

Animal Tests Justifiable

Petnapping legislation, accompanied by frightful accounts of mistreated dogs, could spiral into rigid Federal control over animal experimentation—By Patricia McBroom

➤ ANIMALS have been used and abused by man for all manner of reasons, since the first erect human took a club and cracked the skull of some stray creature for food. They have been eaten, turned into clothing, used as motor vehicles and worked as tools. Most recently, they have substituted for man in the laboratory. Instead of opening a man's brain to study his cell development, scientists study the cat's. Rather than try a heart transplant on man, they first test it on dogs.

Today, medical research on animals is the focus of major national controversy and the squeeze is on. Probably not since the antivivisectionist movement of the 1920s has such a vigorous campaign been mounted against live animal experimentation. Those in the vanguard of this attack, however, including the Humane Society of the United States, deny their aim is antivivisectionist.

President Oliver Evans stated the goal this way: "We want to alleviate the suffering of animals in the laboratory without impeding scientific progress."

But medical groups think otherwise. "These people are putting every kind of impediment in the way of doing experiments," charged Dr. Maurice Visscher, president of the National Society for Medical Research, (NSMR) an association of some 211 major scientific societies.

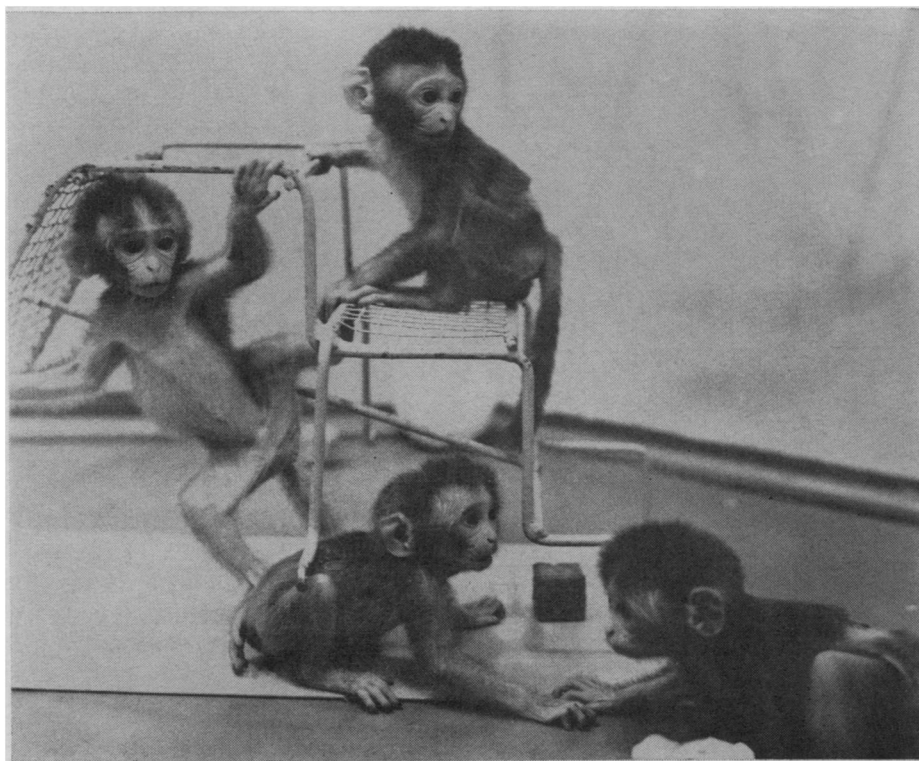
"If they're not antivivisectionists, they act like antivivisectionists," he said.

One of the "impediments" Dr. Visscher had in mind is the Rogers (D-Fla.)-McIntyre (D-N.H.) legislation pending in Congress. Backed by the Humane Society, the two bills—HR 10049 and S 2576—would restrict animal experimentation on a scale unknown in this country. Actually they would introduce a Federal control system similar to the one in England. To American scientists the prospect is a nightmare.

Advisory Board in England

England has an advisory board of eight inspectors who pass on all research projects involving vertebrate animals. The law setting up state control was passed in 1876 and has been in effect ever since. Its basic effect is to make the progress of medical research largely determined by the degree of animal comfort.

So it is with the Rogers-McIntyre



Fred Sponholz

JUST LIKE BOYS—Little monkeys romp in the University of Wisconsin's Primate Laboratory. By testing monkeys under various psychological conditions the laboratory has revealed much about personality development in humans. Legislation pending in Congress could curtail such research.

legislation. The bill provides for a "coordinator" whose job would be to set experimental procedures as well as standards for animal care. Painful or "stressful" experiments would simply be illegal unless the laboratory obtained special permission from the Government. And any laboratory failing to do so would receive no more animals.

An even stronger approach is found in the Clark (D-Pa.)-Cleveland (R-N.H.) bills, backed by the Animal Welfare Institute of New York. Altogether in its current session, Congress has been smacked by some 80 animal bills, from petnapping legislation to control of research.

Many of these bills have been supported by scientists, who, like Dr. Michael DeBakey, famed heart surgeon, are wholly in favor of improving animal care and setting a national standard for laboratories. The problem is money and time to accomplish the improvements. Dr. DeBakey noted that he had strictly curtailed his work on

the artificial heart because he did not have room to take care of many animals.

But to reach beyond animal care to actual control of the experiment is quite another matter. Any attempt to dictate procedure for an experiment would not only stymie research, believe the scientists, but the impact would be especially felt in one of medicine's most vital areas—surgical research. Because it requires higher animals close to human development and because pain is usually involved, this type of experimentation would come under the closest scrutiny.

Many British scientists will protest the observation, but Dr. Visscher, among other Americans, firmly believes the law of 1876 has greatly hampered "survival" research in England.

"There must be some reason," remarked Dr. Visscher, "why few, if any, important advances in surgery . . . have come out of Britain in the last half century. Vascular sur-

gery, open-heart surgery, and management of intestinal obstruction, ulcers, burns and traumatic shock, among other major advances in surgery, were developed mainly in the United States."

Herein lies the great danger, that scientific research would be subjected to the glare of publicity. Any Federal agency caught in such illumination can only adhere to the letter of the law. In this country, those enforcing the regulations would be harrassed by humane groups who could delay, if not abort, important research.

State control of animal experiments is perhaps not a major undertaking in England, but the U.S. Government reviews 30,000 applications for money a year, giving the National Institutes of Health, Bethesda, Md., a stake in about two-thirds of all biomedical research. English scientists use some four million animals a year. U.S. researchers use anywhere from 40 million to 100 million. Laboratories number in the thousands, meaning that a complete inspection and review process would be a vast and expensive operation.

Of the 40 million animal projects now receiving Government support, about 98% use rodents, not dogs or cats. Thus, if the humane movement wins its objective, each and every rat used in research would be given a dossier and his hour before the review board.

What chance does this type of legislation have in Congress? At this point, it is hard to tell. But the research bills will be taken up in the emotional aftermath of the petnapping furor. Public opinion has already been primed with a deluge of ghastly photographs and detailed accounts of mistreated dogs, presumably stolen and destined for the laboratory.

Misconception Needs Exploding

Virtually nothing has been written to explode the misconception that research survives on the broken bodies of such poor animals. The result—an inescapable link between experimentation and sadism.

One story from a recent issue of Newsweek Magazine, 67:33, 1966, was a case in point. Following a description of badly mistreated dogs, the story ran: "This miserable truckload was a small part of the booming traffic in more than two million dogs and cats for which American research laboratories will spend \$30-\$50 million this year. Scientists have become a prime market for domestic animal flesh and thus far the business has been almost totally unregulated."

In short, scientists could not have had a worse press.

An oft-heard charge is that half or more of all dogs used in research are stolen. Not true, state the scientists. Most labs buy their dogs and cats from reputable dealers who buy from pounds. If there is a market for stolen animals, it is probably in those states that have made it illegal for

pounds to sell animals for research. As for mistreated animals, science cannot use them and most laboratories will not buy them.

Also the figure "two million dogs and cats" seems highly questionable in view of the fact that the National Institutes of Health approved projects last year using approximately 160,000 dogs and half that many cats. The two million estimate is off by a factor of 10, said David Tillson, assistant chief of the office of program planning at NIH.

Double-Edged Threat

Actually, medical scientists face a double-edged threat in Congress. Petnapping legislation, one of the hottest issues of this session, has brought a series of attempts to tie up laboratory regulation with animal dealer regulation, all under the auspices of the Department of Agriculture.

It is fine to set standards for animal care and require licensing of dealers; but, the NSMR has argued, to do this in laboratories would be to create an immediate crisis in research. In any case, it says, the Department of Agri-

culture, which has never had any concern in or responsibility for medical research, is not the proper agency.

In the House of Representatives, scientists were successful in staving off laboratory regulation. They may have tougher sledding in the Senate. If the Magnuson bill, now on the floor, comes out with a laboratory licensing provision, adopted by the whole Congress, "half the nation's biomedical research facilities would be put out of operation overnight," said Mr. Tillson.

Hoping to deflate the entire humane movement, the Government has gone on record with its own bill (S 3332), Hill (D-Ala.), which would set standards for laboratory animal care and also earmark funds for improving the facilities.

Half the nation's laboratories are substandard in animal care, said Mr. Tillson, mainly because research has blossomed at a tremendous rate. In recent years, Congress has appropriated great sums for research but little for animal care. "Now we want to redress the balance," he said.

The bill provides preferential matching, with the Government putting up

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Merck and Company, Inc.

SOCIAL CLIMBER—The little gerbil, or desert rat, is one of the most sociable and inquisitive of laboratory animals. Madelyn Esposito of Merck Sharp & Dohme Research Laboratories, Rahway, N.J., holds one of the active little gerbils being studied in research on the action of hormones.

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two-thirds of the funds and laboratories one-third. How much money will be available next year depends on NIH's budget, but the most that can be expected is probably about \$12.5 million, said Mr. Tillson.

Would this do the job? No. Extensive renovation and reconstruction are needed to bring animal facilities up to the standards demanded by S 3332. In very rough terms, said Mr. Tillson, the total cost might run perhaps \$20 million a year for five years.

A major reason for substandard laboratory conditions is the drastic shortage of trained animal technicians. Consequently NIH with the Department of Labor has begun a pilot project in California to train people with grammar school educations in this function.

Laboratories Need Time

Laboratories need a reasonable time—three to five years—in which to comply with standards, said Mr. Tillson. Refusal to allow this would result in immediate crisis.

Why then do humane groups push such legislation? Either they do not believe the problem exists or their sympathies lie so much with the animal, they do not care.

The rationale behind the Rogers bill is to spare animals "avoidable discomfort, pain, fear, stress, trauma and other distresses." But what is avoidable to a member of the Humane Society may not be avoidable to a scientist. In truth, the humane movement, as President Evans admitted in an interview, has "greatly suffered" from a lack of knowledge about research. One of the commendable features of the Rogers bill is that in a few years, it would result in a much better-informed humane movement, said Mr. Evans.

But while scientists educate the animal spokesmen, what happens to human welfare?

• Science News, 89:464 June 11, 1966

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GEOPHYSICS

Total Mass of Earth's Atmosphere Calculated

► THE TOTAL WEIGHT of the earth's atmosphere has been calculated accurately by an Italian scientist doing research at the Smithsonian Astrophysical Observatory, Cambridge, Mass.

Its mass in grams is 5.136 followed by 21 zeroes, or 5,136 billion billion grams, Dr. Franco Verniani has computed.

A rough estimate of the total mass of earth's atmosphere can be obtained by multiplying together the average barometric pressure at sea level, the surface area of the earth and the acceleration of gravity.

An accurate calculation, however, is a difficult problem. One complication is the considerable depth of the atmosphere, resulting in gravity being measurably less at higher levels. The varia-

tion in air density with height must, therefore, be known.

Another problem is introduced by differences in the height of earth's land surface—the atmosphere does not everywhere reach down to sea level.

Making suitable allowances for these factors, Dr. Verniani computed the atmospheric mass as 5,136 billion billion grams, with an uncertainty of about a tenth of one percent.

He further found that the lowest 18,700 feet contribute one-half of the total mass, and that the total is close to one-millionth the overall mass of the earth.

• Science News, 89:473 June 11, 1966

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