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The Probe NADCA
ISSUE 148
OCTOBER 1994

Hantavirus: prevention is the best defense

Suzanne Graham for Pacific Northwest Station (Reprinted from Forestry Research West, Sept. '94 issue, USDA Forest Service

This is the first part of a two-part series. Part 2, **Risk Factors** *and* **Guidelines to Safeguards**, *will appear in the November issue of The PROBE.*

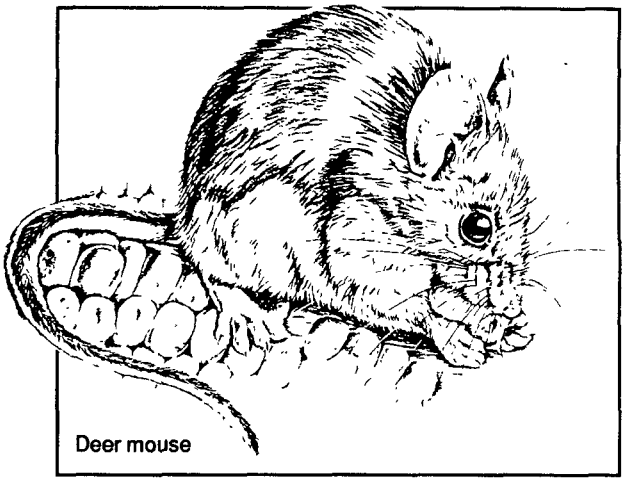
The hantavirus caused major alarm in spring and summer 1993, when it first surfaced as an unknown but lethal respiratory illness in the Four Corners states of Arizona, Colorado, New Mexico, and Utah. With deadly swiftness, it struck formerly healthy young adults, initially causing ordinary flu-like aches and pains but quickly progressed to inflict massive tissue damage in the endothelial cells lining the lungs and causing capillaries to leak. Within a matter of hours victims went into crisis, finding it progressively harder, and then impossible, to breathe. Even with the help of a ventilator, many died from blood loss.

Through a combination of coincidence and quick and clever laboratory detective work that showcased the power of modern genetic techniques, researchers at the Centers for Disease Control and Prevention (CDC) and the U.S. Army Medical Research Institute of Infectious Diseases were able to identify the culprit as a previously unknown strain of hantavirus.

These are a family of retro-viruses already known in Asia and Europe for causing fevers with hemorrhaging and kidney disease. But the newly discovered U.S. strain—known as the "Four Corners" or "Muerto Canyon" strain, based on the location of the first cases—attacks the lungs rather than the kidneys, is much more rapid of onset, and more lethal; mortality for the U.S. strain is running at close to two-thirds, compared to a range of 5 percent to 20 percent for the overseas viruses. As of March 1994, the CDC, taking into account retrospective diagnoses from analysis of deceased patients' tissue samples as well as people currently presenting with respiratory illnesses, has recorded 64 confirmed cases, 39 of them resulting in deaths, according to Lori Armstrong, epidemic intelligence service officer.

Deer mouse identified as main host of virus

Researchers have pinpointed the deer mouse as the main host for the virus, a cause of major concern, because the deer mouse range stretches across most of the continental United States and Canada. According to CDC's Armstrong, there are infected rodents all over the United States with the earliest sample retroactively identified as dating from 1975. "There is no reason to believe we won't find more cases."


Deer mouse

That's also the opinion of Marcia Goldoft, medical epidemiologist with the Washington State Health Department. The concern in Washington State probably mirrors that of many other states currently having no recorded cases of hantavirus to date, but with large populations of deer mice. Goldoft's department has explored every available avenue to uncover cases of respiratory illness that might turn out to be caused by hantavirus. In the last 9 months, no case has surfaced. But Goldoft believes it's only a matter of time. "When there's been a confirmed human case just

Continued on page 2, Col. 1

Continued from page 1

Hantavirus: prevention is the best defense

across the river in Oregon, another in Idaho just 10 miles from the Washington border, and another nearby in Great Falls, Montana, it stands to reason that we probably have some infected mice here, too."

People seem to get the virus mostly from contact with the aerosols produced from deer mice urine, feces, or saliva. The infection can spread also through food or water contaminated by rodent excreta, or when other materials similarly contaminated come into contact with broken skin or any of the mucous membranes of the human body. So those who work outdoors in rural areas, such as farm workers, forestry and wildlife scientists, are potentially at risk. In particular, research biologists and mammalogists may face special hazards. The measures taken by certain Washington State wildlife scientists suggest an appropriate response to the potential danger, which field researchers in other states might do well to follow.

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PNW field crews follow stringent guidelines

Andrew Carey, a former researcher for CDC, is a Principal Research Biologist with the Pacific Northwest Research Station who has Forest Service field crews in both eastern and western Washington State. He quickly sent rodent samples from his region to the disease control agency. All have tested negative. Nevertheless, Carey's field crews now work under the stringent guidelines recommended by the CDC. They use surgical gloves when handling animals, traps, or bedding. They carry detergent and water, plus alcohol towelettes (since alcohol has been found to break the lipid coat of the hantavirus). They use surgical masks or respirator masks plus coveralls that are removed before

Continued on page 5, Col 2

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Your contributions to *The Probe* are welcome. Please send news clippings, new techniques, publications, and meeting notices to *The Probe*, c/o Hopland Research & Extension Center, 4070 University Road, Hopland, CA 95449. If you prefer to FAX material, our FAX number is (707) 744-1040. The deadline for submitting material is the 15th of each month. Opinions expressed in this newsletter are not necessarily those of NADCA.

CALENDAR OF UPCOMING EVENTS

November 3-4, 1994: The Science of Overabundance: The ecology of unmanaged deer populations, National Zoo's Conservation and Research Center, Front Royal, VA. (Bill McShea, Conservation & Research Center, Front Royal, VA 22630, (703)635-6500, FAX (703)635-6551.

November 16-19, 1994: Fifth Annual International Meeting on "Rabies Control in the Americas - Coping with Invading Rabies Epizootics, Skyline Brock Hotel, Niagara Falls, Ontario, Canada. (Sarah Crosgrey, ON Min. of Natural Resources, Midhurst District Office, Midhurst, ON Canada. (705)722-3663, FAX (705)722-5720.

January 26-27, 1995: Annual Meeting New York Chapter of The Wildlife Society, Rochester, New York. Theme: "Wildlife and Human Populations in Conflict". Contact: Mark Lowery, NYS Department of Environmental Conservation, SUNY, Bldg. 40, Stony Brook, NY 11790-2356, (516) 444-0305 or Lynn Braband, Critter Control, P.O. Box 19389, Rochester, NY 14619, (716) 235-2530.

February 10-12, 1995: The Wildlife Damage Management Instructional Conference. Presented by Wildlife Control Technology magazine. To be held at the Nordic Hills Resort and Conference Center, Itasca, Illinois. Contact: Peggy, (708) 858-4928. **NADCA Membership Meeting** - held in conjunction with this conference. Contact: Scott R. Craven, 226 Russell Labs, Univ. of Wis., Madison, WI 53706, (608) 263-6325.

April 10-13, 1995: 12th Great Plains Wildlife Damage Control Workshop, Doubletree Hotel, Tulsa, Oklahoma. Contact Ron Masters, (405) 744-6432 or Grant Huggins, (405) 221-7277.

ADC News, Tips, Ideas , Publications . . .

A Call for Praxis

In every industry there exists a tension between the theoreticians and the engineers, the thinkers and the doers. Animal Damage Control is no different. As one whose undergraduate degree included a major in Philosophy, I have strong support for theoretical/philosophical writing. Definitions, environmental impact, ethics and animal suffering are all important topics for animal damage control. But as a full time problem animal controller, I would like to read less about theory and more about animal behavior relevant to their control. Sure I care about the big issues, but I also know I must care about my client's needs as well. I understand that animal research is expensive and time consuming, but could I just make the modest request that biologists keep an eye open to ADC relevant information as they read various journals and then pass it along to us doers. I believe that educating us will go a long way to fulfilling their desire to develop trappers who understand the "big picture."

Stephen Vantassel, NWCO Correspondent, 332 A Cooley Street Box 201, Springfield, MA 01128

Evaluate the Technique's Financial Practicality

It always frustrates me to read about a technique that may work fine but fails to consider the financial implications. For example, the Chimney Safety Institute of America (*Successful Chimney Sweeping*, p. 6-3) suggests that a squirrel can be freed from a chimney by lowering a large diameter rope (how large is that?) down the chimney and left overnight. But who wants to return the next day when the job could be solved right then by other means? Especially when they say, "If it doesn't work, take the squirrel out the damper." Perhaps you can help me with this issue. Have you found this technique useful for your business? I would like to know. We in the ADC business should evaluate all techniques not only for their effectiveness, but for their practicality for the business person. I don't want to climb a roof twice and I certainly don't want to come back twice. After all, time is money. I need to use techniques that work and work efficiently so that I don't price myself out of a job. Let us work together to utilize the best techniques and eliminate the useless.

Stephen Vantassel, NWCO Correspondent, 332 A Cooley Street Box 201, Springfield, MA 01128

Mixed Results Using Propane Exploders to Repel Deer

Biologists at the Ohio Field Station have been conducting a study to determine the period of time it takes for deer to become habituated to propane exploders. An exploder, fired continuously at 8-minute intervals, was compared to one triggered automatically by the deer itself using a recently developed remote sensing device. The automatic exploder is designed to remain active for a period of one minute and then become inactive until a deer is again detected. Preliminary results suggest that deer become habituated to the continuous exploder within 6 days, whereas the automatic device remained effective for only 9 days. Therefore, propane exploders have a very limited period in which they remain effective as a frightening agent for deer. Studies will continue to determine whether short active/inactive periods will increase the effectiveness of propane exploders.

Revised Damage Handbook Available

The book *Prevention and Control of Wildlife Damage* has been extensively revised by Scott Hygnstrom at the University of Nebraska. It now covers all species of significance throughout North America.

The new edition can be obtained in either hard copy ($40 plus $5 shipping) or a CD-ROM version ($40 plus $3 shipping). If you wish to purchase both formats, it will cost $60 plus $5 shipping. You can phone in your order by calling 402-472-2188. To order by mail, send a check payable to the University of Nebraska to: Wildlife Damage Handbook, 202 Natural Resources Hall, University of Nebraska, Lincoln, NE 68583-0819. Shipment of the revised edition is expected to begin during November.

The editors of **The PROBE** *thank contributors to this issue: Lynn Braband, Robert H. Giles, Jr., James E. Forbes, and Wes Jones. Send your contributions to* **The PROBE**, *4070 University Road, Hopland, CA 95449.*

Trapping Weasels

James E. Forbes, President, NADCA

For some time now, I've been meaning to write a "Message from the President" column for **The PROBE**. I didn't know what to call the column. A "Message From the President" sounded boring. No one would read it.

I felt "Weasel Trapping" might catch your imagination and you might even read it. I was right — if you've read this far. Some day, in this column, I'll tell you about trapping weasels. It's kind of an interesting story.

For now, let's look at what's happening in NADCA. For years, I felt that the Officers and Directors of NADCA didn't effectively tell the " Troops" what was going on at "Headquarters". Hopefully, this column will change all that.

These are exciting and fast-changing times at NADCA. Some of our recent innovations include:

- *New Inservice Training Program*
- *Employment Service for NADCA members*
- *ADC Informational/Techniques Clearinghouse*
- *Ten Position Statements on ADC Issues*
- *Larger "The PROBE" Issues — eight pages in September, six pages in October*
- *Member Directors with ADC Advertisements*

This is all possible because we have a cadre of hard working, innovative people who have agreed to serve on NADCA committees. Some of these people have even agreed to serve on two committees. I'd like to tell you who those Committee Members are so that you may pass on to them any ideas, comments or suggestions that you may have. The members are as follows:

The Spokesperson Committee is Dennis Slate, Chairperson. Members are Gordon Batcheller, Gary S. Kania, Guy Connolly, J.W. Nuckolls, Kevin Bruce, Carter Niemeyer, Larry Van Druff, Scott R. Craven Richard A. Dolbeer and Michael D. Hoy.

The Membership Committee is Rosemary Heinan, Chairperson.

The Expired Membership Subcommittee is Andy Moneteny, Chairperson, with members Kevin Bruce, Donald J. Wilda and Marsha Barden.

The New Membership Subcommittee is Russ Mason, Chairperson. The members are Bruce Leland, James Miller and John R. Consolini.

The Records Subcommittee is Wes Jones, Chairperson.

The Awards Committee consists of James E. Miller, Chairperson. The members are Scott Hygnstrom, Kirk E. Gustad and Mark Thurston.

The Inservice Training Committee is made up of Co-Chairpersons Terry P. Salmon and Scott P. Craven.

The Employment Committee is made up of James E. Forbes, Chairman and Chris Engels. Note: This Committee is described in detail on page 5.

Finally, the Information/Techniques Committee is led by Dallas Virchow, Chairperson and members Russ Mason, Stephen Vantassel and Chris Engel.

Well, that's the "Dream Team". As you can see, we have members from a wide variety of occupations, principal interests, geographic areas, and both genders. In fact, I've mentioned almost everyone, except you. If you would like to work on a committee, please let me know. I still have a few ideas up my sleeve — and I can put you to work.

Next month, I'll tell you more about the goals and objectives of these committees.

How to Make the Treasurer Happy

Take a look at the mailing label on this issue of **The PROBE**. If it says "Expiration date 10/94," it's time to send your membership fee to Wes Jones. (If it says 9/94 or earlier, your dues are over-due!) Send in your renewal now. . .and save Wes's time and effort, as well as saving NADCA the cost of a stamp. Use the handy membership application on the outside of this issue.

Want to make the Treasurer even happier? Pass the membership application along to a friend and tell them how great it is to belong to NADCA and support our profession!

Editors' Note

Please excuse the delay in receiving the September issue of **The PROBE**. We've now switched to printing **The PROBE** at the University of Nebraska, thanks to the help of RD Scott Hygnstrom. Our hope is that bulk mail from Lincoln will reach all members faster than it did from California.

Employment Anyone?

The NADCA President and Treasurer often receive announcements for employment opportunities in the ADC field. For example, recently there were openings for a Wildlife Biologist to run the Wildlife Damage Control Program in Washington State; a Biological Technician (Wildlife) in North Carolina and a Beaver Trapper in Mississippi.

Unfortunately, there rarely is time to notify NADCA members of these openings via **The PROBE**. All that is about to change.

The NADCA Employment Committee has been created and is open for business. Committee members are James E. Forbes, Chairman, and Chris Engel.

The Committee will act as a clearinghouse to put NADCA members seeking employment in contact with prospective employers. This committee will keep a set of résumés of wildlife biologists, technicians, trappers and volunteers on file and, when requested, provide copies of these to prospective employers.

If you would like to participate in this *new NADCA Service* to members, please send a business-sized, self-addressed, stamped envelope to:

Chris Engel
1002 Warren Court
Richland, Washington 99352
(509) 943-9187.

Chris will provide you with an official NADCA Résumé Sheet and instructions. These will be kept on file for two years. When employment openings occur, a copy of your résumé, along with others in your field (Wildlife Biologists, Wildlife Technicians, Trappers, Volunteers) will be forwarded to the prospective employer.

This new NADCA service is available *ONLY* to NADCA members in Good Standing.

Internships Available with the Wildlife Management Department of NRA

Internships with the Wildlife Management Department of the National Rifle Association of America (NRA) are available throughout the year. Interns must be able to work on a daily basis in the NRA Headquarters located in Fairfax, Virginia.

Departmental interests include various aspects of federal and state legislation affecting wildlife conservation and hunting. Duties will include answering correspondence, researching information, assisting with the Grants-in-Aid program, helping to coordinate the Environment, Conservation and Hunting Outreach (ECHO) Program with federal agencies, local travel for meetings and general office responsibilities.

Applicant should be a current student or a recent graduate in a natural resource program with solid writing skills or a journalism major with sound working knowledge of hunting and conservation issues. Experience with firearms and hunting would be helpful. A small stipend and/or college credits may be possible.

To apply, send cover letter indicating starting date preference, résumé, and writing sample to Wildlife Management Department, National Rifle Association of America, 11250 Waples Mill Road, Fairfax, VA 22030. Phone 703-267-1501. Apply at least one month before preferred starting place.

Continued from page 2

Hantavirus Prevention

entering vehicles or houses. They cover any open wounds with waterproof bandages and observe strict hygiene rules, always washing with detergent before eating, urinating, or otherwise exposing any mucous membranes to the potential of aerosolized hantavirus.

"What precautions people take should be directly related to the risk they are undertaking," advises Carey. "The key is to inform people of the risks and the measures they can and should take for protection." He points out that the risk is not solely connected to direct handling of rodents and other small mammals. If field crews are searching for fungi in soil undergrowth, for example, they are in a potentially dangerous environment and need to take appropriate precautions.

Look for part 2 in the November issue of ***The PROBE.***

TIME VALUED MATERIAL –
DO NOT DELAY

Scott Hyngstrom
Forestry, Fisheries & Wildlife
202 Nat. Resources Hall
University of Nebraska
Lincoln, NE 68583-0819

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Membership Application

NATIONAL ANIMAL DAMAGE CONTROL ASSOCIATION

Mail to: Wes Jones, Treasurer, Route 1 Box 37, Shell Lake, WI 54871, Phone: (715) 468-2038

Name: _____ Phone: (____) _____ - _____ Home

Address: _____ Phone: (____) _____ - _____ Office

Additional Address Info: _____

City: _____ State: _____ ZIP _____

Dues: $_____ Donation: $_____ Total: $_____ Date: _____

Membership Class: Student $10.00 Active $20.00 Sponsor $40.00 Patron $100 (Circle one)

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Select one type of occupation or principal interest:

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