

OPUNTIA 470



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

THE VIRUS (CONTINUED)

by Dale Speirs

We live in exciting times, thanks to the COVID-19 coronavirus. The day after I sent off the previous issue of OPUNTIA, the Alberta Minister of Health shut down all schools and churches, in addition to the previous ban on meetings of 250 people or more. The clubs I belong to shut down all meetings and shows for April. International travel has been severely restricted. Any Canadian who admits to having been outside the country is shunned like a leper.

The food courts were still open, but only as takeout or delivery. The shopping malls closed the seating areas. Cashiers wore disposable gloves in all businesses. I bought ordinary items which the clerk handled as if they were a typhoid culture in a thin-walled glass bottle.

Although the measures will do some good, I think it was too late. Schools and libraries were closed far too late for any good that can be done. Supermarkets, pharmacies, and restaurants still operated under restrictions. Shopping malls remained open for limited hours but have lost 75% of their business.

The photos here and on the cover were taken on March 16 at the Garrison Woods Safeway where I regularly shop. Even during the Great Flood of 2013, I never saw panic buying like this.



What I found interesting was seeing what the panic buyers didn't want at any price.

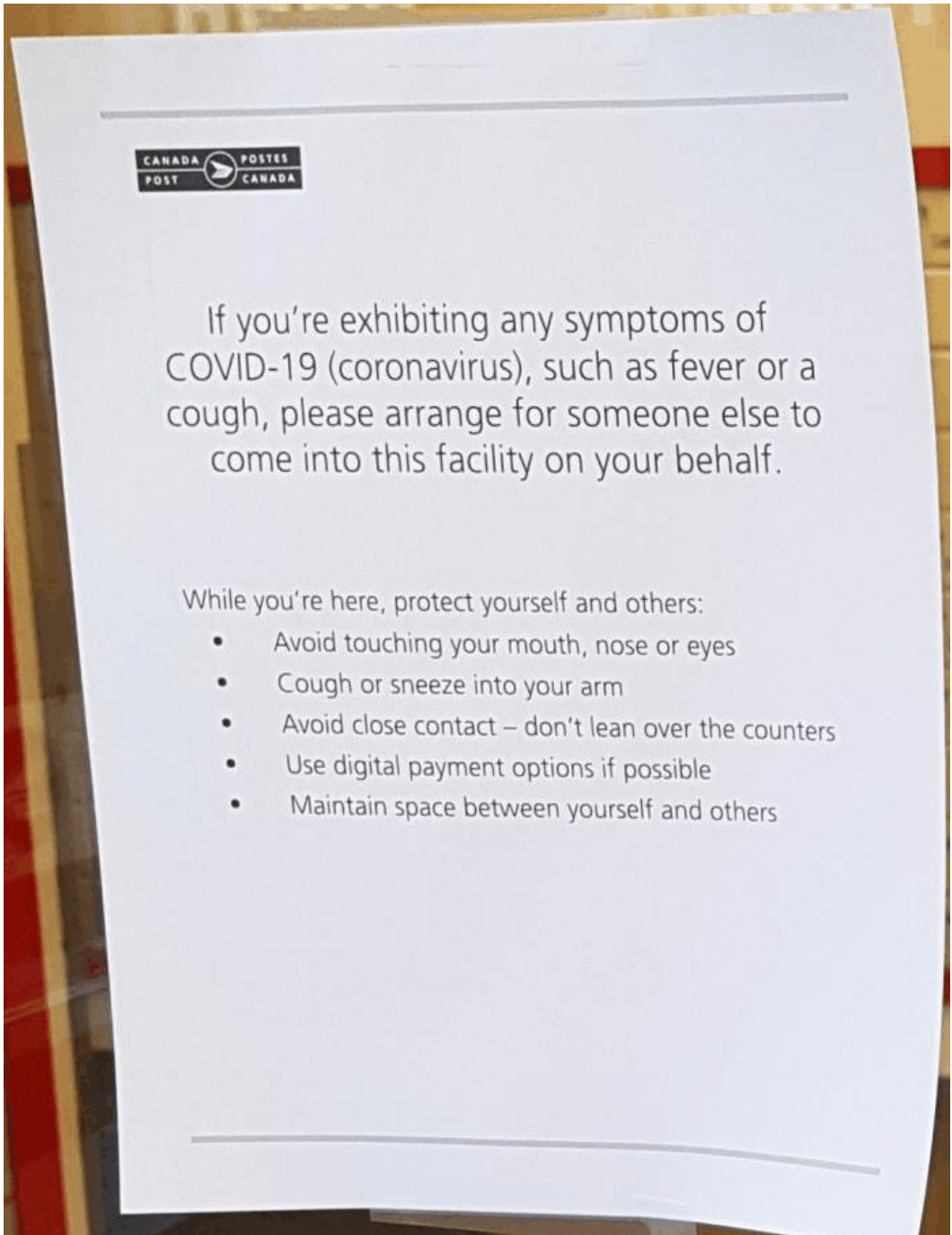
At right: The bulk rice and beans shelves were empty. On the righthand side of the photo are canned beans with the Disney logo, unsold. On the lefthand shelves are specialty Southeast Asian rice bowls.

Below: All canned soups sold out except Cream of Celery. I wasn't surprised. Why anyone would voluntarily eat celery is beyond me.

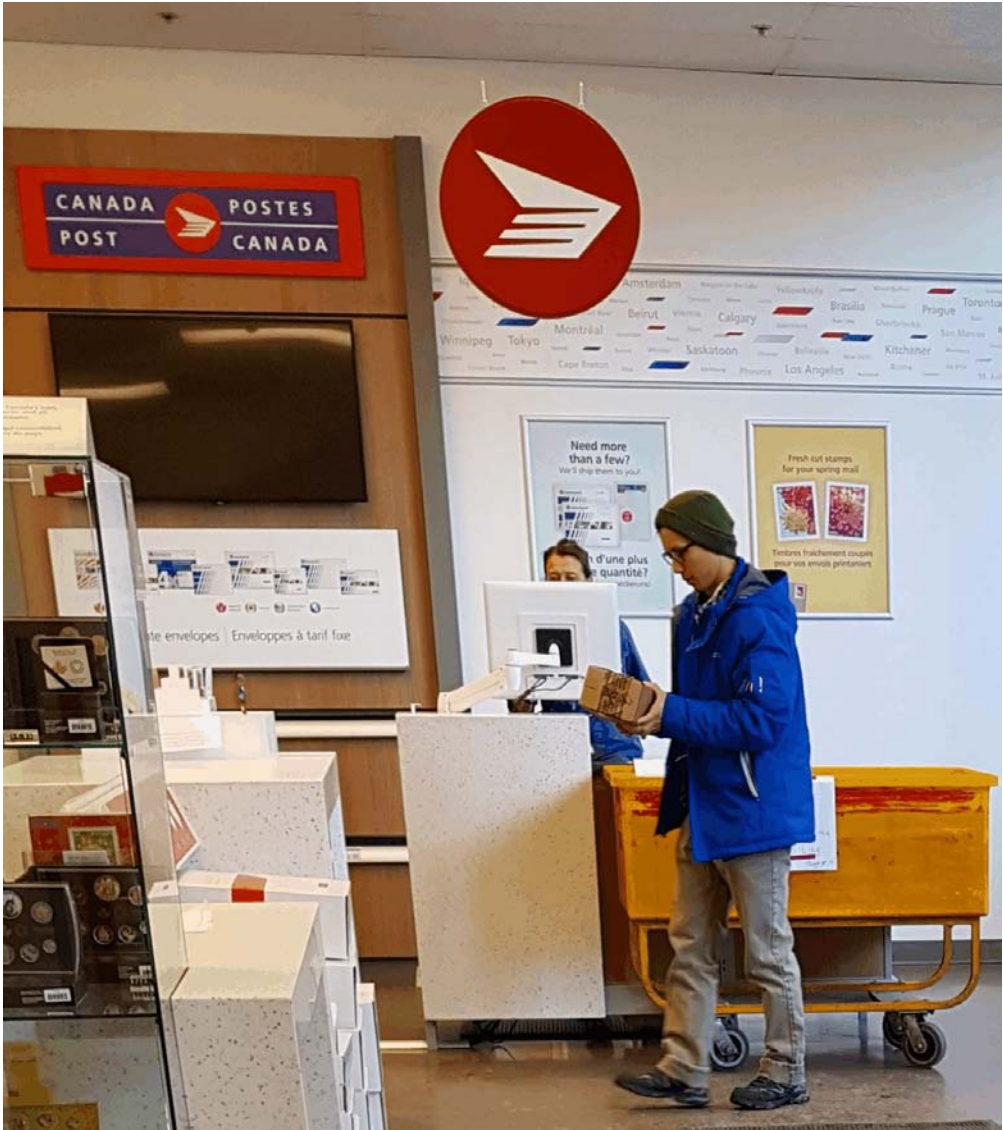


There wasn't an actual shortage of goods and produce from suppliers. It was created by panicky customers. All stores these days use "just in time" stock handling to minimize inventory and ensure fresher perishable goods such as produce. The sudden demand caught the whole supply chain off guard. They will race to catch up. The pandemic won't last forever, then they'll have to throttle back.

I get my mail at the Central Post Office in downtown Calgary. I saw this on March 17.



Seen at the Central Post Office on March 25. An ingenious method of making counter customers keep their distance was to put bins against the front of the counter.



Restaurants were shut down everywhere. St Patrick’s Day is traditionally a big night for drinking establishments, so they took a tremendous hit.

Some supermarkets tried to pep up customers’ morale. These doughnuts were on sale March 17 in Safeway. They were the only celebration I saw in Calgary.



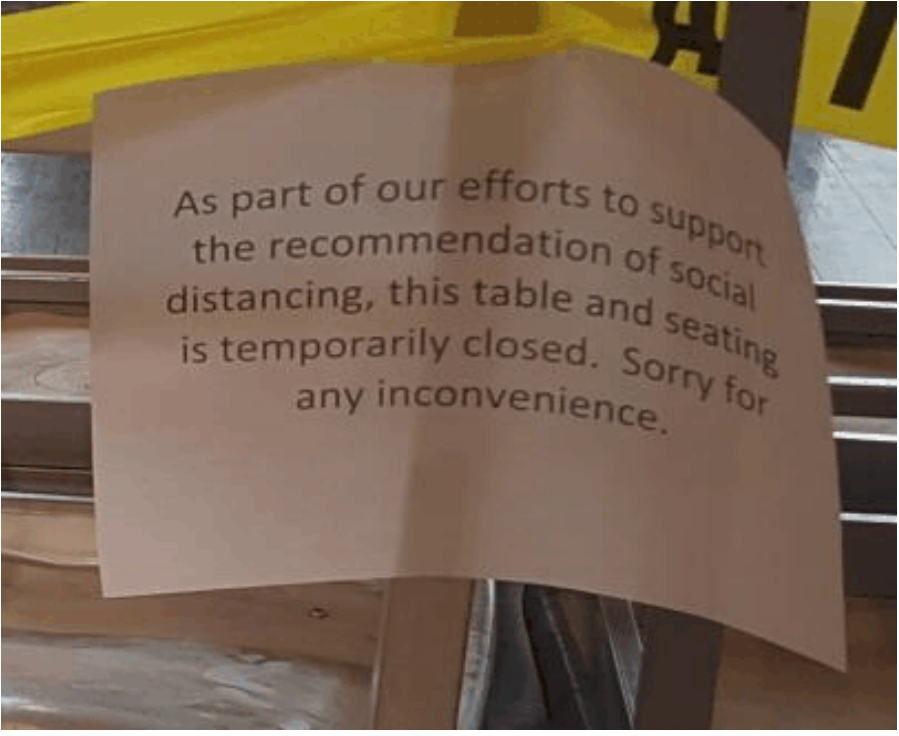
I needed to book a prescription renewal but had trouble getting through to the clinic. I later learned that cellphone networks were overloaded because most of the population was working from home. After finally getting through, I left a voicemail message. It was returned two days later and I got my renewal appointment.

Normally I get 100 days of pills at a time, but this time the doctor wrote me a prescription for 300 days supply. I am in relatively good health and he didn’t want me sitting in a waiting room during a pandemic.

My doctor’s office is in a part of the city I don’t normally drive to. After getting the refill, I stopped at a nearby Co-op store on Macleod Trail SE to buy a few groceries. Their shelves weren’t as bare, and it appeared that the supply chain was finally catching up. They have traditionally offered a self-serve salad bar but it was no surprise to see it closed and replaced by pre-packaged salads.



Likewise the bun bins. Co-op stores also have cafeterias, which they have reduced the seating. I doubt that would reduce any virus spread but it would make customers feel that something was being done.



While some Internet services are booming, others are crashing. AirBnB has collapsed due to travel restrictions and lack of trust in amateur landlords. Prime Minister Justin Trudeau issued an order on March 19 closing the Canadian borders to all passenger traffic, although freight will still be allowed.

Seen at a bus stop on March 21.



Calgary Transit initiated a policy of passengers boarding buses through the back door, ostensibly to protect the drivers. Since they are breathing the same air inside the bus as the passengers, this didn't make much sense.

Cash fares are no longer allowed. We wave our monthly pass at the driver as the bus approaches the stop. Tickets must be held up in the air after boarding and torn apart so the driver can see.

Small shuttle buses on low-use routes only have one door, so there are signs not to lean over into the driver's space. The double-length articulated buses only open their middle door.





ALTERNATIVE HISTORY REVIEWS: PART 10

by Dale Speirs

[Parts 1 to 9 appeared in OPUNTIA #67.1E, 68.1B, 291, 303, 304, 312, 336, 370, and 453. See also the cumulative subject index of OPUNTIA for others.]

Anthologies.

ALCHEMY AND ARTIFACTS (2019) is an anthology of 23 stories edited by Lorina Stephens and Susan MacGregor. It is Volume 22 in the annual Tesseracts series published in Canada. The original volumes were general collections but in recent years each volume has had a theme.

This volume was historical fiction in the modes of alternative history, secret history, or fantasy. Each story was based on a kernel of true historical fact but then took a side step through the dual-wave equations into other universes. The stories are in rough chronological order according to their historical basis.

“By A Thread” by Geoff Gander and Fiona Plunkett considered the colonization of Vineland by Vikings through the eyes of a Norse woman and an Inuit woman. Both resorted to supernatural means, one to help plant the colony and the other to repel the invaders. The story also neatly resolves the contradictions between the Viking reports of a lush fertile land and the reality of barren wastes.

“Things Better Left Buried” by Chris Patrick Carolan was set in Halifax, Nova Scotia, in 1880. Some blithering idiot was using a time machine run by technomancy to bring living dinosaurs into the city. The authorities had no end of trouble, animal control at its worst. Even a herbivorous dinosaur was vexatious when it went munching through gardens and parks like a bulldozer.

“The Darkness Peering” by Kurt Kirchmeier used as its basis the Battle of Ypres, where German soldiers first used poison gas. The other Allies on the front broke and ran but the Canadians held their line. This story offers one reason why, that one of the Canucks was a wendigo, unstoppable by the Germans.

The stories were of generally high quality. I find that in most anthologies there are a high proportion of duds, but beyond one or two that drifted over the line into wish fulfillment (a golem against the Nazis), these stories did well.

Novels.

THE GREAT GAME (2012) by Lavie Tidhar was an alternative history that began with the murder of Mycroft Holmes. The background was filled in, with alien lizards on the thrones of Europe. Humans were just making their first steps into space. And, of course, airships, for it isn’t an AH unless a Zeppelin sails by in the background.

The protagonist was only known as Smith, serving in H.M. Secret Service. His main enemy was The Bookman, probably an alien. Just about everybody who was anybody in gothic and Victorian literature passed through these pages. Van Helsing and Irene Adler intermixed with real people such as Harry Houdini and Bram Stoker.

The MacGuffins included the Ark of the Covenant and automatons. The author had his work cut out to blend all of these and more into a single coherent narrative, but managed successfully. Well recommended.

Old-Time Radio.

NAZI EYES ON CANADA was a five-part 1942 propaganda series about what would happen if the Germans won the war and occupied Canada. It is available from www.otrrlibrary.org as free mp3s. It aired on the Canadian Broadcasting Corporation radio network, sponsored by the National War Finance Committee, which sold war bonds and savings stamps.

The premiere episode, aired September 20, opened with a five-minute speech by Prime Minister Mackenzie King. He stressed the road ahead was long and Canadians needed to work hard to stop the Nazis. In 1942, it was not certain that the Axis would be defeated. Canada was in the war from its beginning in 1939 but by this time the Americans, late to the field as always, had joined the Allies.

In the first episode, set in Toronto, a tired mother had to tell her children that all the bread she could find was on the table and there was no more. The Germans took the majority of Canada’s grain crops and shipped them to the homeland. Actress Helen Hayes played the part of the mother.

Then a segue to a prison camp on Toronto Island where the daughter’s boyfriend was held pending reassignment to a slave labour camp in Germany. He knew he would not survive. Canadians had to leave their house doors

unlocked for surprise inspections by the Gestapo. The melodrama was poured on thick like maple syrup. A woman refused shelter to a resistance fighter for fear of her own safety. She went into a long monologue about how Canada lost the war because its citizens didn't sacrifice enough.

"Maritimes Under The Nazis" aired on October 11. This episode used war correspondent Quentin Reynolds as himself. The setting was Fredricton, New Brunswick, in the heart of the Maritime provinces.

In the opening, Sandy Smith and his family were celebrating receiving two letters. They had two sons serving overseas. The family business was strained financially but they were scraping by. At that point, the divergence kicked in and the Nazis arrived in Canada. Jump cut to the future.

The Nazis confiscated the Smith business and told Sandy to report to a lumber camp. Bread lines became normal. Later the Smiths were told to leave their house by noon tomorrow.

Sandy escaped but his family suffered for that. They were rounded up and sent to concentration camps. It was never explicitly stated, but the implication was clear that the teenaged Smith daughters were sent to bordellos.

The gauleiter of the Maritimes was coming on an inspection tour. Sandy assassinated him, in retaliation for which all the males of Fredricton were executed and the women and children sent to labour camps. The city was razed and all traces of it physically erased.

The massacre at Lidice, Czechoslovakia, and its subsequent eradication had occurred a few months before. Reynolds reminded Canadians that such a thing would not be fantasy if the Nazis invaded Canada.

I was surprised to find at www.otrrlibrary.org an old-time radio series STROKE OF FATE devoted to alternative history. It only aired for three months in late 1953. I downloaded a couple of episodes to be going on with.

In the first fifteen minutes of each episode, the plot followed true history in our timeline. The point of divergence was not highlighted but a listener who knew the real history could spot it. The final ten minutes were the divergence, followed by a brief talk by an historian about the changes.

"The Battle Of Québec Won By Canada", written by Sol Carson (spelling?, the audio was blurred), was a misnomer since the 1759 battle was in New France. Canada didn't exist until much later. In our timeline the British forces led by Wolfe found a path up the cliffs to the Plains of Abraham and from there eastward to the citadel of Québec City. By the time the French forces commanded by Montcalm rallied, it was too late.

The divergence occurred when Montcalm unexpectedly reinforced the Plains with a company of soldiers, instead of relying on the local militia, of which there were a dozen in our timeline and who were sound asleep at their posts. The professional soldiers were able to hold off the British until reinforcements arrived.

As in our timeline, both Wolfe and Montcalm were killed in action. Montcalm died in this divergence knowing that France continued to control the northern half of the continent. The American Revolution was postponed a generation as they needed the British as a bulwark against the French.

"Benedict Arnold's Plot To Betray America Had Succeeded", written by George Faulkner, began in 1780, narrated by a British spy sent to meet with General Arnold. The two men argued over the price of betrayal. Having settled terms, Arnold offered not only the capture of the fort at West Point but the possibility of snatching George Washington.

The middle part of the episode was Arnold ranting and raving, to give the listener an idea of his state of mind and why he would betray the American forces. The second act was about the British taking West Point and capturing Washington and his staff. The subsequent meeting between General Clinton (the British commander), Arnold, and Washington was a shouting match.

In the divergence, the British had won the war but lost the peace. They controlled the seaboard but the rebels withdrew into the Appalachian hills and conducted raids into British territory. After a few years the British were unable to retain their holdings. They then fought another war but lost. America got its independence decades later than in our timeline.

THE DAWN OF TELEVISION: PART 4
by Dale Speirs

[Parts 1 to 3 appeared in OPUNTIA's #309, 367, and 446.]

Television is an example of a technology that had a rough start not so much because of technical problems but because of events in the outside world. It almost got going in the early 1930s when the Great Depression capped investment. A world war then put it on the back burner for the duration.

Extrapolation.

“A Message From Space” by J. Schlossel (1926 March, WEIRD TALES, available as a free pdf from www.archive.org) was about an inventor who had built a radio-television set. Back then, the word ‘television’ was not always used by itself, and the concept had to be explained to the readers in a classical infodump: *A radio television set, as you probably well know, transmits pictures instead of sounds.*

The inventor received a video message from an alien living in a binary star system. It was complete with photographs and diagrams explaining the history of the alien world. It wasn’t just humans who used infodumps. The alien’s planet was in trouble from a dying sun, assorted politics, and a struggle for the throne. The television broadcast was interminable. Once it concluded, so did the story.

Television had many false starts, and science fiction stories and movies about it prior to World War Two also had many false predictions. Sometimes they got a few right. “Prima Donna 1980” by Bernard Brown (1931 October, AMAZING STORIES, available as a free pdf from www.archive.org) missed the mark by two decades as to when public broadcasts would begin, saying that it wasn’t until the 1960s.

On the other hand, it did correctly identify the corporate concentration of production of shows and performers, although not quite like Disney buying everything. The story was about a popular television singer Dorna Guiselle whose voice was starting to crack. With the help of assorted mad technicians, they found a way to fake the perfect voice and reproduce it for a new singer.

Display ad from 1928 Winter issue of AMAZING STORIES QUARTERLY

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Excerpt from Science & Invention:
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broadcast from observatories and
flashed in screen at distant points."
—Donald H. Menzel, Ph.D.
Lick Observatory

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The solution worked too well. Since the voice of anyone could be faked to perfection, it meant the monopoly of the big-name singers was over. Anyone could sing in a perfect voice, so why pay a singer millions? Any broadcast network could have perfect singers, so why watch them instead of some other channel?

In the 1930s, television was still cutting-edge science fiction. “Trial By Television” by Fred Kennedy (1931 December, AMAZING STORIES) began with trouble aboard a giant airship. The chief engineer McCurdie was nae liked by his crew. His ambitious underling Grant set up a murder that would be blamed on co-worker Lopez.

The airship was on a round-the-world flight and would not stop for anything. Thousands of passengers and tonnes of freight ensured that. Therefore the police detective on the ground conducted the investigation by television, with what today would be described as a large-screen LED set.

The legalities were that the captain could insist on this method, and since there was no

place for the murderer to flee, the police reluctantly went along with the idea. Grant was exposed as the murderer and came to a bad end. There was a final twist. Since television was a superscience machine in 1931, the emphasis of this story lay there.

Adoption.

The general public didn't begin buying and watching television in a big way until 1948. Initially only taverns had television sets, but by 1948 the screens were big enough that people could watch them from across the living room.

There was no taboo about mentioning television in old-time radio shows since the radio networks were busy setting up their own television networks and moving OTR shows over to that medium. Old-time radio shows are available as free mp3s from www.archive.org or www.otrrlibrary.org.

Today Lucille Ball is remembered for her television shows but before then she was in old-time radio. Her series MY FAVORITE HUSBAND, which aired from 1948 to 1951, was a half-hour domestic comedy that was essentially a rehearsal for I LOVE LUCY. The radio series was based on the novel MR AND MRS CUGAT by Isabel Scott Rorick.

In the radio series, George and Elizabeth 'Liz' Cooper (the name was changed to be less ethnic) were a 30ish couple. Liz was what show business referred to as a Dumb Dora act, a woman whose stupidity moved the plots.

George worked at a bank whose president was Rudolph Atterbury, a pompous blowhard (played by Gale Gordon, who later appeared on Ball's television series) whose wife Iris was an older version of Liz. Both were scatterbrained women getting in and out of trouble. The two couples were good friends, and Iris was a second mother to Liz.

In 1949, the series began using television as a plot. "George Ruins A Neighbor's Television Set", no writers credited, aired on June 19. It began with Liz and George discussing their upcoming vacation. They needed someone to water the lawn while they were away, which seemed strange because they had a live-in maid.

Nonetheless it motivated the plot. They went next door to the residence of Frank and Mary Stone. Frank mentioned he and Mary had a television set and

asked George what brand his was. George was ashamed to admit the Coopers did not have a set. To save face, he said they were thinking of buying a set.

Frank insisted the Coopers step into the living room and have a look at the Stone's set. Liz said it was impressive how big the screen was, at which point Frank informed her the set wasn't turned on yet and she was looking out the window. The set was turned on but every channel had nothing but wrestling, which disgusted both Liz and Mary.

At that point, the picture went fuzzy. Despite knowing nothing about television repairs, Frank and George decided they could fix the problem. Frank managed to get an electrical shock from touching two live wires at once, ruining the set in the process. Frank and Mary blamed George and said they would sue.

They did indeed, claiming \$300 for a new set and \$200 for Frank's singed eyebrows. George and Liz tried to evade a process server but he caught them sneaking out the back door of their house. George was too cheap to hire a lawyer but neither did Frank, so that didn't matter.

Liz testified, which supplied numerous laughs in her Dumb Dora routine. Her testimony confused the judge. He decided to have everyone step into his chambers to recreate what happened, using his television set. The studio audience fell into the aisles because it was obvious what would happen next. And did. With the judge holding the wires.

This episode was typical of such shows in the early days of television. Sets were unreliable and repairmen made a good living. Script writers could easily churn out an episode about the problems of maintaining what was an expensive prestige item.

The 1949-10-10 episode "Ordering A Television Set", no writers credited, was about Liz's attempts to get a television set. George was a reactionary who wouldn't consider the matter. Liz tried to force the point by talking to him through a pane of glass she held up in front of her face, but he only asked her why she was pretending to be a washing machine.

The Atterburys already had a television set, which was specifically mentioned as having a 10-inch screen. It did indicate that Rudolph, despite being a couple of decades older than George, was not as hidebound as his young protégé.

Liz and Iris tricked George into coming over to the Atterbury residence, thinking that watching a football game would convince him. It didn't go well, mainly because Liz annoyed Rudolph by her constant chattering and blocking the screen view just at the most exciting moments in the game.

The next day Liz walked past a store selling television sets. A shill out on the sidewalk convinced her to try a week's free trial of a set. George later walked by the same store, and the shill made the same offer, which he accepted. Still later, the Atterburys happened by and decided to send a set to the Coopers.

The shill realized what was going on, so he only delivered one set to the Coopers that night. The Atterburys came by that evening. Everyone took credit for the set, not realizing the others had also ordered it. The evening ended in a huff and a broken set.

The episode was an example of the peer pressures that sped up the adoption of televisions. Once the first adopters had them, others felt they must have one. Some resisted but eventually had to give in if they hoped to function in polite society. Much like the telephone before, and Facebook after.

OUR MISS BROOKS was a mild sitcom which aired on radio from 1948 to 1954 and made a successful transition to television. Constance Brooks was a high school teacher who roomed with the widow Margaret Davis. Every episode opened at their breakfast table where their discussion would set up the plot. Osgood Conklin was the school principal, a pompous blowhard (again played by Gale Gordon).

"New School Television Set" was a 1951 episode, written by Al Lewis and Art Alsberg. The Board of Education had purchased a television set to be used by the high school to show educational programmes for the students. Since television was a cultural wasteland from its very beginning, the students instead watched a lot of westerns.

Brooks and Conklin were both being dunned by a collection agency for unpaid debts at a department store, and threatened with having their wages garnisheed. They colluded to have the collection agency take the television set as collateral against payment at a later date.

The difficulty was that Mr Stone, the chairman of the Board of Education, decided to visit and see how the television experiment was going. Brooks and

Conklin therefore hatched a plan whereby they and everyone else spoke to Stone in ersatz western drawls. It was the bad influence of television that done it, pardner, so Stone cancelled the television experiment lest an entire generation of students graduate from school talking like Slim Pickens.

Do It Yourself Television.

THE PHIL HARRIS / ALICE FAYE SHOW aired on radio from 1946 to 1954. Phil Harris was a prominent band leader in the 1930s before joining Jack Benny's show, playing himself as a womanizing band leader. He was funny enough that a show was spun off for him and his wife, singer Alice Faye. This was a domestic sitcom and followed immediately after Benny's show. Harris was thus the same character on two shows simultaneously.

Harris played a egotistical fool supremely overconfident that he could do anything, egged on by some of the players in his orchestra, such as Frank Remley and Elliott Lewis. He and Alice had two daughters Alice Jr and Phyllis (as they did in real life but played by child actors on the show).

The series was sponsored by Rexall Drugs until 1950, who were good natured enough to let Gale Gordon play Mr Scott, the pompous blowhard executive from the company who was always trying to fire Harris. During the final years of the series, the sponsor was RCA Victor, which plugged its television sets on the show. RCA was owned by the NBC network which aired the show, and there was no problem with mentioning the new medium. Mr Scott was worked back into the storyline by being fired from Rexall but then hired by RCA Victor.

"Build It Yourself Television Set" aired on 1954-02-05, written by Jack Douglas and Marvin Fisher. The episode opened with Harris and band player Lewis preparing to put up a television aerial, roping themselves together like mountain climbers. After some random gags, they commenced work and got it up, surprisingly without any trouble.

Harris was replacing an old (very!) television set that had a screen 3 inches wide by 24 inches tall. His new set came via the post office. Picking it up at the parcel post window, they first dealt with a sultry bombshell clerk. Unfortunately she transferred them to a grouchy old man who more accurately exemplified postal clerks, then and now.

After a few contretemps, they got the packages. Only then did Harris learn it was a do-it-yourself television kit he had to assemble himself. Undaunted, he and Lewis went to work. Alice complained about the mess but the job went on. She read out loud the instructions, which didn't make any more sense than they do today with any kit you might buy from a Chinese manufacturer.

There were some vacuum tubes left over but Harris said they could be used for salt shakers. Alice noticed the set was lopsided but what did that matter? Julius, a nosy and noisy teenager from next door, barged into the house. He aggravated Harris to no end, so that provided another round of gags.

Finally to the moment of truth, when the set was first turned on. Many adjustments were required, because the image first appeared upside down. Harris figured the wires needed to be grounded, and you can guess the rest. Bzzzzzt!

HEALTH CARE MISCELLANY
photo by Dale Speirs

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I've been accumulating a few items related to health care, so the coronavirus pandemic gave me an excuse to wedge two of them in here as fillers.

I didn't download this pdf but I thought my American readers might be interested in this book.

I saw this vehicle in 2019 April at the Southcentre Mall. I don't know how it turned out.





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BY
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[Part 31 appeared in OPUNTIA #457.]

The original Sherlock Holmes stories written by Sir Arthur Conan Doyle are referred to as the canon, while stories written by other authors are called pastiches. The ad at left appeared in the 1904 September issue of THE BLACK CAT (available as a free pdf from www.archive.org)

Pastiches.

Terence Faherty has been writing a humorous series purporting to present the first drafts of canon stories, with marginal notes by Dr Watson. The drafts are at variance with the published stories and were obviously revised for publication. As an example, Holmes played the banjo, but Watson thought it undignified and changed it to a violin for publication.

"The Yellow Face" (2020 Jan/Feb, ELLERY QUEEN) reversed the canon story. In the draft, it was the wife who was leading a secret life, and the husband trying to solve the mystery. Which solution was that she was visiting a spirit medium. Holmes was not very good at deducing, so Watson had to fix things up in the final revision.

Titan Books of London, England, publishes an anthology series of pastiche novels. They have a lengthy list in this series by now, well worth perusing if you like pastiches. I've reviewed a number of them in past issues. Here are a few more.

THE WHITE WORM (2016) by Sam Siciliano was a loose amalgam of pastiche Sherlockiana sans Dr Watson and one of Bram Stoker's poorest novels THE LAIR OF THE WHITE WORM. In both these novels, 'worm' is used in its original meaning of a legless serpent or dragon, often pretentiously spelled by modern writers as 'wyrms'.

In this novel, Dr Watson was not living at 221B, having married and set up an independent practice. Staying with Holmes was his French cousin Dr Henry Vernier, fulfilling the role of Watson. It was mentioned in the canon that Holmes' mother was a Vernier.

The client of this case was Adam Selton, of the Derbyshire Seltons. They were landed gentry who also had property in Yorkshire, where young Adam became affianced to Diana Marsh. He had received an anonymous letter warning him

that Marsh was a shapeshifter who could turn into a white serpent. Actually it was more than a letter, it was a short story used as a giant infodump. Didn't Lovecraft warn us to beware of seaside families named March?

Off to the wilds of Yorkshire went Holmes and Vernier. Many alarums and excursions beyond the ken of man, not to mention murder, a cult, and greed. The perpetrator was after an inheritance. She relied on Selton being a stupid git who was gullible about white worms and such.

The denouement had to be one of the most bizarre I have ever read in any kind of mystery. Vernier explained at great length the facts of life to Selton, who feared he had destroyed himself with onanism. The matter was discussed in more detail than readers would be comfortable with.

THE INSTRUMENT OF DEATH (2019) by David Stuart Davies was a novel that began with Holmes investigating the theft of a ruby from Lady Damury. The solution transpired that she staged the theft and tried to frame her husband for the crime. These things happen in the best of families.

The case made an abrupt right-angle turn when Lady Damury was murdered for no apparent reason connected to the frame-up. There was another player in the game who was using his own rules. Dr Gustav Caligari, of cabinet fame, was in London, using hypnotized subjects to kill young women for him.

Caligari was far beyond the bwah-ha!-ha! stage, and was in full madness. When Holmes prevented one killing, that only enraged Caligari to more labours. The police caught him but he escaped to Europe. Holmes remarked that Britain was well rid of him, and as for the Europeans, Caligari was their problem. The epilogue mentioned the madman was eventually caught and consigned into an insane asylum. The novel was a steady read.

Marginalia.

In the canon, Dr Watson often referred in passing to cases which were never written up. These offhand references were a little joke of Doyle, such as the case of Wilson, the notorious canary trainer. One such reference that became popular with pastiche writers was the case of Mr James Phillimore, who had been seen by passersby just stepping out of his house, then went back inside to fetch his umbrella, and was never seen again.

THE DISAPPEARANCE OF MR JAMES PHILLIMORE (2013) by Dan Andriacco was not a pastiche but a modern-day Sherlockian mystery. It was part of a series about mystery writer Sebastian McCabe, Jeff Cody, and Cody's wife Lynda Teal.

The trio were in London, England, where Arthur James Phillimore had disappeared. He had become a Sherlockian because of his name, and even wrote a pastiche about the namesake. In private life, he was a financier who became very public when it was discovered his investment company was a Ponzi scheme. His disappearance didn't last too long, for his body was found with a bullet in his head.

McCabe and Cody did some sleuthing, unknowingly helped along by the perpetrator, whose thought processes were elucidated in interpolations between the chapters. More murders followed, as the killer tried to cover his tracks and confuse the Sherlockians. The ending was the lead-in for some future novel, as the killer escaped under a new identity.

Old-Time Radio.

Sherlock Holmes was very successful on radio. He aired on several networks with several sets of actors from 1930 to 1956, basically encompassing the entire life span of old-time radio. Basil Rathbone and Nigel Bruce had a long run, but others played the parts before and after. (These and other old-time radio shows are available as free mp3s from www.archive.org or www.otrrlibrary.org.)

“The Devil's Foot” was a 1947 episode written by Max Ehrlich. Cornwall was the setting in 1897 where Holmes and Watson were vacationing. The Tregenis siblings were squabbling, while living off a legacy from their father's tin mine. Late one night the sister died under suspicious circumstances while her brother was found laughing insanely.

The housekeeper blamed Dr Standale, a distant relative, recently in Africa. Someone also mentioned a strange man lurking out on the moors. Another Tregenis brother, who lived nearby with the vicar, was later found laughing insanely then collapsed and died. A strange odour was found in the rooms at both places. Holmes found traces of poison powder in gas lamps and fireplaces.

Holmes and Watson tested the powder and verified it was the culprit, isolated from an African plant called devil's foot. Standale was the suspect but it was

one of the brothers who also murdered. Standale murdered the brother who killed his siblings. Standale was in love with the sister, while the killer brother wanted a bigger share of the Tregenis estate.

Holmes did not call in the police. As he pointed out, Standale had merely sped up the process of justice. It would have been difficult to prove a case against the murdering brother. Standale left for Africa, promising never to return. Justice was served.

This was something found in the canon stories as well, where Holmes did not always inform the police if he thought justice had been done by other means. He subscribed to the principle that justice and the court system are not synonymous.

“The Adventure Of The Bloomsbury Ballad” was a 1949 episode, written by Max Erlich. The episode was set in 1899 December. Sir Percy Whitford was a disgraced financier who died fleeing the country with his two daughters Elaine and Elizabeth when their ship sank.

Elizabeth had been married to Arthur Harvey, who had been in India at the time. The estate had since been administered by solicitor Reginald Dudley. Harvey suddenly reappeared and claimed the estate. He didn’t get far and was stabbed to death that night.

Holmes and Watson investigated the Whitford house in Bloomsbury, left empty since the Whitfords were wiped out. They heard harp music and investigated, finding a deranged woman who said she was Elizabeth. Her sister appeared. Elaine was more rational. She talked to the men separately and explained how the sisters survived the wreck and came to live in seclusion.

As Holmes quickly deduced, the sisters were imposters, schemers together with Dudley to fiddle the Whitford estate. What happened next was quickly papered over. The episode rushed to a finish with Holmes in Baker Street explaining away the loose threads to Watson. He concluded by saying that the violin was a superior instrument to the harp.

Collateral Fiction.

Michael Robertson has a series set in contemporary London. England, about a solicitor named Nigel Heath, who rented an office at 221B Baker Street. That

address never existed in Doyle’s time, which was why he used it, but there have been several buildings laying claim to the number since his era. They commonly accept mail sent to Holmes and respond to it.

THE BAKER STREET JURORS (2016) opened with jury selection for a sensational murder trial. Cricket superstar Liam McSweeney was accused of beating his wife to death with a cricket bat. The physical evidence was all against him, but a legion of fans wanted to believe he was innocent.

The Crown Court’s computer sent out a mass of jury summons to everyone on Baker Street, including Sherlock Holmes. The computer used occupant lists supplied by the post office. For more than a century, the posties have been delivering mail addressed to Holmes, in care of local businesses that agreed to handle the correspondence. The mistake was inevitable.

Heath wound up in the jury selection pool with a bunch of oddballs, including a Holmes impersonator. Despite being a solicitor, Heath was picked anyway. The trial was a comedy. The judge did his best to control the barristers and jurors but had little luck.

Two of the jurors were brought down by food poisoning from the courthouse cafeteria. The death toll rose among the jury amidst some extraordinary events too ridiculous to summarize. McSweeney got off on a mis-trial because of all the plot turns.

As frequently happened in the canon, justice was served not in the courts but by others. McSweeney had in fact been guilty of the murder. He received capital punishment in a twist ending when he met a man carrying a cricket bat.

A good read, with dry humour throughout and several twists in the plot. Recommended.

Movies.

Sherlock Holmes was popular in movies as soon as they came in. In the canon, Holmes and Watson were young men, but because most of the actors who played them were middle-aged or even elderly, that was the impression the public had of them for decades. Since the turn of the Millennium, a number of movies and television shows have depicted them at younger age.

Prof. Moriarty only appeared in a few canon stories but in movies he was regularly trotted out as the standard villain. The canon described him as sitting at the centre of a spider's web, issuing orders through intermediaries and raking in vast amounts of loot through an extended network of flunkies.

In the movies, he did the dirty work himself with the assistance of one or two assistants, a bit of a comedown. His crimes were not as gigantic as in the canon, and he usually dealt in frauds of £10,000. Granted that was more money back then, but even so, it seemed small potatoes.

MURDER AT THE BASKERVILLES (1937), screenplay by H. Fowler Mear, was, despite its name, an adaptation of the short story "Silver Blaze". Its British release was indeed under that name, but the title was changed for the American version, which is the one I have. My copy is in the boxed DVD set "50 Movies Mystery Classics" from Mill Creek, which has several other Holmes films.

The movie is fairly faithful to the canon story but for the addition of the Baskerville family. Also cast in this version were Prof. Moriarty and Col. Sebastian Moran, two archvillains who were imported from other stories. The roles of Holmes and Watson were played by Arthur Wontner and Ian Fleming (not the author). They were barely adequate.

In the opening, Holmes read a letter from Sir Henry Baskerville asking for help out on the moors. Sir Henry mentioned in passing that it had been twenty years since the deplorable incident with the Hound, which did fit in with the current middle age of Holmes and Watson.

The story was reasonably close to the original but included a plot by Prof. Moriarty to make money on the betting, he having been hired by a bookie to throw the race. To guarantee that sum, Moriarty set up an Art Deco lair from which to bwah-ha!-ha! and carry out his schemes. He charged the broker £10,000 for his services.

The horse Silver Blaze was stolen and the stable boy murdered. Inspector Lestrade was brought in from London but we know who would solve the case. Once more out onto the moors went Holmes and Watson, following the horse tracks. They found the horse but Holmes kept it under wraps while continuing to investigate.

The famous curious incident of the dog that did nothing in the night had its lines slightly muffed but was at least in the story. Race day was filled with alarums, some from the canon and others added. One of the latter was Col Moran using his trademark air gun disguised as a movie camera. He shot the jockey off Silver Blaze just before it would have won.

Back to Moriarty's lair, where he hardly had time to gloat over his money before the cuffs were slapped on him. "*There isn't a prison that can hold me*", he glowered. We believe him because there were several more sequels.

Compared to what Hollywood usually did to Holmes, this movie wasn't too bad. It kept the main elements, the Baskervilles were just supporting actors of no account, and if not Moriarty, then some other villain.

THE WOMAN IN GREEN (1945) had an original screenplay by Bertram Millhauser, excepting that he added in a sequence from the canon story "The Empty House". Basil Rathbone and Nigel Bruce were the leads this time, although Dr Watson was in a smaller part this time and even more buffoonish than usual.

It was set in 1945, with taxicabs instead of hansom cabs, and rich people living in Art Deco apartments. Some things didn't change though. In a scene at Baker Street where Holmes and Watson were explaining the plot to each other, Holmes took down a Persian slipper to get some pipe tobacco. It was done without comment as a throwaway, but the Sherlockian will appreciate the gesture.

Someone was murdering young women and then cutting off one of their fingers. Moriarty was at it again, this time using hypnosis at public lectures to put men into a state of mind and then later directing them to do his ugly work. The hypnotized men were blackmailed for their crimes at £10,000 a throw. The pace of the movie was slow, even for those times. Characters filled in the time with chitchat and padding. The pace didn't increase until the final third of the film.

Holmes and Inspector Gregson were on the case. Watson didn't really count, being the blithering old fool that he was. The woman in green was Moriarty's assistant Lydia, who vamped men into being hypnotized. Since this was a black-and-white movie, one wonders about the title, for we can only take the word of the characters that she really was dressed in green.

There were two main confrontations between Holmes and Moriarty. The first was a gentlemanly conversation in 221B where the two exchanged threats in ever so polite phrases. Moriarty left and shortly afterward the canon story was inserted, where one of his minions took a window seat across from 221B in an empty house and tried to shoot Holmes. It wasn't anymore successful than in the canon.

The other was the climax when Lydia thought she had hypnotized Holmes into jumping off a balcony. He was just stalling until the police arrived and took her and Moriarty into custody. The professor made a jump for it to a ledge on the other side of the street but fell to his death. As Maxwell Smart said more than once: *Missed it by that much.*

HOLMES & WATSON (2018), written and directed by Etan Cohen, was a comedy movie version of the duo that didn't work so well. It failed to earn back its production costs and was a critical failure. The problem was that the comedy would have been booed in the English music halls, much less by a modern audience. Scatological jokes are never funny. Many of the other scenes needed tighter editing as they went on too long and beat the joke to death.

The plot was the escape of Professor Moriarty to America and evading trial in England. Holmes chased after a Moriarty imposter who had threatened to kill Queen Victoria. Along the way, Holmes and Watson met up with a pair of medical American women, and assorted goons working for Moriarty's daughter.

Holmes deduced Watson had betrayed him and was responsible for the alarums around the Queen. This set up scenes of pathos which didn't work. The audience knew Watson wouldn't really be hanged, so there was no suspense there either. Basically a cheap play for emotions.

The grand finale was on board the Titanic, where a bomb had been placed to kill the Queen, who was attending the bon voyage party. Mrs Hudson was exposed as Moriarty's daughter, and the plot was foiled at the last second. The two American women boarded the ship, which was a novel way of getting rid of characters.

I had not read the reviews of this movie when I bought the DVD in the bargain bin. It wasn't as bad as many said, if the fast-forward button is used judiciously. Nonetheless, it was a movie that should not have been made.

Television.

In 1954 and 1955, a television series SHERLOCK HOLMES was aired on NBC. It was written and produced by Sheldon Reynolds in France, where production costs were much lower. Ronald Howard was Holmes and H. Marion Crawford played Watson. The episodes are in the public domain and therefore available in several different box sets. The collection I'll cite here is "Ultimate Sherlock Holmes TV" from St Clair Entertainment.

More of the episodes were pastiches but some were based on canon stories, however loosely. Interestingly there was some continuity between episodes when characters referred back to previous events. That was unusual for the times, as most television shows were zero-reset.

"The Case Of Lady Beryl" aired on 1954-10-25 and was based on the canon story "The Second Stain". The episode opened with the murder of Austrian spy Carl Oberstein in the chambers of Lord Beryl of the Foreign Office. Even more embarrassing, Lady Beryl was found standing over the body, gun in hand, and confessed to the murder.

Holmes concluded she was lying because she thought her husband did it and she wanted to protect him. How very noble. This allowed for a dramatic camera shot dollying in across the room into her face, as she ran the gamut of emotions from A to F.

Without seeing the scene of the crime, Holmes deduced she was lying. The back of Oberstein's head was a mess. She said she had shot him from behind. Holmes pointed out that a bullet makes a clean hole going in, fragments inside, and blows out a large and messy exit. Since there was no bullet hole in front, Oberstein was instead killed by a blunt instrument from behind, proven by the head wound being caved inward, not outward if it were done by an exiting bullet.

Inspector Lestrade and Dr Watson had attended the scene. They should have known this, Lestrade because he would have seen many bullet wounds during his career and Watson because he had been a military surgeon. Very sloppy.

Lady Beryl was released and Holmes began a proper investigation. Lord Beryl's private secretary, only referred to as Ross, was a sneaky looking git who looked guilty. He was the one who had received Oberstein, who offered money

for a look at Lord Beryl’s papers. Holmes tripped Ross with a trick question to which only the murderer would have known the answer. Lady Beryl then ran the gamut of emotions from G to M upon learning her husband was innocent.

The next episode in the series was “The Case Of The Pennsylvania Gun”, an adaptation of the first part of THE VALLEY OF FEAR. Another body in a different big house, this time Birlstone Manor, the stately pile of Squire John Douglas. The head had been blown off by a shotgun and was assumed to be the body of the squire.

A guest named Morelle was suspected as the killer. Both men had been gold prospectors 20 years previous in western USA. A disputed gold claim was thought to be the motive.

Holmes and Watson were summoned to the manor by Inspector Macleod. Smarter than Lestrade, he realized there was something phony about the setup. Morelle said there had been a third man at the gold diggings, who had arrived to seek revenge for being cheated on the claim.

After more snooping around, Holmes concluded the victim was the third man, killed by Douglas in a struggle. Thereafter Douglas was hiding in the manor in the secret passages. At that point, the episode cut off. There was no climactic scene chasing down the real Douglas. He never appeared at any time in the episode, presumably to save money on actors.

The second half of the episode was mostly night scenes, apparently filmed down a coal mine with all the actors in dark clothing and blackface, since little could be seen. Just shadows and darkness, with dialogue.

WORLD WIDE PARTY ON JUNE 21

Founded by Benoit Girard (Quebec) and Franz Miklis (Austria) in 1994, the World Wide Party is held on June 21st every year. 2020 will be the 27th year of the WWP. Mark your calendars now!

At 21h00 local time, everyone is invited to raise a glass and toast fellow members of zinedom around the world. It is important to have it exactly at 21h00 your time. The idea is to get a wave of fellowship circling the planet.

SEEN IN THE LITERATURE

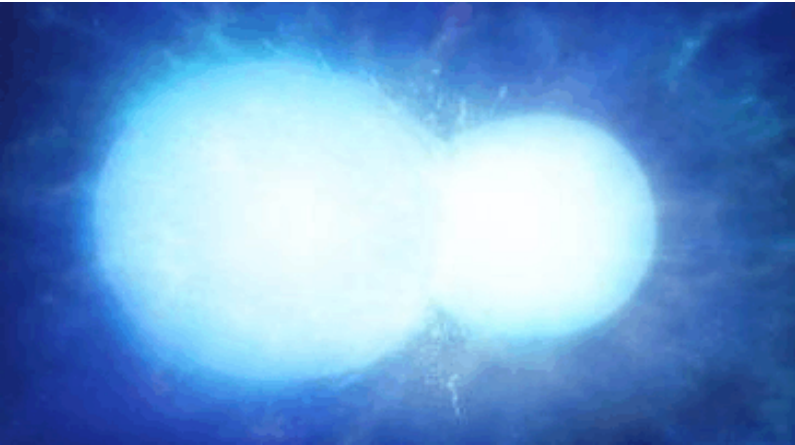
Hollands, M.A., et al (2020) **An ultra-massive white dwarf with a mixed hydrogen-carbon atmosphere as a likely merger remnant.** NATURE ASTRONOMY doi.org/10.1038/s41550-020-1028-0

Authors’ abstract: *White dwarfs are dense, cooling stellar embers consisting mostly of carbon and oxygen, or oxygen and neon (with a few per cent carbon) at higher initial stellar masses. These stellar cores are enveloped by a shell of helium, which in turn, is usually surrounded by a layer of hydrogen, generally prohibiting direct observation of the interior composition.*

However, carbon is observed at the surface of a sizeable fraction of white dwarfs, sometimes with traces of oxygen, and is thought to be dredged up from the core by a deep helium convection zone. In these objects, only traces of hydrogen are found, as large masses of hydrogen are predicted to inhibit hydrogen-helium convective mixing within the envelope.

We report the identification of WD J055134.612+413531.09, an ultra-massive (1.14 solar masses) white dwarf with a unique carbon-hydrogen mixed atmosphere (atomic ratio C/H = 0.15). Our analysis of the envelope and interior indicates that the total hydrogen and helium mass fractions must be several orders of magnitude lower than predictions of single star evolution: less than $10^{-9.5}$ and $10^{-7.0}$, respectively.

Due to the fast kinematics (129 ± 5 km s relative to the local standard of rest), large mass and peculiar envelope composition, we argue that WD J0551+4135 is consistent with formation from the merger of two white dwarfs in a tight binary system.



[Image of merging white dwarfs from this paper, credit to University of Warwick, Mark Garlick.]

Giacintucci, S., et al (2020) **Discovery of a giant radio fossil in the Ophiuchus Galaxy cluster.** ASTROPHYSICAL JOURNAL 891:doi.org/10.3847/1538-4357/ab6a9d

Authors’ abstract: *The Ophiuchus galaxy cluster exhibits a curious concave gas density discontinuity at the edge of its cool core. It was discovered in the Chandra X-ray image by Werner and collaborators, who considered the possibility of it being a boundary of an active galactic nucleus (AGN)-inflated bubble located outside the core, but discounted this possibility because it required much too powerful an AGN outburst.*

Using low-frequency (72 to 240 MHz) radio data from the Murchison Widefield Array/GLEAM and the Giant Metrewave Radio Telescope, we found that the X-ray structure is, in fact, a giant cavity in the X-ray gas filled with diffuse radio emission with an extraordinarily steep radio spectrum. It thus appears to be a very aged fossil of the most powerful AGN outburst seen in any galaxy cluster ($pV \sim 5 \times 10^{61}$ erg for this cavity).

There is no apparent diametrically opposite counterpart either in X-ray or in the radio. It may have aged out of the observable radio band because of the cluster asymmetry. At present, the central AGN exhibits only a weak radio source, so it should have been much more powerful in the past to have produced such a bubble.

The AGN is currently starved of accreting cool gas because the gas density peak is displaced by core sloshing. The sloshing itself could have been set off by this extraordinary explosion if it had occurred in an asymmetric gas core. This dinosaur may be an early example of a new class of sources to be uncovered by low-frequency surveys of galaxy clusters.

Wandel, A., and J. Gale (2020) **The bio-habitable zone and atmospheric properties for planets of red dwarfs.** INTERNATIONAL JOURNAL OF ASTROBIOLOGY 19:126-135

Authors’ abstract: *The Kepler data show that habitable small planets orbiting Red Dwarf stars (RDs) are abundant, and hence might be promising targets to look at for biomarkers and life. Planets orbiting within the habitable zone of RDs are close enough to be tidally locked.*

Some recent works have cast doubt on the ability of planets orbiting RDs to support life. In contrast, it is shown that temperatures suitable for liquid water and even for organic molecules may exist on tidally locked planets (TLPs) of RDs for a wide range of atmospheres.

We chart the surface temperature distribution as a function of the irradiation, greenhouse factor and heat circulation. The habitability boundaries and their dependence on the atmospheric properties are derived. By extending our previous analyses of TLPs, we find that tidally locked as well as synchronous (not completely locked) planets of RDs and K-type stars may support life, for a wider range of orbital distance and atmospheric conditions than previously thought.

In particular, it is argued that life clement environments may be possible on tidally locked and synchronously orbiting planets of RDs and K-type stars, with conditions supporting oxygenic photosynthesis, which on Earth was a key to complex life. Different climate projections and the biological significance of tidal locking on putative complex life are reviewed.

We show that when the effect of continuous radiation is taken into account, the photosynthetically active radiation available on TLPs, even of RDs, could produce a high-potential plant productivity, in analogy to mid-summer growth at high latitudes on Earth.

Johnson, B.W., and B.A. Wing (2020) **Limited Archaean continental emergence reflected in an early Archaean ¹⁸O-enriched ocean.** NATURE GEOSCIENCE 13:243-248

Authors’ abstract: *The origin and evolution of Earth’s biosphere were shaped by the physical and chemical histories of the oceans. Marine chemical sediments and altered oceanic crust preserve a geochemical record of these histories. Marine chemical sediments, for example, exhibit an increase in their ¹⁸O/¹⁶O ratio through time.*

The implications of this signal are ambiguous but are typically cast in terms of two end member (but not mutually exclusive) scenarios. The oceans may have been much warmer in the deep past if they had an oxygen isotope composition similar to that of today. Alternatively, the nature of fluid-rock interactions (including the weathering processes associated with continental emergence)

may have been different in the past, leading to an evolving oceanic oxygen isotope composition.

Here we examine approximately 3.24-billion-year-old hydrothermally altered oceanic crust from the Panorama district in the Pilbara Craton of Western Australia as an alternative oxygen isotope archive to marine chemical sediments.

We find that, at that time, seawater at Panorama had an oxygen isotope composition enriched in ^{18}O relative to the modern ocean with a $\delta^{18}\text{O}$ of $3.3 \pm 0.1\text{‰}$ VSMOW. We suggest that seawater $\delta^{18}\text{O}$ may have decreased through time, in contrast to the large increases seen in marine chemical sediments.

To explain this possibility, we construct an oxygen isotope exchange model of the geologic water cycle, which suggests that the initiation of continental weathering in the late Archaean, between 3 and 2.5 billion years ago, would have drawn down an ^{18}O enriched early Archaean ocean to $\delta^{18}\text{O}$ values similar to those of modern seawater. We conclude that Earth's water cycle may have gone through two separate phases of steady-state behaviour, before and after the emergence of the continents.

Speirs: In other words, about 3 gigayears ago Earth was a waterworld with no continents.

Nanglu, K., et al (2020) **The Burgess Shale paleocommunity with new insights from Marble Canyon, British Columbia.** PALEOBIOLOGY 46:58-81

Authors' abstract: *The middle (Wuliuan Stage) Cambrian Burgess Shale is famous for its exceptional preservation of diverse and abundant soft-bodied animals through the “thick” Stephen Formation. However, with the exception of the Walcott Quarry (Fossil Ridge) and the stratigraphically older Tulip Beds (Mount Stephen), which are both in Yoho National Park (British Columbia), quantitative assessments of the Burgess Shale have remained limited.*

Here we first provide a detailed quantitative overview of the diversity and structure of the Marble Canyon Burgess Shale locality based on 16,438 specimens. Located 40 km southeast of the Walcott Quarry in Kootenay

National Park (British Columbia), Marble Canyon represents the youngest site of the “thick” Stephen Formation. We then combine paleoecological data sets from Marble Canyon, Walcott Quarry, Tulip Beds, and Raymond Quarry, which lies approximately 20 m directly above the Walcott Quarry, to yield a combined species abundance data set of 77,179 specimens encompassing 234 species-level taxa.

Marble Canyon shows significant temporal changes in both taxonomic and ecological groups, suggesting periods of stasis followed by rapid turnover patterns at local and short temporal scales. At wider geographic and temporal scales, the different Burgess Shale sites occupy distinct areas in multivariate space.

Overall, this suggests that the Burgess Shale paleocommunity is far patchier than previously thought and varies at both local and regional scales through the “thick” Stephen Formation. This underscores that our understanding of Cambrian diversity and ecological networks, particularly in early animal ecosystems, remains limited and highly dependent on new discoveries.

Hudgins, M.N., et al (2020) **The evolution of respiratory systems in Theropoda and Paracrocodylomorpha, the end-Triassic extinction, and the role of Late Triassic atmospheric O_2 and CO_2 .** PALAEOGEOGRAPHY, PALAEOCLIMATOLOGY, PALAEOECOLOGY 545:doi.org/10.1016/j.palaeo.2020.109638

[Theropods are dinosaurs and birds.]

Authors' abstract: *During the Late Triassic Period (235 to 201.3 Ma), Paracrocodylomorpha and Theropoda switched predatory roles, with the former filling the subsidiary predator niche and the latter filling the top predator niche at the end-Triassic extinction. Reasons for the transition in predator guilds remain unknown, but atmospheric conditions during this time, which involved high CO_2 and low O_2 concentration levels, may be associated with the event.*

Evidence of bird-like pneumatic post-crania, present in both groups as foramina and fossae, correlates with an avian-like respiratory system. This may have allowed organisms to cope with declining atmospheric O_2 environments of the Late Triassic.

This study estimated pO_2 throughout the late Triassic using organic carbon isotope measurements from Newark-Hartford basin paleosols and examined the morphological change in skeletal remains of Theropoda, focusing on pneumatic bones, compared with Paracrocodylomorpha during the Late Triassic and across the Triassic-Jurassic boundary.

With data compiled from the Paleobiology Database and published anatomical literature, the change of pneumaticity in taxa is quantified by a Pneumatic Index (PI), in which the number of pneumatized units is divided by the total number of bones examined.

Patterns of pneumaticity are individually scored for the presence or absence of pneumatic bones. Morphological data are compared to corresponding femur length, estimated atmospheric O_2 and CO_2 level reconstructions, and an ancestral state reconstruction depicting how PI values change throughout various clades.

Our results suggest that PI values in Theropoda and Paracrocodylomorpha correspond with the vacillating pO_2 and pCO_2 throughout the Late Triassic and into the Jurassic. High PI values are prevalent in advanced theropod taxa, while Paracrocodylomorpha PI values vary by clade with a generally negative trend throughout the Triassic.

Ancestral state reconstruction analysis highlights the increasing PI values within Theropoda and clade dependent trends in Paracrocodylomorpha. This study is instrumental in reconstructing how Theropoda became evolutionarily successful and perhaps how and why the avian-like respiratory system originated.

de Winter, N.J., et al (2020) **Subdaily-scale chemical variability in a *Torreites sanchezi* rudist shell: Implications for rudist paleobiology and the Cretaceous day-night cycle.** PALEOCEANOGRAPHY AND PALEOCLIMATOLOGY 35:doi.org/10.1029/2019PA003723 (available as a free pdf)

Authors' abstract: *This study presents subdaily resolved chemical records through fossil mollusk shell calcite. Trace element profiles resolve periodic variability across ~40- μ m-thin daily growth laminae in a Campanian *Torreites sanchezi* rudist bivalve. These high-resolution records are combined with*

seasonally resolved stable isotope and trace element records that allow shell-chemical variability to be discussed on both seasonal and daily scale.

A combination of layer counting, spectral analysis of chemical cyclicity and chemical layer counting shows that the rudist precipitated 372 daily laminae per year, demonstrating that length of day has increased since the Late Cretaceous, as predicted by astronomical models.

This new approach to determine the length of a solar day in geologic history through multiproxy chemical records at subdaily resolution yields considerably more control on the uncertainty of this estimate.

Daily chemical variability exceeds seasonal variability in our records, and cannot be explained by diurnal temperature changes. Instead, we postulate that rudist shell chemistry is driven on a daily scale by changes in light intensity.

*These results together with those of stable isotope analyses provide strong evidence that *Torreites rudists* had photosymbionts. Bivalve shell calcite generally preserves well.*

Therefore, this study paves the way for daily-scale reconstructions of paleoenvironment and sunlight intensity on geologic time scales from bivalve shells, potentially allowing researchers to bridge the gap between climate and weather reconstructions.

Such reconstructions improve shell chronologies, document environmental change in warm ecosystems, and widen our understanding of the magnitude of short-term changes during greenhouse climates.

Xing, L., et al (2020) **Hummingbird-sized dinosaur from the Cretaceous period of Myanmar.** NATURE 579:245-249

Authors' abstract: *Skeletal inclusions in approximately 99-million-year-old amber from northern Myanmar provide unprecedented insights into the soft tissue and skeletal anatomy of minute fauna, which are not typically preserved in other depositional environments.*

Among a diversity of vertebrates, seven specimens that preserve the skeletal remains of enantiornithine birds have previously been described, all of which

(including at least one seemingly mature specimen) are smaller than specimens recovered from lithic materials.

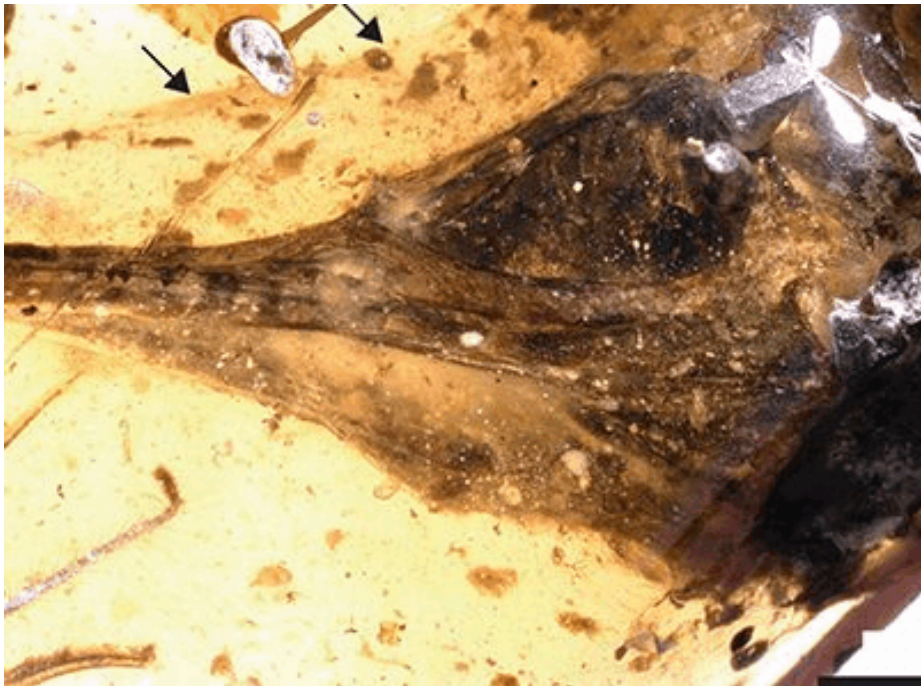
Here we describe an exceptionally well-preserved and diminutive bird-like skull that documents a new species, which we name *Oculudentavis khaungraae* gen. et sp. nov. The find appears to represent the smallest known dinosaur of the Mesozoic era, rivalling the bee hummingbird (*Mellisuga helenae*), the smallest living bird, in size.

The *O. khaungraae* specimen preserves features that hint at miniaturization constraints, including a unique pattern of cranial fusion and an autapomorphic ocular morphology that resembles the eyes of lizards. The conically arranged scleral ossicles define a small pupil, indicative of diurnal activity.

Miniaturization most commonly arises in isolated environments, and the diminutive size of *Oculudentavis* is therefore consistent with previous suggestions that this amber formed on an island within the Trans-Tethyan arc.

The size and morphology of this species suggest a previously unknown bauplan, and a previously undetected ecology. This discovery highlights the potential of amber deposits to reveal the lowest limits of vertebrate body size.

[Image is from the paper.]



Field, D.J., et al (2020) **Late Cretaceous neornithine from Europe illuminates the origins of crown birds.** NATURE 579:397-401

Authors' abstract: Our understanding of the earliest stages of crown bird evolution is hindered by an exceedingly sparse avian fossil record from the Mesozoic era.

The most ancient phylogenetic divergences among crown birds are known to have occurred in the Cretaceous period, but stem-lineage representatives of the deepest subclades of crown birds, Palaeognathae (ostriches and kin), Galloanserae (landfowl and waterfowl) and Neoaves (all other extant birds), are unknown from the Mesozoic era.

As a result, key questions related to the ecology, biogeography and divergence times of ancestral crown birds remain unanswered. Here we report a new Mesozoic fossil that occupies a position close to the last common ancestor of Galloanserae and fills a key phylogenetic gap in the early evolutionary history of crown birds.

Asteriornis maastrichtensis, gen. et sp. nov., from the Maastrichtian age of Belgium (66.8 to 66.7 million years ago), is represented by a nearly complete, three-dimensionally preserved skull and associated postcranial elements. The fossil represents one of the only well-supported crown birds from the Mesozoic era, and is the first Mesozoic crown bird with well-represented cranial remains.

Asteriornis maastrichtensis exhibits a previously undocumented combination of galliform (landfowl)-like and anseriform (waterfowl)-like features, and its presence alongside a previously reported Ichthyornis-like taxon from the same locality provides direct evidence of the co-occurrence of crown birds and avialan stem birds.

Its occurrence in the Northern Hemisphere challenges biogeographical hypotheses of a Gondwanan origin of crown birds, and its relatively small size and possible littoral ecology may corroborate proposed ecological filters that influenced the persistence of crown birds through the end-Cretaceous mass extinction.

Smith, G.J., and L.R.G. DeSantis (2020) **Extinction of North American Cuvieronius (Mammalia: Proboscidea: Gomphotheriidae) driven by dietary resource competition with sympatric mammoths and mastodons.** PALEOBIOLOGY 46:41-57 (available as a free pdf)

[The Proboscidea are the long nosed critters of which elephants are the survivors.]

Authors’ abstract: *The gomphotheres were a diverse and widespread group of proboscideans occupying Eurasia, North America, and South America throughout the Neogene. Their decline was temporally and spatially heterogeneous, and the gomphotheres ultimately became extinct during the late Pleistocene; however, the genus Cuvieronius is rarely represented in late Pleistocene assemblages in North America.*

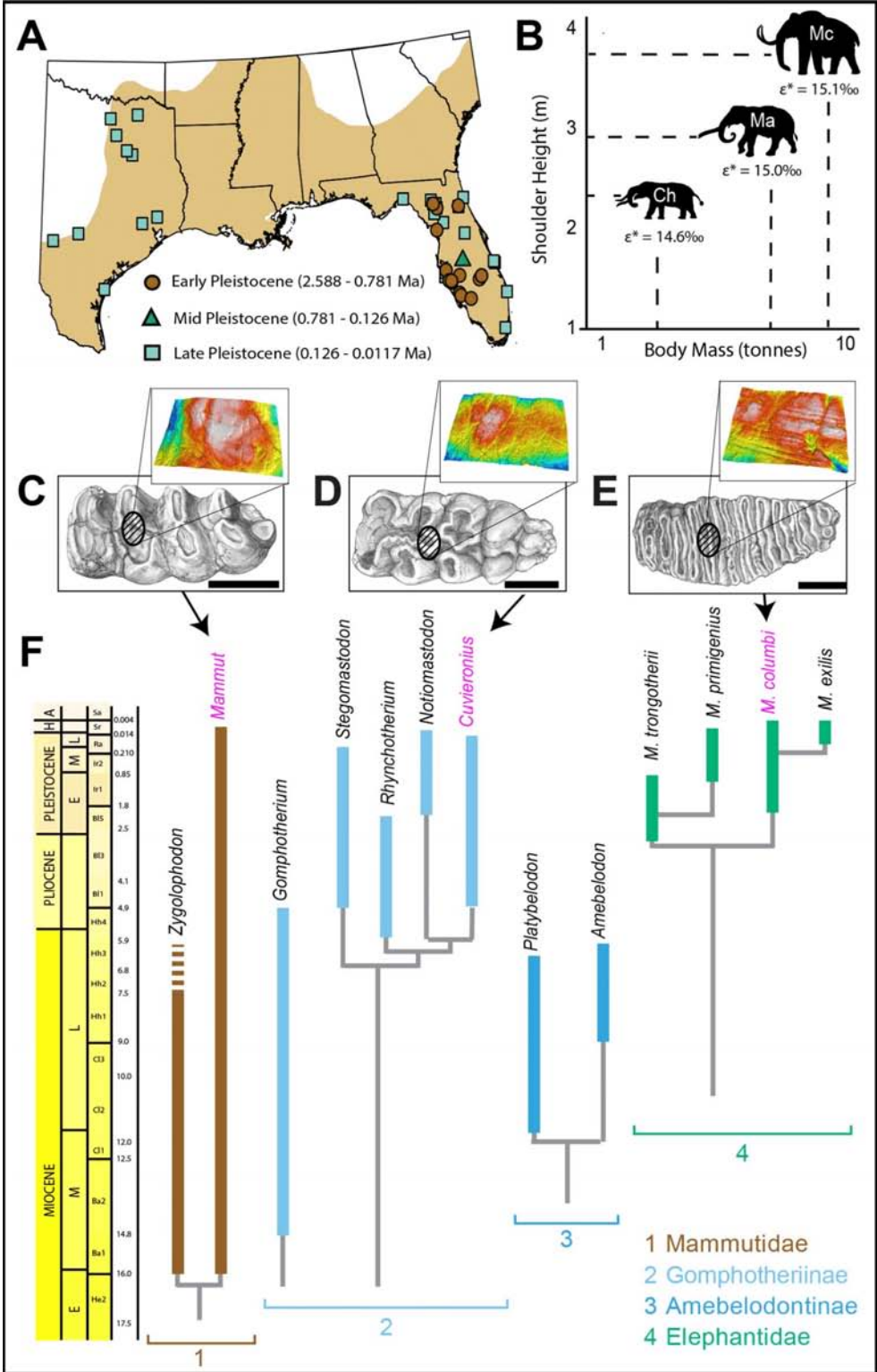
Two alternative hypotheses have been invoked to explain this phenomenon: (1) competitive exclusion by sympatric mammoths and mastodons or (2) ecologic displacement due to an environmental transition from closed forests to open grasslands.

To test whether competition for resources contributed to the demise of North American Cuvieronius, we present herein a large collection of stable isotope and dental microwear data from populations occupying their Pleistocene refugium in the Atlantic Coastal Plain.

Results suggest that Cuvieronius consumed a wide range of resources with variable textural and photosynthetic properties and was not specialized on either grasses or browse. Further, we document evidence for the consumption of similar foods between contemporaneous gomphotheres, mammoths, and mastodons.

The generalist feeding strategy of the gomphotheres likely facilitated their high Miocene abundance and diversity. However, this “jack of all trades and master of none” feeding strategy may have proved challenging following the arrival of mammoths and likely contributed to the extirpation of Cuvieronius in North America.

[Chart is from the paper]



Moore, A.M.T., et al (2020) **Evidence of cosmic impact at Abu Hureyra, Syria at the Younger Dryas Onset (~12.8 ka): High-temperature melting at >2200 °C.** SCIENTIFIC REPORTS 10:doi.org/10.1038/s41598-020-60867-w (available as a free pdf)

Authors' abstract: *At Abu Hureyra (AH), Syria, the 12,800-year-old Younger Dryas boundary layer (YDB) contains peak abundances in meltglass, nanodiamonds, microspherules, and charcoal. AH meltglass comprises 1.6 wt.% of bulk sediment, and crossed polarizers indicate that the meltglass is isotropic. High YDB concentrations of iridium, platinum, nickel, and cobalt suggest mixing of melted local sediment with small quantities of meteoritic material.*

Approximately 40% of AH glass display carbon-infused, siliceous plant imprints that laboratory experiments show formed at a minimum of 1200° to 1300 °C; however, reflectance-inferred temperatures for the encapsulated carbon were lower by up to 1000 °C. Alternately, melted grains of quartz, chromferide, and magnetite in AH glass suggest exposure to minimum temperatures of 1720 °C ranging to >2200 °C.

This argues against formation of AH meltglass in thatched hut fires at 1100° to 1200 °C, and low values of remanent magnetism indicate the meltglass was not created by lightning. Low meltglass water content (0.02 to 0.05% H2O) is consistent with a formation process similar to that of tektites and inconsistent with volcanism and anthropogenesis.

The wide range of evidence supports the hypothesis that a cosmic event occurred at Abu Hureyra ~12,800 years ago, coeval with impacts that deposited high-temperature meltglass, melted microspherules, and/or platinum at other YDB sites on four continents.

Firestone et al first proposed that a cosmic impact event occurred ~12,800 years ago, resulting in multi-continental airbursts, possibly caused by the debris stream from a short-period comet. This event is proposed to have created the Younger Dryas boundary layer (YDB), which contains peak abundances of magnetic spherules, meltglass, carbon spherules, glasslike carbon, charcoal, platinum, iridium, nickel, cobalt, and/or nanodiamonds at ~40 sites across North America and Europe, including from Abu Hureyra, Syria.

Khrennikov, D.E., et al (2020) **On the possibility of through passage of asteroid bodies across the Earth's atmosphere.** MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY 493:1344-1351

Authors' abstract: *We have studied the conditions of through passage of asteroids with diameters 200, 100, and 50 metres, consisting of three types of materials, iron, stone, and water ice, across the Earth's atmosphere with a minimum trajectory altitude in the range 10 to 15 km. The conditions of this passage with a subsequent exit into outer space with the preservation of a substantial fraction of the initial mass have been found.*

The results obtained support our idea explaining one of the long-standing problems of astronomy, the Tunguska phenomenon, which has not received reasonable and comprehensive interpretations to date. We argue that the Tunguska event was caused by an iron asteroid body, which passed through the Earth's atmosphere and continued to the near-solar orbit.

Kawashima, S., et al (2020) **Tropical octopus *Abdopus aculeatus* can learn to recognize real and virtual symbolic objects.** BIOLOGICAL BULLETIN 238:12-24 (available as a free pdf)

Authors' abstract: *We used three consecutive operant conditioning tasks to determine whether the tropical octopus *Abdopus aculeatus* is able to learn to recognize a symbolic object, in either real or virtual forms.*

In Experiment 1, we examined whether octopuses can be conditioned to a real object (a white ball) and whether such trained individuals can select the conditioned object when they are presented with an unconditioned object. We show that octopuses learned to respond to and select the conditioned white ball in preference to the unconditioned object.

In Experiment 2, we examined whether octopuses can be conditioned to an object that gradually changes from real to virtual (i.e., an image of that object on a computer screen). We presented four types of objects, all variations of a white ball, in a stepwise sequence as a conditioned stimulus: a real white ball, a real image of a white ball without a margin, a real image of a white ball centered within a black margin, and a virtual image of a white ball (a video on a computer screen). Individual octopuses learned to respond to all three real objects, and then a subset of these octopuses responded to the virtual object.

In Experiment 3, we examined whether an octopus can learn a virtual image of an object with a specific shape not tested in Experiments 1 and 2. We presented octopuses with an image of a white cross, which was placed at various distances (i.e., close, medium, and far).

We found that after having learned these images, octopuses could learn the virtual white cross on a computer screen. Furthermore, when we simultaneously presented octopuses with a conditioned virtual object and an unconditioned virtual object, they selected the former. Through these three experiments, we confirmed that A. aculeatus can learn both real and virtual specific objects.

Hatcher, C.R., et al (2020) **The function of secondary metabolites in plant carnivory.** ANNALS OF BOTANY 125:399-411 (available as a free pdf)

Authors' abstract: Carnivorous plants are an ideal model system for evaluating the role of secondary metabolites in plant ecology and evolution. Carnivory is a striking example of convergent evolution to attract, capture and digest prey for nutrients to enhance growth and reproduction and has evolved independently at least ten times.

Though the roles of many traits in plant carnivory have been well studied, the role of secondary metabolites in the carnivorous habit is considerably less understood.

This review provides the first synthesis of research in which secondary plant metabolites have been demonstrated to have a functional role in plant carnivory. From these studies we identify key metabolites for plant carnivory and their functional role, and highlight biochemical similarities across taxa. ...

Carnivorous plants use secondary metabolites to facilitate prey attraction, capture, digestion and assimilation. We found ~170 metabolites for which a functional role in carnivory has been demonstrated. Of these, 26 compounds are present across genera that independently evolved a carnivorous habit, suggesting convergent evolution.

Some secondary metabolites have been co-opted from other processes, such as defence or pollinator attraction. Secondary metabolites in carnivorous plants

provide a potentially powerful model system for exploring the role of metabolites in plant evolution.

Roy, R.D. (2020) **White ants, empire, and entomo-politics in South Asia.** HISTORICAL JOURNAL 63:411-436

Author's abstract: British rule in India was vulnerable to white ants [termites] because these insects consumed paper and wood, the key material foundations of the colonial state. The white ant problem also made the colonial state more resilient and intrusive.

The sphere of strict governmental intervention was extended to include both animate and inanimate non-humans, while these insects were invoked as symbols to characterize colonized landscapes, peoples, and cultures. Nonetheless, encounters with white ants were not entirely within the control of the colonial state.

Despite effective state intervention, white ants did not vanish altogether, and remained objects of everyday control until the final decade of colonial rule and after. Meanwhile, colonized and post-colonial South Asians used white ants to articulate their own distinct political agendas. Over time, white ants featured variously as metaphors for Islamic decadence, British colonial exploitation, communism, democratic socialism, and, more recently, the Indian National Congress.

Dyonisius, M.N., et al (2020) **Old carbon reservoirs were not important in the deglacial methane budget.** SCIENCE 367:907-910

Authors' abstract: Methane is a potent greenhouse gas with large natural sources, reservoirs, and sinks. Methane emissions from old, cold-region carbon reservoirs like permafrost and methane hydrates were minor during the last deglaciation.

The team analyzed the carbon isotopic composition of atmospheric methane trapped in bubbles in Antarctic ice and found that methane emissions from those old carbon sources during the warming interval were small. This finding suggests that methane emissions in response to future warming likely will not be as large as some have suggested.

Our results also indicate that methane emissions from biomass burning in the pre-Industrial Holocene were 22 to 56 teragrams of methane per year (95% confidence interval), which is comparable to today.

Gerstung, M., et al (2020) **The evolutionary history of 2,658 cancers.** NATURE 578:doi.org/10.1038/s41586-019-1907-7

Authors' abstract: Cancer develops through a process of somatic evolution. Sequencing data from a single biopsy represent a snapshot of this process that can reveal the timing of specific genomic aberrations and the changing influence of mutational processes.

Here, by whole-genome sequencing analysis of 2,658 cancers as part of the Pan-Cancer Analysis of Whole Genomes (PCAWG) Consortium of the International Cancer Genome Consortium (ICGC) and The Cancer Genome Atlas (TCGA), we reconstruct the life history and evolution of mutational processes and driver mutation sequences of 38 types of cancer.

Early oncogenesis is characterized by mutations in a constrained set of driver genes, and specific copy number gains, such as trisomy 7 in glioblastoma and isochromosome 17q in medulloblastoma. The mutational spectrum changes significantly throughout tumour evolution in 40% of samples. A nearly fourfold diversification of driver genes and increased genomic instability are features of later stages.

Copy number alterations often occur in mitotic crises, and lead to simultaneous gains of chromosomal segments. Timing analyses suggest that driver mutations often precede diagnosis by many years, if not decades. Together, these results determine the evolutionary trajectories of cancer, and highlight opportunities for early cancer detection.

Similar to the evolution in species, the approximately 1,014 cells in the human body are subject to the forces of mutation and selection. This process of somatic evolution begins in the zygote and only comes to rest at death, as cells are constantly exposed to mutagenic stresses, introducing 1–10 mutations per cell division.

These mutagenic forces lead to a gradual accumulation of point mutations throughout life, observed in a range of healthy tissues and cancers. Although

these mutations are predominantly selectively neutral passenger mutations, some are proliferatively advantageous driver mutations.

The types of mutation in cancer genomes are well studied, but little is known about the times when these lesions arise during somatic evolution and where the boundary between normal evolution and cancer progression should be drawn.

Sequencing of bulk tumour samples enables partial reconstruction of the evolutionary history of individual tumours, based on the catalogue of somatic mutations they have accumulated.

These inferences include timing of chromosomal gains during early somatic evolution, phylogenetic analysis of late cancer evolution using matched primary and metastatic tumour samples from individual patients, and temporal ordering of driver mutations across many samples.

Liu, X., et al (2020) **Power generation from ambient humidity using protein nanowires.** NATURE 578:550-554

Authors' abstract: Harvesting energy from the environment offers the promise of clean power for self-sustained systems. Known technologies, such as solar cells, thermoelectric devices and mechanical generators, have specific environmental requirements that restrict where they can be deployed and limit their potential for continuous energy production.

The ubiquity of atmospheric moisture offers an alternative. However, existing moisture-based energy harvesting technologies can produce only intermittent, brief (shorter than 50 seconds) bursts of power in the ambient environment, owing to the lack of a sustained conversion mechanism.

*Here we show that thin-film devices made from nanometre-scale protein wires harvested from the microbe *Geobacter sulfurreducens* can generate continuous electric power in the ambient environment. The devices produce a sustained voltage of around 0.5 volts across a 7-micrometre thick film, with a current density of around 17 microamperes per square centimetre.*

We find the driving force behind this energy generation to be a self-maintained moisture gradient that forms within the film when the film is exposed to the

humidity that is naturally present in air. Connecting several devices linearly scales up the voltage and current to power electronics.

Hoppenstand, Gary (2020) **Assembling action: Collecting popular adventure fiction.** JOURNAL OF AMERICAN CULTURE 43:41-48 (available as a free pdf)

Extracts: The adventure story deemphasizes such things as characterization in favor of narrative action. It typically also features larger-than-life heroes as central protagonists. The single defining element of all the great adventure heroes, from Sir H. Rider Haggard’s Allan Quatermain to Tom Clancy’s Jack Ryan, is their ability to conquer their adversaries or prevail over a hostile environment.

This reason is why the dramatic conflict in many adventure stories is structured as a series of traps and escapes, a literary convention that allows the hero to demonstrate great strength, courage, and intelligence by escaping an otherwise inevitable destruction. At a larger, thematic level, the adventure hero’s triumph over imminent death becomes a symbolic conquest of human mortality.

Finally, the adventure story tends to reinforce certain imperialistic ideas or beliefs. A number of the various types of popular fiction can be collected under the general heading of the adventure story, which is typically set in foreign lands or exotic locales.

The heroes of these stories, as part of the author’s intended construction of dramatic conflict, often engage in hostilities with the native peoples of these foreign lands, frequently either subjugating them or killing them.

From approximately 1860 to the turn-of-the-twentieth century, the western dominated the subject matter of the dime novel, reflecting, at that time, America’s fascination with frontier expansion, its dangers and rewards of a new life not hindered by past misfortunes and prejudices.

And yet as the population in America moved from the rural areas to the cities, the focus of the dime novel shifted from the western to the urban detective story.

In both categories, adventure was the principal ingredient of entertainment. The dime novel hero, during its transitional setting phase, went from the hero

fighting Native Americans and outlaws to fighting urban gangs and criminal masterminds.

For the collector (such as myself), the “gold standard” of collecting detective dime novels was acquiring the Nick Carter stories, frequently attributed to creators Ormond Smith and John Russell Coryell, which first started to be published in 1886 and featured more adventure than detection.

Popular Culture critic, Clive Bloom, suggests that “by the 1960s genre divisions, however vaguely defined, had been determined by over sixty years of publishing”.

And yet, the one genre that seemed to take a back seat to other categories, such as detective and crime stories, romance stories, and science fiction and fantasy stories, was classic adventure fiction. This type of story languished until mega-bestselling thriller author, Michael Crichton, resurrected it toward the end of the twentieth century.

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[Editor's remarks in square brackets. Please include your name and town when sending a comment. Email to opuntia57@hotmail.com]

[Theo's quarterly postcard, this one for the 2020 vernal equinox. The view side is on the next page]

