



# ***THE GYROLOG***

**THE GYRO CLUB OF EDMONTON**

**Club Charter No.18, July 29, 1921**

**President-Ron Trant, Past President-Dunc Mills**

**1<sup>st</sup> Vice-President-Jack Bowen, 2<sup>nd</sup> Vice-President Martin Marshall**

**Secretary-Barry Walker, Treasurer-David Burnett,**

**Directors- Dan Hasinoff, Bruce Foy, Jim Lepp, Sheldon Weatherby  
Peter Carter (Ex-Officio)**

**Database Administrator-Chuck Gerhart, Gyrolog Editor-Fred Schulte**

**Club Website: [www.edmontongyroclub.com](http://www.edmontongyroclub.com)**

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## **MARCH 2023**

Those celebrating their birthdays are **Alan Rusler** on the 3<sup>rd</sup>, **Sheldon Weatherby** on the 11<sup>th</sup> and **Barry Walker** on the 29<sup>th</sup>.

**Mike** and **Sharon Matei** celebrated their 34<sup>th</sup> wedding anniversary on the 18<sup>th</sup>.

**John Boyd** played an opening tune on the xylophone and **President Ron Trant** welcomed 22 Gyros, our guest speaker and three guests to the March 8<sup>th</sup> luncheon meeting held at the Derrick Golf and Winter Club.

**Welcome back John Boyd!** John has spent the last 16 weeks at the Glenrose Rehabilitation Hospital.

**President Ron** introduced his guest **Gord Raymond**, and **Jack Little** introduced his two guests, **Alan Mabee** and **Tim Spelliscy**.

**Dunc Mills** led the singing of *Cheerio* and **Doug Armstrong** gave the *Selkirk Grace* penned by Robert Burns.

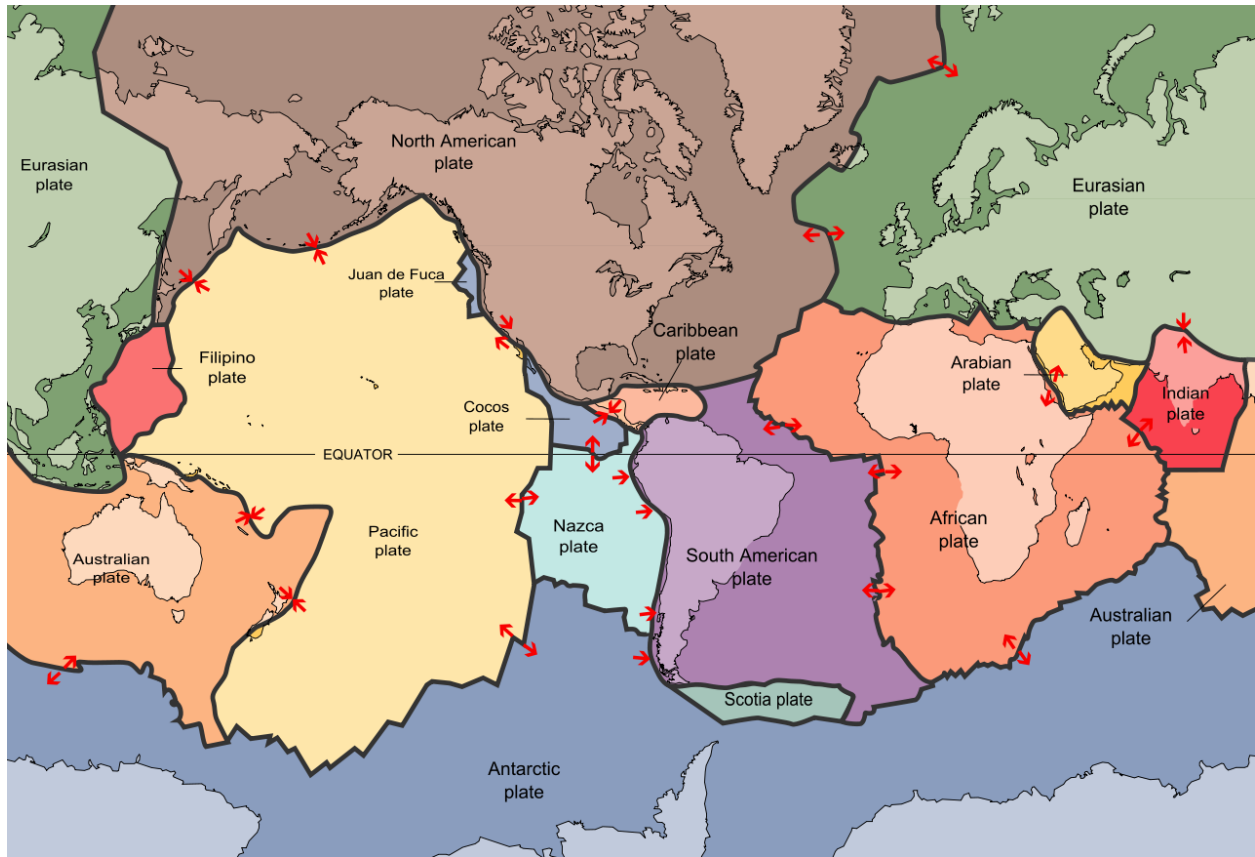
Some hae meat and canna eat,  
And some wad eat that want it,  
But we hae meat and we can eat,  
Sae let the Lord be Thankit!

**Dan Hasinoff** introduced our guest speaker, **Robert A Creaser, PhD, Professor, Faculty of Science – Earth & Atmospheric Sciences, University of Alberta.**

Robert's extensive CV includes numerous awards dating back to 1997 and he is widely recognized as one of the foremost geological experts in North America.

His research specialty is radiogenic isotope geochemistry, in other words “he studies rocks.”

Today's presentation is about **Plate Tectonics and the Earthquakes in Türkiye and Syria.**

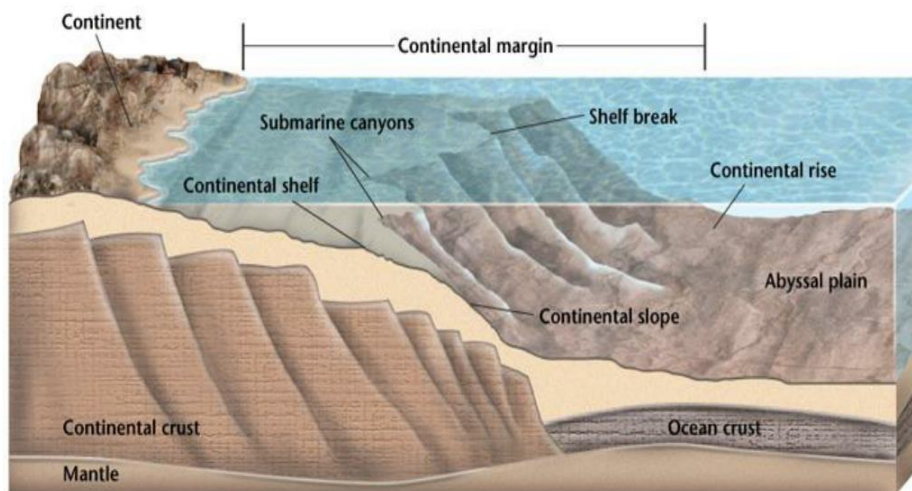


### The Earth's Tectonic Plates

The solid outer part of the Earth, the lithosphere is a series of plates that “float” on the mantle. These plates move independently, and earthquakes occur at the plate boundaries.

### The Seafloor

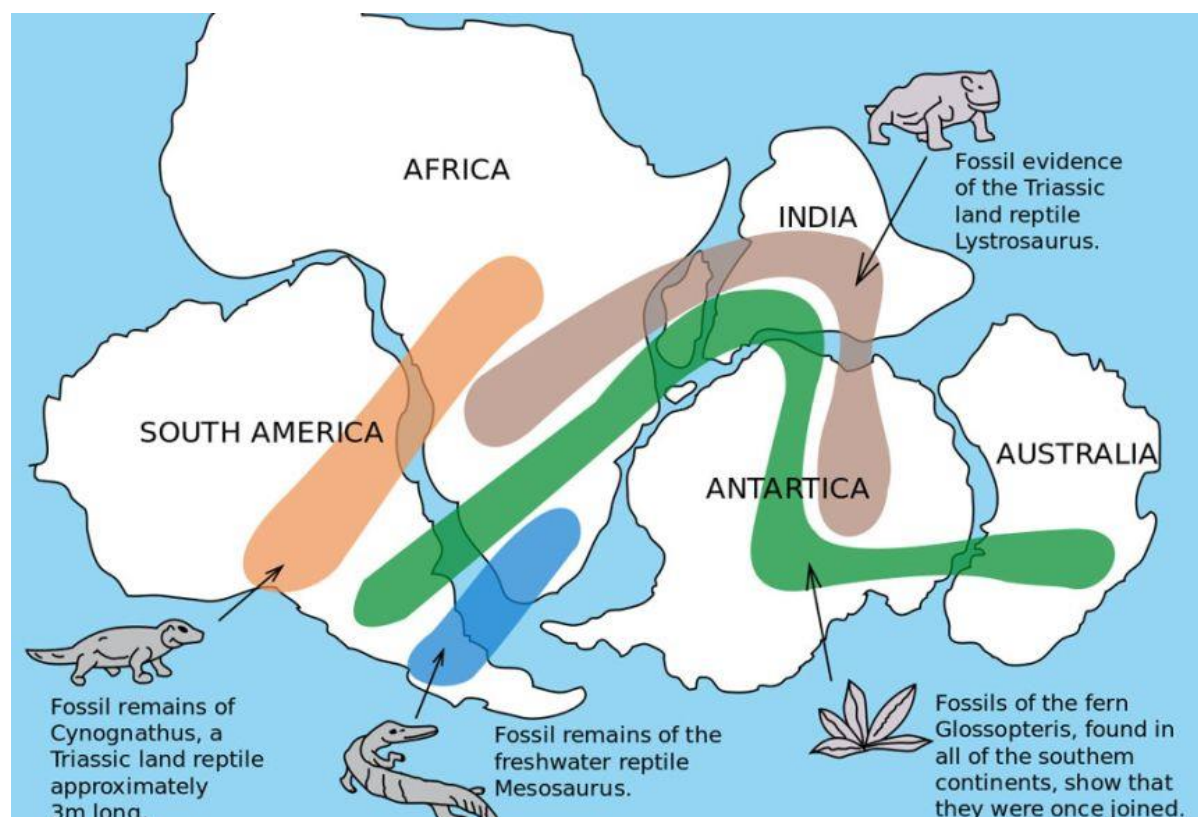
## Oceanic and Continental Crust



There are two types of crust, **thick Continental** and **thin Oceanic**.

Earthquakes occur mostly in “cold” rocks that are less than 30 km deep, due to elastic strain and brittle fracture. Deeper rocks are at higher temperature and undergo ductile flow in response to plate motion.

**Continental drift** describes one of the earliest theories about how continents moved over time. **Alfred Wegener (1880–1930)** was a German meteorologist and geophysicist who developed in 1914 the theory of continental drift and formulated the idea that a supercontinent known as **Pangaea** existed on the Earth millions of years ago. As part of his research, Wegener also took part in several journeys to Greenland, where he studied the atmosphere and ice conditions. He used biology, botany, and geology to describe Pangaea and continental drift. For example, fossils of the ancient reptile mesosaurus are only found in southern Africa and South America. Mesosaurus, a freshwater reptile only one meter (3.3 feet) long, could not have swum the Atlantic Ocean. The presence of mesosaurus suggests a single habitat with many lakes and rivers.



### National Geographic

Wegener’s ideas were largely ignored at the time they were developed, but today they are widely accepted by the scientific community.

The theory of continental drift has been replaced by the science of plate tectonics.

## How are earthquakes measured?

Two different viewpoints underpin the most important measurements related to earthquakes: **magnitude and intensity**. To scientists, an earthquake is an event inside the earth. To the rest of us, it is an extraordinary movement of the ground. Magnitude measures the former, while intensity measures the latter.

**Magnitude** describes the overall size of an earthquake as an event in the earth. Magnitude represents the total energy the earthquake radiates and is calculated using information on how large an area moves, the distance that one side of the fault moves past the other, and the rigidity of the rock.

The international standard for measuring earthquake magnitude is called the **moment magnitude scale** and was formulated by Caltech seismologist Hiroo Kanamori with alumnus Thomas Hanks.

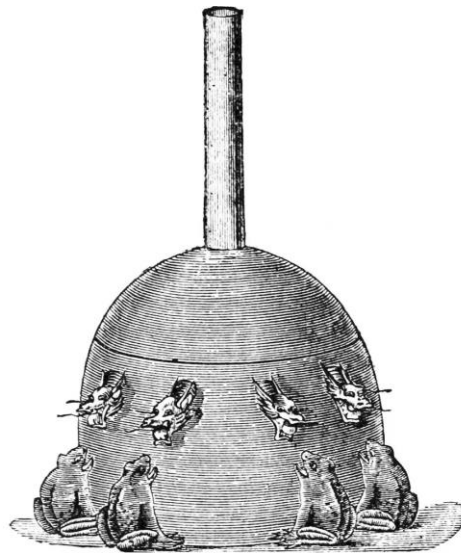
**Caltech's Charles Richter** conceptualized magnitude. He developed a method to numerically report the relative sizes of earthquakes before earthquake magnitude could be measured directly. He described the first magnitude scale, which came to be known as the **Richter scale**, in a paper published in 1935.

**Intensity** describes how strong the shaking is at a given location. In the United States and many other locations, intensity values are described with Roman numerals from I (barely perceptible) to X (widespread destruction), using the Modified Mercalli Intensity scale.

This definition of intensity requires a subjective judgment by an observer. For instance, if the shaking is strong enough to awaken most people, then the intensity will be assigned a level of V. Today, scientists also can measure instrumental intensity directly, calculating and assigning intensities based on recorded ground shaking in different locations. Source: *Caltech Science Exchange*

## The First Seismoscope

In 132 CE, inventor, Imperial Historian, and Royal Astronomer Zhang Heng displayed his amazing earthquake-detection machine, or seismoscope, at the court of the Han Dynasty. Zhang's seismoscope was a giant bronze vessel, resembling a barrel almost 6 feet in diameter. Eight dragons snaked face-down along the outside of the barrel, marking the primary compass directions. In each dragon's mouth was a small bronze ball. Beneath the dragons sat eight bronze toads, with their broad mouths gaping to receive the balls.



This seismoscope could measure the direction the quake came from.

Source: *ThoughtCo*

### **Valdivia, Chile; magnitude 9.5**

Approximately 1,655 people died in the **largest earthquake ever recorded which** struck Valdivia, Chile, on **May 22, 1960**. Thousands more were injured, and millions were left homeless. Southern Chile suffered \$550 million in damage. The quake triggered a tsunami that killed 61 people in Hawaii, 138 in Japan and 32 in the Philippines. The earthquake struck where the Nazca Plate dives underneath the South American Plate, on the Peru-Chile Trench.

**Tōhoku, Japan; 2011; magnitude 9.1.** On **March 11, 2011**, a magnitude 9.1 quake triggered a tsunami that left more than 15,700 people dead, more than 4,600 missing, over 5,300 injured and more than 130,900 displaced, according to the USGS. More than 332,000 buildings, 2,100 roads, 56 bridges and 26 railways were damaged because of the quake. The quake also damaged nuclear reactors at the Fukushima Daiichi Nuclear Power Plant, leading to one of the biggest nuclear disasters in history. This earthquake was the largest ever recorded in Japan and cost an estimated \$309 billion in damage.

The quake was caused by thrust faulting near the Japan Trench, the boundary between the Pacific and North American plates.



**On February 6, 2023 around 4:15 a.m. local time, a magnitude 7.8 earthquake struck south-central Turkey (Türkiye) near the Turkey/Syria border. Just 11 minutes later, it was followed by a magnitude 6.7 aftershock. The largest aftershock at the time of writing was a M7.5 aftershock which struck 95 km (~60 miles) to the north. USGS observations and analyses indicate all these events are occurring within the East Anatolian fault system.**

Though an earthquake of this magnitude is rare anywhere in the world, this type of event is generally expected on long, plate-boundary strike-slip faults.

“It’s difficult to watch this tragedy unfold, especially since we’ve known for a long time that the buildings in the region were not designed to withstand earthquakes,” said USGS scientist David Wald. “An earthquake this size has the potential to be damaging anywhere in the world, but many structures in this region are particularly vulnerable.”

The two largest earthquakes in the recent series are relatively shallow, with the mainshock 18 kilometers, or 11 miles, deep and the 7.5 magnitude aftershock at 10 kilometers (just over 6 miles) deep. Because the quakes are relatively shallow, the intensity of the shaking is severe.

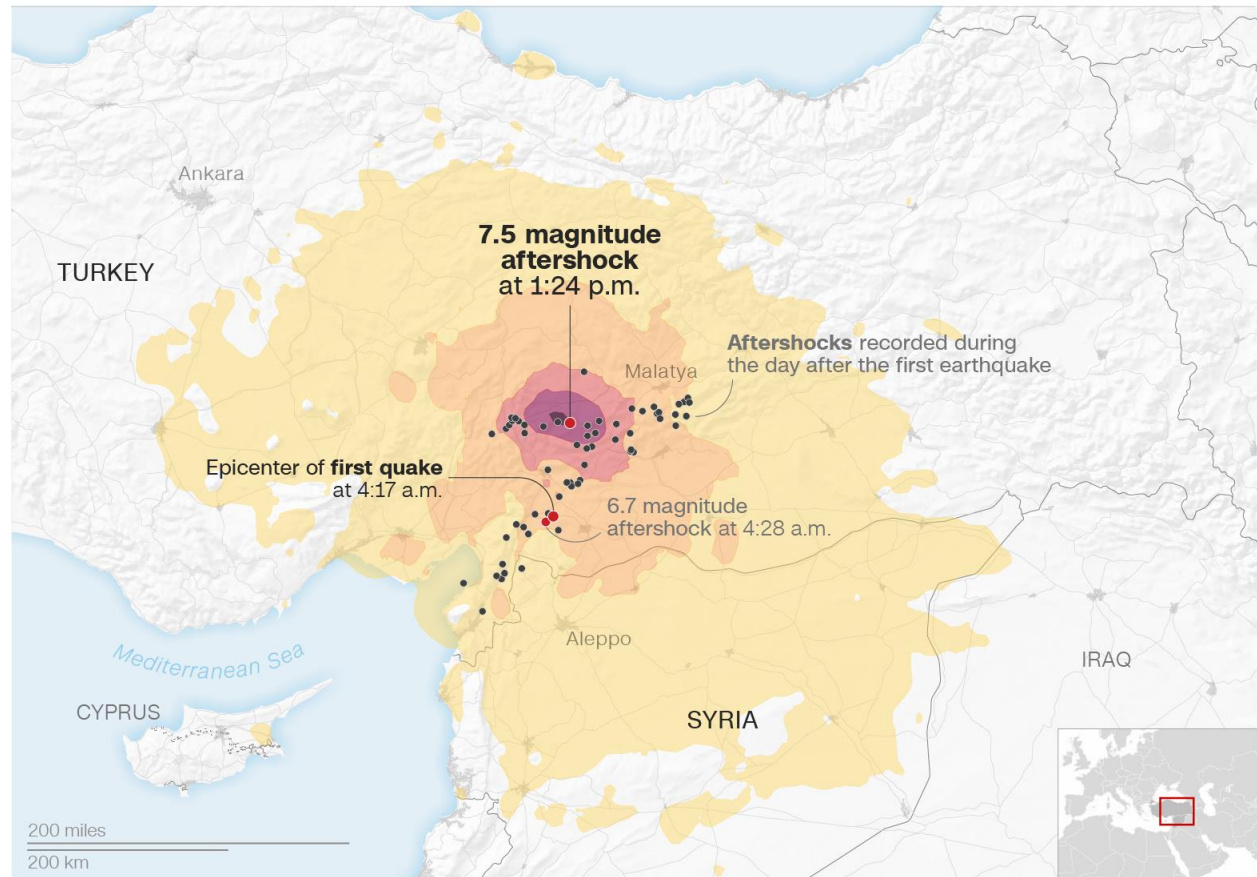
“This earthquake produced intense shaking in the epicentral region,” said USGS scientist Kishor Jaiswal. “While newer buildings in other parts of Turkey (like Istanbul) are designed with modern earthquake standards in mind, the area affected by this earthquake included more vulnerable buildings, like older types of concrete frames that were not designed from seismic considerations to absorb this much ground motion.”

**Dr. Creaser advised** that this is a very complicated tectonic area and ground shaking intensity was over nine. He also indicated that the vertical displacement was about one metre in 3 seconds which would have had a catastrophic impact on buildings.

## More than 60 aftershocks recorded – including a major one at 7.5 magnitude

Early in the afternoon a powerful aftershock was recorded around 80 kilometers (50 miles) north of the epicenter of the 7.8 earthquake that rocked Turkey and Syria on Monday morning. It's among more than 60 aftershocks recorded.

### Shake intensity of the 7.5 magnitude aftershock



Note: Map shows quakes of 2.5 magnitude and over, recorded through 7:43 p.m. local time (1:43 p.m. ET).

Sources: US Geological Survey, LandScan  
Graphic: Henrik Pettersson, CNN

Alberta experiences relatively few earthquakes, particularly when compared with areas surrounding the Pacific Ocean. The earthquakes in Alberta are minor to moderate, and, to our knowledge, no one has recorded damage from an earthquake in Alberta. The largest magnitude earthquake documented in Alberta was a natural event, local magnitude (ML) 5.4, near the Alberta–British Columbia border, 100 km northwest of Grande Prairie (April 2001). The frequency of earthquakes in the province began increasing in 2011, mostly due to human-activity induced earthquakes related to oil and gas exploration and production such as hydraulic fracturing and wastewater disposal. *Source: Alberta Geological Survey.*



President Ron thanked our speaker for a fascinating presentation. **Robert Creaser** was presented with a signed copy of the book entitled *Giants of the Pacific Northwest, The Hunt Family Totem Poles* authored by Doug Armstrong.

**Allan Warrack** was the Free Lunch winner.

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**President Ron Trant** welcomed 23 Gyros to the March 21<sup>st</sup> Luncheon meeting held at the Derrick Golf and Winter Club. We have reached that special day called the spring equinox.

*The spring equinox, or Ostara, is also called the vernal equinox and has long been celebrated as a time of renewal, rebirth, and new beginnings. Ostara occurs at the halfway point between the [winter](#) and [summer](#) solstice and is one of the four fire festivals or quarter days that fall within the solar wheel of the year in the Gaelic calendar. The vernal equinox is also the second of three traditional Celtic spring celebrations; [Imbolc](#), Ostara, and [Beltane](#). And although the spring vernal equinox marks the first astronomical day of spring on the Gregorian calendar, the first signs of spring can often be seen as early as Imbolc.*

**Val Pohl** led the singing of Cheerio and **Heinrich Grosskopf** presented the Grace.

**Peter Carter** gave us a live tour of our website and noted that several areas need updating. He also provided some tips on logging in and what information is for Club Members only.

The **Annual General Meeting** commenced at 1:08 pm

**President Ron Trant** reported that the Board met once on August 2, 2002 to review the proposed changes to the Constitution and By-Laws. They were subsequently approved by the Members on November 1, 2022.

**Treasurer David Burnett** presented the proposed **Budget-General Fund May 1, 2023 -April 30, 2024.**

The proposed budget shows an increase in projected disbursements to reflect the expected increase in District and International dues, additional funds to attract new members, travel subsidies for Executive member attendance at District VIII and International Conventions and printing of the Club Roster.

**David Burnett** moved that the proposed budget be approved, and **Peter Carter** seconded the motion. The members unanimously approved the budget.

**Immediate Past President, Dunc Mills** presented the **Proposed Slate of Officers and Directors:**

Past President	<b>Ron Trant</b>
President	<b>Jack Bowen</b>
1 <sup>st</sup> Vice-President	<b>Georg Schuller</b>
Secretary	<b>Barry Walker</b>
Treasurer	<b>Larry Dobson</b>
Directors	<b>Bruce Foy</b> -second one- year term <b>Jim Lepp</b> – second one-year term <b>Sheldon Weatherby</b> – second one-year term <b>Martin Marshall</b> – second one-year term

International **President Peter Carter** and **Lt. Governor Dunc Mills** will be Ex-Officio members of the Board.

A motion by **Dunc Mills** to approve as amended the proposed Slate of Officers and Directors was seconded by **David Burnett**. The members unanimously approved the motion.

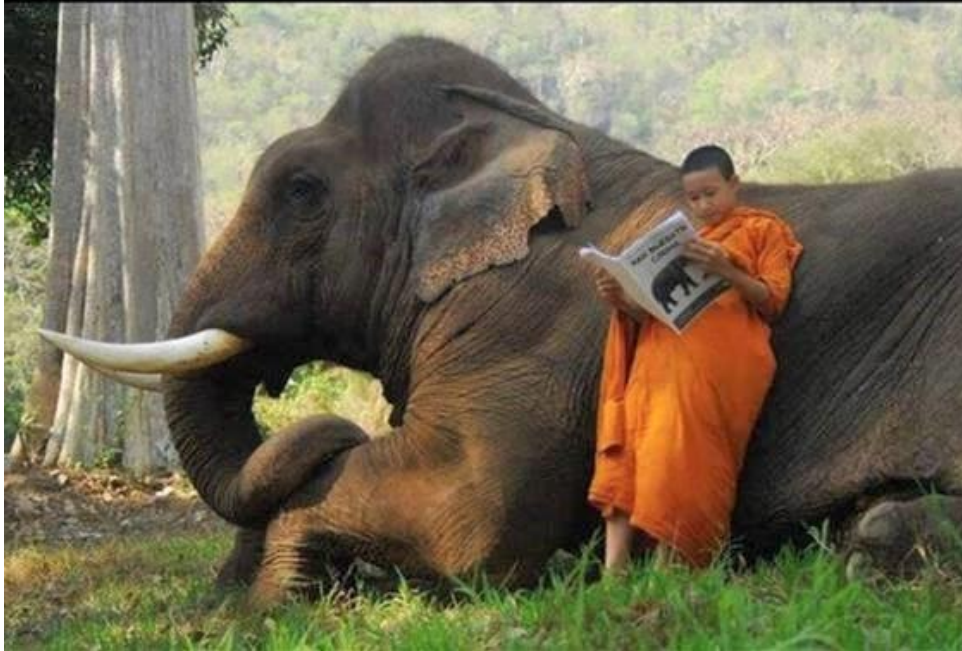
The Annual General Meeting finished at 1:41 pm.

**Fred Schulte** was the winner of the Free Lunch draw.





**When you bought an elephant and are reading  
the instructions**



Dick Nichols reports on the [Hockey Pool Winners.](#)

Game 15 February 27	<u>Winners</u>	<u>First Period</u>	<u>Second</u>	<u>Final</u>
<b>Oilers vs Bruins</b>				
<b>First Period</b>	<b>1 2</b>	Darcy Burnett	<b>Dick Nichols</b>	<b>Dick Nichols</b>
<b>Second</b>	<b>2 3</b>	<b>Myrna Gerhart</b>	<b>Sheldon Weatherby</b>	<b>S. Weatherby</b>
<b>Final</b>	<b>2 3</b>	Kherington Baird	Brock Cook	Brock Cook

Game 16 March 11	<u>Winners</u>	<u>First Period</u>	<u>Second</u>	<u>Final</u>
<b>Oilers vs Maple Leafs</b>				
<b>First Period</b>	<b>0 0</b>	<b>Marie Losier</b>	Gerry Erickson	<b>Gary Campbell</b>
<b>Second</b>	<b>2 1</b>	<b>Shirley Larson</b>	<b>Mike Matei</b>	<b>Myrna Gerhart</b>
<b>Final</b>	<b>5 2</b>	Paul Lam	<b>Shirley Larson</b>	Andrea Larson

Game 17 March 18	<u>Winners</u>	<u>First Period</u>	<u>Second</u>	<u>Final</u>
<b>Oilers vs Kraken</b>				
<b>First Period</b>	<b>2 1</b>	<b>Dunc Mills</b>	Gerry Erickson	Andrew Burnett
<b>Second</b>	<b>4 3</b>	Bill Porter	<b>Mike Matei</b>	<b>Sharon Matei</b>
<b>Final</b>	<b>6 4</b>	<b>Cliff Revell</b>	<b>Shirley Larson</b>	<b>Dan Hasinoff</b>

**“Fast Fred”**

## Upcoming Events:

**Tuesday Luncheon Meeting, Mixed Event, Derrick Golf and Winter Club, April 4<sup>th</sup>.**

**Speaker: Dr. James Shapiro, MD PhD**

**Topic: Autologous Stem Cell Islet Transplants for Diabetes: A first-in-Human Trial Presentation.**

**Team Leader: Marty Larson**

**Gyrette Luncheon Meeting, Derrick Golf and Winter Club, April 11<sup>th</sup>.**

**Speaker; Ron Trant-President Edmonton Gyro Club**

**Topic: Inflation-Causes and Consequences of Inflation Since the Roman Empire**

**Time: 11:30, lunch noon.**

**Tuesday Evening Mixed Event, Derrick Golf and Winter Club, April 18<sup>th</sup>.**

**Topic: Installation of Officers and Directors.**

**Speaker: Tim Cartmell, Ward 9 Councillor.**

**Team Leaders: Ron Trant and Mike Matei**

**Gyro District VIII Convention, Thursday, July 27-Sunday July 30**

**Deerfoot Inn & Casino Convention Centre, Calgary**

**Ken Baker, Convention Chairman, Calgary Gyro Club.**

**Gyro International Gyro District VII Convention, "Summer Nights & Northern Lights" August 23-27 Winnipeg**

**<https://winnipeg.gyro.org/>**