OPUNTIA 484



Thanksgiving 2020

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.

AROUND COWTOWN: THE WEASELHEAD

2020-09-17

photos by Dale Speirs

In the previous issue of OPUNTIA were photos of the Glenmore Dam and its reservoir. At the upstream end of the reservoir is the Weaselhead swamp, now a municipal park. The name is translated from the Tsuu T'ina tribe's word for the area. Their Reserve is on the south bank of the Elbow River, just upstream from the Weaselhead.

The cover photo shows a teepee frame in a clearing in the middle of the park. It was presumably built by the Tsuu T'ina for cultural or educational purposes, since they live in wood-frame houses like the rest of us.

The Tsuu T'ina Reserve was originally far from the city but by the 1990s the southwestern suburbs began sprawling up against the north and east sides of the Reserve. The boundaries are now contiguous.

Below is a view looking southeast from the north escarpment, showing the Elbow River meandering just before it flows into the reservoir. Bear in mind this park is in the central part of Calgary. You can't see the suburbs but they are just over the far horizon and behind the camera.





Top left: Looking southwest from the same spot as the previous page. The plateau on the horizon is the Tsuu T'ina Reserve. If you squint closely at the upper left corner of the photo, you can see a pedestrian bridge across the Elbow River.

Bottom left: A better view of the pedestrian bridge from the bottomlands on the opposite side of the river, looking back at the escarpment.

Below: Looking down the Elbow River from the pedestrian bridge.







From World War One to the end of the Balkan wars in the 1990s, the Canadian Armed Forces used part of the upstream area of the Weaselhead for artillery training. They cleaned up the area, so they say, but these signs provide an incentive not to go off trail.





This is the only park in the city that doesn't have a problem with BMXers cutting new trails.

From 1908 to 1998, the Canadian Armed Forces (CAF) conducted training operations on the Harvey Barracks, Weaselhead Park, and Sarcee training area. Sarcee training area and Harvey barracks is now known as Tsuu T'ina Nation reserve close to Calgary, Alberta. Manoeuvre trainings were carried out using high explosive, pyrotechnic or inert filled projectiles, shoulder fired and air launched rockets, grenades and various other munitions.

DND/CAF has done work to clear unexploded explosive ordnance (UXO). UXO is the term for military explosives that were used but failed to function or detonate properly.

The Department of National Defence will continue to work closely with the City of Calgary and Calgary Police Services as situations arise.

If you see something that could be UXO:

- Do not touch it! If UXO is disturbed, it could explode and cause serious injury or death;
 - d C
- 2) Leave and remember the area;
- 3) Call 911! Report your findings to the police and follow instructions.

All UXO is DANGEROUS!

Below: Autumn foliage. At right: Not the river but a side channel.



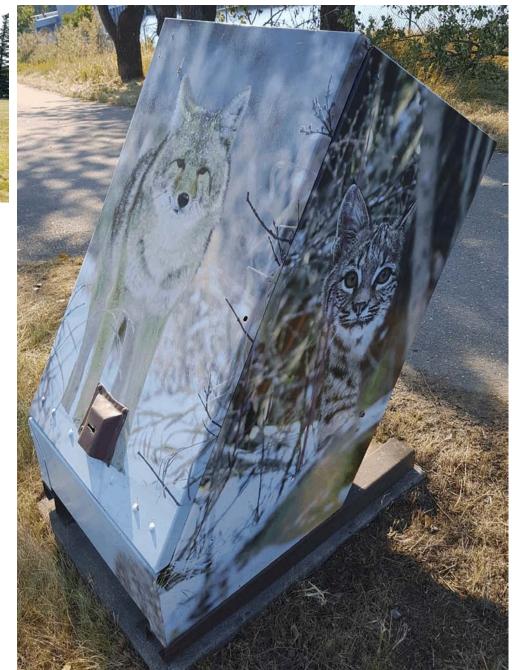








The stone boat sculpture at left was at the water treatment plant at Glenmore Dam. The park garbage bins were photographed at various locations around the reservoir from the dam to the Weaselhead.





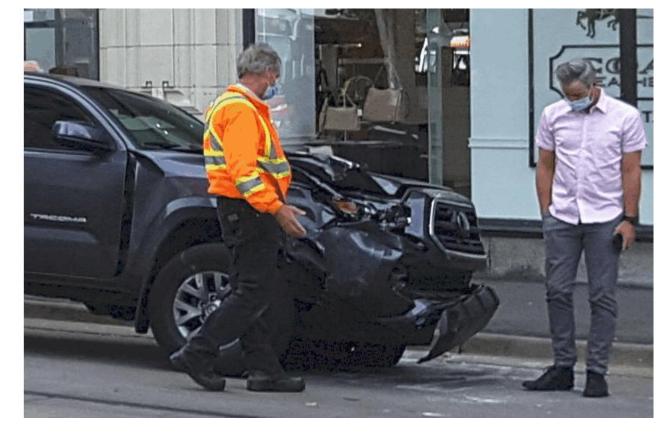


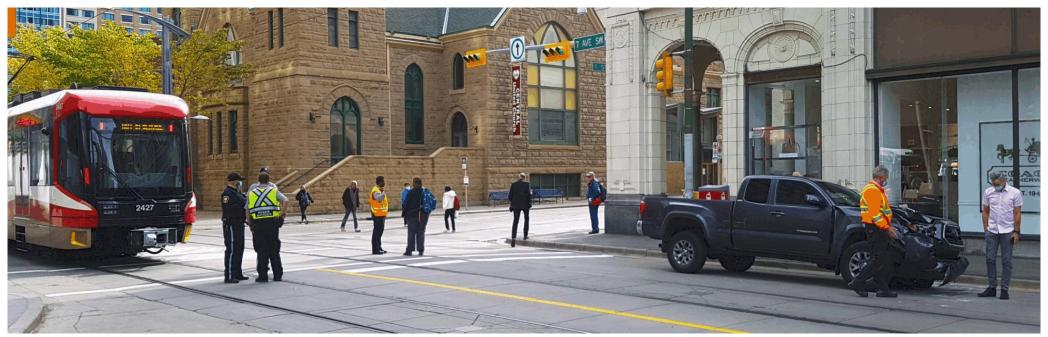
TRANSIT FANNING IN CALGARY: PART 28

photos by Dale Speirs

[Part 27 appeared in OPUNTIAs # 462.]

Someone had a bad day on September 22 when he tried to beat an LRT train across the lights on 7 Avenue SW and 1 Street downtown. Guess which of the two men at right was the driver.





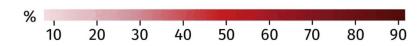
CURRENT EVENTS: PART 6

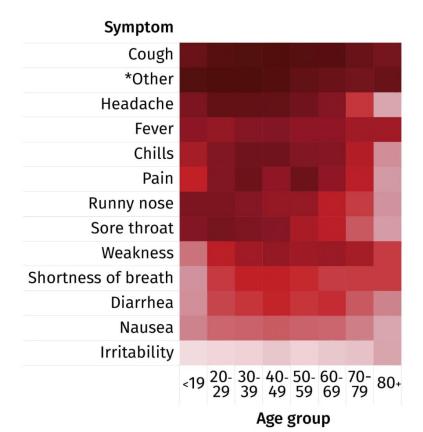
by Dale Speirs

[Parts 1 to 5 appeared in OPUNTIAs #474, 475, 479, 480, and 483.]

The Canadian Broadcasting Corporation published these charts based on data from the federal Ministry of Health. COVID-19 is now surging in young adults.

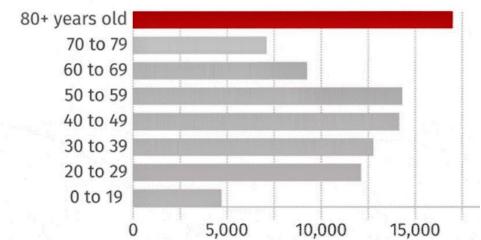
Symptom frequency, by age



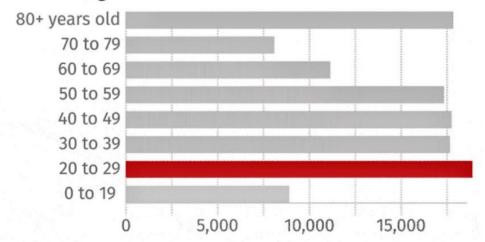


CBC NEWS Source: PHAC

Week of June 7



Week of Aug. 30



National statistics as of 2020-10-02: 160,535 cases 9,319 deaths

Below: Seen at a service building in Crescent Heights Park during my walks.



Normally we have a big family dinner on Thanksgiving at my brother's house but his 88-year-old mother-in-law lives with them. None of us were going to risk her health during the pandemic. There is no way I am going to cook an entire turkey for myself, so I'll use an easier method.



THANKSGIVING FICTION

by Dale Speirs

Thanksgiving is a traditional harvest festival celebrated in cultures around the world for centuries. When European settlers arrived in North America, they brought it with them but found the indigenous peoples also had the feast day.

Canada celebrates Thanksgiving on the second Monday in October, while Americans wait until the fourth Thursday in November. Supposedly this was because the Canadian harvest comes in a month earlier than south of the border. Since both countries moved the official date around several times before settling on their current dates, this is a doubtful explanation.

The earliest known European Thanksgiving in what is now Canada was celebrated in 1578 by Martin Frobisher in Nunavut. The Spanish conquistadors recorded the feast many times during the 1500s in the American Southwest. The Pilgrim celebration in 1621 was established in mythology as the first American Thanksgiving, but it wasn't so.

Cozies.

A FATAL FEAST (2010) by Jessica Fletcher and Donald Bain is, for the two mystery readers who don't know, part of a lengthy chronicle of America's answer to Miss Marple, the author Jessica Fletcher. The novel series derived from the television series. She lived in Cabot Cove, Maine, a seaside village which should be a ghost town by now, given its murder rate. Later stories moved her to other places to spread the death toll around.

Thanksgiving was nigh, so Fletcher was busy with the local pageant and preparing her own party with an ever-expanding guest list. So many that she had to ask a neighbour Seth Hazlitt if he could put up a guest for her. Scotland Yard Inspector George Sutherland was visiting from London. There was a quick infodump on how the American Thanksgiving evolved, as usual using the premise that the Pilgrims invented it.

Fletcher's Thanksgiving run-up was marred by threatening letters but on the day, the meal was a success. The only untoward incident was that Hazlitt had loaned a special knife for carving the turkey, which went missing. After the big meal, Fletcher and Sutherland went for a stroll to work off a few calories. They found the knife, buried in the body of a local man.

With a mixture of amateur and police detectives, a complicated story of people in the Witness Protection Plan was uncovered. Someone was settling accounts for a crime long ago and far away. The threatening letters were an ill-advised practical joke from friends.

The final item was Fletcher accepting Sutherland's invitation to spend Christmas with him in London. That would, of course, give Cabot Cove a brief surcease from murder. One murder more or less would not affect the crime statistics of London.

A CATERED THANKSGIVING (2010) by Isis Crawford was a novel in a food cozy series about sisters Bernadette and Libby Simmons of Longely, upstate New York, who operated a catering business called A Little Taste Of Heaven.

This time around, they were catering a turkey dinner in the palatial country mansion of the Field family. The patriarch Monty Field was a skinflint in the worst way. His murder was also in the worst way, as a bomb planted in the turkey detonated as he leaned over the bird, taking half his head off. An unusual way to stuff a bird.

While that was happening, a blizzard isolated the Field mansion, trapping the Simmons sisters with the group of dysfunctional heirs. No police to interfere, so the Simmons had free rein to Marple away in the big house. As the death toll rose, melodramas from the past were uncovered, such as an illegitimate son.

Monty was an abusive father, so his progeny didn't mourn him. One of them took direct action. Since it was an isolated mansion, the sisters staged another cliché of manor house mysteries, the J'accuse! meeting in the drawing room. From there to the recipes, two types of stuffing and pecan pie. What, no pumpkin recipes?

Gimme That Old-Time Radio.

CASEY, CRIME PHOTOGRAPHER aired on old-time radio from 1943 to 1955. The series title varied several times but is generally remembered by this one. The series was based on novels by George Harmon Coxe. The hero was Casey, first name never given, who was a newspaper photographer for the MORNING EXPRESS. He was accompanied by reporter and girlfriend Ann Williams.

"After Turkey, The Bill", written by Alonzo Deen Cole, aired on 1947-11-27, the American Thanksgiving Day. The episode began with a young couple Joe Bowers and Lotti Newcomb enjoying a turkey dinner in a restaurant. Meanwhile Casey and Ann Williams were doing likewise at the Blue Note Café.

For dessert, Lotti told Bowers she was dumping him in favour of his cousin Ferd. Joe was an ex-con, just out of reformatory, and resented the idea that he wasn't good enough for her. The argument was interrupted when the waiter Gus presented the check for the meal.

Joe discovered that he had forgotten his wallet. He lived only a couple of blocks away in the Newcomb rooming house, so he told Lotti to wait while he ran home for it, wearing a distinctive overcoat with red stripes.

Over at the café not long after, Casey and Williams were called away by their editor to cover a routine holdup at a service station. Casey forgot to pay the bill, much to the annoyance of the bartender Ethelbert.

The gunman was said to have been wearing an overcoat with red stripes. His face was covered, but one good clue was that as he left the service station he stepped on some heavy grease and stained his shoes. Another clue was that the cashier had just taken in a \$20 bill that had been torn and then taped together. It was among the loot taken.

As the police, Casey, and Williams attended the scene of the crime, Gus burst in and said he knew who was wearing the red-striped overcoat. Bowers was arrested at the restaurant, but his shoes were clean and he did not have the torn \$20 on him.

The police went to the rooming house, where both Lotti's father and Bowers gave permission for a search. It was then divulged that Cousin Ferd lived across the hallway.

The torn \$20 bill and the rest of loot were found hidden in Joe's room. They went across the hall to search Ferd's room. He demanded a search warrant, but after a scuffle Joe opened the closet for the police. Inside was an overcoat with red stripes and a gun in its pocket. The police took both men into custody.

Casey and the police hadn't forgotten the greasy shoes. Casey went back to interview Newcomb, who admitted he didn't like his daughter dating Joe.

Casey accused him of the crime but quickly realized he was wrong. It really was Joe, who planted the evidence in Ferd's room.

Casey and Williams went back to the Blue Note Café to finish their dinner. Ethelbert told them with regret that the plum pudding was out. Presumably he presented them with the bill. The episode had some interesting plot twists in the final ten minutes, although the final twist was not quite as believable.



WEIRD FICTION: PART 3

by Dale Speirs

[Parts 1 to 2 appeared in OPUNTIAs #412 and 458.]

Commentary.

PROVIDENCE AFTER DARK (2019) by T.E.D. Klein is a doorstop-sized trade paperback. The book is a 590-page collection of non-fiction related to the world of weird and horror fantasy. The essays were collected from a variety of publications, so there are some overlaps and repetition. The book is best read as a few essays at a time rather than in one sitting.

Klein was a university student at Brown University in Providence about three decades after H.P. Lovecraft's death. In his time there, he met several people who remembered Lovecraft from personal contact. The first section of this book therefore opens with essays about HPL or his milieu.

Taking an example, "The United Amateur" discussed HPL's sojourn in zinedom. For most of his adult life he was actively involved with apas. HPL served in executive positions as well as publishing his own zine. He wrote criticism of apazines and in particular the poetry within. Never the KTF type but rather encouragement for future and hopefully better poems.

"The Festival" was a convention report about the First World Fantasy Convention, held in Providence in 1975. This was a real report about what was said at panels and other substance, not name checks of other fans or what meals Klein ate. The emphasis was naturally on HPL and his circle.

At one panel, big-name authors complained there were few or no publishers to sell horror or weird fiction. Pay rates had not kept pace with inflation. Authors had an ongoing problem getting payment for stories. There is no new thing under the sun.

Another panel had L. Sprague de Camp, whose just-published biography of HPL had caused controversy. Those who idolized HPL were upset at how de Camp portrayed him as a loser who could have accomplished more had he but tried. de Camp addressed the issue of HPL's racism, pointing out the bigot of the 1920s was not the same man as in the 1930s when he was slightly more worldly. He did, after all, marry a Jewish woman.

During the convention, walking tours of Providence were undertaken by many, either informal or organized groups. Klein noted that in 1975 there was no recognition by the city of HPL in any form. No plaques or street signs. The city pointed with pride to vaudevillians and local dignities now forgotten in the 2000s, while HPL has now become a growth industry in the tourist trade.

The second section covered weird fiction authors associated with or at least contemporaneous with HPL. Several of them were cited by Lovecraft as influences on his works.

Klein discussed horror and fantasy writers from a century ago such as Arthur Machen and more modern authors like Ramsey Campbell. Sheridan Le Fanu wrote supernatural horror stories arising from the severe nightmares he suffered all his life. He died of a heart attack upon awakening from one such nightmare, and is widely believed to be one of very few people who actually died of fright.

These authors are, in my opinion not necessarily Klein's, B-list authors, not in the same rank as Lord Dunsany, Edgar Allan Poe, or H.P. Lovecraft, but worth reading once after having gone through the better authors.

Klein mentioned that Frank Belknap Long, a B-list fantasy author little read today, had to bear the cross of being the last surviving personal friend of Lovecraft. Interviewers would ignore his works and instead ask him about HPL. A sad way to spend one's declining years, being remembered only for an association with a cult author who died decades before.

Reprinted in this section are Klein's columns "Dr Van Helsing's Handy Guide To Ghost Stories" in which he traced their history. Such stories are the oldest type of human tales, traced back to Biblical times. Doubters also are traced back that far, but there have always been believers. Insofar as fiction goes, ghosts have had their ups and downs. The more secular our society became, the fewer people there were who believed in ghosts.

Klein commented that ghost stories are best written as short stories or novellas. Few ghostly narratives can be sustained over the length of a novel. Psychological shocks are best delivered as a burst, not an enervating flow that soon numbs the reader. Likewise an anthology of ghost stories is best read one or two stories at a time rather than all in a single sitting, lest they become monotonous.

Section 3 dealt with Klein's five years as editor of the TWILIGHT ZONE magazine. First was a reminiscence of Rod Serling, then various editorials from the magazine followed.

The major piece in this section was how to write horror. Klein emphasized that it must initially be grounded in reality. The horror develops as the protagonist gradually moves into the improbable, then to the impossible. Background and setting are more important than in other genres. Lovecraft was a master at setting the scenery in place and readying it for the appearance of the eldritch and squamous.

Klein mentioned his editorial office was checkerboarded with knee-high stacks of manuscripts. The slush pile wasn't just one pile. As a result of his tenure with TZM, he compiled a list called "Horrible Cliches: The 21 Most Familiar Horror Plots". The list began with "Dead but didn't know it", and included familiar plots such as "Not just a game", "You can't cheat fate", and "Ironic retribution".

Section 4 was about Klein's experiences in the movie industry. He began with two factual essays about a genuine horror: the abuse, maiming, and killing of animals on movie sets. When regulations were imposed, the Hollywood studios simply moved the filming of such scenes overseas.

The most common example was the use of tripwires to make horses fall during chase scenes. If you see a horse falling in any Hollywood western except John Wayne's, chances are the horse was deliberately tripped. As an old cowhand from the Red Deer River, I have to say God bless you to the memory of John Wayne, who used trained horses and followed Humane Society guidelines.

Klein worked three years as a first reader for Paramount Pictures, each day wading through dozens of novels and agented scripts. Unsolicited manuscripts were sent back unread. He admitted he wasn't good at it. He rejected many that were made into successful movies. None of his recommendations ever made it to the screen.

The remainder of this book was a random miscellany of reviews, commentaries about situations and politics long made obsolete, and watching the world go by. On the whole, this was a good book to read. Not all in one sitting mind you, but something to be dipped into during spare moments.

Gimme That Old Time Radio.

CREEPS BY NIGHT was a short-lived old-time radio anthology series that aired in 1944 from February to August. It is available as free mp3s from the Old Time Radio Researchers at www.otrrlibrary.org. The scripts were good but the writers were not credited.

Worse yet, the series was never advertised by the Blue Network, the predecessor of the American Broadcasting Company. Listeners had to stumble across the show by accident to know that it existed. Boris Karloff was the host for the first half when the series aired from Hollywood. An anonymous actor hosted for the second half from New York City when production moved there in a cost-cutting measure.

The anonymous host was called Doctor X in an apparent attempt to build up interest in such a mysterious character, undercut by the fact that few listeners knew the series was on the air in the first instance. Undoubtedly Doctor X was just a stock company player, probably whomever was standing about the studio when the episode was recorded.

"The Walking Dead" was the first episode to replace Boris Karloff with Doctor X. The episode was set on a Haiti coffee plantation. A crew foreman named LaRue, a paroled prisoner from a nearby French penal colony, was slowly dying. A plantation worker had been found murdered a few days before and the natives blamed LaRue. They tried to put a hex on him and seemed to be succeeding.

The previous day LaRue had woken up and found his legs paralyzed. The paralysis slowly crept up his body and he now had problems breathing. Miss Carlyle, daughter of the recently dead plantation owner and his heir, kept a vigil. Mr Craig, the supervisor, had summoned Dr Nelson for assistance.

Craig spoke with a Noo Yawk gangster voice, always with urgent undertones. He explained to Nelson that the natives were experts in the use of natural poisons from local plants, which made Craig suspicious they were poisoning LaRue.

The natives made off with LaRue to turn him into a zombie. This was, not so incidently, the original type of zombie, a person drugged and made suggestible to orders. Hollywood perverted the idea in the 1960s by generating the walking

dead from radiation fallout, and then in the 2000s from viral plagues. This radio episode was old enough to stay closer to the truth of Haitian voodoo belief, not the Hollywood distortion.

Miss Carlyle disbelieved and as a result got herself kidnapped by voodoo practitioners. Craig and Nelson rescued her but she was much traumatized by witnessing the ceremony at which LaRue was made into a zombie slave. He shuffled over to the house and annoyed them with many alarums.

They finally found him stretched out on a bed, calm and peaceful. At that point the story abruptly ended. It wasn't because the mp3 was cropped, because Doctor X solemnly intoned "And that, my friends, was the walking dead."

"Six Who Did Not Die" was introduced by Peter Lorre although he did not narrate the episode. A small-time sloop anchored at an uninhabited atoll for some fishing. The captain hired some natives for pearl diving and they brought back a very good haul.

He wasn't inclined to share the loot despite an agreement with the tribesmen. He and the first mate disposed of the six divers, then sailed for Australia to cash in the pearls. Unfortunately the captain lost the money at a roulette wheel.

There was nothing for it but to go back to the atoll. After defenestrating the first mate, the only man who could tell others about the murdered pearl divers, the captain hired a new crew and went back to the atoll.

Fresh divers went down but panicked when they saw the six dead men standing on the bottom. The captain put on a diving suit and went down to reassure the divers. He was the one who wasn't reassured when he saw the dead men waiting for him. Needless to say he didn't come back up.

Old-Time Radio: Escape.

ESCAPE was a popular anthology series that aired on old-time radio from 1947 to 1954. The shows were most twist-ending mysteries and fantasy, with a few science fiction episodes thrown in. The episodes were generally well done and are worth downloading as free mp3s from www.archive.org

"The Log" was a 1953 episode written by Marianne Mosner and Francis Rosenwald. The SS Seagull was a submarine that had been interned during

World War Two by Sweden. The ship's home country disappeared after the war, and its captain had only the ship for his home. To his dismay, the Swedish government sold the submarine for scrap to pay for the costs of internment since there was no home country to do so.

The captain convinced the salvage company's representative Mr Andrews to let him sail it to the scrapyard. Accompanying the submarine was a news reporter Bill Owens. Once in the North Sea, the captain and crew, all homeless men, mutinied and announced they were taking up the pirate's life. It didn't work out as they had hoped.

The first freighter they stopped was very surprised to find themselves being attacked by a submarine eight years after the war had been over. They were able to turn about and ram the submarine. The sub was damaged and had to make repairs. Andrews was in a state of shock and Owens just wanted to get home alive.

A British destroyer arrived and began dropping depth charges. The submarine took water and the crew had to abandon ship. The captain made the final entry in the ship's log, gave Owens the book, and went down with his ship. The war was finally over for him.

Old-Time Radio: The Haunting Hour.

THE HAUNTING HOUR was an anthology radio series that aired from 1944 to 1946. No credits were ever given to writer, production staff, or actors. Not all episodes were preserved but some can be had as free mp3s from www.otrrlibrary.org or www.archive.org.

"The Case Of The Lonesome Corpse" was a 1945 episode, stated as happening in New York City in June 1922. Private criminologist Hugo Catterick and his assistant Ann Smith were called in to investigate the disappearance of two men in Greystone Park.

The land had originally been the estate of Caleb Greystone, a nasty millionaire who was not mourned when he died. His mausoleum was still there. He had driven his brother Arthur to suicide and cheated the rest of the family out of the property, then specified he was to be the only one buried there. He had a large statue of himself placed on top of his tomb, looking out to the city so all could see it.

Fast forward to the disappearance of two men, first the estate executor who was on an inspection tour, then a gardener. In each instance, their footprints could be seen in the ground but suddenly vanished in front of the tomb, as if a giant bird had snatched them. Further, the statue of Greystone had turned about 180°.

The NYPD were baffled, so the Police Commissioner called in Catterick to investigate. Smith came along. Her function was to scream at shadows, chatter inanely, and have the plot explained to her. The two went inside the tomb and found the bodies of the missing men.

They were confronted by Arthur Greystone, who had not suicided but went to live in the mausoleum after his brother died, seeking post-mortem revenge. Caleb had wanted to be alone in death, so Arthur was collecting bodies to fill up the tomb. He did it by standing on top where the statue was, first moving it away to give him room. As a victim walked by, he dropped a lasso down and hoisted the man straight up, strangling him in the process.

Against Catterick and Smith, there was no doubt that Arthur would come to a bad end. They beat him down and from there he went to a court trial, followed sometime later by a trip up the river to Sing Sing to sit in Old Sparky. The story ended without saying if Arthur got to join his brother in the tomb for eternity.

"A Corpse There Was" was a 1945 episode. A young woman Kathy was housekeeper to Martin, a stone mason, and his brother Steven, a cemetery caretaker. She nagged Martin to take his medicine but he was negligent and died of a heart attack.

After his burial, Kathy gave notice while at the cemetery but Steven didn't want her to go as he was in love with her. She refused his advances because he was twice her age. In the struggle, she accidently killed him, then fled blindly from the grave in panic.

After calming down, she went back to the house and prepared her alibi. Not having properly disposed of the body, she went to do so but the corpse was gone. There was a second tombstone with Steven's name on it.

Steven's sister suddenly arrived and wanted to see Martin's grave. Since it was next to Steven's grave, Kathy went ahead and moved it so it wouldn't be seen. It reappeared but the sister didn't see it, only Kathy. She thought it was a ghost tombstone sent to vex her.

When some of the letters rubbed off, Kathy realized it wasn't supernatural. The sister did it because she wanted to inherit. She also dug a new grave for Kathy because she didn't want her plan exposed. The two women fought at the open grave and Kathy won. The sister fell into the hole and it collapsed onto her, burying her alive. In a word, histrionic.

"The Hands Of Mr Smith" was a 1945 episode. It began with two goons laying in wait for a man carrying cash to a bank. One of them, a psychotic named Tiny Smith, strangled the cashier with his giant bare hands because he looked like a prison guard he once knew. As they fled with the cash, Tiny apologized for his lack of control.

Russ Rogers, the other goon, took him to a remote spot and shot him dead. It's hard to get good help these days, but sometimes one has to terminate unsatisfactory employees without a reference. During Tiny's death throes, he swore revenge from the grave.

Rogers had taken up with Tiny's wife Claire. They hid out in the Smith apartment. She began suffering jitters as assorted alarums occurred. The police arrived, having found a bloodstained car parked outside. They went away but there was no rest for Rogers and Claire. They went into the bedroom and found Tiny waiting for them. He had big hands and knew how to use them.

The next morning the janitor and his wife investigated, having read the news that Tiny had been found murdered out in the country. They found Claire dead from strangulation and Rogers alive but hopelessly insane, with no sign of Tiny. The question was who really strangled her, a ghost or a guilt-stricken man.

Just to tie off one last thread, the janitor complained about the bloodstained car out front. It belonged to another tenant who had been out hunting and brought home a deer strapped to the running board. He took the deer inside but left the bloody car uncleaned.

"The Thought" was a 1945 episode. It began with a mind reader, The Great Marlowe, performing at a nightclub. He was genuine, not a faker. He read a thought that someone was going kill a woman named Helen Thornton. He stopped his act, rushed backstage, looked up the name in the directory, and telephoned her. He warned her life was in danger. That put her in a tizzy.

Helen's husband Jack came home unexpectedly early from a business trip. He mentioned that before coming home he and his partner Paul Allen had stopped off at the nightclub for a drink. He told her the next morning that he was taking her out to the hills for a hunting trip.

She told Allen, her ex-boyfriend, that her husband was going to kill her from jealousy. Up at the cabin, Jack calmly said he was going to kill her in a supposed hunting accident. He was jesting, but not very convincingly.

She survived the shot but couldn't convince anyone that it wasn't an accident. Back home, she went to Marlowe for help. Everyone converged at the nightclub. Marlowe read the killer's thought again. The culprit was Allen, resentful at having been rejected by Helen. Having been told that she was going to the cabin, he followed at a distance.

The denouement was telegraphed, so the listener could easily guess. About 3/4 of the way through an incident occurred which proved Jack couldn't have been the killer. Since Allen was the only other character who had the means, motive, and opportunity, that resolved the matter. More suspense would have arisen had there been two or three other suspects.

Old-Time Radio: Quiet Please.

QUIET PLEASE aired from 1947 to 1949, created, written, and directed by Wyllis Cooper. The episodes included a lot of weird fiction. Well worth downloading as free mp3s from www.otrrlibrary.org or www.archive.org

"We Were Here First" was a 1947 episode that was a one-trick pony, relying on a twist ending that the listener would guess about halfway. The narrator represented a species complaining about giants that relentlessly persecuted them.

A litany of complaints against the giants followed, and self contradictorily, reassurances that the species would survive and prosper despite everything the giants could do.

Once the narrator mentioned that the giants were about to destroy the world by atomic bombs (climate change didn't exist in those days), the listener will guess which insect species was complaining. Nonetheless it was an interesting episode to listen to at least once.

"The Man Who Stole A Planet" was a 1948 episode, narrated by Norman, an amateur archaeologist who kept the body of a Mayan priest in his deep freeze. The corpsicle was from the Fifth Century and had walked into the archaeologist's house, where Norman shot him. Norman's wife Elizabeth joined in telling the story, as she had accompanied him as part of the expedition.

The priest had come for something the narrator stole from Mexico and wasn't going to give back. Other Mayans kept coming, and Norman had to keep shooting them. The couple had found the artifact in an underground chamber of a pyramid. It was a crystal globe of Earth, accurately depicting all the continents. Since the site was pre-Columbian, and since even Columbus didn't know the details of Earth, the globe was definitely an anachronism.

"This was one treasure the Mexican government wasn't going to get", said Norman. Around the perimeter of the chamber were standing the mummies of priests, armed with bows. As the couple left with the globe, one of the priests came to life and pointed a bow at Norman. The priest abruptly went back to death when Norman shot him.

On their return home, the couple examined the globe with a magnifying glass. It somehow suspended itself in midair and began turning on its axis, making one rotation every 24 hours. Norman discovered that if he poked the blue ocean, he could create a real-life tsunami. The power went to his head. Jabbing a needle into northern Minnesota created a giant earthquake. Norman thought it was all in great fun.

The priests kept coming, and one managed to get into the house. He grabbed the globe just as Norman shot him. Unfortunately one of the bullets hit the globe, at which point the episode abruptly terminated. The listener can infer what happened.

"Gem Of Purest Ray" was a 1948 episode that began with a murderer Dr Moraitas under interrogation by a police detective. He admitted to 32 killings while trying to save the world from invasion by humanoids who came from the bottom of the ocean.

The place was Atlantis, and they were infiltrating the surface. Moraitas and a female assistant went down in a diving bell for various adventures. Afterwards he returned to the surface but she did not. She was, it transpired, an Atlantian.

Needless to say the detective said he did not believe the narrative. Moraitas presented as proof a gem he found below. The Atlantians were preparing an invasion and were sending infiltrators to make ready. The leader told Moraitas they were encouraging atomic warfare to eliminate humans.

The episode began as a police procedural and as it proceeded, it seemed that Moraitas was insane and should be committed, although the detective kept saying he would fry for murder (his words). The twist was that the detective was Atlantian and was looking for a way to eliminate Moraitas. The listener could guess that in the final few moments.

"Never Send To Know" was a 1948 episode about a private detective named Kramer. In his opening monologue he first demolished all the cliches of fiction. He didn't take his secretary out on cases. He got along well with the local police, never handled jewel thefts, or romanced exotic oriental princesses. Kramer had a pistol, not a revolver, that he never used and kept in his desk drawer. The blondes he met were average looking and seldom beautiful. Most of his cases were divorce actions or guarding wedding gifts.

All the more annoying when he was hired by a ghost to avenge his death. The ghost couldn't remember his name but left \$300 in cash, stained with blood. He did think he was murdered in Lindon, Utah, which gave Kramer a starting point. The ghost offered Kramer an additional \$1 million if he would kill the murderer, since it seemed unlikely that a court would suffice for the case. Kramer only hesitated a moment.

Kramer wired the Lindon police for details of any unsolved murders. The sole unsolved death in Lindon was a hobo supposedly killed by a train. Kramer mentioned he had once been a hobo, which immediately waved a red flag at the listener, if I may use such a metaphor for a radio show.

Further conversation with the ghost revealed that in Kramer's hobo days, he had met the ghost as a living man, had argued with him, then pushed him out of the freight car. The ghost fell under the wheels.

The ghost said he would stick with Kramer and drive him to suicide to both ensure the contract was fulfilled and to get his revenge. The final line, spoken quietly by the ghost, was "*The pistol is in the drawer there*".

"The Man Who Knew Everything" was a 1949 episode narrated by the man himself. He always knew the correct answer to the jackpot contest on a radio station, or Wyllis Cooper's telephone number when he lived in Chicago in 1922 (an inside joke there). It almost went without saying that he knew tomorrow's weather forecast better than the Weather Bureau. He knew he was going to die of an aneurysm but not when.

In consequence, The Man, name of Charles W. Afternoon, received a constant stream of telephone calls from enquirers. One door knocker was a man who wanted the combination to a bank vault, which Afternoon gave him. The burglar then left with profuse thanks. Afternoon didn't call the police because he knew they would catch him in the act. He didn't tell the burglar because he never volunteered information, just answered direct questions.

Afternoon addressed a listener and described three people who would soon intrude on the listener's life. He didn't specify what would happen. A constant parade of enquiries distracted him. He resumed telling the listener of their impending fate.

One of the three people arrived at Afternoon's office and uttered threats. Afternoon knew he wouldn't be killed, and the culprit would take off for the listener's house. He continued narrating the doom awaiting the listener, but never got the chance to finish. He died of an aneurysm.

Not Old-Time Radio.

Television killed off old-time radio by the middle 1950s, although a few series struggled on until 1962. From time to time the networks tried to revive series radio but never succeeded.

"The Understudy" was a 1964 episode of THEATER FIVE, part of an unsuccessful attempt to bring back radio drama. No writer was credited. The story began with the climax of a stage play, a scene where the leading character tried to hang himself but the rope broke just in time.

Paul was the leading man. His understudy Carl was far too ambitious. The play was a success and the producer Mr Wendell proudly announced it was moving uptown. Since there would be double the performances, Carl thought he had a chance to lead in some of the performances.

Carl overheard Wendell saying he would never get the lead. Didn't like the looks of him. The plot seemed obvious enough. Carl adjusted the noose so it would not break away and instead would hang Paul for real. If he were a mad scientist, he would have bwah-ha!-ha!-ed.

It was the night that Paul booked off sick with laryngitis. With ten minutes before the curtain went up, Carl was told he was substituting. He was trapped. If he refused, his acting career was over and he would be blacklisted. If he admitted fiddling the noose, he would be sent up for attempted murder. Instead, he choose to go ahead to his death. He would go out in a blaze of glory.

Hauntings.

"The Purple Sedan" by Lois Lane (1929 August, WEIRD TALES, available as a free pdf from www.archive.org) was a haunted car story. I wonder if this was the first one on the topic, since mass-market motor vehicles had only been around for about two decades by then.

A man bought an expensive used sedan only a few months old and at a giveaway price because previous buyers had returned it shortly after purchase. The car had a purple body with lilac interior. It also came with a ghost, a disheveled woman in the back seat. She was bloody and battered, obviously a murder victim.

The narrator was made of sterner stuff. The ghost was pleading for help, not threatening him. He learned the original owner's name, then did the research through old newspapers. Jasper Drennan had reported his wife Felicia missing. She had been a heiress of great wealth. The story grew old, and after Jasper settled the estate, he went on with life. He liked to wear purple ties and lilac shirts.

The ghost directed the narrator to a swamp where he found her body. Jasper had killed her with an ornament from the purple car then left it with the body, while the ornament's counterpart was still on the car. His report on Felicia's disappearance did not stand re-examination, and there was no doubt what would happen to him.

Her remains were buried in consecrated ground, which put her ghost to rest. The narrator was therefore able to continue driving the purple car without looking in the rearview mirror and seeing a bloody corpse.

DARK FANTASY was an old-time radio anthology series out of Oklahoma City, written entirely by Scott Bishop. The episodes were a mixture of fantasy, horror, weird, and mystery stories. The series was well done and is worth downloading as free mp3s from www.otrrlibrary.org or www.archive.org

"A Delicate Case Of Murder" was a 1942 episode. Miss Frederica Keaton was having an affair with Harvey Winsted, whose wife Laura was a medium. She suspected the liaison, which therefore made a seance at the Winsted residence rather tense. Also in attendance was Mr Rogers, a good ole boy with an Okie accent. He had a bit part and was obviously a local actor.

Harvey was cynical about Laura's abilities. They snapped at each other without caring who was listening. Nonetheless the seance staggered on with table raps, voices from beyond, and materializations. Keaton's mother came to visit her from The Beyond.

Laura asked Keaton not to tell anyone. After the seance, Harvey and Keaton talked about their romance. Laura wouldn't allow a divorce. Harvey showed Keaton how Laura faked the seance. She overheard him and warned that some night she would be able to punish him.

Laura took Keaton for a drive. They were in a serious traffic accident, killing Laura and putting Keaton in a 10-day coma. Keaton couldn't speak and had to have three expensive operations, which Harvey paid for. They were married, after which Laura took over Keaton's body and voice. Harvey was horrified to learn that death would not part him from Laura.

THE HALL OF FANTASY was an anthology old-time radio series that lasted a year. "Man Sized In Marble" aired on 1947-04-10. It was an adaptation by Robert Olsen of a story by E. Nesbitt. A newlywed couple, Laura and Vance Langdon, rented a country cottage in rural England.

The property was an abandoned manor with remnants scattered about, such as the ruins of the big house, a parish church, and an ancient cemetery. The church held some marble statues marking the tombs of apparently unsavoury characters. Why they had been interred in consecrated ground was a mystery. Probably some gold changed hands, speculated Vance.

The idyllic lifestyle was perturbed when the cottage housekeeper gave notice. She feared evil from the marble statues, which were said to come to life and walk about on All Saints Eve. More specifically, a stroll to the cottage, once their home centuries ago. Lock the doors on Halloween night, she warned the honeymooners.

Came the night and came the alarums when the marble statues began walking. Vance had gone out for some fresh air and went into the church. As he narrated at great length, when a single sentence would have done the job, the statues were gone, almost as if they had got up and walked out.

Vance worked himself into a panic and ran outside, blundering about hither and yon. A neighbour came by, a Scottish doctor, and understandably refused to accept Vance's blithering. The two men went to the church and found the marble statues back in place. Strangely, a finger was now missing from one of them.

The doctor walked Vance to the cottage. The door was wide open and Laura was dead inside. Vance emoted at great length over her body. In her hand she clutched a marble finger. A mildly interesting episode, although once Vance's verbal padding was removed, there was only about 15 minutes of substance.

THE SCREAMING SKULL (1958), screenplay by John Kneubuhl, is available on the boxed DVD set "50 Movies Horror Classics" from Mill Creek Entertainment. In black-and-white, it was slightly better than a B-movie but not good enough for first-run.

The movie began with a pretentious announcement that anyone who died of fright while watching this movie would have their funeral paid for by the producers. A safe bet. The movie was presented as a study in psychological crime but moved so slowly as to make the viewer greet the faster-paced ending with relief.

The plot began with newlyweds Jenni and Eric Whitlock arriving from their honeymoon to the mansion once owned by Eric's first wife Marion, who had died in a fall on the estate. Jenni was neurotic, insecure, and wealthy. Eric was always short in his accounts. The plot was obvious and proceeded from those premises.

Eric used trickery, including planting skulls around the estate, to drive Jenni insane and attempt to fake her suicide. He was, however, the one who didn't survive to the end of the credits. The setup took quite a while as the characters

explained everything to each other. The premonitions and forebodings were made obvious.

Eric got his comeuppance on a dark and stormy night in the last quarter of the movie. After trying unsuccessfully to choke Jenni to death, skulls began appearing. Trouble was, they weren't the ones he had been using, which got him frightened instead of Jenni. Skulls everywhere came after him and pursued him into a watery grave in the lily pond where he had killed Marion.

My advice is to watch the first fifteen minutes so you know who the characters are, then jump to the final quarter when the plot began moving.

Uncracked Mirrors.

"Through The Mirror" by Charles H. Plummer (1904 April, THE BLACK CAT, available as a free pdf from www.archive.org) began with a young bachelor, the narrator of the story, purchasing a tall free-standing mirror at an auction. Once installed in his apartment, he discovered it reflected not his quarters but those of some manor house.

It also reflected a beautiful young woman who was startled at seeing the narrator and his place from her side. They tried to communicate with reversed letters but the mirror always clouded up at the point where the letters were. With hand signals, they managed to get across some points. Then the woman disappeared from view.

The narrator did some research and tracked back whence the mirror had come. He sent a letter to the last owner and got back a reply that alas, the young woman had died five years previous.

"The Mirror" by George Burrowes (1933 February, WEIRD TALES) was another version of the story. The unnamed narrator was a widower who converted his home into a boarding house. One of his roomers, a Mr Raleigh, had the second floor front, which featured a floor-to-ceiling mirror.

One day the landlord stepped into the room to retrieve a book. Raleigh had been there a moment before but mysteriously vanished in the few seconds since the landlord had left the room. He noticed movement in the mirror and discovered that Raleigh was on the other side, with no counterpart in the room.

Raleigh had been dabbling in the metaphysics of mirrors, too dangerously as events transpired. The room he was in did not extend to the rest of the house, only what was reflected in the original world. This created a problem with food, which the landlord solved by bringing food into his room and setting it on a table. Raleigh was able to eat the reflected food but the original food remained untouched.

When the landlord spoke, Raleigh could understand his reflection, but since Raleigh was only on one side of the mirror, his sounds could not cross the glass. Fortunately there was a telephone in the real room, so he was able to call the narrator and converse. He also phoned his girlfriend Eleanor in the real world, who came to visit and eventually to cross over to the other side.

The finale came when Eleanor's ex-boyfriend, who had anger management problems, somehow tracked her to the room. In his rage at being unable to reach her on the other side, he smashed the mirror into shards. The question that afflicted the landlord was whether Raleigh and Eleanor were still on the other side. If so, how would they survive?

Poetry.

Lewis Carroll wrote fiction as weird as anything, if not in the horror mode. His 1876 Snark poem was his second most popular work after the Alice in Wonderland books. The poem is about a nonsensical quest to hunt the Snark, which turned to tragedy when the Snark hunted the hunters.

I have a couple of old editions of the poem and a few years ago picked up THE ANNOTATED HUNTING OF THE SNARK by Martin Gardner. His book was first published in 1961 and the revised edition, which I have, in 2006 with additional material.

Gardner's work is quite useful. The revised edition began with several prefaces, including reprinted commentary from more than a century ago by Henry Holiday, who illustrated the original work. Next followed the text of "The Hunting Of The Snark", subtitled "An Agony In Eight Fits", with extensive footnotes by Gardner explaining the background behind various lines and words.

The subtitle itself was an example of something that needed explaining, as 'agony' had a different meaning back then rather than just suffering pain. A fit was a chapter in an epic poem. Today's reader, sans etymological knowledge

of the Victorian era, will interpret the subtitle in a completely different way from the reader back when.

Following on after the poem and its annotations are several essays on the meaning of it all. Some say Carroll was just joshing and others take him gravely at face value. There are a few parody and sequel poems, best skimmed over as fannish ephemera.

An extensive bibliography of Snark editions is given for the dedicated book collector, who will need perseverance and a sizeable bank account. It is a paradox that books popular in their time are difficult to find in good condition because they were read to death. Mint copies will be few and far between, and none at a cheap price.

If you haven't read the Snark poem, Gardner's book will suit quite well. The annotations and articles make it seem like a book club conversation, with others adding in useful knowledge that will enhance enjoyment of this bizarre poem.

ZINE LISTINGS

[I only list zines I receive 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 it directly.]

CHRISTIAN NEW AGE QUARTERLY V24 #4 (Sample copy US\$5 from Catherine Groves, Box 276, Clifton, New Jersey 07015-0276) This issue contains an article by Robert M. Price on "Ritual In Space". He wrote about two episodes of Star Trek:TNG where aliens messed around with the Enterprise and Captain Picard trying to preserve their dying cultures and religions. They were missionaries not necessarily misbegotten but as determined as any Methodist preaching to African tribes during the Victorian era.

SEEN IN THE LITERATURE

Vanderburg, A., et al (2020) A giant planet candidate transiting a white dwarf. NATURE 585:363-367

Authors' abstract: Astronomers have discovered thousands of planets outside the Solar System, most of which orbit stars that will eventually evolve into red giants and then into white dwarfs. During the red giant phase, any close-orbiting planets will be engulfed by the star, but more distant planets can survive this phase and remain in orbit around the white dwarf.

Some white dwarfs show evidence for rocky material floating in their atmospheres, in warm debris disks or orbiting very closely, which has been interpreted as the debris of rocky planets that were scattered inwards and tidally disrupted.

Recently, the discovery of a gaseous debris disk with a composition similar to that of ice giant planets demonstrated that massive planets might also find their way into tight orbits around white dwarfs, but it is unclear whether these planets can survive the journey.

So far, no intact planets have been detected in close orbits around white dwarfs. Here we report the observation of a giant planet candidate transiting the white dwarf WD 1856+534 (TIC 267574918) every 1.4 days. We observed and modelled the periodic dimming of the white dwarf caused by the planet candidate passing in front of the star in its orbit.

The planet candidate is roughly the same size as Jupiter and is no more than 14 times as massive (with 95 per cent confidence). Other cases of white dwarfs with close brown dwarf or stellar companions are explained as the consequence of common-envelope evolution, wherein the original orbit is enveloped during the red giant phase and shrinks owing to friction.

In this case, however, the long orbital period (compared with other white dwarfs with close brown dwarf or stellar companions) and low mass of the planet candidate make common-envelope evolution less likely.

Instead, our findings for the WD 1856+534 system indicate that giant planets can be scattered into tight orbits without being tidally disrupted, motivating the search for smaller transiting planets around white dwarfs.

Ida, S., et al (2020) Uranian satellite formation by evolution of a water vapour disk generated by a giant impact. NATURE ASTRONOMY 4:880-885

Authors' abstract: The ice-giant planet Uranus probably underwent a giant impact, given that its spin axis is tilted by 98 degrees. That its satellite system is equally inclined and prograde suggests that it was formed as a consequence of the impact. However, the disks predicted by the impact simulations generally have sizes one order smaller and masses two orders larger than those of the observed system at present.

Here we show, by means of a theoretical model, that the Uranian satellite formation is regulated by the evolution of the impact-generated disk. Because the vaporization temperature of water ice is low and both Uranus and the impactor are assumed to be ice-dominated, we can conclude that the impact generated disk has mostly vaporized.

We predict that the disk lost a substantial amount of water vapour mass and spread to the levels of the current system until the disk cooled down enough for ice condensation and accretion of icy particles to begin. From the predicted distribution of condensed ices, our N-body simulation is able to reproduce the observed mass-orbit configuration of Uranian satellites.

This scenario contrasts with the giant-impact model for the Earth's Moon, in which about half of the compact, impact-generated, solid or liquid disk is immediately incorporated into the Moon on impact.

Rampino, M.R., and A. Prokoph (2020) **Are impact craters and extinction episodes periodic? Implications for planetary science and astrobiology.** ASTROBIOLOGY 20:doi.org/10.1089/ast.2019.2043

Authors' abstract: A review of the results of published spectral analyses of the ages of terrestrial impact craters (58 analyses) and biotic extinction events (35 analyses) reveals that about 60% of the crater trials support a statistically significant cycle averaging ~29.7 million years (My), and about 67% of the trials of extinction episodes found a significant cycle averaging ~26.5 My.

Cross-wavelet transform analysis of the records of craters and extinctions over the past 260 My shows a mutual ~26 My cycle and a common phase, suggesting

a connection. About 50% of the best-dated impact craters seem to occur in approximately nine pairs or clusters in the past 260 My, apparently carrying the signal of an \sim 26- to 30-My cycle.

It has been suggested that periodic modulation of impacts and extinctions might be related to periodic comet storms that follow the solar system's oscillations in and out of the galactic mid-plane.

Problems arise, however, with regard to the compatibility of such periodic pulses of comet flux with the makeup of the steady-state Near Earth Object (NEO) population, the estimated long-term NEO cratering rates on the terrestrial planets, and the predicted small contribution of Oort Cloudderived comets to the terrestrial cratering record.

Asteroid storms may be possible, but at present there are no accepted mechanisms for creating an ~30-My period in asteroid breakup events and impacts. Astrobiological implications arise if extra-solar habitable planets suffer similar cyclical or episodic catastrophic bombardment episodes affecting long-term biotic evolution on those planets.

Other planetary systems might commonly have comet reservoirs, but they are less likely to contain an asteroid belt in the proper orbital position. Further, frequent impacts of ~ 1 -km diameter comets and asteroids could affect the establishment and longevity of technological civilizations, including our own.

Zhang, Y., and D.N.C. Lin (2020) **Tidal fragmentation as the origin of 11/2017 U1 ('Oumuamua).** NATURE ASTRONOMY 4:852-860

Authors' abstract: The first discovered interstellar object (ISO), 'Oumuamua (1I/2017 U1) shows a dry and rocky surface, an unusually elongated shape, with short-to-long axis ratio c/a < 1/6, a low velocity relative to the local standard of rest (~10 km s⁻¹), non-gravitational accelerations and tumbles on a timescale of a few hours. The inferred number density (~3.5 × 10¹³ - 2 × 10¹⁵ pc⁻³) for a population of asteroidal ISOs outnumbers cometary ISOs by >10³, in contrast to the much lower ratio (<10⁻²) of rocky/icy Kuiper belt objects.

Although some scenarios can cause the ejection of asteroidal ISOs, a unified formation theory has yet to comprehensively link all 'Oumuamua's puzzling characteristics and to account for the population. Here we show by numerical

simulations that 'Oumuamua-like ISOs can be prolifically produced through extensive tidal fragmentation and ejected during close encounters of their volatile-rich parent bodies with their host stars.

Material strength enhanced by the intensive heating during periastron passages enables the emergence of extremely elongated triaxial ISOs with shape c/a? 1/10, sizes a ~100 m and rocky surfaces. Although volatiles with low sublimation temperature (such as CO) are concurrently depleted, H_2O buried under surfaces is preserved in these ISOs, providing an outgassing source without measurable cometary activities for 'Oumuamua's nongravitational accelerations during its passage through the inner Solar System.

We infer that the progenitors of 'Oumuamua-like ISOs may be kilometre-sized long-period comets from Oort clouds, kilometre-sized residual planetesimals from debris disks or planet-sized bodies at a few astronomical units, orbiting around low-mass main-sequence stars or white dwarfs. These provide abundant reservoirs to account for 'Oumuamua's occurrence rate.

Nathues, A., et al (2020) **Recent cryovolcanic activity at Occator crater on Ceres.** NATURE ASTRONOMY 4:794-801

Authors' abstract: NASA's Dawn mission revealed a partially differentiated Ceres that has experienced cryovolcanic activity throughout its history up to the recent past. The Occator impact crater, which formed ~22 Myr ago, displays bright deposits (faculae) across its floor whose origins are still under debate.

Two competing hypotheses involve eruption of brines from the crust-mantle transition boundary (remnants of an ancient ocean) or alternatively from a shallow impact melt chamber. Here we report new constraints on the history of Occator that help in testing the hypotheses of its formation. We used high-resolution images of the Dawn Framing Camera obtained close to the end of the mission.

We found a long-lasting and recent period of cryovolcanic activity, which started about 9 Myr ago and lasted for several million years. Several resurfacing events, affecting the faculae and some (dark) solidified impact melt units, are shown to have occurred millions of years after crater formation and the dissipation of the impact-generated heat.

These findings are indicative of a deep-seated brine source. Extensive volatile-driven emplacement of bright material occurred in the central floor, causing its subsidence due to mass loss at depth.

Finally, a thick (extrusive) dome of bright material was raised in the central depression. The derived chronostratigraphy of Occator is consistent with a recently geologically active world, where salts play a major role in preserving liquid in a heat-starved body.

Osinski, G.R., et al (2020) **The role of meteorite impacts in the origin of life.** ASTROBIOLOGY 20:doi.org/10.1089/ast.2019.2203 (available as a free pdf)

Authors' abstract: The conditions, timing, and setting for the origin of life on Earth and whether life exists elsewhere in our solar system and beyond represent some of the most fundamental scientific questions of our time.

Although the bombardment of planets and satellites by asteroids and comets has long been viewed as a destructive process that would have presented a barrier to the emergence of life and frustrated or extinguished life, we provide a comprehensive synthesis of data and observations on the beneficial role of impacts in a wide range of prebiotic and biological processes.

In the context of previously proposed environments for the origin of life on Earth, we discuss how meteorite impacts can generate both subaerial and submarine hydrothermal vents, abundant hydrothermal-sedimentary settings, and impact analogues for volcanic pumice rafts and splash pools.

Impact events can also deliver and/or generate many of the necessary chemical ingredients for life and catalytic substrates such as clays as well. The role that impact cratering plays in fracturing planetary crusts and its effects on deep subsurface habitats for life are also discussed.

In summary, we propose that meteorite impact events are a fundamental geobiological process in planetary evolution that played an important role in the origin of life on Earth.

We conclude with the recommendation that impact craters should be considered prime sites in the search for evidence of past life on Mars. Furthermore, unlike other geological processes such as volcanism or plate tectonics, impact

cratering is ubiquitous on planetary bodies throughout the Universe and is independent of size, composition, and distance from the host star. Impact events thus provide a mechanism with the potential to generate habitable planets, moons, and asteroids throughout the Solar System and beyond.

Speirs: Many interesting diagrams in this paper, and lots of ideas for science fiction writers. Well worth downloading.

Todd, Z.R., and K.I. Öberg (2020) **Cometary delivery of hydrogen cyanide to the early Earth.** ASTROBIOLOGY 20:doi.org/10.1089/ast.2019.2187

Authors' abstract: Delivery of water and organics by asteroid and comet impacts may have influenced prebiotic chemistry on the early Earth. Some recent prebiotic chemistry experiments emphasize hydrogen cyanide (HCN) as a feedstock molecule for the formation of sugars, ribonucleotides, amino acids, and lipid precursors.

Here, we assess how much HCN originally contained in a comet would survive impact, using parametric temperature and pressure profiles together with a time-dependent chemistry model. We find that HCN survival mainly depends on whether the impact is hot enough to thermally decompose H_2O into reactive radicals, and HCN is therefore rather insensitive to the details of the chemistry.

In the most favorable impacts (low impact angle, low velocity, small radius), this temperature threshold is not reached, and intact delivery of HCN is possible.

We estimate the global delivery of HCN during a period of Early and Late Heavy Bombardment of the early Earth, as well as local HCN concentrations achieved by individual impacts. In the latter case, comet impacts can provide prebiotically interesting HCN levels for thousands to millions of years, depending on properties of the impactor and of the local environment. Dal Corso, J., et al (2020) Extinction and dawn of the modern world in the Carnian (Late Triassic). SCIENCE ADVANCES 6:doi.org/10.1126/sciadv.aba0099 (available as a free pdf)

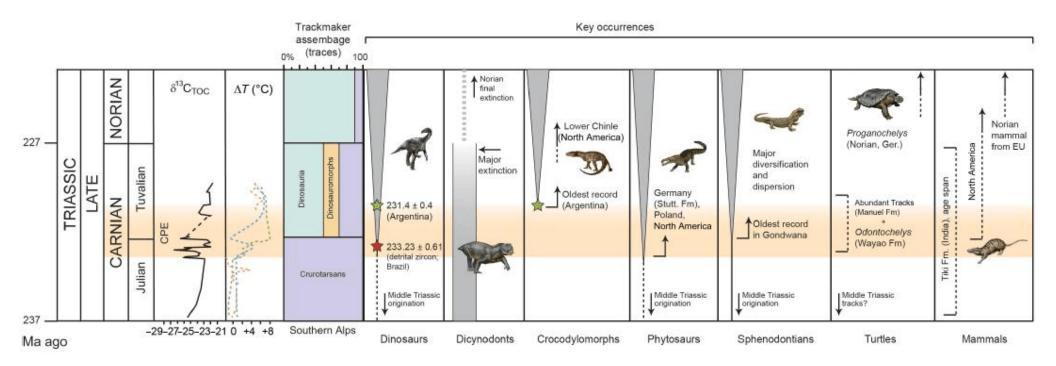
Authors' abstract: *The Carnian Pluvial Episode (Late Triassic)* [234 to 231 megayears ago] was a time of global environmental changes and possibly substantial coeval volcanism. The extent of the biological turnover in marine and terrestrial ecosystems is not well understood.

Here, we present a meta-analysis of fossil data that suggests a substantial reduction in generic and species richness and the disappearance of 33% of marine genera. This crisis triggered major radiations. In the sea, the rise of the first scleractinian reefs and rock-forming calcareous nannofossils points to substantial changes in ocean chemistry.

On land, there were major diversifications and originations of conifers, insects, dinosaurs, crocodiles, lizards, turtles, and mammals.

Although there is uncertainty on the precise age of some of the recorded biological changes, these observations indicate that the Carnian Pluvial Episode was linked to a major extinction event and might have been the trigger of the spectacular radiation of many key groups that dominate modern ecosystems.

Speirs: Chart is from this paper. This extinction event triggered the rise of the dinosaurs, turtles, and crocodiles.



McLoughlin, S., et al (2020) **Dwelling in the dead zone: Vertebrate burrows immediately succeeding the end-Permian extinction event in Australia.** PALAIOS 35:342-357

[The Permian era ended 251 megayears ago with the greatest mass extinction in Earth's history when continent-wide flood lavas heated air and water to 45°C or more. Among the few vertebrates that survived were burrowing animals who could go deep enough to escape the heat and those in the polar regions.]

Authors' abstract: A distinctive burrow form, Reniformichnus australis n. isp., is described from strata immediately overlying and transecting the end-Permian extinction (EPE) horizon in the Sydney Basin, eastern Australia. Although a unique excavator cannot be identified, these burrows were probably produced by small cynodonts based on comparisons with burrows elsewhere that contain body fossils of the tracemakers.

The primary host strata are devoid of plant remains apart from wood and charcoal fragments, sparse fungal spores, and rare invertebrate traces indicative of a very simplified terrestrial ecosystem characterizing a 'dead zone' in the aftermath of the EPE.

The high-paleolatitude ($\sim 65-75^{\circ}S$) setting of the Sydney Basin, together with its higher paleoprecipitation levels and less favorable preservational potential, is reflected by a lower diversity of vertebrate fossil burrows and body fossils compared with coeval continental interior deposits of the mid-paleolatitude Karoo Basin, South Africa.

Nevertheless, these burrows reveal the survivorship of small tetrapods in considerable numbers in the Sydney Basin immediately following the EPE. A fossorial lifestyle appears to have provided a selective advantage for tetrapods enduring the harsh environmental conditions that arose during the EPE.

Moreover, high-paleolatitude and maritime settings may have provided important refugia for terrestrial vertebrates at a time of lethal temperatures at low-latitudes and aridification of continental interiors.

Petr, M., et al (2020) The evolutionary history of Neanderthal and Denisovan Y chromosomes. SCIENCE 369:1653-1656

[There were three species of the genus *Homo* which spread from east Africa to southeast Asia, Siberia/Tibet, and Australia. They were Neanderthals, Denisovans, and *Homo sapiens*. They interbred occasionally but you know which of the three won the evolutionary race.]

Authors' abstract: The genomes of archaic hominins have been sequenced and compared with that of modern humans. However, most archaic individuals with high-quality sequences available have been female. We performed targeted sequencing of the paternally inherited Y chromosomes from three Neanderthals and two Denisovans.

Comparisons with available archaic and diverse modern human Y chromosomes indicated that, similar to the maternally inherited mitochondria, the human and Neanderthal Y chromosomes were more closely related to each other compared with the Denisovan Y chromosome.

This result supports the conclusion that interbreeding between early humans and Neanderthals and selection replaced the more ancient Denisovian-like Y chromosome and mitochondria in Neanderthals.

Sequencing Y chromosomes from two Denisovans and three Neanderthals shows that the Y chromosomes of Denisovans split around 700 thousand years ago from a lineage shared by Neanderthals and modern human Y chromosomes, which diverged from each other around 370 thousand years ago.

The phylogenetic relationships of archaic and modern human Y chromosomes differ from the population relationships inferred from the autosomal genomes and mirror mitochondrial DNA phylogenies, indicating replacement of both the mitochondrial and Y chromosomal gene pools in late Neanderthals. This replacement is plausible if the low effective population size of Neanderthals resulted in an increased genetic load in Neanderthals relative to modern humans.

Telis, N., et al (2020) **Selection against archaic hominin genetic variation in regulatory regions.** NATURE ECOLOGY AND EVOLUTION 4:doi.org/10.1038/s41559-020-01284-0

[Introgression is when the genes of one species work their way into another species by hybridization.]

Authors' abstract: Traces of Neandertal and Denisovan DNA persist in the modern human gene pool, but have been systematically purged by natural selection from genes and other functionally important regions. This implies that many archaic alleles harmed the fitness of hybrid individuals, but the nature of this harm is poorly understood.

Here, we show that enhancers contain less Neandertal and Denisovan variation than expected given the background selection they experience, suggesting that selection acted to purge these regions of archaic alleles that disrupted their gene regulatory functions.

We infer that selection acted mainly on young archaic variation that arose in Neandertals or Denisovans shortly before their contact with humans; enhancers are not depleted of older variants found in both archaic species.

Some types of enhancer appear to have tolerated introgression better than others; compared with tissue-specific enhancers, pleiotropic enhancers show stronger depletion of archaic single nucleotide polymorphisms. To some extent, evolutionary constraint is predictive of introgression depletion, but certain tissues' enhancers are more depleted of Neandertal and Denisovan alleles than expected given their comparative tolerance to new mutations.

Foetal brain and muscle are the tissues whose enhancers show the strongest depletion of archaic alleles, but only brain enhancers show evidence of unusually stringent purifying selection.

We conclude that epistatic incompatibilities between human and archaic alleles are needed to explain the degree of archaic variant depletion from foetal muscle enhancers, perhaps due to divergent selection for higher muscle mass in archaic hominins compared with humans.

Stewart, M., et al (2020) **Human footprints provide snapshot of last interglacial ecology in the Arabian interior.** SCIENCE ADVANCES 6:doi.org/10.1126/sciadv.aba8940 (available as a free pdf)

Authors' abstract: The nature of human dispersals out of Africa has remained elusive because of the poor resolution of paleoecological data in direct association with remains of the earliest non-African people. Here, we report hominin and non-hominin mammalian tracks from an ancient lake deposit in the Arabian Peninsula, dated within the last interglacial.

The findings, it is argued, likely represent the oldest securely dated evidence for Homo sapiens in Arabia. The paleoecological evidence indicates a well-watered semi-arid grassland setting during human movements into the Nefud Desert of Saudi Arabia.

We conclude that visitation to the lake was transient, likely serving as a place to drink and to forage, and that late Pleistocene human and mammalian migrations and landscape use patterns in Arabia were inexorably linked.

Cheng, H., et al (2020) **Timing and structure of the Younger Dryas event and its underlying climate dynamics.** PROCEEDINGS OF THE NATIONAL AACDEMY OF SCIENCES USA 117:23408-23417

Authors' abstract: The Younger Dryas (YD) was an \sim 1,300-y period of extreme climate that dramatically reversed the course of global warming that brought the last Ice Age to a close. Understanding what mechanisms triggered and terminated this event remains enigmatic, but it is fundamental for gaining insights into the inner workings of Earth's climate system.

In this study, we used a combination of well-dated speleothem and ice-core records to pinpoint the timing of its onsets and terminations in various climatic regimes around the world. We show that the YD event occurred first at high northern latitudes and then propagated southward into the tropical monsoon belt through both atmospheric and oceanic processes, ultimately reaching Antarctica before reversing the course to its eventual termination.

The Younger Dryas (YD), arguably the most widely studied millennial-scale extreme climate event, was characterized by diverse hydroclimate shifts globally and severe cooling at high northern latitudes that abruptly punctuated

the warming trend from the last glacial to the present interglacial. To date, a precise understanding of its trigger, propagation, and termination remains elusive.

Here, we present speleothem oxygen-isotope data that, in concert with other proxy records, allow us to quantify the timing of the YD onset and termination at an unprecedented subcentennial temporal precision across the North Atlantic, Asian Monsoon-Westerlies, and South American Monsoon regions.

Our analysis suggests that the onsets of YD in the North Atlantic $(12,870 \pm 30 B.P.)$ and the Asian Monsoon-Westerlies region are essentially synchronous within a few decades and lead the onset in Antarctica, implying a north-to-south climate signal propagation via both atmospheric (decadal-time scale) and oceanic (centennial-time scale) processes, similar to the Dansgaard-Oeschger events during the last glacial period.

In contrast, the YD termination may have started first in Antarctica at \sim 11,900 B.P., or perhaps even earlier in the western tropical Pacific, followed by the North Atlantic between \sim 11,700 \pm 40 and 11,610 \pm 40 B.P. These observations suggest that the initial YD termination might have originated in the Southern Hemisphere and/or the tropical Pacific, indicating a Southern Hemisphere/tropics to North Atlantic-Asian Monsoon-Westerlies directionality of climatic recovery.

Guimaraes, S., et al (2020) **Ancient DNA shows domestic horses were introduced in the southern Caucasus and Anatolia during the Bronze Age.** SCIENCE ADVANCES 6:doi.org/10.1126/sciadv.abb0030 (available as a free pdf)

Authors' abstract: Despite the important roles that horses have played in human history, particularly in the spread of languages and cultures, and correspondingly intensive research on this topic, the origin of domestic horses remains elusive.

Several domestication centers have been hypothesized, but most of these have been invalidated through recent paleogenetic studies. Anatolia is a region with an extended history of horse exploitation that has been considered a candidate for the origins of domestic horses but has never been subject to detailed investigation.

Our paleogenetic study of pre- and proto-historic horses in Anatolia and the Caucasus, based on a diachronic sample from the early Neolithic to the Iron Age (~8000 to~1000 BCE) that encompasses the presumed transition from wild to domestic horses (4000 to 3000 BCE), shows the rapid and large-scale introduction of domestic horses at the end of the third millennium BCE. Thus, our results argue strongly against autochthonous independent domestication of horses in Anatolia.

Miles, M.W., et al (2020) Evidence for extreme export of Arctic sea ice leading the abrupt onset of the Little Ice Age. SCIENCE ADVANCES 6:doi.org/10.1126/sciadv.aba4320 (available as a free pdf)

Authors' abstract: Arctic sea ice affects climate on seasonal to decadal time scales, and models suggest that sea ice is essential for longer anomalies such as the Little Ice Age. However, empirical evidence is fragmentary. Here, we reconstruct sea ice exported from the Arctic Ocean over the past 1,400 years, using a spatial network of proxy records.

We find robust evidence for extreme export of sea ice commencing abruptly around 1300 CE and terminating in the late 1300s. The exceptional magnitude and duration of this "Great Sea-Ice Anomaly" was previously unknown. The pulse of ice along East Greenland resulted in downstream increases in polar waters and ocean stratification, culminating ~1400 CE and sustained during subsequent centuries.

While consistent with external forcing theories, the onset and development are notably similar to modeled spontaneous abrupt cooling enhanced by sea-ice feedbacks. These results provide evidence that marked climate changes may not require an external trigger.

The reduction in the Arctic sea-ice cover observed in recent decades is considered a leading indicator of climate change. Sea ice is, however, not only merely a passive responder but also an active agent of climate-system changes on seasonal to decadal time scales. Recently, seasonal-scale changes in atmospheric circulation patterns have been linked to reduced Arctic sea ice, leading to cold winters.

On a decadal scale, the Great Salinity Anomaly (GSA) of the 1960s to 1970s was the result of enhanced export of sea ice and freshwater from the Arctic

Ocean through Fram Strait between Greenland and Svalbard, then carried to the subpolar North Atlantic by the East Greenland Current. There are also indications of a larger GSA during the late 19th to early 20th century, suggesting that these are recurring events.

Seghezza, E., and P. Morelli (2020) Was a sudden stop at the origin of German hyperinflation? FINANCIAL HISTORY REVIEW 27:161-186

Authors' abstract: This article shows that the origins of this hyperinflation can be traced back to a sudden stop that occurred in the summer of 1922 at a time when expectations that the German economy would stabilise began to subside.

The reversal of capital flows that took place in those months led in the short term to a dramatic depreciation of the mark, a significant increase in prices and a decline in output. This decline sparked bitter social conflict that fuelled a wage and price spiral. This spiral was accommodated by monetary authorities, leading in turn to explosive inflation.

The fact is, however, that in the years immediately following World War I Germany was affected by a massive inflow of capital from abroad on the back of expectations of capital gains to be had from a possible appreciation of the mark. As a result of this, in the early part of 1922, a large share of the country's debt, both public and private, was held by non-residents.

In this context the country was exposed to a sudden stop, that is to say, a sudden reversal of capital inflows. This reversal occurred after certain events in June 1922 that wiped out any hope among foreign investors that a solution could be found to the reparations problem and that the German economy could be stabilised.

As a consequence, expectations of an appreciation of the mark faded, leading non-residents to sell their financial assets in the German currency. This was followed by a pronounced depreciation of the mark and a notable increase in the price of imports, and thus of wholesale prices. This increase was then followed by a considerable increase in consumer prices.

The marked acceleration in the rate of inflation led to a bitter conflict between interest groups, each of which wanted to maintain intact its purchasing power and shift onto others the reduction in national income resulting from the sudden

stop. The government and Reichsbank maintained an accommodating stance. This led to an inflationary spiral that then degenerated into hyperinflation.

Dearlove, B., et al (2020) A SARS-CoV-2 vaccine candidate would likely match all currently circulating variants. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 117:23652-23662 (available as a free pdf)

Authors' abstract: The magnitude of the COVID-19 pandemic underscores the urgency for a safe and effective vaccine. Many vaccine candidates focus on the Spike protein, as it is targeted by neutralizing antibodies and plays a key role in viral entry.

Here we investigate the diversity seen in severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) sequences and compare it to the sequence on which most vaccine candidates are based. Using 18,514 sequences, we perform phylogenetic, population genetics, and structural bioinformatics analyses.

We find limited diversity across SARS-CoV-2 genomes. Only 11 sites show polymorphisms in >5% of sequences; yet two mutations, including the D614G mutation in Spike, have already become consensus. Because SARS-CoV-2 is being transmitted more rapidly than it evolves, the viral population is becoming more homogeneous, with a median of seven nucleotide substitutions between genomes.

There is evidence of purifying selection but little evidence of diversifying selection, with substitution rates comparable across structural versus nonstructural genes. Finally, the Wuhan-Hu-1 reference sequence for the Spike protein, which is the basis for different vaccine candidates, matches optimized vaccine inserts, being identical to an ancestral sequence and one mutation away from the consensus.

While the rapid spread of the D614G mutation warrants further study, our results indicate that drift and bottleneck events can explain the minimal diversity found among SARS-CoV-2 sequences. These findings suggest that a single vaccine candidate should be efficacious against currently circulating lineages.

Hoffmann, M., et al (2020) Chloroquine does not inhibit infection of human lung cells with SARS-CoV-2. NATURE 585:doi.org/10.1038/s41586-020-2575-3 (available as a free pdf)

[Vero cells were isolated in 1962 from African green monkeys and have been cultured in laboratories ever since for vaccine testing.]

Authors' abstract: Chloroquine and hydroxychloroquine are used for the treatment of malaria and have been widely used to treat patients with COVID-19. Both of these drugs are currently under investigation in more than 80 registered clinical trials for the treatment of COVID-19 worldwide.

Chloroquine and hydroxychloroquine inhibit the ability of SARS-CoV-2 to infect Vero cells, providing a rational for using these drugs for the treatment of COVID-19. However, it is unknown whether these drugs inhibit the infection of lung cells and it is poorly understood how they inhibit infection with SARS-CoV-2.

The coronavirus disease 2019 (COVID-19) pandemic, which is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has been associated with more than 780,000 deaths worldwide (as of 20 August 2020). To develop antiviral interventions quickly, drugs used for the treatment of unrelated diseases are currently being repurposed to treat COVID-19.

Chloroquine is an anti-malaria drug that is used for the treatment of COVID-19 as it inhibits the spread of SARS-CoV-2 in the African green monkey kidney-derived cell line Vero. Here we show that engineered expression of TMPRSS2, a cellular protease that activates SARS-CoV-2 for entry into lung cells, renders SARS-CoV-2 infection of Vero cells insensitive to chloroquine.

Moreover, we report that chloroquine does not block infection with SARS-CoV-2 in the TMPRSS2-expressing human lung cell line Calu-3. These results indicate that chloroquine targets a pathway for viral activation that is not active in lung cells and is unlikely to protect against the spread of SARS-CoV-2 in and between patients.

Speirs: I hope somebody sends a copy of this paper to the White House.

Won, D.O., et al (2020) An adaptive deep reinforcement learning framework enables curling robots with human-like performance in real-world conditions. SCIENCE ROBOTICS 5:doi.org/10.1126/scirobotics.abb9764

Authors' abstract: The game of curling can be considered a good test bed for studying the interaction between artificial intelligence systems and the real world. In curling, the environmental characteristics change at every moment, and every throw has an impact on the outcome of the match. Furthermore, there is no time for relearning during a curling match due to the timing rules of the game.

Here, we report a curling robot that can achieve human-level performance in the game of curling using an adaptive deep reinforcement learning framework. Our proposed adaptation framework extends standard deep reinforcement learning using temporal features, which learn to compensate for the uncertainties and nonstationarities that are an unavoidable part of curling.

Our curling robot, Curly, was able to win three of four official matches against expert human teams (top-ranked women's curling teams and Korea national wheelchair curling team (reserve team)). These results indicate that the gap between physics based simulators and the real world can be narrowed.



Speirs: This may not be important outside Canada, but up here curling is the second major sport after hockey.

2020-09-22

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

FROM: Theo Nelson Calgary, Alberta

[His quarterly postcard, this one for the autumnal equinox.]

01010 Autumn falls the Bon @ bear.com Through my eyes, The colours change, The trees divesting, (glasting) Theo Blanketing the ground, Nicer, warmer than The ones to follow. Nelson The mornings are crisp, Mellowing through the day, Dale -Harvests fill the bins, And Night fills the Sky Gaia knows, Gaia grants. Longer and longer, We follow the rhythms Of the eternal cycle. Presional Autuma Hills, Autuma Clouds



THE HARVEST IS IN



Thanksgiving is a traditional harvest festival, so what better way to celebrate than with harvest-themed cupcakes from supermarkets.

I ate them as part of my research for this issue. That's my story and I'm sticking to it.





Top left: The corncob cupcake, in yellow and green icing, was beautifully done by a Safeway baker. It was almost a shame to eat it. Almost.

Bottom left: From Sobeys came the tray of orange cupcakes decorated with the little farmers.

Above: Safeway, which is owned by Sobeys, also had packs of harvest cupcakes. In their variation, they used tiny sugar autumn leaves to decorate the cupcakes.