OPUNTIA

399

Early December 2017

Opuntia is published by Dale Speirs, Calgary, Alberta. It is posted on www.efanzines.com and www.fanac.org. My e-mail address is: opuntia57@hotmail.com When sending me an emailed letter of comment, please include your name and town in the message.

LEAVING A MARK IN THE WORLD

photos by Dale Speirs

Some people tell me they live in boring towns and that nothing ever happens. My belief is that if you open your eyes and look around, there is always something. Festivals and other current events fill the air, and history not only surrounds us but we walk on it.

In the past few years, local history buffs in Calgary, myself included, having been photographing and documenting the markings impressed into concrete sidewalks by contractors, dating back more than a century.

At right: Modern sidewalk markings circa 2010 on 13 Avenue SW at 4 Street along Central Memorial Park. This was Calgary's first park. It was modernized in the first decade of the 2000s, and this leaf pattern created by sandblasting over stencils.

Calgary is young compared to eastern North American cities and especially to Europe. It was founded on August 28, 1875, when F Troop of the North West Mounted Police waded across the Bow River just upstream of the junction with the Elbow River and built a fort. Briefly known as Bow Valley Post, then Fort Brisebois, and finally Fort Calgary, a hamlet sprang up around it. In August 1883, the transcontinental railroad came through and its future was assured.

By the turn of the century, Calgary was a prosperous town. In 1902, the first concrete sidewalk was poured on 8 Avenue South, in what is today the downtown core. That street has been rebuilt countless times and is now the Stephen Avenue pedestrian mall. No trace remains of the original sidewalks in the core.

The earliest known surviving sidewalk mark is dated 1907, shown below. It is in the Beltline district, a neighbourhood on the other side of the railroad tracks from the downtown, so-called because the first streetcars traveled its length in an endless loop.

The mark is distinctive because of the paw prints preserved in it, someone's dog from an adjacent house, and the oldest paw prints known in Calgary. The initials are those of Bachelor, Marshall, and Skairn Contractor. The words 'Contractor' and 'Calgary Alta' are almost completely worn away.

The second oldest mark, from the same contractor, is on a sidewalk poured in 1909 in the Mount Royal district, the next one south of Beltline. It was where the Old Money crowd once lived but is today overrun by the Nouveau Rich. A starter home begins in the millions of dollars, and the big old mansions in the tens of millions. Below is a double error. The labourer who stamped this mark into the concrete put it in upside-down to the street name. He also forgot to include the word 'Street' after 'Seventh'.

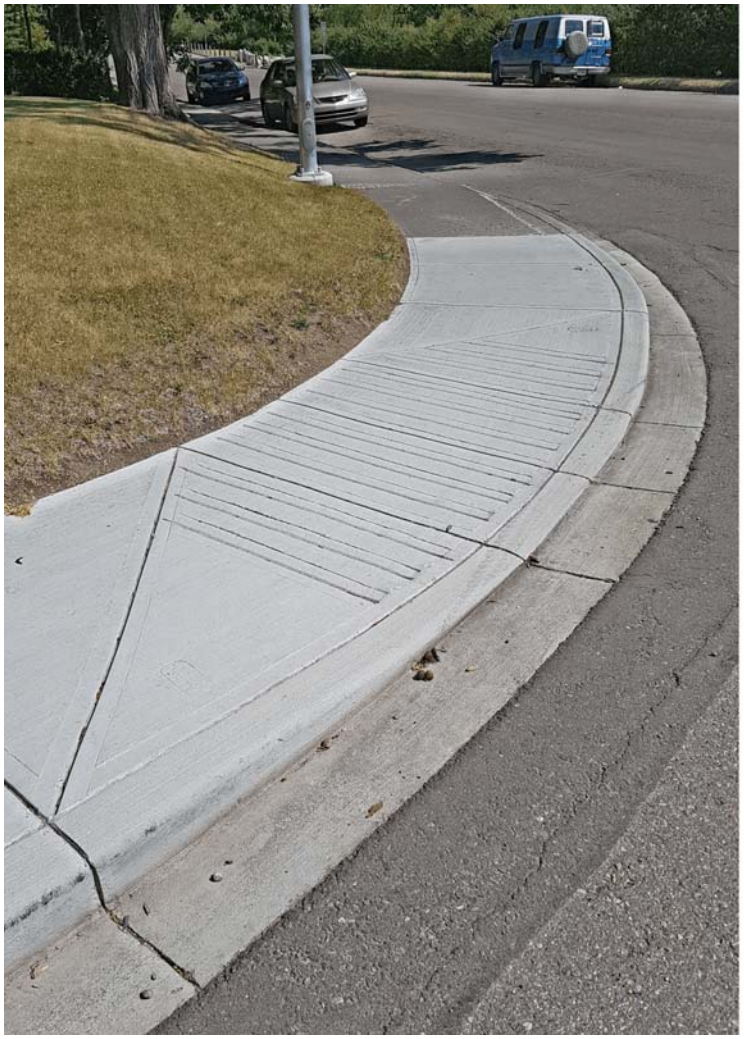
A Sidewalk's Lot Is Not A Happy One.

There are several reasons why few sidewalks older than World War Two remain, and even fewer markings. Calgary's freeze-thaw winters are very rough on monolith concrete sidewalks, with temperatures commonly fluctuating between -20°C and +10°C in as fast as one day, when a chinook moves in after an Arctic front. Sidewalks seldom last more than sixty years before replacement is required.

Whenever a building is demolished and a new one constructed, the sidewalk and boulevard will be replaced as a matter of course. The owner of a shiny new skyscraper does not want its customers and tenants tripping over cracks. The original pioneer town is now the downtown core, filled with skyscrapers, none older than World War Two, and most built since the 1980s.

In the 1970s, the City of Calgary initiated a policy of converting street corner sidewalks into cut-outs or ramps to allow wheelchair users to move freely without having to jump a curb. All new and replacement sidewalks are built with cut-outs as a matter of policy. Existing corners are gradually being converted even if still structurally sound.

If a citizen phones in a request, it will be done as part of City policy to ease life for wheelchair users. (Which is why all Calgary Transit buses have hydraulic ramps for wheelchair access.) Since the majority of concrete stamps are placed at street corners, this has hastened their disappearance.



The photo at left, taken at 25A Street SW and 32 Avenue, is a typical example.

You can easily see the difference between the original suburban sidewalk, poured in the late 1950s, and the new cut-out, which eliminated the old date stamp.

Rescuing Sidewalk Marks.

In the early 2000s, the spread of the World Wide Web made it possible for hobbyists to make connections with each other in a way that had never been possible before. A few homeowners in Calgary had noticed old sidewalk markings being torn out and hauled to the landfill, and tried to save them. Some moved them into their own yards as flagstones. Other markings were cut out but then carefully re-embedded into the new sidewalk as historical markers, thanks to concerned citizens who went after bureaucrats and politicians.

Today there is an active group on Facebook called Old Calgary Sidewalk Stamps, and a conversation thread is hosted at www.calgaryheritage.org I found out about them in a news article online in early 2017. Since I had been photographing manhole covers as a fun thing (God bless those who invented the smartphone camera!), this was a natural extension to my interest in Calgary history. See OPUNTIAs #308 and 360 for my photos of manhole covers.

This sort of hobby provides an excuse to go walking about neighbourhoods and exploring their history and parks. I need the exercise since I retired in 2010, so it gives me an reason to wander about Cowtown into places I ordinarily wouldn't bother with. I can't go out to the mountains every day.

My standard procedure is to take the bus to the far end of a suburb and then walk back, or vice versa, in such a way that I always have the sun behind my back. Easier on the eyes and skin, not to be walking into the sun.

Many sidewalk marks have eroded over time from weather and pedestrian scuffing, and are difficult or impossible to read. I quickly found out that the best time to photograph the marks is in the morning or evening when the sun is low on the horizon. The marks show up better in the shadows cast by their relief.

Pall Mall Can't Spall.

The really serious sidewalk mark collectors in Calgary are documenting every known early occurrence. There are a number of Calgarians who are trying to walk every street in the city, pretty much a lifetime task.

I am content to try for one dated mark from each year, plus spelling errors. The latter is an entire category in its own right, as literacy was not a requirement for construction labourers back when. The names of streets impressed into the concrete were often mis-spelled, so much so that in 1909 the editor of the CALGARY HERALD newspaper blasted the contractors and City Council for all the mistakes. That editorial is reproduced on the next page. Following it are various photos I took of spelling errors.

CALGARY, CANADA, TUESDAY, MAY 11, 1909.

CALGARY CAN'T SPELL.

The Herald rises at this present moment, when the sidewalk contractors are busily preparing for their extensive labors of the summer of 1909, to suggest, urge and implore that the city fathers take steps to prevent any further occurrences of the disgraceful spelling with which the names of our streets and avenues are unfadingly imprinted in the walks of stone. There are some who will think lightly of the fact that about three out of four times "Twelfth" is spelled "T-w-e-l-v-t-h" or "T-w-e-l-t-h" in the sidewalks of this main residential avenue, or that there confronts one daily on Calgary's streets the awfulness of "N-i-n-e-t-h." There is something wrong with the thinktanks of people who hold the matter thus lightly.

Calgary spends tens of thousands yearly, if subjects are averaged up, in teaching its youth how to spell. And then we calmly stand for such atrocities as those referred to above! They are just as reprehensible as faults in figures would be on the part of the clerks in the treasurer's office, or mistakes in the computing of surveys and grades by the engineer's department.

If the visitors in our city yesterday had had the opportunity of seeing these sights, would they have gone away so favorably impressed? Nay verily. There is not one of them but would have told, over and over, when they reached home, and perhaps before, that Calgarians were so grossly, so barbarously illiterate that they could not spell the names of the ordinal numerals.

Commissioner Clarke should call his inspectors in this year and tell them that faults of this kind are as serious as soft spots, broken corners, or any other sidewalk defects. Furthermore, the corners at which these advertisements of ignorance appear should be torn up and replaced. If the city has accepted them it should bear the cost rather than suffer the condition to stand; if the city has not accepted, the contractors should be told in no mild terms that workmanship such as this might be tolerated in ramshackle frontier towns, but cannot be in Calgary.

This one is today 7 Avenue NW and 1 Street. The avenue was renamed, about which more further on. This is in the Crescent Heights district, originally settled by well-to-do British merchants, who named their streets after the counties and shires in the Old Country.

This 1912 marking is at 7A Street NE and 4 Avenue in Bridgeland. Using this example, sub-lettered streets are always '7A Street', not '7 Street A'. The district is opposite the downtown core and got its name because it was a natural crossing point over the Bow River. Today it has three major vehicle bridges, an LRT bridge, and two pedestrian bridges.

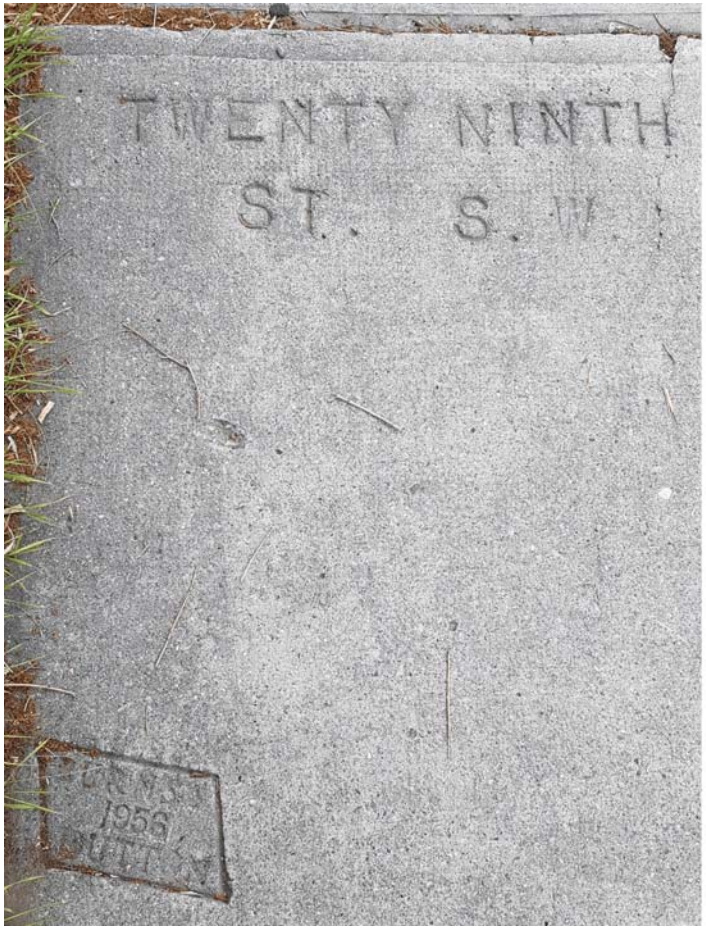
Another one from Crescent Heights, at 5 Street NW and Crescent Road. The labourer stamped the letter Q, then overstamped with a backward S.

Things hadn't improved by 1956, with this one in Rutland Park at 33 Street SW and 35 Avenue (date stamp too far away to get into same photo).

No date stamp left for this Bridgeland marking because of wheelchair cut-outs but probably the same age as the nearby one shown on the previous page. Located at 7 Street NW and 2 Avenue.

Name Changes.

When Calgary was being born, all the streets were named, mostly at random. In the early 1900s, City Council established a policy that all grid streets would be numbered. Hence, as an example, the main drag downtown was changed from Stephen Avenue to 8 Avenue South. One north-south street was designated Centre Street, and the city's addresses became NW, SW, NE, and SE. There are sidewalk marks that were impressed in the days of named grid streets but are now numbered streets. These are fascinating fossils of Calgary's past history. It also happens in reverse. I found a sidewalk stamp in a 1950s suburb, where the numbered street was given a name because it meandered so much that it really wasn't a grid street.



Rutland Park is on the west side of a former air force base from World War Two and the Korean War. The runways were aligned with prevailing winds, not the street grid.

29 Street SW ran alongside the base and curved over to other streets at an angle. Sometime in the 1960s, the street was renamed Sarcee Road because it wasn't on the grid.

Salisbury Avenue is today Salisbury Street SE. Avenues run east-west in Calgary and streets north-south. The original name was applied before that policy was standardized.

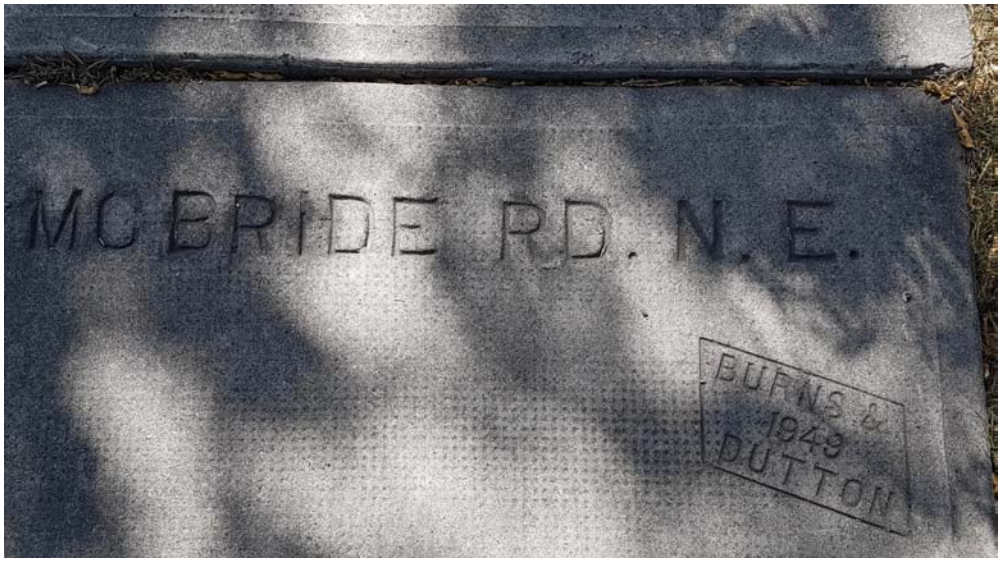
For decades, no one could decide if a long street in Crescent Heights was Alexandra Crescent or Alexander Crescent. The debate still continues today because no one knows for whom the street was named. Today all the street signs say Alexander Crescent, but the old sidewalk markings say Alexandra Crescent.

Macleod Trail South is the main drag from downtown to the south boundary of Calgary. It is a pioneer cattle drive trail that originally went around the east side of Cemetery Hill just south of the downtown. In the horse-and-buggy days, one tried to avoid hills because they were hard on the horses. In the 1960s, when the automobile was king, the street was realigned and took the short cut overtop the hill. The old road was renamed Spiller Road after somebody no one in Calgary remembers today. The sidewalk marks along Spiller Road still say Macleod Trail though, at least the ones that haven't been cut out for wheelchairs. Ironically, because Macleod Trail has been expanded over the years to six or eight lanes, Spiller Road has the only Macleod markings left.

Names That Never Were.

Calgary has always had a boom-or-bust pattern of growth because its economy depends so much on commodities. First it was cattle ranching, then homesteading, and since World War One, the price of crude oil. It was common to plan suburbs in boom times that were never built because of an economic crash, then replace them with new development plans a decade or two later. This can be seen in some of the sidewalk marks, where the street names are of roads that were never built because of recessions.

In the late 1950s, City Council debated building a ring road across north central Calgary through what is now the Thorncliffe residential neighbourhood. Thorneycroft Drive NW was to have been the ring road but instead became an ordinary street. The decision was made while the suburb was still being built, because at the intersection with Tipton Road, the southeast corner marking says Thorneycroft Drive but the northeast corner marking says Ring Road.



Bridgeland occupies two glacial terraces of the Bow River, with a steep escarpment separating the two halves. The streets abruptly stop at the edge of the escarpment. An optimist in the Planning Dept. thought to build a road running along the edge of the escarpment but wiser heads prevailed because it would have cost a fortune to shore up the side of the road along the cliff.

Thus it was that McBride Road NE was never built. The contractor pouring the sidewalks didn't get the memo though. Today a scenic footpath meanders along the edge of the cliff, about all that there is room for.

Contractors.

Contractors included their name or initials on sidewalk stamps. They include, from approximately the oldest to the modern:
the McKibbin brothers (shown on page 4)
Bachelor, Marshall, and Skairn Contractor (shown on page 2)

F. Ferenbach	C.M. Payne	G.B. Wood

Burns and Dutton - Robert Burns and Mervyn Dutton
Burnco - Patrick Burns (no relation)

Borger Brothers	Poole	LaFarge
ACC	Asty	Stuart Olson
Maco Paving	Alsa	Con Site
PUC	Pro-Con	Standard General

The City of Calgary has its own crew for spot repairs, originally called the Calgary Municipal Paving Division (shown on page 6), but now called the Roads Dept. and using a City of Calgary sidewalk stamp.

Layzell Road SW, 5700 block

The North Lakeview suburb was built in the late 1950s and early 1960s. There is no view of a lake, so it was renamed North Glenmore after Glenmore Trail, the freeway that forms its southern boundary.

Layzell Road SW, 5800 block

Same contractor, who evidently changed names.

Below:
Same suburb at 20 Street SW and 51 Avenue, but done by the Roads Dept.

1700 block of College Lane SW in Mount Royal, just around the corner from the 1909 stamp shown on page 2.

Standard General stamp in Rutland Park at 2000 block of 35 Street SW.

This is a 2016 pour (white concrete at left) with a deliberate crook in it for no apparent reason. Located on 6 Avenue SE near 1 Street in the downtown core.

And so it goes. I'm still hunting for various years, and in my travels coming across a lot of fascinating history. The next time you're out for a walk, look down as you approach the street corners.

THEY SHALL MOVE OUT OF THEIR HOLES LIKE WORMS OF THE EARTH: PART 6

by Dale Speirs

[Parts 1 to 5 appeared in OPUNTIAs #307, 308, 331, 347, and 390.]

Caverns Measureless To Man.

TWO THOUSAND MILES BELOW by Charles Willard Diffin was originally serialized in ASTOUNDING STORIES from 1932 June to 1933 January. My copy was a free download from www.gutenberg.org

The prologue opens with a speech by Gor, a caveman addressing his tribe. The ice is coming and will soon cover the land, but Gor has discovered deep caves with warmth, fish in the underground streams, and a place of refuge until the Sun God returns some day.

Tens of millennia later, Dean Rawson is a geologist with a plan. He convinces investors to fund an ultradeep borehole for geothermal energy. The well will go down ten miles in the crater of an extinct (they hope) volcano where Rawson had previously seen puffs of steams coming from a few crevices. At that depth they have a bit of excitement.

The drill bit is red hot from the heat but when they pull it up, it is plugged with pure gold. Molten gold that flowed into the bit and then hardened around it. Rawson, nonetheless, still wants geothermal energy, not molten gold. Further tests produce strange results, the last of which is the drill bit coming back up dripping with blood.

While Rawson and his men were drilling down, something was drilling up. Yes, you guessed it, the descendants of those cavemen now have their own technology. Rawson's rig stirred them up and they are coming out of the depths.

The Red Ones capture Rawson and take him down into their subterranean civilization, while simultaneously launching attacks topside. Their slaves are the Yellow Giants, so read what you will into their racial relations. The middle of the novel is the usual trouble and strife one might expect as two civilizations fight each other to the death.

The Red Ones tunnel with ray guns that somehow vapourize the rock and make the mass vanish. Rawson tricks them into drilling upward into the ocean, and don't they get a surprise when they punch a hole into the water. The flood turns into live steam when it hits red-hot rocks down below. Rawson was expecting it and knows how to avoid it, while the Red Ones are turned into pulled pork when they are hit by the live steam.

The rest is just cleanup operations as the military comes to the rescue. There was also a fair maiden in there, just to satisfy convention. Since the water is still pouring into the hot tunnels and exiting the borehole in the volcano at supersonic speeds, Rawson has his geothermal project as well.

"The Microscopic Giants" by Paul Ernst (1936 October, THRILLING WONDER STORIES) tells of the discovery in a deep mine of tiny human footprints. Not fossil, but recent, for the miners notice additional footprints appearing, as if some tiny human walked out of the bedrock, looked around, and then went back. Eventually First Contact is made and it goes all wrong. The little humans are ultradense and can move through rock as if it were water. There is a battle because the little creatures want to collect one of the big ones as a scientific specimen. They fail, find they can't drag a human through bedrock, and run back into the bedrock. No one believes the narrator.

THE INCREDIBLE PETRIFIED WORLD was a 1957 movie with an original screenplay by John W. Steiner. It opens with lots of stock shots, such as a fight in an aquarium between a shark and an octopus, then assorted other reef fish swimming about. All the while, a narrator pompously explains the obvious.

When the actors finally take the stage, the plot gets rolling with an expedition to explore the ocean deeps with a new diving bell. The bathysphere goes down with three oceanographers (two male and one young female) and a spunky female newspaper photographer (who is of a certain age, and resents the other woman for her youthful beauty).

Something goes wrong and the bathysphere breaks loose and disappears into the depths. Unbeknownst to those topside, the bathysphere crew are still alive. Despite it being specifically stated that they are two miles below the surface, they put on scuba gear and swim out of the capsule. According to Google, the deepest scuba dive ever accomplished is 332 metres in 2014, so these actors have pulled off quite a feat.

At that depth, two miles, the ocean should be pitch black, but everything is lit up like a shallow reef. The explanation is phosphorescent algae growing on the walls of a nearby cavern.

The quartet swim inside and discover the cave system has trapped air. They search for a route to the surface, but it stands to reason that if there was one, then the caves would be flooded. The air would gush out because of the water pressure and the seawater would find its level with the surface.

The survivors go exploring. The men bravely do the searching, while the women stay behind. This allows the photographer to make catty remarks to the technician. "*Little Miss Innocent*" is the most polite term she uses. Flaming jealousy indeed, as she resents the competition for the males.

They see a Gila monster. The caves are barren, so what did it live on? Do desert reptiles go fishing two miles down? How did it get into the cavern in the first instance? The matter is not pursued any further, probably because the questions have no answers and possibly because that was all the stock footage of the animal the producer had.

Eventually they meet a shipwreck survivor who tells them that he has been there fourteen years. He looks like Karl Marx on a bad hair day and is dressed in rags. He soon corners the photographer and suggests they could have a wonderful relationship all by themselves. She doesn't concur. That possessive of all the menfolk she isn't.

Meanwhile, up top, the lab boys are building a second bathysphere. Plenty of stock shots of machinists turning brake drums on lathes, then a jump to the new bathysphere, which is exactly like the first one. It is launched and finds the survivors.

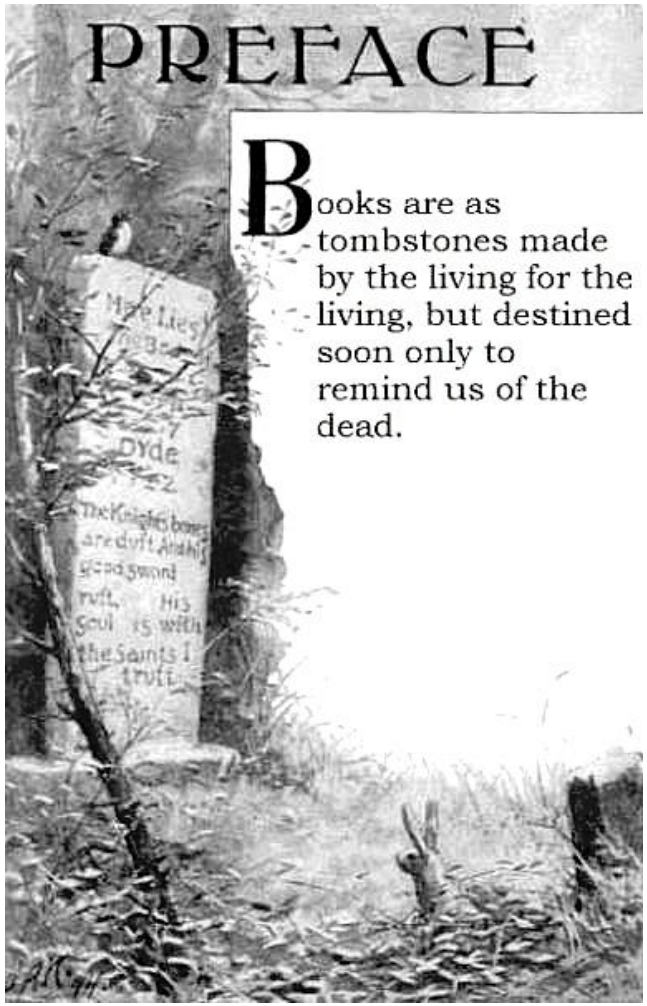
Just then, a nearby volcano erupts and begins to collapse the caverns. Exciting last-second escapes, except the shipwreck survivor. More stock shots, this time of lava flows. There is a surprisingly quick ending, suggesting that the producer had run out of stock shots.

The main problem with this movie is that the underground world is too barren to be plausible. This is based on the assumption that anyone could survive the immense pressures to reach the caverns in the first place.

Just Plain Bizarre.

ETIDORHPA, OR, THE END OF EARTH is an 1896 novel by John Uri Lloyd. The title is the word 'Aphrodite' spelled backwards. It was very popular in its time and went into eighteen editions. Today it is almost completely forgotten. I came across it by accident at www.gutenberg.org, where it is available as a free download in a variety of formats. The author was a pharmaceutical manufacturer, and there are suggestions that some of the novel was written under the influence of his products.

The novel is an as-told-to by a strange being who called himself I-Am-The-Man. The transcriber, in turn, inserts chunks of his narrative, and sometimes it is difficult to separate the two. The book is a series of lengthy essays on alchemy, Masonry, Hollow Earth, and transcendentalism. Multiple prefaces and appendices are attached. All told, a bizarre work.



The preface is extraordinary and would stand by itself even today as a separate article or chapbook. I quote only a few of the opening paragraphs:

Books are as tombstones made by the living for the living, but destined soon only to remind us of the dead. The preface, like an epitaph, seems vainly to implore the passing tribute of a moment's interest. No man is allured by either a grave-inscription or a preface, unless it be accompanied by that ineffable charm which age casts over mortal productions.

Libraries, in one sense, represent cemeteries, and the rows of silent volumes, with their dim titles, suggest burial tablets, many of which, alas! mark only cenotaphs, empty tombs. A modern book, no matter how talented the author, carries with it a familiar personality which may often be treated with neglect or even contempt, but a volume a century old demands some reverence.

A vellum-bound or hog-skin print, or antique yellow parchment, two, three, five hundred years old, regardless of its contents, impresses one with an indescribable feeling akin to awe and veneration, as does the wheat from an Egyptian tomb, even though it be only wheat.

We take such a work from the shelf carefully, and replace it gently. While the productions of modern writers are handled familiarly, as men living jostle men yet alive; those of authors long dead are touched as tho' clutched by a hand from the unseen world; the reader feels that a phantom form opposes his own, and that spectral eyes scan the pages as he turns them.

The stern face, the penetrating eye of the personage whose likeness forms the frontispiece of the yellowed volume in my hand, speak across the gulf of two centuries, and bid me beware. The title page is read with reverence, and the great tome is replaced with care, for an almost superstitious sensation bids me be cautious and not offend. Let those who presume to criticise the intellectual productions of such men be careful; in a few days the dead will face their censors dead.

Standing in a library of antiquated works, one senses the shadows of a cemetery. Each volume adds to the oppression, each old tome casts the influence of its spirit over the beholder, for have not these old books spirits? The earth-grave covers the mind as well as the body of its moldering occupant, and while only a strong imagination can assume that a spirit hovers over and lingers around inanimate clay, here each title is a voice that speaks as though

the heart of its creator still throbbed, the mind essence of the dead writer envelops the living reader.

Take down that vellum-bound volume; it was written in one of the centuries long past. The pleasant face of its creator, as fresh as if but a print of yesterday, smiles upon you from the exquisitely engraved copper-plate frontispiece; the mind of the author rises from out the words before you. This man is not dead and his comrades live. Turn to the shelves about, before each book stands a guardian spirit; together they form a phantom army that, invisible to mortals, encircles the beholder. Ah! this antique library is not as is a church graveyard, only a cemetery for the dead; it is also a mansion for the living.

These alcoves are trysting places for elemental shades. Essences of disenthralled minds meet here and revel. Thoughts of the past take shape and live in this atmosphere. Who can say that pulsations unperceived, beyond the reach of physics or of chemistry, are not as ethereal mind-seeds which, although unseen, yet, in living brain, exposed to such an atmosphere as this, formulate embryotic thought-expressions destined to become energetic intellectual forces?

Was, or is, not the hope of every zinester or book author to have their works survive in some alcove? We all have the vanity that some future reader will glance through our works. If we have but one reader per century, then we are immortal.

When ETIDORHPA finally begins, it is set thirty years prior, which would be shortly after the American Civil War, in Ohio. The transcriber Llewellyn Drury is dozing in his library when he suddenly awakes and finds a strange elderly man with a chest-protector beard sitting in his room.

The man tells Drury that he has a long narrative to tell, based on a manuscript he wrote, and which will take many evenings to read. He says he will leave the manuscript with Drury afterwards, on the condition that it not be published for thirty years.

Drury thinks he had a waking dream, and consults with a psychology professor. This allows considerable padding about dreams to be inserted. The old man doesn't show for months, but finally reappears in Chapter 4. Drury asks him his name but is told that he is simply I Am The Man Who Did It. The old man then begins reading from his manuscript. In a later chapter, he mentions that his first journey was in 1826, so that dates his life.

It all began, he begins at great length, in his search for knowledge. After going through modern scientific research, he began reading alchemical manuscripts in detail. He discovered there was a coded key hidden in some texts about a secret and ancient society called the Chemical Improvers of Natural Philosophy. He applied at once for membership and was accepted. Apparently he only had to send in his dues, swear an oath of secrecy, and became a member.

There is a lengthy insert about the history of alchemy and how it was the ancestor of modern science. True enough as far as it goes. Much verbiage follows about how everything has been discovered by ancient alchemists and there is nothing new to be found. The text goes on in this manner. It almost makes sense for those poorly educated in science and logic, and one can see why the book was popular back when.

I-Am-The-Man became obsessed with the alchemical secrets he was learning. He decided that the knowledge should be shared with the general public and wrote a confessional explaining in great detail all the secrets. The idiot makes no secret of the manuscript to the society, yet acts surprised when they begin harassing him by all means fair and foul, culminating in his kidnapping.

IATM is taken to a secluded cabin in the woods, where they use magic to change his looks and make him appear an old man, although his health is still that of a young man. They destroy his identity so that his wife and friends will not recognize him. It is done so that he will cut all ties with secular life and devote himself to the true alchemy.

In exchange, the Adepts give him extended life for many generations into the future. He wonders how time can be stopped, and an adept tells him time is not as we think it is.

The usual conception of the term Time, an indescribable something flowing at a constant rate, is erroneous, replied my comrade. "ime is humanity's best friend, and should be pictured as a ministering angel, instead of a skeleton with hour-glass and scythe. Time does not fly, but is permanent and quiescent, while restless, force-impelled matter rushes onward. Force and matter fly; Time reposes.

At our birth we are wound up like a machine, to move for a certain number of years, grating against Time. We grind against that complacent spirit, and

wear not Time but ourselves away. We hold within ourselves a certain amount of energy, which, an evanescent form of matter, is the opponent of Time. Time has no existence with inanimate objects. It is a conception of the human intellect. Time is rest, perfect rest, tranquillity such as man never realizes unless he becomes a part of the sweet silences toward which human life and human mind are drifting.

So much for Time. Now for Life. Disturbed energy in one of its forms, we call Life; and this Life is the great enemy of peace, the opponent of steadfast perfection. Pure energy, the soul of the universe, permeates all things with which man is now acquainted, but when at rest is imperceptible to man, while disturbed energy, according to its condition, is apparent either as matter or as force.

A substance or material body is a manifestation resulting from a disturbance of energy. The agitating cause removed, the manifestations disappear, and thus a universe may be extinguished, without unbalancing the cosmos that remains. The worlds known to man are conditions of abnormal energy moving on separate planes through what men call space. They attract to themselves bodies of similar description, and thus influence one another. They have each a separate existence, and are swayed to and fro under the influence of the various disturbances in energy common to their rank or order, which we call forms of forces.

And so forth for several more pages. From there, the narrative moves to a journey across the still-wilderness of the eastern states, arriving in Kentucky in late 1826. Many pages are given over to the description of southern Ohio and Kentucky scenic views, followed by an extended explanation of the karst topography and caverns of Kentucky. Eventually the narrator runs out of geology, and descends into a cavern measureless to man. The Adepts not only have a franchise down below, but its inhabitants are no longer normal humans but pale sightless humanoids adapted to subterranean life.

IATM descends into the caverns, led by a sightless humanoid, who along the way lectures him in the usual manner which utopians are fond of using. That seems to be one of the greatest drawbacks of utopias. Let any stranger appear, and the inhabitants will be seized with an urge to explain in great detail the wonders of their society, whether the stranger wants to hear it or not.

Below the caverns, they enter into a hollow Earth and trudge down ten miles. They should be splashing about in magma at that depth, but instead enter a chamber with a forest of tree-sized luminescent mushrooms. The experienced reader or movie watcher of Jules Verne-style underground worlds will immediately recognize them. They are one of the standards of stories such as this, like starships whooshing through space in television SF, or clickety-clack computer keyboards in Hollywood movies.

The humanoid takes the opportunity to spend several chapters lecturing IATM about the evolution of food. When they walk into a zone of giant salt crystals, it switches to the theory and practice of hydrostatics and saline solutions. It mentions they are walking to an area under the North Pole.

IATM points out this is not walking distance from Kentucky but the humanoid has several answers. Firstly, they are walking down a chord of the sphere that is Earth and therefore a shorter distance. Secondly, the atmosphere has invigorating properties that make the air fresher and more nutritious than up on the surface, giving people the stamina to walk a thousand miles as if only ten. Thirdly, the force of gravity declines as they go deeper, giving IATM a real spring in his step.

At this point in the novel, IATM leaves the stage and the narrator takes over with an extended essay on the Aristotlean ether, an attempt to explain the fabric of space and time. The emphasis was on how gravity worked, which no one knew at the time, other than a few equations showing it diminished exponentially with distance. The essay is long obsolete, for it was but a few decades later that Einstein pointed out that gravity is an effect, not a cause or fundamental force. The notion of the ether was destroyed in his time but revived in the 1970s with the Higgs field.

After many pages of musing about gravity, the story returns to IATM and his travels. He and the humanoid travel over a giant subterranean lake in a boat powered by a gibberish engine that generates motion without any motive power.

This gives the humanoid an opportunity to go into lecture mode about harnessing motion for power, most of which is handwaving magic. For many tens of pages thereafter, he lectures about artesian fountains, brain physiology, and light spectra. Since they are still traveling over the lake to the far side, it whiles away the time.

At long last, they reach the edge of the lake, which overflows down a ten mile deep wall. This gives the humanoid an opportunity to explain how volcanos really work.

None of this liquid magma business. The overflow of water reacts with metallic substances down below and turns into a mixture of live steam and disassociated hydrogen. It then blows up crevices and fractures to Earth's surface, so hot it melts rocks along the way and sprays out lava. It does explain why IATM and the humanoid can travel so far down without hitting magma.

At this point, the humanoid explains how Hollow Earth came to be: *The earth-forming principle consists of an invisible sphere of energy that, spinning through space, supports the space dust which collects on it, as dust on a bubble. By gradual accumulation of substance on that sphere a hollow ball has resulted, on the outer surface of which you have hitherto dwelt. The crust of the earth is comparatively thin, not more than eight hundred miles in average thickness, and is held in position by the central sphere of energy that now exists at a distance about seven hundred miles beneath the ocean level.*

The force inherent to this sphere manifests itself upon the matter which it supports on both sides, rendering matter the lighter the nearer it lies to the center sphere. In other words, let me say to you: The crust, or shell, which I have just described as being but about eight hundred miles in thickness, is firm and solid on both its convex and concave surface, but gradually loses in weight, whether we penetrate from the outer surface toward the center, or from any point of the inner surface towards the outside, until at the central sphere matter has no weight at all.

So there you have it. Research that, flat Earthers.

One lecture after another follows. The novel, like many utopian stories, is an excuse for polemics about how a new world could be born if we would just see the light and repent. Next up is alcoholism:

Intemperance has been the vice of every people, and is prevalent in all climes, notwithstanding that intoxicants, properly employed, may serve humanity's highest aims. Beginning early in the history of a people, the disease increases with the growth of a nation, until, at last, unless the knife is used, civilization perishes. A lowly people becomes more depraved as the use of liquor increases; a cultivated people passes backward into barbarism with the depravities that come from dissipation. Here nations meet, and individuals sink to a common level. No drinking man is strong enough to say, "I can not become dissipated"; no nation is rich and cultivated enough to view the debauch of its people without alarm.

It turns out that the Hollow Earth is not entirely a paradisaical utopia. The humanoid leads IATM past a cavern filled with drunkards, degenerate in body and mind. A lesson to us all. Various other temptations and tests follow, sort of a poor man's Dante's Inferno. Eventually the narrative gets back on track.

The two characters finally pass out of Earth's shell into the 6,000 mile deep hollow centre. They step off the shelf and begin the long fall, during which they will pass through Earth's centre and almost up to the shell on the other side, then oscillate back and forth until atmospheric friction finally brings them to a halt at the centre. IATM fears they will be trapped there, but the humanoid tells him that it is in the centre that humans can learn telekinesis to move themselves. And so he does.

It being rather boring floating in dead centre, the two men move to the inner surface of Hollow Earth, on the inside of the shell. At this point, barring a few more dozen pages of philosophy, the story ends. IATM tells his host that's all there is and there ain't no more. Not in those exact words; he never used one word when a dozen paragraphs would do. The author either ran out of ideas or drugs, probably both. A bizarre book, not to be read in one sitting, but interesting reading nonetheless.

SIGNS, SIGNS, EVERYWHERE A SIGN: SPECIAL LIBRARY ISSUE
by Dale Speirs

I recently got the DVD set for Season 3 of THE LIBRARIANS (2017), a fantasy series about a brave team who fight the forces of magical evil. The series is good-humoured, with an excellent cast. Episode 2, written by Rob Wright and first aired in 2016, was "And The Fangs Of Death". It is about werewolves, but not just any werewolves. Alberta werewolves. First wolverines, now these.

As I watched the episode, I almost fell out of my chair when I saw a scene where the heroes enter a forested area where a supercollider is located. If Alberta can have werewolves and Wolverine, I suppose it isn't too much further that it should have a supercollider. Take that, CERN.

The scene that made me laugh out loud was a brief pan across a Keep Out sign. It looked genuine, but when I freeze-framed it, there were quite a few anomalies.

It is a hybrid between a National Defence sign and a Parks Canada sign, something that would never occur in real life. There are no military facilities in the mountain parks.

Some of the details on the sign look realistic but have been altered to avoid copyright problems. The logo on the upper right corner is that of the federal government, used by all ministries. Except that on this one, the maple leaf was moved to the end of the word Canada and then tilted to one side. Presumably this was done to make it different enough to avoid nasty bureaucrats from Ottawa bothering the studio about trademarks.

Setting aside the question as to why the military is operating a supercollider inside a national park, the sign has a phrase along the bottom: *All wildlife is dangerous. Do not approach or feed. Bow Range, National Park Services, Alberta*. There is no way that such a phrase would ever appear on a Canadian Forces sign, but let me analyze it further. Firstly, all federal signs are bilingual by law, so where is the French translation?

It gets better yet. There is no such thing as National Park Services. Responsibility for national parks belongs to Parks Canada, which in turn is a subdivision of Environment Canada, the trendy name for what used to be the federal Ministry of the Environment. Nor would such a sign add in the name Alberta. The attitude of Parks Canada is that if you don't know what province you're in, then it hardly matters what the park name is.

The phrase "Bow Range" almost makes sense. This implies the supercollider is hidden in Banff National Park, which comprises the headwaters of the Bow River. The Rocky Mountains are not a single range but dozens, of which the Bow Range is one. I have visited BNP countless times but have never seen a sign that said Bow Range or, for that matter, any other range in the park (there are several). If you want to know what range you're in, then you have to look at a topographical map.

In the episode, one of the characters specifically says that the supercollider is underneath Ringrose Peak, Alberta, the province also being given. There really is a Ringrose Peak in the Bow Range. It is directly on the continental divide which forms the boundary between Alberta and British Columbia. Most references say it is part of the latter, but I'll let that point go.

It is adjacent to Lake Louise, one of the most heavily visited tourist attractions in the world, with millions of visitors per year. Riiight. The military built a secret supercollider in the mountain parks with no one noticing all the construction vehicles. I don't know how much electricity a supercollider uses, but I know the power lines I've seen along the Trans-Canada Highway couldn't carry the load.

Further, there are no roads into the Ringrose area, not even a forestry road. Supposing the military tunneled into it from a valley floor, where is the entrance? A supercollider needs many people to operate it, presumably working in shifts. They weren't wearing Parks Canada uniforms, that's for sure. Where do they live? They can't commute from Banff because it is a 50 km trip. If they lived in the village of Lake Louise, the other residents would certainly notice them.

Being a professional horticulturist with a BSc in the subject, I pay more attention to vegetation in movies and television shows than most viewers. Being someone who has hiked in the mountains for decades, I also know what the vegetation looks like in BNP. 99% spruces, and 1% mountain meadows.

Some of the characters are shown walking through obvious rainforest, not the type of forest one would see in Alberta, which has a dry climate. It is difficult to tell from the screen, but the trees look like cedars. The forest is definitely not the shoulder-to-shoulder spruce trees that make up standard Alberta mountain forests.

No long-distance views are shown in this episode, which to me is a clincher that filming was done in the Pacific Northwest. Alberta mountains are jagged peaks rising majestically out of the spruce forests. No cinematographer could resist adding in views of the mountains if they were actually filming in BNP. They're called the Rockies for good reason. Look back through the OPUNTIA reports of my hiking trips to see what real mountains look like.

As far as the episode plot goes, the werewolves were created by Anubis, who used the supercollider as a portal into this world. As a Lovecraft fan, I would have appreciated seeing Cthulhu come out, but that's not for me to say. After much running about in a labyrinth of tunnels, interspersed with plenty of howling, the werewolves are dealt with and order is restored. Anubis is sent back to the underworld whence he came. And so the heroes leave sunny Alberta and its magnificent rainforest, and return to The Library.

SEEN IN THE LITERATURE

Xu, H.H., et al (2017) **Unique growth strategy in the Earth's first trees revealed in silicified fossil trunks from China.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 114:12009-12014

Authors' abstract: *The evolution of trees and forests in the Mid to Late Devonian Period, 393 to 359 million years ago, profoundly transformed the terrestrial environment and atmosphere. The oldest fossil trees belong to the Cladoxylopsida. Their water-conducting system is a ring of hundreds of individual strands of xylem (water-conducting cells) that are interconnected in many places.*

Using anatomically preserved trunks, we show how these trees could grow to a large size by the production of large amounts of soft tissues and new wood around the individual xylem strands and by a controlled structural collapse at the expanding base. We have discovered a complex tree growth strategy unique in Earth history, but with some similarity to that of living palms.

Cladoxylopsida included the earliest large trees that formed critical components of globally transformative pioneering forest ecosystems in the Mid- and early Late Devonian (ca. 393 to 372 Ma). Well-known cladoxylopsid fossils include the up to ~1-m-diameter sandstone casts known as Eospermatopteris from Middle Devonian strata of New York State.

Cladoxylopsid trunk structure comprised a more-or-less distinct cylinder of numerous separate cauline xylem strands connected internally with a network of medullary xylem strands and, near the base, externally with downward-growing roots, all embedded within parenchyma. However, the means by which this complex vascular system was able to grow to a large diameter is unknown.

We demonstrate, based on exceptional, up to ~70-cm-diameter silicified fossil trunks with extensive preservation of cellular anatomy from the early Late Devonian (Frasnian, ca. 374 Ma) of Xinjiang, China—that trunk expansion is associated with a cylindrical zone of diffuse secondary growth within ground and cortical parenchyma and with production of a large amount of wood containing both rays and growth increments concentrically around individual xylem strands by normal cambia.

The xylem system accommodates expansion by tearing of individual strand interconnections during secondary development. This mode of growth seems indeterminate, capable of producing trees of large size and, despite some unique features, invites comparison with secondary development in some living monocots.

Feulner, G. (2017) **Formation of most of our coal brought Earth close to global glaciation.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 114:11333-11337

Author's abstract: *The bulk of the coal driving the Industrial Revolution and contributing to global warming today has been deposited during the Carboniferous period (359 to 299 million years ago), resulting in a significant drawdown of atmospheric carbon dioxide at that time.*

A recent analysis of a high-resolution record reveals large orbitally driven variations in atmospheric CO_2 concentration between 150 and 700 ppm for the latest Carboniferous and very low values of 100 to 80 ppm for the earliest Permian.

Here, I explore the sensitivity of the climate around the Carboniferous/Permian boundary to changes in Earth's orbital parameters and in atmospheric CO_2 using a coupled climate model. The coldest orbital configurations are characterized by large axial tilt and small eccentricities of Earth's elliptical orbit, whereas the warmest configuration occurs at minimum tilt, maximum eccentricity, and a perihelion passage during Northern hemisphere spring.

Global glaciation occurs at CO_2 concentrations <40 ppm, suggesting a rather narrow escape from a fully glaciated Snowball Earth state given the low levels and large fluctuations of atmospheric CO_2. These findings highlight the importance of orbital cycles for the climate and carbon cycle during the late Paleozoic ice age and the climatic significance of the fossil carbon stored in Earth's coal deposits.

Speirs: Now go back and reread the previous abstract about the earliest trees. They were major contributors to the formation of coal. Think about it.

Rio, J.P., and P.D. Mannion (2017) **The osteology of the giant snake Gigantophis garstini from the Upper Eocene of North Africa and its bearing on the phylogenetic relationships and biogeography of Madtsoiidae.** JOURNAL OF VERTEBRATE PALEONTOLOGY doi.org/10.1080/02724634.2017.1347179

Authors' abstract: *Madtsoiidae is a speciose family of extinct snakes that achieved a wide Gondwanan and trans-Tethyan distribution by the Late Cretaceous* [65 megayears ago at the time of the dinosaur extinction] *, surviving until the late Pleistocene* [Ice Ages]. *Gigantophis garstini, the first and largest described madtsoiid, was recovered from the upper Eocene* [35 megayears ago] *of Fayum, Egypt. The 20 vertebrae that constitute the syntype have only received brief description, hindering the referral of specimens to this taxon and our understanding of madtsoiid interrelationships in general.*

A detailed redescription of the syntype material demonstrates the validity of Gigantophis, based on two autapomorphies (including a strongly depressed neural canal in posterior trunk vertebrae) and a unique combination of characters. Referred material from the lower Paleocene [just after the Cretaceous ended] *of Pakistan differs significantly, and we restrict Gigantophis to the middle to late Eocene of North Africa.*

Using a model of morphological variation in extant snakes, we estimate that Gigantophis was 6.9 ±0.3 m long. A phylogenetic analysis using the largest sample of putative madtsoiids (20 operational taxonomic units) and a revised and augmented matrix (148 characters) places Gigantophis as sister taxon to the latest Cretaceous Indian snake Madtsoia pisdurensis.

Whereas our topology might suggest that a dispersal route was present between India and North Africa in the latest Cretaceous to early Paleogene, an evaluation of putative dispersal routes leads us to conclude that the paleobiogeography of Madtsoiidae is best explained by a poorly sampled, earlier widespread distribution in Africa, Indo-Madagascar, and South America. In contrast, latest Cretaceous madtsoiid occurrences in Europe might be explicable by trans-Tethyan dispersal from Africa across the Apulian Route.

Menounos, B., et al (2017) **Cordilleran Ice Sheet mass loss preceded climate reversals near the Pleistocene Termination.** SCIENCE 358:781-784

Authors' abstract: *The Cordilleran Ice Sheet (CIS) once covered an area comparable to that of Greenland. Previous geologic evidence and numerical models indicate that the ice sheet covered much of westernmost Canada as late as 12.5 thousand years ago (ka).*

New data indicate that substantial areas throughout westernmost Canada were ice free prior to 12.5 ka and some as early as 14.0 ka, with implications for climate dynamics and the timing of meltwater discharge to the Pacific and Arctic oceans. Early Bølling-Allerød warmth halved the mass of the CIS in as little as 500 years, causing 2.5 to 3.0 meters of sea-level rise. Dozens of cirque and valley glaciers, along with the southern margin of the CIS, advanced into recently deglaciated regions during the Bølling-Allerød and Younger Dryas.

Speirs: Alberta's landscape is unmistakably shaped by glaciation. Calgary was founded at the junction of the Bow and Elbow rivers, both of which flow in terraced valleys up to five kilometres wide and obviously not formed by ordinary erosion. The prairies were scraped flat by the continental ice sheets.

Kilburn-Toppin, Jasmine (2017) **Gifting cultures and artisanal guilds in Sixteenth- and early Seventeenth-century London.** HISTORICAL JOURNAL 60:865-887

Author's abstract: *Previous research into guild gift-giving cultures has focused exclusively upon substantial bequests of money and property by mercantile elites to the 'great twelve' livery companies. Through charitable gifts, citizens established godly reputations and legacies, perpetuated through the guild institution.*

It is argued here that a rich culture of material gift-giving, hitherto overlooked by historians, also thrived within London's craft guilds. Drawing on company gift books, inventories, and material survivals from guild collections, this article examines typologies of donors and gifts, the anticipated 'returns' on the gift by the recipient company, and the ideal spatial and temporal contexts for gift-giving.

This material approach reveals that master artisans negotiated civic status, authority, and memory through the presentation of a wide range of gifted artefacts for display and ritual use in London's livery halls. Moreover, this culture of gift-giving was so deep-rooted and significant that it survived the Reformation upheavals largely intact. Finally, the embellishment of rituals of gifting, and the synchronization of gifting and feasting rites from the second half of the sixteenth century, are further evidence for the resurgence of English civic culture in this era.

Speirs: Zinesters on the Papernet have often discussed how zine trading constitutes a gift culture, so this article caught my eye.

White, R.R., and M.B. Hall (2017) **Nutritional and greenhouse gas impacts of removing animals from US agriculture.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 114:E10301-E10308

Authors' abstract: *As a major contributor to agricultural greenhouse gas (GHG) emissions, it has been suggested that reducing animal agriculture or consumption of animal-derived foods may reduce GHGs and enhance food security. Because the total removal of animals provides the extreme boundary to potential mitigation options and requires the fewest assumptions to model, the yearly nutritional and GHG impacts of eliminating animals from US agriculture were quantified.*

Animal derived foods currently provide energy (24% of total), protein (48%), essential fatty acids (23 to 100%), and essential amino acids (34 to 67%) available for human consumption in the United States. The US livestock industry employs 1.6×10^6 people and accounts for $31.8 billion in exports.

Livestock recycle more than 43.2×10^9 kg of human inedible food and fiber processing byproducts, converting them into human-edible food, pet food, industrial products, and 4×10^9 kg of N fertilizer.

Although modeled plants-only agriculture produced 23% more food, it met fewer of the US population's requirements for essential nutrients. When nutritional adequacy was evaluated by using least-cost diets produced from foods available, more nutrient deficiencies, a greater excess of energy, and a need to consume a greater amount of food solids were encountered in plants-only diets.

In the simulated system with no animals, estimated agricultural GHG decreased (28%), but did not fully counterbalance the animal contribution of GHG (49% in this model).

This assessment suggests that removing animals from US agriculture would reduce agricultural GHG emissions, but would also create a food supply incapable of supporting the US population's nutritional requirements.

Lan T., et al (2017) **Evolutionary history of enigmatic bears in the Tibetan Plateau-Himalaya region and the identity of the yeti.** PROCEEDINGS OF THE ROYAL SOCIETY B 284:doi.org/10.1098/rspb.2017.1804

Authors' abstract: *Although anecdotally associated with local bears (Ursus arctos and U. thibetanus), the exact identity of 'hominid'-like creatures important to folklore and mythology in the Tibetan Plateau-Himalaya region is still surrounded by mystery. Recently, two purported yeti samples from the Himalayas showed genetic affinity with an ancient polar bear, suggesting they may be from previously unrecognized, possibly hybrid, bear species, but this preliminary finding has been under question.*

We conducted a comprehensive genetic survey of field-collected and museum specimens to explore their identity and ultimately infer the evolutionary history of bears in the region. Phylogenetic analyses of mitochondrial DNA sequences determined clade affinities of the purported yeti samples in this study, strongly supporting the biological basis of the yeti legend to be local, extant bears. Complete mitochondrial genomes were assembled for Himalayan brown bear (U. a. isabellinus) and black bear (U. t. laniger) for the first time.

Our results demonstrate that the Himalayan brown bear is one of the first-branching clades within the brown bear lineage, while Tibetan brown bears diverged much later. The estimated times of divergence of the Tibetan Plateau and Himalayan bear lineages overlap with Middle to Late Pleistocene glaciation events, suggesting that extant bears in the region are likely descendants of populations that survived in local refugia during the Pleistocene glaciations.

BANNERS, BANNERS, EVERYWHERE A BANNER
photos by Dale Speirs

I took these photos in the early spring o f 2017 when I was visiting Lake Louise village. No sign of a supercollider anywhere.