

Will Graves
900 Hillen Drive
Millersville, MD 21108
3 March 2010

Environmental Quality Council
Helena, Montana, 59620

Mr. Chairman, Ladies and Gentlemen of the Council;

This is for the record:

I worked for a short time (1950-1951) in Oaxaca, Mexico for the US Department of Agriculture. I was the Chief of an Inspecting, Vaccinating, Slaughtering Brigade in a horseback sector working to eradicate the Foot and Mouth Disease. In 1951 I volunteered for four year service in the US Air Force where I was taught Russian. In 1955 I started to work for the National Security Agency (NSA) and retired after 35 years service. In 1983 I was awarded the Meritorious Civilian Service Award from NSA.

I have had an active interest in wolves since 1951 during which time I researched the characteristics, habits, and behavior of wolves in Czarist Russia and the former USSR. I recorded the results of my research in 2007 in a book titled, "Wolves in Russia: Anxiety Through the Ages." The much esteemed Dr. Valerius Geist was the Editor of my book.

From 1993-1995 I worked for the US State Department in the US Embassy in Moscow. While there I spent much of my free time traveling and collecting information about wolves in Russia. I still maintain email contact with some residents there. I have contacts with individuals who live in Yakutsk in the Yakutia Autonomous Republic. This area is well know as a reindeer breeding and herding area. One of my contacts is Yuri Sleptsov, whose wife Maria Rastorgueva works in the Yakutia Scientific Research Institute of Agricultural Science. She knows Isakov Semen Innokentevich, Doctor of Veterinarian Science who also works at the Institute. I requested and they forwarded to me on the 26 of February "A Notice for the Public about Hydatid Diseases." A translation of that notice done by Mr Vladimir Deriabn and me, and edited by Dr. Geist is attached.

The inhabitants of Yakutia have had centuries of experience with wolves. Each year wolves kill from about 8,000 to almost 10,000 reindeer. Some details on this are included in my book. Thus, it should not be a surprise that Yakutians also have extensive experience with wolves carrying and spreading parasites and diseases; therefore, I thought the information in this notice would be informative to Americans.

I do not understand how anyone in the US could say that Hydatid Disease does not pose a significant threat to humans. It is difficult to detect this disease in humans, and it

may go undetected for an extended period of time, even twenty plus years. Late detection increases the risk of serious consequences or even death.

Hydatid eggs can survive severe cold temperatures, and note that they can be carried in water. Research needs to be carried out in both of these areas.

The parasite Neospora Caninum causes abortion in cattle and is carried by dogs and coyotes. It has not been determined if wolves are the definitive hosts of this parasite. I personally suspect that wolves may also carry and spread N. Caninum. I believe research needs to be done in this area.

Additional information about wolves in Russia spreading diseases written by the biologist N. Nazarova may be found on my website: WolvesInRussia.com

I believe our government agencies need to do much more to assist and aid our ranchers and farmers.

Respectfully,

Will Graves,
Millersville, Maryland

This is a translation of an undated Notice from the Yakutian Scientific Research Institute of Agricultural Science received February 2010. The translation was done Mr. Vladimir Deriaben and Mr. Will Graves, and edited by Dr. Valerius Geist.

A Notice to the Public about Hydatid disease (*Echinococcus*)

Hydatid disease (caused by the dog and fox tape worms, *Echinococcus granulosus* and *E. multilocularis*, respectively. ed) is a very severe parasitic disease, and possesses a very complicated clinical background. It acquires a chronic character and ends with grave consequences or lethal outcome.

The pathogenic organisms of hydatid disease are small tape worms that inhabit the bowels of dogs, which are considered to be the carriers of the parasite. Humans and some animals (sheep, swines, cows and etc.) are the intermediate host of the *Echinococcus*. The larval bladder stage of the parasites develops within the person, making it the intermediate carrier of the disease.

The most common type of human contamination is through contact with contaminated dogs whose fur has come in contact with contaminated fecal matter. Hydatid disease may also be transmitted through contaminated vegetables, vegetation, fruit, dirty hands.

Up to 80 - 95 % of the *Echinococcus* cysts develop in the liver and lungs. These cysts grow slowly: upon initial penetration into the human carriers, their length hardly reaches several millimeters, in 5 months they reach 1 cm diameter, and in 10 years these cysts reach a massive size and contain several liters of liquid.

The main measure to prevent contamination by *Echinococcus* eggs is strict personal hygiene, avoiding contact with helminth (tape worm ed.) eggs through the mouth from infected animal fur, as well as other objects of the environment polluted by the feces of the infected animals. It is important to implement veterinary measures aimed at utilization of the meat wastes of the diseased sheep (prohibition of feeding dogs and industrially produced fur animals with such waste meat products), timely identification of the diseased dogs and their proper treatment.

It is very difficult to diagnose hydatid disease at the initial stages due to the absence of specific clinical symptoms. The *Echinococcus* cysts can be detected accidentally in the course of carrying out some research procedures for example X rays, or during surgery. Currently, to aid in diagnosis, research is held in the field of immunology, the most effective being immuno-enzyme analysis. The enzyme-linked immunoassay is used for seroepidemic study of the contamination of the population by hydatid disease in order to determine the intensity of transmitting of contamination in the breeding ground. Observation of different ages, professional and ethnic groups of the

population makes it possible to obtain information on contingents affected by high risk of contamination.

The origin of this disease is the larval stage of helminth (cestode). Its adult tape worm form is parasitizing in the thin section of the bowels of the animals (dogs, wolves, foxes). The larval form - is to be found mostly in the liver, lungs, and rarely in other parts of all agricultural animals and humans. As a result it leads to the formation of the *Echinococcus* bladders and finally to a severe disease which often ends with lethal outcome.

Hydatid disease is widely spread in the areas where the stray dogs are not taken care of, where the bodies of the dead animals are not taken away and dogs are fed with the inner organs, contaminated with the bladder stage of *Echinococcus*. The infected dogs which have a constant contact with humans and home mammals quickly disseminate the pathogens of these diseases among humans and animals.

Humans are infected while contacting the contaminated animals, gathering berries and herbs, or using the water from the sources contaminated by the eggs of the helminths or processing skins.

In the alimentary canal of humans the oncospheres of the eggs of the tape worms are getting rid of their cover, the emerging larvae penetrate into the arterial blood and are spread further by the flow of blood. Most part of the larvae are retained in the liver, part of them is penetrating into the lungs (through the minor circulation of blood). Insignificant number of larvae get into kidneys, bones and brain. One cyst (a solitary affecting) or several cysts (alveolar hydatid disease caused by the fox tape worm *E. multilocularis* ed.) may develop in the affected organ. The cyst grows in the course of several years moving or squeezing the carrier's tissues, which later get atrophied and become necrotic.