

ing countless lives and avoiding needless misery. . . .

Alcohol abuse and alcoholism

● **Fetal Alcohol Syndrome:** Perhaps the most heart-breaking damage inflicted by alcohol consumption is on the fetus, which is at the mercy of a mother's alcohol intake. Although the possible connection between a mother's alcohol use and damage to the fetus had long been suspected, it was unclear whether alcohol or confounding factors, such as nutrition, overall health, other drug use, or life style was responsible until animal research showed convincingly that alcohol was a teratogen, a substance capable of causing birth defects. Establishing in animal studies that alcohol intake causes fetal damage led to acceptance by the medical community and the public at large of the risks involved in drinking during pregnancy. Currently, further animal research is seeking to understand how alcohol exerts its damaging effects, so that FAS can be prevented in infants.

● **Organ damage:** The liver is responsible for metabolism of alcohol and is a prime target for alcohol-induced tissue damage. Alcoholic cirrhosis is the seventh leading cause of death in the United States. For many years it was believed that liver damage was the result of malnutrition in alcoholics and not due to alcohol itself; this theory was disproved in animal experiments, using baboons, which were fed adequate diets that were also high in alcohol content. The demonstrations of the liver damage in these animals under the controlled condition of the laboratory provided clear evidence that alcohol was responsible. This animal model is now being used to test new therapies to prevent alcoholic liver damage. . . .

● **Alcohol's effect on the brain:** Much of what we know about the acute effects of alcohol on the brain has been learned from animal research. Molecular studies show that ethanol disrupts the integrity of cell membranes, which can disrupt their ordered functioning. Studies of alcohol's direct effect on brain cells show that it decreased neuronal activity. Ethanol is particularly effective in reducing the firing rate of the Purkinje cells on the cerebellum.

Because the functional characteristics of these cells were well known from previous animal experiments, the knowledge needed to develop drugs that could protect these cells from ethanol damage can be developed. Other, similar observations from animal studies are now laying the groundwork for developing therapies to block the rewarding sensation and the depression brought on by alcohol. With this information, difficult and expensive research in humans is made much more productive.

Recently, an important discovery related to alcohol's action on the brain was demonstrated through research on experimental animals. This research illustrated that a major brain neurotransmitter system which is important in the process of learning, memory, and neuronal development is also involved in alcohol toxicity. Animal research has shown that a special receptor system called NMDA receptor is very sen-

Augustine on the difference between man and beast

During his lifetime (354-430 A.D.), St. Augustine battled fiercely against the pagan beliefs and cultural outlook which had utterly destroyed Roman civilization, and sought to establish the Christian concept of man as the living image of God, by virtue of man's creative reason. While no outright animal rights movement existed in his time, Augustine struck at the core belief structure of today's movement: the belief that everything created by God is divine, and the resulting irrational insistence that there exists no higher principle according to which the separate parts of God's creation are ordered. Augustine further points out that those who deny such a divine ordering, necessarily substitute some other, inferior ordering principle to guide their sinful practice.

From City of God, Book IV, Chapter 12:

. . . let us note carefully that if God is the Soul of the World, and the world is to him as the body of the soul, if

sitive to alcohol effects. The sensitivity of NMDA receptors to alcohol could be the basis for explaining blackouts due to alcohol as well as alcohol withdrawal seizures.

Effects of 'animal rights' agenda on biomedical research

From a fact sheet issued by the ADAMHA:

. . . A common tactic of animal rights groups is to discourage research by "critiques" of the work in progress, claiming expertise in the field, and then claiming the research useless. Congress, funding institutions, and the media are inundated by monumental amounts of letters asking them that the research be stopped.

● A recent example is the 1990 Defense Department appropriations bill (H.R. 3072) that included a prohibition on continued funding of a bone replacement graft study conducted by the Letterman Army Research Institute and a brain injury project at Louisiana State University after such activist campaigns.

● November 1988, Dr. Michiko Okamoto and the administrators at Cornell Medical College were harassed unrelentingly by animal rights activists until she returned a grant to the National Institute on Drug Abuse (NIDA) which would have allowed her to continue her important research on barbiturate addiction in cats—after 14 years of federal funding.

this God is, as it were, in the bosom of nature and contains all things in himself, so that from his soul, which gives life to the whole of that mass, the life and soul of all living things is derived . . . then nothing at all remains which is not a part of God. Can anyone fail to see the blasphemous and irreligious consequences? Anything which anyone treads underfoot would be a part of God! In the killing of any living creature, a part of God would be slaughtered! I shrink from uttering all the possibilities which come to mind; it would be impossible to mention them without shame.

From City of God, Book XI, Chapter 16:

Now among those things which exist in any mode of being, and are distinct from God who made them, living things are ranked above inanimate objects; those which have the power of reproduction, or even the urge towards it, are superior to those who lack that impulse. Among living things, the sentient rank above the insensitive, and animals above trees. Among the sentient, the intelligent take precedence over the unthinking—men over cattle. Among the intelligent, immortal beings are higher than mortals, angels being higher than men.

This is the scale according to the order of nature; but there is another gradation which employs utility as the criterion of value. On this other scale we would put some inanimate things above some creatures of sense—so much so that if we had the power, we should be ready to remove these creatures from the world of nature, whether in ignorance of the place they occupy in it, or, through knowing that, still subordinating them to our own convenience. For instance, would not anyone prefer to have food in his house, rather than mice, or money rather than fleas? There is nothing surprising in this; for we find the same criterion operating in the value we place on human beings, for all the undoubted worth of a human creature. A higher price is often paid for a horse than for a slave, for a jewel than for a maidservant.

Thus there is a very wide difference between a rational consideration, in its free judgment, and the constraint of need, or the attraction of desire. Rational consideration decides on the position of each thing in the scale of importance, on its own merits, whereas need only things of its own interests. Reason looks for the truth as it is revealed to enlightened intelligence; desire has an eye for what allures by the promise of sensual enjoyment.

The loss of this study is all the more critical given our nation's tremendous drug problem. Research on addiction is one of the chief priorities of NIDA and Dr. William J. Bennett, [then] director of the National Office of Drug Control Policy, has called research involving animals an "indispensable part" of the nation's campaign to combat drug addiction.

- At a head injury lab in Cincinnati, a researcher under extreme pressure from animal rights activists decided to discontinue her work studying traumatic head injury in feline models. (Approximately 80,000 Americans are permanently disabled by head injury every year; thousands more die.) The Physicians Committee for Responsible Medicine (PCRM), which launched the campaign against the researcher, claimed credit for her decision not to apply for a renewal of her grant.

- Dr. William Dement, director of the Stanford Sleep Disorder Research Center, recently presented a chilling example of what has been lost, in time and in progress, due directly to the animal rights agenda. Hit by a car, Dement's daughter experienced damage to her brain, causing coma. The Dements were told that it was unlikely that their daughter would survive. However, the controversies in use of animals in the study of brain and head trauma have made research of condition, similar to his daughter's, extremely difficult. In his presentation, as reported in the *Stanford Daily*, Dement describes one current study that aims to develop a safe and effective medication that will block lipid peroxidation and

stop progressive damage to the nervous system after injury. There once were many animal models being studied, but according to Dement, since 1984 head injury research using large animals such as primates has ceased to exist in the United States. "Maybe three years were lost in the course of all this," Dement said. . . .

- Break-ins, vandalism, arson and theft not only affect the researcher and important studies, much of it federally funded, but also pose a significant public health risk. In August 1987, the USDA Animal Parasitology Institute in Beltsville [Maryland] was raided by a group calling itself the Band of Mercy. Seven pigs and 27 cats were stolen and resulted in halted research. Each of the cats was infected with the deadly parasitic disease toxoplasmosis, which, when pregnant mothers are exposed, causes birth defects such as blindness and mental retardation in the unborn infants. . . .

- Animal activists have targeted the "next generation of biomedical scientists" through anti-science literature, inflammatory statements, and misleading information directed at schoolchildren, college students, and health professions majors, that include the message that animals are not needed for research and that all animal research is cruel. The possibility is very real that through the misguided efforts of animal rights activists, we will see a whole generation unwilling to engage in the critical health research that depends upon the use of animals.