

THE MANITOBA LEGISLATIVE BUILDING



FOSSIL HUNT

Manitoba's Ancient Seas
and Tyndall Limestone

If these walls could talk...

History lives on in the Manitoba Legislative Building. It lives on in the neoclassical architecture and symbolic adornments that help us recall past events that once took place in these rooms.

Prehistory lives on, too, in the countless fossils embedded in the walls of this hallowed institution. These are the tangible reminders of the tropical sea that existed here 445 million years ago.

Fossil fun

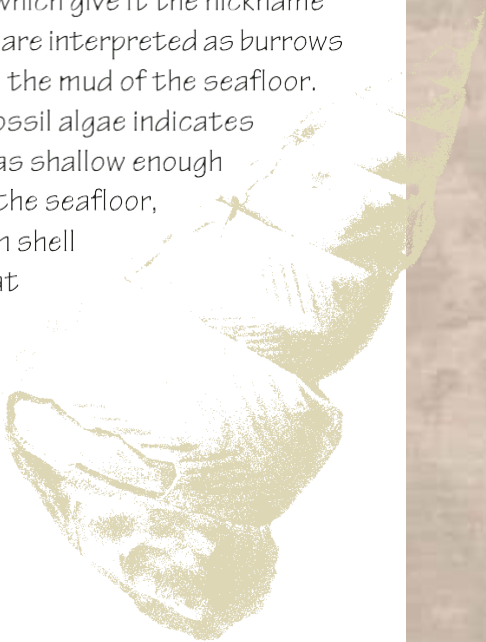
Before you begin your hunt, it's important to know a thing or two about fossils. Fossils are the remains or traces of plants or animals, preserved in rock. Fossils are generally found in places where the ground surface contains rock made of old sediment. The badlands of Alberta and Montana contain an abundance of dinosaurs and other fossils, but you don't have to go that far to discover amazing finds. Dinosaurs haven't yet been found in Manitoba, but fossils of many different types and ages have been found in the southern and northeastern parts of the province.

Fossils of ancient sea creatures and plants, much older than the dinosaurs, occur in quarries and along lakeshores in Manitoba's Interlake Region. The fossils inside the Manitoba Legislative Building are in Tyndall Stone, which is quarried at Garson, Manitoba.

The Seas of Manitoba

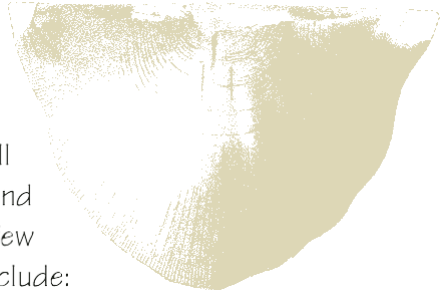
How did fossil sea creatures come to be in southern Manitoba? Tyndall Stone preserves evidence of a very different stage in the Earth's history, a time 445 million years ago when this part of the world was near the equator, and a time when sea level was much higher than it is today. This limestone was deposited as sediment on the bottom of a warm, shallow sea that covered the middle of North America, including much of what is now Manitoba.

Conditions in this sea were ideal for the growth of many kinds of organisms, some of which are preserved as fossils. The mottles in the limestone, which give it the nickname "tapestry stone," are interpreted as burrows made by shrimp in the mud of the seafloor. The presence of fossil algae indicates that the water was shallow enough for light to reach the seafloor, and beds of broken shell material show that the seafloor was stirred up by the waves of ancient storms.



Fossil groups

More than one hundred species of fossils can be found in Tyndall Stone, but most of the larger and more obvious ones belong to a few major groups (types). These include:



Brachiopods – These “lamp shells” looked like clams, but belong to a completely different group. They lived on the seafloor and fed by removing small food particles from the water. Lamp shells are not extinct, and the shells of modern brachiopods can be found near Churchill on the shore of Hudson Bay. (see graphic above)

Bryozoans – The bryozoans, or “moss animals,” were colonies that lived attached to the seafloor. Each pore in the colony contained a tiny animal.

Cephalopods – These molluscs were free-swimming predators which were related to the chambered nautilus and squid. The biggest Tyndall Stone cephalopods were at least two metres (six feet) long. (see graphic below)



Colonial corals – Each coral colony was made up of many small animals, which lived inside the tubes of the skeleton.

Common colonial corals in Tyndall Stone belong to several types, including chain, honeycomb, and encrusting (“crust”) types.

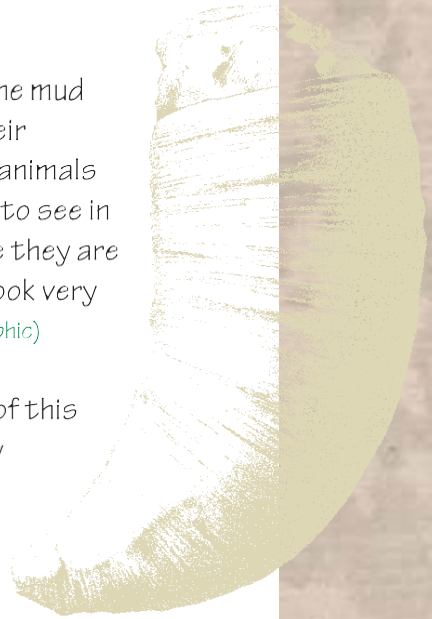
Gastropods – Several kinds of gastropods (snails) are found in Tyndall Stone. The largest of these is among the world's largest fossil snails.

Horn corals – These lived in the mud of the seafloor and used their tentacles to capture small animals in the water. They are easy to see in Tyndall Stone walls because they are usually white in colour and look very much like cow horns! (see graphic)

Receptaculitids – Members of this extinct group are commonly called “sunflower corals,” although they were neither sunflowers nor corals. They are the most common Tyndall Stone fossils, and were most likely green algae (plants).

Sponges – Sponges are very simple animals. Sponges with hard skeletons, called “stromatoporoids,” were abundant on the floors of ancient seas.

Trilobites – These are extinct relatives of crabs and insects, which crawled across the ancient seafloor or lived in burrows.



Sea Survivors

You may wonder how the remains of these ancient sea creatures have survived through many millions of years. When a snail or a coral died the soft body parts rapidly decayed, but the shell was buried by limy mud on the seafloor. The mud filled the shell, and as more layers of mud and sand built up above it, the shell and sediment were both turned to stone.

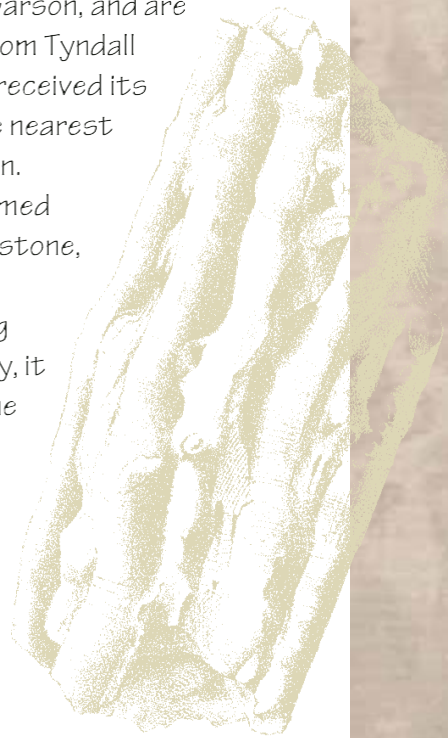
Some kinds of shells, such as the corals, were made of the same mineral as the surrounding sediment, and are preserved essentially unchanged from their original form. Others, such as snail shells, have lost their original structure, which was replaced with muddy lime carried by water passing through the rock.

Rock of Ages

Tyndall Stone, which is light grey or tan in colour, is recognized as one of the world's most beautiful building stones. It is featured in the Manitoba Legislative Building, but it also appears in many other Winnipeg and Manitoba structures: apartment blocks, office buildings, universities, hospitals, churches, and museums. Outside this province, it is seen in structures including the Canadian Museum of Civilization in Gatineau, Québec, the Saskatchewan and Alberta Legislative Buildings as well as the Parliament Buildings in Ottawa (you can often see Tyndall Stone on the television news, when politicians are interviewed inside the Parliament Buildings).

This distinctly mottled stone is quarried at Garson, Manitoba, about 50 kilometres northeast of Winnipeg on Highway #44. A farmer named Gunn was the first to discover the deposit at Garson in 1896. The first use of similar stone, however, dates back to 1831, when limestone from the Red River valley was used to build the warehouses and walls of Lower Fort Garry, Manitoba (now a national historic site).

The Selkirk Stone and Red River valley stone were not quarried at Garson, and are somewhat different from Tyndall Stone. Tyndall Stone received its name from Tyndall, the nearest railway point to Garson. Commercially, it is termed Manitoba Tyndall Limestone, Manitoba Tapestry Limestone, or Winnipeg Limestone. Geologically, it is a dolomitic limestone of Late Ordovician age (about 445 million years old), belonging to a geologic unit known as the Selkirk Member of the Red River Formation.



Happy Fossil Hunting...

The following pages display photos of 17 fossils and their approximate locations in the Manitoba Legislative Building. Each photo is numbered and it is your task to find all 17 fossils, which are embedded in the interior walls of the building. Floor plans are found on pages 13, 14 and 15.

A special thanks to Dr. Graham Young, Curator of Geology & Paleontology at the Manitoba Museum for providing the written text, and identification of the fossils for this project!

Line drawn images are from:
Whiteaves, J.F. 1895
Palaeozoic Fossils, Vol. III, Part II
Geological Survey of Canada, Ottawa



17 fossils ...



- 1 Encrusting Coral
(*Protrochiscolithus*)

Cephalopod 2



Stromatoporoid
(Sponge) 5



Horn Coral 4



Storm Bed
(3 storm beds in
this column) 5





6 Chain Coral
(large fossil)



Gastropod
(*Maclurina*)



Gastropod
(*Hormotoma*)



9 Cephalopod
(*Armenoceras*)

Receptaculitid

10



Cephalopod
(surrounding are
3 horn corals)



Receptaculitid

12



Honeycomb Coral
(*Crenulites*)

13





Cephalopod
(one of the largest
fossils in the
building)



Receptaculitid
(a.k.a. The Skull)



16 Cephalopod



17 Chain Coral



Visitor Tour Program

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