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SCIENCE

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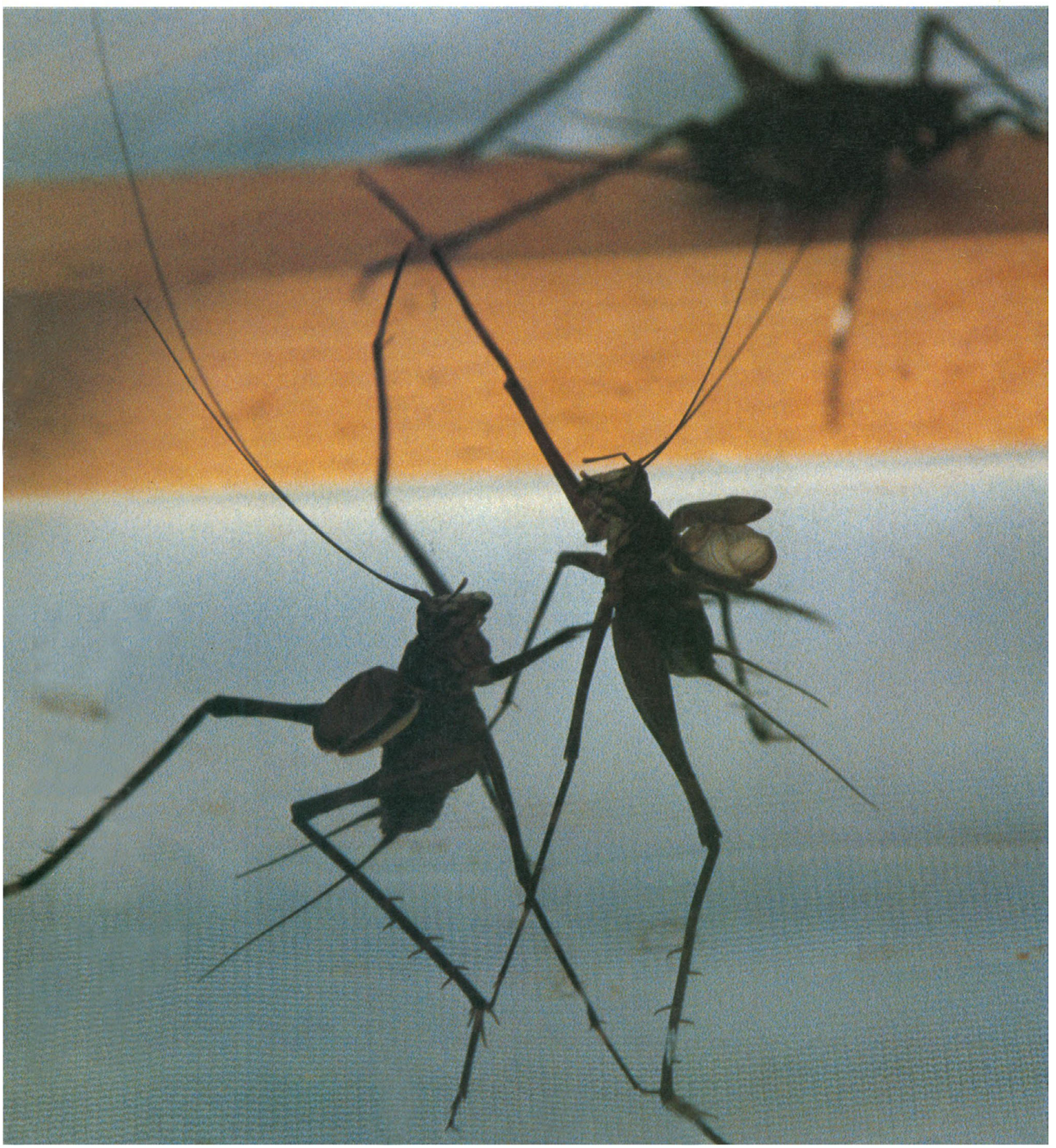

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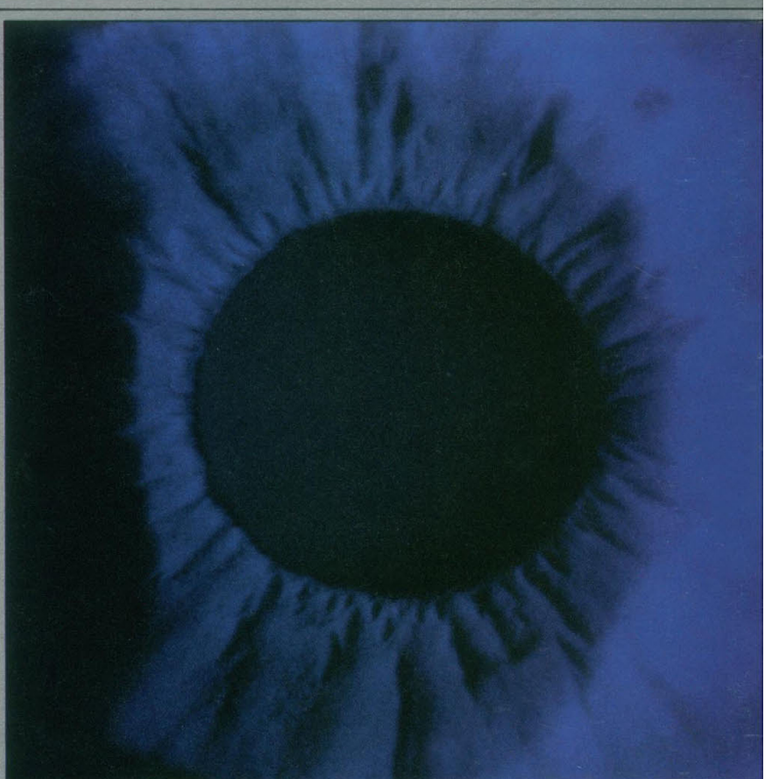

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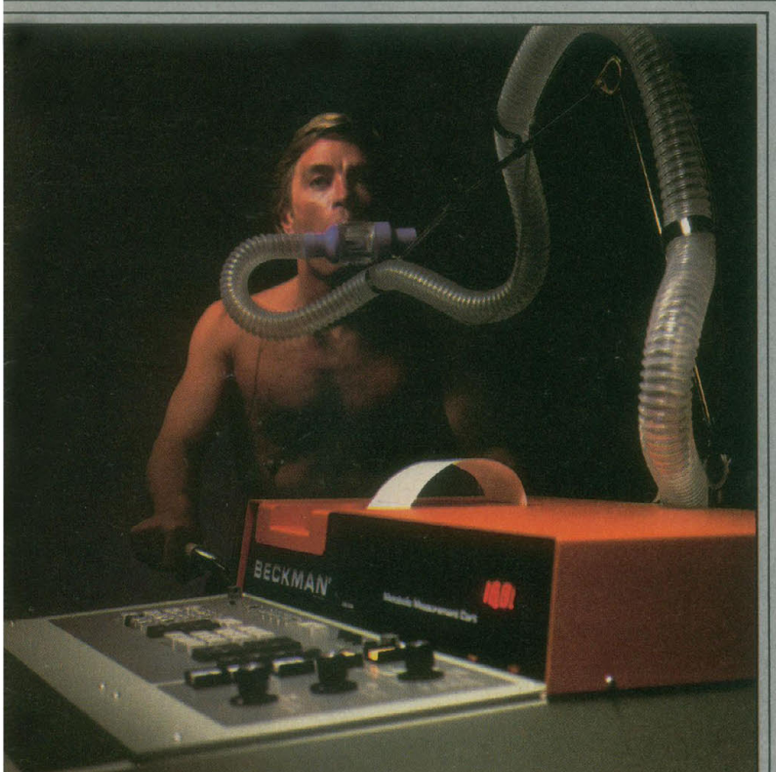

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Male crickets (Gryllidae: *Amphiacusta maya*) fighting. They are chirping, hitting each other, and trying to bite. A female is in the background. In this gregarious species, acoustic signals influence male mating success through intermale competition rather than through female choice. Female choice is a major component of sexual selection in solitary cricket species. See page 580. [C. R. Boake, University of Chicago, Chicago, Illinois 60637]

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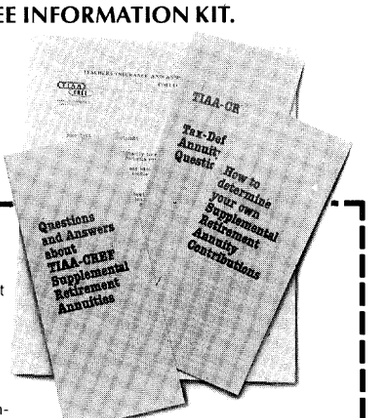

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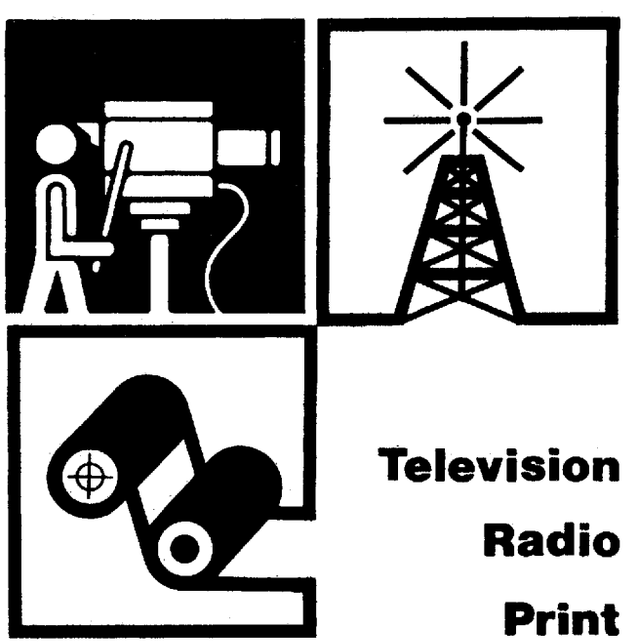

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The aim of this competition is to encourage and recognize outstanding reporting on the sciences and their engineering and technological applications in newspapers, general circulation magazines, radio, and television. The following categories are not eligible: items on the field of medicine, items published originally in AAAS publications or produced by AAAS; reports by employees of the AAAS or Westinghouse Electric Corporation.

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- Each entrant may submit three entries for any one category.
- Each entry must have been published or produced and broadcast within the United States during the contest year—1 October 1981 through 31 December 1982. (In case of a series, more than half of the items comprising it must have been published or broadcast during the contest year.) The date on the issue in which an article appears will be considered as the date of publication. All entries must be postmarked on or before midnight, 15 January 1983.
- Persons other than the author may submit entries in accordance with these rules. Entries will not be returned.
- Winner of the 1981 awards are not eligible for the 1982 awards. Persons winning three times are no longer eligible.
- The Judging Committee, whose decisions are final, will choose the winners. There are five awards of $1,000: for the winning entry in the over 100,000 daily circulation newspapers competition; for the winning entry in the under 100,000 circulation newspapers competition; for the winning entry in the general circulation magazine competition; for the winning entry in the radio competition; and for the winning entry in the television competition. For award purposes, newspaper circulation will be sworn ABC daily circulation as of 30 September 1982. The Judging Committee may cite other entires for honorable mention.
- The awards will be presented at the dinner meeting of the National Association of Science Writers during the Annual Meeting of the American Association for the Advancement of Science in May 1983. Travel and hotel expenses of the award winners will be paid. **Entrants agree that, if they win, they will be present to receive their awards, unless prevented by circumstances beyond their control.**

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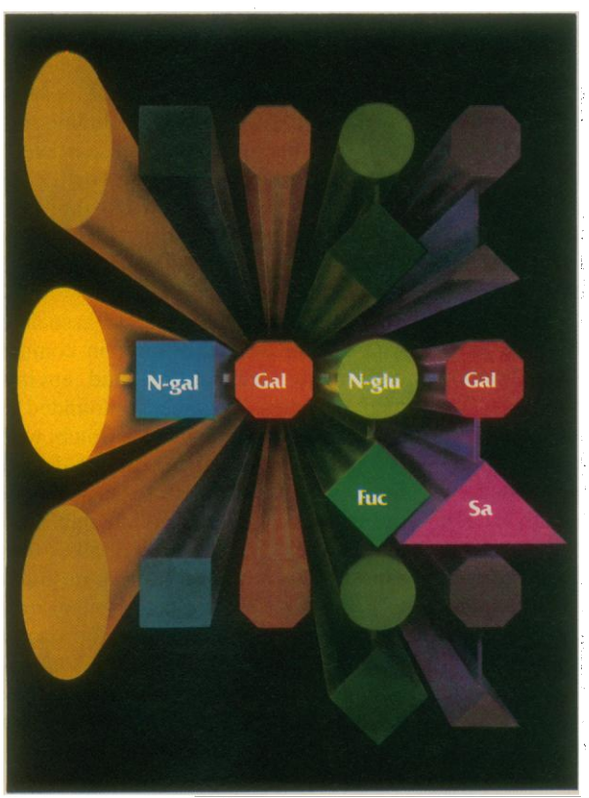

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SCIENCE/SCOPE

The United Kingdom's Royal Navy uses a satellite for its ultra high frequency communications in the Atlantic Ocean. The Royal Navy leases capacity on a Marisat communications satellite, placed in service in 1976. Two other Marisats serve ships in the Pacific and Indian Oceans. Since its inception, a primary Marisat customer has been the U.S. Navy, which uses dedicated, specialized ship-to-satellite and satellite-to-ship UHF capacity for communications for its worldwide fleets. Hughes built the Marisats for a joint venture headed by Comsat General and involving three U.S. international record carriers.

The new thematic mapper aboard Landsat 4 has distinct advantages for mapping vegetation and land covers in comparison to the multispectral scanners used on previous Earth resources satellites. Improvements give the instrument better resolution (30 meters versus 80 meters) and enable it to see in narrower bandwidths. The green band measures reflections from vegetation more precisely. The red band better distinguishes differences in the chlorophyll absorption of plants. The near-infrared spectral band reduces the chances of atmospheric vapor like fog and haze from obscuring land surfaces. Hughes and its Santa Barbara Research Center subsidiary built the thematic mapper for NASA.

The new Intelsat VI communications satellite will be able to grow by roughly three-fourths in mass and power to meet needs into the 1990's. The liquid propellant tank on the basic model will be only partially filled, and there is ample room to enlarge the tanks. Also partially loaded is the solid rocket motor used to kick the satellite into transfer orbit after launch aboard NASA's Space Shuttle. Moreover, the drop-down solar panel can be extended for extra power, the thermal radiator can be lengthened to dissipate heat generated by more transponders, and equipment can be added both on the electronics shelves and in the antenna arrangement. Hughes heads an international team building Intelsat VI for the International Telecommunications Satellite Organization.

Educational TV is being brought to most of Pennsylvania by a new microwave distribution network. The two-channel, two-way network provides public access to educational programming via cable TV. It consists of 22 hops, or relays, that interconnect with the network that had already been operating in part of the state. The Hughes system is operated by the Pennsylvania Educational Communications System, a non-profit organization whose membership includes leading independent cable companies and multiple systems operators. Network programming, called Pennarama, is originated by Pennsylvania State University.

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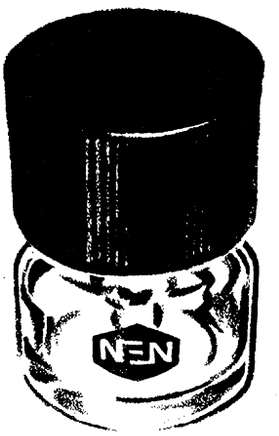

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5 November 1982, Volume 218, Number 4572 **SCIENCE**

Ocean Research in Hot Water

President Reagan's recent decision not to sign has foreclosed, for now, U.S. approval of the Convention on the Law of the Sea. Only three other countries joined in opposition, while 130 countries approved the treaty on 30 April 1982. After drafting changes, the treaty will be open for signature this December. Most nations are expected to ratify it.

It is widely agreed, and indeed has been acknowledged by the President, that apart from the deep seabed mining provisions to which he objects, most of the treaty serves U.S. interests. Despite earlier fears that treaty restraints on research would be crippling, the research provisions are tolerable if administered fairly. The new regime requires the consent of coastal states for research in areas under their jurisdiction, including a 200-mile exclusive economic zone, and the treaty contains principles and procedures to govern the conduct of research in such areas.

Continued access to this 200-mile zone is vital to oceanographers. The circulation there is dominated by the coastal boundary and the shallow depth of the shelf. More than 95 percent of the world's marine fish catch comes from within 200 miles of the shore. About one-fifth of the world's total oil and gas production is from this zone. Both the oceanic processes characteristic of the zone and the level of human activity there place heavy requirements on scientific investigation. This is true for all countries, rich and poor.

The interests of U.S. oceanographers are not limited to domestic waters. Some important phenomena—for example, strong monsoons as in the Arabian Sea—are not available for study nearby. More commonly, comparative study of processes more sharply developed elsewhere gives insight into how they work; an example is the comparison of upwelling off Oregon, Mauritania, and Peru. For such reasons, U.S. research vessels have spent as much as half their time working in regions that are now under the jurisdiction of other countries.

Without U.S. approval of the treaty, the State Department has been unwilling to seek clearance from other governments beyond the unrealistically narrow limits traditionally accepted by the United States. While that position has created difficulties for some research projects, heretofore it could be understood as part of the negotiating process. But now the negotiations on this part of the text are finished, and continuation of the position places U.S. marine science in a most unfortunate predicament. A coastal state that follows procedures spelled out in the treaty will require that requests for research clearance be processed through official channels. But use of those channels will be denied to American scientists. Thus we face an indefinite period when the State Department may be as big an impediment to U.S. ocean research as restrictions imposed by other countries.

Apart from a reversal of the U.S. position, it appears to be possible to remedy the situation. Adoption of national legislation subjecting foreign research to U.S. jurisdiction in a 200-mile zone would permit the United States to recognize similar jurisdiction elsewhere. Bilateral or multilateral agreements might secure access for U.S. research. The United States might explicitly accept the validity of coastal states' claims of jurisdiction over research within the 200-mile zone, to the extent that the claims are consistent with the convention, and might then seek clearance for such research by U.S. nationals.

The last is by far the best approach. The first is overkill, establishing a control over foreign science that we have never sought and do not need. Negotiation of a myriad of special agreements would be awkward and time-consuming. Simple acceptance of jurisdiction, however, would jeopardize no U.S. interests and would free us to get on with studying this vital region of the world ocean. Whatever action is taken, it will most effectively facilitate marine scientific research if it complies with the Convention on the Law of the Sea, which is now expected to become law for the rest of the world.—WILLIAM T. BURKE, EDWARD L. MILES, *and* WARREN S. WOOSTER, *Institute for Marine Studies, University of Washington, Seattle 98105*

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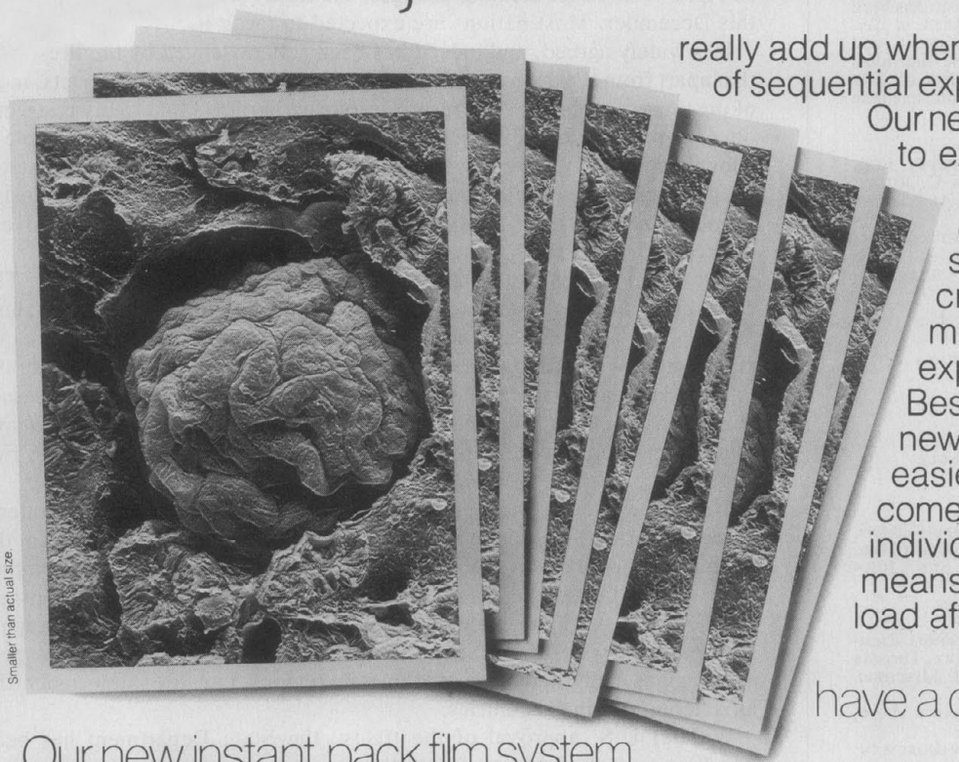

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