

OPUNTIA 416



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THE CALGARY MILITARY MUSEUMS: PART 2. ROYAL CANADIAN AIR FORCE

photos by Dale Speirs

The first RCAF airbase in Calgary was established during World War Two, across Crowchild Trail SW from where the CMM now is (out of the cover photo to the left). CFB Calgary was closed in 1997 but the legacy of Calgary fliers has not been forgotten. The cover photo shows in the distance the complex of interconnected wings that make up the CMM.

Surprisingly, the CMM doesn't have much about the RCAF pre-Cold War other than a lot of models and poster displays. The reason is that an hour's drive south of Calgary on Highway 2 is the town of Nanton, home to the Bomber Command Museum, which does have many WW2 aircraft. The planes were produced by the thousands during the war, but only dozens of each, if that many, were preserved for posterity.

The Nanton museum has a Lancaster bomber and many other aircraft used by the RCAF back then. See OPUNTIA #278 for photos and trip report about it. The CMM concentrates its RCAF displays on the Korean War and the Cold War. The model displays are in the main building, while the aircraft are in hangars adjacent, seen below.

Little remains of the original airbase. Part of it is industrial, part has been converted to modern housing, and the barracks are now special-needs schools.





Some of the many models in the main building.

The real aircraft were in the hangers. The RCAF flew F-86 Sabres during the Korean War. The docent shown below told me that Korea was before his time but he flew Starfighters in Europe during the Cold War.



The docent told me the Starfighter could fire 4,000 rounds per minute from a Gatling gun but only had room for 425 rounds. He said the main reason for the gun was psychological, to give the pilot a faint hope. Just tapping the button would use up all the ammunition in a few seconds.

Underneath this plane is the shell of a 70 kilotonne hydrogen bomb. The shell is genuine but is empty for obvious reasons. The Starfighter was silver in the hopes that after the bomb was dropped, the flash would be reflected. Again, it was mainly psychological. The bomb was equipped with a parachute to slow its descent so as to give the pilot more time to get away. Even at supersonic getaway speeds, the chances of a Starfighter surviving its bomb run were close to nil.



The RCAF now flies CF-18 Hornets. This plane has a special paint job for the centennial of the first powered flight in Canada, the Silver Dart flight in 1909 in Nova Scotia. This Hornet was subsequently retired but the decorations left on it.

Since the display emphasizes the Cold War, there are some chunks of the Berlin Wall next to the plane, to remind visitors why the RCAF was in Germany.



WHATEVER HAPPENED TO NIKITA?

by Dale Speirs

THE FIFTH HORSEMAN was a 1946 radio mini-series about atomic warfare. (This and hundreds of other old-time radio shows are available as free mp3s at www.otrrlibrary.org) The atomic bombs were still very fresh on everyone's minds. Over the next few years, the Soviets would consolidate their grip on eastern Europe, increasing fear that World War Three was imminent.

Written and produced by Arnold Marquis, the episodes progress from the USA's tense relationship with Nation X to full-scale atomic warfare to the aftermath. The Second Atomic War began and ended on August 1, 1965. (The First Atomic War was what is more commonly known as World War Two.)

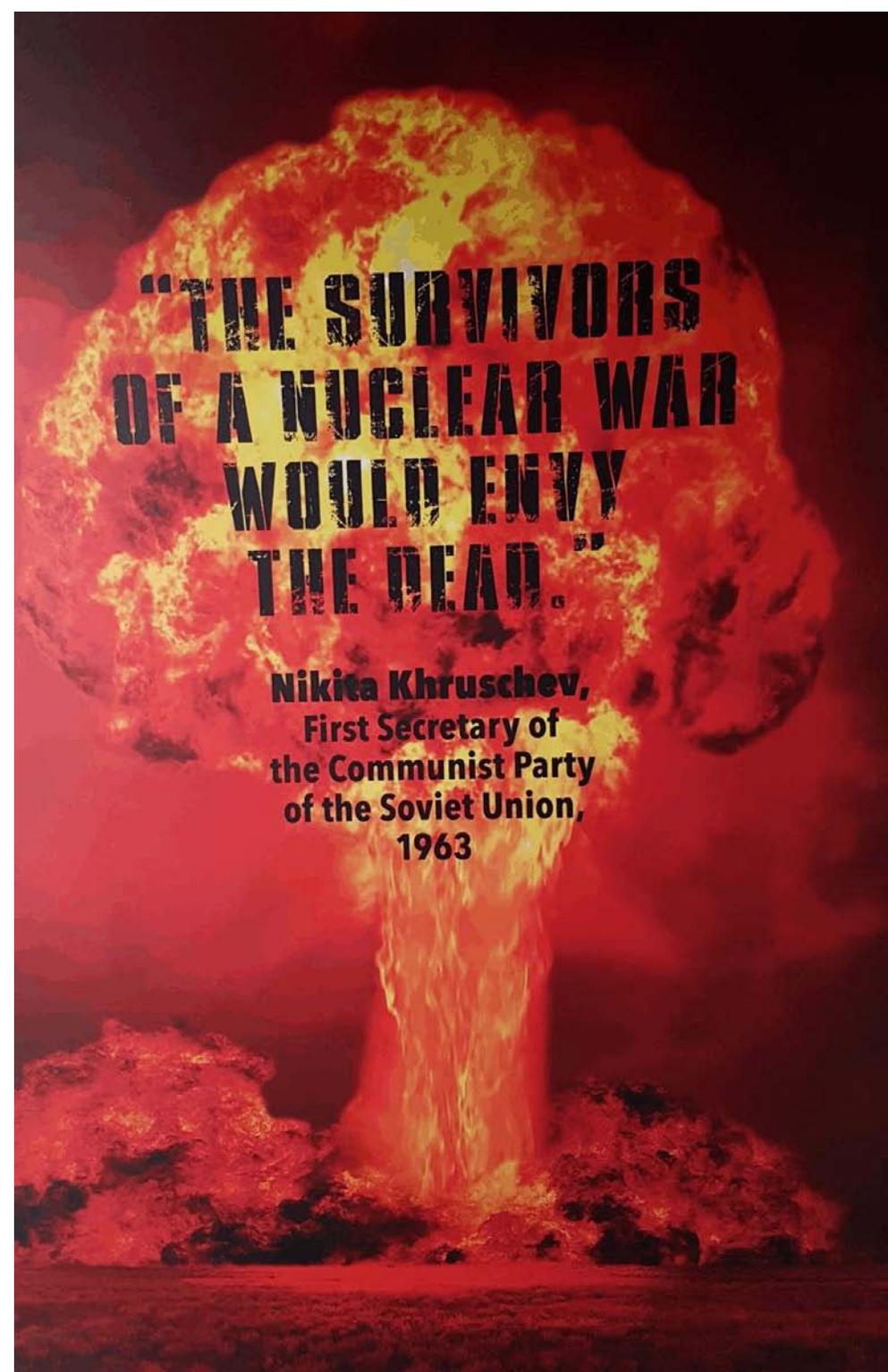
The episodes were not so much science fiction as they were over-the-top political polemics about how atomic weapons should be under international control. The dramas were acted out to the fullest, with no subtle nuances. The episode titles explain themselves: "Rehearsal", "Dawn", "The Promise", "Crisis", "Zero Minus One", "Doomsday", "Aftermath", and "Memo To Mankind".

The episode "Doomsday" is a graphical account of how personnel in a backwoods military communications centre react as they watch the blips on radar and listen to radio transmissions during the three-hour war. First there is shock that it is actually happening, as hundreds of blips appear on their screen and they lose contact with other bases and cities one by one. Is there anybody out there?



Not to be listened to if you are feeling depressed. North Korea notwithstanding, the threat of atomic war has faded, to be replaced with climate change as the next casus belli.

At right: This poster is at the entrance to the RCAF exhibit.



There is no new thing under the sun, as a glance at www.gutenberg.org will demonstrate, specifically H.G. Wells's 1907 novel *THE WAR IN THE AIR*. It was a future history about how an arms race destroyed civilization. Its premise was that the European nations had been building massive armadas of Zeppelins and spoiling for a fight.

Wells mentions fixed-wing airplanes and helicopters, but they are minor players in the war. In his day, only four years after the Wright Flyer had first taken to the air, heavier-than-air craft were fragile birds made of canvas and balsa wood, barely able to lift a man off the ground. Helicopters were fantasy, and he wrote of them the same way he wrote of time machines and Martian invaders.

The war begins with a German Zeppelin fleet crossing the ocean and bombing New York City, then proceeding to Niagara Falls to establish an airbase. The Germans, however, quickly learn what it took real-world militaries a long time to discover in later years, that it is not enough to have an aerial armada. To hold a conquered land requires soldiers' boots on the ground, which the Germans did not have.

The attack precipitates a world war. China and Japan had also been building armadas, and seeing the Americans tied down on the Atlantic coast, took advantage. First the Pacific, then landings on California, and then over the mountains to the east. The Europeans are attacked from out of central Asia, and soon the world is aflame.

The greatest devastation was to the world economy. Stock and bond markets collapsed, credit dried up, and only physical gold and silver in hand counted for anything. While it fits in with the novel, it was a poor piece of prediction. A decade later, it was learned that war is good for business. The price of crops and armaments soared, and businesses prospered. Two decades beyond that, another world war wiped out unemployment almost overnight, finally ending the Great Depression.

Wells does a lot of lecturing and shoveling out infodumps, for the novel is as much a polemic as it is action-adventure fiction. He dwells at length on the economic devastation that the war in the air caused, and how civilization collapsed back to medieval farm and village life, while the great cities decay and education is forgotten. Even the idea of atomic war was not yet born when Wells wrote this novel, but it is interesting how the air war had the same effects that later writers would ascribe to World War Three.

H.G. Wells gave it another go with *THE WORLD SET FREE*, written in 1913 and published in early 1914 just before the War To End All Wars broke out. As he admitted in a later edition (also available at www.gutenberg.org), his predictions didn't pan out, mostly from timidity at how fast technology and political hatreds could advance.

His great war didn't begin until 1956, which gives an idea of how unexpected the actual conflagration was. The general public fretted over the arms race and belligerence, but no one expected the actual war to begin the way it did or last as long. Both sides thought the boys in uniform would be home in time for Christmas. Many historians have remarked that World War One was an accidental war.

At the time the novel was published, the study of radioactive materials had just been born. People thought of radium, not plutonium. The great physicists were still stumbling about in the dark, but dawn was breaking on the horizon to illuminate the way. The idea of an atomic bomb was not clearly understood. Wells, better educated in science than most layman, extrapolated bombs that had only conventional power but radiated energy long after some Tommy threw an atomic grenade out onto the battlefield.

The gaunt face hardened to grimness, and with both hands the bomb-thrower lifted the big atomic bomb from the box and steadied it against the side. It was a black sphere two feet in diameter. Between its handles was a little celluloid stud, and to this he bent his head until his lips touched it. Then he had to bite in order to let the air in upon the inducive. Sure of its accessibility, he craned his neck over the side of the aeroplane and judged his pace and distance. Then very quickly he bent forward, bit the stud, and hoisted the bomb over the side.

'Round,' he whispered inaudibly.

The bomb flashed blinding scarlet in mid-air, and fell, a descending column of blaze eddying spirally in the midst of a whirlwind. Both the aeroplanes were tossed like shuttlecocks, hurled high and sideways and the steersman, with gleaming eyes and set teeth, fought in great banking curves for a balance. The gaunt man clung tight with hand and knees; his nostrils dilated, his teeth biting his lips. He was firmly strapped.

When he could look down again it was like looking down upon the crater of a small volcano. In the open garden before the Imperial castle a shuddering star

of evil splendour spurted and poured up smoke and flame towards them like an accusation. They were too high to distinguish people clearly, or mark the bomb's effect upon the building until suddenly the facade tottered and crumbled before the flare as sugar dissolves in water.

The man stared for a moment, showed all his long teeth, and then staggered into the cramped standing position his straps permitted, hoisted out and bit another bomb, and sent it down after its fellow.

Wells hypothesized a radioactive element known as Carolinium, which had a half-life of 17 days. What he described was more like a dirty bomb, tossed overboard from an airplane by hand. There was an explosion of energy that kept radiating indefinitely, if ever weaker, and contaminated the battlefield for decades.

What happened when the celluloid stud was opened was that the inducive oxidised and became active. Then the surface of the Carolinum began to degenerate. This degeneration passed only slowly into the substance of the bomb. A moment or so after its explosion began it was still mainly an inert sphere exploding superficially, a big, inanimate nucleus wrapped in flame and thunder. Those that were thrown from aeroplanes fell in this state, they reached the ground still mainly solid, and, melting soil and rock in their progress, bored into the earth.

There, as more and more of the Carolinum became active, the bomb spread itself out into a monstrous cavern of fiery energy at the base of what became very speedily a miniature active volcano. The Carolinum, unable to disperse, freely drove into and mixed up with a boiling confusion of molten soil and superheated steam, and so remained spinning furiously and maintaining an eruption that lasted for years or months or weeks according to the size of the bomb employed and the chances of its dispersal.

Once launched, the bomb was absolutely unapproachable and uncontrollable until its forces were nearly exhausted, and from the crater that burst open above it, puffs of heavy incandescent vapour and fragments of viciously punitive rock and mud, saturated with Carolinum, and each a centre of scorching and blistering energy, were flung high and far.

A financial disaster in 1956 and rising political tensions trigger the great war. As happened with the real World War One, it was the interlinked treaties that

dragged one European nation after another into the fight. Wells got that part correctly. Across the continent, soldiers found themselves fighting to defend some other nation. Big alliances start big wars.

Wells wrote himself into a corner, and as he later admitted, the ending was contrived. An outbreak of sanity prevails among world leaders. Like Saul on the road to Damascus, the rulers suddenly see the light after seeing the devastation. The novel peters out with a few characters philosophizing about what Utopia would look like and how to get there. That is always the sticking point, making it to the new world being born.

Atomic war and post-holocaust stories were, of course, a staple of science fiction magazines. The writers usually concentrated on the aftermath. An example is "Time Enough At Last" by Lynn Venable (1953 January, WORLDS OF IF). Harry Bemis is a survivor of an atomic war, whose first thought is that he will now have the time to read books. He is visually impaired, extremely myopic, and is almost blind without his glasses. He finds his way to the public library and settles down to read a book in the ruins. And accidentally smashes his glasses.

This story was later adapted for the television series THE TWILIGHT ZONE, and originally aired in 1959. It is considered one of the best episodes of the series. As our modern world rushes to an era when everything is only online and requires electricity, this story makes one think. Like Ray Bradbury's FAHRENHEIT 451, it will soon become obsolete. No paper books left to read or to burn.

"Third Planet" by Murray Leinster (1963 April, WORLDS OF TOMORROW) shifts back and forth between Earth, where the Western world is slowly being nibbled away by the Communists, and deep space, where a starship is exploring a stellar system. Three planets show residues of past civilizations, who fought nuclear wars against each other.

The crew find and bring back a device that detonates fissionables with a beam. Their arrival back at Earth coincides with the beginning of full-scale nuclear war. The beam is used to destroy the Communists by detonating all their warheads before the rockets leave the silos. Pax atomica. The story's ending is routine, but Leinster did a good job delineating how weakness in the Western world allowed the Communists to grab off nation after nation.

TRAIN OF EVENTS: PART 2

by Dale Speirs

[Part 1 appeared in OPUNTIA #403.]

Trains That Never Were.

“The Celestial Railroad” is an 1843 story by Nathaniel Hawthorne, available in his collection *MOSSES FROM AN OLD MANSE*, which can be downloaded for free in a variety of formats from www.gutenberg.org. It is a parody of John Bunyan’s *THE PILGRIM’S PROGRESS*, but I also detect a bit of fun poked at Dante as well.

The pilgrims do not journey on foot with their heavy loads, but travel by train. The demons who tormented them en route in the original story are now railroad employees. This, I am sure, confirmed the suspicions that many rail travelers had or still have today about how the railways are operated.

The narrator notes: *The passengers being all comfortably seated, we now rattled away merrily, accomplishing a greater distance in ten minutes than Christian probably trudged over in a day. It was laughable, while we glanced along, as it were, at the tail of a thunderbolt, to observe two dusty foot travelers in the old pilgrim guise, with cockle shell and staff, their mystic rolls of parchment in their hands and their intolerable burdens on their backs. The preposterous obstinacy of these honest people in persisting to groan and stumble along the difficult pathway rather than take advantage of modern improvements, excited great mirth among our wiser brotherhood.*

The train whips past venues that tried and tested the original pilgrims. The Hill of Difficulty has been bypassed with a tunnel, the excavated material from it used to fill in the Valley of Humiliation. The Valley of the Shadow of Death is now illuminated by gaslight along the tracks. Vanity Fair is still as it was, the proprietors of which are the largest shareholders in the railway company.

Along the way, the train makes brief stops where the travelers talk to those pilgrims who did not and never will complete the trip. Then across sweet Beulah to the Celestial City. An amusing story that holds up well.

Randall Garrett authored a series of stories and a novel about Lord Darcy, a police investigator in an alternative universe where King Richard III lived a long

and happy life, the Plantagenets remained on the throne and kept their Anglo-French empire, and magic existed as a strict and logical science. The other major divergence was that the Reformation never happened, and the Roman Catholic Church is part and parcel of European politics.

Since magic forestalled many advances in technology and physics, the world of Lord Darcy has telephones but no radio, steam locomotives but no internal combustion engine automobiles, healers but no physicians. The stories were set at the time they were published, between the early 1960s and the 1970s.

“The Napoli Express” (1979 April, *ASIMOV’S*) has Lord Darcy and his assistant Sean O’Lochlainn traveling on the famous train of that name from France to Roma, after which they will make connections to take them further on to the Byzantine Empire. They are shadowing a King’s Messenger, who is carrying a copy of a treaty that will bring the Byzantines on side with the Anglo-French Empire and help forestall the evil intentions of the Kingdom of Poland. He is murdered on the train. Darcy and O’Lochlainn must solve the case before the train reaches Roma, otherwise they and the treaty will be seriously delayed in reaching their final destination.

The storyline follows the Orient Express story partially, which was the obvious inspiration. Darcy and O’Lochlainn use magic as a tool, but it can’t do everything for them. Initially they come to the conclusion that everybody did it, everybody being all the other passengers in the car. A twist in the plot identifies the trainmaster as the culprit, and another twist reveals the copy of the treaty isn’t what it seems.

As to why locomotives are powered by steam instead of magic, it soon becomes obvious that steam is cheaper and easier. Magical spells can only be used for specific instances and require constant rituals and renewal to keep them going, far more work than shoveling coal into a boiler.

Because the Holy Roman Empire still exists, albeit as a sort of European Community, the train can travel further without constant border checks and inspections. Conversely though, Lord Darcy’s authority as a police detective is not unlimited, hence his rush to solve the case before the train arrives in Roma and he has to yield to the Roman Praefecture.

This and other Lord Darcy stories have been collected into book form; check online for a copy. Normally I don’t like a mixture of alternative history and

magic, but Garrett succeeds in combining the two in very logical circumstances. Well worth reading.

“A Brief History Of The Trans-Pacific Tunnel” by Ken Liu (2013 January, MAGAZINE OF FANTASY AND SF) is an alternative history where the Japanese government took a kinder, gentler turn in the 1930s. They built up the Greater East Asia Co-Prosperity Sphere by diplomacy and trade, not at the point of a rifle.

When the Great Depression hit, Japan proposed a Keynesian plan to spend our way out of it, a trans-Pacific railway tunnel from Seattle to Shanghai, with one stop at Tokyo. It was an earthquake-proof pneumatic tube design, dug mostly by hand. It created 7 million jobs in the USA and Japan, and took a decade to build from its start in 1929.

The tunnel generates a number of historical divergences. As a joint project of Japan and the USA, it calms relations between the two countries, gets Hoover re-elected President thrice, and preempts a second world war. There is, however, one dirty secret, the use of prisoner labour during the later stages of construction. The story is well told by a mixture of sidebar infodumps and character viewpoints.

Murder On Board.

Trains are a closed society while they are in motion between cities. This makes them a popular choice for murder mysteries, as the sleuth has to solve the case before the murderer can escape, and no one is going anywhere until the next stop.

MURDER ON THE TRANS-SIBERIAN EXPRESS (2001) by Stuart M. Kaminsky is part of a series about Chief Inspector Porfiry Rostnikov of the Moscow police. This novel has three plot lines. One is the kidnapping of an oligarch’s son, another is about a woman stabbing people on the Moscow Metro, and the third has Rostnikov taking the Trans-Siberian Express on a chase for an historical document.

The set-up for the novel gives away the identity of the subway killer in an early chapter, which makes it a police procedural rather than a mystery. It is difficult to keep track of who is who because the author keeps switching character names between their formal names, familiar names, nicknames, and patronymics,

depending on who is speaking to them. I know that’s how Russians speak to each other, varying what name they use depending on their relationships and who else is in the room, but it makes it awkward to follow the dialogue.

Rostnikov has been sent on the train ostensibly to recover a secret treaty made by the last Czar when the railroad was being built and which was stolen en route. The treaty has no significance anymore. The Soviets would not have honoured any agreement the Czar made, much less the post-Soviet government. Yet someone wants it enough to send an assassin on the train.

Along the Metro stations, there are plainclothes police at every station, watching and waiting for the woman. There are not enough officers to cover every station, more than 90 of them.

Rostnikov picks up the package at the far end of the railroad. It is not what he thought it would be but is simply a cover story for modern documents listing who paid what bribes for what favour. He returns to Moscow unscathed.

The Metro police catch the woman but they are not unscathed. She wounds a policewoman but another officer manages the arrest. The only suspense was in how the takedown would happen. The novel reads well and does a good job of fleshing out its characters.

OUT OF THE FRYING PAN, INTO THE CHOIR (2006) by Sharon Kahn is a novel in a food cozy series about Ruby Rothman, widow of a rabbi. After his death, she subsequently bought into a bagel shop. She lives in Eternal, Texas, where her nemesis is Essie Sue Margolis, the bossy chairwoman of the Temple Rita board.

What caught my eye about this book is that the plot revolves around an excursion by the synagogue’s choir to the Canadian Rockies, traveling by rail from Vancouver to Calgary. Not too many cozies are about my neck of the woods, so I certainly couldn’t pass by this novel.

The choir’s fundraising for the trip doesn’t go well. They can’t sell enough latkes (recipe at the back of the book), their Chanukah concert doesn’t do well, and a professional party planner was a failure at great cost. Worse yet, the temple’s star soprano collapses and dies from poisoning. She had been having an affair with the choir leader, and for good measure was involved in a neo-Kabbalistic cult.

Margolis insists that the trip should go ahead, and so it does. First they fly from Texas to Seattle, with one woman worrying about not getting a kosher meal on the flight. It wasn't that she was keeping kosher, but she was on a diet and the travel agent told her the airline served brisket instead of enchiladas as in the regular meal. Brisket is apparently less fattening. From Seattle, they fly on a shuttle to Vancouver.

The Vancouver stopover has its moments. Margolis and Rothman share a hotel room while waiting for the excursion train. Margolis spends her time watching the French language channel on television, wanting to improve her fluency. She doesn't realize that British Columbia and Alberta are anglophone provinces with about as many francophones as Texas. The only time she'll get to use French is if she meets some Quebecois tourists.

The rabbi orders grits and Texas toast for breakfast, of which the waitress had no idea what he was talking about. (I didn't either, and had to Google them; grits are coarsely ground corn kernels boiled in milk, and Texas toast is just thick-cut garlic toast.)

And so to the train. Up through Fraser River Canyon (the railroad does not follow the same route as the Trans-Canada Highway), then real mountains. By the time they reach Kamloops, Rothman and Margolis are almost at each other's throats.

At the Continental Divide, Rothman is at the back end of the train when she spots a body lying beside the tracks just past the Spiral Tunnel. When the train stops at Banff and passengers disembark for sightseeing, one of them is unaccounted for, the choir master.

The Mounties begin their investigation, about two steps behind Rothman's amateur sleuthing. The choir group takes a bus back up the highway to Lake Louise. The descriptions of the lake are accurate; no nits to pick here. Once they finish marveling at the lake, they then take the bus to the opposite side of the valley where the ski resort is. In summer, the lifts take tourists up to the mountain top for spectacular scenic views.

The views are all very well, but for excitement Rothman finds nothing matches what happens to her. The murderer tries to push her off the lift into a deep ravine. She barely survives, as she must of course if the series is to continue.

The murderer was the choir master's other mistress, who wanted revenge. From there to the potato latke recipe. Don't forget the apple sauce. A good read, and I'll vouch for the accuracy of the scenery descriptions.

DEATH ON THE PATAGONIAN EXPRESS (2017) by Hy Conrad is a novel in a cozy series about Amy Abel and her mother Fanny. They have a travel agency in New York City and a trendy blog that gets them invited to an excursion of travel writers on a train through Patagonia.

The train is drawn by a reconditioned steam locomotive. It has a habit of making unscheduled halts at whistle-stop depots. This has the advantage of spreading the murders out instead of inflicting them on one poor helpless village.

Fanny finds the first body, and from there the dead and wounded litter the tracks. The investigation by the women is hampered by language problems but that doesn't stop them from being the idiots in the idiot plots. If someone does something careless or just plain stupid, chances are it will be one of them. There is the final confrontation, with much explaining to do. Since the series continues, they obviously make it out alive.

Smoke Along The Track.

GREEN VALLEY LINE was an old-time radio series from the early 1930s, of which little is known. It was a 15-minute episode soap opera complete in 26 parts, available at www.otrrlibrary.org. The plot will remind Boomers of the 1960s television show PETTICOAT JUNCTION. The Green Valley Line was a rural railway that had been overlooked by the railroad barons until one of them sends his son Bill Reed to attempt a hostile takeover.

Reed ends up defecting to the enemy, helping them run the railway. The final episodes are mostly taken up with his romance of a local girl. In between, there are various crises, such as trying to come up with \$70,000 for a promissory note, failure to do so meaning the railway goes into default and is annexed by the white shoe boys on Wall Street. Reed has to worry about mail contracts (which kept most branch lines going in those days) and shareholder meetings.

Not to be listened to all at once, but a few episodes at a time. This is an interesting part of early broadcast radio, which began in the 1920s but didn't really get going until the middle 1930s.

SHERLOCKIANA: PART 28

by Dale Speirs

[Parts 1 to 27 appeared in OPUNTIA #63.1B, 63.1C, 63.1D, 67.1D, 68.1C, 69.1E, 70.1A, 71.1B, 251, 253, 256, 261, 269, 270, 276, 288, 309, 333, 340, 348, 356, 359, 365, 370, 383, 397, and 410.]

Pastiches: Short Stories.

Terence Faherty has been writing a series of humorous pastiches using the titles of the original stories in the canon, but which are purported first drafts by Watson before he rewrote them as per canon. They include parenthetical notes to himself reminding him to edit such-and-such a phrase differently for the final draft.

As an example, he mentions his two bullet wounds received at the Battle of Maiwand, one to his shoulder and the other to his leg. He was with a young woman in his tent when the natives attacked. She was teaching him yoga positions. He was in an awkward position with her when a stray bullet ripped through the tent and wounded him. There follows an edit note that perhaps this anecdote should be deleted from the final story as his wife Mary might not be pleased.

“The Noble Bachelor” (2018 Jan/Feb, ELLERY QUEEN) concerns the quandary of Lord Philip Strachan and his new bride Kitty Devlin, an American heiress. She absconded during the wedding breakfast, which Watson notes must be a record for desertion. Some mysterious strangers appear from the pasts of both husband and wife. The finale is that both of them are bigamists, but they manage to sort that out and go their separate ways.

“Holmes On The Range” by John Connolly (2016, in the anthology ECHOES OF SHERLOCK HOLMES, edited by Laurie R. King and Leslie S. Klinger) is a short story that should not be confused with a novel of the same title by Steve Hockensmith, which I reviewed in OPUNTIA #276.

The story at hand is about the Caxton Private Lending Library and Book Depository. Despite its name, it is a retirement home for literary characters whose authors have died. The characters must be famous and well-loved, surpassing their literary origins to assume physical reality. The library expands itself for each intake, setting up rooms for each character to live in with the style to which they are accustomed.

A problem arises in 1893, after Doyle killed Holmes by dropping him off the Reichenbach Falls in “The Final Problem”. Holmes and Watson arrive at the Caxton, which shouldn’t be because Doyle is still hale and hearty. Mr Headley, the librarian, is at a loss about what to do, but the library creates rooms for them duplicating 221B, with the street outside as well. So they stay, and so they reside, settling into a routine over the next decade.

Then the shock comes. In 1903, Doyle revives Holmes with a fresh crop of stories. This creates doppelgangers of Holmes and Watson, leaving the Caxton pair in a quandary. They resolve it with a bit of handwaving that doesn’t quite work for the reader. In 1930, Doyle died, keeping Headley and the Caxton Holmes and Watson on tenterhooks. But their solution works, and the doppelgangers vanish.

Pastiches: Professor Moriarty.

In the original canon, the evil villain Professor Moriarty only appeared in two stories of the later part of the series. He came suddenly from nowhere, labeled by Holmes as the Napoleon of Crime,. No one heard of him before but his influence was said to be everywhere.

Moriarty has been more popular in pastiches as a larger-than-life criminal upon whom all the major crimes of Europe can be blamed. He made a refreshing change from young governesses in distress or country squires being lopped off by greedy nephews. The OTR series made frequent use of Moriarty, who always managed to elude capture and escape to a future episode. Unfortunately this becomes tiresome if you listen to too many radio episodes. It was a sign of hack writing.

From the radio series is the 1946 episode “The Adventure Of The Half-Eaten Apple, The Coptic Compass, And The Unclothed Corpse”, no writer credit given. Holmes and Watson are strolling back to Baker Street when they meet a man who says he was on his way to see them about protecting a valuable diamond from India that is to go on display. Holmes says he doesn’t do security guard work and declines the job.

Upon entering their flat, the duo find a man’s naked corpse, and next to it an apple with a couple of bites out of it, half of a return ticket from a village outside London, and a compass with markings in Coptic script. This gets Holmes going of course, speculating on the apple, and making a trip to the

village to find out who had bought the ticket. Back in London, he is about to head over to the Egyptian Embassy to have the Coptic compass decoded, when he finally tumbles to the realization that the corpse is real but the clues are fake.

It was the doing of Professor Moriarty, who wanted Holmes out of the way during the diamond heist. It almost succeeds but Holmes manages to identify the corpse and race over to the home of the Indian Raj in time to prevent the robbery. An interesting sketch of Holmes pompously proclaiming deductions about the clues until it sinks in that he has been had as a sucker.

“The Cadaver In The Roman Toga” is a 1947 episode written by Edith Meiser for the radio series. Holmes and Watson are in their Baker Street quarters discussing a recent flood of counterfeit gold coins. The case begins when archaeologist Sir George Westbrook comes to Baker Street with a problem. He had been investigating a Roman bath under London and had broken through into a chamber that had been empty and sealed since the Legions withdrew from Londinium about 1,500 years before.

The problem was that there was a corpse in the sealed chamber. Fresh, not desiccated, and wrapped in a toga made from modern cloth. Westbrook doesn't want the police trampling through the site and ruining it, a problem Holmes could relate to. Off they go to investigate, Holmes, Watson, and Westbrook. There is an amusing incident when Watson gets stuck in the tunnel and the other two have to pull him through. Holmes then lectures Watson on the need for diet and exercise.

Inside the chamber, Holmes notices fresh air circulating, so there must be another entrance. The body is recognized as that of a prominent numismatist who had gone missing a few weeks before. They then hear the voice of Professor Moriarty through a speaking tube, chortling with glee. He blows in the entrance that the men had used. He tells them they will die down there with the numismatist, whom Moriarty had forced to help him improve the quality of the fake coins.

Since Moriarty must have brought the body in by another entrance, the three men begin a search and eventually locate a heating tunnel. (The Romans had central heating, a technology lost after their empire fell.) They crawl through it and emerge in a basement where Moriarty is rudely interrupted while gloating over a huge pile of gold counterfeits.

After a bit of badinage with Holmes, Moriarty flees to live another day and another episode. The basic plot was threadbare but it is evident that Meiser must have been reading a book about Roman Britain and used the setting for a script. Nonetheless the episode is interesting for its background.

The plot was recycled in “The Fabulous Windmill”, a 1948 episode written by Howard Merrill. Holmes is called to the Netherlands after a building inspector goes missing. He traces the disappearance to a supposedly abandoned windmill where he and Watson find Moriarty busy counterfeiting currency and passports to help other criminals flee justice. Moriarty, as usual, almost kills the two with an elaborate method, fails, and, as usual, escapes to a future episode.

One begins to wonder about Moriarty though. Supposedly he is the centre of a web of crime, yet he generally works alone. Someone of his brilliance should have a gang of men working for him, instead of him operating the printing press by himself.

Also, he sets up in an abandoned windmill in a remote area. The windmill was used to power the press. The fact that it suddenly begins operating attracts the notice of locals, which soon exposes him. Had he set up in a busy city using a print shop as a cover, he probably would have gone unnoticed. This is an ongoing problem with supervillains, locating their lairs in remote areas where their activities stick out more.

Another 1947 episode is “The Harley Street Murders”, no writer credited, which begins with Homes and Watson strolling to the London street where medical doctors concentrate. En route, they find a police scene surrounding the freshly murdered body of a doctor who had been stabbed on his doorstep and then tossed to the bottom of basement steps to delay discovery. Holmes declines to become involved.

The two men continue just down the street to the surgery of Dr Sarah Ingleby. She had invented a combination scalpel and local anaesthetic injector that numbed the skin just ahead of the cutting. Holmes and Watson learn from her that the device had been disapproved by a Medical Society committee. Members of that committee have been dying one by one. The last survivor is Dr McKenna.

As Holmes and Watson visit with Ingleby, McKenna stops by for a visit. Holmes questions him regarding an unrelated matter, a Cornish estate for which

McKenna was executor. A mathematics professor had made persistent attempts to buy the estate but had been refused because McKenna was holding it in trust for the heirs. Holmes cautions McKenna to be on guard and admit no strangers to his house until the murders were solved.

A scene change reveals that Moriarty is using Ingleby as a cat's paw to get at McKenna, hoping the next trustee of the estate would be more inclined to sell. Meanwhile, Holmes and Watson visit McKenna and with his consent set a trap for Ingleby. It works but Ingleby had been poisoned by Moriarty with a slow-release poison capsule. She dies before she can tell them who put her up to it.

Yet another stalemate, as Holmes later remarks to Watson. But of course Moriarty must live to fight on another episode.

Associated Fiction.

Vicki Delany has a cozy mystery series about Gemma Doyle and Jayne Wilson, who operate the Sherlock Holmes Bookshop and Emporium and the adjacent Mrs Hudson's Tea Room respectively. They are located at 220/222 Baker Street, West London, Massachusetts. Besides books and magazines about you-know-who, Doyle's shop carries DVDs, knickknacks, and anything else that can have an image of Holmes and/or Watson silkscreened on it.

The debut novel is *ELEMENTARY, SHE READ* (2017). Doyle finds a copy of *BEETON'S CHRISTMAS ANNUAL* for 1887, which contained the first Sherlock Holmes story ever published, "A Study In Scarlet". It is worth about £200,000.

The owner of that copy turns up dead and you don't need Holmes to deduce who found the body. The local police operate on the principle that whoever had it last is guilty, so Doyle has to do her own investigating to clear herself.

There is a batch of other suspects. Most of them are heirs to the estate, whose first thought on hearing the news is to wonder how much their share of the estate will amount to. Doyle finds another body, this time an heir who lived in Boston. She is now the centre of attention of two police forces.

Other heirs don't want to wait for probate, and are trying to sneak Sherlockiana items from the deceased's collection into the market. One of them doesn't like Miss Marple getting in the way and tries to eliminate Doyle. There is the

standard confrontation with the killer, followed by an epilogue that explains what the reader has already deduced. A fair read for a debut novel.

In the next novel of the series, *BODY ON BAKER STREET* (2017), the shop has the honour of hosting a book signing for pastiche novelist Renalta Van Markoff on the occasion of her latest book *HUDSON HOUSE*.

It doesn't go well. Many Sherlockians object to her portrayal of Holmes, and one of them gets into a vicious argument with her during the question-and-answer session. After the row is over, Van Markoff begins autographing books. She takes a chug of bottled water and a moment later dies from cyanide poisoning. That's one book signing that will make the front page news.

There is no shortage of suspects with motives. Van Markoff was heartily disliked by her personal assistant, her publicist, book dealers, Sherlockians, and an insane fan who thinks she stole the idea for her book. (General plots are not copyright, especially if a common theme in literature.) Doyle begins her sleuthing. The police are no friends of her, as she has a habit of lecturing them on how to do an investigation.

Nothing is what it seemed. Van Markoff is discovered to be a stage name, and the woman's daughter had done the actual writing. Notwithstanding that, Van Markoff hogged most of the royalties. Doyle is slugged unconscious when she gets too close to the solution.

Everything comes out in the denouement when the top two suspects go head to head and the real murderer cracks. He takes Doyle hostage, following the tradition of cozies, and she barely survives, but does so because otherwise there won't be another novel in the series. All ends well, and on the final page Doyle goes back to her bookstore.

SEEN IN THE LITERATURE

Lammer, H., et al (2018) **Origin and evolution of the atmospheres of early Venus, Earth and Mars.** ASTRONOMY AND ASTROPHYSICS REVIEW 26:doi.org/10.1007/s00159-018-0108-y

Authors' abstract: *We review the origin and evolution of the atmospheres of Earth, Venus and Mars from the time when their accreting bodies were released from the protoplanetary disk a few million years after the origin of the Sun.*

If the accreting planetary cores reached masses greater than or equal to 0.5 Earth mass before the gas in the disk disappeared, primordial atmospheres consisting mainly of H form around the young planetary body, contrary to late-stage planet formation, where terrestrial planets accrete material after the nebula phase of the disk.

The differences between these two scenarios are explored by investigating non-radiogenic atmospheric noble gas isotope anomalies observed on the three terrestrial planets. The role of the young Sun's more efficient EUV radiation and of the plasma environment into the escape of early atmospheres is also addressed.

We discuss the catastrophic outgassing of volatiles and the formation and cooling of steam atmospheres after the solidification of magma oceans and we describe the geochemical evidence for additional delivery of volatile-rich chondritic materials during the main stages of terrestrial planet formation. The evolution scenario of early Earth is then compared with the atmospheric evolution of planets where no active plate tectonics emerged like on Venus and Mars.

We look at the diversity between early Earth, Venus and Mars, which is found to be related to their differing geochemical, geodynamical and geophysical conditions, including plate tectonics, crust and mantle oxidation processes and their involvement in degassing processes of secondary atmospheres.

The buildup of atmospheric N₂, O₂, and the role of greenhouse gases such as CO₂ and CH₄ to counter the Faint Young Sun Paradox, when the earliest life forms on Earth originated until the Great Oxidation Event 2.3 Gyr ago, are addressed.

Jakosky, B.M., et al (2018) **Loss of the Martian atmosphere to space: Present-day loss rates determined from MAVEN observations and integrated loss through time.** ICARUS doi.org/10.1016/j.icarus.2018.05.030

Authors' abstract: *Observations of the Mars upper atmosphere made from the Mars Atmosphere and Volatile Evolution (MAVEN) spacecraft have been used to determine the loss rates of gas from the upper atmosphere to space for a complete Mars year (16 Nov 2014 to 3 Oct 2016). Loss rates for H and O are sufficient to remove ~2-3 kg/s to space.*

By itself, this loss would be significant over the history of the planet. In addition, loss rates would have been greater early in history due to the enhanced solar EUV and more active Sun.

Integrated loss, based on current processes whose escape rates in the past are adjusted according to expected solar evolution, would have been as much as 0.8 bar CO₂ or 23 m global equivalent layer of H₂O; these losses are likely to be lower limits due to the nature of the extrapolation of loss rates to the earliest times.

Combined with the lack of surface or subsurface reservoirs for CO₂ that could hold remnants of an early, thick atmosphere, these results suggest that loss of gas to space has been the dominant process responsible for changing the climate of Mars from an early, warmer environment to the cold, dry one that we see today.

Eigenbrode, J.L., et al (2018) **Organic matter preserved in 3-billion-year-old mudstones at Gale crater, Mars.** SCIENCE 360:1096-1101

Authors' abstract: *Establishing the presence and state of organic matter, including its possible biosignatures, in Martian materials has been an elusive quest, despite limited reports of the existence of organic matter on Mars. We report the in situ detection of organic matter preserved in lacustrine mudstones at the base of the ~3.5-billion-year-old Murray formation at Pahrump Hills, Gale crater, by the Sample Analysis at Mars instrument suite onboard the Curiosity rover.*

Diverse pyrolysis products, including thiophenic, aromatic, and aliphatic compounds released at high temperatures (500° to 820°C), were directly

detected by evolved gas analysis. Thiophenes were also observed by gas chromatography-mass spectrometry. Their presence suggests that sulfurization aided organic matter preservation. At least 50 nanomoles of organic carbon persists, probably as macromolecules containing 5% carbon as organic sulfur molecules.

Charnoz, S., et al (2018) **Rings in the Solar System: a short review.** arXiv:1805.08963 Preprint at www.arxiv.org

Authors' abstract and extracts: *Rings are ubiquitous around giant planets in our Solar System. They evolve jointly with the nearby satellite system. They could form either during the giant planet formation process or much later, as a result of large scale dynamical instabilities either in the local satellite system, or at the planetary scale.*

All giant planets of the Solar System have rings. The brightest and most massive, those of Saturn, have been discovered by Galileo Galilei himself (whereas he did not interpret them as rings, the first one to interpret them correctly was the Dutch astronomer Christian Huygens), but it is really with the space missions Voyager 1 and 2, during the 1970s and 1980s that it was realized that all four giant planets harbor rings. Conversely, rings seem absent around terrestrial planets, despite many attempts to find dusty rings (especially around Mars).

Jupiter rings are extremely tenuous and are mostly dusty. They are closely associated to the four small moons, Metis, Adrastea, Amalthea and Thebe that release dust from their orbit. This dust adopts a 3D structure with finite thickness due to the randomization of their longitude of nodes and pericenters.

Saturn's rings are the most famous, the richest and the most massive ring system of the four giant planets. Very broadly speaking, they are composed of a dense and vertically thin ring system inside the Saturn's Roche limit (about 2.5 Saturn's radii), as well as several of dusty rings, sometimes associated with satellites, beyond the Roche limit.

Hundreds of dynamical structures have been identified in Saturn's main ring system, with a number of them clearly associated to ring-moons gravitational interactions, but the origin of numerous structures is not clearly associated to moons.

Uranus rings are very different from those of Jupiter and Saturn. They consist mainly of a discrete collection of about 10 ringlets and two dust bands, with low albedo (< 5%). Their composition is unknown but their low albedo suggest that they are not made of water ice (at least for a substantial part). The majority of them are not circular, but slightly eccentric and inclined, that could result from the gravitational interaction with the nearby moons, or the effect of self-gravity, that can confine the longitude of pericenters and nodes. Uranus rings are dense, made of macroscopic particles and contains little dust.

Neptune rings consists of 5 discrete rings, intertwined with numerous moonlets, recalling those of Uranus. However, they are in general dustier, made of darker material and ring's edges are much less sharp than Uranus or Saturn's one. They somewhat recall those of Jupiter because of their high dust content. One of the most notable structure of Neptune's rings is the presence of five arcs structures (i.e. incomplete rings) inside the Adam ring. It is hypothesized that these arcs correspond to material trapped in corotation sites with the moon Galatea, however this is still a matter of debate.

Rings are not static structures. They evolve through numerous, internal or external processes.

An interesting consequence of the ring spreading and ring-satellites interaction is the formation of moons. A gravitationally unstable media, if undisturbed, should collapse into a spherical body. The material that constitute the rings of Saturn does not, only because Saturn's tidal forces are stronger than self-gravity. However, the tidal forces decay as the distance to the planet cubed and, beyond a distance called the Roche radius, they lose to self-gravity. As rings spread beyond the Roche radius, the material coalesces into new moons, that are repelled by the rings further away, and grow by merging with one another.

This process generates either 1 satellite if the ring spreads very fast (as was the case of the Moon-forming disk around the Earth) or a series of satellites whose mass-distance distribution follows a precise law, in excellent agreement with the regular satellites of Saturn, Uranus, and Neptune. This suggests that this process may be universal, in the Solar System and beyond. Although the massive rings around Uranus, Neptune, and the Earth that gave birth to their satellites have now disappeared, it seems that looking for rings around exoplanets may be a way of looking for moons.

Zhao, X., et al (2018) **Stepwise oxygenation of early Cambrian ocean controls early metazoan diversification.** PALAEOGEOGRAPHY, PALAEOCLIMATOLOGY, PALAEOECOLOGY 504:86-103

Authors' abstract: *The Ediacaran-Cambrian transition is a critical period in Earth history, during which both marine environment and life experienced drastic changes. It was suggested that pervasive oxygenation and associated chemical changes in the ocean have potentially triggered the rapid diversification of early Cambrian metazoans.*

In this paper, an integrated study was conducted on the lower Cambrian Niutitang (NTT) Formation in Siduping area, western Hunan, which was paleogeographically located at shelf margin-upper slope setting of the Yangtze Platform. The results show that during the NTT deposition, bottom seawater in the study area experienced a complicated evolution, with a dynamic alternation of three ferruginous and three euxinic intervals, and suboxic-oxic conditions occurring only in the latest Cambrian Stage 3.

Comparison with relevant sections reported previously from other facies belts within the Yangtze Platform shows that the seawater oxygenation was a progressive process expanding from shallow to deep-water areas in time. Shallow-water platform area became oxygenated in the late Cambrian Stage 2, shelf margin area in the late Cambrian Stage 3, and the deep-water basin remained ferruginous until the latest Cambrian Stage 3, when it became euxinic.

Sediment Mo/TOC, U/TOC ratios increased from bottom to top in the section, coupled with elevated Mn, N and P secular trends, likely indicating an overall enhancement of seawater oxygenation. The spatial-temporal distribution and increased paleoecologic complexity of major fossil groups on the Yangtze Platform over time coincide with the seawater oxygenation process, likely implying that increased ocean oxygenation and declining euxinic seawaters have driven the rapid diversification of early Cambrian metazoans.

Bindeman, L.N., et al (2018) **Rapid emergence of subaerial landmasses and onset of a modern hydrologic cycle 2.5 billion years ago.** NATURE 557:545-548

Authors' abstract: *The history of the growth of continental crust is uncertain, and several different models that involve a gradual, decelerating, or stepwise*

process have been proposed. Even more uncertain is the timing and the secular trend of the emergence of most land masses above the sea (subaerial landmasses), with estimates ranging from about one billion to three billion years ago. The area of emerged crust influences global climate feedbacks and the supply of nutrients to the oceans, and therefore connects Earth's crustal evolution to surface environmental conditions.

Here we use the triple-oxygen-isotope composition of shales from all continents, spanning 3.7 billion years, to provide constraints on the emergence of continents over time. Our measurements show a stepwise total decrease of 0.08 per mille in the average triple-oxygen-isotope value of shales across the Archaean-Proterozoic boundary.

We suggest that our data are best explained by a shift in the nature of water-rock interactions, from near-coastal in the Archaean era to predominantly continental in the Proterozoic, accompanied by a decrease in average surface temperatures. We propose that this shift may have coincided with the onset of a modern hydrological cycle owing to the rapid emergence of continental crust with near-modern average elevation and aerial extent roughly 2.5 billion years ago.

Wang, X., et al (2018) **Mercury anomalies across the end Permian mass extinction in South China from shallow and deep water depositional environments.** EARTH AND PLANETARY SCIENCE LETTERS 496:159-167

Authors' abstract: *Life on Earth suffered its greatest bio-crisis since multicellular organisms rose 600 million years ago during the end-Permian mass extinction. Coincidence of the mass extinction with flood basalt eruptions in Siberia is well established, but the exact causal connection between the eruptions and extinction processes in South China is uncertain due to their wide spatial separation and the absence of direct geochemical evidence linking the two.*

The concentration and stable isotope analysis of mercury provides a way to test these links as its concentration is thought to be tied to igneous activity. Mercury/total organic carbon ratios from three Permian-Triassic boundary sections with a well-resolved extinction record in South China show elevated values (up to 900 ppb/wt.% relative to a background of <100 ppb/wt.%) that

exactly coincides with the end-Permian mass extinction horizon. This enrichment does not show any correlation with redox and sedimentation rate variations during that time.

Hg isotope mass independent fractionation ($\delta^{199}\text{Hg}$), with sustained positive values, indicate a predominant atmospheric-derived signature of volcanic Hg in deep-shelf settings of the Daxiakou and Shangsi sections. In contrast, the nearshore environment of the Meishan section displays a negative $\delta^{199}\text{Hg}$ signature, interpreted to be related to terrestrial Hg sources.

Such temporal differences in $\delta^{199}\text{Hg}$ values shed new light on Hg geochemical behavior in marine settings, and also on the kill mechanisms associated with volcanism that were responsible for biotic mortality at the end of the Permian.

Speirs: The greatest mass extinction in Earth's history occurred 251 megayears ago at the end of the Permian, when 97% of all life died out. The atmosphere was superheated by massive lava flows that covered Siberia kilometres deep. The oceans were depleted of oxygen. Land life survived in the polar regions and mountain heights where things were cooler, then gradually spread back down into the lessening heat.

Ezcurra, M.D., and R.J. Butler (2018) **The rise of the ruling reptiles and ecosystem recovery from the Permo-Triassic mass extinction.** PROCEEDINGS OF THE ROYAL SOCIETY OF LONDON 285B:doi.10.1098/rspb.2018.0361

Authors' abstract: *One of the key faunal transitions in Earth history occurred after the Permo-Triassic mass extinction (ca 252.2 Ma), when the previously obscure archosauromorphs (which include crocodylians, dinosaurs and birds) become the dominant terrestrial vertebrates. Here, we place all known middle Permian-early Late Triassic archosauromorph species into an explicit phylogenetic context, and quantify biodiversity change through this interval.*

Our results indicate the following sequence of diversification: a morphologically conservative and globally distributed post-extinction 'disaster fauna'; a major but cryptic and poorly sampled phylogenetic diversification with significantly elevated evolutionary rates; and a marked increase in species counts, abundance, and disparity contemporaneous with global ecosystem

stabilization some 5 million years after the extinction. This multiphase event transformed global ecosystems, with far reaching consequences for Mesozoic and modern faunas.

Simões, C.R., et al (2018) **The origin of squamates revealed by a Middle Triassic lizard from the Italian Alps.** NATURE 557:706-709

Authors' abstract: *Modern squamates (lizards, snakes and amphisbaenians) are the world's most diverse group of tetrapods along with birds and have a long evolutionary history, with the oldest known fossils dating from the Middle Jurassic period, 168 million years ago. The evolutionary origin of squamates is contentious because of several issues: (1) a fossil gap of approximately 70 million years exists between the oldest known fossils and their estimated origin; (2) limited sampling of squamates in reptile phylogenies; and (3) conflicts between morphological and molecular hypotheses regarding the origin of crown squamates.*



Here we shed light on these problems by using high-resolution microfocuss X-ray computed tomography data from the articulated fossil reptile Megachirella wachtleri (Middle Triassic period, Italian Alps).

We also present a phylogenetic dataset, combining fossils and extant taxa, and morphological and molecular data. We analysed this dataset under different optimality criteria to assess diapsid reptile relationships and the origins of squamates.

Our results re-shape the diapsid phylogeny and present evidence that M. wachtleri is the oldest known stem squamate. Megachirella is 75 million years older than the previously known oldest squamate fossils, partially filling the fossil gap in the origin of lizards, and indicates a more gradual acquisition of squamatan features in diapsid evolution than previously thought.

For the first time, to our knowledge, morphological and molecular data are in agreement regarding early squamate evolution, with geckoes, and not iguanians, as the earliest crown clade squamates. Divergence time estimates using relaxed combined morphological and molecular clocks show that lepidosaurs and most other diapsids originated before the Permian/Triassic extinction event, indicating that the Triassic was a period of radiation, not origin, for several diapsid lineages.

Lowery, C.M., et al (2018) **Rapid recovery of life at ground zero of the end-Cretaceous mass extinction.** NATURE 557:doi:10.1038/s41586-018-0163-6

Authors' abstract: The Cretaceous/Palaeogene mass extinction eradicated 76% of species on Earth. It was caused by the impact of an asteroid on the Yucatán carbonate platform in the southern Gulf of Mexico 66 million years ago, forming the Chicxulub impact crater.

After the mass extinction, the recovery of the global marine ecosystem, measured as primary productivity, was geographically heterogeneous; export production in the Gulf of Mexico and North Atlantic-western Tethys was slower than in most other regions, taking 300 thousand years (kyr) to return to levels similar to those of the Late Cretaceous period.

Delayed recovery of marine productivity closer to the crater implies an impact-related environmental control, such as toxic metal poisoning, on recovery times. If no such geographic pattern exists, the best explanation for the observed heterogeneity is a combination of ecological factors; trophic interactions, species incumbency and competitive exclusion by opportunists, and 'chance'.

The question of whether the post-impact recovery of marine productivity was delayed closer to the crater has a bearing on the predictability of future patterns of recovery in anthropogenically perturbed ecosystems. If there is a relationship between the distance from the impact and the recovery of marine productivity, we would expect recovery rates to be slowest in the crater itself.

Here we present a record of foraminifera, calcareous nannoplankton, trace fossils and elemental abundance data from within the Chicxulub crater, dated to approximately the first 200 kyr of the Palaeocene.

We show that life reappeared in the basin just years after the impact and a high-productivity ecosystem was established within 30 kyr, which indicates that proximity to the impact did not delay recovery and that there was therefore no impact-related environmental control on recovery.

Ecological processes probably controlled the recovery of productivity after the Cretaceous/Palaeogene mass extinction and are therefore likely to be important for the response of the ocean ecosystem to other rapid extinction events.

Field, D.J., et al (1980) **Early evolution of modern birds structured by global forest collapse at the end-Cretaceous mass extinction.** CURRENT BIOLOGY 28:1825-1831

Authors' abstract: The end-Cretaceous mass extinction devastated forest habitats globally. Tree-dwelling birds failed to persist across the end-Cretaceous extinction event. All bird groups that survived the end-Cretaceous extinction were non-arboreal. The early ancestors of many modern tree-dwelling bird groups were ground-dwelling.

Global paleobotanical and palynological data show that the K-Pg [Cretaceous/Palaeogene] Chicxulub impact triggered widespread destruction of forests.

We suggest that ecological filtering due to the temporary loss of significant plant cover across the K-Pg boundary selected against any flying dinosaurs (Avialae) committed to arboreal ecologies, resulting in a predominantly non-arboreal postextinction neornithine avifauna composed of total clade Palaeognathae, Galloanserae, and terrestrial total-clade Neoaves that rapidly diversified into the broad range of avian ecologies familiar today.

The explanation proposed here provides a unifying hypothesis for the K-Pg-associated mass extinction of arboreal stem birds, as well as for the post-K-Pg radiation of arboreal crown birds.

WORLD WIDE PARTY 2018

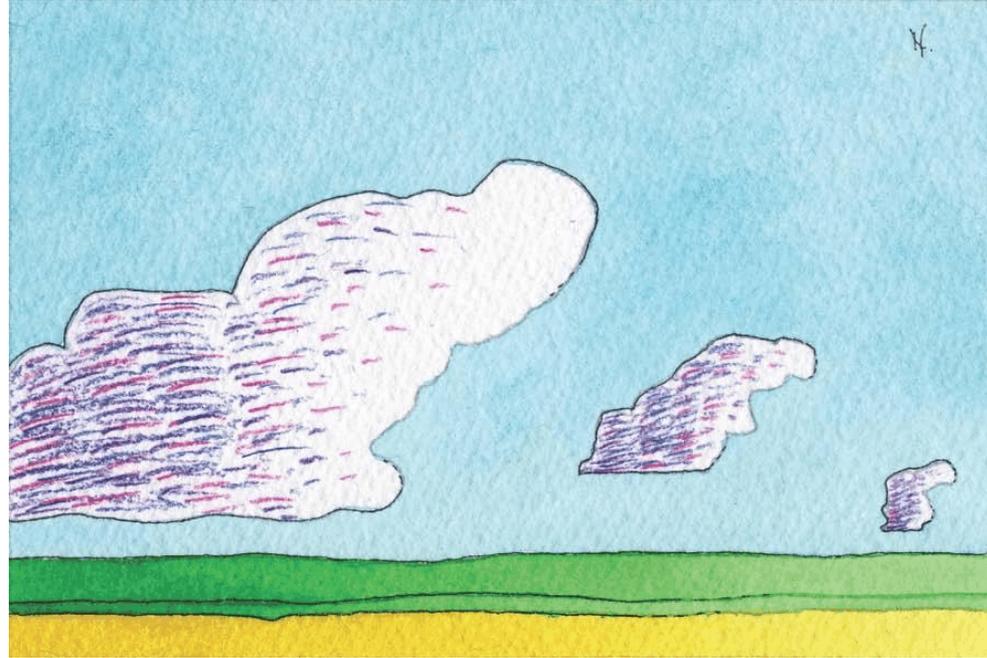
Founded by Benoit Girard (Quebec) and Franz Miklis (Austria) in 1994, the World Wide Party is held on June 21st every year. 2018 was the 25th year of the WWP.

The idea of the WWP is to have it at 21h00 local time, when everyone raises a glass and toasts fellow members of zinedom around the world. It is important to have it exactly at 21h00 local time. The idea is to get a wave of fellowship circling the planet. Rescheduling it to a club meeting or more convenient time negates the idea of a wave of celebration by SF fans and zinesters circling the globe.

I celebrated in my traditional manner. At 21h00, I faced to the east and saluted those who had already celebrated. Then I faced north, then south, and toasted those in my time zone (Mountain Daylight) who might have been celebrating as I was. I suspect that I was the only one in Alberta who did so, although there might have been some American fans to the south.

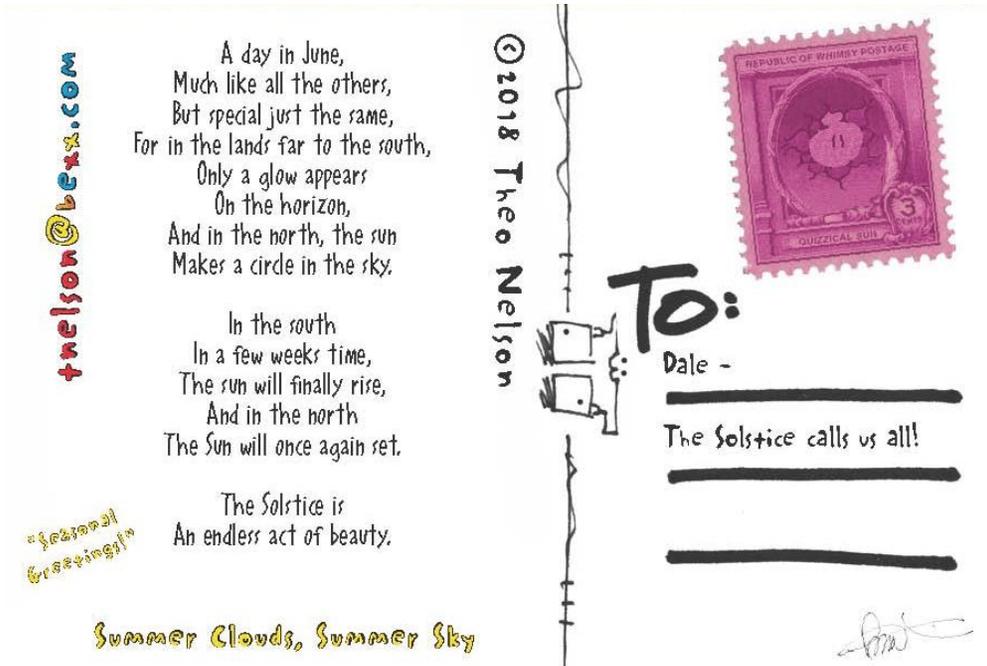
Finally, I faced west and raised a glass to those who would celebrate WWP in the next hour.

Did you celebrate the day? Let me know. Or am I the last fan standing while everyone else plays video games or blogs about politically incorrect authors?



POSTCARDS TO THE EDITOR

At right are the two sides of a mail art postcard from Theo Nelson of Calgary, celebrating the summer solstice.



AROUND COWTOWN

photos by Dale Speirs

Macleod Trail South pedestrian overpass at Anderson Road LRT station, on April 9 and June 21.

On the next page are two views of an electrical box at the Chinook LRT station.



