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Warfare

Inside this issue:

While the World is consumed by two tragic wars in the Northern Hemisphere, this newsletter looks at wars of a different kind.

The war between butter and margarine went on through most of the 20th Century, with margarine holding an almost unassailable lead thanks to corporatized advertising, until a late rally saw butter take the lead.

This is noted on page 2, the thrust of the story being that the same adverting format has led to misinformation in the oral milk fever remedy field.

Then we talk of the war against parvovirus where the main weapon is of course vaccination, but vaccination has never been a substitute for hygiene.

Thus we outline the problem and best practice disinfection against this deadly disease which seems to pop up at this time most years.

The other war is that against climate change, a great concern to all. However recent research into recent emissions around the world show that all is not as it seems and the perennial whipping boy, our Dairy Industry is being treated a little unfairly by those with political agendas.

Amidst all this talk of warfare we announce the arrival of a new product,

one that has been previewed in the last edition of EA News, CP+ Oral Paste for horses.

This simple but effective product has enormous benefit for both racing athletes and in the breeding barn.

Power of Advertising

Clearly advertising, especially intensive advertising as seen by major companies does work. We saw this last century in the great butter versus margarine debate.

Margarine only came into existence in 1869 when the emperor of France, Napoleon III, ran a contest for a low-cost butter replacement for his army. However, World War II brought butter shortages and, with them, the rise of margarine. This is when the media campaign began, and it was a real example of fake news.

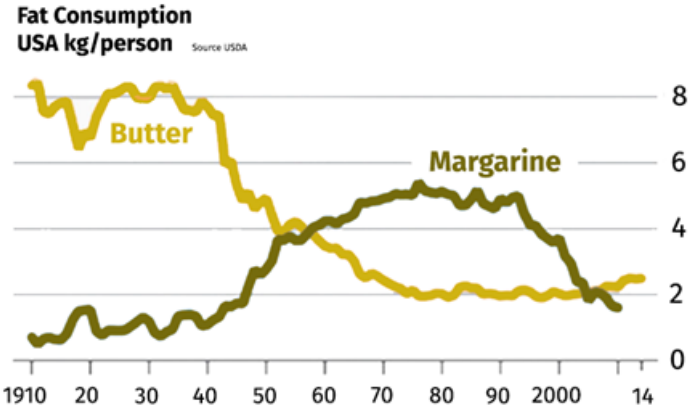
A bad butter fallacy started in 1913, when a Russian researcher, Nikolaj Nikolajewitsch Anitschkow, fed large amounts of animal fats to rabbits and showed that their cholesterol levels rose dangerously. He ignored the fact that rabbits do not naturally eat dairy.

40 years later, Ancel Keys, an American physiologist, claimed to have discovered a firm link between saturated fat intake and coronary heart disease.

Keys' research ignored clinical reports from European countries, where the traditional diets are heavy in fats, but the rate of heart disease is low. His study prompted a widespread fear of animal fats, promoted extensively of course by the purveyors of margarine.

Thus, margarine's popularity soared in the 1980s as a butter substitute with less saturated fat and no cholesterol for people with heart health concerns.

However, emulsifiers, which are used to make margarine smooth, can disrupt the vital healthy balance of bacteria living in our digestive systems. This can inflame the intestine, which raises the risk of developing inflammatory bowel disease.



Georgia State University researchers found that the inflammatory disruption can also lead to people piling on dangerous levels of weight, raising their risk of heart disease and diabetes - the very illnesses they have spent decades trying to avoid by ditching butter.

Growing concerns over processed foods and a simultaneous revival of appetite for natural fats has now turned the tables.

It is not only in the field of nutrition that corporate advertising trumps common sense. It is common enough in the animal health field, none more so than in the highly competitive transition cow area.

Just over thirty years ago Calol made a huge impression in a new field of oral milk fever remedies, so much so that it became the go to product and dominated the field for years.

This was simply because it worked! Like butter it had negatives that were not related to product efficacy.

Margarine was heavily marketed as being more spreadable and so easier to apply. Calol is an oily mixture so not all of it will come out of the bottle, just like oil being put in a car engine.

Competitors pushed this issue hard, not realising that the bottom line is not how quickly you can get it into the cow, but how quickly you can get the cow to its feet.

There is a myriad of good scientific reasons why Calol is so much more efficient than anything else on the market, the main thing being to realise that it is a milk fever treatment. There may be cheaper options for prevention but none of those options are as efficient in the treatment field.

While Calol has been around for three decades, old science is still good science. After all, Newtons law of gravity is hundreds of years old but still relevant. Calcium infusions are also much older science but still the mainstay of initial treatment of downer cows.

The only change here is that intravenous infusions are gold standard but subcutaneous, i.e. the 'bottle under the skin', is now a waste of time and money.

All milk fever cases should be treated as urgent because the longer a cow is down, the more chance she has of being a permanent 'downer'.

The bottom line is that, if she has a swallow reflex Calol alone will get her up, if not then a bottle of CBG in the vein, then Calol as soon as she can swallow will fix the problem. If she does not get up then it is more than a simple milk fever and that is the time to call the veterinarian.

Cheap Insurance

A cow down in transport is always a tough loss and, until recently, more common than it should be. Can it be insured against? The short answer is yes but not by involving big insurance companies and exorbitant premiums; there is a much simpler way.

Scientists at Massey University pinpointed a calcium deficit as the problem in dairy cows being transported and now MPI are recommending drenching them with a calcium slurry before transport.

While this may work it is messy and time consuming and utilises fairly insoluble calcium salts that take time to work.

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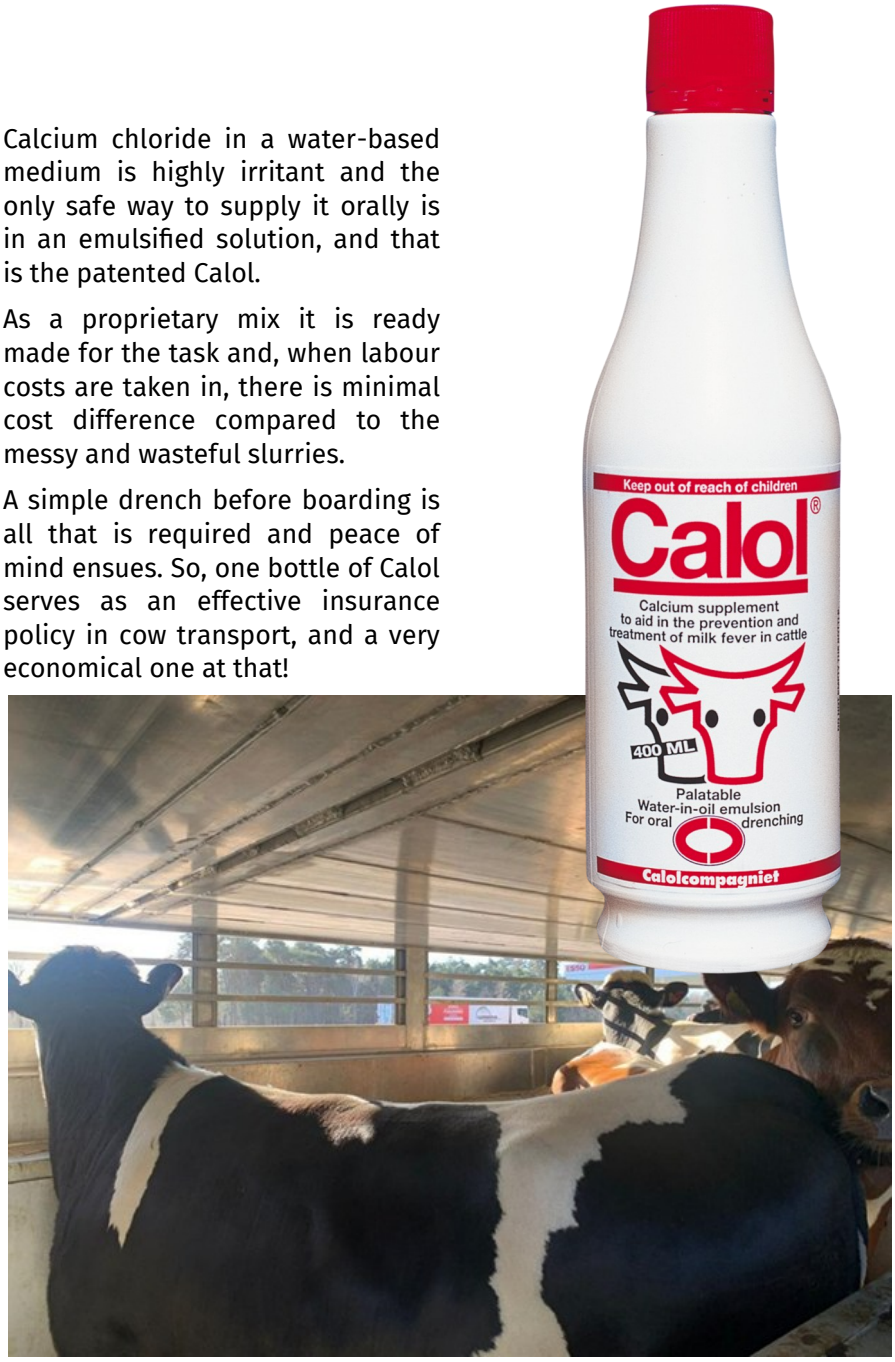
Clearly boluses, apart from their very slow delivery, are out of the question as processing plants get upset with them going through machinery. Anyhow, they are simply not designed for the short-term fix required.

What is required is a rapidly absorbed calcium salt and the only one that fits the bill is calcium chloride.

Calcium chloride in a water-based medium is highly irritant and the only safe way to supply it orally is in an emulsified solution, and that is the patented Calol.

As a proprietary mix it is ready made for the task and, when labour costs are taken in, there is minimal cost difference compared to the messy and wasteful slurries.

A simple drench before boarding is all that is required and peace of mind ensues. So, one bottle of Calol serves as an effective insurance policy in cow transport, and a very economical one at that!



Driving

A police officer pulls over a car on the highway, moving at an unusually slow 20 kph. Behind the wheel is Nagy, and in the backseat sit Tony and Vesna, looking visibly frazzled.

The officer approaches the car and gently asks, "Sir, is there a reason you're driving so slowly?"

Nagy smiles proudly and replies, "Of course! I'm following the speed limit exactly as it's posted." He points to a nearby sign for emphasis.

The officer glances at the sign and chuckles. "Sir, that's not a speed limit sign. That's the highway sign for Route 20."

From the backseat, Vesna throws up her hands and exclaims, "We tried to tell you, Nagy!"

The officer notices the other two gripping the seats and door handles tightly, their faces pale.

Concerned, he asks, "Are you two alright?"

Tony, his voice shaky, replies, "We will be... but we just got off Interstate 190!"

The Parvovirus War

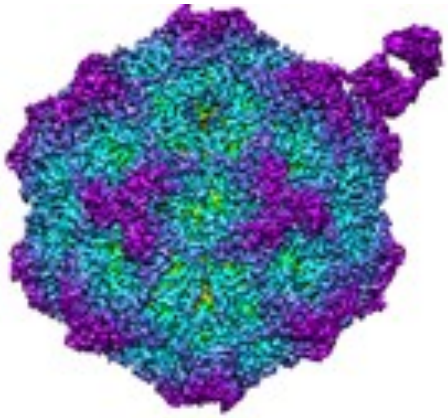
Know The Battle

Canine parvovirus is a relatively new disease that appeared in the late 1970s. It was first recognized in 1978 and spread worldwide in one to two years. The name comes from the Latin parvus, meaning small, as the virus is only 20 to 26 nm in diameter.

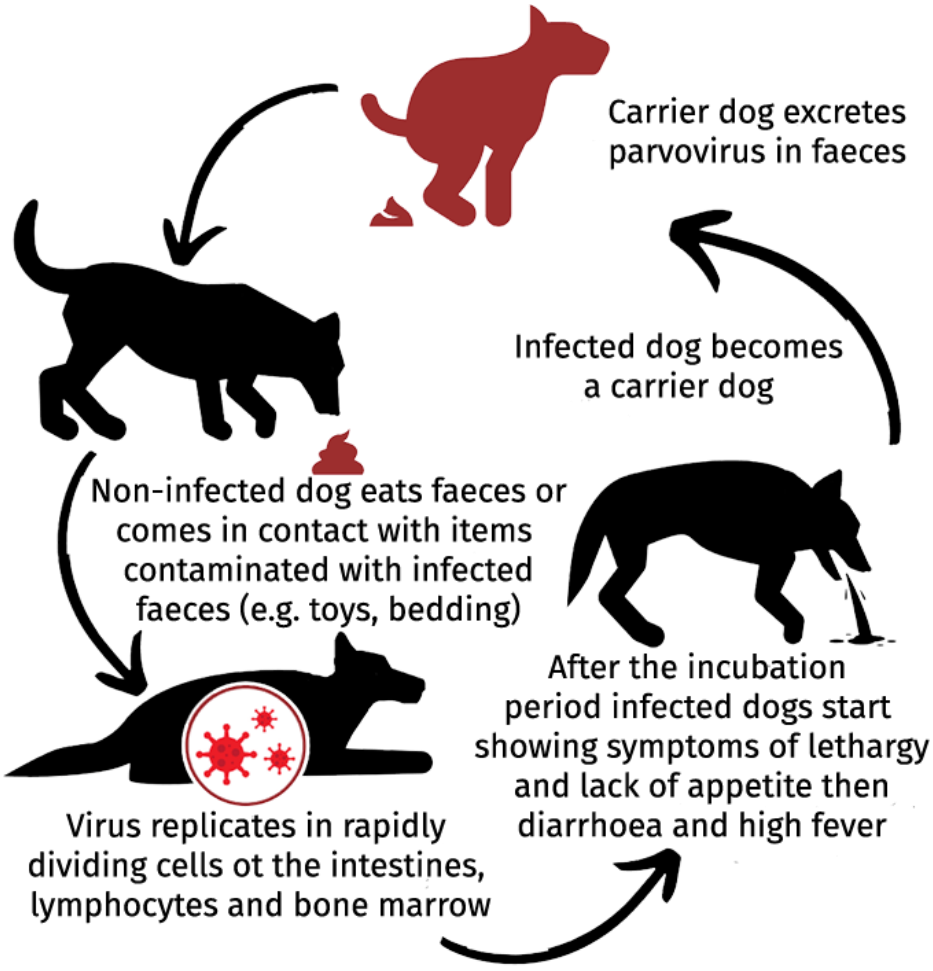
The general rule of thumb is that the smaller the virus the harder it is to kill with chemical disinfection. The smallest animal viruses are parvoviruses and picornaviruses such as Bovine Foot and Mouth Disease.

Canine parvovirus is highly contagious and is spread from dog to dog by direct or indirect contact with their faeces.

It is an extremely virulent and contagious virus; the only reliable way to prevent infection is by vaccination, but mortality can reach 91% in untreated cases. Treatment often involves veterinary hospitalization



A dog that successfully recovers from canine parvovirus generally remains contagious for up to three weeks, but it is possible it may remain contagious for up to six.



Know The Enemy

The canine parvovirus is a non-lipid virus, meaning that it is not enveloped in fat. Non-lipid viruses are especially hardy in the environment. Canine parvovirus is readily carried on shoes or clothing to new areas (which accounts for its rapid world-wide spread shortly after its original appearance).

It is able to overwinter freezing temperatures in the ground outdoors. These factors make disinfection a vital cog in keeping spread under control. However, many disinfectants are not capable of killing it.

Given that this is such a tough virus to destroy, many people want to know exactly what they must do to disinfect an area that may have contained an infected dog or how long they must wait before safely introducing a new dog to a previously contaminated or suspect area.

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Typical areas of High risk include veterinary waiting or reception areas where faecal deposits may have been transported or deposited by infected patients.

Here is what we know about how contaminated an environment is likely to be:

1. Infected dogs shed virus (in their stool) in gigantic amounts during the 2 weeks following exposure. Because such enormous amounts of

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The Parvovirus War

(Continued from page 4)

virus are shed, there is a huge potential for environmental contamination when an infected dog has been there.

2. It Is important to realise that because the canine parvovirus is so hardy in the environment, it is considered 'ubiquitous'. This means that no environment is free from this virus unless it is regularly disinfected.
3. A parvoviral infection can be picked up anywhere though it is easier to pick up an infection in an area where an infected dog has been present simply because of the larger amounts of virus present in a contaminated area.
4. Whether an individual dog gets Infected or not depends on the number of viral particles the dog experiences, what kind of prior immune experience the dog has had with the virus before (vaccinated? Previously infected? How much past exposure?), and how strong the individual dog is (stress factors, diet etc.).

A typical/average infectious dose for an unvaccinated dog is 1000 viral particles. An infected dog sheds 35 million viral particles (35,000 times the typical infectious dose) per ounce of stool (approximately 30 grams).

That means one tiny gram of faeces from an infected dog will contain well over 1000 infectious doses.

Indoor contamination

• Indoors, the virus loses its infectivity within one month; therefore, it should be safe to Introduce a new puppy indoors one month after the active infection has ended.

Outdoor decontamination

• Freezing is completely protective to the virus, if the outdoors is contaminated and is frozen, one must wait for it to thaw out before safely introducing a new puppy.

• Shaded areas should be considered contaminated for seven months.

• Areas with good sunlight exposure should be considered contaminated for five months.

Know Your Weapon

Because the target is so virulent, invasive and difficult to kill, disinfectants need to have at least a log 4 reduction (the EU standard) to be classified as effective.

While many oxidising disinfectants achieve this, viral disinfection becomes problematical on surfaces indoors that are susceptible to the highly corrosive nature of bleach, sodium isocyanurates, peracetic acids and per-oxygen compounds, which are used in many powerful disinfectants, this makes them a liability economically.

SteriGENE has been shown not to harm sensitive surfaces when used as directed.

The cleaning and disinfection process is a daily necessity since the overall goal of decontamination is to reduce the total viable count of viral particles to an acceptable level. It can never be guaranteed that all viral particles have been destroyed in one pass.

<u>The final key factor in the armament is dilution rate.</u>

Many products have a general dilution rate of 1:100 but need to be at 1:25 for canine parvovirus claims, even then it may only be a log 3 reduction.

While they may be price comparable on a per litre basis, they are very uneconomic on a usage basis.

SteriGENE has proven to have a log 4 reduction at a 1:100 dilution, making it the most effective and economic option for canine parvovirus.

Extortion

Nagy noticed a pigeon being chased by a hawk landing in his garden.

He managed to grab it and saw it had a band on its leg with a number.

He was able to check it and find the owner, who was a racing pigeon enthusiast from the next town.

Nagy quickly rang him and said,

“I have your pigeon, send me $200 in unmarked notes or I will let it fly away!”

CP+ Oral Paste

CP+ Oral Paste is an amino acid supplement containing L-Carnitine and D-Panthenol and comes in an oral paste.

Carnitine is a quaternary ammonium compound biosynthesized from the amino acids, lysine and methionine.

Its biologically active form is L- carnitine, whereas its enantiomer, D-carnitine, is biologically inactive.

Carnitine transports long-chain fatty acids into mitochondria to be oxidized for free energy and also participates in removing products of metabolism from cells.

Thus, carnitine is a substance that helps the body turn fat into energy.

D-panthenol is an alcohol derivative of vitamin B5, or pantothenic acid. Experts also call it pro-vitamin B5, because the body converts it to vitamin B5. Panthenol's moisturizing properties also contribute to its anti-inflammatory nature.

Mitochondria are the power generators of the cell. They convert oxygen and nutrients into ATP. ATP is the chemical energy "currency" of the cell that powers the cell's metabolic activities.

Mitochondria have an outer membrane, which allows the passage of most small molecules and ions, and a highly folded inner membrane, which does not even allow the passage of small ions and so maintains

"Racing is one of the greatest stresses to which horses can be exposed."

a closed space within the cell. Inside the space enclosed by the inner membrane is the matrix.

L-carnitine is the only physiological carrier for transport of fatty acids inside the mitochondria, where they are burnt to produce energy.

It also removes the acetyl groups, which are formed by lipid and amino-acid metabolism, from the mitochondria.

It sustains cardiac activity as heart muscle relies almost totally on fats as an energy source, so adequate supplies are essential.

Racing is one of the greatest stresses to which horses can be exposed. L- Carnitine delays the onset of exercise-induced metabolic acidosis and fatigue development.

CP+ Oral Paste thus has several indications.

One is the frustrating but common situation where performance is poor but the blood count shows no anomalies.

Any well trained horse not finishing off is a candidate as are those with energy down, with or without muscle damage.

CP+ Oral Paste can also be indicated for stallion fertility. In stallions, L-carnitine has been found in epididymal secretions, constituting a reserve of carnitine for equine sperm (Kareskoski & Katila, 2008; Magistrini et al., 1995).

Raw semen and seminal plasma carnitine and acetyl carnitine levels were found to be positively correlated with both sperm concentration and progressive motility.

Therefore oral administration of L-carnitine could improve semen quality in stallions with poor fertility. (Stradaioli et al., 2004).

At The Pearly Gates

He had been mean and stingy all his life, so when he finally arrived at the Pearly Gates St Peter asked for his report card.

"I once gave a dollar to a widow who was turned out of her house, and I once gave two dollars to an orphan who had just lost his parents" said he.

St Peter reported the conversation to God who then replied by saying,

"Give him his three dollars back and tell him to go to Hell!"

Our Methane Contribution

A list of the top 10 global regions where natural or anthropogenic sources emit methane on a continuous, "persistent" basis was recently published in Atmospheric Chemistry and Physics.

The study analyzed data and measured emissions from hundreds of potential sources of methane based on satellite data.

Researchers analyzed concentrations of methane (parts per billion) for 2018–2021. A location was classified as a potential persistent emitter if levels of methane were consistently higher than the surrounding area.

Wetlands are the most important natural sources of methane as microbes found in wetland soil emit high levels of the gas.

The two natural sources indicated in the study's top 10 are both wetlands: the Sudd wetlands in southern Sudan and the Iberá wetlands in Argentina.

The study also identified potential persistent methane emissions related to human activity. The biggest anthropogenic source was from the oil and gas fields on the west coast of Turkmenistan.

Several oil and gas persistent emission sites were identified in North America, including the Permian Basin, which is America's highest producing oil field, spanning the border between Texas and New Mexico.

The top 10 persistent emitting sources included three coal fields in Shanxi province in China, as well as Kuznetsk, one of the largest coal mining areas in Russia.

The study also looked at other anthropogenic sources, which include landfills, wastewater, digestive gas from ruminant animals such as cattle, sheep and goats, as well as manure, rice and energy buildings.

So, despite all the paranoia around our own greenhouse gas emissions, it seems New Zealand does not rate as a major culprit.

Coupling this with our geographic position, basically at the centre of the water hemisphere, and our total impact is minimal.

The land hemisphere and water hemisphere are the hemispheres of Earth containing the largest possible total areas of land and ocean, respectively.

The land hemisphere has the substantial majority of the planet's land (80.1 percent), including nearly all of Asia and most of South America. Africa, Europe, and North America.

The water hemisphere has only about one-fifth of the world's land. Most of the Pacific Ocean and the Indian Ocean, and the whole Southern Ocean, are in the water hemisphere.

The water hemisphere is approximately 89 percent water (almost all pertaining to the World Ocean), 6 percent dry land and 5 percent polar ice cap.

Yes, methane is damaging, but it is shorter lived than carbon dioxide and the amount we put into the air above the water hemisphere hardly registers on a global scale.

This is not to say that, as a nation we should not take climate change very seriously, but our major export earner, the dairy industry hardly deserves all the negative press it gets from those with political agendas.

Reference: Steffen Vanselow et al, Automated detection of regions with persistently enhanced methane concentrations using Sentinel-5 Precursor satellite data, Atmospheric Chemistry and Physics (2024). DOI: 10.5194/acp-24-10441-2024

Racing Talk

The horse had started out as odds on favourite but by the home turn it had run out of puff and was going backwards at a rapid rate.

The irate trainer approached the jockey, “What the hell was going on?”

“The horse was simply not good enough,” responded the jockey.

“Rubbish,” said the trainer, “you could have done a lot better.”

“Maybe I could,” said the jockey, “but you know as well as I do the rules state that I must stay on the horse’s back.”

The Golfer

His drive from the third tee sliced to the left of the fairway and the ball ended up in an impossible lie in front of the greenkeeper's tractor shed.

His wife summed up the situation.

"No need to take a penalty shot darling," she said.

"Just open the doors of the garage, push the tractor out, open the rear doors, and with a number three wood you could hit straight through the shed."

"Brilliant darling," he said.

He took a mighty whack but the ball hit the rear of the building, cannoned back and struck his wife stone dead.

The following day he was playing the same hole and by sheer coincidence landed in the same place in front of the shed.

"No need to take a penalty shot," said the caddie.

"We can Just open the doors of the garage, push the tractor out, open the rear doors, and with a number three wood you could hit straight through the shed."

"No way, "he replied.

"I tried that yesterday and ended up with a double bogey!"