

find it necessary to establish graduate programs in order to build strength. It would be relatively simple to follow that route in history. If you go beyond that and do the same in literature, then you're building a university."

From the standpoint of the faculty's opportunity for scholarly pursuits, the lack of graduate programs at the Institute can be partly offset by summer research grants and the like. Some support of this kind has been provided the humanities faculty, and Johnson hopes it can be expanded.

"Tech is hell" is a traditional undergraduate expression, and there is some feeling on the part of the faculty that perhaps the temperature of hell should be lowered. A British Broadcasting Corporation film entitled *How To Be First* has depicted M.I.T. as a place of unrelenting pressure and little humanity. More of an essay than a documentary, the film overstates the case but does present recognizable features of M.I.T. life. The Institute has been making efforts to relieve the campus' physical

austerity by such improvements as construction of a handsome new student center.

Johnson thinks it is also important that the undergraduate's intellectual regimen be improved. "Quiz pressure for quiz pressure's sake" he regards as undesirable. "Students of the quality we have at M.I.T. can bear heavy burdens. M.I.T. should remain a heavily demanding place, but all aspects of M.I.T. life should be meaningful," Johnson says.

Under the leadership of Compton, Killian, and Stratton, M.I.T. has built a tradition of major involvement with the pressing problems of the time. Under the new administration the tradition is not likely to wither. Stratton has identified a number of demanding public concerns, outside the ever-present one of defense, which M.I.T. and other institutions must pursue.

The transformation of the cities under the impact of technology, the crisis in transportation, automation and its impact on the labor force, environmen-

tal pollution—these are examples of problems which, according to Stratton, require the attention of institutions such as M.I.T. because government, industry, and research institutes all lack either the intellectual resources, the incentive, or the capacity for self-renewal that are essential. Johnson, in his 10 years at M.I.T., has grown up in the tradition of "engagement" with the outside world and, as dean of the Sloan School, has made his contribution to it.

In the past, M.I.T. has kept its leadership as a school of technology partly by the sheer weight of its output of highly trained engineers. In the future, as the production of engineering Ph.D.'s at other institutions continues to grow, M.I.T.'s influence will decline unless it maintains its place at the leading edge of technological change. For his part, Johnson has no doubt that the Institute will keep that place, through its selectivity in admitting students, its flexibility in using its resources, and its constant experimentation in program planning.—LUTHER J. CARTER

## Animal Care: The Humane Movement Is Pulling Ahead

Warfare between the research community and the humane movement over the regulation of animals used in research has been carried on for some time, with researchers relatively confident that, while the "dog lobby" was something of a nuisance, it presented no immediate legislative threat. Until recently, that assessment was probably correct: the humane movement was concentrating on efforts to limit the number of animals used in painful experiments and on the amount of pain to which they were subjected, and Congress showed little inclination to make judgments so intimately affecting research. But in the past few months the humane movement found its thalidomide in sensational nationwide exposés of pet thievery and brutality among the animal dealers who supply research institutions.

The result was the creation of a kind

of second front, focusing not on animal experimentation but on animal trading and handling. Public interest is at an incredibly high pitch: the House Agriculture Committee alone received over 20,000 letters following 2 days of hearings this month, and individual congressmen report mail from constituents running far higher than combined mail on Vietnam, inflation, poverty, and civil rights. As a consequence, there seems very little doubt that Congress will approve some form of regulatory legislation this session. The issue now at hand is whether the legislation to control animal suppliers will deflate the drive to regulate experimentation, as the scientific community rather openly hopes; whether it will be the first step in securing such regulation, as part of the humane movement wishes; or whether it will itself be broadened to include some authority over laboratories, as

other segments of the humane movement intend. Behind each of these possibilities is an army of formidable lobbies fighting like cats and dogs as well as about them.

At this writing, prospects are best for the third possibility—a strong bill that would give the Secretary of Agriculture some authority over research laboratories as well as over animal dealers. A number of bills providing for lesser degrees of regulation were considered by the House Agriculture Committee's subcommittee on livestock and feed grains during its recent hearings. But the subcommittee, in action late last week, rejected the weaker proposals and approved the bill introduced by its chairman, W. R. Poage (D-Texas), the second-ranking member of the Agriculture Committee. The subcommittee's action has already won a favorable response from Harold Cooley (D-N.C.), chairman of the full committee, and Cooley has promised quick committee action.

In the Senate, hearings before the full Commerce Committee are scheduled, for 25 and 28 March, on two bills, one introduced by Hugh Scott (R-Pa.) and one cosponsored by Joseph Clark (D-Pa.) and Warren Magnuson (D-Wash.), the Commerce Committee chairman. The Clark-Magnuson bill is

very similar to a bill introduced in the House by Joseph Resnick (D-N.Y.), and the Scott bill is very similar to the Poage bill, and in fact all four bills are quite similar to one another. (Resnick is a freshman congressman who was the first politician to bring the dognapping issue into the spotlight. His upstaging by Poage in the Agriculture subcommittee led one Washington commentator to remark that billnapping as well as dognapping was taking place.) Both bills before the Commerce Committee are heatedly opposed by the scientific community, and individuals are now at work attempting to arrange for a scientists' version of the legislation to be introduced before the committee hearings take place.

Spokesmen for the scientific community are not uniformly opposed to the

provisions of the Poage bill that call for federal regulation of animal dealers. A bill introduced in the House by Representative Ancher Nelsen (R-Minn.) and supported by the National Society for Medical Research (NSMR) (the chief lobby for science on this issue) authorized the Secretary of Agriculture to set standards governing the handling and transportation of dogs and cats by dealers, provided for federal licensing of dealers, and ordered that all dogs and cats be marked or identified, and that appropriate records be kept, to eliminate stealing. All these provisions have their analogs in the Poage bill. But the Poage bill goes much farther. It regulates commerce in vertebrate animals in addition to dogs and cats; the scientists felt such regulation was unworkable and hoped to keep cover-

age limited. It singles out "the sale or use of stolen dogs and cats and other animals for purposes of research and experimentation"; scientists testified that animals are stolen for hunting and other purposes and objected with some passion to this discriminatory feature. ("It's like saying rape is only a crime when committed by Negroes," one scientist complained.) And, most important, it provides for federal licensing of the research facilities that use the animals as well as of the dealers that sell them.

The licensing provision is a route to other federal authority over the laboratories. The relevant portion of the bill (section 5) reads: "The Secretary [of Agriculture] is authorized to promulgate humane standards to govern the handling and transportation of dogs, cats, and other animals by dealers and research facilities, and to promote their health, well-being, and safety: Provided however, That nothing in this act shall be construed to authorize the Secretary to set standards for the handling of these animals during the actual research or experimentation." In other words, the size of animal cages, the amount of exercise the animals get, perhaps the number and qualifications of persons who care for them, and possibly other things, would all be subject to federal regulation. In addition, the Poage bill provides a stiff penalty for willful violations of federal standards, including the cutting off of federal funds.

If the seemingly good prospects for Agriculture Department regulation of animal handling in the laboratories represents something of a defeat for the scientific community, it is not an unqualified victory for the humane movement, whose sympathies still lie, as the scientists rightly suspect, as much with the dog under the knife as with the dog in the crowded cage. The Poage bill reflects most closely the strategy endorsed by Christine Stevens, a rather autonomous center of power within the humane movement. Mrs. Stevens' New York-based Animal Welfare Institute does not have quite the popular following that the larger humane associations have, but Mrs. Stevens herself has energy, charm, intelligence, money, and connections. Her husband, Roger Stevens, has long played an influential role in the financial councils of the Democratic Party and is now, among other posts, chairman of the National Council on the Arts.

Mrs. Stevens, who is almost single-handedly responsible for the 1960 pas-

### Dognapping: More Emotion Than Facts

The prevalence of passion over evidence wherever scientists and the humane movement clash tends to obscure whatever the actual facts about animal trade and handling may be. Every organization seems to have its own figures about both the number of animals used annually in research and the number of stolen dogs and cats. No figures are reliable enough to quote, but it is obvious that expanded government support of research in recent years has greatly expanded the market. Another factor affecting the market in animals is the requirement (under the Kefauver-Harris drug amendments) for extensive animal testing of drugs in the investigational stage.

Most responsible research institutions try to buy their dogs from pounds or from reputable dealers. It is generally agreed that the largest dealers, with which most institutions have their direct dealings, make an effort to handle their animals in humane and sanitary ways. It is the small and middle-sized operators, the feeders of the bigger ones, which are most often accused of cruelty and neglect. Although a few institutions are now attempting to raise their own animals, pound and dealer dogs are vastly cheaper than specially bred dogs would be. As a result, research institutions can afford a heavy attrition in their purchases. The humane societies believe it is this cheap availability of the animals that has led to a lack of interest among research institutions in the condition of the animals they receive.

The extent of pet thievery is another open question. There is absolutely no doubt that house pets do show up in research laboratories: almost every institution admits to having had that experience. There is also no doubt that some of these are stolen. There are, however, a number of other ways they can get there. One is by authorized transfer from pound to laboratory after the specified waiting periods. There is also the possibility of unauthorized transfer, without a waiting period. It is suspected that some pound officials permit this, and that some dealers have keys to pounds. It is also suspected that some pound officials are a bit too enterprising in rounding up "strays," and that they and the dealers deliberately ignore owner tags. Permanent marking of the animals and the requirement that dealers keep accurate records should go a long way toward ending these undercover operations, and federal standards should help to insure that the animals are decently transported and housed—E.L.



This picture was taken by representatives of the Humane Society of the United States during a raid on a Maryland animal farm in collaboration with the Maryland State Police last winter. Photographs of this sort, appearing in *Life* and other national magazines, played a major role in stimulating public interest in the drive for legislation to regulate the animal dealer trade.

sage of the humane slaughter bill (an effort with which Representative Poage was associated), is also a leading supporter of legislation to limit painful experimentation on animals. But, despite apparently widening congressional interest in such legislation late last session, Mrs. Stevens concluded that the time was not yet ripe. And she believed that more would be accomplished, from her point of view, by incorporating whatever degree of laboratory regulation could be obtained into the pet-stealing bill than by holding out for the more comprehensive controls she is still seeking.

Other parts of the humane movement took a different view. Unlike Mrs. Stevens, who supports an animal experimentation bill introduced by Senator Clark and Representative Joseph Cleveland (R-N.H.), most of the humane movement, after a long period of internecine squabbling, has given unified support to the bill introduced by Representative Paul Rogers (D-Fla.), a rising member of the House Commerce Committee. Again unlike Mrs. Stevens, other representatives of the humane movement, including the Humane Society of the United States, believe that legislation of the Rogers type does have a chance of passage this session, and

they are not anxious to see the possibility of strong controls jeopardized by the inclusion of weaker ones in the dealer bills. Representative Claude Pepper (D-Fla.), sponsor of an animal-experimentation bill identical to Rogers', attempted to explain this position to Representative Poage in an effort to persuade him to eliminate laboratories from his bill. In a letter to Poage published in the *Congressional Record*, Pepper stated:

Conditions in the animal supply industry do not appear to call for the same kind of regulation as those found in the research, medical and drug laboratories.

In the dealer trade the problems appear to be identification and recordkeeping to insure that all animals have been legally acquired, and humane and sanitary care during the period that animals are housed and transported by the dealers. These relatively simple problems can be met by regulations establishing minimum standards for environment and care, a system of registration and inspection of dealers' establishments, requirements for recordkeeping and identification, and appropriate administrative machinery and penalties for violations.

By contrast, the problems pertaining in laboratories are far more complex. The stay of animals in laboratories is often measured in months and years as compared to hours and days in dealers' establishments. Standards for one would not be applicable for the other. However, the

greatest problem in laboratories arises in seeking a resolution of the conflicting, emotion-laden approach to a difficult problem by scientists and humanitarians—the problem of using animals in research with a minimum of pain and discomfort and a maximum yield of scientific information. . . .

While section 5 would have some beneficial effect upon the housing and care of animals in laboratories, it would specifically exempt conditions attendant upon their actual use in research. I am convinced that the needs of animals and our moral obligation to them is not met by such provision for partial coverage. I am convinced that a far better answer lies in covering conditions in laboratories [in one bill] and covering conditions in the dealer trade [in another].

Pepper's view, given in a speech to the House, that providing the lesser coverage in the dealer bill "would be prejudicial" to the passage of the more comprehensive legislation is a view that the scientist-lobbyists generally share, although, unlike Pepper, they are pleased rather than displeased by the possibility. Poage took a different position, telling Pepper he regarded "a little of something" as better than "all of nothing," and went his own way.

The scientific strategists, aware of their somewhat ironic coalescence with the humanitarians, are continuing their efforts to detach the laboratory provi-

## 200-Bev Accelerator: NAS Group Picks Six Sites

*As Science went to press on Tuesday the Atomic Energy Commission announced it had received a report from a special National Academy of Sciences committee recommending six sites as possible locations for the AEC's proposed \$375-million, 200-Bev proton accelerator. The AEC said it "now plans to carry out additional studies as may be necessary." The NAS committee selected the short list of sites after reviewing 85 proposals involving 150 tracts in 43 states (Science, 24 Sept. 1965). A key portion of the summary of the Site Evaluation Committee report follows.*

*The Site Evaluation Committee of the National Academy of Sciences was formed to assist the Atomic Energy Commission in the evaluation of sites offered for location of a national center to house the proposed accelerator. After extensive study, aided by many experts, the Committee has selected six sites which, on balance, are clearly superior. Five sites are principally characterized by having either the nucleus of a strong accelerator design group, or one of the nation's outstanding universities nearby. These are: Ann Arbor, Michigan; Brookhaven National Laboratory, New York; Madison, Wisconsin; Sierra Foothills near Sacramento, California; and South Barrington (or Weston), near Chicago, Illinois. The sixth site, Denver, Colorado, has neither the university strength nearby nor the existing design group that is considered desirable. However, the Committee is of the opinion that the combined advantages of excellent geology, accessibility, good climate, and an area already available which is sufficiently large to accommodate any conceivable experiment or expansion are such as to make the site merit serious consideration.*

*The Committee's principal concerns have included the physical properties of the site, the problems of assembling an outstanding staff, and accessibility for visiting scientists who will conduct about seventy-five percent of the experiments. While none of the recommended sites is ideal, each is excellent in at least one of the most important features and within acceptable limits with respect to others.*

sions from the Poage bill in the not very secret hope that even a bill regulating dealers alone would have the deflating effect on the drive for stronger legislation which Pepper predicted. Meanwhile, the scientists are also supporting a bill introduced, as an antidote to the "pain bills," by Representative Edward Roybal (D-Calif.), which is in large measure a proclamation that animals are essential in research. It provides for federal grants for research and training in laboratory animal health, care, and use, and for the establishment of governmental and nongovernmental committees of experts on the subject.

About the only interested parties whose cards are not yet on the table are the drug companies and the federal government. The drug industry, so far, has seemed content to let the scientific community interests do its speaking for it. The government's position is more complex. Public Health Service officials are unhappy about the provision in the Poage bill that calls for regulating traffic in animals other than dogs and cats. "It

would be impossible," one official commented. "We estimated that about 45 million vertebrates were used last year by HEW alone." They are unhappy, also, about the regulation of laboratories by the Agriculture Department for which the Poage bill provides. HEW would like to see a division of labor, with Agriculture regulating trade in dogs and cats and HEW retaining jurisdiction over scientific facilities.

HEW's precise position will remain secret until its negotiations with the Bureau of the Budget on a proposed bill are completed. But it is known that the Department does favor the development of objective standards for animal facilities and care, and believes that the standards should be administered by some nonfederal accrediting agency responsible to the Surgeon General of the Public Health Service. One such accrediting organization known as the American Association for the Accreditation of Laboratory Animal Care (AAALAC), has recently come into existence, as an outgrowth of the earlier

established Animal Care Panel. It is likely that AAALAC is one of the mechanisms HEW officials have in mind. HEW also feels that, since many laboratories now have demonstrably inadequate animal facilities, any legislation would have to provide considerable sums of money for renovation before accreditation could fairly be made a precondition for federal grants. Humane-movement workers such as Mrs. Stevens have already denounced this view as a dodge: "There is plenty of money in those research grants right now for taking good care of the animals," she commented during a recent interview with *Science*. But HEW officials feel strongly that legislation that fails to make money available for improvements would not only hurt the poor institutions but probably jeopardize the chances for strict enforcement of strong standards. The fear is that if people on inspection committees know there is no money for corrections, they will be unwilling to make adverse judgments, and that if they make adverse judgments anyway, there will be a serious medical research crisis.

With delicate budgetary discussions now in progress, no one is complaining too loudly, but officials are plainly worried that their reform efforts will be compromised by the financial demands of the Vietnam war. And the prospects that even effective legislation governing animal facilities would satisfy the humane movement's drive for legislation governing experimentation seem very dim. That issue is likely to stay with us for a long while.

—ELINOR LANGER

## Meeting Notes

An annual symposium on **molecular structure and spectroscopy** will be held at Ohio State University, 6–10 September. Discussions will include methods of obtaining and interpreting data. Dormitory accommodations will be available. (K. N. Rao, Department of Physics, Ohio State University, Columbus)

A call for papers has been issued for a symposium on **polar meteorology**, scheduled for 5–9 September in Geneva, Switzerland. The topics to be covered include local effects; synoptic analysis and forecasting; circulation studies; mass and energy budgets, exchanges, and interactions; snow, ice, instruments, and special phenomena;

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