

OPUNTIA

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Opuntia is published by Dale Speirs, Calgary, Alberta.
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.

ROCKY MOUNTAIN WAY: KANANASKIS CANYON

by Dale Speirs

Kananaskis Canyon is an abandoned channel of the river
between Upper and Lower Kananaskis Lakes. It now has
only a trickle of water but it is still a lovely hike. The
view on this page is looking north towards a waterfall
hidden just around the bend. The view on the next page
is that waterfall seen from the other side.







Above, trout swimming in a backwater just downstream from the waterfall.

At left, the reflection of the strata on the water caught my eye.

TRANSIT FANNING IN CALGARY: PART 8.

by Dale Speirs

Nahum 2:4
The chariots shall rage in the streets. They shall jostle one against another in the broadways. They shall seem like torches. They shall run like the lightnings.

Calgary no longer blasts new freeways through the central city. City Council finally acknowledged a decade ago that new roads just bring in more cars, not to mention the screaming from NIMBYites in the central suburbs. The emphasis now is on expanding the bus and train system.

The expansion of the LRT system has been so successful that vehicle counts for 2012 show there is less car traffic on some central city streets than in 1964, when Calgary had only a quarter of the population. The counts for 2013 are not valid because of the great flood, but 2014 is confidently expected to support the trend.

LRT stations have computerized voices that repeat the announcements on the message boards as a convenience for those with poor or no vision. The one computerized chant that is ingrained in the memory of all frequent riders is “Next train arriving. Please stand behind the yellow line.”



There is no trouble about getting people to obey that particular instruction. Anyone who doesn't obey the order will get his head whapped hard by the train's rearview mirrors.

Like the buses, many LRT trains have advertising on them. I show some photos of such trains in the next few pages.





THOU BRINGEST CERTAIN STRANGE THINGS

by Dale Speirs

THE PARTICLE AT THE END OF THE UNIVERSE (2012, hardcover) by Sean Carroll is a look at the frontiers of particle physics. Since this book is aimed at the general public, Carroll must spend some pages explaining basic physics. That is not a problem but he often jitters back and forth, and withholds some information for later as if the book were a suspense novel. Conversely, towards the end of the book he rushes in an inordinate amount of explanation about subatomic particles that are not subsequently mentioned again. Despite the erratic balance of the book, it is a useful read for those who want to learn more about particle physics, if only to appreciate some of the in-jokes on the television series THE BIG BANG THEORY.

The universe is composed of three parts: the Higgs field, fermions, and bosons. The Higgs field is the fabric of our space-time continuum, what a century ago was hypothesized as the ether. It gives subatomic particles their mass. Fermions are all the different types of subatomic particles that produce matter. Bosons are all the particles that produce forces, such as gravity, electromagnetism, and light. The Higgs boson, much in the news, is a vibration of the Higgs field. By itself, the Higgs boson is only of interest to physicists because its existence would prove the Higgs field to be real. It caught the public's eye because Dr. Leon Lederman, in a moment of whimsey he came to regret, called it the God Particle. The name created a sensation in the news media. Lederman later remarked that he offended two groups of people: those who believe in God, and those who do not.

Fermions take up space and under normal conditions cannot be compressed into each other. They have electrical charges that repel each other and enable atoms to behave as if they were solid matter instead of what they actually are, mostly empty space and charges. That is why solid matter exists. Bosons, by contrast, can occupy the same space, whether two of them or trillions of them at one coordinate. Think of them as nesting Russian dolls, except that they are all the same size when they nest. The more bosons in a single spot, the stronger the force they exert.

Carroll then explains all the different forces and subatomic particles, including the sub-subatomic particles that bigger particles decay into. So many subatomic particles have been discovered that Willis Lamb, in his 1955 Nobel Prize speech, remarked: *“The finder of a new elementary particle used to be rewarded*

by a Nobel Prize, but such a discovery now ought to be punished by a \$10,000 fine.” Eventually the puzzle was solved in 1964 by Murray Gell-Mann and George Zweig, who proposed that subatomic particles are made of building-block particles called quarks. Quarks come in a variety of types, the different combinations thereof making up different particles.

Studying subatomic particles requires particle accelerators, which have become larger and more expensive over the decades. The cost rose to the point where no single nation could afford their own, so an international collaboration called CERN was established in Switzerland. CERN currently operates the Large Hadron Collider, the world's largest and most expensive machine of any kind. Carroll goes into detail about the history of atom smashing, from the original cloud chambers that fitted on a lab table to the gargantuan CERN colliders.

Science is not a smooth progression from hypothesis to lab results to publication to the final step up to the lectern to accept a Nobel Prize. Disputes over priority of discovery often rise because so many scientists are working on the same idea. Peter Higgs wasn't the first to publish on the boson that bears his name, nor did he name it. He did provide the best analysis of it. (He was also annoyed by the name God Particle.) CERN isn't just the white-coated scientists and techies. It is the desk jockeys who process the payroll and inventory. It is the time wasted by scientists in committee hearings as they try to bamboozle politicians into coughing up another billion euros for a gadget that will detect (or not) invisible particles that can only be inferred, not seen.

Superscience such as CERN sometimes goes in unexpected directions and produces benefits that could not be predicted. The World Wide Web was invented by Tim Berners-Lee while he was working at CERN because he wanted a method by which particle physicists could electronically share technical papers with illustrations and formulae not easily posted on the bulletin board systems of the day. Physicist Dr. Robert Wilson appeared before a Congressional committee in 1969 in support of building the Fermilab particle accelerator. Senator John Pastore asked him how Fermilab would contribute to national security. Wilson replied: *“It has nothing to do directly with defending our country except to make it worth defending.”*

Carroll finishes the book with a look at some of the weird and wonderful ideas of cosmology and quantum mechanics which have yet to be proven. Dark matter, dark energy, vacuum energy, supersymmetry, and string theory are all untested. It's mighty strange out there.

WHEN SOMETIME LOFTY TOWERS I SEE DOWN-RAISED

by Dale Speirs

Back when, rulers built pyramids or giant statues to show off their prowess. Today it is skyscrapers; mine is taller than yours.

Accursed Tower.

Skyscrapers were part of the vision of the future for early writers of scientific romances in the late 1800s and early 1900s. The aspiration of humans to see further, not just figuratively, dates back to the Biblical legend of Babel.

Frank Lillie Pollock wrote a story in 1904 for the pulp magazine BLACK CAT called “The Skyscraper In B Flat”, subsequently reprinted in a modern anthology THE MAN WHO FOUND ZERO. An inventor is developing a self-playing violin and forgets to turn it off when he leaves his office. The violin keeps playing a B flat over and over again. The vibration starts to shake bricks loose from the skyscraper facade, pop windows out, and seems ready to shake down the entire building. The story is not as fantastical as it may seem, as there is a phenomenon called resonance that actually has destroyed big structures. (The most famous incident was the collapse of the Tacoma Narrows bridge because the wind gust frequency matched the bridge’s swaying frequency and the resonance shook the bridge apart.)

Murray Leinster’s “The Runaway Skyscraper”, published February 22, 1919, in ARGOSY magazine, is available online from Project Gutenberg. The story begins with a typical business day in Manhattan in the Metropolitan Tower skyscraper. People are about their business when the building shudders, a loud bang is heard, and clocks start running backward. Arthur Chamberlain is a young engineer just starting out. At the time of the incident, he is dictating a letter to his stenographer Estelle Woodward, to be sent to his creditors regretting that his bank account is indisposed and they shall have to wait longer.

The occupants discover that time is running backward at an increasing rate. Days go by in a blur, with the sun rising in the west and sinking in the east. Traffic runs backward, the seasons come and go in a flash. Adjacent skyscrapers are disassembled and replaced by townhouses, which in turn give way to vacant land overgrown with trees. The runaway skyscraper finally stops in the middle of virgin forest, as Manhattan once was. There is a cluster of aboriginal wigwams, whose inhabitants are as astonished to see the giant

building materialize in their midst as the skyscraper inhabitants are to find themselves millennia back in time. Chamberlain surmises that the skyscraper was built on defective foundations, and when it settled on them, instead of sinking down in space, it sank down in time.

After the skyscraper comes to rest, Chamberlain takes charge of the two thousand people in the building. The long-term plan is to get them back, but the short-term need is food, and in tons per day if the occupants expect three meals daily. Guns are scarce and gardens are non-existent, so the only hope is fishing and scavenging for edible plants. Trouble is, few city slickers know how to fish or what roots are edible and which are poisonous. There is also the matter of crowd control and preventing anarchy.

When the time came to remedy the problem of traveling forward in time to their origin, Chamberlain devises a plan to pump spring water into the foundations to lift the building back into its original time. The plan succeeds and all ends well, the hero marries his secretary, and a disbelieving world is eventually forced to recognize the truth of the story.

And Started When He Look'd Upon The Tower.

THE HAUNTING HOUR was an old-time radio programme that aired from 1944 to 1946, with about forty episodes surviving. Credit was never given to anyone, not the production staff, the writer, nor the actors, so little is known of it. The episode “The Skyscraper Murders” is about a window-cleaning company which suddenly is experiencing a high death rate among its employees. The safety equipment was okay, the men were well trained, and yet experienced employees are falling to their deaths about once a week. The hero is an insurance investigator whose employer understandably doesn’t want to keep paying out on the policy. The window-cleaning company is desperate to find out what is going wrong because they are rapidly losing business to a rival.

The hero and his gal Friday eventually determine that each of the deaths occurred when the defunct were cleaning windows of vacant skyscraper offices. He infiltrates the company as a new hire to decoy the murderer. It turns out the culprit is sneaking up on his victims, chloroforming them, and then tossing them out the window, all in aid of a rival company. The medical examiner had been certifying the deaths as due to massive physical trauma, for why would he do a toxicology test? It’s a neat little trick and carries the story along, which is just as well since the actors are melodramatic and over-the-top. They do tone

it down a bit in the final half of the story, once there is more of a plot to take on some of the load.

What, Art Thou Fallen?

SKYSCRAPER (1984, mass-market paperback) by Robert Byrne takes down a building by collapse. The Zalian Plaza at 8th Avenue and 50th Street, Aram Zalian proprietor, is 66 floors of lowest-bidder construction. The story goes straight to the forebodings. A window pops off during strong winds, sucking out an unfortunate employee who was standing too close to it and decapitating an equally unfortunate pedestrian far below. That was, of course, just the prelude.

The subplots are introduced. Zalian’s personal secretary, a woman scorned who wants her revenge. His henchmen, who, along with him, are aware that some of the Zalian skyscraper’s pilings are stressed and cracking. Zalian’s financial empire is failing, and every dollar counts. The hotshot young engineer brought in from Colorado as an independent consultant to find out what is happening is indeed finding out what is happening. The weak concrete patches in the building are failing because the concrete was diluted with too much water when it was poured. The Zalian tower sways so much in strong winds that he can’t lease out the upper floors to outsiders and has to use it for his own companies. An excavation across the street for a new skyscraper whose blasting foreman likes to beat the clock by using excessive explosive charges to break up the bedrock. A subway tunnel too close to everything, and leaky water pipes that the NYC waterworks bureaucrats don’t want to spend the money to fix. A strong wind storm arrives over the city. As my safety officer liked to point out when I was working for the Parks Dept., when an accident happens, it’s never because of just one thing, and it’s never an accident.

The excavation blasting takes place, and the excess explosives cause the pit wall to fail, collapsing the street into the hole. On the other side of the street is the Zalian building, its substandard pilings now exposed to view. With its footings damaged on one side of the building and gale-force winds pushing on the other side, the Zalian tower goes into failure mode. Like Hemingway’s definition of bankruptcy, the fall begins slowly and then suddenly. The rest is obvious.

The novel is a good page-turner to be read in one sitting. In our post-9/11 world, it is impossible to interpret or review it as might have been done before 2001. The descriptions of the Zalian tower’s failure and fall will inevitably be

compared with what we saw of the Twin Towers on television. Byrne’s novel is very prescient, but not because of 9/11. An excavation beside an existing skyscraper did in fact cause one to fall over in Shanghai in 2009.



I Would They'd Fight In The Fire Or In The Air.

THE TOWERING INFERNO (1974) was a big box office movie that created a sensation. Loaded with an all-star cast and good SFX, it is about the 138-story Glass Tower of San Francisco on its opening night, which also proved to be its closing night. The skyscraper was built with many shortcuts, including substandard electrical wiring. Before the opening ceremonies in the penthouse suite are even over, a fire breaks out in a maintenance closet due to overloading of electrical circuits.

The movie was an unusual collaboration between two movie studios, Warner Brothers and 20th-Century Fox. They had each separately bought novels published in 1974 on the same subject of skyscraper fires. Fox bought THE GLASS INFERNO by Thomas Scortia and Frank M. Robinson, and Warner bought THE TOWER by Richard Martin Stern. The two studios realized that

to bring out two movies simultaneously on the same topic would kill both at the box office, so they agreed to split the production costs and share the profits. The movie script is a reasonable blend of the two novels, although of course with some changes. THE GLASS INFERNO reads better than THE TOWER, the latter of which seems somewhat forced in showing the characters' behaviours and motivations.

In the movie, there are the usual subplots. A couple of romances to pace the action scenes, a Fire Chief sick to his heart about how his men could fight a blaze so high up in the sky, an engineer who took too many shortcuts, and the cast of characters who must fight to survive the blaze. The usual bunch of supporting actors are killed en route to the finale, when someone remembers the roof of the skyscraper has a million gallons of water in storage tanks, so all they have to do is blow them open to drown the fire (and a few more characters). All told, the movie is a good action-adventure film.

Skyscrapers are built of concrete and steel but their contents are flammable, hence the spectacle of towering infernos. They are not unknown even today; the photo shows a 2013 fire in Guangzhou, China.



SEEN IN THE LITERATURE

[In case you have wondered why I use "et al" so much when citing scientific papers, it is because of author inflation. As an example, the Neanderthal paper cited below had 47 co-authors listed with Higham.]

Higham, Tom, et al (2014) **The timing and spatiotemporal patterning of Neanderthal disappearance.** NATURE 512:306-309

Authors' abstract: "*The timing of Neanderthal disappearance and the extent to which they overlapped with the earliest incoming anatomically modern humans (AMHs) in Eurasia are key questions in palaeoanthropology. Determining the spatiotemporal relationship between the two populations is crucial if we are to understand the processes, timing and reasons leading to the disappearance of Neanderthals and the likelihood of cultural and genetic exchange. Serious technical challenges, however, have hindered reliable dating of the period, as the radiocarbon method reaches its limit at 50,000 years ago. Here we apply improved accelerator mass spectrometry 14C techniques to construct robust chronologies from 40 key Mousterian and Neanderthal archaeological sites, ranging from Russia to Spain. Bayesian age modelling was used to generate probability distribution functions to determine the latest appearance date. We show that the Mousterian ended by 41,030–39,260 calibrated years BP (at 95.4%probability) across Europe. We also demonstrate that succeeding 'transitional' archaeological industries, one of which has been linked with Neanderthals (Châtelperronian), end at a similar time. Our data indicate that the disappearance of Neanderthals occurred at different times in different regions. Comparing the data with results obtained from the earliest dated AMH sites in Europe, associated with the Uluzzian technocomplex, allows us to quantify the temporal overlap between the two human groups. The results reveal a significant overlap of 2,600–5,400 years (at 95.4%probability). This has important implications for models seeking to explain the cultural, technological and biological elements involved in the replacement of Neanderthals by AMHs. A mosaic of populations in Europe during the Middle to Upper Palaeolithic transition suggests that there was ample time for the transmission of cultural and symbolic behaviours, as well as possible genetic exchanges, between the two groups.*"

Speirs: It only took about two to five millennia for our ancestors to wipe out Neanderthals and become the dominant primate species on Earth.

Karzbrun, E., et al (2014) **Programmable on-chip DNA compartments as artificial cells.** SCIENCE 345:829-832

Authors' abstract: *"The assembly of artificial cells capable of executing synthetic DNA programs has been an important goal for basic research and biotechnology. We assembled two-dimensional DNA compartments fabricated in silicon as artificial cells capable of metabolism, programmable protein synthesis, and communication. Metabolism is maintained by continuous diffusion of nutrients and products through a thin capillary, connecting protein synthesis in the DNA compartment with the environment. We programmed protein expression cycles, autoregulated protein levels, and a signaling expression gradient, equivalent to a morphogen, in an array of interconnected compartments at the scale of an embryo. Gene expression in the DNA compartment reveals a rich, dynamic system that is controlled by geometry, offering a means for studying biological networks outside a living cell."*

Speirs: Instead of Asimovian positronic circuits, we seem to be slowly edging our way to bionic artificial intelligence.



Jayasanka, S.M.D.H., and Takashi Asaeda (2014) **The significance of microwaves in the environment and its effect on plants.** ENVIRONMENTAL REVIEWS 22:220-228

Authors' abstract: *"Various wireless Internet and communication technologies, such as worldwide interoperability for microwave access (WiMAX) and long-term evolution (LTE), are expanding rapidly. As with mobile phones, all of these technologies operate using high-frequency electromagnetic waves in the microwave category ($3 \times 10^2 - 3 \times 10^6$ MHz). An increasing number of operators within a geographical area is resulting in high microwave densities in the environment. At the same time, wireless technologies are now utilizing radio frequency electromagnetic radiation of up to 5500 MHz, and frequency spectrum allocation tables indicate that countries have allocated additional high frequencies for broadcasting purposes. Scientists have widely investigated the effects of microwaves on humans and animals, and some findings confirm that such effects exist. In comparison, a very limited number of published studies have addressed the effects of microwaves on plants. The findings of these studies indicate that the effects of microwaves on plants depend on the plant family and growth stage involved as well as the exposure duration, frequency, and power density, among other factors. However, the number of published studies is not yet sufficient to support drawing strong conclusions regarding the effects of microwaves on whole plant communities. Therefore, further studies are necessary to support present findings and uncover new findings."*

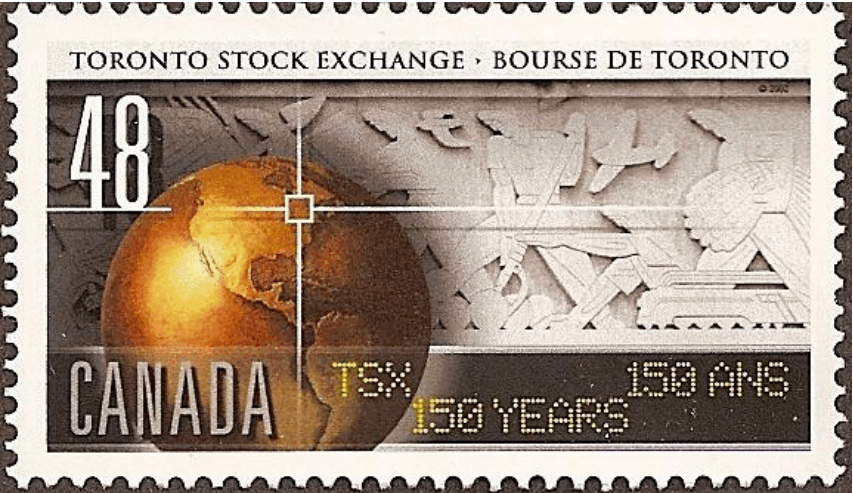
Bordo, M.D., et al (2014) **Why didn't Canada have a banking crisis in 2008 (or in 1930, or 1907, or ...)?** ECONOMIC HISTORY REVIEW 2014:1-26

Authors' abstract: *"The financial crisis of 2008 engulfed the banking system of the US and many large European countries. Canada was a notable exception. In this article we argue that the structure of financial systems is path-dependent. The relative stability of the Canadian banks in the recent crisis compared to the US in our view reflected the original institutional foundations laid in place in the early nineteenth century in the two countries. The Canadian concentrated banking system that had evolved by the end of the twentieth century had absorbed the key sources of systemic risk, the mortgage market and investment banking, and was tightly regulated by one overarching regulator. In contrast, the relatively weak, fragmented, and crisis-prone US banking system that had evolved since the early nineteenth century led to the rise of*

securities markets, investment banks, and money market mutual funds (the shadow banking system) combined with multiple competing regulatory authorities. The consequence was that the systemic risk that led to the crisis of 2007–8 was not contained.”

“We argue in this article that the comparative stability of the Canadian banking system emerged out of the very different structure of the financial sectors of the two countries from the early nineteenth century. In Canada the banking system was created as a system of large financial institutions whose size and diversification enhanced their robustness. Moreover it evolved into an oligopoly which was tightly regulated in a grand bargain whereby the chartered banks would provide financial stability in exchange for the Canadian government limiting entry to the industry. In the US the fragmented nature of the banking system created financial institutions that were small and fragile. In response the US developed strong financial markets and a labyrinthine set of regulations for financial institutions. These different structures, and the political economy they generated, created a path dependence that goes a long way towards explaining the relative stability of the financial systems today.”

Speirs: Unlike the USA, which has thousands of banks, Canada only has a dozen national banks, two federations of credit unions (one anglophone, the other francophone), and one bank that is an arm of the Alberta Ministry of Finance. The last bank failure in Canada was in 1928. The American system allows states to charter banks, whereas Canada's financial institutions are under federal control. Canadian banks own brokerages as arms-length subsidiaries but neither can make proprietary trades (ie, bets on the markets) the way that Wall Street banks can.



Van de Vliert, E., and R.S.J. Tol (2014) **Harsh climate promotes harsh governance (except in cold-dry-wealthy environments).** CLIMATE RESEARCH 61:19-28

Authors' abstract: "Human societies are usually thought to adapt culturally to mean climatic temperature. Here we alternatively propose that cultural adaptations are fine-tuned, using monetary means as tools, to harsh deviations from optimally livable winter and summer temperatures around 22°C. We test for the first time the interactive impacts of cold demands, heat demands, precipitation, and income on the autocracy of central government. Eight regression analyses across 173 nations, with R2 ranging from 0.29 to 0.55, show that political cultures vary from maximally autocratic in poor countries threatened by demandingly cold and dry climates, to maximally democratic in rich countries challenged by demandingly cold and dry climates. Moreover, demandingly hot and dry climates appear to promote autocracy everywhere, irrespective of the country's level of income. The best documented rival explanations, including human-to-human transmitted diseases, ethnic diversity, and low average intelligence of the population, could not account for the findings. This kind of evidence may lead climate-culture scholars to move away from climatic determinism toward climato-economic theory building on the origins of cultures."

Speirs: Hmmm, Alberta is cool and dry (humidity is never mentioned in weather reports on the radio or television) and, yes, we have 40% of North America's petroleum reserves. Albertans earn better money on average than the rest of Canada, the provincial income tax is a flat rate 10% before deductions, and there is no provincial sales tax.



WORLD WAR ONE CONSIDERED AS ALTERNATIVE HISTORY

by Dale Speirs

What Happened In Our Timeline.

The USA was neutral at the beginning of World War One, while Canada, as it would be again in the next war, was in it from the start. The American factories could and were allowed to manufacture munitions. The money was certainly appreciated, and soon the railcars were hauling weaponry and supplies north. Canada then trans-shipped the munitions to England. A blatant example was the construction of submarines in Montreal shipyards for the British Royal Navy. The contract was actually for Bethlehem Steel, USA, but they were prohibited from doing the work by neutrality laws, so they subcontracted to Canadian Vickers [5]. German-American societies protested vociferously about this, and spent much time lobbying the American Congress to prevent these shipments [4]. That all came to nought, especially after the U-boat war heated up.

These were legal, aboveboard societies that spoke up and campaigned on behalf of Germany. While they were doing so, other groups were active against Canada, not legal, not aboveboard.

The Germans Are Coming! The Germans Are Coming!

During 1914, hysterical rumours plagued the Canadian government about German plans to invade Canada with 150,000 men via the then neutral USA. Other rumours were about large scale attacks against Winnipeg and Thunder Bay. Canadian authorities were not concerned about any such attacks and dismissed them out of hand as fantasy. They were, however, concerned about small raids on bridges or canal locks by individual saboteurs, a more realistic possibility [1].

One problem faced by the Canadian government was its own politicians. Too many of them were happy to fan the flames for political reasons, nevermind the consequences. Canada had been whipped into a patriotic frenzy supporting the British Empire by a strong propaganda campaign. Every ordinary warehouse fire or industrial accident was blamed on German saboteurs [6]. The British embassy in the USA was the worst of the panic-mongers, declaring that cross-border raids were imminent.

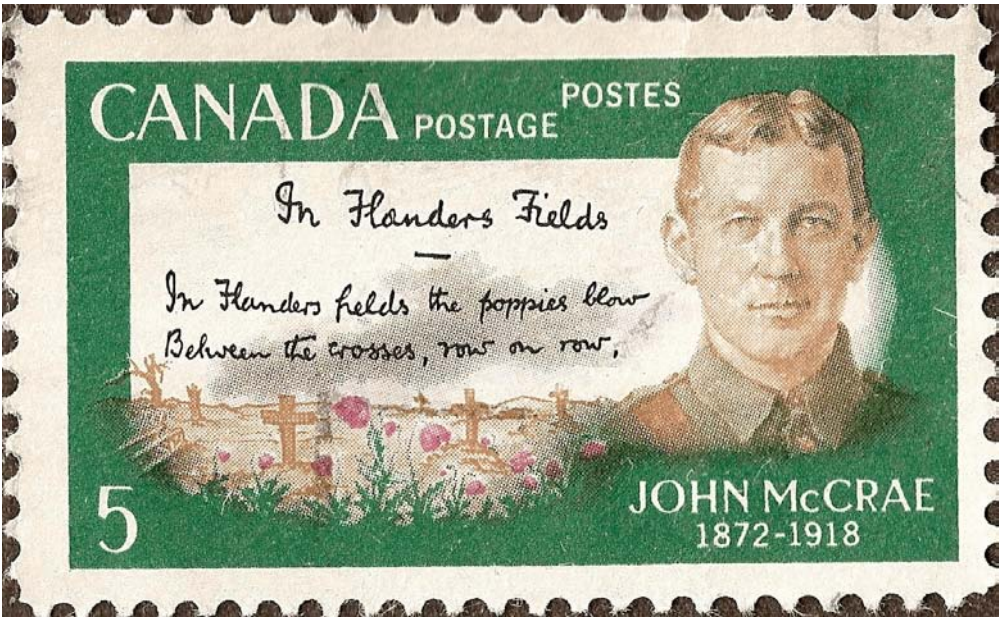
Germany, or any other nation, did not have trans-Atlantic flight capability for bombing raids by fixed-wing aircraft. This didn't stop Canadians from reporting German aircraft in Canada, always at night. The first panicky report came on 1914-08-13, and others followed regularly throughout the war. The height of the panic was the night of 1915-02-14, when Brockville, Ontario, residents spotted planes heading on a bombing run to Ottawa. The Prime Minister ordered out the Home Guard to protect the Parliament buildings. Nothing happened of course, because there were never any airplanes. That didn't stop the Toronto newspaper THE GLOBE (today called THE GLOBE AND MAIL) from reporting the raid as fact on the front page [7]. The next day the embarrassed newspaper ran an inconspicuous paragraph blaming the whole thing on panicky Brockville citizens.

The Neo-Fenians Of 1914.

The German government and its American supporters were completely out of touch with the realities in Canada. Some proposed an invasion to establish a Canadian republic and cut the Canucks out of the war, leaving Britain without the resources of the Great White North. Like the Americans in 1776 and 1812, the Germans seemed to believe that Canadians were groaning under an oppressive British monarchy, and never understood that almost all Canadians supported the King of Canada [2]. The Germans thought they might split the country by using the Quebecois and Irish immigrants. They did not understand that the language disputes and the reluctance of Quebecois to fight overseas did not mean the francophones would support a revolution. They did not understand that the Irish immigrants might talk loudly in the taverns under the influence of alcohol but would shrink back from any real work or risk entailed in a revolution.

Another proposal would have 650,000 American supporters dressed as cowboys invade Canada from somewhere in western USA. The German Foreign Office and its American legation spent considerable time and energy studying this plan as if it were serious, an indication of how far out of touch they were. They expected that German and Irish immigrants with no experience in western living, horse riding (they were city slickers, after all), or war would assemble below the border. The Foreign Office did not address how 650,000 easterners would quietly make their way to North Dakota or Montana without being noticed, somehow equip themselves for a long-range war against patriotic prairie dwellers, and slip back and forth across the border without triggering diplomatic incidents. What the Foreign Office did do was to investigate the

legal aspects of cowboy clothes to see if they could be considered a uniform. If so, any prisoners taken by the Canadian authorities would have to be treated as POWs; if not, they could be executed as spies. I am not making this up as an alternative history, I must add; the Germans really did this planning in our timeline [1].



Saboteurs.

Fortunately, for Germany that is, such proposals came to nothing. More credible were plans for sabotage by small teams or individuals. The Germans were afraid that Japan, then an Allied nation, would assist Britain with troops. Those troops would have to be sent either by the Panama Canal or across Canada on the Canadian Pacific Railway (CPR). In discussion about the latter, it was suggested that supporters go into Alberta and British Columbia to blow up railway bridges and tunnels, but this eventually came to nothing. What did come to something was a group of incompetent volunteers in Maine who targeted several bridges in New Brunswick. Only one individual succeeded, dynamiting the CPR bridge at Vanceboro, Maine, on 1915-02-02. The suspect was immediately arrested. It was not a difficult task, as he was a stranger in town, was remembered by townsfolk for his heavy German accent, and was found with dynamite in his possession. The bridge was only lightly damaged and was back in service within a few hours.

The Zimmermann Telegram.

No, not the one about Mexico, but a different one Zimmermann sent 1915-01-03 to Count von Bernstoff: *“General Staff desires energetic action in regard to proposed destruction of Canadian Pacific railway at several points with a view to complete and protracted interruption of traffic. Captain Boehm, who is known on your side and shortly returning, has been given instructions. Inform the Military Attache and provide the necessary funds.”* [3].

The Welland Canal in Ontario seemed to be a particular obsession with German plotters, as it appeared repeatedly in their plans. Other targets were the grain elevators at Thunder Bay, the Sault Ste. Marie locks, a clothing factory in Walkerville, Ontario, and the St. Clair tunnel which connects Detroit and Windsor. The year 1915 would have been chaos for the Canadian government had these plans all come to fruition, but the saboteurs usually never even detonated the bombs, much less do actual damage. A lot of German money seemed to vanish without results to show for it.

These farcical activities in themselves were of no real consequence to history, but they did have one major effect in our timeline. The activities of the German legation in the USA about Canadian sabotage attracted the interest of American feds. They monitored German communications and eventually broke their diplomatic code, leading to the other Zimmermann telegram incident. Had the Germans been more discreet and less gullible about invading Canada, this might have been avoided. There would have been a consequent point of divergence, which I leave to someone else to speculate upon.

What Might Have Been.

Had the German legation been more professional, they would have known their typical supporters in North America were useless. The German immigrants were objects of suspicion in the USA, and were rounded up in Canada as soon as the war started. The Irish immigrants had alcoholic courage but couldn’t sabotage a potato sack.

Suppose instead a few handpicked professionals, who stayed out of the taverns, were sent out to annoy Canada. An intelligent German would know that large-scale invasion or social disorder was not going to happen. Individual acts of sabotage were another matter, and plausible enough to worry Canadian authorities. Large-scale sabotage was not necessary. It would only be

necessary to blow up a few bridges or canal locks, say one every second month, to tie up considerable personnel and resources. The Canadian government would have to divert staff to deal with the problem. A Home Guard could be used to protect the strategic sites, but regular staff would be needed to identify sites for protection, train the Home Guard, and keep an eye on them. At a time of intense anti-German feeling, sabotage would further inflame and panic the Canucks, diverting them into witch hunts and useless guard duty. The diversion in resources would be larger, and from the German point of view, every little bit helped.

Paranoia Strikes Deep: My Alternative History.

1915 in an alternative timeline was a time of chaos for the Canadian government. About once every second month a bomb exploded somewhere in Canada, demolishing a small bridge, or dropping key utility lines, or sinking a freighter at the harbour mouth of an important port. The government was on the defensive, not only from the saboteurs, but a Canadian public angry at the impotence of the feds in stopping the outrages. Rounding up German immigrants didn't seem to help; the bombs kept coming. The government diverted troops from overseas duty to guard home installations. There was a Home Guard, but decrepit commissionaires and Boer War veterans weren't much good for investigative duties. It takes trained police and soldiers to examine the wreckage and attempt to follow the trail back.

When the bombs sank tramp steamers at harbour mouths, just as the ships were leaving port, the damage wasn't just the actual loss of shipping. More men and materiel were diverted from war duty into raising the sunken ships and clearing the harbours for other traffic. Still more resources had to be diverted into a close examination of every piece of cargo loaded onto a ship, and every nook and cranny of each ship. Other freighters sat uselessly in harbour waiting to get out, delaying vital war supplies for Britain. Those waiting to get in would be delayed or be diverted to some other port, wasting logistical time and money.

Then The Mail Bombs Began.

Even as the country bogged down in paranoia, with troops wasted huddled under railroad bridges on guard duty, the mail bombs began, just before Christmas. The first batch, hidden in hollowed-out books mailed to prominent people, cost the Prime Minister's secretary her left hand, blinded the Premier of Saskatchewan, and killed a Halifax postie who hand-cancelled the package too

hard on the wrong spot. The Post Office Department shut down its parcel system as they searched for all possible package bombs.

Anyone mailing a parcel had to bring it unopened to a post office for inspection prior to wrapping. It would then be sealed on the spot, and the mailer's name and address recorded. The lineups in urban post offices were immense, as Canadians tried to get their presents mailed out. People sending care packages to sons and husbands serving overseas were frustrated by the trouble in mailing them. Small but vital shipments of war supplies were delayed or stopped.

All this created more aggravation to the average person, and damaged morale with all its follow-on effects. Things couldn't get much worse. Then the anthrax letters started coming.

Things Get Much Worse.

Anthrax is found in soils throughout North America but very rarely infects livestock and almost never humans. The only human cases ever recorded in Canada have been the cutaneous form. No inhalation anthrax has ever been reported in Canada.

Thus it was that the first deaths from respiratory problems in 1916 were thought to be pneumonia. Medical diagnostic technology was quite primitive, and vital statistics reporting uncoordinated in those days. It wasn't until the death toll reached several hundred people that someone figured out that anthrax was spreading. But how? Almost immediately it was noticed that most of the deaths were of postal workers, and most of the cutaneous cases were of people who had recently gotten mail from Trenton, Ontario. It took weeks to examine letters suspected to be contaminated by anthrax, and by the time the problem was noticed, the trail was cold.

The frightening thing was that almost all of the victims were in rural areas. Veterinarians made the obvious connection and began testing livestock owned or living near anthrax victims. The disease was there, a plague in every part of rural Canada. The meat-packing industry tried to keep the events quiet, but when some packing-plant workers came down with cutaneous anthrax, the sales of beef and pork fell through the floor. The disruption was made worse when other nations banned the import of Canadian meat. The federal government was forced to divert budget monies to subsidizing lost farm income and to cleaning up contaminated farms. Taxes had to be raised, and layoffs instituted to pay the

cost, which further dragged down the economy. The Post Office delivery times dragged out by another week for even cross-town letters. Rural areas were particularly panicky about incoming letters spreading anthrax, and everywhere the Post Office incurred additional expense to cover the cost of inspecting mail for anthrax. Entire sorting plants and post office buildings had to be closed for decontamination.



The Follow-On Effects.

Canada was a major supplier to Britain, but with the sabotage at home, the convoys overseas were not carrying as much materiel and troops as they should have been. Food supplies were not as abundant as they might otherwise have been, since Canada could not export meat due to the anthrax scare. Britain felt the effects a bit later, as that small margin of supplies and troops dwindled down. There was more talk of a negotiated settlement and definitely the trench warfare bogged down even slower than it was in our timeline. The Germans proposed a truce, and while not immediately accepted by the Allies, this led to

a later denouement. Germany settled for the status quo ante, and the war trickled to an end in January 1917. Millions of lives were wasted for nothing; every country went back to their old borders, save for a few minor adjustments here and there. The influenza epidemic began a year early, as troops returned home sooner.

No reparations crippled Germany. The Kaiser was nonetheless forced to abdicate, but was allowed to stay in Germany. The new German republic was soon taken over by military men angry at how they were betrayed, and determined to get even. With no reparations or treaty limitations to hold them back, a re-arming gets underway. The military regime was not stupid; they kept very quiet about it so as not to panic the Allies. Increased expenditure on military preparedness meant increased taxes to pay for it, which dragged down the German economy, although not as much as our timeline's reparations did. The military regime also realize the advantages of saboteurs in North America, and resolve to re-build their spy network for that purpose, not just as a sideline.

Would there be another war? Perhaps, perhaps not. Germany was weakened by the loss of so many young men and was unable to hold its colonies. It probably would have blustered but over time would have come to accept that it would never have unlimited lebensraum. And Hitler was just a failed artist.

References.

1] Kitchen, M. (1985) The German invasion of Canada in the First World War. *INTERNATIONAL HISTORY REVIEW* 7:175-260

2] The King of Canada held that title in his own right separate from his other titles, as Queen Elizabeth still does today. If Britain were to become a republic again, whether by revolution, referendum, or legislation, Elizabeth would still be a Queen, the Queen of Canada, and the Queen of whatever other Dominions still accepted her, such as New Zealand and Australia.

3] Horne, C. (1920) The secret attack upon America. in *THE GREAT EVENTS OF THE GREAT WAR* 3:288-293

4] Child, C.J. (1938) German-American attempts to prevent the exportation of munitions of war, 1914-1925. *MISSISSIPPI VALLEY HISTORICAL REVIEW* 25:351-368

5] Smith, G.G. (1963) The clandestine submarines of 1914-15: An essay in the history of the North Atlantic triangle. *HISTORICAL PAPERS COMMUNICATIONS HISTORIQUES*, pages 194-203

6] Bartholomew, R.E. (1998) Phantom German air raids on Canada. *CANADIAN MILITARY HISTORY* 7(4):29-36

7] Anonymous (1915-02-15) Ottawa in darkness awaits aeroplane raid. *THE GLOBE*, page 1

HISTORY IS NOT WHAT IT SEEMS AT FIRST SIGHT

by Dale Speirs

I read H. Allen Smith’s book LOW MAN ON A TOTEM POLE (1941, hardcover) and came across an interesting biography he wrote of the publicist Jim Moran (pages 94 and 95). In 1939, Moran decided to test the truth of Colonel Prescott’s famous command “Don’t fire until you see the whites of their eyes.”, given at the Battle of Bunker Hill.

Moran hired a group of men as follows:

- a) Two near-sighted, two far-sighted, two normal vision. All six were dressed as American Revolutionary soldiers and given guns loaded with blanks.
- b) Two bleary-eyed, two bright-eyed, one with pinkeye, and one cross-eyed. These men were dressed as British soldiers.

Moran then took his motley dozen out to the battle site and re-enacted the battle on the hill. He gave strict instructions to the Americans absolutely not to fire until they actually did see the whites of the British eyes. What happened next was that: *“The two farsighted men opened fire when the enemy was 75 feet away. The redcoats advanced another 25 feet before the men with normal vision pulled the triggers. The nearsighted Americans never did shoot but were theoretically skewered on the British bayonets. And when the cross-eyed man pulled the trigger, his musket was aimed in the general direction of the Boston custom house tower.”*

I decided to test this myself. Rather than hire people to re-enact the event, I decided to see how close passersby had to walk by me before I could see the whites of their eyes. My testing ground was the Food Court at the University of Calgary Student Hall where I sat at a table adjacent to a walkway. This does require caution. If you simply stare at people, they will notice you, and if you stare at enough people long enough, one of them will call Campus Security. My method was to quickly glance at a pedestrian for a second, then glance away as if uninterested. I think this would actually be more realistic than Moran’s scenario, since soldiers in a battle are not going to be fixated on one particular enemy soldier but will be nervously scanning the entire battlefield.

I have normal vision with glasses, but without them I am quite nearsighted. With glasses, I could see the whites of people’s eyes at about 10 metres. Without glasses, I could not see their whites until about 2 metres. This does indeed match up reasonably close with Moran’s results.

It also demonstrates what Moran set out to prove, that faithfully obeying the instruction given by Prescott would have resulted in a ragged fire by the Americans, and a very uneven line of defence.

ZINE LISTINGS

by Dale Speirs

[I only list zines from the Papernet. If the zine is posted on www.efanzines.com or www.fanac.org, then I don’t mention it since you can read them directly.]

[The Usual means \$5 cash (\$6 overseas) or trade for your zine. Americans: please don’t send cheques for small amounts to Canada or overseas (the bank fee to cash them is usually more than the amount) or mint USA stamps (which are not valid for postage outside USA). US\$ banknotes are still acceptable around the world.]

[SF means science fiction. An apazine is a zine for an amateur press association distro, a perzine is a personal zine, sercon is serious-constructive, and a genzine is a general zine.]

CHORRADA #4 (The Usual from Kris Mininger, Calvo Sotelo 13B, 4B, Plasencia 10600, Caceres, Spain) Perzine about book hunting in Portugal, and the Armenian billionaire Calouste Gulbenkian, who made his fortune in the early 1900s when a billion was real money, not a rounding error in government accounts as it is today.

HOW TO SLEEP (The Usual from Sinoun Chea, Box 1602, Decatur, Georgia 30031) One-shot mini-zine on the subject of the title. We spend a third of our lives in bed but seldom give it much practical thought.

BANANA WINGS #56 (The Usual from Claire Brialey and Mark Plummer, 59 Shirley Road, Croydon, Surrey CR0 7ES, England) SF genzine with talk of conventions, the failure of Left wing politics, dealing with an intestate friend (everyone please make sure you have a will), and miscellaneous topics. Lots of letter of comments.

FOR THE CLERISY #80 (The Usual from Brad Kresovich, Box 404, Getzville, New York 14068-0404) Reviews of older books and movies, a look at Jughead, and letters of comment.

THE MIRACLE OF GOOGLE
by Dale Speirs

Someone told me about Google’s ngram search engine, which counts how many times a particular word or phrase has been used in books since 1800.

I tried it for Calgary. The city was founded in 1875, so the graph starts to rise from 1880 as the settlement became prominent, with a peak plateau since 1980 as the era of Peak Oil began to make itself felt. What surprised me was the little spike at year 1800. Calgary, Alberta, is named after the hamlet of Calgary, Isle of Mull, Scotland, so something must have been happening there back when.

