



THE MINERAL VEIN

THE MINERAL SOCIETY OF MANITOBA NEWSLETTER

SEPTEMBER 2008

The Mineral Society of Manitoba
c/o The Manitoba Museum
190 Rupert Avenue
Winnipeg, MB
R3B 0N2
Published monthly from September to June
Home page:
<http://www.umanitoba.ca/geoscience/mineralsociety/index.htm>

Meetings are held on the first Wednesday of each month from September to May inclusive at the Manitoba Museum in room P47 on the Planetarium level. They begin at 7:30 PM and feature announcements, an invited speaker and a draw.

Members are encouraged to bring along any new, interesting specimens or specimens appropriate to the speaker's topic.

Field trips take place from May to September to interesting sites in Manitoba, neighbouring provinces and states

2007- 08 EXECUTIVE

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A NEW SEASON BEGINS



CLUB MEETINGS

Message from the President

Jack Bauer

I would like to thank the executive for giving of their valuable time, support and their hard work during our 2007 -8 season.

October 1 is our general election of Executive Officers at 8 PM. If you have leadership attributes, the time and will, please stand and be counted. If you have not served on the executive in a while, please consider doing so. So that others may take a break.. If you have new ideas about how things should be run or complaints on how things have been run, speak up, offer to take a position on the executive. Call Jack at 632-6934 if interested

Our October Annual General meeting will be also a “Show and Tell”. Bring those interesting specimens that you have collected over the summer season and tell us about your adventures. If you were really lucky and found a unique Selenite specimen, the Museum Committee may make you an offer, if the quality is suitable as a museum specimen.

Membership Dues Mineral Society of Manitoba memberships are due in October. \$15.00 for individual or \$20.00 for family. Please make arrangements if you cannot attend this meeting.

Xmas Party This will be held on the 1st weekend of December, “probably December 7, 2008”. The location will be announced shortly. Winnipeg Rock and Mineral Club are cordially invited to attend, and MSM members have been invited to their Xmas Party. Please register early so that organizers can plan accordingly, as available seating may be limited.

Manitoba Mining and Minerals convention November 20-22. I would like to thank those members that have put their names on the volunteer list. This is also an excellent opportunity for MSM members to make contact with professionals in the industry.

October 1, our general meeting is also a time for new members to meet older members, to exchange stories, hints, and advice. See you there

Sept 3 Meeting

Lori Stewart presented us with her Honours Thesis Research.

STROMATOPOROIDS AND COLONIAL CORALS HOSTING BORERS AND LINGULOID, ORDOVICIAN OF MANITOBA, CANADA

Research for her M.Sc. thesis deals with some of the most significant events in Earth’s history. The Ordovician radiation was one of greatest periods of diversification and biotic change (Harper, 2006), and the end-Ordovician mass extinction resulted in one of the largest decreases in biodiversity, and in a

reorganization of faunas. The estimated loss of species was 85%

What species used to exist are indicated by the amount, kind and condition of fossils that can be uncovered.

In the fossil record there are instances where one kind of organism may take up residence within the skeleton or tissues of another kind of organism. This is important to our understanding of ancient ecosystems.

In some cases, there may be evidence of direct interaction of these organisms, providing information about their physiology and relationships.

In other cases, evidence of any direct interaction is lacking, but information about the behaviour and growth of one of the organisms can still be observed.

Throughout their geologic history, many stromatoporoids and colonial corals have hosted macroboring activity during life and/or after death. There have, however, been very few previous reports of linguloids within such borings.

The specimens were collected from a newly exposed road cut which displayed many weathered surface exposures, as well as a newly exposed fantastic stratigraphic section.



This work included laser-aided surveying between exposures, GPS mapping of localities, measurement of stratigraphic sections, and field collection of macrofossils and lithologic samples from each stratigraphic interval.

Laboratory analyses of this material included detailed macroscopic and microscopic study of fossils and polished lithologic samples. Taxonomic identification of fauna was performed by studying the macroscopic and microscopic structure of the fossils. Field observation

indicates that important fossil groups that have not previously been recorded from these units are present, which may change our understanding of the distribution of certain fossils.

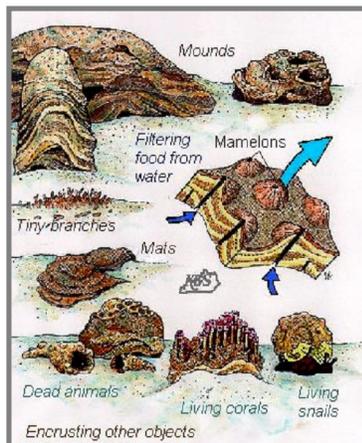
The latest Ordovician of Manitoba has not been studied comprehensively since the work of Stearn (1956). The latest Ordovician mass extinction negatively impacted marine communities, and this study provided critical information about the ecologic changes leading up to this global event. This will be related to the regional context of the Williston Basin, and on to the global changes associated with the Late Ordovician mass extinction.

Macro-borings have a long geological record. Throughout their geologic history, many stromatoporoids and colonial corals have hosted macro-boring activity during life and/or after death. There have, however, been very few previous reports of linguloids within such borings.

Colonial corals are marine benthic organisms consisting of soft-bodied polyps that reside on the outer surface of a calcified skeleton.



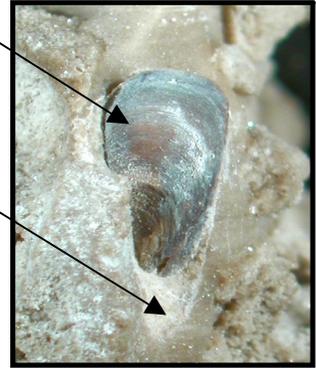
Stromatoporoid sponges are marine benthic organisms characterized by a simple calcified skeleton composed of horizontal laminae and vertical pillars.



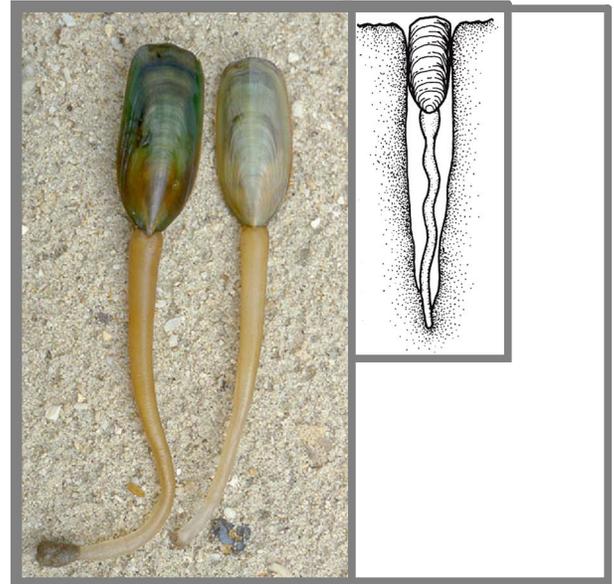
Linguloid-boring

association is depicted here.

Single linguloid brachiopod within a boring in host stromatoporoid or colonial coral



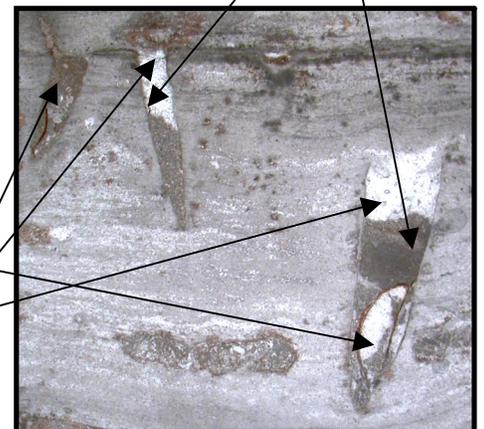
Linguloid brachiopods are characterized by an elongate, biconvex phosphatic shell, and at present inhabit vertical burrows in soft sediments



Linguloids are otherwise unreported from the member, and were not observed in the matrix surrounding the stromatoporoids or corals. Shells of other organisms were not observed in the borings except as bioclastic infilling sediment. Some of the borings are covered over by subsequent growth of the host or recolonization of the surface. The borings, however, remain entirely excavation structures through their length.

Linguloid shell

Trypanites



The diameters of the borings were shown to represent a normal distribution based on statistical analysis. This suggests that they may have been produced by a single species.

The linguloids tend to occur in borings with relatively large diameters. The vertical location of the linguloids within borings is random. What she found in Garson was that *Trypanites* borings were produced in the stromatoporoid *Stratodictyon* and tabulate coral *Protrochiscolithus* on inactive or dead surfaces. This is indicated by the truncation of skeletal structure through the entire length of the borings.

In the Selkirk Member, linguloid brachiopods are reported within *Trypanites* borings. The linguloids are interpreted to be nestlers preserved in life position. The linguloids are found only within the *Trypanites* borings, which they cannot produce for themselves. The delicate shells are oriented upright and are commonly preserved in articulated condition. The inference is that the linguloid larvae selected a vacant boring, preferably one with a large diameter, which it then occupied throughout life.

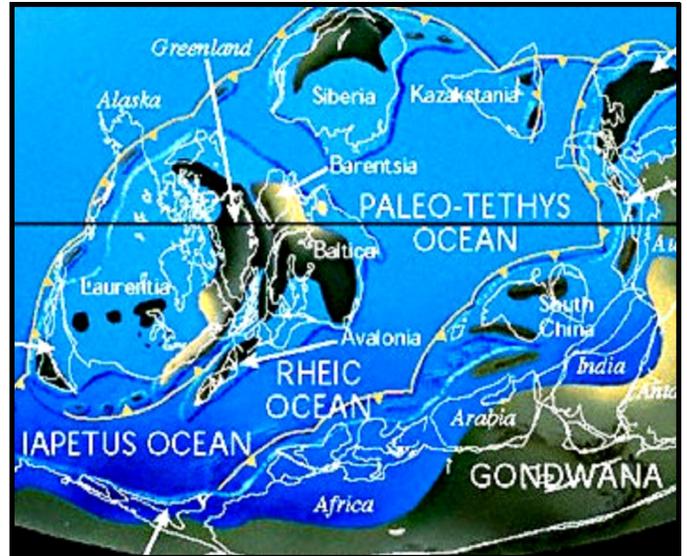
This newly discovered linguloid-boring association expands the geographic range of such associations to central Canada. The earliest previous report of a linguloid-coral association was from the latest Ordovician unit on Manitoulin Island, Ontario, which is considered Rawtheyan or late Richmondian in age

This establishes our discovery as the earliest known linguloid-coral association as well as the only linguloid-stromatoporoid association prior to the Silurian.

Although the number of known cases is small, the linguloid-boring association within stromatoporoids and corals presents an interesting stratigraphic pattern. The association appeared quite early in the history of stromatoporoids and corals, which both originated in the Early Ordovician.

Trypanites borings first appeared in the Cambrian and extend to the present. Their peak diversity, however, appeared during the Ordovician and Silurian corresponding with the linguloid

association. Perhaps this accounts linguloid-boring association in host stromatoporoids and corals during the Ordovician and Silurian.



Trypanites is a narrow, cylindrical, unbranched boring which is one of the most common trace fossils in hard substrates such as rocks, carbonate hardgrounds and shells (Bromley, 1972). It appears first in the Lower Cambrian was very prominent in the Ordovician Bioerosion, and is still commonly formed today. *Trypanites* is almost always found in calcareous substrates, most likely because the excavating organism used an acid or other chemical agent to dissolve the calcium carbonate.

Stromatoporoidea is an order of colonial aquatic invertebrates that until recently was believed to have gone extinct in the Devonian. The group was previously thought to be related to the corals and placed in the phylum Cnidaria. It is now thought to belong to the sponges (Porifera). There are numerous fossil forms, dating from the Cambrian to the Cretaceous periods, with spherical, branching or encrusting skeletons of lime. The living members of this order are recognized by the zoological society as sclerosponges but are identical to, what the paleontological community has identified as stromatoporoids. It is poor communication between these two groups that has caused improper naming of this species and some confusion. Today stromatoporoids have been relegated to a marginal existence in areas intolerable to other reefing benthos.

Geological Time Scale

This geologic time scale shows all the defined units of period rank, along with the eras and eons that comprise them. The periods of the Phanerozoic Eon are further subdivided into epochs; see those in the Phanerozoic Eon geologic time scale are further subdivided into ages; see those in the Paleozoic Era, Mesozoic Era and Cenozoic Era geologic time scales.

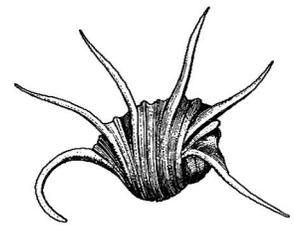
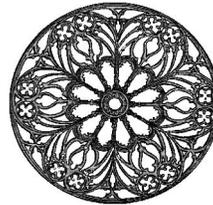
Geologic Time Scale: Periods

Eon	Era	Period	Dates (m.y.)
Phanerozoic	Cenozoic	Neogene	23-0
		Paleogene	66-23
	Mesozoic	Cretaceous	146-66
		Jurassic	200-145
		Triassic	251-200
	Paleozoic	Permian	299-251
		Carboniferous	359-299
		Devonian	416-359
		Silurian	444-416
		Ordovician	488-444
		Cambrian	542-488
Proterozoic	Neoproterozoic	Ediacaran	630-542
		Cryogenian	850-630
		Tonian	1000-850
	Mesoproterozoic	Stenian	1200-1000
		Ectasian	1400-1200
		Calymmian	1600-1400
	Paleoproterozoic	Statherian	1800-1600
		Orosirian	2050-1800
		Rhyacian	2300-2050
		Siderian	2500-2300
Archean	Neoproterozoic		2800-2500
	Mesoarchean		3200-2800
	Paleoarchean		3600-3200
	Eoarchean		4600-3600
Eon	Era	Period	Dates (m.y.)

Object and purpose of the Mineral Society of Manitoba:

“The object and purpose of Society shall be to establish and to conduct a non-profit, educational organization to promote, to enjoy, and to develop the study and practices of the various phases of mineralogy and related earth sciences.”

The above is an excerpt of our constitution. Constitutions tend to be dry reading but they always contain interesting bits of information. Copies of the constitution will be available for picking up at our next meeting.



Notice

This is the last paper to be prepared by Marjorie Turton. It is time for new ideas.

Thank you, members of Mineral Society of Manitoba for an interesting adventure.

Oak Hammock Marsh

Oak Hammock marsh held on September 20. and 21 .(Saturday and Sunday)held a Mineral logy and Archeological weekend. The Mineral Society of Manitoba and Winnipeg Rock and Mineral Clubs were their amongst other presenters. Anita-Marie Janzic from the Canadian Fossil Centre was there on Sunday. She gave a presentation Saturday to the Annual Canadian Paleontology Conference, so it was nice to see her there with displays and some of her staff.

Here are some pictures of the well-attended event.



Here is Jack Bauer expounding many tidbits of information about minerals to visitors.



Here is Gerald Ross with his eye catching mineral display



Marion Foster is busy arranging mineral and fossil specimens for sale. Money collected is going for the scholarship fund.



Yes they were at Oak Hammock Marsh



Ken Fumerton had an interesting collection for sale.

STORAGE SPACE WANTED

Does anyone have space for Mineral Society of Manitoba displays and supplies?

Otherwise the club will be required to rent a storage locker somewhere.