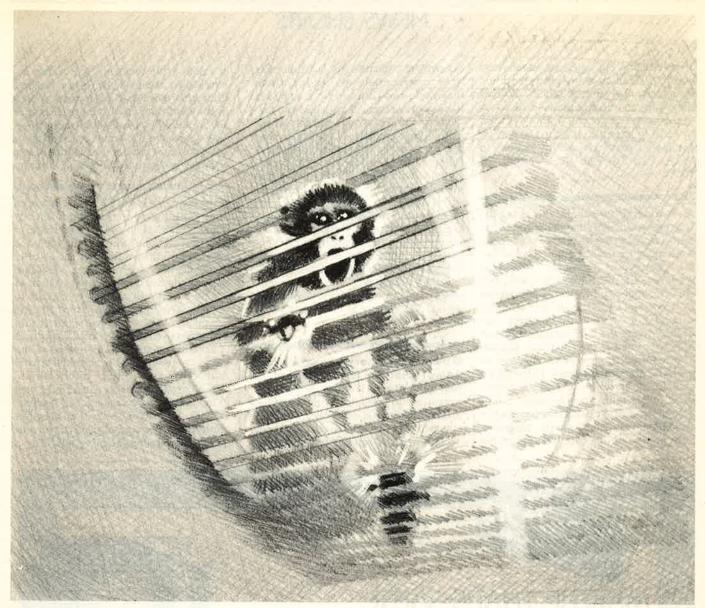
BOS TURNOIT HORES ANIMALS' HE PENTAGON'S SECRET WAR ON ANIMALS CODDI-



Monkeys are irradiated and forced to walk on treadmills to determine how much radiation they can be exposed to and still "work", and how long it takes them to die.

# The Pentagon's Secret War on Animals

#### BY HOLLY METZ

Animals have been targeted in laboratory war games since the early 1900s. Today the war machine continues to sacrifice countless innocent animals in military experiments, and peace for them—and us—is nowhere in sight.

Illustrations by Lee Gobbi

o the Pentagon, laboratory animals and soldiers are interchangeable tools of the armed forces, used to maximize the nation's fighting capacity. Their inherent worth is not considered, and this attitude is reflected in systematic experimentation on live animals by military-contracted scientists, and in battlefield triage where the least wounded soldiers are sorted out and treated first. Triage is the very antithesis of civilian emergency care, and military enlistees and draftees are often shocked when first encountering the practice. Nor are they prepared for the strictures of military law, which may punish them for vocalizing a dissenting opinion which would be fully acceptable in civilian life. So soldiers become virtually voiceless, says Guy Hodge, Vietnam veteran and current director of data and information services for The Humane Society of the United States (HSUS). In this, he believes, soldiers are like the military's experimental animals.

Laboratory animals might be considered the first wave of soldiers in contemporary wars. Their fate indicates the government's changeable political obsessions—such as the "Yellow Rain" studies which, fueled by the Reagan administration's anti-Soviet hyperbole, profitably proliferated in labs nationwide until the alleged contaminant was identified by an independent scientist as bee droppings. The potential for future military ventures can also be gleaned from animal tests. Soldiers can now be equipped with protective gear so they can continue warring through radiation and chemical "showers". Such circumstances seem almost surreal, but according to the Department of Defense (DOD), they are visited upon half a million animals annually in Pentagonfunded experiments. (Independent research, cited in this article, suggests that the DOD figure represents only a fraction of the animals actually used by the military.)

Peace activists often remark that every weapon that is tested is ultimately used. The following abbreviated overview of contemporary U.S. military tests on animals shows that this is so, and also that the results of those tests have frequently been misread, dismissed, or inflated at will. The stakes continually get higher.

## **Explosives tests**

During World War I, millions of animals served the Allies as carriers of supplies (dogs, horses, mules and even camels) and as messengers (carrier pigeons). Their use of animals instead of tanks makes that war seem less ferocious than recent conflicts. But as with each war, new technologies were introduced to the battlefront during World War I, expanding the scope and intensity of rationalized cruelty. Previously unknown vapors annihilated and disfigured 1.3 million soldiers, and those who escaped the gases were frequently afflicted with "shell shock", a condition resembling physical shock but unaccompanied by wounds.

In the war's early phases, military scientists were eager to attribute shell shock to air concussion from ex-

monkeys-were public knowledge by the summer of 1919, via a New York Evening Sun story. In a "barren belt in New Jersey", goats and dogs were chained or tied every few feet to stakes placed inside trenches or in open fields. Shells were fired that emitted pale yellow gas. "(A)ll animals used in tests of mustard were allowed to remain in the gassed periods for one to ten hours" while symptoms appeared, according to the newspaper account. Scientists recorded burns, convulsions, and vomiting by survivors. Caged guinea pigs had been used previously, but they did not develop lesions after exposure to the vapors-the desired effect. Liquid

In a "barren belt in New Jersey", goats and dogs were chained or tied every few feet to stakes placed inside trenches or in open fields. Shells were fired that emitted pale yellow gas.

plosives detonation, rather than to acknowledge the likelihood of psychological breaks in battle. Animal experiments were conducted on the problem, continuing even after scientists labeled shell shock a "war psychosis". In one study, begun in 1918 at the Sandy Point Proving Ground in New Jersey, unanesthetized frogs, rabbits, cats, and morphine-treated dogs were placed in "strong cloth bags", wired to gun carriages of large caliber weapons, and "exposed to gun-blast pressure". Some were "exposed" more than once, others died instantly. The explosive TNT was also used. D.R. Hooker, the study's coordinator, described the fate of one large male dog who was "exposed 2 feet from 2 pounds (of) TNT" as: "Thrown 20 feet. Hind limbs shattered and abdominal wall ruptured. Skin burned...No specimens preserved."

#### **Chemical warfare**

The use of chemicals to temporarily blind opposing troops was advocated by German chemists as early as 1888, and by 1917 the German War Office had shifted to the mass production of HD, or mustard gas, a blistering agent that could also contaminate battle-grounds for long periods after shell impact.

Allied scientists could not have been far behind. Advanced field tests of the U.S. Army's chemical arsenal—on goats, dogs, guinea pigs, and

mustard gas was also tested on guinea pigs—with fatal results—although it would never be found on any battlefield in that form.

The shells and bombs used on that barren field were probably produced at the Chemical War Services' shellfilling plant at Edgewood Arsenal in Maryland. The 6,500-acre compound was outfitted with several manufacturing plants. Its factory for the production of chlorine-a gas which causes pulmonary lesions, resulting in death by suffocation - was said to the world's largest. Reporters from the Journal of Industrial & Engineering Chemistry noted that its extensive research facilities rivaled those of Germany's I.G. Farben (which later created Zyklon B, the gas used by the Nazis to kill concentration camp inmates). At Edgewood, mice, guinea pigs, rabbits, dogs, and-less frequently-monkeys were subjected to two kinds of experimentation: "the one consisting of inflicting injuries, the other of attempts to neutralize the gas or to alleviate the injuries when produced," according to a December 1922 account in the anti-vivisection publication The Starry Cross. As the center of the nation's chemical warfare system, more than 4,000 different materials were researched at Edgewood during its first years alone.

"Riot control" gases were also developed and tested at Edgewood.

Continued on page 25

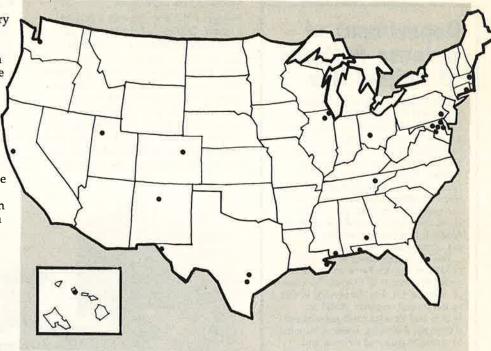
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DM (vomit gas), prized by the military for its "persistent incapacitating action", was initially administered only to dogs in 1919, then fatally tested on mice, rats, monkeys, goats, and swine in later years, according to a 1969 report compiling Edgewood experiments from 1918 to 1968. Lab technicians described frothing, convulsing goats kneeling on their forelegs, collapsing bloated at death. CS and CN (tear gases) were tested as early as 1918, but the war use of these so-called "non-lethal" weapons was most controversial during the Vietnam conflict. From 1964 to 1969, 14 million pounds were requisitioned for use in Southeast Asia, the Scientists' Committee on Chemical and Biological Warfare reported.

#### Beagle poisoning

President Richard Nixon's 1969 moratorium on the production of chemical weapons restricted Edgewood's activities only temporarily. By 1973, the Christian Science Monitor was reporting Edgewood's plans for 400 beagles: they were to be used to test "binary" poison gas (binary poisons contain two harmless components that become lethal when combined). Protests by HSUS and the Washington Society for the Prevention of Cruelty to Animals brought an Army explanation: poisoning the beagles would help set "standards for the protection of men engaged in demilitarizing obsolete gas ammunition."

But public pressure mounted; there was Congressional intervention, and the 1973 experiments were halted. Or so it was thought. In 1985, *Parade* 



Government laboratories that perform military research using animals are scattered across the United States. In addition, much Armed Forces research is farmed out to universities (Source: Alternatives to Animal Use in Research, Testing, and Education, U.S. Congress, Office of Technology Assessment, 1986).

magazine reported that the "program was quietly resumed in 1982 at the Aberdeen Proving Ground near Baltimore," and that "24 dogs and 78 cats were used in nerve gas research in 1983." There could be many more experiments as 81 per cent of Edgewood's tests remain classified, HSUS reported in its newsletter in the summer of 1976.

### **Biological Warfare**

The biological warfare equivalent of Edgewood was established in 1943 at Fort Detrick, Maryland, on a 1,300-acre base. It immediately became "one of the world's largest users of laboratory animals", wrote Seymour Hersh in his 1968 study, Chemical and Continued on next page

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# Department of Defense Patterns of Animal Use

The divisions within the Department of Defense (DOD) that conduct experimental research on animals are the Air Force, the Army, the Navy, the Uniformed Services University of the Health Sciences, the Defense Nuclear Agency, and the Armed Forces Institute of Pathology; the first three of these account for most of the research. Together, all the divisions have approximately 40 research facilities that conduct animal experimentation.

The Aerospace Medical Division (AMD) of the Air Force accounts for about 95 percent of that service's use of animals. Of this, 84 percent is due to intramural research. AMD research and development projects fall within the following areas: • humans in space, • chemical defense and threat countermeasures, • safety and environment, • logistics and technical training, • air combat training, • human components of weapons systems, and • personnel and force management.

The Army does medical research to protect the soldier by the authority of the U.S. Army Medical Research and Development Command. Medical research and development (R&D) are carried out in five areas: infectious diseases (tropical disease and biological warfare defense), combat casualty care, combat systems, dental research (facial injuries), and chemical defense. About one-third of the research is done in-house and two-thirds is contracted out.

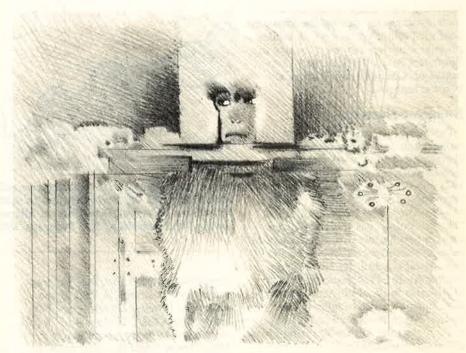
The Navy in fiscal year 1985 allocated \$58 million for the life sciences or biomedical research. Of this, \$37 million (64 percent) is for extramural research while the remainder is for intramural use. The two main branches of the service doing research involving animals are the Naval Medical Research and Development Command and the Office of Naval Research (ONR). The Naval Medical Research and Development Command does research in: • submarine and diving medicine, • electromagnetic radiation, • aviation medicine/human performance, • fleet health care systems, • infectious diseases, and • oral and dental health. ONR conducts research using animals in four major areas: molecular biology, neurophysiology/physiology, cellular biosystems, and psychological sciences.

From Alternatives to Animal Use in Research, Testing, and Education, U.S. Congress, Office of Technology Assessment, 1986.

Continued from previous page

Biological Warfare: America's Hidden Arsenal. During World War II, experiments consumed more than a quarter of a million mice, rats, guinea pigs, hamsters, and rabbits each month. This was accomplished in complete secrecy, "comparable only to the Manhattan Project," Hersh noted. For most of its history, Fort Detrick, like Edgewood, has focused on the offensive uses of chemical and biological warfare (CBW), asserted the journalist.

virus, the country would be at a great disadvantage," Major T.L. Samuel, an Army public affairs officer, told a Register reporter in 1982 when the documents were released. Army papers stated that on July 14, 1951, two bombs developed at Iowa State, containing turkey feathers mixed with more than 50 trillion "infective doses" of hog cholera, were detonated 1,500 feet over Florida's Eglin Air Force Base, a major testing center for CBW munitions. Ninety-three of the 115 penned



Monkeys used in eye-burn experiments must have their heads held rigid to insure a precise amount of eye injury from localized radiation; cataracts and blindness are the usual result.

Fatal or highly infectious bacterial and viral diseases like anthrax and the bubonic plague were researched at Fort Detrick, or consigned by head-quarters to be developed at other sites around the country.

According to "top secret" Army documents released to the Des Moines Register under the Freedom of Information Act, Iowa State College scientists were commissioned from 1950 to 1953 to "explore the possibilities of initiating an [epidemic] among farm animals by the release of feathers dusted with [hog cholera virus]". Code-named "Operation Green", the project was part of the Army's "antianimal research"-open air biological warfare tests using diseases transmissible only to animals-conducted from 1942 to 1954. "If you were at war with a country that depended on hogs for food, and you had a hog cholera

pigs who had eaten or sniffed the feathers were infected within 18 days, and were then "sacrificed by electrocution". This type of research is particularly important for Pentagon strategy involving the covert destruction of the infrastructure of underdeveloped agricultural societies throughout the so-called Third World.

# **Dugway Proving Grounds**

Dugway Proving Grounds, located on 840,000 acres of desert in southwestern Utah, has always claimed that it had to provide financial compensation for its isolated workers—according to journalist Hersh, they have been very well paid indeed. Yet isolation at the nation's major test site for chemical and biological weapons was an institutional choice, as well as a geographic reality. From 1942 to 1960,

public access, in the form of press visits, was strictly prohibited. But in the summer of 1960, Dugway threw open its doors. Reporters were invited to watch technicians kill animals with lethal gases, and to experience "riot control" gases for themselves.

"Few persons like to see animals die", reported Army Times reporter Jack Vincent, one of the "witnesses" of the 1960 demonstrations. According to Vincent, reporters "were comforted by the fact that it was more humane" to

kill animals "with a quick acting gas without pain" than to blow them up or subject them to atomic fallout. He then described an "experiment" on a live rabbit with a "liquid chemical agent": "one very tiny drop, one-third the size of a pinhead, immediately killed the animal when the liquid was put in its eye."

That same day, several tethered goats and caged pigeons-"representing the enemy", a New York Tribune reporter remarked-were placed in different dugouts, then sprayed with shells filled with GB or Sarin, an odorless, colorless nerve gas. GB kills by paralyzing the nervous system: the animals convulsed and died within one minute.

But these demonstrations barely suggest the number of animals used at Dugway during the 1950's and 60's: Vincent reported that up to "8,000 laboratory-bred and 1,500 trapped wild animals" were held for experimenta-

Continued on next page

# **Animal Secret Agents**

Some of the most macabre Military experiments have involved the use of animals as surreptitious carriers of weapons.

### **Operation Bat**

n 1941, following a suggestion by a Pennsylvania surgeon, the War Department began to investigate the possibility of equipping bats with small incendiary bombs. The flying mammals were to be dropped by plane onto Japanese villages, leaving the delayed-action devices to burn villages made of wood.

Dr. Louis F. Fieser of Harvard University, who had helped develop the incendiary napalm, created a bomb weighing less than one ounce. It was attached to the bats' chests with surgical clips and string.

The first Army-Air Force tests at Carlsbad Caverns, New Mexico, went well: the bat-bombs burned down a fake village. Later that day, however, some bombequipped bats escaped, chewed off their bomb strings, and set fire to a \$2 million aircraft hangar and a general's car. The Army dropped the project, only to have the Navy resume testing.

The bats were artificially cooled to force hibernation, then "packed like eggs in a crate" and dropped over the New Mexico test grounds, according to a 1959 article in the Armed Forces Chemical Journal. The crates broke open, releasing the bats who "were supposed to awaken in the warm lower air and glide away." Most fell to their death. The Navy finally halted the project, but only because "combat bats would not be ready until mid-1945.'

# **Project Pigeon**

egun in 1940 by infamous behaviorist B.F. Skinner, "Project Pigeon" proposed "to use living organisms to guide missiles," according to Skinner's 1960 article in the American Psychologist. Pigeons were chosen not because they were "more sensitive than man", but because they were "readily expendable".

The birds were immobilized in jackets, with head and neck exposed, then harnessed to a block inside the nose cone. They would peck at target images connected to the missile's steering mechanism, thus guiding the weapon. Despite proven accuracy, however, the project was scrapped. "The spectacle of a living pigeon carrying out its assignment, no matter how beautifully,

simply reminded (War Department officials) of how utterly fantastic our proposal was," Skinner later wrote.

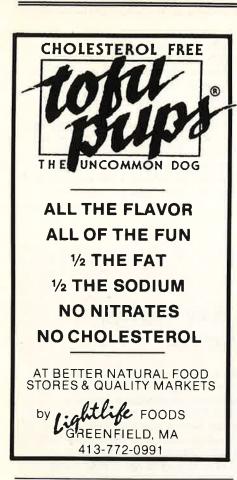
The project did have other ramifications, however. It was the training ground for Skinner's student Marion Breland, who would later form Animal Behavior Enterprises (ABE) in Hot Springs, Arkansas. During the Vietnam War years, ABE surgically implanted several pounds of aluminum in wild pigs to see if they could cross enemy lines with "guns, ammunition, and secret documents" concealed in their bellies, according to two accounts in Omni magazine during 1984.

## **Dolphin Warriors**

olphins were used to kill North Vietnamese frogmen by injecting high-pressure gas into them, according to scientist Michael Greenwood, a civilian researcher for the Navy until 1972, when he left because he disagreed with the use of dolphins as "biological weapons". In a 1977 interview with the New York Times, Greenwood described how gas cannisters and a needle were carried on the dolphins' backs during the 1971 "Swimmer Nullification" program. Later accounts in Jack Anderson's syndicated column outlined how dolphins "with their built-in sonar" located enemy demolition experts, and "impaled them on the needles." Over a 15-month period, almost 60 North Vietnamese divers-and, accidentally, two American frogmen-were imploded by the dolphins' needles, according to Anderson's June 8, 1984 column.

Such programs are far from over, say defense experts. Anderson reported that a "secret directive was sent out by the chief of naval operations" ordering the expansion of "Navy marine mammal capability" into the Atlantic ocean (including Nicaragua's harbors). And publications like Defense Week have received word from retired Navy officers that dolphins are being trained to attach limpet mines to vessels in a program dubbed "tag-a-ship". The Navy's budget for its Advanced Marine Biological System-for "training marine mammals"-certainly indicates heavy military interest in dolphins: \$5.4 million

was requested for fiscal year 1987.





Young, healthy, friendly An ancient breed of dog (obtained from nine New England dog tracks)



Continued from previous page tion at the proving ground during his

Cold War exaggerations were used to support such large scale testing-and to circumvent criticism. "Every time we say something, there is the danger the Russians will pick it up and use it against us," the Army's director of research and development warned New York Herald Tribune reporters. And there was also glib cynicism: a visit to Dugway by Chemical Corps chief General William M. Creasy was marked by the gassing of several thousand guinea pigs, a former Army chemist wrote Seymour Hersh. After viewing the killings, the General reportedly remarked, "Now we know what to do if we ever go to war against guinea pigs."

Nixon's chemical weapons development moratorium, and the signing of an international convention prohibiting biological research and testing, "curtailed" Dugway Proving Grounds' "progress", the center's current brochure asserts. But the White House's ideological shift to the right in 1980 resurrected Dugway with rhetoric and cash. "The Soviets' development of chemical and biological weapons, and their total disregard for international public opinion, left little room for speculation about their intentions", the Dugway brochure grumbles. Consequently, U.S. funds for research and development, and testing of "smokes, obscurants, chemical warfare and biological defense have been increased. This upward trend is expected to continue for at least the next five years."

In 1986, the Army's Medical Research and Development Command spent \$42 million to fund 57 biotechnology projects, which the Wall Street Journal noted was "a ten-fold spending increase since 1981". In fact, the Journal described the Army as "one of the leading bankrollers of research into the genetics of infectious diseases and toxins." DOD is pushing for a "new biological-agent testing facility" at Dugway.

#### The atomic age: radiation tests

World War I brought the introduction of lethal gases to trenches in Europe; the next world war brought atomic bombs and radiation to Japanese civilians. In each, the means of destruction was more horrible than any used previously, but touted as humane and controllable. General Leslie A. Groves, head of the Man-



# The Devastation of War is **Nondiscriminatory**

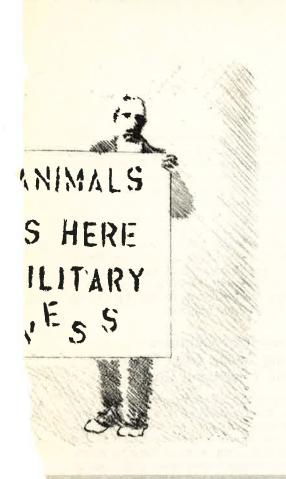
A bumper sticker reads, "Nuclear weapons are an equal opportunity destroyer." However, it's not just nuclear weapons. War itself has become completely indiscriminatory as to who its victims are. Every form of life-human, animal, and plant-is at risk.

Peace activists often point out that preparations for war are waging war now. Sixty-four percent of every tax dollar goes to the military, which has a higher priority than health care, education, housing, and other basic needs. But we would do well to think beyond the cost of human life, and

refuse to sacrifice animal life as well.

Military scientists use animals to perfect their weapons-chemical, biological, conventional, and nuclear. As peace activists broaden their opposition to all weapons of war, we should also broaden our concern for the victims of war-animal life as well as human.

Judy Kowalok War Resisters League 339 Lafayette St., New York, NY 10012



Professor John Somerville, philosopher and 1987 recipient of our Gandhi Award, has coined the word "omnicide" to replace the term war, since a nuclear war would mean the death of all living things. We humans consider the prospect of nuclear war as if it were a threat to us alone. None of us has the right to take actions which jeopardize the survival of life on earth, however great or small.

As a peace activist whose daily efforts center around the prevention of conflicts and the preservation of the environment, reading of the misuse of animals for military experiments roused my anger at the aberrant behavior of those humans who can conceive and carry out such torturous experiments. It made me aware of the need for us to protest this inhumanity and cruelty perpetrated on those who have no voice to speak for themselves.

It is indeed a haunting thought to know that even as we carry on our daily activities, both humans and animals undergo daily torture. We are making some progress towards the abolition of human mistreatment. Certainly if we are to survive into the 21st Century, as civilized people, compassion and kindness to creatures who are powerless to help themselves is essential to our way of life. Unnecessary and inhumane experimentation on any form of life is a denial of the rights of all members of creation to dignity and respect.

Alice Z. Frazier Promoting Enduring Peace P.O. Box 5103, Woodmont, CT 06460 hattan Project, had even insisted before a 1945 Congressional committee that "radiation death is a very pleasant way to die." After both conflicts, military personnel sought to establish an impossible exposure *threshhold* using animals.

In the early years of the atomic age, few protections against nuclear fallout were offered by the military to soldiers, or to ranchers and livestock near the New Mexico test sites. When the first atomic bomb was exploded on July 16, 1945, observers were instructed to "duck and cover". Cattle grazing close to the site were also dusted with radioactive fallout; the entire herd was shipped to U.S. Atomic Energy Commission (AEC) labs in Oak Ridge, Tennessee, to study whether fallout would affect reproduction. According to a 1967 AEC report, one cow-later named "Granny" because she survived 21 years-produced "a healthy, frisky calf every year for 16 years." With all the publicity surrounding Granny's anomalous maternity, the fate of the other cattle passed out of the public eye. In fact, a suppressed 1951 AEC report confirmed that years after the 1945 test, cattle and sheep had deformed offspring from eating radioactive vegetation, writes Howard Ball in Justice Downwind: America's Atomic Testing Program in the 1950s.

#### A modern Noah's Ark

Six months after the August 1945 bombing of Hiroshima and Nagasaki, the *New York Times* reported that the U.S.S. Burleson, a Navy assault transport ship docked at San Francisco, was being "converted...into an 'ark" that would "transport 4,000 animals—goats, sheep, hogs and rats—to their probable death in the

atom bomb experiment at Bikini atoll", scheduled for July 1946. Animal welfare organizations protested vigorously, receiving in response a dismissive form letter from the Joint Army-Navy Task Force. The "ark" was filled.

"Operation Crossroads', in which an atomic bomb was dropped on seventythree target ships in Bikini Lagoon by an Army-Air Force B-29, was done successfully on July I," Vice Admiral William H.P. Blandy announced via radio. Half the ships were damaged; five sank. Scientists compared the bomb's blast to the destructive power of over 20,000 tons of TNT-more destructive than the Hiroshima bomb. Subjected to the plutonium blast were a total of about 4,900 tethered and caged animals, held on at least four vessels. Most were packed on board the U.S.S. Burleson, "the highly secret ship from which reporters have been barred", the Associated Press relayed.

Early accounts of a goat who survived exposure near the blast center, and a pig who was rescued after leaping from a sinking ship, were blotted out two weeks later by news that the test animals—including the famous goat—were "dying like flies". Although an estimated 25 per cent were killed outright, and thousands became critically ill, military spokespersons insisted that the animals suffered "no real pain". Yet the *New York Times* reported on July 23 that "for scientific study, some animals were treated, and others not."

By September, the "modern Noah's Ark" returned to Washington with less than half its original animal passengers. They were slated to be used "in scientific tests of the possible effects of radioactivity on human beings", accord
Continued on page 48

# What You Can Do

Action against the military's use of animals in war research is needed for several reasons: the unnecessary suffering and death of hundreds of thousands of animals each year; the waste of millions of tax dollars; and the fact that the purpose of the research is to prepare the U.S. for war. It is important that a bill be introduced in Congress to ban all such research using animals. Urge your Senators and Congressperson to do so. Activists might also consider organizing demonstrations at military facilities in their areas that experiment on animals. Finally, the research needs to be exposed throughout the entire country at individual facilities. Obtain the research protocols, grants, progress reports, and other materials through medical libraries and the Department of Defense. As always, photographs help to make the case. Consider working with anti-military/anti-war groups and individuals as well as animal rights advocates—it helps to link up with others who share similar goals.

- Dave Macauley



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# **War on Animals**

Continued from page 29

ing to the *Times*. Two Japanese cities filled with human atomic bomb survivors were not mentioned.

### The hydrogen bomb

By October of 1946, the Operation Crossroads radiological safety officer was warning AEC officials about the "insidious hazard" of fallout—how it causes cancer in human beings. But the AEC ignored the officer's memo, according to Howard Ball. They continued to conduct open-air tests, and to subject several species of animals to radiation.

Testing increased with the development of the hydrogen bomb, and the AEC's budget rose accordingly, from \$1.5 billion in 1950 to \$2.75 billion in 1951. During "Operation PLUMBOB", a series of hydrogen bomb tests conducted in Nevada in 1957-58, rhesus monkeys were placed in tubes near Ground Zero, reported the December 1979 newsletter of the International Primate Protection League. Survivors were transferred to the Yerkes Primate Center in Atlanta, Georgia, where many developed cancer.

#### The "peaceful" atom, the neutron bomb, and today's Star Wars

In a 1967 report, the AEC acknowledged the use of some five million animals annually in research on "radiation originating from peaceful uses of atomic energy". Numerous

### **More Military** Madness

A 28-page booklet documenting the use of animals in Defense Department sponsored research projects has been published by The National Anti-Vivisection Society (NAVS). Aptly called "Military Madness", the report, written by Jeff Diner, examines a sampling of 43 case studies of experiments conducted in government and university laboratories around the country. Copies of the booklet can be obtained by writing NAVS at 100 E. Ohio St., Chicago, IL 60611. There is a \$1 charge for postage and handling for non-NAVS members.

universities and military installations were "sponsored" by the AEC to subject dogs, mice, and monkeys to whole-body irradiation, to inject plutonium into the skin of miniature swine, and to force rats to inhale radioactive dust.

Research on "an enhanced radiation neutron warhead" at Maryland's Armed Forces Radiobiology Research Institute (AFRRI) included the radiating of monkeys to "determine the levels at which they could no longer work and at which they would die", the Washington Post reported in 1977. The Defense Department later denied the report. AFRRI documents, obtained by animal welfare groups, indicated that such tests were being conducted to estimate the performance of irradiated troops, which seemed to disregard the neutron bomb's unique capability: it kills with radiation, yet buildings stand unharmed, because the weapon has no blast.

By the late 1980's rhesus monkeys and other animals will be used to test Strategic Defense Initiative weapons in the new Brooks Air Force Base laboratory approved by Congress in 1985. The \$1.5 million project will use the animals to test particle beams, high energy lasers, and microwave radiation, reported The News, a San Antonio-based daily.

With such "non-nuclear" testing, the Air Force seems to be semantically skirting a DOD policy, outlined in a 1986 Congressional report, that prohibits the use of dogs, cats, and nonhuman primates for developing biological, chemical, or nuclear weapons. Because of the ideological bent of the Reagan administration, there is increased boldness, and greater willingness to flout any restrictions for "the sake of national security".

The wars of this century have all begun in laboratories, waged against animals. Animals have been the first to pay for humanity's misguided policies of aggression. They will be the first to benefit from a comprehensive peace.

—Holly Metz is a freelance journalist based in Hoboken, NJ. She wishes to thank Bernard Unti, Guy Hodge, Shirley McGreal, Jim Mason, The Nerve Center of Berkeley (CA), Daniel Grossman, Robert Boyle, and Aaron Medlock for their help in researching the subject.