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**IN THIS ISSUE**

- 1. An alternate theory about CWD ..... 2
- 2. Game farming fiasco ..... 5
- 3. New technology for DNA sample collection ..... 11
- 4. Drug withdrawal intervals..... 13
- 5. Industry news ..... 13
- 6. Events calendar ..... 15
- 7. Subscription services ..... 15
- 8. Contact information ..... 16

**\*\* DEER \* BYTES \* \*\***

Velvet Antler – A Gift From Nature, 2<sup>nd</sup> Edition by Cindy Ewashkiw, D.T. and Marion Allen, PhD., R.N. is now available. This 28-page booklet is perfect to give to potential customers and distributors. Only \$3.00 USD with quantity discounts available. To order, phone 780-789-2331 or <mailto:strawberrycreek@myexcel.ca>

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## 1. AN ALTERNATE THEORY ABOUT CWD

[By Rich Forrest, the CWD Foundation, <http://www.stopcwd.org>, e-mail [antler333@amigo.net](mailto:antler333@amigo.net) ]

For those of you with a general interest in CWD and a desire to read technical jargon, our Colorado CWD research foundation has just released a tentative draft on a proposed CWD causative agent which rewrites the books on TSE diseases from the perspective of an observant elk farmer. You may view the technical article at: [http://www.stopcwd.org/library/cwd\\_paper.cfm](http://www.stopcwd.org/library/cwd_paper.cfm)

Here is a non-technical explanation of my CWD-TSE theory.

The Spiroplasma theory I have presented in my paper is sufficiently different from current CWD causative theory to create a bit of a stir. Perhaps 95% of the scientific community has subscribed to “prions” as being the causative agent of all TSE diseases, which has helped spread “prion hysteria” all over the world. That hysteria has been the real problem.

After 25 years and hundreds of millions of research dollars, no one has actually proved that prions cause disease! A small group of scientists, myself included, believe prions are a symptom of the disease and do not cause the disease. Prions are to TSE diseases as cancer cells are to cancer: a result, not a cause!

Basically, for four decades, some researchers have continued to suspect bacteria or virus to be involved in TSE diseases. However, in the early 1980s some researchers were frustrated by the inability to specifically identify a bacterial or viral origin and hence proposed a non-biotic process as creating these diseases, AKA non-DNA coded prions (proteinaceous infectious particles). Through very adroit and expert PR manipulation, the theory (initially nixed by the scientific community) caught on and eventually led to a Nobel Prize for Dr. Stan Pruisner. Since then, research monies have flowed like water, but the results have been less than stellar. Prion theory has major flaws, some seemingly fatal, e.g., multiple strains of disease (21 kinds of sheep scrapie), animal-to-animal transmission but no detectable transferring agent, a suppression of the disease by tetracycline (an antibiotic), the presence of foreign DNA within diseased cells, and so on.

As such, when my own animals contracted CWD (I had 350 elk, 3 of which got the disease) I watched the disease progression very closely. Using basic scientific observation skills (I am a geologist-geochemist, a noted elk expert and national championship level elk antler grower) I tried to better understand the disease. Then, over the next year I read all I could find from the National Institute of Health library, and discovered that not everyone believes in prions. A Tulane University professor had very interesting proofs that TSE may be caused by bacteria.

The gist of this theory (actually Dr. Bastian’s, as he originally proposed it some 35 years ago) is founded and explained with my disease “symptom chart” found about two-thirds of the way into the paper. There are twenty-one symptoms of TSE disease and a bacteria can cause all 21 of them! Every symptom of TSE disease can be explained by a very peculiar bacteria which is very poorly understood by most medical personnel. Spiroplasmas were only “discovered” in the mid-1970s. All my proofs are from independently documented sources. When presented in the whole (for the first time in my paper) the evidence is, in my humble opinion, overwhelming. This is the first time anyone will have seen all this information in one place. This makes a compelling case!

The most convincing individual proof is from Dr. Bastian of Tulane University who has actually found Spiroplasma bacteria in the brain of CJD and scrapie victims. He injected similar bacteria into rats (rabbits and hamsters too) and produced a TSE disease. All this evidence has been seemingly ignored by the “established” medical research community, giving us nothing of use for over two decades! NO proven cause, no preventative actions, no vaccine, no treatment, no nothing for hundreds of millions of research dollars.

Effectively, the Spiroplasma theory CAN explain why the meat animal in central Alberta was positive. It can explain what has happened in Colorado, South Dakota, Saskatchewan, New Mexico, Wisconsin and other places. It easily fits in all areas because it is so basic. A very simple bacteria with very unusual abilities lives in insects, and those insects are a secondary reservoir of disease lying in wait to newly infect.

To paraphrase the last two pages of my text: CWD is a disease caused by a deer or elk variety of parasitic Spiroplasma bacteria, most logically supplied by an insect, invading the host likely via ingestion into the digestive system. The bacteria passes through the gut membranes into the lymph and blood system. Since it consumes sterol proteins, Spiroplasma coats itself in host cholesterol to confound the host’s immune system, but does initially induce the production of anti-infection chemicals which stimulate the production of defensive white blood cells.

Spiroplasma then invades the white cells without assimilation due to its chemical structure, allowing it to be transported throughout the host, including to the brain. The bacteria also gets red blood cells and brain cells to produce another anti-infection drug (TNF-alpha) which induces the creation of excess manganese in the cell structure and helps induce star-shaped defense cells (astrocyts) found in TSE diseased brain tissue. Once in the brain, Spiroplasma cloaks itself in brain tissue as shape-shifting blebs, or dense sugar-coated capsules entirely emplaced within individual brain cells, escaping detection, immune response and drug therapy.

During its reproduction state, Spiroplasma changes shape but does have a short-lived, but distinctive helical shape. To reproduce, it steals the necessary proteins, and in particular, the requisite metallic building blocks, to convey host-immune defenses to its bacterial offspring. The bacteria steals copper and zinc from normal cellular prion protein and internal cell components, basically killing the cell by robbing it of its own defense mechanisms, and additionally inducing the emplacement of more manganese leading to cell destruction. All the while the bacteria digest its host cell membrane walls with secretions of hydrogen peroxide.

The newly created Spiroplasma cells (carrying the scavenged copper and proteins) are available to attack new cells. They can also be excreted by the host into the environment and subsequently picked up by insects to repeat the cycle. The host animal then looks like it has a copper deficiency, and it yet has extra manganese in the brain.

The extra brain manganese creates the positive test results on the poorly understood testing procedures (western blot and ELISA). The bacteria yield the distinctive tiny helical protein fibrils found in all TSE-infected tissue. And the dead brain cells give the sponge-like texture to the brain. All three diagnostic criteria are met!

To my knowledge, only three researchers in the USA (I am one) are pursuing this most logical causal agent. My goal is to show the fallibility of the current testing routines, and to prove that a more reasonable solution is out there. I am sure I will be ridiculed for what I propose, but 25 years as

a gold mine scam debunker has put me face to face with controversy before. And while I am not a “trained” medical researcher, I have spent over thirty years logically and successfully figuring out Mother Nature's puzzles and man's theoretical baloney. As such, my forensic abilities, my scientific BS detector, and my basic scientific investigative skills are very well-developed.

If someone wants to shoot me down, I welcome the chance to respond to valid theory criticism after thoughtful deliberation. But I must say that, this theory is very difficult to knock down.

Here are some of my answers, based on my theory, to specific questions that have been asked.

*1. Is there a more specific way now to identify the disease, i.e., an early live animal test?*

Yes the bacteria should be directly detectable in the blood within a short time after infection, and their byproducts should show up in the urine. This makes for an easy screening test for humans, but maybe not so easy for an elk (unless you can get them to pee in a cup!) I will be addressing the possible solutions in Part 3 of my paper.

*2. With the ability to cloak itself, is there the possibility for a) a cure, b) a vaccine potential c) eradication, and d) disease treatment? What management techniques can we incorporate to minimize risk, in both farmed and wild animals?*

A cure is a matter of finding the proper combination of spiroplasmacidal antibiotics in a cocktail and treating animals over an extended period of time to kill the dormant or cloaked bacteria. Right now, we know that tetracycline slows them down, but we need to try all the variants of tetra, as well as other bacteriostats. If the agent can be identified, then a live-attenuated vaccine may be possible as well. The host immune system is important in the first stage of infection. Kill it quick or you may be toast! Once it is ensconced, the bugs will be difficult to root out. CWD will be a management disease, and culling may still be necessary for overall domestic control.

Wild control is very problematic. Part 3 will present a more complete picture, but personally, if I were facing a CWD risk and NOT making meat animals, I would feed a tetra medicated pellet with extra copper and some immune system vitamins. If you can keep the buggers out of the animal or if you can weaken the bugs when they first show up, plus additionally boost the host immune system, why not? Even the alien-like “prions” seem to be subject to the host immune defenses.

*3. Can you culture the specific agents and infect healthy animals and create the disease? Can this be done without using an already infected cervid, i.e., insect to cervid?*

Yes, I would think so, once you isolate the specific organism. Mouse infection studies followed by cervid studies will “prove” the hypothesis, but many months will be necessary, along with big bucks!

*4. Can you isolate the specific organism from diseased animals?*

Yes. I would expect that through the use of PCR (polymer chain reaction) amplification and DNA sequencing very specific strains should be identifiable, followed up by very discriminating culturing procedures. The buggers are parasitic and very difficult to cultivate outside of live mammalian tissue. Fortunately, tissue could even be well deteriorated and still harbour these rotten little buggers, munching away!

5. Can you find the disease agent on site after an eradication of positive animals?

Yes. I would expect the possibility of somebody creating a live animal screening test either using blood or urine, maybe even saliva. Right now, I want to try some urine byproduct tests with some off-the-shelf products. I'm ready to go to work, but alas! All this research takes people, time and money, and we are not exactly an army.

## 2. GAME FARMING FIASCO

*[This is a copy of a letter written by Len Jubinville, an Alberta deer farmer, to Ralph Klein, Premier of the Province of Alberta, Canada.]*

Dear Ralph,

First, I want to wish you and your family a very happy and prosperous New Year. But, as you may not know, it surely won't be for any of the deer and elk farmers in Alberta.

I would like to share my thoughts and experiences pertaining to the above subject, and also introduce myself. My name is Len Jubinville. You probably don't remember, but you and I talked, and even exchanged a couple of jokes, at one of our earlier deer and elk conventions just before you became our Premier. Do you remember how supportive and passionate you were about our new industry in those days? Today, the real joke of Alberta is elk and deer farming.

After 15 years, you would think that provinces like Alberta and Saskatchewan would be reaping large benefits from such an initiative. But no, it's just the opposite. Now, for hundreds of families, all we have to look forward to is compensation resulting from a class action lawsuit against our federal government. I hope the expected results of this class action lawsuit will become three-fold. First, it would be a step in making right the wrong that has been done to so many Canadian families. Secondly, it would inject cash into our industry, cash which is so desperately needed at this time. These monies would be used by some farmers to rebuild our industry and weather the storm. Others choosing to get out could at least do so with a little dignity and have some of their life savings returned to them. Thirdly, it would put pressure on our provincial government to start cleaning up this mess.

Together we need to reflect on just how we got to this point, and visiting the past is the only way we will be able to come up with a solution and a vision that will move this industry forward or shut it down.

Game farming was introduced and encouraged by the provincial governments of Alberta and Saskatchewan in the 1980s as an important initiative to diversify our agricultural industry. At that time, many of us studied the benefits of such an initiative, and then decided to invest and get involved.

Today, I am one of those unfortunate people. When I think of all the money, sweat, time and stress that I've put myself and my family through, it makes me sick. The only thing that keeps me sane and struggling is making sure that I stay focused on the positives and the benefits of game farming. I've traveled extensively, at my own expense, in Europe and throughout North America, researching and learning about deer farming. As a matter of fact, I'm probably the most traveled deer farmer in the

world. In all these travels, I've gathered a wealth of knowledge about deer farming, and what is needed to build an industry around these animals.

Many farmers in our industry have other sources of income. However, ten years ago, I chose to put all of my energies and money into building an industry around game farming. For fifteen years, I've donated time and money to our different associations. I've served as director, vice president and president, and attended numerous meetings with many different government personnel. I can assure you that I've acquired a very good insight as to what went wrong, and how it can be fixed if someone is to fix it.

A person would need to write a book in order for the story to unfold properly and thoroughly, but time is of the essence now. I know that a man of your stature is often in a difficult position. If you and your fellow politicians are not very well versed on a subject, how can we expect you to always make the right decisions? While still doing it justice, I will try to reveal as much of the fiasco mentioned above as briefly as I can.

### **History of deer and elk farming**

In the 1980s, the governments of Saskatchewan and Alberta made the decision to allow the farming of deer and elk. Game farming was to become an important factor in the diversification of our agricultural industry. At the time, as you and I both remember, there was lots of opposition towards this initiative. Much of this opposition was within our own government departments. Some was even within the Department of Agriculture, which is the department responsible for supporting us. This department has greatly improved over the years. Today, I believe that any opposition to game farming from within the department is now gone, since Mr. John G. has recently been assigned to other tasks.

Unfortunately, the same can not be said for the Department of Sustainable and Natural Resources. In my opinion, this department will eventually kill game farming in Alberta by a slow death if something is not done about it soon. The government approved game farming and then left us alone to deal with the opposition. How could we do everything? After all, we're only human. Learning how to farm these animals turned out to be a big job in itself. While we were learning, the opposition was building bridges. When game farming first started, Saskatchewanites and Albertans did not waste any time. We were fast becoming the leaders of game farming throughout North America. We were trading and working hard together to breed for superior genetics and develop farming methods that would guarantee game farming's success. We wanted to become a good farming diversification example for the rest of Canada.

It wasn't long before the opponents to game farming woke up and realized that maybe, just maybe, this game farming was not just another scheme that would eventually end up going the way of the ostrich. Ralph, nothing is a coincidence in this world, and you and I have both been around long enough to know this to be true. Game farming in Canada came about for certain reasons and today I beg you to trust in a pioneer game farmer and fellow Albertan to enlighten you about some of the reasons. First, let's talk about the Slow Death Plan created by the anti's.

### **Slow Death Plan and the opposition to game farming**

We all know the most effective way to shut down industries or bring them to their knees is to attack their trade, to divide and conquer them, and to keep them as busy as possible putting out fires. In the early 90s, when it was obvious we were going to survive the TB scare, the Fish & Wildlife division,

led by Margo P., took this opportunity to throw us another curve ball. Margo, in case you don't know, is a leading scientist with Alberta Fish and Wildlife division. In my opinion, she has a superior ability in keeping her opposition to game farming very well-camouflaged. Her opposition, I'm sure, springs from a personal vendetta than from professional doubt. The problem is that she's in a position of such influence that it makes it easier for her to implement any strategies that she and her group may come up with from time to time.

The first of these strategies was to attack our trade. This was successfully accomplished by this group pushing forward with a fear mongering plan. It stated that, if trade continued between Saskatchewan and Alberta, we were posing a serious threat to our wildlife. This group used *P. tenuis* (a brain worm that can affect deer and elk) as an excuse to eventually stop the east-west movement of cervids. I remember Margo thoroughly explaining to us how this parasite's host is a small snail that is indigenous to eastern Canada, but it has so far only been found as far west as a short distance past the eastern Saskatchewan border. What a coincidence! What if someone was to look a little harder? We might just find this snail throughout Canada. Anyway, because of this, the decision to close the border from Saskatchewan to Alberta was implemented, resulting in a one-way trade for our industry.

Our opponents know if they're successful in restricting trade even one way, this will help their cause a great deal in the long term. These new regulations quickly pitted farmer against farmer, and province against province. We all found ourselves spending more time arguing than doing anything else. Scientists and researchers kept us very busy negotiating transportation protocols and proposals for a blood test that we were being told would soon reopen the borders. Well, did we ever get the wool pulled over our eyes! They took our money, plus matching grants from the government, for a number of years, and kept promising us that a test was still within reach. To this day, we have never received as much as a paragraph of research results that make any sense to farmers. There will never be a test created for *P. tenuis* because it's so redundant. Does this mean that the borders will remain closed for ever? Or does science need to come up with new diseases every so often to make sure we can't trade within our own country?

Where was Health Canada when all of this was happening, you ask? Health Canada and CFIA did not recognize *P. tenuis* as a threat, and never wanted any part of this trade obstruction scheme. As a matter of fact, farmers have no problem acquiring transportation permits from CFIA to move their animals anywhere in Canada. The problem has been caused by bureaucrats in both provinces that are determined to kill our industry. Now, why wasn't the border between Manitoba and Saskatchewan chosen as the one to close? The answer is simple. It would have had absolutely no effect whatsoever on the young aggressive elk and deer farming industry of Saskatchewan and Alberta.

Ralph, do you think it was a coincidence that this particular border was shut down instead of any other one? Pioneer elk and deer farmers know first-hand how much pain and grief this issue has caused us. Never once did Margo and her team ever accept our arguments about deer and elk in the wild moving freely throughout Canada, and especially between Saskatchewan and Alberta where they are in such abundance. Nor did they accept the fact hunters move deer freely across this border. Also, everything else you can imagine has been moving freely across this border for millions of years. So, what's the problem if it isn't game farming as a whole.

Science and research are fast losing credibility in our democracies. This is a true example of abusive authority! Can you see how these anti's went right for the heart of our trade? As a matter of fact, I would call it going right for the jugular. Even well-established industries would have difficulty

surviving such a blow, never mind an emerging industry like ours. (Remember - attack their trade.) Can you also see how something so dramatic would create lots of dissention among farmers? (Remember - divide and conquer.) Can you also see how this serious situation demanded so much of our time and money? (Remember - keep them busy putting out fires.)

Our industry has spent so much money and energy designing and negotiating different protocols for P. tenuis and other issues that we should consider reclassifying our industry to a protocol industry, if there is such a thing. For the most part, all we've been doing for the last ten years is negotiating protocol after protocol. Even very recently, some of our supposed industry builders were spending lots of time negotiating a protocol for depopulation. Can you imagine such a thing happening when not long ago, our industry was identified as being one where it was imperative that we work hard at increasing our number of farms and animals in order to have a viable industry?

There's a lot more I could tell you. I could tell you how overzealous Fish and Wildlife officers keep harassing us, intimidating us and hauling us to court. We never asked for any of this crap. Today, we find ourselves raising nothing more than pets because the whole industry is actually shut down. Public perception of us is so bad, and the industry is so low, that many good families are presently giving up game farming and moving on to other things so they can survive emotionally and financially. Who would have ever imagined that in such a short time something so good could turn so ugly in this beautiful country?

Ralph, I ask you to look after putting an end to this slow death plan before it's too late. Most of the anti's work for you or your fellow premier, Mr. Lorne Calvert of Saskatchewan. And another request: could you please bring Shirley (Minister of Agriculture) up to speed on some of these issues? She's under the impression that the drought is the cause for all our problems, when for us, it's the least of our worries.

What we're truly lacking is not moisture. It's government understanding of our industry, and government support for our industry, and I don't mean monetary. Now, I know that some opposition to game farming is also coming from other industries like the oil and gas industry, other farming industries and one hunting group. But I also know that if we work together we should be able to overcome this, unless you know something that I don't. If you do, please let us know so we do not continue spinning our wheels for nothing.

### **Reasons for game farming**

There are many good reasons for us to encourage game farming, but the single most important reason is the environment. There is nothing in the world done naturally anymore. The last 100 years of evolution has seen more destruction to our planet than the previous millions of years. For example, in Alberta, we brag that our oil and gas industry drilled 17,500 wells in Alberta alone in the year 2001, with 2002 and 2003 possibly seeing more than that.

We do not even know the consequences of these actions, yet we just plow ahead and keep on drilling. Is this natural? In agriculture, we continue knocking bush down to grow more grain with more chemicals and fertilizers when there's nothing more unnatural than monoculturism.

I remember when 40 lbs per acre of fertilizer was the norm, and now, many farmers are over 200 lbs per acre. These fertilizers are responsible for a very big portion of the gas emissions that are affecting our planet. We also don't know the consequences of these actions, yet we plow ahead anyway. Is this natural? We brag that we can make a chicken in less than five weeks, and that our



cows give 20 times more milk than they used to. Our pigs and cattle are also mass-produced often with super feeds full of antibiotics and growth hormones. Is this natural? Our vegetables and fruits have, on average, been sprayed with some sort of chemical or another at least seven times before we get to eat them. Is this natural? We talk about health, obesity, climate changes, wells going dry, ground water tables disappearing completely, death of the family farm, rural ghost towns, urban sprawl, soil erosion, natural habitats disappearing, the extinction of species, and many more disastrous actions. But do we really do anything substantial about it? Humans have put all of their eggs in one basket, and that's science.

I think we need to implement policies that would see a big percentage of what we do done in a way that is as close to natural as possible. We need some of our scientists to get out of their labs and really study Mother Nature's plan. They should study what her secrets are, and why she was so successful in keeping the earth so green for so long. We have to thoroughly study her plan in every aspect to the point where humans would finally abase themselves and admit to having been taught something by another species other than ourselves. I have learned so much from these animals and there is so much more they can teach us. Today, I know that with the help of these animals, we can efficiently produce some of the healthiest foods one hundred percent naturally.

For example, one year, I wanted to grow oats without chemicals or fertilizers, so I worked up one of my oldest deer pastures. It was obvious the soil was full of nutrients because the oats came up quickly and thickly very shortly after seeding. The only problem was that not long after, the weeds really began growing. It seemed it was becoming a race between the oats and the weeds as to which was going to take over. It actually was getting discouraging but there was no way I was going to go buy chemicals to spray the weeds. I finally decided to open the gates and let the deer in. To my amazement, the deer were mostly only eating the weeds. They had made little trails all over my field, and a few spots where they had bedded down. Overall however, they damaged very little crop. I went on to harvest 70 bushels per acre of clean No. 1 oats that year.

What a wonderful surprise and inspiration of Mother Nature at work. What we call weeds is what deer call crops or food. Who's right? Another example is how I restored a depleted pasture with the help of my deer in a short period of four years. You see, Ralph, deer are 70% browsers and 30% grazers, which means they spend most of their time pruning the plants rather than clipping them to the ground. This process encourages plants to stool out and produce more. This process is further enhanced by the way deer excrete their waste in little pellets evenly spread over the entire pasture. These fast-acting biodegradable pellets are broken down quickly and easily by the environment, allowing the soil to absorb their nutrients more quickly. Compare this, for example, to a big cow dung that often ends up killing a square foot of grass if you don't go and break it down into smaller pieces yourself.

Game farming performed naturally will be so sustainable that it would go a long way in helping to rebalance Mother Nature. We have not used chemicals or fertilizers for the last ten years. We applied for organic status for our Athabasca farm, and when the inspector had completed the inspection, he could not believe how clean and green our whole farm was. He mentioned that we were onto something good and said to keep it up. He did not know that it's going to be impossible if we can't generate any income.

Ralph, humans need to get off this self-destructive road that we're on and come up with an agri-enviro-balance plan that would see at least half of our foods grown completely naturally. Didn't your parents ever tell you to never put all of your eggs in one basket? Right now, all of us are very

dependent on oil and gas for everything. If you allow yourself to really think about this, it becomes very scary especially after September 11th and you're living in Alberta when it's minus 40 with a wind. If ever you are to entertain such a thought, make sure you're dressed for it, because just the chill will become unbearable.

I'm convinced game farming needs to be encouraged and supported if we're serious about protecting our environment. Other good reasons why game farming must move forward are too numerous for me to elaborate on now, because there's other important issues that we need to talk about, but I would at least like to mention some of them.

- Game farming can help put some of our marginal lands into production without knocking down all the trees.
- More of our land needs to be put back to grass for environmental benefits, and game farming will help do that.
- Game farming is a very sustainable industry that is not dependant upon non-renewable resources.
- Game farming can help save the family farm and create jobs in more rural areas.
- Game farming will produce healthier and leaner products, which are in demand around the world today.

To summarize the reasons for game farming, I would like to leave you with this thought: game farming goes with the environment like bees go with flowers if performed in true partnership with Mother Nature.

I would also like to take this opportunity to invite you and Maureen, along with some of your fellow politicians, to come visit our farm in St. Albert. I would suggest scheduling this visit around lunch time so Gisele and I could treat all of you to a very healthy meal of farm-raised venison.

Thank you for your time. Please accept this letter as the first part of a series as a true and honest dialogue between two half-a-century old fellow Albertans. Also, please look forward to receiving my thoughts, in my next letter to you, covering some or all of the following topics:

- Who's to blame: the farmer or the government?
- Animal diseases and how humans deal with them.
- What does it take to successfully build an industry around animals in a democracy?
- Can the elk and deer industry be revived in Alberta?
- Should our vision be to build 60 some different little deer industries (one for each province and state) in North America or one big industry capable of competing with the rest of the world, or maybe even leading the rest of the world?
- Why bureaucrats like dealing with associations that depend on volunteers.

Yours truly,

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### 3. NEW TECHNOLOGY FOR DNA SAMPLE COLLECTION

[By Danielle L. Wolfe, Production Assistant at Open Door Visions, Tyrone, PA;  
<http://www.opendoorvisions.com> ]

Advances in science and technology have improved the world in ways that once were not thought to be possible. One of the most dynamic of these advances is the study of DNA and how genetic material determines and identifies characteristics unique to each organism. DNA has become the undeniable evidence used to prove and disprove the actions and presence of humans and animals across time. It has become the final word when trying to determine maternity or paternity, the presence or absence of diseases, and even a person's guilt or innocence.

DNA testing has also become an issue of concern for those interested in preserving white-tailed deer. In the effort to strengthen the health and population of their deer herds, deer farmers have begun to recognize the value of knowing the genetic profile of each animal. Obtaining the testing sample from the animal, however, has not been the easiest of processes.

Pneu-Dart, a remote injection equipment manufacturer based in Williamsport, Pennsylvania, has developed the first dart specifically designed to collect DNA samples without causing stress to the animal. Working closely for several months with Jim Raney, Founder and Executive Director of the North American Whitetail Registry, Inc., technicians at Pneu-Dart refined the design of the DNA Dart to ensure its effectiveness in obtaining tissue samples for DNA testing. "This new design makes the tissue sample collection from wild animals easier for everyone involved," says Dr. Robert Gozales, Scientific Advisor for DNA Solutions, Inc., in Ardmore, Oklahoma. "A tissue sample is the best kind of sample, preferable to that of hair and blood."

#### **Why DNA testing for deer?**

Testing is done to get a DNA fingerprint of an organism's genetic material. "Your DNA identity is a 50/50 composite of your parents," explains Dr. Gonzales. "[Knowing this individually unique DNA profile] helps registries confirm the genealogy or lineage of a given buck or doe." It provides deer farmers with scientific proof that the deer they raise hold the pedigree the farmers believe they do. DNA testing eliminates any doubt, which is essential when people pay thousands of dollars for healthy specimens. Jim Raney, representative of the North American Whitetail Registry, Inc., agrees with Dr. Gonzales: "Deer farmers are starting to see the importance of documentation. Your documentation has to be verifiable. Many breeders have been reluctant to use genetic testing because of the stress imposed on the animal during the process of sample retrieval. They didn't feel that the verification of parentage was worth the risk of damaging or losing an otherwise strong, healthy animal. [Pneu-Dart's DNA Dart] should allow breeders to concentrate on their bloodlines without the fear of causing stress to their stock."

#### **How does the DNA Dart make obtaining samples easier?**

The DNA Dart is built on a one cc plastic dart body. The purpose of the design is to remove a small tissue sample containing both the dermis and the hypodermis. A single tissue sample captured by the dart during field trials can provide enough tissue, conceivably, for dozens of DNA tests once the DNA has been properly isolated in the laboratory. The dart has a small, stainless steel cutter located on the tip of an aluminum nosecone. The cutter encompasses a barbed capture claw to ensure sufficient sample retention. Upon impact, the dart extracts the tissue sample and falls to the ground to be retrieved by the shooter.

The DNA Dart provides an economical, efficient, accurate, and safe alternative method of extracting tissue samples. Without the dart, people must collect samples during specific seasons in order to cause the least amount of disruption to the natural and biological cycles of the deer. To obtain samples, animals often have to be trapped, run through chutes, sedated (which can last 45 –60 minutes), and brought out of sedation. The effects of the drugs combined with the physical handling of the animals causes an undesirable and immeasurable amount of stress to each animal. Dr. Gonzales observes, “This new design makes the tissue sample collection from wild animals easier for everyone involved.”

“The most important thing is that the dart eliminates the stress factor,” explains Mr. Raney, who has been present when registry members have used the dart. “It’s proven to be extremely helpful. One member has does that aren’t very gentle. Still, many of their offspring were turning out very well, so he wanted DNA documentation. [To get samples from the does] he broadcasts supplemental feed. When the does come to feed, he shoots them with the dart. He retrieves the dart, and in five minutes, the does have returned to feeding, seemingly unaffected by the experience.

### **Can a dart really provide quality samples?**

Dr. Brandt Cassidy, Director of Operations at DNA Solutions, Inc., introduces new procedures into their laboratories and has worked with Pneu-Dart’s DNA Dart. “It provides a really good sample. The tissue we get [from the dart] is an ample amount for the testing we do to verify DNA.”

He went on to express the vital need for samples to be stored properly in a solution of alcohol. Because the barb traps and protects the sample inside the dart casing, it makes it very easy to ensure that the sample is properly stored and free of contamination. As Jim Raney offered, “The North American Whitetail Registry provides members with everything they need. All you have to do after retrieving the dart is loosen the tip so that air doesn’t get trapped. Drop the entire dart into the vial provided by the Registry and return it. The Registry will send the sample to the laboratory and provide [the farmer] with the proper paperwork.”

Those who have utilized the DNA Dart have responded positively. Dr. Cassidy described his experience with the DNA Dart favorably. “We have used it, and it works beautifully. I feel very comfortable in recommending that people use this dart as an accurate way of getting quality samples. DNA Solutions is willing and able to use samples from this dart.” Jim Raney endorses the product as well. “I’m proud to be in on the ground floor of something this exciting. This is going to help bring deer breeders into the 21<sup>st</sup> century. I think every serious deer farmer should highly consider [using it], if for no other reason than for their own pedigree information.”

For optimum results, DNA Darts should be fired from a variable-power dart projector (Pneu-Dart Model 193, 196, 176 or the Oplus-XT) at ranges from 20-40 yards. More product information about the DNA Dart can be obtained from Pneu-Dart by calling toll free at 1-866-299-DART or visiting <http://www.pneudart.com>. Inquiries for the Registry can be sent to: The North American Whitetail Registry, Inc., PO Box 1649, Uvalde, TX 78802. The Registry can also be called at 1-830-278-1322. Information about DNA Solutions can be viewed at <http://www.dnasolutionsusa.com>.

## 4. DRUG WITHDRAWAL INTERVALS

[By Karen Martin, VMD, <mailto:kmartin@state.pa.us> ]

I am wondering how many of you have been informed by your veterinarians that there are withdrawal intervals on antibiotics and xylazine and some of the other drugs that you may be using.

Traditionally in food animals like cattle, veterinarians and farmers have been acutely aware of the fact that drug testing is going on in slaughter plants. The drugs that we use take variable amounts of time to be cleared from an animal's body after they are injected or ingested. The FDA has set acceptable levels of drugs in tissue that are intended for human food. For some drugs like chloramphenicol there are no acceptable levels. This drug is not permitted for use in animals intended for human food. For other drugs like gentamicin, the withdrawal interval is at least one year or 454 days. The reasons for this are complicated, but have to do with humans eating the meat from these animals. If humans eat meat from animals that have drugs in their tissues, they can have allergic reactions. If people eat meats with low levels of antibiotics in them, the antibiotic can later become ineffective for use in humans.

All of the drugs that you use should have a withdrawal interval printed on the label. It should inform you of the amount of time that should elapse from the time that the drug is used to the time that the animal is killed for food. For example, if you use Xylazine to tranquilize an animal, the withdrawal interval is 14 days. You would not want any person to kill the animal until 14 days from the time the drug was used. Fourteen days is also the withdrawal interval for Yohimbine. For drugs used on species for which a withdrawal interval is not known, the withdrawal interval is 45 days. This includes Telazol. The time from injection of Telazol to the time that the meat should be used for food is 45 days because studies have not been done to determine how long it would take for the drug to be metabolized or leave the animal's body.

If drugs are found in an animal's body at slaughter, the veterinarian who prescribed the drug and the person who used the drug can end up being investigated by the FDA. If you are sending animals for slaughter for human food, you need to be very careful about drug use.

I have been getting a lot of questions about these issues recently, so I thought I would try to explain it to you all and ask for your feedback.

## 5. INDUSTRY NEWS

### Qeva expands into meat

CALGARY -- Qeva Group Inc. has purchased the rights to operate Balzac Meats, a provincially-inspected slaughter facility located on the Highway 2, 10 minutes north of Calgary. Balzac Meats has traditionally processed cattle, pigs, sheep and goats.

Qeva has expanded the operation to allow for the custom slaughter of elk and bison. Qeva had its first successful run of 18 elk and one bison on Friday, January 10, 2003.

Qeva will custom slaughter elk and bison as well as process animals for their own markets across Alberta. Qeva has branded Qeva Meats as the label under which the elk meats will be sold. Qeva is engaging in an aggressive marketing plan to introduce rancher elk meats to the Alberta marketplace.

Balzac Meats is now accepting custom processing orders from elk and bison producers. Call for more information on your processing needs or to purchase finished elk & bison products directly from Qeva meats.

Qeva is a leading distributor of elk velvet products for people and dogs. It also publishes the Canadian Elk and Deer Farmer Magazine, and provides sales and broker services.

Office number: 403-250-8852

Balzac processing: 403-226-0162

Contact: Rod McLeod, Rob Pek and Eric Falk

### **Tax relief for Canadian deer and elk farmers**

Canadian owners of breeding livestock forced to sell all or part of their herd in 2002 due to drought conditions will be eligible for a one-year tax deferral on 2002 income from those sales. The government hopes this deferral will help farmers replenish their breeding stock and maintain their operations. Eligible producers will be able to request this tax deferral when filing their 2002 income tax returns.

### **New Zealand venison prices down**

Prices for New Zealand venison are down from last year's high of \$NZ 10.00 to \$NZ 4.00 (~\$2.00 USD). Several reasons for this downturn have been identified. They include a strengthening of the New Zealand dollar against other currencies; high inventories left from last year in Europe; and high prices from last year making many buyers cautious. It is also suspected that BSE and FMD paranoia is still making people reluctant about eating too much red meat.

### **Deer on the roads**

In continental Europe, 300 people are killed and 30,000 injured each year in collisions with hoofed animals. At least 500,000 deer are killed annually by cars in the United States. These accidents cost around one billion US dollars each year within Europe alone.

In Britain, there are probably more than 40,000 deer-related traffic accidents each year. Between 2% and 5% of these are likely to result in human death or injury.

[Source: Deer Commission for Scotland as reported in the BDFA Deer Farming, Autumn 2002]

### **Lots of US hunters**

According to a US Fish and Wildlife Service 2001 survey, some 13 million Americans over the age of 16 hunted that year. They spent more than \$20 billion dollars doing it. Of these, some 11 million Americans (4% of the total US population) hunted deer.

[I've always said that some 15 to 20 millions American hunt deer every year. I wonder if the numbers are going down, especially with recent concerns about CWD. Ed]

## 6. EVENTS CALENDAR

Here is a list of upcoming events of interest to deer, elk and reindeer farmers.

NORTH AMERICAN DEER FARMERS' ASSOCIATION (NADeFA) Annual Convention will be held on March 19-23, 2003 in Jefferson City, Missouri USA. For more information, contact NADeFA at *mailto:info@nadefa.org* or visit their web site at *http://www.nadefa.org*

SASKATCHEWAN WHITETAIL AND MULE DEER PRODUCERS ASSOCIATION will hold their annual convention on March 28 to 30, 2003 at the Travelodge in Saskatoon, Saskatchewan, Canada. For more information, contact *mailto:info@saskdeer.com* or visit their website at *http://www.saskdeer.com*

REINDEER OWNER'S & BREEDER'S ASSOCIATION 2003 ANNUAL MEETING will be held in Pendleton Oregon USA on June 20-22, 2003. For more information contact Carol at *mailto:roba\_association@hotmail.com* or visit their web site at *http://www.reindeer.ws*

NORTH AMERICAN ELK BREEDERS ASSOCIATION (NAEBA) Convention and International Antler Competition will be held July 30 – August 3, 2003 at Kansas City, Missouri USA. Contact the NAEBA office at *mailto:info@naelk.org* or visit *http://www.naelk.org* for more information.

SECOND ANTLER SCIENCE AND PRODUCT TECHNOLOGY SYMPOSIUM will be held in February 25 to 27, 2004 in Queenstown, New Zealand. For more information contact Mark O'Connor at *mailto:mark.oconnor@nzgib.org.nz* or phone +64 4 473 4500.

\*\*\*\*\* **A D** \*\*\*\*\*

If you are thinking of starting a deer or elk farm, please visit the Deerfarmer Store located at *http://store.deerfarmer.com* There you will find model business plans that you can use to plan and finance your dream farm.

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## 7. SUBSCRIPTION SERVICES

We respect your right to privacy. If you wish to be removed from our mailing list at any time, simply send an e-mail to *mailto:editor@deerfarmer.com* with REMOVE in the Subject line.

If you want your name ADDED to our mailing list, please sign our Guest Book form at *http://www.deerfarmer.com/forms/guest.htm*

The *Digest* is also available in a print format (ISSN 1499-1349). A \$3 per issue (\$36 per year) fee applies to cover postage, paper and handling costs. Subscriptions and back issues can be ordered from our Store located at *http://store.deerfarmer.com*

As per our Privacy Policy, your name, e-mail address and any other information you provide us will only be used by Deerfarmer.com. This information will not be shared with any third party unless we get your permission first!

## 8. CONTACT INFORMATION

We are always looking for articles and news about deer and elk farming that we can print in this newsletter. E-mail, fax or mail your ideas and articles to the Editor as per below.

For more general information, comments and suggestions, please contact:

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