

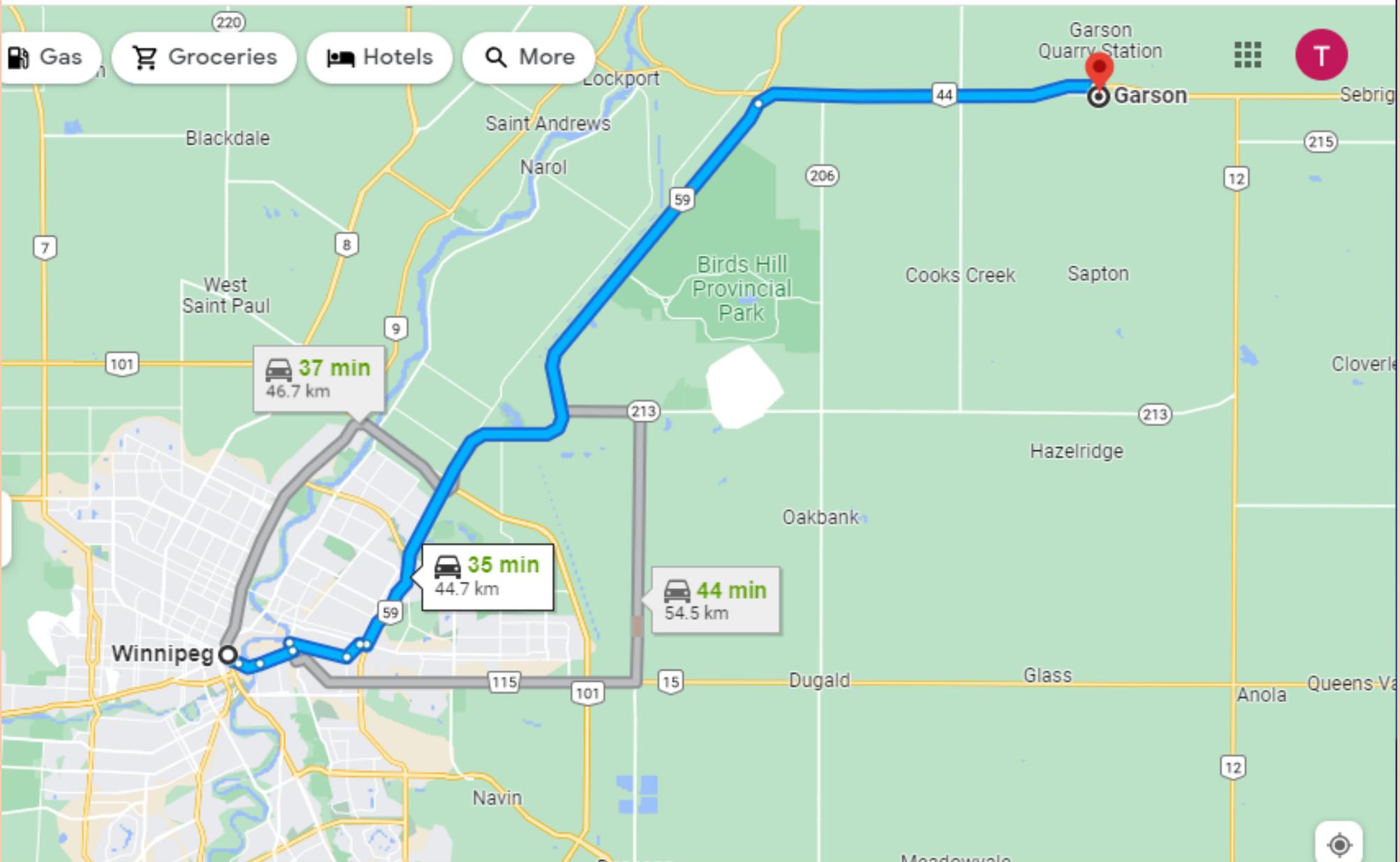
Quarrying of the Ordovician Tyndall Stone, Garson, Manitoba

**Virtual Presentation to the Joint Meeting of
the Alberta Palaeontological Society &
the Canadian Society of Petroleum Geologists**

**April 8, 2022 (7:30 PM)
Calgary, Alberta**

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Map – Highlighting Winnipeg and Garson, MB



Introduction – My “Journey” with the Tyndall Stone

In 2019, I began detailed studies on the abundant Ordovician fossils in the Tyndall Stone in:

- 1.) *Downtown Calgary*, where Tyndall clads many historic and newer buildings.
 - 2.) *Safeway Store*, Sunnyside-Kensington, 10 large blocks of Tyndall.
 - 3.) *SAIT - Southern Alberta Institute of Technology* where the Senator Patrick Burns building is entirely clad by Tyndall.
- I published a paper on my studies in the December 2020 issue of the *Bulletin of the Alberta Paleontological Society*, titled “*Tyndall Stone: Hunting Ordovician Fossils in Downtown and Inner-City Calgary*”
 - I now lead a half day field trips to these three sites. The field trips are held once a year for the Alberta Paleontological Society, usually in the fall and also every spring for the Alberta Wilderness Association as a fundraiser for them

This year for the Alberta Paleontological Society it will be:

Saturday, September 10

Tyndall Limestone: a Famous Building Stone

- Tyndall limestone is late Ordovician in age, 450 million years old
- Tyndall limestone also known as Tyndall Stone occurs within the Red River Formation's Selkirk Member, 43 m thick
- Rated as one of the most beautiful decorative stones in the world
- In Ottawa it clads the interior of the Parliament Build (Central Block), Museum of Civilization in Gatineau, PQ, Provincial Legislature buildings in Winnipeg and Regina, Tory Building in the University of Alberta campus, Rimrock Hotel in Banff, Chateau Lake Louise, Empress Hotel in Victoria, Canadian High Commission in Trafalgar Square, London & many more locations

Downtown Calgary: Bank of Montreal Building, built in 1932



Downtown Calgary: Eaton's Building, 8th Ave & 4th St., built in 1929



Tyndall Limestone: Geology

- Tyndall limestone was deposited in a shallow marine environment under tropical conditions
- The limestone is fine grained and cream colored with pervasive mottling of darker dolomitic limestone caused by extensive presence of trace fossils known as *Thalassinoides* which are fossilized traces left by burrowing organisms, possibly worms and crustaceans which were soft bodied so left no fossilized remains
- This is one of the *enigmas* of the Tyndall that we don't know which specific organisms caused the pervasive mottling throughout the limestone

FOSSILS TO BE SEEN DOWNTOWN CALGARY, SAFEWAY KENSINGTON & SAIT

- Nautiloids, gastropods, stromatoporoids, brachiopods, sponges, rugose corals and also the very common and highly distinctive *Receptaculites* algae called “the sunflower coral” even though paleontologists say that it is not a coral but it is an algae
- Nautiloids which are cephalopods like modern day squids or nautili. Nautiloids with straight shells are called orthocone nautiloids whereas those with curved shells are called *Winnipeoceras* nautiloids. In the literature, it is reported that Ordovician nautiloids can reach a length of 2 meters
- Common at SAFEWAY and SAIT are *Receptaculites*, orthocone nautiloids, *Maclurina* & *Hormotoma* gastrops, *Catinepora* chain corals and horn corals; very rare *Aulacopella* sponges, tabulate corals and *Manipora* chain corals

SAFEWAY KENSINGTON Fossils: *Aulocopella* sponge with straight-shelled orthocone nautiloid in the lower right corner



SAFEWAY KENSINGTON Fossils, *thallasinoides* burrow tubes, also see on right build up of a coral head



SAFEWAY KENSINGTON Fossils- *Favosites* tabulate coral head



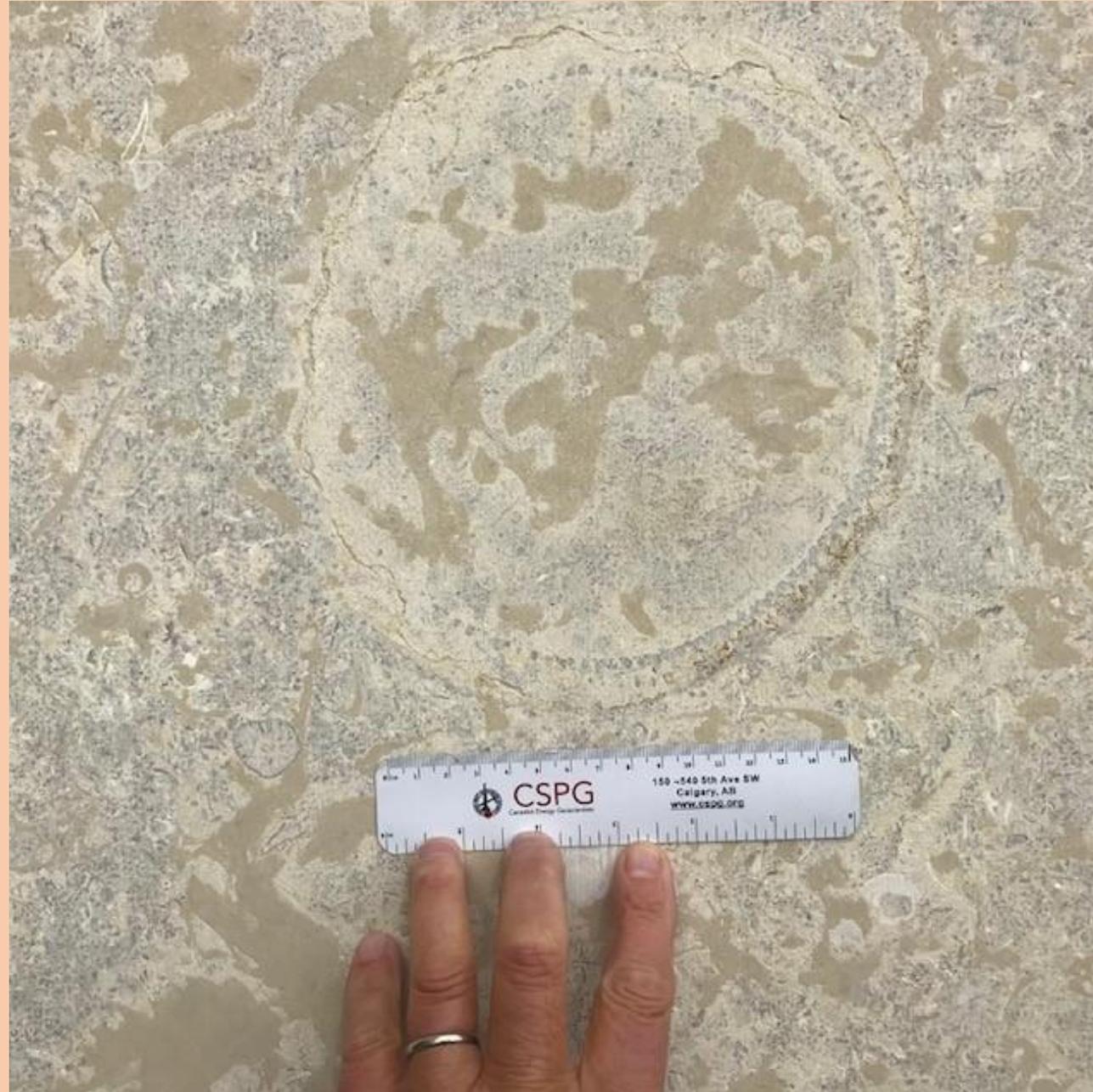
SAFEWAY KENSINGTON Fossils, *Macularites* gastropod, loony for scale



SAIT – *Receptaculites*, the “sunflower coral” which is not a coral but an algae



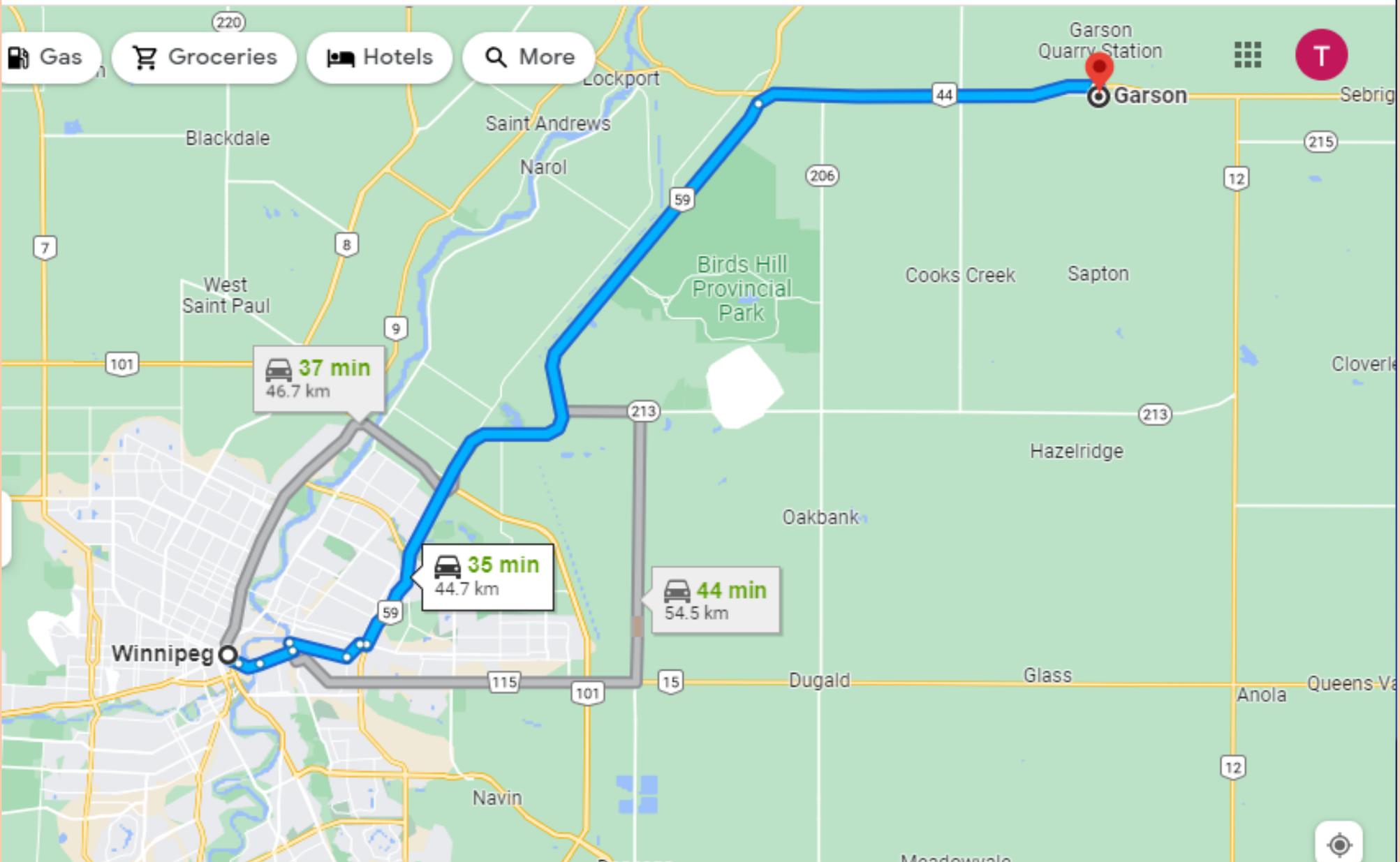
SAIT – *Receptaculites* the “sunflower coral” which is not a coral but an algae



On the road again....

- Now we leave Calgary's Tyndall Stone behind
- Now we travel by road to Manitoba to see where the Tyndall Stone is quarried!
- Departed Calgary October 7th to visit Garson Quarry on October 8th, 2021

Map- Winnipeg to Garson - 47 km, 40 minutes driving time



Turnoff to Garson, Manitoba!



Welcome to Tyndall/Garson, Manitoba!



Gillis Quarry, Garson – note flat lying beds of Tyndall Stone



Gillis Quarry, Garson



History of Quarrying of the Tyndall Stone, Garson

- In the early 1890's, small commercial stone quarrying was established at the 40 km NE of Winnipeg
- First large quarry was established in 1898 by William Garson
- Garson, 40 km NE of Winnipeg was named after him
- Already at that time, the stone was named Tyndall Stone, after the nearby town of Tyndall where shipments of Tyndall were sent by railroad Canada-wide and also into the USA
- Tyndall quickly became known as one of Canada's premium building stones
- By 1914, 3 large quarries were in operation at Garson with 250 men employed
- In 1915, the Gillis family established the Gillis Quarry which is the only remaining operation which still quarries Tyndall Stone

Tyndall Stone quarried at Garson, early 1900s

From: Archives, Department of Geological Sciences, University of Manitoba



Gillis Quarries, workers cutting Tyndall Stone in the 1930s

From: canada.constructconnect.com



Gillis Quarry workers, 1930s

From: Gillis Quarry archives



Gillis Quarry, Garson – operational office & processing centre



Gillis Quarry, Garson – Gillis Quarries pickup truck



Gillis Quarry, Garson, being welcomed by Mrs. Gillis, Operations Manager



Gillis Quarry, Garson – fossils on display



Gillis Quarry, Garson – fossils on display



Gillis Quarry, Garson – bird bath from Tyndall Stone



Gillis Quarry, Garson – note blocks of Tyndall –these are highly fossiliferous – see next slide



Gillis Quarry, Garson - nautiloid, 1.0 m length



Gillis Quarry, Garson – saw blades for slabbing Tyndall



Gillis Quarry, Garson – saw blades for quarrying Tyndall



Gillis Quarry, Garson - slabs of Tyndall Stone



Gillis Quarry, Garson - slabs of Tyndall Stone



Gillis Quarry, Garson - blocks of Tyndall Stone



Gillis Quarry, Garson - blocks of Tyndall Stone



Gillis Quarry, Garson - entrance to the Rubble Pile



Gillis Quarry, Garson – rubble pile



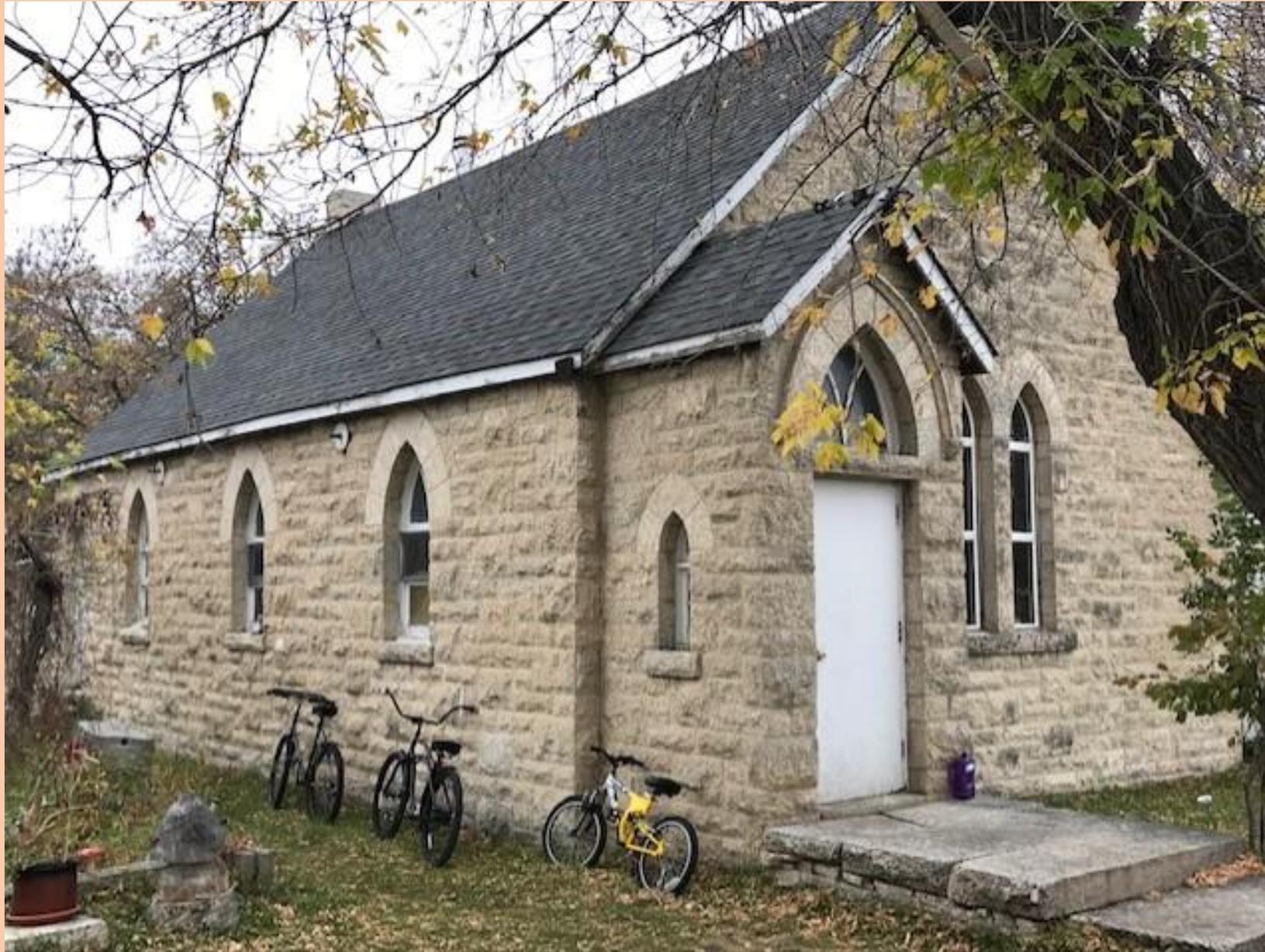
Gillis Quarry, Garson - rubble pile



Gillis Quarry, Garson - processing facilities



Garson - historic residence clad with Tyndall Stone



Garson - WWI & II memorial made from Tyndall Stone



Gillis Quarry, Garson - local hotel, outside is Tyndall Stone



Entrance to the town of Tyndall - monument made from Tyndall Stone



Saint Boniface MB - church clad with Tyndall Stone



Saint Boniface MB - memorial clad by Tyndall Stone



Saint Boniface, MB - university building clad by Tyndall Stone



Saint Boniface MB - university building clad by Tyndall Stone



Manitoba's Legislature Building - clad with Tyndall Stone



Canadian Museum for Human Rights, Winnipeg - extensively clad by Tyndall Stone



Canadian Museum for Human Rights, Winnipeg - extensively clad by Tyndall Stone



Humphrey Hotel & Suites, Winnipeg - clad by Tyndall Stone, this is the hotel where we stayed



Humphrey Inn & Suites, Winnipeg - clad by Tyndall Stone



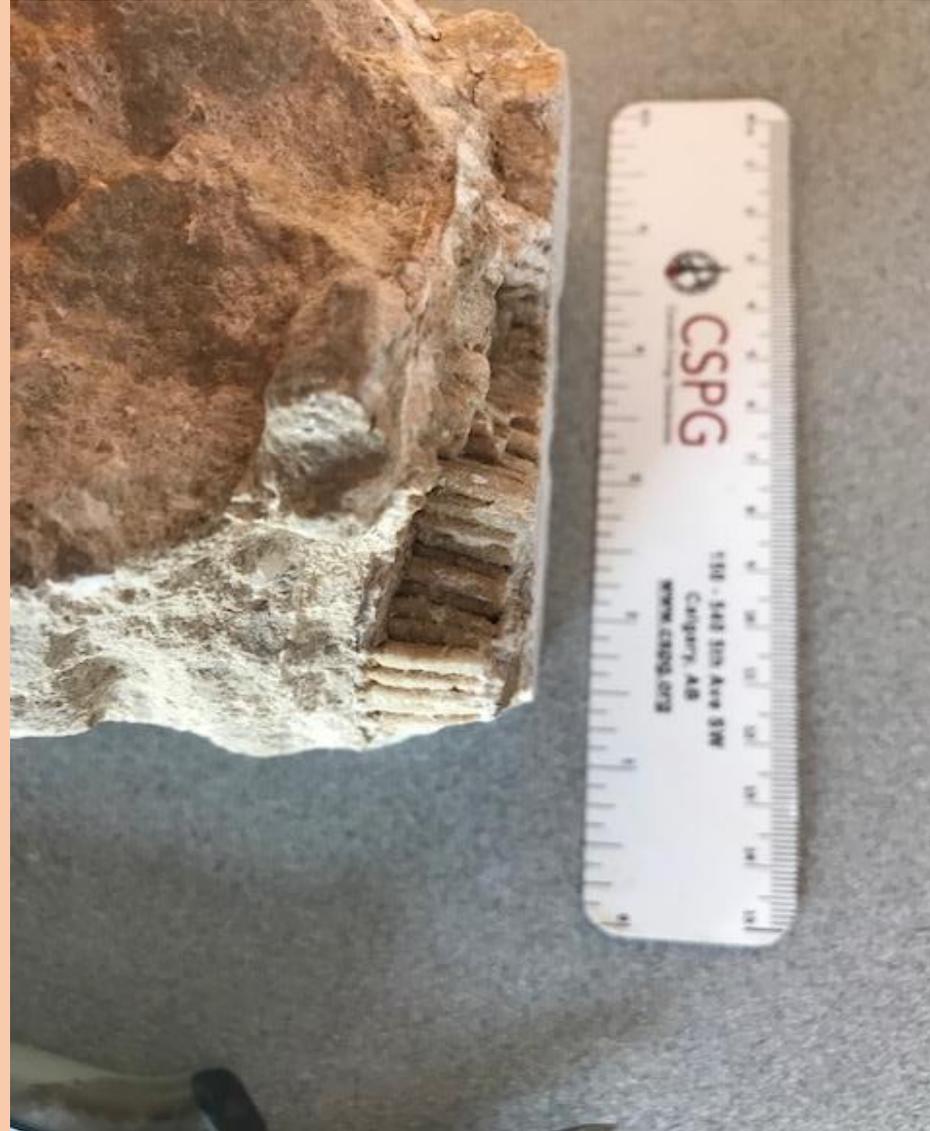
Tyndall Stone from the Rubble Pile brought back home to Calgary, a Rubble Pile in my garage



Study of Tyndall samples brought back to Calgary, *Receptaculites*, the “sunflower coral” which paleontologists say is actually an algae, top view showing typical radiations and an opaque central core



Receptaculites, a side view, note the typical; pillar-like, columnar structures



Receptaculites, a three dimensional view, hand specimens allow for 3-dimensional study and analysis



Visiting Gillis Quarry – You must plan ahead

- **Visitors are welcome but you should phone in advance; the Rubble Pile is open 8:00 – 3:30 pm, Monday – Friday; in 2021 it closed October 8 and will re-open in about May, 2022**
- **Due to safety issues, you can not go inside the processing facilities**
- **You can drive yourself to the rubble pile, help yourself to as much rubble as you want and pay \$30.00 afterwards**
- **We drove thereafter along the western shore of Lake Winnipeg and to places like Gimli where the famous Air Canada Gimli glider descended empty of fuel in July, 1983. Lake Winnipeg is huge, it is like an inland sea**
- **Manitoba is off-the-beaten path for tourists and we were very welcomed by everyone, we were there first week of October, 2021**

Thank You!

- **Thanks to the Alberta Palaeontological Society (APS) and the Canadian Society of Petroleum Geologists (CSPG) for hosting this virtual meeting.**
- **Thanks to Harold Whittaker, Program Coordinator of the APS and Aaron Fitzgerald, Programs Coordinator of the CSPG for your help with organizing this meeting.**
- **Thanks to Cory Gross, APS President for chairing this evening's meeting.**
- **Thanks to my wife Henrietta "Henri" Koning for convincing me to go on a road trip to Manitoba. Our first time there. An excellent time!**