

Current Events

MEETING REPORTS

Conference on Rabies: The U.S. Mid-Atlantic Outbreak

The January 13, 1983 issue of *New Scientist* reported that, in Europe, successful control of rabies in wildlife may soon become a reality. Rabies first appeared in Poland in 1947; since that time, it has been moving steadily westward, transmitted chiefly among foxes, at a rate of about 30 miles a year. In an attempt to stop its further expansion, Swiss veterinarians have developed a vaccine that is made up of attenuated noninfectious (but nevertheless live) virus; the vaccine was given to the foxes via chicken head baits. For this program, the initial results have been propitious. Although there remains a very remote possibility that the immunization virus might revert back to a virulent form, thereby causing a disastrous increase in the incidence of the disease, the benefits to date from the Swiss program have been tremendous: the further spread of rabies to the Upper Rhone Valley seems to have been halted. One consequence of this achievement is that West Germany and Italy have decided to assume the risk associated with the use of live virus, and will soon begin their own programs to immunize foxes against rabies.

In the U.S., however, there persists a certain wariness about the potential danger of massive deployment of live-virus vaccine. Also, in contrast with Europe, the principal vector of rabies here is the raccoon, an animal that shows distinctly different patterns of rabies onset, course of disease, and transmission than the foxes of Europe. Rabies is endemic in many species of

U.S. wildlife, but in the last few years, the mid-Atlantic area has experienced what appears to be an epidemic of rabies

in raccoons. To sort out the facts from the myths about the outbreak, a conference was held on the topic at the Laurel Ridge Conservation Education Center in Vienna, VA.

The first speaker, Suzanne Jenkins from the Centers for Disease Control, provided the conferees with a brief history of the outbreak, and some pertinent data on the epidemiology of rabies in several common species. The earliest known description of rabies dates back to 500 B.C., in Greek mythology. Throughout most of history, rabies has been found predominantly in dogs but, in 1953, the introduction of an effective rabies vaccine for dogs initiated a rapid decline in the incidence of the disease in the canid population (about 5,000 cases in dogs were reported in 1953; by 1983, the number had dropped to 185). Then, however, in 1978, public health officials began to observe a real spike in the incidence of rabies in both wild and domestic animals.

In foxes, the disease is cyclical, but the overall incidence remains at a low level. Only in New England is fox-to-fox transmission suspected; other cases in foxes are probably caused by "spillover" from skunks. Cases in skunks approximate 4,000 a year, and these animals may thus be responsible for some spillover of rabies to other species occupying the same or adjacent territories. The patterns of geographic distribution of rabies in skunks, raccoons, and dogs do seem to coincide, thereby substantiating the concept of spillover among species. And, while skunks appear to be somewhat more resistant to rabies infection than some other species, they show more severe symptoms when they do contract it and, more important, excrete more contagious virus particles before they succumb. Rabies in bats doesn't show any obvious geographic clustering; isolated cases, probably not associated

with rabies in other species, are reported from time to time. Rabbits and rodents are very resistant to rabies. Even when they are experimentally infected with rabies virus, they don't produce enough virus to transmit the illness to humans.

Raccoons, when infected, don't always exhibit the signs of rabies or die from the disease. Right after an outbreak among raccoons, 40 to 50 percent will show antibody to rabies virus in their blood. But even 1 ½ years after an outbreak has subsided, a small percentage will have rabies antibody in their blood, so it is likely that a residual pool of rabies virus is always present in this species.

Until recently, most of the raccoon rabies cases reported in the U.S. occurred in the Deep South, principally in Florida, Georgia, and South Carolina. By 1981, though, rabies had traveled north to Virginia and Maryland, where far greater numbers of cases were reported than were ever observed in the South. In 1982, rabies had even crept up into Pennsylvania, although the number of cases was still relatively low. Translocation of rabies, Dr. Jenkins hypothesized, was probably caused by the transport of rabid raccoons (by individuals like hunters) back to the North.

In West Virginia, however, the pattern has been somewhat distinct: the numbers of rabies cases have remained low, partly because both raccoon and human populations are much lower, and partly because people there are more likely simply to kill and bury a suspected rabid animal than report their suspicions to local authorities.

Factors in the current outbreak include a possible recent overpopulation among raccoons, but Dr. Jenkins admitted that we really have no reliable data on raccoon populations or their movements. The only means of controlling the extent of transmission of rabies to humans available in the U.S. are (1) creating physical barriers between ourselves and wild animals; (2) inoculation of animals or humans; and (3) deterring raccoons from living so closely with us, by removing possible food sources like garbage.

Some have requested that we try to halt the outbreak by killing off the entire

raccoon population. But, even if this were somehow construed to be the method of choice, "population control for raccoons doesn't seem to work," Dr. Jenkins noted. If their numbers are greatly decreased, raccoons display a rebound phenomenon, and utilize an increased reproductive capacity to compensate for recent losses. She did suggest trapping in isolated cases, as a means of eliminating suspected rabid populations. But this practice is of limited utility because, first, wholesale trapping may well result in the removal of immune animals (which are then replaced by new, susceptible occupants) and, second, translocated raccoons have low survival rates. This means, Dr. Jenkins concluded, that any trapped raccoons must be destroyed.

While a live vaccine for rabies in wildlife is available, there is still great fear among those at CDC concerning the havoc that could be created if the attenuated virus in the vaccine were to revert to its virulent form. Small-scale testing of the vaccine is about to begin, though, in Washington, DC's Rock Creek Park. Dr. Jenkins did recommend human vaccination for all those in high-risk jobs.

David Manski from the U.S. Park Service spoke next about his proposed studies on the raccoons of Rock Creek Park, a long strip of land that runs right through the center of urban Washington. He had discovered that there were virtually no data on the ecology of urban raccoons. He therefore plans to study the park's raccoons intensely over the next few months. The particular objectives of the study are to:

- Establish raccoon densities and their distribution in the park
- Describe the age/sex/social structure and survival patterns
- Quantify raccoon movements and resource utilization in the park and adjacent residential and commercial areas
- Monitor the raccoons for rabies
- Evaluate the efficacy of vaccinating the park raccoons against rabies.

In the wild, he said, population densities are estimated at 20/sq km for coastal areas and marshes (the animals' prime habitat), or as low as 1/sq km (in

less favorable sites like prairies). These numbers contrast dramatically with urban densities, which average 68/sq km. The movements of raccoons in the wild are related to their quest for food sources, usually fleshy fruits. In cities, however, the range and frequency of movements may differ radically, since the new food source, garbage, is always close at hand.

In the upcoming Rock Creek study, animals will be trapped, and every raccoon so captured will be marked for identification. Blood samples, to test for rabies antibody titers, will be taken. Animals will then be vaccinated and later retrapped, to take follow-up blood sample, in order to get an idea of how long immunization lasts.

Jeffrey Lake, of the Virginia State Department of Health, has already used a somewhat different approach to investigate the ecology of raccoons in northern Virginia. His study will:

- Monitor the rabies cases reported in the state
- Characterize the location of each case according to a list of 40 geographic and environmental factors
- Define the factors that affect any change in the distribution of rabies
- Provide data for later evaluation of the relative effectiveness of different control tactics, including oral vaccination.

For the purposes of the study, Mr. Lake has divided the state into 6,000 grids of 1 sq km. Each of these areas is described in terms of factors like slope, aspect, land use type, elevation, distance to a stream or bridge, distance to a residential area, rainfall, and distance from other reported cases. Among other things, he is trying to find precise figures on the rate at which rabies is spreading in the state. (Current CDC data indicate that rabies travels somewhere between 25 and 50 miles per year.)

Mr. Lake has already discovered one important datum: if a small food area is established, about 80 to 90 percent of the raccoons in a large area will pass through this feeding site. This item on raccoon logistics offers hope that, should massive vaccination be attempted in the U.S., a relatively small number of

vaccination sites will suffice to immunize a large proportion of the raccoon population.

Sylvia Simpson from the Maryland Health Department discussed some of the cost-vs.-benefit factors entailed in rabies control. For three Maryland counties, she itemized, and then obtained cost data for, various kinds of activities potentially useful for controlling rabies and informing the public about it. These factors included media campaigns (TV and radio spots, flyers, newspaper articles), stepped-up efforts at vaccination of dogs and cats, data on the cost of vaccines, and the amount of time spent by personnel like public health department workers that could have been used on other programs.

She found that, by 1983, in the three study counties one-tenth of the cats, one-half of the puppies, and two-thirds of all adult dogs had been vaccinated. In her opinion, a reasonable immunization goal should be set at one-half of the cats and three-fourths of the adult dogs. Alternatively, public health efforts might be concentrated on immunization of high-risk humans (such as trappers and hunters), or direct control of the size of the raccoon population.

A panel discussion among public health officers and humane society workers then addressed the question of how best to inform the public and get companion animals vaccinated, without raising undue alarm about rabies. A variety of media programs (including a puppet show on rabies) was described, and the numbers and sites of extra vaccination clinics were detailed.

However, Martha Armstrong, of the Arlington Animal Rescue League, raised some critical questions about the current approach to rabies control in the U.S. Since the epidemiology of rabies falls under the jurisdiction of the CDC, the disease is studied principally as it affects the *human* population; animals are only considered to the extent that they serve as a vector for transmission of the disease to humans. One consequence of this policy, Ms. Armstrong noted, is that every animal caught, whether actually infected with rabies or not, must be killed and tissue samples submitted for testing.

If the verdict from the test lab comes back negative for rabies, it is small comfort to the dead animal, or to the animal welfare worker who was compelled to euthanize it. She wondered if one unintended result of current campaigns might therefore be the massive destruction of raccoons. And Mr. Manski asked whether large-scale vaccination of raccoons might have the adverse effect of removing rabies as a natural self-regulator of animal populations. He also questioned whether animals artificially immunized by humans could still be considered wild, in the true sense of the word.

In sum, the conference provided a thorough background on what is known about the methods of rabies control currently available in the U.S. But any notion that some aspects of these methods might be inhumane, or that the mind-set of the whole approach might be a typical product of the manipulative "game management" perspective on the nature of human interaction with wildlife, emerged only in the unanswered questions that were voiced, merely as footnotes, at the very end of the session.

FORTHCOMING MEETINGS

University of California, Davis: Conference on Animal Stress, July 6-8, 1983, Sacramento, CA. Various aspects of recent research on indicators and consequences of stress in animals will be discussed. Contact Barbara Adams, Dean's Office, College of Agricultural and Environmental Sciences, University of California, Davis, CA 96516.

University of Surrey: "Short Course in Laboratory Animal Science and Technology," July 25-September 2, 1983, University of Surrey, Guildford, Surrey, U.K. This high-level course is intended for people with some experience in this field but who hold, or will in the future, major responsibilities for the management and organization of units that serve education, industrial, or governmental laboratories.

Topics to be covered include animal health, care, nutrition, and experimental usage, along with management and staff training. After the 2-week lecture course, attendees will be given the option of an additional 2 weeks of work experience in a major British laboratory facility from September 5-16, 1983. Contact Mr. A.A. Tuffery, Department of Biological Sciences, North East Surrey College of Technology, Reigate Road, Ewell, Surrey KT17 3DS, U.K.

Lifeforce: Animal Rights-A Humane Symposium, July 30-August 5, 1983, Vancouver, B.C. This meeting, which will be held in conjunction with the Annual General Meeting of the Canadian Federation for the Protection of Animals, will seek to draw up a listing of clearly defined goals for the animal rights movement, as related to the specific issues of intensive farming, vivisection, and fur production. Contact Lifeforce, Box 3117, Main Post Office, Vancouver, B.C., Canada, V6B 3X6.

International Council for Laboratory Animal Science: "The Contribution of Laboratory Animals to the Welfare of Man and Animals: Past, Present, and Future," July 31-August 5, 1983, Vancouver, B.C., Canada. Topics covered will include: a geographic overview of laboratory animal science; the animal model in gerontological studies; the development, status, and future of international quality in laboratory animals (standardization); and new and future trends in biotechnology. Contact Mr. D. Joi, ICLAS/CALAS 1983, Box 286,810 West Broadway, Vancouver, BC, Canada V5Z 1J8.

American Society of Primatologists: 5th Annual Meeting, August 7-10, 1983, East Lansing, MI. Contact Dr. David M. Taub, c/o Yemassee Primate Center, 414 New Street, Beaufort, SC 20092.

Austrian Ludwig Wittgenstein Society: 8th International Wittgenstein Symposium, August 15-21, 1983, Kirchberg/Wechsel, Austria. The theme of this year's symposium is "Aesthetics-Philosophy of Religion" and papers are now being solicited in the following subject areas:

Wittgenstein, recent developments in aesthetics, methods in aesthetics and in philosophy of religion, knowledge and belief, science and religion. Contact Dr. A. Hubner, President, Austrian Wittgenstein Society, Markt 234, A-2880 Kirchberg am Wechsel, Austria, or Professor Werner Leinfeller, University of Nebraska, Dept. of Philosophy, Lincoln, NB 68508.

World Veterinary Association: XXII World Veterinary Congress, August 21-27, 1983, Perth, Western Australia. Planned session topics include: "The Place of Animal Production in Veterinary Science," "The Role of International Organizations in the Field of Animal Health," and the Recognition of the Emerging Role of Companion Animals in Human Health." Papers to be presented will focus on avian medicine, epidemiology, small animal medicine, veterinary education, and veterinary state medicine, among others. Contact WVC Travel Planners, P.O. Box 32366, San Antonio, TX 78216.

International Union of Toxicology: Third International Congress on Toxicology, August 28-September 3, 1983, San Diego, CA. This congress provides a forum for international communication of toxicological endeavors and promotes worldwide cooperation in identifying and addressing issues in the field of toxicology. symposia tentatively planned for the meeting include: "Toxicology of Energy Sources from Synthetic Fuels," Behavioral Toxicology: Link Between Chemical Lesions and Functional Deficiencies," and "Recent Approaches to the Problems of Dose-Response of Genotoxic Carcinogenicity." Contact J. Wesley Clayton, Ph.D., Department of Pharmacology & Toxicology, College of Pharmacy, University of Arizona, Tucson, AZ 85721.

Australian Society for the Study of Animal Behavior and the Australian Academy of Sciences: 18th International Ethological Conference, August 29-September 6, 1983, Brisbane, Australia. Plenary sessions will be strongly didactic, but will also provide a general overview of recent developments and highlight any problems or controversies. Contact Conference Sec-

retary, Animal Behavior Unit, University of Queensland, St. Lucia, Australia 4067.

American Association for Laboratory Animal Science, National Capital Area Branch: 12th Annual Seminar, "Emerging Models in Toxicologies," September 15 and 16, 1983, Hunt Valley, MD. Contact William C. Cole, National Capital Area Branch, American Association for Laboratory Animal Science, 17501 Beauvoir Blvd., Derwood, MD 20855.

IEMT: International Symposium on Pets and Society on the 80th Birthday of Professor Konrad Lorenz, October 17-19, 1983, Vienna, Austria. Contact Secretary, IEMT, Johann-Blobner Gasse 2, A 1120, Vienna, Austria.

Society of Environmental Toxicology and Chemistry: 4th Annual Meeting, November 6-9, 1983, Arlington, VA. The theme of this year's meeting will be: Multidisciplinary Approaches to Environmental Problems, and will cover sublethal effects, complex mixtures, risk analysis, regulatory and legal aspects, agroecosystems and pesticides, effects on communities and ecosystems, and innovative experimental and statistical methods. Contact Barbara T. Walton, Program Chair, Environmental Sciences Division, Oak Ridge National Laboratory, P.O. Box X, Oak Ridge, TN 38730.

International Association Against Painful Experiments on Animals and the American Fund for Alternatives to Animal Research: Conference on religious perspectives on the use of animals, July 1984, London, U.K. Papers to be presented will deal with aspects of the scientific use of animals, in educational settings, toxicity testing, and basic and applied research. Contact Professor Tom Regan, Department of Philosophy and Religion, North Carolina State University, Box 5688, Raleigh, NC 27650.

ANNOUNCEMENTS

Buddhists Form Animal Organization

Buddhists Concerned for Animals, Inc. (330 Page Street, San Francisco, CA 94102) is a new organization for those "who see consideration of animals, and responsiveness to their suffering, as an integral part of Buddhist practice." The concerns of BCA about the current mis-use of animals spring from the belief that all living beings are, alike, manifestations of the life-force of Buddha, and all share a common experiential base as well: pain, grief, sorrow, hunger, and thirst.

One of their first efforts is a quarterly newsletter. In the Winter 82-83 issue, they set forth the grounding and motivation for their beliefs, and then detail current positions on animal issues: they have come out strongly against factory farming, animal experimentation, and trapping with leghold traps. A longer article relates the role of animals in war-related research, thus providing yet another rationale for supporting a nuclear freeze.

BVA Trust Funds Animal Welfare Chair

Substantial funding for a chaired professional position at one of the I.J.K.'s veterinary schools has been announced by the British Veterinary Association's president, Neal King. The person who will provide the bequest will reserve the privilege of nominating her choice as the veterinary school that will sponsor the post but, should her initial offer meet with any complications, the BVA Trust does not intend to delay the appointment, and will simply offer the post at another university.

Toxicology Directory

A "Directory of Toxicology Testing and Consulting Institutions in the U.S."

will soon be published by the Texas Research Institute. It will include descriptions of over 300 laboratories, the types of testing performed, the animal species used, and the types of materials tested. The directory is priced at \$55, and will be available from Texas Research Institute, P.O. Box 20165, Houston, TX 77225.

Get Out Your Pencils and Paper - Animal Welfare Journalism Contest

The Scientists Center for Animal Welfare is inviting all those who feel they have a flare for scientific writing to submit entries for its 1983 Journalism Awards. Stipends of \$500 each will be awarded in two categories: articles published since 1980, and articles currently being prepared for publication.

Entries, SCAW advises, should consist of thoughtful, well-researched articles that focus on the use of animals in biomedical experimentation, scientific education, or agricultural practices. It is stressed that the development and discussion of ideas and points of view must be given primary emphasis, rather than mere presentation of data or methodology.

Each entry should be accompanied by (1) the author's name, address, home and office phone numbers, and affiliation; (2) if published, a copy of the article and the publication's title and date; (3) if unpublished, a copy of the typewritten draft of the article and a background statement discussing the development of the article; and (4) samples of previously written articles. The deadline for the contest is September 30, 1983, and it is anticipated that the awards will be made by November 1, 1983.

Send all entry materials to Marcia R. Feinleib, Executive Secretary, Scientists Center for Animal Welfare, 2115 East Jefferson Street, Suite 401, Rockville, MD 20852.

Institute for Alternative Agriculture, Inc., Established in Washington

To provide a credible and reliable

resource for objective education and research on biological/organic farming, the Institute for Alternative Agriculture has been formed in Washington, DC. The Institute will promote organic farming systems, because they can help (1) reduce soil erosion and compaction; (2) conserve energy; (3) minimize agricultural pollution of streams and ground water; (4) avoid our current heavy dependence on increasingly expensive and uncertain sources of agricultural fertilizers and pesticides; (5) contribute to long-term sustainable food production; (6) enhance environmental quality for fish and wildlife; and (7) improve food quality and safety.

Those at the Institute believe that the conventional agricultural community persists in ignoring the benefits of alternative agriculture principally because of misinformation (or lack of information), or the negative image that conventional farmers may have formed of alternative farming systems. To explain the possible role of organic farming, the Institute will initiate a national information clearinghouse on all aspects of alternative agriculture; provide alternative farmers and their support industries with an educational and research organization that is strategically located in Washington; work with state and regional organic producer and marketing groups in coordinating and sharing information; reach out to conventional farmers and consumers with objective information; and publish a regular newsletter, *Alternative Agriculture News*. The first issue of this publication provided news and comment on agriculture-related items such as the Agricultural Research Service's long-term program plan, which calls for the development of alternative agricultural systems, but then provides no funding to implement the recommendation, and a description of the U.S. senate's Weaver bill, which would provide federal support for research and information programs on alternative agriculture—a revised version of the Organic Farming Act of 1982, narrowly defeated last August.

For more information, write to Institute for Alternative Agriculture, Inc., 9200 Edmonston Road, Suite 117, Greenbelt, MD 20770.

New Publications from the Primate Information Center

Three new bibliographies on primates have recently been printed by the Primate Information Center. The new titles are: *Behavioral Observations of Feral and Free-Ranging New World Monkeys: A Bibliography (1940-1979)*; *Behavioral Observations of Feral and Free-Ranging New World Monkeys: A Bibliography (1980-1982)*; and *Catecholamines and Corticosteroids in Nonhuman Primates During Stress: A Bibliography*. For ordering information, write to Primate Information Center, Regional Primate Research Center (SJ-50), University of Washington, Seattle, WA 98195.

Animal Toxicology Hotline

An Animal Toxicology Hotline service has been initiated for the U.S. at (207) 333-3611. It is available on a 24-hour-a-day, 7-day-a-week basis, and furnishes information and advice about identified or suspected cases of animal intoxication with chemicals or poisons. When telephone consultation is judged insufficient in any particular case, a team of investigators will be sent out to assist the attending veterinarian in making a diagnosis and setting up a treatment regimen (note that the service is only available through primary veterinarians). There is no charge for the telephone consultation, but charges are made if an emergency team is dispatched, based on the expenses incurred and the magnitude of the problem.

Hotline personnel have access to a comprehensive data bank containing up-to-date information on chemicals, feed additives, drugs, pesticides, environmental contaminants, and plant and mold toxins likely to have affected animals through ingestion or inhalation. The data bank also includes details on comparative toxicity and recommended therapeutic and decontamination measures.

Scientists Center for Animal Welfare Publishes Proceedings of Conference

A recent conference on animal experimentation forms the basis for a new SCAW publication, *Scientific Perspectives on Animal Welfare*. It contains discussions on the whole spectrum of review procedures that govern animal welfare, practical recommendations for scientists concerned about proper standards for animal use, and comments on the relevant training and important guidelines necessary for setting up an effective animal care committee.

Copies can be obtained for \$14.50 from Academic Press, 111 Fifth Avenue, New York, NY 10003.

Felix Wankel Research Award for Animal Protection

To help establish a scientific basis for modern animal protection, the Felix Wankel Research Award for Animal Protection has been established, with awards totaling OM 50,000 given each year, to express appreciation for the work of individuals who have made an outstanding contribution to the scientific study of animal welfare. Those who wish to compete for the prize should submit papers based on their own research, which reflect knowledge gained in the course of that work and its immediate benefit to animals. Entries must be received by December 15, 1983, at the office of the Felix Wankel Research Award for Animal Protection, c/o Director H.-J. Weichert, Ortlindestrasse 6/VIII, D-8000, Munich 81, Federal Republic of Germany. All entries originally written in a language other than German should also include a summary in German.