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Holy Cow!

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Special points of interest:

- * As usual we have a few funnies in this issue. There are a couple concerning the Don. While we do try to be apolitical we just like to think that this is an attempt to make humour great again.
- * Although painting Theresa May as more intelligent, after recent events, may seem a stretch—but it is only a joke!

A few years ago one Hamilton city councillor, who had a history of opposing highly prominent and successful innovations such as the stadium and the events centre came up with the idea of changing the name of Hamilton.

His reasoning? To change its image from that of a cow town.

25 minutes down the road the town of Morrinsville has embraced the notion that the region has been built on the back of the dairy industry.

Dairy contributes \$16 billion of New Zealand's dairy exports with \$5 billion of that coming from Waikato and \$1 billion from within a 25 km radius of Morrinsville.



Little wonder then that the local council devised the catch phrase, "Morrinsville—the cream of the country".

In the last couple of years several ceramic cows have appeared around the town, all decorated in various colours by local artists.

There were 42 at the last count and a further 15 are in the pipeline.

Even that project is now overshadowed by a mega cow that has just been erected.

This is a legacy from recently deceased local businessman Laurie Maber and

has been erected outside his farm machinery business near the entrance to town.

Standing 10 meters long and 7.3 meters tall, and then atop a podium, this colossus took 12 months to create.

It certainly rivals the carrot in Ohakune and the drink bottle in Paeroa in acknowledging what put their regions on the map.

From an animal perspective there is the sheepdog statue in Tekapo and the working horse hill carving above Waimate but the big cow in Morrinsville is right out there in promoting the region and its dependence on this particular animal.



End User Advertising of Antibiotics

Ethical Agents has spent a small fortune advertising in the farming press over the years but never, at any stage in this millennium, has the company advertised antibiotics, despite their being a massive portion of the company turnover.

While it is good business to advertise OTC products, and some RVMs, to the wider public in order to generate awareness and make it easier for veterinarians to on sell them to their clients, there has always been a stigma with antibiotics. This has become even more pronounced in these days of antimicrobial resistance awareness.

New Zealand, being one of the few countries to allow marketing of antibiotics to the general public, has been out of step with the rest of the world for a considerable time on this contentious issue.

Most industry organisations, including NZVA, VCNZ and the dairy giants are all keen to see advertising of antimicrobials to general public banned, only allowing

advertising to the professionals who prescribe them, i.e. the veterinarians.

Recently VCNZ and NZVA jointly did a survey of veterinarians on this issue and the results were unsurprising. 92.8% of respondents, out of a total of 479, were opposed to the continuance of the advertising of veterinary antibiotics to end users.

The vast majority of the pharmaceutical industry is also on board. There are two organisations representing the marketers of agricultural compounds. The largest lobby group, AGCARM, represents most of the big players, the multinationals. AGCARM is right behind the concept of stopping such advertising, even though some of its individual members are major participants in the practice.

The only dissenting voice appears to be from ARPPA, an organisation representing several companies, most of whom are not AGCARM members. Despite this their King

"Despite this their King Canute type approach seems to be working"

Canute type approach seems to be working; MPI inaction, regardless of the clamour of the profession, looks as though it will be the outcome, making one wonder at the strength of this small but apparently very effective lobby group.

Ethical Agents Veterinary Marketing has always rowed its own boat and is not a member of either of these industry lobby groups.

The company will continue to advertise products, especially metabolic products and disinfectants to the general public, and always promoting veterinarians with the by-line "Ask your vet for advice."

We will however only ever market antibiotics to the profession itself and never to the general public

This Winter

Just what the Doctor ordered

When you need to fix a problem this winter, do it right first time. Go and see the Vet and get professional advice. It'll save you money.

ea
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Acetol	Dexamethasone
Sepradine	Vetaseal
Calstart	SterGEM
Iodine Tincture	Wound Powder
Debrinol	Chloramphenicol
Cort	Canine
Cupressol	Vet B12
Kopexin	Vetaseal
Apix	EA Oxydine
Turbinex CS	Kyocin

Groaner

Two green beans were crossing the highway when one was hit by a semi. His friend scrapes him up and rushes him to hospital. After hours of surgery the doctor comes in and says, "I have some good news and some bad news."

The healthy green bean says "OK, give me the good news first."

The doctor says, "The good news is that he is going to live."

"So," says the green bean, "What's the bad news?"

"The bad news is he'll be a vegetable for the rest of his life."

Myrtle Rust

If there were any doubts to the acceptance of SteriGENE as a highly effective and safe biocide they are surely dispelled by the nature of its use in the field of plant diseases.

For some time now SteriGENE has been the 'go to' product for DOC in the fight against Kauri die back and also has been utilized by both DOC and MPI in combatting the dangerous PSA infestation in the nation's kiwifruit industry.

"MPI conduct their own in house testing and from that have recommended the use of SteriGENE"

The latest scare, and it is a big one, is that of Myrtle Rust arriving and doing irreparable damage to, in particular,

our iconic native pohutukawa, rata, kanuka and manuka trees plus the highly popular exotic fruit, the feijoa. These species are part of the myrtaceae genus.

It has always been a case of when and not if Myrtle Rust gets here as it has spread from South America

to Australia (where 80% of the native trees are myrtaceae) and is a highly airborne fungal disease.

It is therefore no surprise that around 85% of the New Zealand cases so far are in the Taranaki region.

Myrtle Rust is not only a devastating threat to a lot of our native flora but also, like the PSA threat to kiwifruit, a danger to the country's burgeoning Manuka honey export industry that is already more than \$27 million per annum and tipped to be \$1.2 billion by 2028. No wonder MPI is involved!

MPI conduct their own in house testing and from that have recommended the use of SteriGENE for Myrtle Rust protection, following on from prior recommendations for Kauri die back and PSA in the kiwifruit industry.

This, coupled with the recent independent checking of claims by TGA in Australia for TriGene Advance, which is SteriGENE, as a high grade hospital disinfectant show why it is the leading disinfectant in



the New Zealand markets and practices can have total confidence in the product doing the job they require of it.

Airline Service

Remember the "United Airlines" fiasco? Check out how "Aer Lingus" resolved their issue:

Shortly after take-off on an out-bound, evening Aer Lingus flight from Dublin to Boston, the lead flight attendant nervously made the following painful announcement in her lovely Irish brogue:

"Ladies and gentlemen, I'm so very sorry, but it appears that there has been a terrible mix-up by our catering service. I don't know how this has happened, but we have 103 passengers on board, and

unfortunately, we received only 40 dinner meals. I truly apologize for this mistake and inconvenience."

When the muttering of the passengers had died down, she continued, "Anyone who is kind enough to give up their meal so that someone else can eat, will receive free and unlimited drinks for the duration of our 10 hour flight."

Her next announcement came about 2 hours later:

"If anyone is hungry, we still have 40 dinners available."



The Search For A New Molecule

With all the noise around antimicrobial resistance there has been a constant clamour for the development of new molecules, especially in the region of antibiotics themselves. For many years this subject has only had lip service paid to it because, in such a highly commercial world, there was little future in spending millions in order to develop a drug that registration authorities would immediately insist be kept for special circumstances.

More recently however the search has intensified and the quite simple philosophy of looking to the soil has taken root. The soil is, after all, where the majority of microbes live and from where most of our current natural antibiotics have been derived.

The trouble, however, is that only about 1% of the microbes in the soil (or sea water) can be reliably grown under lab conditions. This means that so far we have not been able to study the remaining 99%, which are bound to produce antibiotics unknown to us.

Recent technology, developed by Kim Lewis and Slava Epstein at Northeastern University in Boston and known as iChip technology

may provide a solution to the problem. A sample of soil is diluted and then poured on the iChip, which consists of hundreds of small holes. Because of the dilution, it is hoped that only one microbe is caught in each hole.

The iChip is then covered with membranes on both sides and put back into the soil sample. The membranes contains pores that are only large enough for chemical nutrients to flow in but small enough to block the movement of any bacteria. This means the single bacteria in each of the holes in the iChip can consume all the nutrients it would naturally find in the environment and multiply, but not be contaminated with other bacteria in the soil.

This method can help nearly one in two bacteria to start growing in the iChip cells and three-quarters of the iChip bacteria can then be transferred to and grown in lab solutions. This is a massive improvement on the previous 1%.

Why this transition through the iChip allows previously incapable bacteria to grow in lab solutions is not clear, but it may have to do with mutations gained by the bacteria during the process. And this

step is crucial because it might help to overcome a huge barrier that was stopping the development of new antibiotics – growing bacteria under lab conditions to study and isolate the antibiotics they produce.

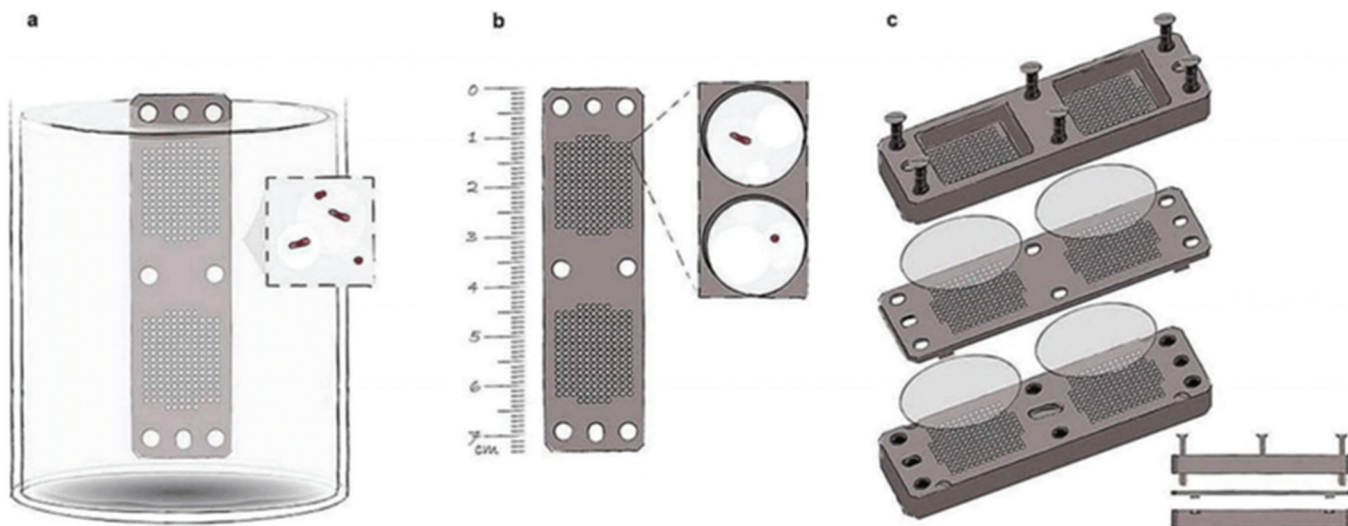
While many compounds have been tried and discarded there was a recent breakthrough with one promising new antibiotic being uncovered.

"Teixobactin is the first of a completely new class of antibiotic as it has a unique mechanism of action"

Tests for antibacterial activity against *Staphylococcus aureus* highlighted a previously undescribed bacterium which was named *Eleftheria terrae*. It was found to be producing a new antibiotic compound that the researchers named teixobactin.

Teixobactin is the first of a completely new class of antibiotic as it has a unique mechanism of action, targeting lipid molecules that bacteria use to build their cell walls. Thus it separately targets precursors in the biosynthetic pathways

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The Search For A New Molecule

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for each of two major components of the bacterial cell wall, peptidoglycan and teichoic acid.

One claim is that because the targets are not proteins but lipids that are polymer precursors of the cell wall building blocks, meaning that there is nothing to mutate. Therefore there is no risk of resistance development. Whilst zero risk is a massive claim reduced risk is certainly real.

Since it is hard for bacteria to alter these molecules, and because of the

novel two target mechanism, it is expected to take much longer for resistance to develop.

Because of this type of action it is effective against gram positive bacteria, including MRSA, but is not effective against gram negative bacteria such as E coli.

So far it has only been tested in mice and human trials are yet to begin, so approval could take several years. If teixobactin itself does not make it, it could still be chemically modified to make it work in humans.

Even if this particular compound may eventually prove unsuitable the signs are promising, not just for this molecule in particular, but also for the iChip process being able to bring to light other new weapons in the ongoing struggle against pathogenic organisms.

Source: Losee L. Ling et al A new antibiotic kills pathogens without detectable resistance. Nature 517, 455–459 (22 January 2015) doi:10.1038/nature14098

Kudos to NZ from WVA

April 30 was World Veterinary Day and, to commemorate the day the World Veterinary Association asked member countries to submit proposals about how they each celebrated the occasion, with the recommended theme being antimicrobial resistance.

Naturally the competition was incredibly strong with big ticket countries such as Spain, UK and USA involved.

In the final wash up the top three were voted on by various people around the world, with little old NZ being on the podium.

The top position went to France, with a massive, and highly impressive, presentation but NZ must have run it awfully close.

The NZ presentation was based on the NZ statement of 2015 and what the NZVA has been doing in the meantime with best practice

guidelines. In addition the timeline for the future was clear and precise.

This was a great result for the NZ veterinary profession. Not only is the medical profession in our country being forced to sit up and take notice of (and appreciate) the veterinary profession, but also such recognition on the world stage can only be positive for the NZ veterinary profession as a whole.

The News Spin

President Trump invited the Pope for lunch on his mega yacht, the Pope accepted and during lunch, a puff of wind blew the Pontiff's hat off, right into the water.

It floated off about 50 feet, then the wind died down and it just floated in place.

The crew and the secret service were scrambling to launch a boat to go get it, when Trump waved

them off, saying "Never mind, boys, I'll get it."

The Donald climbed over the side of the yacht, walked on the water to the hat, picked it up, walked back on the water, climbed onto the yacht, and handed the Pope his hat!

The crew was speechless. The security team and the Pope's entourage were speechless.

No one knew what to say, not even the Pope.

But that afternoon, NBC, CBS, ABC, MSNBC, CNN all knew how to cover the story.

Their banner headlines read: "TRUMP CAN'T SWIM!"



Around The Traps

One of the bonuses of being involved in the pharmaceutical industry is the ability to speak to clinicians around the country and get the feedback from all areas. The varying viewpoints can be quite illuminating and, in areas that may have been contentious, grass roots opinions are important.

The change of opinions over time is fascinating, and no more so in the field of antimicrobial resistance. Despite it long being viewed as a boring topic more and more people are now showing interest and, with that interest, comes responsibility.

"the public pressure that it is not OK, you are not unlucky to get busted but just a moron,"

It was not that long ago that many clinicians would make comments to the effect that, despite what the people in the ivory towers tell us, we will go on using product X. Nowadays, for every comment like that there would be half a dozen saying, "We take AMR seriously in our practice. We do not use product X at all/only when absolutely necessary."

It is no coincidence that this awareness has coincided with the

much maligned release of the AM-RLG statement by NZVA in 2015. After the initial furore has died down it seems, two years later, that one of the original intentions of the statement has been well and truly achieved.

Veterinarians in every field, from companion animal practices to food animal practices have accepted the aspirational aims and are helping to work towards them.

It is no surprise that one of the first areas of the profession to be on board was the pharmaceutical industry.

While many may think that the industry would be extremely protective, and some still may be, the vast majority have been aware of the worldwide situation for a considerable time and know that, in an industry noted for constant change, it is important to change with the times.

Industry realises that to stay in the market the market itself must be protected. Clinicians also realise that the efficacy of antimicrobials must be protected.

While there is also the noble goal of assisting with human health, the primary role of the veterinarian is animal welfare and preserving the efficacy of these vitally im-

portant drugs in clinical practice. It looks like this generation of New Zealand

clinicians have got the message loudly and clearly and that is crucial.

While there are some who believe in compulsion, citing the examples of seat belts and cycle helmets, social pressure is a far more effective tool. The biggest influence on cigarette smoking in public places has been making it socially unacceptable and the most dramatic example still is that of drink driving.

While more and more stringent laws had some little effect, the public pressure that it is not OK, you are not unlucky to get busted but just a moron, has seen the levels of drink driving drop spectacularly over recent decades.

Likewise with AMR, the feedback from the field is that many clinicians are now justifiably proud of their attitudes and peer pressure is filtering through to their colleagues. The AMR statement in 2015 put the profession in a good light; clinicians today are making that light shine brighter.



The Pope and The Don

The Pope and Trump are on the same stage in Yankee Stadium in front of a huge crowd.

The Pope leans towards Trump and said, "Do you know that with one little wave of my hand I can make every person in this crowd go wild with joy?"

This joy will not be a momentary display, but will go deep into their hearts and they'll forever speak of this day and rejoice!"

Trump replied, "I seriously doubt that! With one little wave of your hand Show me!"

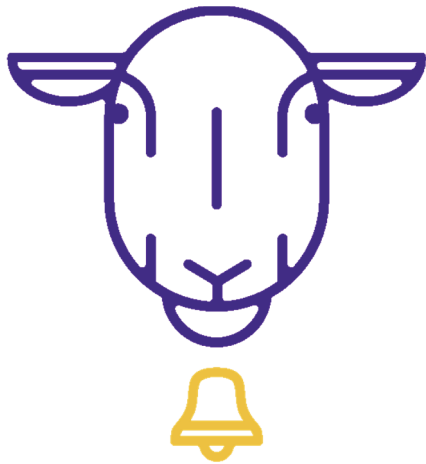
So the Pope backhanded him and

knocked him off the stage!

And the crowd roared and cheered wildly, and there was happiness throughout the land!



The Bellwether



We often hear the term bellwether in politics, indicating electorates that tend to show the trends of an election, i.e. the bellwether electorates generally are close fought ones that mainly go to the winning party.

The term is derived from the Middle English bellewether and refers to the practice of placing a bell around the neck of a castrated ram (a wether) leading his flock of sheep. The movements of the flock could be noted by hearing the bell before the flock was in sight.

The term therefore means an indication and need not be confined to

politics and may be used in other endeavours. For example a particular trait of something may be used to indicate a concept.

A case in point would be staphylococcal infections and antimicrobial guidelines. The best bellwether is *Staphylococcus mastitis* but it is the principle that is valid (i.e. non-dairy vets, you can still read on!)

Staphylococcal bacteria are noted not only for β lactamase production but also other devious mechanisms such as L forms, making them difficult to treat in the first place, and they can also develop resistance in the same way as other bacteria, hence the appearance of MRSA, once known as methicillin resistant *Staphylococcus aureus* but now often called multi resistant *Staphylococcus aureus*.

One of the major antimicrobials in treating Staph infections is tylosin, a red light product on the

"but it is the principle that is valid (i.e. non-dairy vets, you can still read on!)"

traffic light system.

Being a red light antimicrobial is not a reason not to use it, but a reason to investigate the disease and methods of prevention.

Staph mastitis is a contagious disease; it is transmitted from cow to cow, often at milking. Thus it is a case of hygiene; a high level of Staph mastitis in a herd is a sign that hygiene in the shed is not up to scratch.

Bellwether number 1, Staph mastitis is an indicator of poor hygiene.

Therefore the message is that shed hygiene needs to improve dramatically; if that happens control will occur over the disease and there will be little further requirement to use antimicrobials in order to achieve this.

Bellwether number 2, the need to use a red light antimicrobial such as tylosin is an indicator of there being a problem that requires attention in order to put in place means of disease prevention, so as to reduce overall antimicrobial use.

Diplomat

A man in Melbourne walked into the produce section of his local supermarket and asked to buy half a head of cabbage.

The boy working in that department told him that they only sold whole heads of cabbage.

The man was insistent that the boy ask the manager about the matter.

Walking into the back room, the boy said to the manager, "Some old geezer outside wants to buy half a head of cabbage."

As he finished his sentence, he turned around to find that the man had followed and was standing right behind him, so the boy quickly added, "and this gentleman kindly offered to buy the other half."

The manager approved the deal and the man went on his way.

Later, the manager said to the boy.....

"I was impressed with the way you got yourself out of that situation

earlier, we like people who can think on their feet here, where are you from son?"

"New Zealand, sir," the boy replied.

Why did you leave New Zealand?" the manager asked.

The boy said, "Sir, there's nothing but prostitutes and rugby players there."

"Is that right?" replied the manager, "My wife is from New Zealand!"

"Really?" replied the boy, "Who did she play for?"

Swede Worries

A recent memo from NZVA concerned swede poisoning. In 2014 and 2015 a new syndrome was observed in cattle (and anecdotally in sheep and deer) on some swede crops. This was characterised by ill thrift, photosensitisation, recumbency, death and an increased incidence of peri-parturient problems.

Among the recommendations was

that Swedes should not comprise more than 70-80% of a dry cow diet and no more than 33% of a lactating cow diet. Other preventative measures were also put in place as well as recommendations for diagnosis, suggesting biochemistry panels including GGT and GDH to assess individual or mob health.

The full memo is available from NZVA, however there was little

information on therapy. One would expect the parenteral nutrient Metabolase would be ideally indicated as an adjunct in these cases and, with spring around the corner most will have it in stock for those low energy transition cows.



Metabolic Problems Ahead?

Without doubt the single most important animal health issue in the dairy world this year would have to be the pending shortage of magnesium oxide. We have become so dependent upon this one chemical for so many years that it is only when a lack of it shows up that we realise just how important it is.

New Zealand's soil is traditionally low in magnesium and so supplementation is essential throughout the country. Few current clini-

cians will remember the high levels of metabolic disease overall, and clinical grass staggers in particular, that abounded in concentrated dairy areas around the middle to three quarter period of the 20th century. In those days veterinary practice was very much a 'fire brigade' affair; there was little time for anything else.

This all dramatically fell away with the advent of shiploads of magnesium oxide.



Apparently the big problem this year is that the World's supply of magnesium oxide is not only solely manufactured in China, it is also from a specific region in that country.

Factories in that region have been shut down by the Chinese government due to high levels of pollution in the area and there seems to be little chance of the decision being reversed in time for our spring calving season.

Intelligence Test

Donald Trump met with the Queen of England and he asked her, "Your Majesty, how do you run such an efficient government? Are there any tips you can give me?"

"Well," replied the Queen, "the most important thing is to surround yourself with intelligent people."

Trump frowned, and then asked, "But how do I know the people around me are really intelligent?"

The Queen took a sip of tea. "Oh, that's easy; you just ask them to answer an intelligent riddle."

The Queen pushed a button on her intercom. "Please send Theresa May in here, would you?"

Theresa May walked into the room

and said, "Yes, your Majesty?"

The Queen smiled and said, "Answer me this, if you would, Theresa. Your mother and father have a child. It is not your brother and it is not your sister. Who is it?"

Without pausing for a moment, Theresa May answered "That would be me."

"Yes! Very good," said the Queen.

Trump went back home to ask Mike Pence the same question. "Mike, answer this for me. Your mother and your father have a child. It's not your brother and it's not your sister. Who is it?"

"I'm not sure," said Pence. "Let me get back to you on that one." He went to his advisers and asked eve-

ryone, but none could give him an answer.

Finally, Pence ran in to Sarah Palin in a restaurant the next night. Pence asked, "Sarah, can you answer this for me? Your mother and father have a child and it's not your brother or your sister. Who is it?"

Sarah Palin answered right back "That's easy, it's me!"

Pence smiled, and said, "Thanks!"

Pence then went back to speak with Trump. "Say, I did some research and I have the answer to that riddle. It's Sarah Palin!"

Trump got up, stomped over to Pence, and angrily yelled, "No, you idiot! It's Theresa May!"