EPSOM U3A Inc.

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Website https://www.epsom.u3a.nz

MEETING PLACE

Royal Oak Bowls, 146 Selwyn St, Onehunga

10am on the 2ND Thursday of most months

NEWSLETTER

July 2024

Next meeting
10-12noon
Thursday 11th July 2024

Greetings to all U3A members.

At our last committee meeting we discussed several issues that affect all members. Some of these are as follows:

1 The difficulty of the sound system and microphones at our monthly meetings. We are working on this with the Bowling Club to see if their system can be upgraded.

2 We also discussed membership which now stands at 190 members and whether we should cap our membership at 200 members. We agreed that this would be reviewed when we have 200 members. I think numbers are not the issue but it is more about group leaders and time and space for members to meet.

3 The committee also considered the final draft constitution prepared by Mike Matson. The organization thanks him for all his work. It will be presented at the AGM this year for ratification. A big thank you goes to Mike for all his good work and assistance

4 We also reviewed our speaker programme and other matters to make our club work well. It is dependent on members helping out as needed.

Over the last two weeks my wife Julie has not been well which has meant I have had to do more daily chores. However the most important thing is to be around to be supportive and to do what is needed. As we grow older we may take each other for granted and the routine jobs we each do around the home. Our partners are the most important people in our lives and must not to be taken for granted. Respect, love, care and action are all required when our partners need extra help and attention. This is the very essence of personal relationships.

Something I read in the Listener in the last two weeks there was a credible scientific study carried out by a respected Historian about the role and importance of nostalgia in people as they grow older. It would seem that being nostalgic and reflecting on the past produces positive chemicals in our brains and bodies enabling us to grow old happily and gratefully. It also assists in producing positive and healthy aging.

Interesting as we reflect on our lives as we age we get great pleasure and a feel good factor particularly at times of coping with aging issues. This is obviously a very healthy activity for all of us who see ourselves as growing older. So too are keeping up as many social contacts as we can as well as the special relationships with partners, families and friends. Could I suggest that you keep up reflecting positively about your past and our socialization with others to maintain positive health in later years.

Take care

Duncan

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Mike Matson **-** 022-630 7968
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Jeanette Grant – 638 8566
Greeters:
Don Buchanan - 620 7572
Ngaire Mune – 624 0226

INTEREST GROUP CONVENERS

Appreciating Performing Arts
Shirin Caldwell – 630 1662
Architecture
Brian Murray – 021 026 68396
Art Appreciation
Kaye Buchanan – 620 7572
Big History
Emily Flynn- 021 0902 5094
Christine Keller Smith- 021 140 9021
Book Chat
Helen Holdem - 021 260 3510
Comparative Religions
John Locke & Duncan MacDonald
Current Affairs
Shirley McConville – 622 3542
Fabric & Fibre Crafts
Charmaine Strang – 027-4177 556
Famous & Infamous Group
Gary Preston – 021 297 3087
Foodies
Graham Gunn – 027 445 0929.
Garden Appreciation
Betty Townley - 626 6673
Introduction to Family History
Bryn Smith – 027 280 5235
Latin
Phyllis Downes - 630 5867
Lunch Club
Shirley McConville – 622 3542.
Medical Matters
Diana Hart – 021 284 4402
Music Appreciation
Carleen Edwards – 624 6298
19th Century History
Helen Holdem - 021 260 3510
NZ History
Kaye Buchanan - 620 7572
Philosophy
Jocelyn Hewin - 634-1552
Recreational Drawing
Grant Coupland – 638 7496
Scrabble
Joslyn Squire – 021 168 0680
Te Reo Maori
Jenny Whatman - – 027 353 2487
Te Reo Beginners
Christine Short – 021 872 227
Travel
Diana Hart- 021 284 4402
Walkers & Talkers Group
Don Buchanan ph:620 7572.

SPEAKER REPORT	Our speaker was Laurence Melton, Emeritus Professor, Faculty of Science, University of Auckland and his subject: Genetic Engineering: The Power of CRISPR. He noted that the 2020 Nobel Prize for Chemistry had been award to two female scientists for their work on this important scientific breakthrough which has implications for inherited human health conditions and to influence the ability of plants and animals to adjust to climate change to meet the food needs of an increasing human population. CRISPR (Clustered Regularly Interspaced Palindromic Repeats) is a family of DNA sequences found in the genome defense systems of organisms (such as bacteria.) CRISPR is a way of finding a specific piece of DNA inside a cell and then altering that piece by inserting a small section to effect a precise change to the "make up" of that gene. It mimics what the immune system does to bacteria when it encounters a virus. It produces an RNA copy that guides an enzyme, called Cas9 (CRISPR associated Protein 9) which acts as a "pair of scissors" and cuts up the invading virus and renders it harmless. This process is repeated with every new wave of virus infection where the bacteria, having taken a copy of the previous attack version, uses the guide RNA and Cas9 to make another change and deal to the new "invader". Successful trials have been reported for human diseases such as Sickle Cell Anaemia, reversal of complete deafness in an 18 month old British child and in advanced cases of Lymphoma (details of work here in Auckland). Other applications may involve Type 1 Diabetes, fragile skin conditions, Duchenne Muscular Dystrophy and Huntingdon's Disease amongst others. Most countries have strict protocols surrounding human trials because of concerns that editing a gene may result in unexpected or unwanted consequences. The dream of producing humans with superior athletic ability or creativity (Einstein/Mozart) is unlikely because a copy of the original (defective) gene can still be inherited. At present there are forecasts that the human population of our world will continue to grow with a projected figure of 9-10 million people in the year 2050 and solutions as to how to feed such a large number of people are demanding attention. Some of the main issues are:- how to increase the food yield from animals and grains, developing TB resistance in cattle, making crops more drought – resistant and not to need fertilizer, how to develop a type of rice that can be grown in salt water (as we face rising sea levels) and how to breed animals that can cope with higher temperatures but would produce lower carbon emissions. While CRISPR has opened the way for many improvements to our lives there is still much to be learned about where it may be safely used and in what areas it may have negative impacts. At the completion of his talk and a Q&A session, Prof. Melton referred us to a book "The Code Breakers" by Walter Isaacson for further explanation of the processes involved in the development of gene editing. The book is a biography of one of the Nobel Prize winners, Jennifer Doudna and her work. *Kaye Buchanan* (with apologies for any misinterpretation of the facts about CRISPR, despite the very comprehensive presentation by our knowledgeable speaker)
SUBSCRIPTIONS INFORMATION	The 2024 Epsom U3A subscription is $50 per person. This should be paid into our **ASB bank account –** **12 – 3067 – 0204618 – 00.** Please enter **subs** in the "code" section and your **name** in the "reference" section in order for us to have a record of your payment.

MAIN SPEAKER Kathryn Trounson **'Leading the charge; electric vehicles in NZ.'**	Our speaker on 11 July will be Kathryn Trounson, Chair of the Better NZ Trust. The title of her talk is 'Leading the Charge: electric vehicles in NZ'. She is the Chair of the Better NZ Trust, whose mission statement is to encourage the transition from ICE (internal combustion engine) vehicles to EV in New Zealand and personally has driven an EV for 9 years and would never consider anything else! Initially (2016-2019) the Trust organised RoadTrips driving from Cape Reinga to Bluff to demonstrate that EVs could go anywhere – on those trips they held many 'show and tell' events offering the general public an opportunity to ride and drive an EV! We converted many by this technique. Today there are many vehicle manufacturers offering EV test drives and so our focus has shifted a little more towards EV advocacy – and speaking to groups like U3A helps us to spread the EV message.
INTEREST GROUPS	- The Te Reo group is up and running with Christine Short as the convenor. It currently has 12 members. - John Locke and Duncan MacDonald are starting a new group called Comparative Religions, which will begin with 12 or 13 members on 12th July. John Locke will send out the email to the members. It will be held at Duncan's home.
CONSTITUTION UPDATE	The committee has considered a new constitution. It will be sent to you next week. You will have time to look at it and raise any matters at our August meeting. Any suggestions and recommendations by members will be considered at that meeting. The final constitution will be presented at the AGM for acceptance.
NAME BADGES	The Committee has decided that if name badges are not collected after the first call at the main meeting, they will be put on the secretary's table for collection in future.
TRADING TABLE	The trading table must be cleared at the end of the main meetings. It has been suggested that we collect and donate left-over books to charities, eg the annual Rotary Book Fair
SOUND SYSTEM	There are many reasons for the problem with the sound system, mostly not of our own making, and we are negotiating with Royal Oak Bowls to find a compatible solution. The speakers themselves cause some of the problems.
2024 MEETING DATES Thursdays, 10am	11 July 8 August 12 September 10 October 14 November AGM **NB Always wear your name badge** and be seated ready at 10am

JEANETTE'S JOTTINGS

ELON MUSK'S VIEWS…

"…I think solar energy is very much underestimated in terms of its capability. If you do the rough math, to power the United States, which is a heavy user of electricity, it'd take less than a 200 km (124 mile) by 200 km solar array to power the entire United States. Another way to think of it is, a small section of the Sahara desert could power all of Europe, or the world…

"The cost of solar power has dropped dramatically over the years. If you were to look at the price of solar power five years ago, or 10 years ago, or 20 years ago, it would've seemed cost-prohibitive. But the cost of solar power today is extremely low, and the cost of batteries to store the energy has also dropped dramatically…

"The cost of battery storage of electricity has dropped by a factor of 10 in the last five years, so many of the studies that were done in times past, when batteries were very expensive and solar power was very expensive... So I'd encourage everybody to basically take another look at the cost of solar and the cost of batteries. I think you'll find you're pleasantly surprised."

THREE INVENTIONS THAT WERE NOT INITIALLY WELCOMED

DAYLIGHT SAVING TIME: Most countries these days move their clocks forward an hour in the spring and back every autumn to make the most of natural daylight. The practice was first suggested in 1895 by British-born New Zealand scientist George Vernon Hudson in a paper submitted to the Wellington Philosophical Society. Hudson's suggestion was lambasted by his peers**.**
Indeed the very notion of playing around with time was thought of as preposterous. One member complained that it was "out of the question to think of altering a system that had been in use for thousands of years", while another criticized the concept as unscientific and impractical. Hudson had the last laugh of course when DST was adopted in Ontario, Canada in 1908, with countries around the world soon following suit.

FORKS: Exactly when the fork was invented is open to question, but this essential piece of cutlery is thought to have been introduced to the Western world in the 10th century by Byzantine princess Theophano Skleraina (pictured), the wife of Holy Roman Emperor Otto II. Although some historians credit its arrival in Europe to another Byzantine princess, Maria Argyropoulaina, who married the Doge of Venice's son in 1004.

UMBRELLA: Today the umbrella is an essential accessory in rainy England. In fact, the average person in the country owns two of the things. Yet the first man to carry an umbrella in the nation was bombarded with insults, pelted with garbage and almost run over and killed by a coach. Jonas Hanway shocked fellow Londoners in the 1750s when he took to using an umbrella in the city's streets.
An import from Persia via France, the accessory was considered taboo for men to carry and thought of as a sign of a weak, effeminate character. Hanway also drew the ire of coach drivers (behind two-wheeled, horse-drawn carriages) who feared the accessory would steal away their business, which flourished on wet days. Stubborn, Hanway ignored the haters even when one coach driver went as far as trying to run him over. Within decades the stigma attached to umbrellas vanished and they have come to be ubiquitous across the world.

THREE 'FORBIDDEN' FOODS

COFFEE

A caffeine hit wasn't always accepted as the only way to start the day. Not only did the Catholic church initially try to ban coffee drinking from getting a foothold in Europe in the 16th century, but in 1675, the English king Charles II attempted to ban coffee shops altogether. He feared they were serving as a meeting place for activists, and brewing as much discontent as they were coffee (which they were). However, the ban was redacted two days before it was due to be put in place.

HAGGIS

If you want an authentic taste of the national dish of Scotland, your best bet might be to visit the country itself. While variants abound, true haggis consists of minced pluck (the liver, lungs and heart of a sheep) mixed with oats, onions, suet, salt, pepper and spices, and cooked in the animal's stomach. It's been banned in the US for nearly fifty years as the US Department of Agriculture (USDA) deems sheep lungs unfit for human consumption.

MARMITE

With the tagline 'love it or hate it', the yeast spread Marmite is so embedded in British culture that it's become one of the most confiscated items at airport security. Usually it's allowed abroad (as long as the pot complies with airport security regulations), but in Denmark it's another story. In 2011, the country restricted the sale of Marmite due to the fact that it's fortified with additional vitamins and minerals.

THREE ODD ENGLISH LAWS

[1] In England, allowing your pet to get intimate with a royal pet is not only illegal but in the past was taken so seriously that until 1965 offenders could potentially face the death penalty if convicted of this!

[2] Also - according to the Public Health Act of 1936, cab drivers are legally required to ask passengers if they are suffering from smallpox or the plague.

[3] It is actually illegal to try and queue jump. This oddly sensible rule was put in place by Transport For London as one of their London Underground bylaws - and it was imposed to prevent passengers getting frustrated by others jumping the line, and also for safety reasons,

NEW LITHIUM SOURCE

Thanks to the increase of electric vehicles and other battery-using technologies, the demand for lithium is expected to skyrocket in the coming years. One odd but potent source of the metal is a Pennsylvania wastewater stream, says a new study.

As we've reported previously, based on current demand, the world is going to need about 59 new lithium mines hauling out 45,000 tonnes of the metal by 2035. The silvery metal is a key component of rechargeable batteries which are powering seemingly everything these days from countertop ice cube makers to freight ships.

Due to the growing demand for lithium, researchers are developing quicker ways to harvest it from the brine pits which, along with more traditional mines, are a primary source of the element. They are also looking in other places for sources of the material.

One of those places is a wastewater stream produced as a result of a fracking operation outside of Pittsburgh, Pennsylvania. There, operators of the Marcellus shale gas wells need to report levels of certain materials in the wastewater to regulators. Because the reports must mention lithium levels, researchers from the University of Pittsburgh were able to conduct an analysis that showed that if a technique could be developed that would remove 100% of the lithium from the wastewater, about 40% of America's demand for the metal could be met.

Currently, lithium can be removed from water with an efficiency rate of more than 90%, so the goal is not too far away.

And while the wastewater at these particular fracking mines is rich in lithium, they are not the only sources of Marcellus shale in the country. West Virginia could also be a rich source, say the researchers.

Because the US Geological survey has classified lithium as a critical mineral (technically an element), the government wants all lithium produced domestically by 2030. In terms of resource allocation, that would be an improvement over the current method which consists of extracting it from brine ponds in Chile, shipping it to China to be processed, and shipping it back to the States for use.

The next step for exploring the wastewater stream as a source of lithium is to analyze the environmental impacts of extracting it and to build a pilot plant to research and develop more efficient extraction techniques.

“Wastewater from oil and gas is a burgeoning issue,” says study lead author Justin Mackey. “Right now, it’s just minimally treated and reinjected.” However, he adds that developing better extraction techniques could provide serious value in turning a wastewater into something much more valuable. “It’s been dissolving rocks for hundreds of millions of years – essentially, the water has been mining the subsurface,” he says.

A paper about the finding has been published in the journal Scientific Reports.

“DIRECTED ENERGY WEAPON REPLACES MILLION-DOLLAR MISSILES AT 13 CENTS A SHOT”

A new directed energy weapon is being rolled out to bolster British defense capabilities. And, at 13 cents a shot, it's just as effective, but a lot cheaper than the multi-million dollar missiles it's designed to replace.

The Radio Frequency Directed Energy Weapon (RFDEW) is part of the British government's policy to respond to a changing geopolitical situation, placing the country's defense on more of a war footing as it increases spending to 2.5% of GDP by 2030. This policy change also includes fast-tracking the rollout of lasers and other directed energy weapons.

The latter is extremely important, because, well, knocking out a drone that costs a few grand with a missile costing millions of dollars per round is bad economics – see, for example, the US$1.3-2.5 million Sea Viper missile used to take out a US$20,000 drone, as reported by Navy Lookout. Also, missile stockpiles tend to be pretty small, and swarms of cheap drones could easily exhaust them.

Energy weapons overcome these problems because, though the weapon itself costs money, on a shot by shot basis they are astonishingly cheap. And, since they fire energy rather than solid rounds, they can potentially fire an infinite number of times so long as the energy holds.

The RFDEW is a self-contained energy weapon that can be operated by one person, and can detect, track, and engage multiple threats at a range of up to a kilometer (0.62 miles). It can also be installed on everything from a warship to the back of a lorry. The main target will be drones or aircraft electronics, blasting them with a burst of electromagnetic radiation.

Being developed as part of Project Ealing, the RFDEW is scheduled to be tested by the 7th Air Defence Group along with the DragonFire laser weapon in September. The results will be used to evaluate the systems and determine possible improvements.

"We are already a force to be reckoned with on science and technology, and developments like RFDEW not only make our personnel more lethal and better protected on the battlefield, but also keep the UK a world leader on innovative military kit," said Minister for Defence Procurement, James Cartlidge. "As we ramp up our defense spending in the coming years, our Defence Drone Strategy will ensure we are at the forefront of this war-fighting evolution."

Source: UK Government