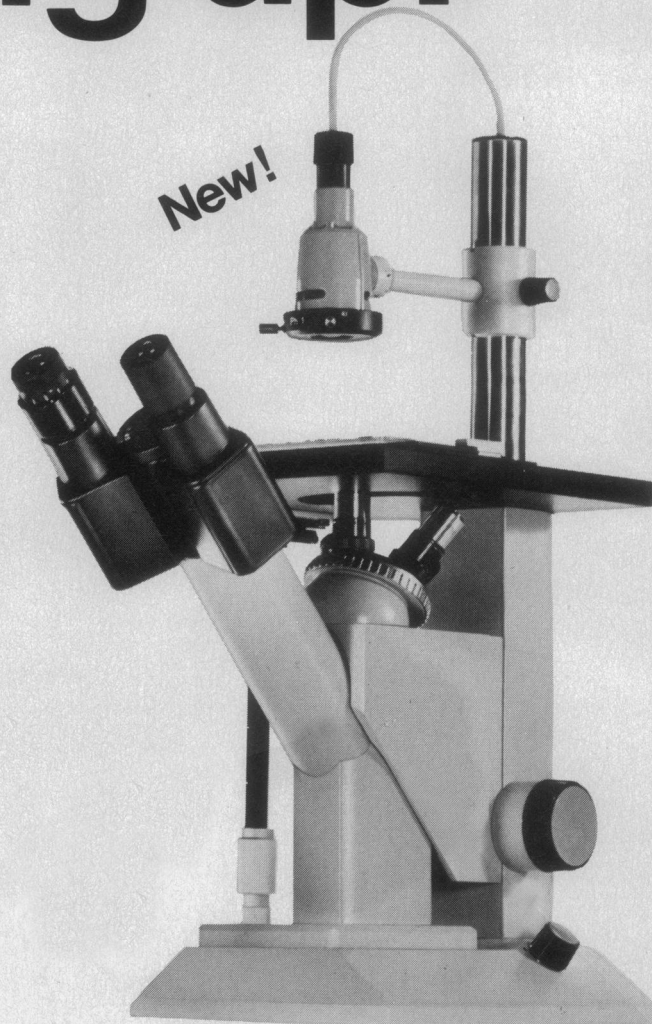




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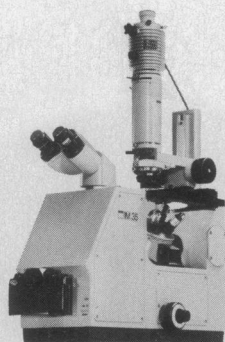
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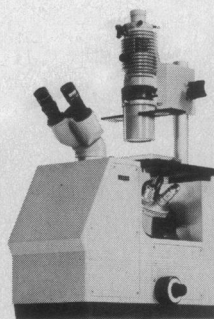


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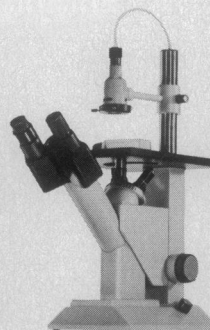
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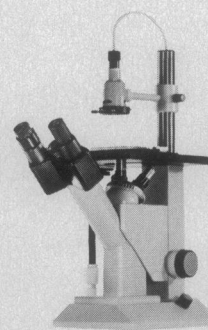
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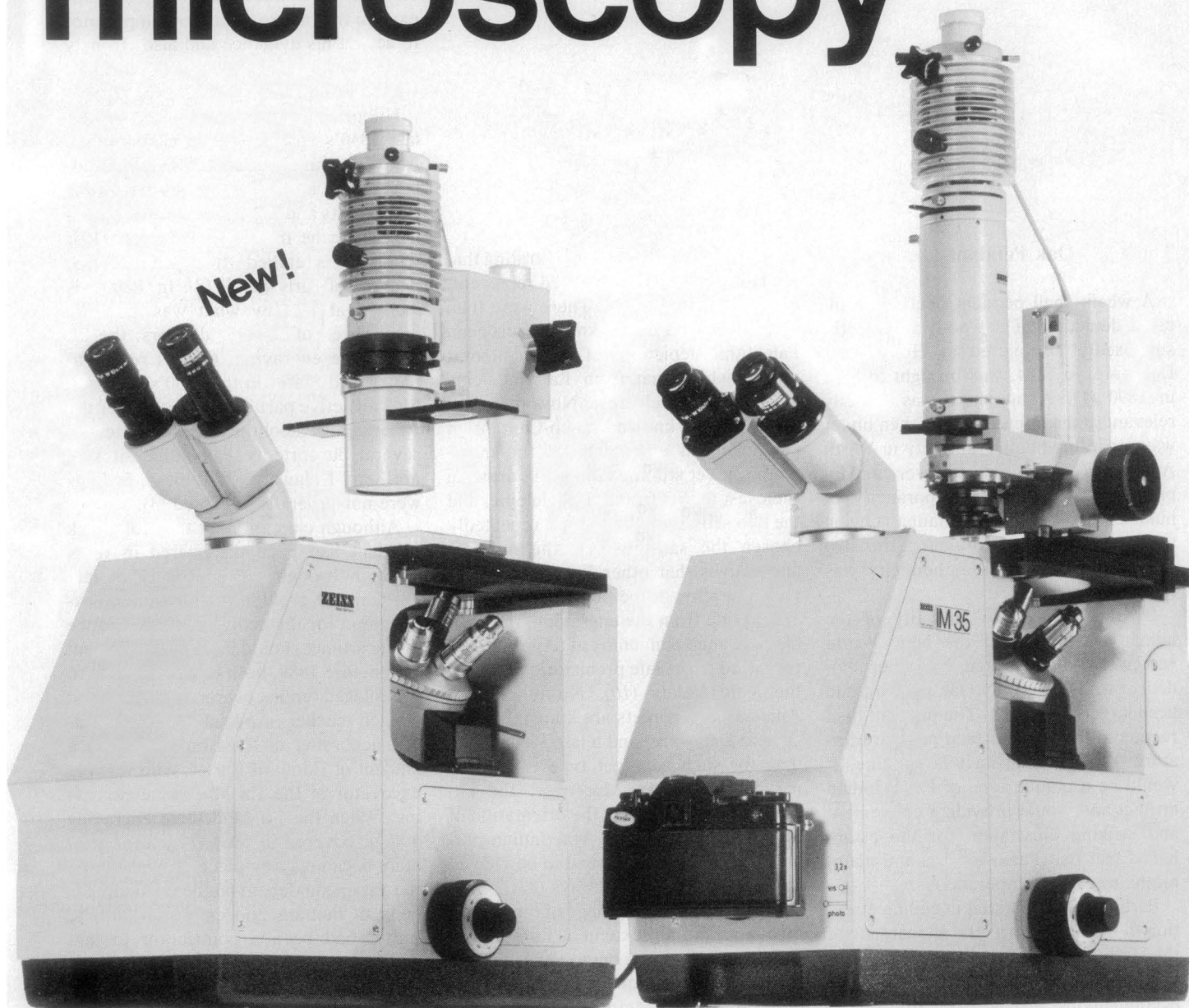
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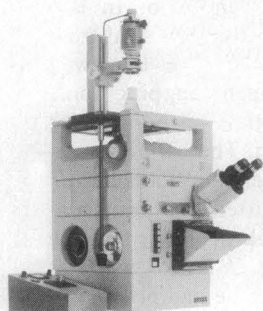


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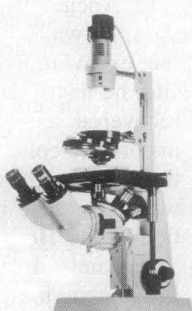
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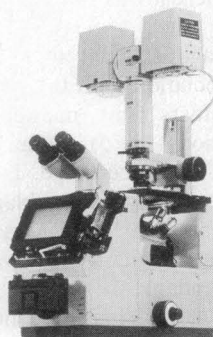
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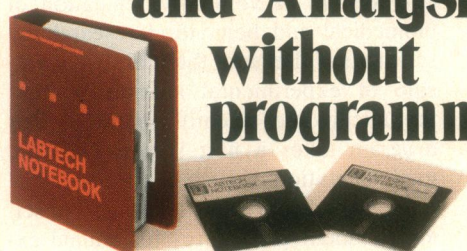
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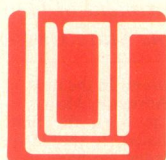
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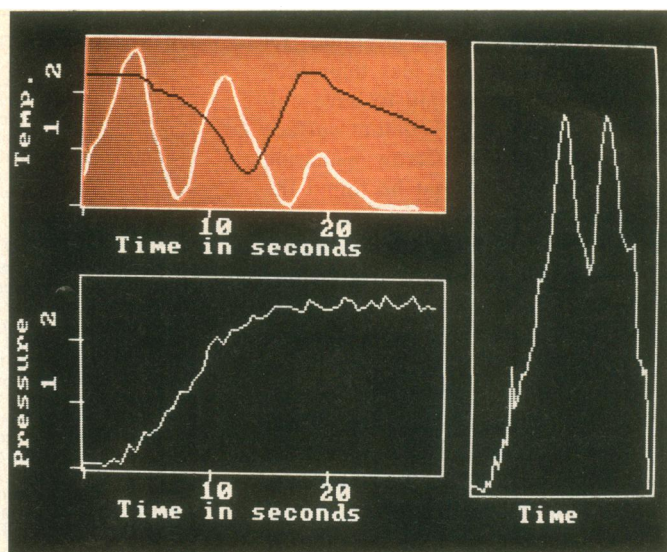
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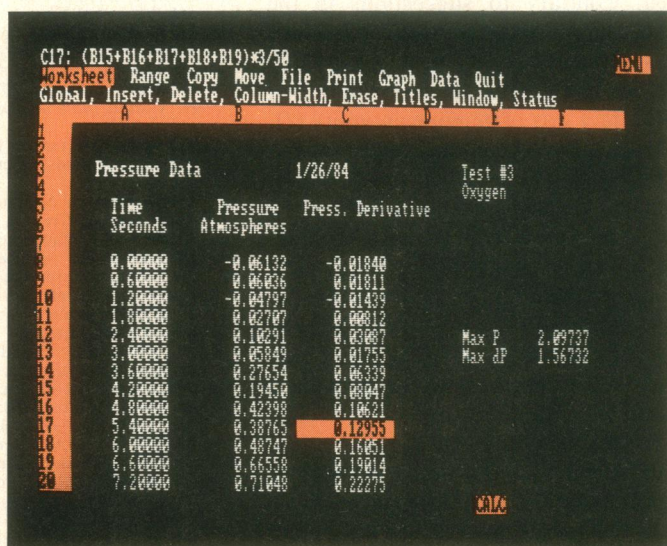


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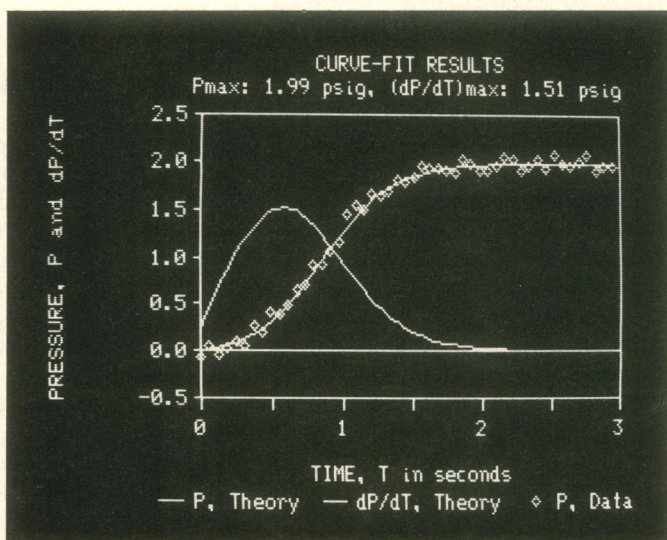
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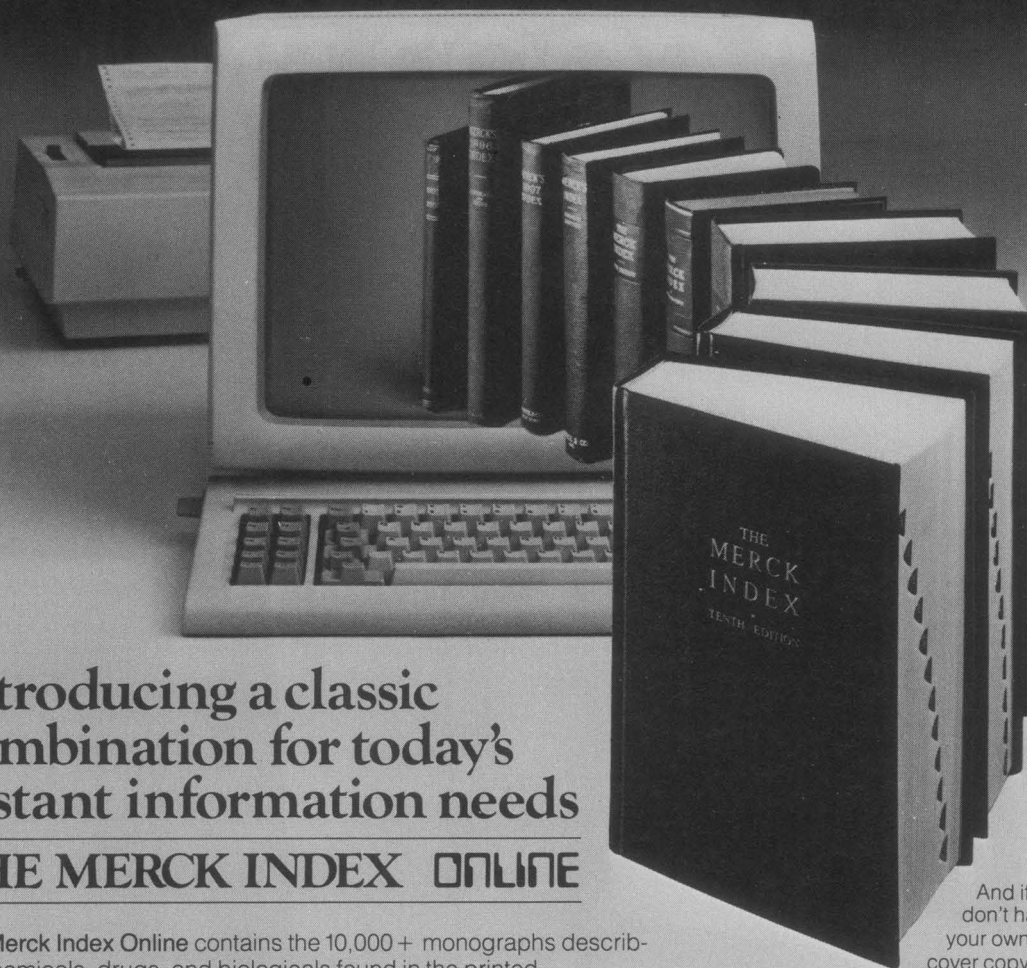


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## An Editor's Quest (II)

There is a story that a patient was asked by a psychiatrist, "Do you have trouble making decisions?" The patient answered, "Yes and no." *Science* has a similar problem in regard to its research reports. For every 100 that we receive, we can publish no more than 20 if we are to remain the slim, chic, and portable journal that you see today. Yet most of the manuscripts describe competent studies, well worthy of being published. How will we choose? We will try to select the manuscripts that are most appropriate for an interdisciplinary journal whose readers want to be exposed to the very best in each field. To achieve that goal *Science* is introducing procedures that should result in decisions that are both better and more rapid.

Each week all manuscripts will go out to a member of our newly appointed Board of Reviewing Editors, some of whom are listed on the masthead. The reviewing editor will make an initial appraisal of a paper in terms of interest, quality, relevance to major problems, and so on and give it a rating on a scale from 10 to 1. On the basis of these ratings, the editorial staff will return 60 percent of the manuscripts to the authors within 10 days and send the remaining manuscripts out for further review. It is our intention eventually that all manuscripts will either be returned to their authors within approximately 2 weeks—so that the papers may be submitted elsewhere—or will continue in the reviewing process. Manuscripts that receive top ratings from the reviewing board will have a 50 percent chance of being accepted. As a result of the decrease in the number of manuscripts under consideration, we should become more efficient in the second phase of the reviewing process also. Because of the diversity of *Science* authors, there will be some exceptional cases in which there is no member of the reviewing board with the appropriate expertise. In such cases the editorial staff will select reviewers to make the initial appraisal.

In essence, this selection process is similar to peer review of research grants awarded on a priority score. Manuscripts will be evaluated in relation to others, not on the basis of an absolute standard. The line between the accepted and the not-accepted will involve the same terrible "yes and no" factors that the grant administrator with insufficient funds must face. To some extent the new procedures will increase our work load since we expect, by streamlining the review process, to get ever better manuscripts, and this will make the decisions increasingly difficult. Yet we believe that these changes will make a more exciting journal.

One rule must accompany these changes—no resubmissions. Each author of a returned manuscript can explain to his or her graduate students that "unfortunately we chose the week in which Darwin, Newton, Priestley, and Keynes submitted their own seminal discoveries." That not only will teach graduate students how statistical fluctuations run the world but will help us give this system a chance to function. A second rule is a must—there will be no lobbying or phoning of review board members to influence their decisions. These individuals were chosen for their Solomonic wisdom, their mercurial response times, and their encyclopedic knowledge, qualities achieved by being exceedingly busy scientists.

The final reviewing board will be composed of 40 members whose fields will cover the areas in which *Science* receives the most manuscripts. Half are listed in this issue, and the others will be listed in a subsequent issue. Their judgments will determine the success of this experiment, and *Science* is deeply indebted to them for their willingness to participate.—DANIEL E. KOSHLAND, JR.



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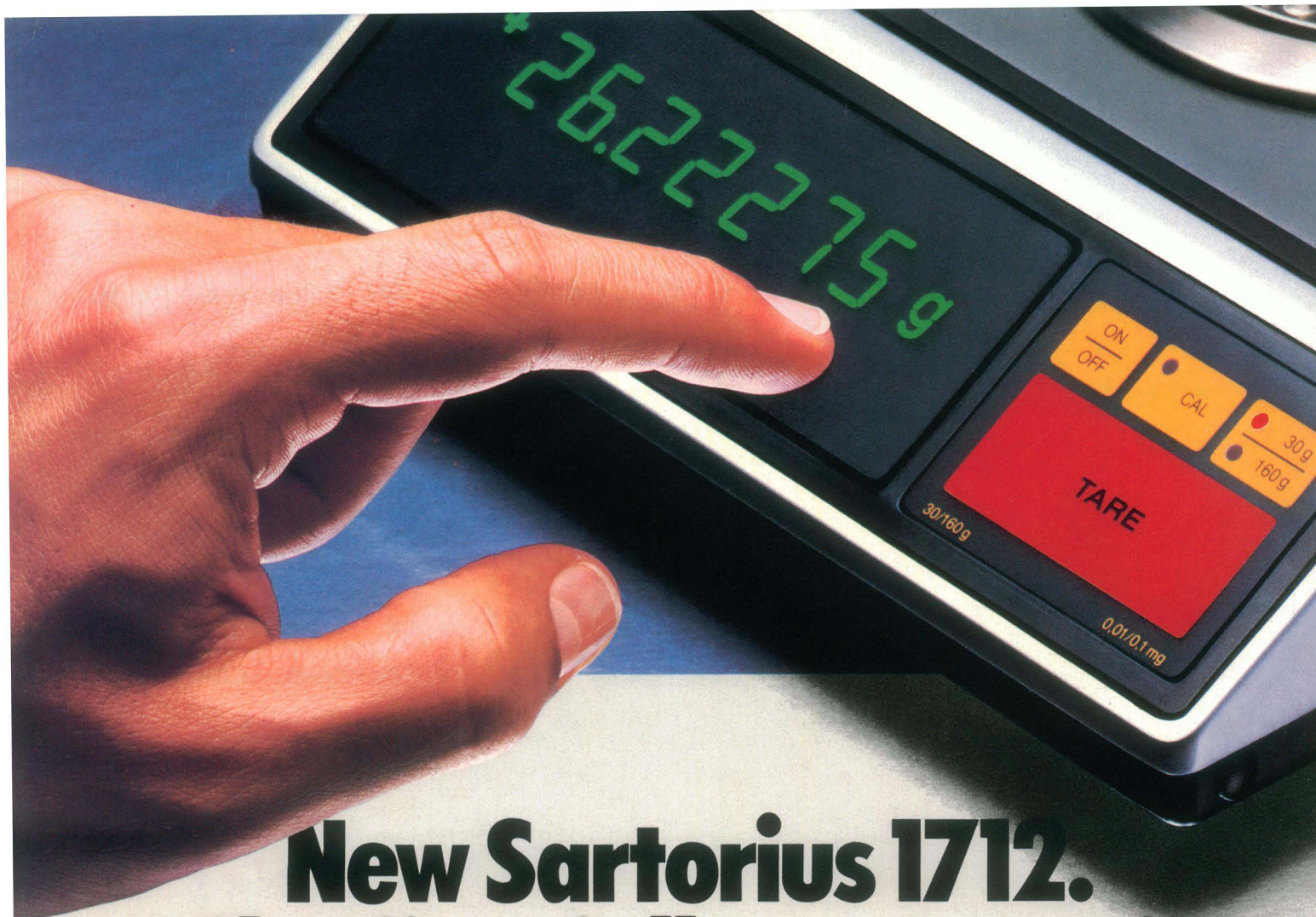
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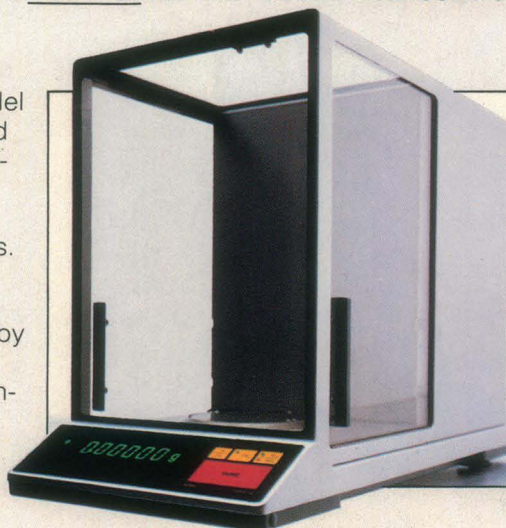




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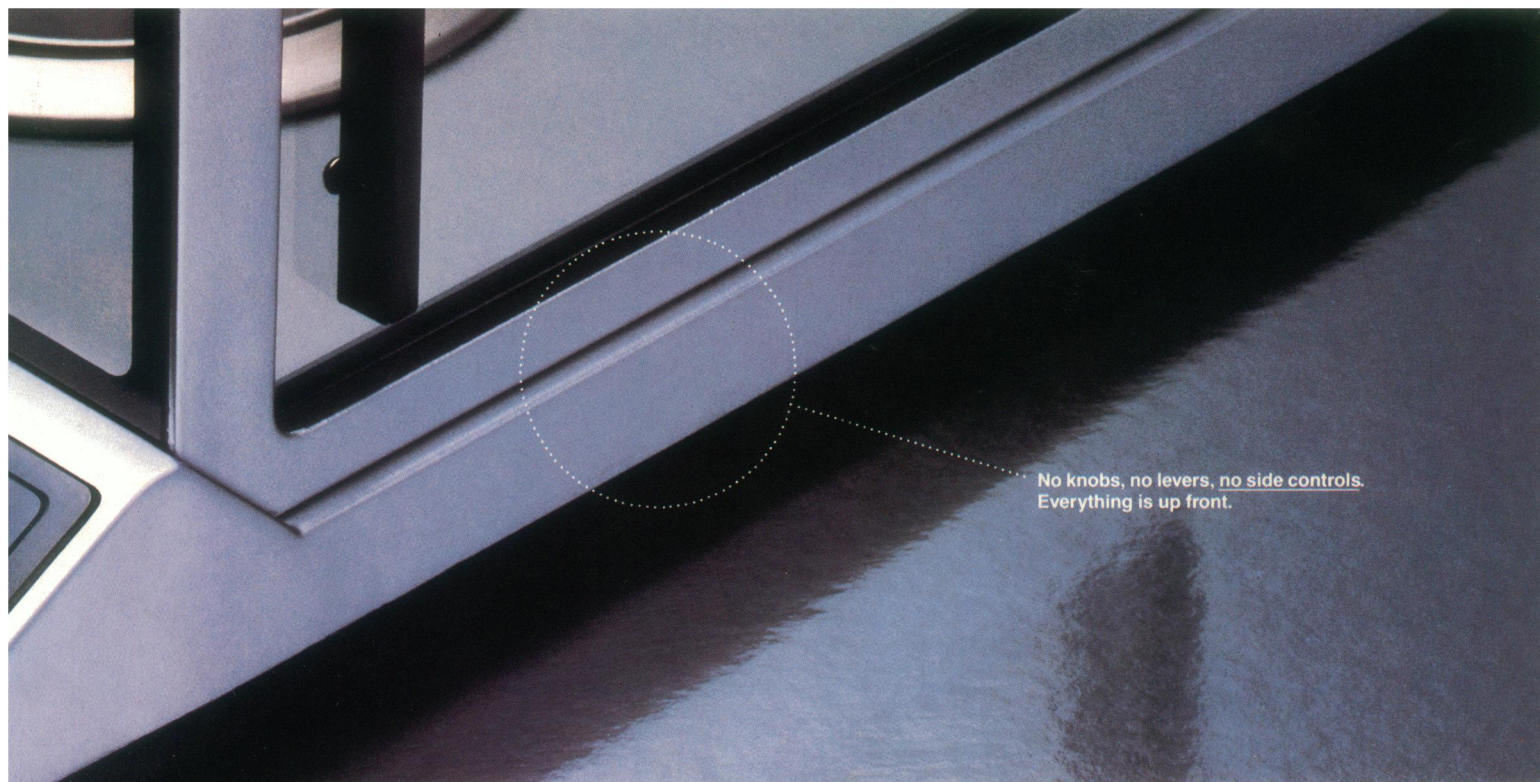


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Semi-micro weighing range, with 0.01 mg readability.

### Really two balances in one.

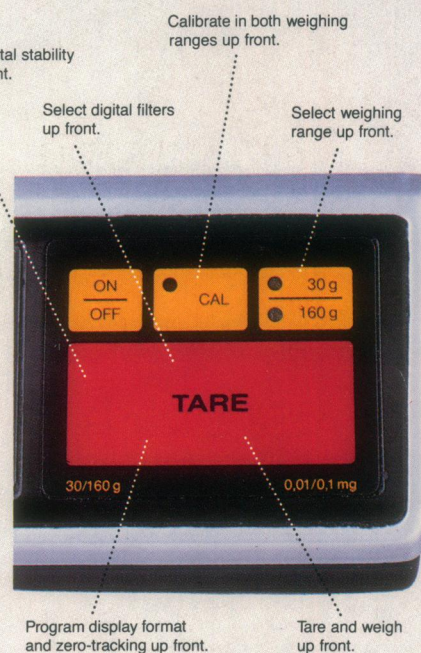
The 1712 can handle more of your weighs because it has two distinct weighing ranges: an analytical range to 160 g and a semi-micro range to 30 g. But it's really two balances in one, because you calibrate it and adjust its operating parameters—digital filter settings, stability ranges, display format, and zero-tracking—separately and independently for each weighing range. You can also expand the 1712's extensive capabilities by adding optional (RS232C) data outputs.

### All weighs precise with fully automatic calibration.

Because of its exclusive dual-range calibration system, the 1712 gives you accuracy and precision that no other multirange balance can compete with. Two separate weights for two separate weighing ranges assure accurate results every time. The 1712 also guarantees stable readings by filtering out interfering disturbances, and it lets you adjust operating parameters with front-panel programming to suit your lab environment. And if a problem arises, the unique AutoCheck feature of Model 1712 will locate it and tell you where it is.



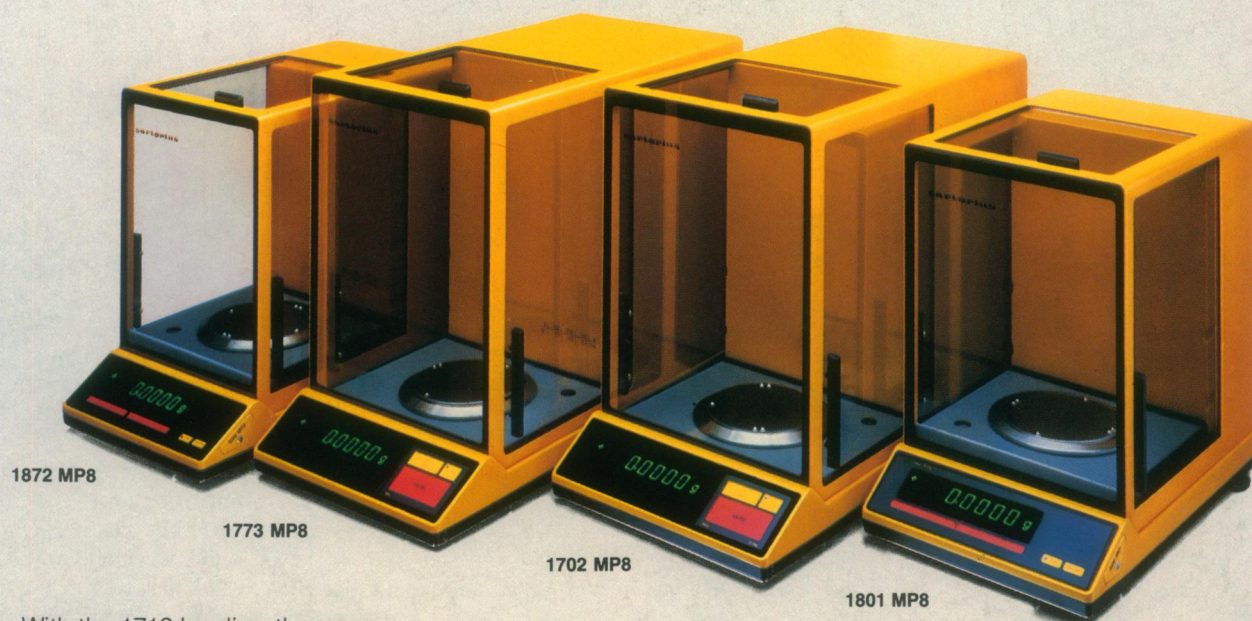
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Technical Data	1702 MP8	1712 MP8	1773 MP8	1801 MP8	1872 MP8
<b>Weighing range</b>	0-200 g	0-30/160 g	0-100/200/300 g	0-110 g	0-60/100/160 g
<b>Readability</b>	0.1 mg	0.01/0.1 mg	0.1/0.2/0.5 mg	0.1 mg	0.1/0.2/0.5 mg
<b>Reproducibility (SD)</b>	$\leq \pm 0.1$ mg	$\leq \pm 0.02/0.1$ mg	$\leq \pm 0.1/0.1/0.25$ mg	$\leq \pm 0.1$ mg	$\leq \pm 0.1/0.1/0.25$ mg
<b>Linearity</b>	$\leq \pm 0.2$ mg	$\leq \pm 0.03/0.2$ mg	$\leq \pm 0.2/0.2/0.5$ mg	$\leq \pm 0.2$ mg	$\leq \pm 0.2/0.2/0.5$ mg
<b>Taring range (by subtraction)</b>	0-200 g	0-30/160 g	0-300 g	0-110 g	0-160 g
<b>Stabilization time</b>	~3 sec	~5/3 sec	~3 sec	~3 sec	~3 sec
<b>Housing (w x d x h)</b>	211x408x313 mm	211x408x313 mm	211x408x313 mm	186x315x270 mm	186x315x270 mm
<b>Weighing chamber (w x d x h)</b>	188x155x253 mm	188x155x253 mm	188x155x253 mm	168x154x207 mm	168x154x207 mm
<b>Pan size/pan clearance</b>	90 mm/246 mm	90 mm/246 mm	90 mm/246 mm	90 mm/200 mm	90 mm/200 mm
<b>Weight (net/gross)</b>	13 kg/15 kg	13 kg/15 kg	13 kg/15 kg	12 kg/14 kg	12 kg/14 kg

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