Hogmanay 2021

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.

ABOUT THE COVER: Feral rabbits in the Beltline district of central Calgary, seen on December 10. These were quite unafraid of me and were probably released by some apartment dweller in the surrounding condo towers who didn't want to feed them.

Domestic rabbits are proliferating in the city and have demonstrated their ability to survive our winters. See OPUNTIA #456 for more photos of feral rabbits.

AROUND COWTOWN

by Dale Speirs

After I posted the last issue of this zine, the mild winter abruptly changed on Boxing Day. Temperatures descended to -34ºC day or night.

Chez Opuntia is normally heated at 24ºC but the furnace struggled to keep the house at 20ºC despite running continuously. But we don't have earthquakes, hurricanes, atmospheric rivers, tornados, or Nor'easters. I have four portable electric space heaters, having gone through this before.

Calgary had a white Christmas, with 5 cm snowfalls every other day. I needed the exercise shoveling the sidewalk, I kept telling myself. Alberta snow is dry powder, so the task isn't as difficult as it might be elsewhere. The house is on a long corner lot so I have to shovel three times as much as my neighbours.

Upper right: Snowshoe hare tracks in my front yard. I wonder how long the feral rabbits will take to reach my neighbourhood, which is about 5 km from the downtown core.

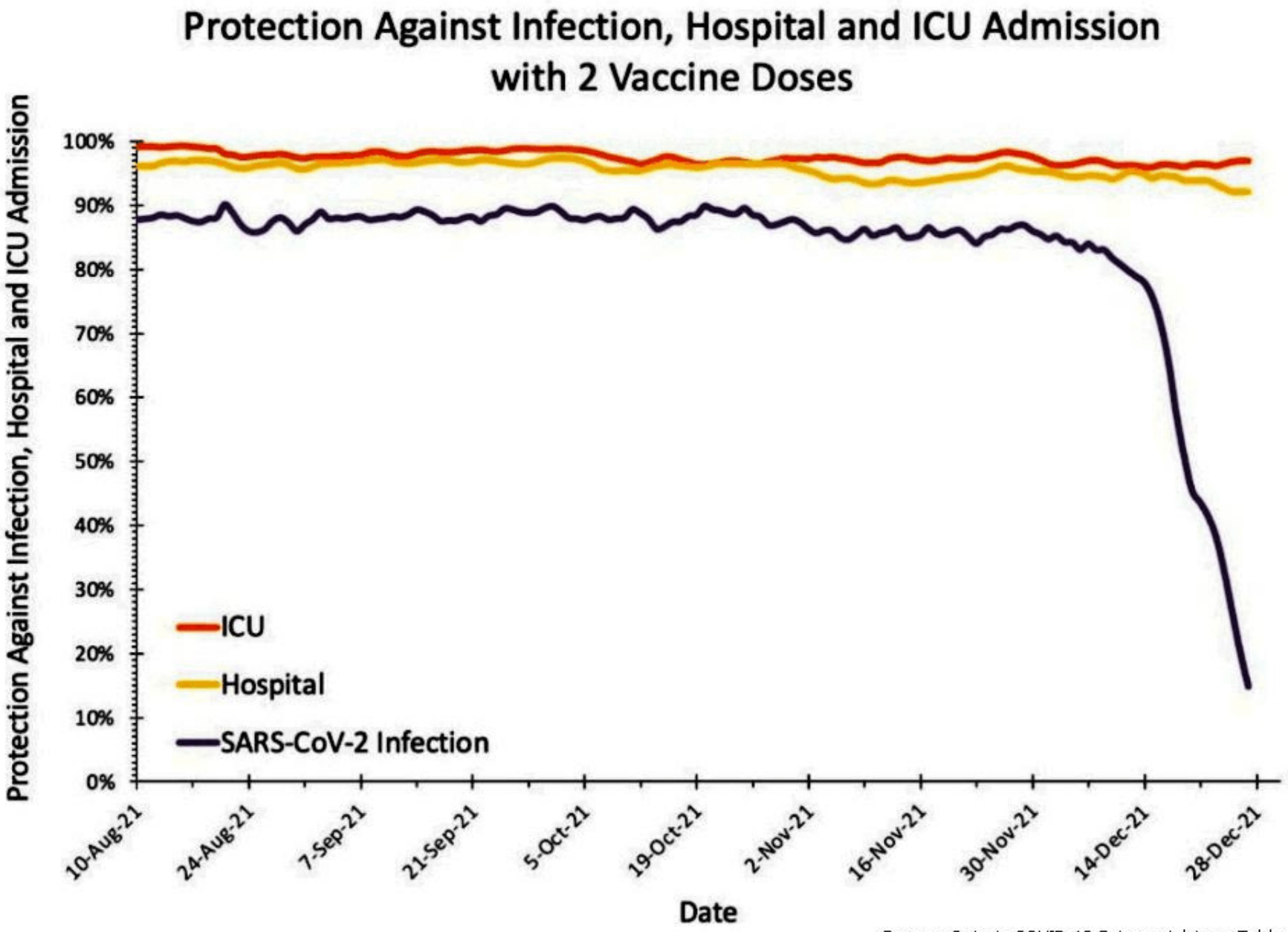
Lower right: *Rosa rubrifolia* fruits from my back yard. Photo taken on December 31 at -30ºC. On top of the cluster is a white puff of crystalized ice fog, not actual snow.

CURRENT EVENTS: PART 31
by Dale Speirs

[Parts 1 to 30 appeared in OPUNTIAs #474, 475, 479, 480, 483, 484, 488 to 503, and 507 to 514.]

This column is continuing much longer than I thought. Omicron does not seem to be a serious variant, and ICU admissions in Alberta are actually falling.

Normally our family have Christmas dinner at my brother Neil's house but once again it was cancelled. His daughter and her husband both came down with Omicron, no worse than a bad cold, but they can't visit.. I've been healthy but I haven't had my third shot yet (booked for January 28). Neil's 88-year-old mother-in-law lives with them. Even though she had her third vaccination, I daren't visit.



Source: Ontario COVID-19 Science Advisory Table

As of December 30, Canada had 2,139,914 cases of COVID-19, with 30,280 deaths. 76.9% of the population was vaccinated. Canada has 38 million people. The number of new cases has surged 200,000 over the past fortnight but the death toll has only risen slightly. It seems apparent now that the Omicron variant is no worse than a bad cold and is not a threat.

The consensus among researchers is that COVID-19 is here to stay, like its cousin the common cold, which is also a coronavirus. The pandemic will not end abruptly but fade away. The SARS coronaviruses, of which COVID-19 is one, will be with us just as influenza never went away after the 1918 pandemic.

The trauma of the economic collapse and lockdowns will scar humanity for decades. In the same way I heard stories as a young boy of the Great Depression from my parents and grandparents, so it will be that children born after this is all over will hear the stories of the pandemic from their elders.

Seen In The COVID-19 Literature.

Yogesh V. Joshi, Y.V., and A. Musalem (2021) **Lockdowns lose one third of their impact on mobility in a month.** SCIENTIFIC REPORTS 11:doi.org/10.1038/s41598-021-02133-1 (available as a free pdf)

Authors' abstract: *As the novel coronavirus (COVID-19) pandemic spread across the world over the past year, many countries imposed lockdowns in the form of stay at home requirements on their citizens to mitigate its spread. We analyze mobility data from 93 countries implementing lockdowns to investigate their immediate impact on mobility and the subsequent evolution of mobility.*

We find that at the start of a lockdown, median mobility is reduced to 36% below the baseline, and by another 18% in the subsequent 2 weeks. 70 countries had lockdowns lasting beyond 4 weeks and showed a significant reduction in mobility compared to that prior to the lockdown.

Mobility was at its minimum 18 days into the lockdown for the median country. Comparing this minimum mobility to the average mobility 2 weeks before the lockdown, we observe a median reduction of 50 percentage points, evidencing that lockdowns reduce mobility.

For 59 of these 70 countries, lockdowns lasted at least 4 weeks after reaching minimum mobility and most observed a significant rebound in mobility during the lockdown period. For the median country, 30.1% of the mobility reduction achieved is lost within 4 weeks, and lockdowns lose all their impact on mobility in 112.1 days.

Overall, our findings show that while lockdowns significantly reduce mobility, this impact is also subject to fatigue as the lockdown period extends longer. The magnitude of mobility reductions achieved and fatigues reported in this research can help policy makers anticipate the likely impact of their lockdown policies.

Arnarson, B.T. (2021) **How a school holiday led to persistent COVID-19 outbreaks in Europe**. SCIENTIFIC REPORTS 11:doi.org/10.1038/s41598-021-03927-z (available as a free pdf)

Author's abstract: *This paper investigates the role of large outbreaks on the persistence of COVID-19 over time. Using data from 650 European regions in 14 countries, I first show that winter school holidays in late February/early March 2020 (weeks 8, 9 and 10) led to large regional outbreaks of COVID-19 in the spring with the spread being 60% and up-to over 90% higher compared to regions with earlier school holidays.*

While the impact of these initial large outbreaks fades away over the summer months, it systematically reappears from the fall as regions with school holidays in weeks 8, 9 and 10 had 30 to 70% higher spread. This suggests that following a large outbreak, there is a strong element of underlying (latent) regional persistence of COVID-19.

The strong degree of persistence highlights the long-term benefits of effective (initial) containment policies, as once a large outbreak has occurred, COVID-19 persists. This result emphasizes the need for vaccinations against COVID-19 in regions that have recently experienced large outbreaks but are well below herd-immunity, to avoid a new surge of cases.

First cases of COVID-19 were identified in Europe in January 2020 and only sporadic cases reported until middle of February. From the WHO COVID-19 situation report on February 21st, only 47 cases had been confirmed in Europe and 1,200 outside of China, over half of which were linked to the Diamond Princess cruise-ship.

The situation escalated rapidly in Europe from this point, and on March 13th the Director-General of the World Health Organization noted that "Europe has now become the epicenter of the pandemic, with more reported cases and deaths than the rest of the world combined, apart from China."

Hence, in the short time-span from the 21st of February until the 13th of March, COVID-19 took hold and spread uncontrolled throughout Europe. During this pivotal period, in late February and early March, many European countries had school holidays.

The specific naming and purpose varies from e.g. winter sport-holidays, half-term holiday, carnival/crocus and some even had early spring breaks. The generic term school holiday is used in this paper to describe all school holidays at the primary and secondary education level in the period of interest (January to March 2020).

Schiøler, H., et al (2021) **Mathematical modelling of SARS-CoV-2 variant outbreaks reveals their probability of extinction.** SCIENTIFIC REPORTS 11:doi.org/10.1038/s41598-021-04108-8 (available as a free pdf)

Authors' abstract: *When a virus spreads, it may mutate into, e.g., vaccine resistant or fast spreading lineages, as was the case for the Danish Cluster-5 mink variant (belonging to the B.1.1.298 lineage), the British B.1.1.7 lineage, and the South African B.1.351 lineage of the SARS-CoV-2 virus.*

A way to handle such spreads is through a containment strategy, where the population in the affected area is isolated until the spread has been stopped. Under such circumstances, it is important to monitor whether the mutated virus is extinct via massive testing for the virus sub-type.

If successful, the strategy will lead to lower and lower numbers of the sub-type, and it will eventually die out. An important question is, for how long time one should wait to be sure the sub-type is extinct?

We use a hidden Markov model for infection spread and an approximation of a two stage sampling scheme to infer the probability of extinction. The potential of the method is illustrated via a simulation study. Finally, the model is used to assess the Danish containment strategy when SARS-CoV-2 spread from mink to man during the summer of 2020, including the Cluster-5 sub-type.

In order to avoid further spread and mink being a large animal virus reservoir, this situation led to the isolation of seven municipalities in the northern part of the country, the culling of the entire Danish 17 million large mink population, and a bill to interim ban Danish mink production until the end of 2021.

Pandemic outbreaks have reentered as a global reality and threat to humanity with the transmission of an animal-adapted Corona virus to humans, first detected in Wuhan, China in late 2019, leading to the COVID-19 pandemic exhibiting frequent severe respiratory problems in humans.

Early warnings of a global event were seen with SARS and avian flu. In both cases early containment measures proved successful, whereas for SARS-CoV-2 early containment failed and the strategy transferred to mitigation. This pattern has later been re-observed in almost all countries at the early stages of COVID-19 introduction across national borders.

Lately, human-animal transmission has given rise to grave concerns regarding a re-ignition of the pandemic through resistant mutations cultivated in animal reservoirs.

One such example is the discovery of the Cluster-5 variant in humans transferred from farmed mink in the Danish fur industry during the summer of 2020. Cluster-5 belongs to the B.1.1.298 lineage and is characterized by 11 amino acid substitutions and four amino acid deletions relative to Wuhan-Hu-1. It was indicated that Cluster-5 could be vaccine resistant.

Hence, national and global health concerns triggered severe disease containment measures, such as the rapid culling of the entire Danish 17 million large stock of mink as well as relatively severe social- and travel-restrictions for seven municipalities in the North Denmark Region (approx. 281,000 people).

Containment measures were, for various reasons, delayed for around four weeks, in which there were no observations of Cluster-5 mutations in a subset of polymerase chain reaction (PCR) tested samples subjected to whole genome sequencing (WGS).

This has lead to the primary objective of the present paper, namely to answer the question: For how long should Cluster-5 be absent from test samples before its extinction is sufficiently certain? The answer depends on the

epidemiological behaviour of the disease during restrictions as well as the testing regime imposed in that period.

Elliott, P., et al (2021) **Exponential growth, high prevalence of SARS-CoV-2, and vaccine effectiveness associated with the Delta variant.** SCIENCE 374:doi.org/10.1126/science.abl9551 (available as a free pdf)

Authors' abstract: *Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections were rising during early summer 2021 in many countries as a result of the Delta variant. We assessed reverse transcription polymerase chain reaction swab positivity in the Real-time Assessment of Community Transmission-1 study in England.*

During June and July 2021, we observed sustained exponential growth with an average doubling time of 25 days, driven by complete replacement of the Alpha variant by Delta and by high prevalence at younger, less-vaccinated ages. Prevalence among unvaccinated people was three times that among double-vaccinated people.

However, after adjusting for age and other variables, vaccine effectiveness for double-vaccinated people was estimated at between ~50% and ~60% during this period in England. Increased social mixing in the presence of Delta had the potential to generate sustained growth in infections, even at high levels of vaccination.

Rabasco, A., et al (2021) **Alone but not lonely: The relationship between COVID-19 social factors, loneliness, depression, and suicidal ideation.** PLOS ONE 16:doi.org/10.1371/journal.pone.0261867 (available as a free pdf)

Authors' abstract: *Since the start of the COVID-19 pandemic, there have been concerns that social distancing may negatively impact mental health, particularly with regards to loneliness, depressive symptoms, and suicidality.*

The current study explored how aspects of social distancing, communication, and online support from October 2020 to December 2020 related to loneliness, depressive symptoms, and suicidal ideation.

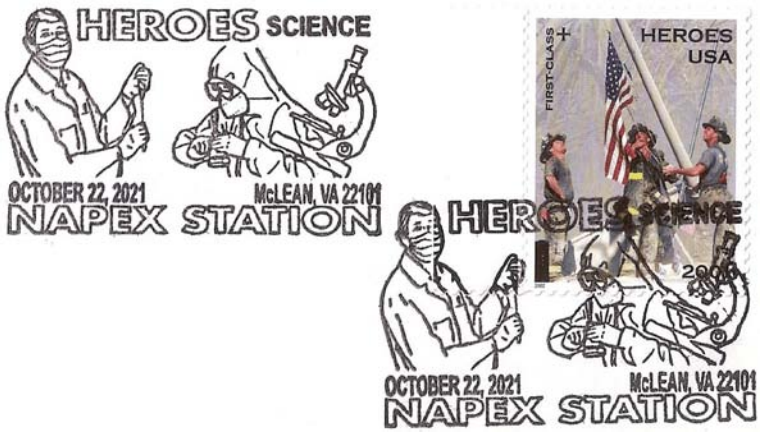
Participants (n = 216) who self-identified as having mental health diagnoses were recruited and completed questionnaires online. Findings showed that COVID-19 related social contact, particularly electronic social contact, is associated with decreased loneliness, suicidal ideation, and depression.

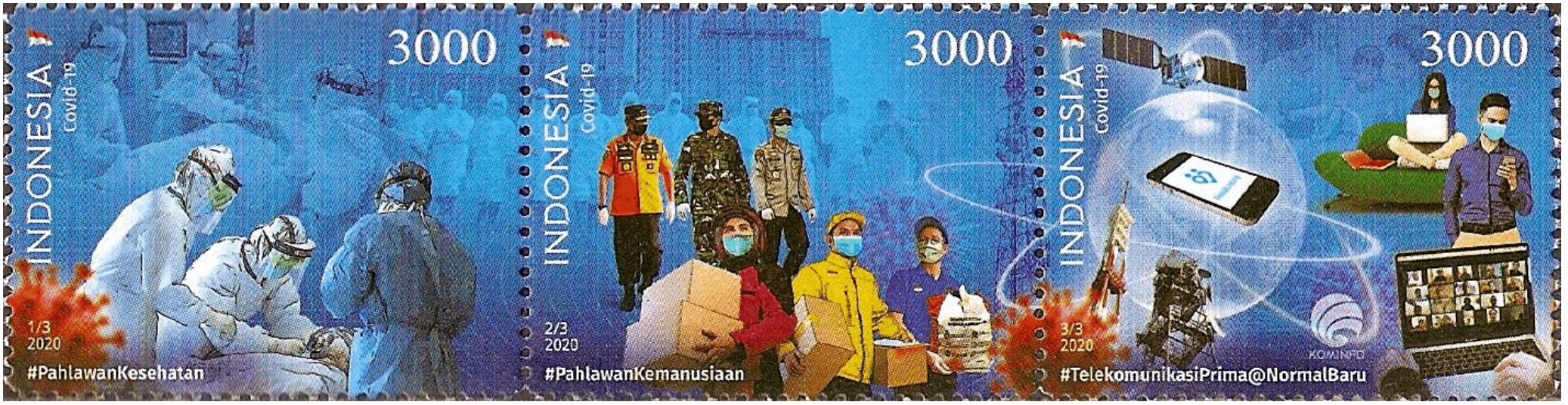
Online emotional support was significantly associated with decreased loneliness and depressive symptoms. Social distancing practices were not associated with increased loneliness, suicidal ideation, and depression.

Our findings underscore the importance of leveraging electronic methods of social connection, especially among individuals who are at risk for suicide or depression.

Philately.

A postmark I sent away for, and some stamps I bought. Images not actual size or to same scale.





K. Peter Lepold
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Kelowna, BC, Canada
V1X 7B6

Kelowna - Home of Ogopogo

PLEASE HANDLE WITH CARE
DO NOT CRUSH BEND OR FOLD
THANK YOU

CANADA
RABBIT
NOV 25 2021
571 BERNARD AVE
KELOWNA BC V1Y 6N2

R Dwayne Miner
1613 -14St SW
CALGARY, AB
T3C 1E3

A cover mailed with a pandemic mask stamp, sent to the stamp dealer who supplies me with my COVID-19 stamps.

Dwayne Miner specializes in topical stamps, so if you collect stamps by a topic, send him your want list. You can write to his shop at the street address given on the envelope at left or email rdminer@telus.net

TEMPUS FUGIT: PART 8
by Dale Speirs

[Parts 1 to 7 appeared in OPUNTIA #401, 432, 442, 464, 483, 487, and 491.]

Cozy Passages.

A CATERED NEW YEAR'S EVE (2019) by Isis Crawford was part of a series about sisters Bernie and Libby Simmons, who operated the bakery A Little Taste Of Heaven in the village of Longely, upstate New York. They catered what transpired to be a night to remember.

The client was Ada Sinclair, a distant relative who hired the sisters not just for the meal but their sleuthing skills. Long ago, Sinclair's father and his business partner had died within hours of each other. The cases were never solved.

Sinclair found her father's diary in the attic which appeared to have clues about the murder. She proposed to assemble the suspects on New Year's Eve for a J'accuse! meeting. She would read aloud extracts from the diary, hoping to prick the conscience of the murderer.

Instead, one of the guests keeled over from poison. The diary went missing during the hubbub. Not that it mattered, for in the denouement it was revealed to be a fake, created by a Sinclair family member. There was an internecine struggle to control the family business, going as far as murder.

The recipes appendix included Ginger Lentil Soup and Steamed Honey Cake. No poison in either of them, unless you have greedy relatives eyeing your estate.

Should Auld Acquaintance Be Forgot.

NICK CARTER, MASTER DETECTIVE aired on old-time radio from 1943 to 1955. The detective first appeared in print in 1886, predating Sherlock Holmes, and often appeared on stage and in movies. Nick Carter appeared in his own pulp magazines and dime novels, written by house authors. Available as free mp3s from the Old Time Radio Researchers at www.otrr.org/OTRRLibrary

"Murder In A Decanter" was written by Jock MacGregor. The episode aired on 1944-12-31 and appropriately opened at a New Year's Eve party. Nick Carter and Patsy Bowen were attending a function at the Cord mansion.

Mrs Cord did not live to see the next sunrise. Someone got her in the den with a blunt instrument. Her lover was seen carrying a whiskey decanter about the party. To no one's surprise, it was the blunt instrument. Meanwhile, Mr Cord's private secretary Wallace Benson had disappeared.

The house was searched but no trace of him was found. As Carter helped, another guest pointed out two giant urns at the top of the staircase. They were huge, the size of a grown man. Anyone familiar with the principle of Chekhov's gun will immediately be on the alert.

The party wasn't successful but since the police arrived during the function to attend a murder, that was understandable. No countdown to the new year. From there, some to-ing and fro-ing across town, with the police in hot pursuit of Carter.

The death toll reached three. Mr Cord wanted his wife's money and thought to blame her killing on her lover. As he told Carter, he wouldn't be hanged any higher for three murders than for one. The police overheard his confession and the rest was details.

Despite thorough searching, Benson's body couldn't be found. Carter knew where the deceased was. Remember those giant urns?

Clocked.

"The Inch That Counted" by Lisetta Megerle (1909 September, THE BLACK CAT, available as a free pdf from www.archive.org) was a horror vignette about a traveler who accidently got himself locked in a small closet while touring a medieval church. It was pitch black and no one heard his cries for help.

He reached around and felt the ceiling slowly descending. He had to sit, then he had to lie down, and thought he would be crushed. Came the dawn and he was rescued by the monk who came to rewind the clock in the church tower. The ceiling was actually the counterweight of the clock, and the closet was just an access shaft.

Time Is The Simplest Thing.

QUIET PLEASE was a radio anthology series that aired from 1947 to 1949. Episodes ranged from mystery to fantasy to weird fiction. Ernest Chappell was

the narrator, assisted by one or two supporting actors. He had a rich voice that compelled attention. Some episodes are available as free mp3s from the Old Time Radio Researchers at www.otrr.org/OTRRLibrary.

"Not Enough Time" was written by Wyllis Cooper and aired on 1947-10-06. The episode began with the narrator Walter McCoy smashing up his time machine. He then addressed his audience and began explaining why he did it.

His first and only jump was back fifty years to 1897. The machine stayed where it was in space relative to the inventor's house. Almost immediately he ran afoul of the local sheriff. After a detour to the hoosegow, McCoy managed to get back to his time machine.

The occupant of the property was a young woman Carrie McKinstry, with whom McCoy flirted. The machine was set on a time delay, so McCoy had to wait for it to kick in. He had a good time courting her until the menfolk arrived.

Between her father and the sheriff, McCoy was lucky to escape. Upon returning to his time, McCoy found the elderly Carrie, now 74 years old. She had waited fifty years for him to come back.

"One For The Book" was written by Wyllis Cooper and aired on 1948-11-21. The story took place at Muroc Dry Lake Air Base in 1937, narrated by Air Corps Sergeant Max Westlake.

He was a science fiction fan, which in those days meant pulp magazines. Westlake dealt with the skepticism of his fellow aviators, who didn't believe in rockets to the Moon or faster than sound aircraft.

One night an aircraft crashed at the base. A strange pilot, and a strange aircraft marked US Air Force instead of US Army Air Corp. (USAF wasn't created until 1947.) The stranger was identified as Major Max Westlake USAF, with an identification card dated 1951. He was received unconscious at base hospital and stayed that way.

Sgt Max quickly figured out that Major Max was him from the future, come in a rocket plane that flew back through time. The colonel and the base doctor had trouble believing it. They took fingerprints of the two men, which were identical.

When the Major awoke, he was interrogated. He said he was in a Mach 12 rocket plane when things went awry. The high command went nuts trying to deal with the two Maxes. As the enquiry was proceeding, the Sergeant of the Guard arrived. His men had rechecked the crash site and found a machmeter. The needle was jammed against the pin. The general fiddled with it and freed the pin.

The instant the pin swivelled free, Major Max vanished. The narration jumped ahead many years. Sgt. Max had been promoted to Captain. He was dreading the resolution of the time loop. "*My gosh, have I got to go through all that again?*"

THE MYSTERIOUS TRAVELER was an anthology radio series which aired from 1943 until 1952. All episodes were written by Robert A. Arthur and David Kogan. Only about one-quarter of the episodes still exist on tape or mp3 via www.otrr.org/OTRRLibrary

The episodes always opened with the sound of a train whistling its way through the night. The narrator introduced himself as The Mysterious Traveler on board the train. He urged the listener to "*settle back, get a good grip on your nerves, and be comfortable, if you can*".

"Operation Tomorrow" aired on 1950-04-11. Professor Wilbur Malcolm had invented a time machine. He tested it by sending a clock forward in time and retrieving it. Dr Frederick Andrews, his dashing young assistant, volunteered to make a trip.

Upon arrival in the year 2050, he found himself in a post-apocalyptic land. He was immediately challenged by an armed woman Lieutenant Emily French, who demanded to see his identification. "*Since when does an American have to carry identification papers?*", he replied.

Pause for reflection. As we hurtle into a cashless society, nevermind vaccine passports, it is well to remember there was a time within living memory when civilians did not need any kind of identity card.

If you were polite, well behaved, and had the cash, you could rent an apartment or buy anything from a restaurant meal to a car without showing a photo ID card or tapping a credit card against a reader.

I am just barely old enough to remember from my boyhood in the early 1960s when the only identification card my father had was a non-photo driver licence. Everyone paid cash and credit cards were still experimental.

My mother had been born and raised in the village, and did not need any card whatsoever. Everyone knew her from when she was a little girl or had grown up with her. When she became the village schoolmarm, she in turn taught the next generation and knew their lives and their kin.

Now I can still pay cash for a hamburger, but like most people I just tap a credit card against the reader. When I applied for my pension, I had to do it online, for there are no front-counter clerks anymore. Voting in an election in person can still be done, as long as you can show the poll clerk a driver licence, passport, or provincial identity card, all with photos embedded in them.

But I digress. When last we left Andrews, he was hustled into a military prison as a spy. The city was underground and Andrews learned a war had been ongoing for 95 years. His 1950 driver licence was laughable. There was a real danger he might be shot as a spy.

However he managed to convince them he was legitimate. They gave him the guided tour that every visitor to a utopia gets, with the usual lectures. He collected books filled with scientific information, which he wanted to take back when Malcolm recalled him with the time machine.

Pause for yet another digression. I am prepared to believe there will still be books in 2050, but not scientific texts. Even today, scientific periodicals are pdfs, not print. The only printed codexes of the future will be novels, cookbooks, repair manuals, and self-help books.

Back at the future, Andrews' tour guide French showed him the warboard room, where a continuous exchange of missiles was tracked. She told him the war began in 1955 when a missile project in Red Rock, Arizona, suffered a catastrophic accident that was mistaken for an enemy attack.

By now, the answer was clear. When Andrews returned in 1950, he must alert the missile project of the danger. They gave him some books and bade him farewell. No one seemed to be thinking about altered timelines.

The books stayed behind. When Andrews arrived back home in 1950, all of his memories of 2050 had been wiped out. Malcolm concluded that nothing could be brought from the future. The experiment was a failure.

Not to worry though. Malcolm told Andrews that they had just received funding for a new project developing space rockets. The project was based in Red Rock, Arizona.

2000 PLUS was an old-time radio anthology series set in the far distant future of the 2000s. Or, from our point of view, circa now. The series was said to be the first adult science fiction radio show, and aired from 1950 to 1952. Available as free mp3s from www.otrr.org/OTRRLibrary

"The Temple Of The Pharaohs" aired on 1951-12-26. A spaceship returning to Earth hit a time warp and was thrown back in time to Egypt circa 3000 BC. Fortunately the two astronauts had a universal translator with which to communicate with the pharaoh.

He was a good sort and bade them welcome as messengers of Ra in a sky bird. He and the queen were much vexed by the disappearance of their son. The astronauts used their superscience devices to rescue the boy.

The high priest tried to poison the pharaoh but one of the astronauts was well read in Egyptian history. He foiled the plot and showed the pharaoh a picture of the Sphinx. The astronauts departed in their spaceship, leaving the pharaoh to build the Sphinx. Good way to mess up the timelines.

Timelines.

"Down The Dimensions" by Nelson S. Bond (1937 April, ASTOUNDING, available as a free pdf from www.archive.org) took a different slant on inventors sitting in a chair traveling through time. Bradner was the scientist who considered time as a dimension that could be manipulated.

His time machine worked, but his experience was different than the Wells type of chrononaut. He saw time as a line stretched out ahead and behind him, saw all that had been and would be, and too late realized he was trapped. Time was not consecutive events but a single aspect. Bradner was trapped on the timeline. He could see all but could never leave and turn aside.

One interesting aspect I've not seen considered before was used as the main point of "The Time Contractor" by Eando Binder (1937 December, ASTOUNDING, available as a free pdf from www.archive.org). Eando was the pseudonym of the Binder brothers Earl and Otto.

The mad scientist had invented a device for producing abundant clean energy by contracting time. Lots of handwaving as to the theory of the device but that was just the side plot.

The scientist wanted to win the Nobel Prize for his invention. Alas, there was more than one mad scientist in the world, and another published the same invention a few weeks prior. Nobody remembers those who finish second. A neat little twist.

WINTER WONDERLANDS: PART 5
by Dale Speirs

[Parts 1 to 4 appeared in OPUNTIAs #405, 437, 465, and 490.]

Skiing Is A Dangerous Sport.

LET GEORGE DO IT aired on radio from 1946 to 1954, sponsored by Standard Oil. The episodes can be downloaded as free mp3s from www.otrr.org/OTRRLibrary.

The series was about George Valentine, a private investigator. He solicited clients with a running newspaper classified advertisement in the Personals column that he cited in the opening credits: *Danger's my stock in trade. If the job's too tough for you to handle, you've got a job for me. Write full details.*

Valentine's secretary/girlfriend was Claire Brooks, whom everyone called Brooksie. Her main function was to act as a sounding bound for Valentine and have the plot explained to her at intervals.

"Red Spots In The Snow" written by Davis Kent, aired in 1951. Herbert Judson, wealthy movie director from Hollywood, wanted George Valentine to act as his bodyguard on a trip to Snow Valley Lodge. Claire Brooks was thrilled to be going.

No comment was made as to whether she and Valentine had separate rooms. I mention that because ye olde radio shows have a reputation for being prudish, but script writers often tried to sneak in some racy stuff past the network censors.

So they went and so they arrived to meet their client. Judson was a ladies man. He didn't waste a moment before offering Brooksie a screen test. It was his favourite pickup line. Didn't work.

Getting down to business, Judson showed Valentine a threatening note he had received. Something about keeping his promises. Not to be outdone, Valentine shortly thereafter received a similar note warning him off the job.

Judson had accumulated a list of enemies, among whom was Jacques the ski instructor. The afternoon was to be spent skiing. As they went up the lift, a

shot was heard from the forest below. Valentine and Brooksie saw red spots in the snow. Judson was on the lift seat ahead of them but would never see anything again.

Valentine spotted a skier heading downhill out of bounds. He was wearing a blue sweater with a yellow band. Too late to catch him, but Valentine and Brooksie followed his trail. Partway down, shots were fired at them. The perpetrator ran out of ammo and fled out of sight.

Brooksie made some useful contributions in the investigation, unusual in the scripts in those days. The duo found a lounge singer Jill Drew who was most unhelpful. Carrying on, they found a waitress Mary crying over Judson's death. He had promised her a screen test.

Jacques was the next suspect. They searched his cabin and found incriminating evidence, including the sweater. Non-admissible in court, of course. Jacques arrived, was suitably indignant, and picked up a gun lying on the table. He didn't know that all the bullets had been expended on the ski hill, so Valentine had little trouble restraining him.

Since there were still five minutes left in the episode, it couldn't be that simple and it wasn't. Mary confessed all, including framing Jacques with fake evidence. Valentine demolished her confession, then accused Drew. She confessed in turn, a victim of unrequited love. Since only two minutes remained, she was therefore the culprit.

As usual in these mysteries, had the culprit kept quiet, she probably would have been acquitted. The evidence was circumstantial at best, contaminated by Valentine, and there were others who had the means and opportunity.

BARRIE CRAIG, CONFIDENTIAL INVESTIGATOR was probably the only private detective series whose star had actually been a private detective in real life. William Gargan had worked in an investigator's office as a young man. He professed amusement at how script writers depicted private detectives at variance with the real ones.

This series aired from 1951 to 1955. Craig narrated most of each episode. The plots often tangled up, but there were several summations during each episode so the listener wouldn't get lost. The episodes are worth listening to, and the series grows on the listener.

"Zero Hour" aired on 1954-02-02 and was written by John Roeburt. Barrie Craig was hired by Evan Parker to visit him at a ski lodge in Stowe, Vermont. Two years before, his estranged wife Jean had fallen over a ravine while skiing and broken her spine. Since then she had been confined to a wheelchair, paralyzed below the waist.

Her equipment had been sabotaged. There were four suspects: her husband Evan, her brother Tom Cooper, friend Alan Loomis, and fashion writer Wilma West. It happened that all of them were there at the ski lodge that weekend.

Craig was still unpacking when Cooper visited him, uttering threats with menaces. A more bashful antagonist later fired a rifle bullet through Craig's room window, not to kill but to frighten since the shot was deliberately wide. He pocketed the bullet as a souvenir.

Jean was staying down in the village since ski lodges then and now are not suitable for wheelchairs. En route to see her, Craig met up with West, who filled in some of the background. Two years ago she had an affair with Evan but Jean wouldn't consent to a divorce.

Just outside Jean's room, Loomis was waiting for him. "*More people know my name up here*", groused Craig. Loomis said Jean had left him at the altar and married Evan instead. Craig finally met Jean. She provided the final motive, saying her brother resented her for inheriting their father's estate, leaving him with nothing.

All the motives having been set up, the episode swung into action. Cooper was picked off by a sniper on the mountain top. Not long after, the sniper got West while she was on a sleigh ride. Loomis was sniped down in the village.

Craig caught Evan snowshoeing on the mountain, carrying the rifle that killed the other three. But something led Craig to believe that Evan was an accessory but not the murderer. Taking the rifle away from Evan, he went back down to the village and fired shots through the windows of Jean's chalet.

He then dashed around to the front, broke through the door, and found Jean standing flattened against an inside wall to evade further shots. The paralysis was a fraud. She had been the sniper. Since she didn't know who her assailant had been two years ago, she decided to clean house. That three innocent people would be killed didn't faze her.

THE ADVENTURES OF SAM SPADE, based on the character created by Dashiell Hammett, aired from 1946 to 1951. It went off the air shortly after both Hammett and Howard Duff, the actor who played Sam Spade, were named as Communist sympathizers during the Red Scare.

The series struggled on for a few more episodes as a sustained show with no advertisers. No corporation dared to be associated with it. The replacement actor couldn't live up to Duff's characterization. The episodes can be downloaded as free mp3s from www.otrr.org/OTRRLibrary.

Spade worked in San Francisco. His secretary was Effie Perrine, a scatterbrained young woman who took down his narration in the form of a report. Unlike the movie, where Spade was a serious man, the radio series played him as a happy-go-lucky fellow, sometimes swerving into slapstick.

"The Chateau Macleod Caper" was written by John Michael Hayes and aired on 1951-01-26. Howard Duff had been run out of town by the Red Scare. The part of Sam Spade was now played by Steven Dunne, who did his best to imitate Duff's style and failed.

As the episode opened, Spade returned from a skiing vacation in Lucerne, California. He brought back a souvenir for Effie Perrine. It was a snowball, carried in a Thermos flask so it would survive the San Francisco heat. Packed inside the snowball was a bloodstained bullet, and thereby was a tale.

Upon arrival at the ski resort, Spade was met by Rita Parker, self-confessed mistress of Rufus Macleod, the hotel owner. She introduced the rest of the characters, saying that if Spade was interested in abnormal psychology then he was in for a treat.

Cora Macleod's boyfriend Paul Endicott was the gigolo type. She and Rufus were in the mid-stage of a divorce action. Charlie Allison was Rufus' righthand man and Tosur Svenborg the ski instructor.

Upon meeting Rufus, the client, Spade was told of a threatening letter. A party was planned for the weekend and Rufus wanted any trouble nipped in the bud. Nonetheless the trouble began early. Rufus and Endicott had fisticuffs out on the snow.

Relations between the group members were just as chilly indoors. Paul resented Tosur's attentions to Cora. They exchanged fisticuffs as well. Cora took Spade out for a ski to a nearby lake and began romancing him en route. At the lake, she abandoned him for Allison, who was puttering with an iceboat.

That evening Endicott departed this world out on the snow due to a rifle bullet. The orchestra went into a crescendo. The episode cut to a network house ad, there being no commercial advertisers who would touch the show.

The ad was for a new network series about Mr and Mrs Blandings as they built their dream house. No Commies there. People complained about how dull the early 1950s were in the broadcast media but the networks had to tread carefully and not offend anyone. Much like the wokers and cancellers of today terrorize anyone who isn't politically correct.

Spade found the deceased. No one else was around, so he decided to psyche out the murderer. Instead of raising an alarm, Spade hid Endicott's body nearby, covered it with snow, and brushed away all the tracks.

Back at the chalet, the party resumed. Endicott wasn't missed by most, not even Cora. She thought he was dead and said so privately to Spade. Spade went back outside and discovered Endicott's body was gone. A rifle shot was fired at him.

Discretion being the better part of valour, Spade went back to his hotel room, only to be jumped by Svenborg the moment he opened the door. Also present was Endicott. Svenborg thought Spade did it. That was almost his last thought, for someone poked a gun through the window and emptied the clip into Svenborg.

He survived, so Spade left him there and went on yet another excursion out into the snow. He followed fresh ski tracks hither and yon, then returned to the hotel. There was a confrontation, some final gunshots, and Allison exposed as the killer. Jealousy and all that.

SNOWBEAST was a 1977 made-for-television movie written by Joseph Stefano. It is available on the 50-Movie Sci-Fi Classics box set from Mill Creek Entertainment.

Set at a Colorado ski resort, the protagonists were Gar and Ellen Seberg. He was a former Olympic skier looking for work and she had done some television documentaries.

The Snow Carnival was on but was marred by skiers disappearing on the slopes. Resort owner Carrie Rill feared losing business at the height of the season, especially after some witnesses said they saw a Sasquatch. The sheriff scoffed and said the monster was nothing more than a rogue bear.

Carrie's grandson Tony hired Gar, telling him his first job would be to kill the monster. The creature eventually came down into the village, crashing the Snow Carnival and causing quite a hoorah. The death toll steadily climbed.

I must say that many of the victims would not be missed from the gene pool. When the Sasquatch attacked, they stood still and screamed, even though they could have easily skied or run away.

The Sasquatch was not shown except for occasional partial glimpses near the end. Fair enough, since a stunt man in a Chewbacca suit would not have been that believable. The attacks were shown from the monster's point of view, as the cameraman rushed toward the actor.

The plot was standard horror. First the unawareness of the threat, then disbelief, turning into horror and confusion. Finally a posse was formed, culminating in a fight to the death on the edge of a cliff. Sasquatch didn't have a chance. The movie was watchable, padded out somewhat by lots of downhill skiing shots.

Skating Around Murder.

SKATING ON THIN ICE (2011) by Donald Bain was another installment in the Murder, She Wrote series about Jessica Fletcher of Cabot Cove, Maine.

The town's ice arena was being used by Christine Allen and Alexei Olshansky, who were training for the Olympic Games pairs figure skating, under the direction of former medalist Brian Devlin.

Accidents began to happen, apparently sabotage. Lots of melodrama on and off the ice. Olshansky survived as far as Chapter 11, rather surprising for a cozy. Some of his melodrama extended back to Russia. Fletcher was on the case, not to mention the police, who liked to think they were in charge.

The murderer was acting on an out-of-the-blue motive. Olshansky was blackmailing her, a dangerous occupation which cost him his life. She blabbed a complete confession since Fletcher had, as usual, contaminated the evidence. No other way to bring the culprit to justice.

MR AND MRS NORTH aired on radio from 1942 to 1955, based on the novels by Frances and Richard Lockridge. The protagonists were Jerry and Pam North, average citizens with a remarkable propensity for stumbling into murder cases. Jerry was a publisher and Pam was a housewife.

The radio scripts were written by Howard Merrill. The episodes can be downloaded as free mp3s from www.otrr.org/OTRRLibrary.

"Accidents On The Ice Rink" aired on 1950-01-03. Pam and Jerry North were at an indoor ice skating rink. She was trying to do figures but couldn't do the number 4. Pam was working her way up to a figure-8.

Nearby, a young figure skater named Marcelle took a bad fall. Someone had sabotaged her skate. She told the Norths that such accidents had been happening frequently.

Her stepfather Mr Russo, first name never given, was the manager, so the Norths talked to him. Russo and Marcelle had arrived in the city a few months ago and opened the rink. The Norths suggested that perhaps someone was trying to kill them both.

Soon enough they found an intruder snooping in Marcelle's room. He pulled a gun on them and fled. He didn't get far, as someone put a knife in his chest when he stepped out into the hallway. The dead man had a locket clenched in his hand, taken from Marcelle.

Along came Arthur Chadwick, theatrical agent, who identified the deceased as Roy Gallagher. No sooner did he make the identification than a scream reverberated down the corridor.

The Norths raced over to Russo's office. Marcelle was with Russo when his chair suddenly collapsed. He was momentarily unconscious when his head hit the concrete floor. Someone had sawed through the chair leg.

The police arrived and the Norths directed them to Gallagher's body. Chadwick was gone and so was the locket. Jump cut to the Norths and the police, in that order, interviewing Gallagher's daughter. She filled in his past history, and mentioned she was trying to get a job on the stage with Chadwick's help.

Her father had operated a gold mine in Alaska for twenty years and hadn't seen his daughter in all that time. Russo had been with him. They came back to New York City separately.

The Norths visited Russo and Marcelle, who were in a dither. Chadwick had just left after threatening their lives. Another excursion for the Norths, this time to Chadwick's office. He wasn't there, so they made themselves at home and searched the place. They found the locket.

Chadwick found them, pulled a gun, but was interrupted by the arrival of Miss Gallagher. The room became even more crowded when the police, Russo, and Marcelle appeared. In the denouement, the explanations tangled up suitable for a soap opera.

Marcelle was Gallagher's real daughter and Miss Gallagher was an imposter named Fay Lavere. Chadwick and Lavere were trying to get Gallagher's fortune.

When Russo and Marcelle arrived in town, Chadwick had to get them out of the way before Gallagher found out he had the wrong daughter. He was scheduled for an early death so that Lavere could inherit his gold mine.

Lavere was taken away for an eventual excursion to the electric chair for murdering Gallagher. The Norths went back to the rink where Pam finally did a figure-8 after a lesson from Marcelle. Next she was going to put on her skates and try to do it on the ice.

Real Climate Change.

"White Adventure" by Warner Van Lorne (1936 April, ASTOUNDING, available as a free pdf from www.archive.org) began with unusual snowfall around the world. Heavy snowfalls accumulated but strangely the white stuff would not melt and was difficult to plough due to its weight. A disaster unfolded over the months as a new ice age began.

The hero figured out how to melt the snow using broadcast electrical power a la Tesla. Not until after he spread the news did he realize the impending problem. Everyone rushed to melt the metres of snow that covered North America and Eurasia. All at once, that is, which produced massive floods everywhere at the same time.

Relax with cupcake snowmen, courtesy of my neighbourhood Safeway.

Canada Post issued this booklet of stamps in early 2021. They proved to be the most popular commemorative in Canadian history. Canada Post had to go back to the printers for a second run to meet the demand.

I'm sure the fuzzy little weasel made everyone go "Aw, isn't it cute?".

Let It Snow.

"Snowbound" was an episode of MR AND MRS NORTH and aired on 1954-01-26. The episode opened in Lakeville, upstate New York, at the Benson Hotel, owned and operated by Carl and Vera Benson. They were having financial problems.

A blizzard covered the district. Carl was in Forest City on business but had chains on the car tires, so he told Vera on the telephone that he should be able to get home safely. After concluding with him, she turned on the radio to hear the news.

The announcer was talking about a armoured car holdup by two men that left a guard dead and $25,000 stolen ($250,000 in today's currency). The guard managed to seriously wound one of the thieves.

Just then a traveler arrived at the hotel, seeking a room. He signed his name George Martin and talked like any gangster you ever heard. He made a pass at Vera and then went up to his room.

Next up were Pam and Jerry North. They were heading further north. Jerry was hoping to persuade a writer Henry Grayson to stay with his publishing firm instead of defecting to another company. He hadn't called ahead and was hoping to surprise the author.

Instead the blizzard surprised the Norths and forced them into the hotel. En route they found a ditched car, abandoned but with a pool of blood on the floorboard. They asked Vera to call the police but she was interrupted by Carl's arrival.

That set the stage. Vera let on to Martin that she knew he was one of the robbers. For $10,000 she would stay quiet. Elsewhere, the local constable arrived and told the Norths the car had been used by the bandits. The body of the wounded robber was found not far away.

Frank Ross, as Martin really was, had been identified as the other robber. The police knew he couldn't have gone past Lakeville because of the storm. Vera dragged Carl into the conspiracy as the only way out of their debts.

The plot spread to a cabin in the woods, where Vera took Ross for hiding. Out in the blizzard, the two went. They had to walk since no vehicle could move in the deep snow. In the whiteout she slipped and broke her ankle. Martin left her in a field to freeze to death and went on, carrying his suitcase full of cash.

Vera's body was found by a snowplough crew the next morning. The Norths drove off but got stuck on the same road where Vera died. They went to the cabin for help and were warmly greeted by Ross. He took Pam hostage.

The final act played out on the road with gunshots and the full cast, at least the surviving ones. Ross got his just desserts. Jerry called ahead to the Grayson residence. The wife told him that Grayson had gone to New York City to surprise the Norths and was now snowbound there.

RUBBER STAMPS

by Dale Speirs

I regularly check the What's New section of Project Gutenberg (www.gutenberg.org). Recently I saw an 1891 book that had been scanned, titled RUBBER HAND STAMPS AND THE MANIPULATION OF RUBBER by T. O'Conor Sloane.

The title caught my eye because in 1997, as part of my interest in mail art, I published a history of rubber stamps in OPUNTIA #34 (available as a free pdf from www.fanac.org or www.efanzines.com). More about that in a moment.

The other thing that caught my eye was the author's name, Thomas O'Conor Sloane. He was editor of AMAZING STORIES from 1929 to 1938. Born 1851, died 1940, he had seen amazing changes during his life. Sloane had several science degrees, and was involved in all manner of cutting-edge technology.

He was a practical scientist, as was his publisher Hugo Gernsback. One of Sloane's sons married the daughter of Thomas Alva Edison and gave that man the only four grandchildren he had.

Sloane's editorial experience also included a stint at SCIENTIFIC AMERICAN from 1886 to 1896. He published numerous books on practical electricity, which during most of his adulthood was revolutionizing industry and home life the same way computers have changed ours.

The book goes into detail about practical methods of casting India rubber into moulds and how to make rubber stamps. There is also a section on hektographs which will interest old-time science fiction fans. (See OPUNTIA #24 for a history of the hektograph.)

I dare say that even 130 years later this book will still be useful to the arts-and-crafts hobbyists. Another demonstration of the value of Project Gutenberg.

LITERA SCRIPTA MORTEM: PART 7

by Dale Speirs

[Parts 1 to 6 appeared in OPUNTIAs #424, 428, 440, 469, 505, and 513.]

Printing.

"The Mischievous Typesetter" by Noel Loomis (1952 July, IMAGINATION, available as a free pdf from www.gutenberg.org) is a semi-ghost story with a science fictional explanation about totally obsolete technology.

The story was set in the printing shop of a newspaper where a linotype machine was acting up. One of the printers speculated the cause was a combination of a new uranium facility that had opened nearby and a recent lightning bolt that hit the print shop and sent a surge of electricity into the machine.

Linotype machines cast type by a complicated gizmo using hot lead that created the text as lines of metal. The operator sat at the machine and typed the editorial copy, which came out ready set in lead slugs, which were then compiled on the printing press.

The difficulty was that linotype #7 in the shop had become sentient. It didn't mind setting dignified news copy, but objected to the drudgery of want ads. After assorted alarums, the machine was beaten into docility with a sledgehammer.

Dangerous Books.

"The Album" by Amelia Reynolds Long (1936 December, WEIRD TALES, available as a free pdf from www.archive.org) began in a bookstore where Murray, Fenwick, and O'Hara were browsing.

They found an old photograph album with daguerreotypes of assorted people. They were all from different decades in chronological sequence, and all had a surprised look on their faces. There was a warning inscribed in the flyleaf that the reader should not go past the red bookmark.

Murray bought the book and took it home. Fenwick called later that night and found Murray missing but the book lying on the table. He noticed that the bookmark had been moved ahead one page. Murray's photo was in the book.

He had a surprised look on his face. O'Hara stopped by later. He saw the book and opened it. Near the end was a picture of Murray, then Fenwick. O'Hara turned the page past the red bookmark.

Preserving Books And The Evidence.

IF BOOKS COULD KILL (2010) by Kate Carlisle (pseudonym of Kathleen Beaver) was part of a cozy series about Brooklyn Wainwright, a book restorer in San Francisco. (Her sisters were named London, China, and Savannah.) She had gone to Scotland for the Edinburgh Book Fair, where she met up with ex-boyfriend Kyle McVee.

They were on reasonably friendly terms, enough so that he asked her to authenticate a book of poems by Robbie Burns. In it was a previously unknown poem that suggested the poet had diddled with Princess Augusta Sophia, daughter of George III and got a son by her. All hushed up back then, not because Sophie got herself in the family way but because the father was a Scot.

There was one sticking point in the plot I never believed, the remark by McVee that the present-day Royal Family would try to hush up the scandal. Given what Lizzie's brood had done by the year this book was published, one doubts there would be any concern at Buckingham Palace about an unwed princess who got herself pregnant in 1785.

Someone had no doubts apparently, as McVee was murdered. The blunt instrument was a bookbinder's hammer which belonged to Brooklyn. What followed was the usual Miss Marple versus the police routine. The only difference was that most of the characters spoke Scottish, och aye.

Brooklyn did manage some time at the book fair, where she presented a workshop on book forgeries. At the dealer bourse, she bought a vintage poster from a francophone version of a Vincent Price movie. Some alarums the followed.

The murderer tried to kill Brooklyn by toppling a heavy bookcase on her, but she survived as we knew she would. In the final confrontation, the motive was revealed as jealousy. Kyle had been canoodling with the killer's wife. Buckingham Palace could rest easy.

THE GRIM READER was the fifteenth novel in the series. Brooklyn Wainwright and her new husband Derek were in the village of Dharma, somewhere in California wine country. The first annual Dharma Book Festival was underway. Her mother Rebecca was head of the organizing committee.

Brooklyn was talked into doing rare book appraisals, shared a booth, and was staging LITTLE WOMEN: THE MUSICAL. The villain of the festival was Jacob Banyan, a boor, loudmouth, and mortgage forecloser. Surprisingly, he wasn't the murder victim.

Instead a festival committee member Lawson Schmidt departed this world suddenly. Did Banyan kill him? was the thought on everyone's mind. Simultaneously the festival's cash float vanished, which was the $70,000 needed to keep the book fair operating.

Notwithstanding the hoorah, Brooklyn managed to demonstrate some book restoring. Rebecca desperately tried to hold the festival together. The killer had been involved in a shady deal with Banyan that went wrong. Schmidt had a rare book worth five figures that was worth killing for.

The denouement was live on stage. The finale got a grand finish that would have amazed Louisa May Alcott.

Literary Clubs.

HANCOCK'S HALF HOUR was a comedy series which aired on BBC Radio from 1954 to 1961. Tony Hancock was the star, assisted by Sidney James, who specialized in playing spivs and con men, and Bill Kerr, an Australian who played the village idiot.

Unusually, their character names were the same as their real names. Other actors came and went but had character names. Hancock played a stand-up comedian who only worked occasionally but managed to keep his own house. He rented rooms to James, Kerr, and occasionally others.

"The Poetry Society" aired in 1959 December and was written by Ray Galton and Alan Simpson. Tony Hancock's latest fad was beatnik poetry, semi-random words arranged in free verse. He had tried a different pub than his usual local, where a group of beatniks hung out, calling themselves the Poetry Society.

In his newfound enthusiasm, he invited the group to his house for a meeting. They accepted with alacrity after Hancock offered to feed them. James and Kerr insisted on staying for the meeting. Various of the group took turns reading gibberish in the guise of poetry, including Hancock and Kerr.

James was openly derisive of the group, so the leader gave him a brochure to explain the good works of the society. As the others quoted poetry, he read through the bylaws. He discovered the leader was entitled to £500 to concentrate on running the society instead of having to go out and get a day job. The second-in-command got £350. Both salaries were good money back in those days.

The leadership went to the best poet by vote of the membership. Kerr's Australian gibberish was so popular that the current leader resigned in favour of him. James tried out for the assistant's job.

Hancock, meanwhile, was indignant not only because no one liked his poetry but because a Down Under hillbilly and a spiv were getting the money. The meeting did not end well.

On a more serious note, DEAD BETWEEN THE LINES (2014) by Denise Swanson was the third novel in a cozy series about Devereaux Sinclair of Shadow Bend, Missouri. She operated a general store which incorporated a small diner. Hoping to keep the business profitable, she set up the Stepping Out Book Club, expecting to make some food sales when they met in the diner.

Their first speaker was local author and giant ego Lance Quistgaard. He was a misogynist and a snob. After a stormy session with the book club, who didn't give him the adoration he felt entitled to, he left in a huff. He returned the next morning as a corpse, found behind the building with a stake driven through his heart.

Sinclair came from a broken home and had more family history than the rest of the village put together. She was still working out her issues while doing amateur sleuthing into the Quistgaard murder. The book club members came under scrutiny. Sinclair discovered the local newspaper's gossip column had been written under a pseudonym by Quistgaard.

The deceased had published a sadomasochistic novel TEN COLORS OF BLONDE which was a roman a clef based on a Shadow Bend woman, whose diary he had come into possession. He did have the decency to disguise identities of the characters, but slipped and described her realistically with a small birthmark on her cheek.

She didn't like the shame and took direct action. One unanswered question was whether or not the book club resumed its meetings. When an inaugural meeting ends in murder, the next session is likely to be edgy.

THE LIAR IN THE LIBRARY (2017) by Simon Brett had the protagonist Jude Nicholls being invited by her friend Burton St Clair to watch him give a talk to the Fethering Library book club. He was formerly Al Sinclair but was now a successful author promoting his latest novel. A rude, egotistical womanizer, he didn't make it past Chapter 5 nor the library parking lot after his talk was over.

The police put Nicolls at the top of the suspects list because she had been seen spurning an amorous advance from St Clair just before he died. Another probable was Steve Chasen, a self-published author whose novels only appeared on his website or buried deep in social media that no one ever scrolled down to. Then there was ex-wife Megan Sinclair, on the borderline of insanity and an inveterate liar.

Nicolls went Marpleing. The autopsy revealed St Clair was poisoned by something he drank, either in the wine served at the book club meeting or in his whiskey flask. Someone slipped crushed walnuts into his drink, to which he was allergic and went into a fatal anaphylactic shock. Therefore the killer had to have known him and knew he would be at the library.

Chasen had been a member of the library book club, which had discussed a mystery novel where the victim was poisoned with nuts. That talk had been given by a community college lecturer Nessa Perks.

Nicolls worked her way through the book club members, one of whom confessed and blabbed all to her. She hadn't recorded the conversation and therefore had no proof. The cheat ending was the murderer committing suicide after typing a full confession for the police.

CRYPT SUZETTE (2019) by Maya Corrigan was an installment in a series about Valerie Deniston of Bayport, Massachusetts. She was catering the grand opening of a bookstore called Title Wave. The proprietor Dorothy Muir was a retired schoolteacher and an optimist.

Suzette Cripps (Really? Her parents named her that?) was a college student renting a room from Denison's grandfather. He was a ghost hunter by trade. Cripps had a secret past which caught up to her after the bookstore's opening party. As she left, a hit-and-run driver ran her down. Book sales at the party were good though.

Cripps had been studying creative writing. She belonged to a small club of students called the Fictionistas. She had drafted a mystery story about a woman killed by a hit-and-run driver, so the police wondered if a reader had been inspired the wrong way. However it was her past that caught up with her, and the killer was seeking revenge.

Since it is impossible for a bookstore to survive on walk-in traffic in a village, there was good news in the denouement. Muir's sone was coming to live with her and run the online operation.

MURDER AT THE TAFFY SHOP (2020) by Maddie Day (pseudonym of Edith Maxwell) seems like it might be a food cozy, but the resident Jessica Fletcher owned a bicycle shop in Westham, Massachusetts, on Cape Cod. Mackenzie Almeida did her sleuthing in what had been a peaceful village until she disturbed its slumber.

Almeida belonged to the Cozy Capers Book Group, who specialized in mysteries. Thereby the number of Fletchers roaming about the village increased substantially. Pity the police.

Beverly Ruchart, a wealthy and obnoxious biddy, only lasted until Chapter 5. She died ignominiously on a sidewalk, possibly from poisoned taffy. Almeida managed to get in a fair amount of Fletchering despite the bike shop being so busy.

What she missed, the book club sniffed out. The killer didn't have a chance with all those amateur sleuths hounding her. The motive was inheritance. Almeida got herself trapped with the murderer with nary a book club member in sight. Somehow she survived.

A CATERED BOOK CLUB MURDER (2021) was a food cozy, but I'll jam it in here. The novel was part of a series about sisters Bernie and Libby Simmons, who operated the bakery A Little Taste Of Heaven in the village of Longely, upstate New York.

They had a standing order from Marge Hemsley to supply pastries for the monthly meeting of the Longely Mystery Book Club. Hemsley went missing and didn't pick up her order nor attend the book club meeting.

Her corpse was found soon enough in a local swamp. The sisters and book club members began snooping. Oh yes, mustn't forget the police, who liked to get in on these things.

The secret life led by Hemsley was unsuspected by her friends. The sisters used the basic techniques of Marpleing, such as break-and-enter, contaminating crime scenes and evidence, and obstructing justice. The book club agreed not to waste time on mystery fiction when they could immerse themselves in real crime.

The murderer had settled a dispute the hard way over some doubtful financial transactions involving rare paintings, satchels of cash, fake passports, and other impedimenta. The book club decided to switch to science fiction and fantasy as being safer.

Since the Simmons sisters were caterers, there was a recipes appendix specifically for book club meetings. Cranberry Bread, Pumpkin Bread, and Orange-Cardamom Muffins. Those should plug up anyone's digestive system.

CAT ME IF YOU CAN (2020) by Miranda James (pseudonym of Dean James) was the 13th novel about Charlie Harris and his library cat Diesel. They worked at the Athena College in Georgia. Since by now they were associated with every murder in the town, the time had come to spread the deaths around.

Diesel, Charles, and his fiancée Helen Brady were in Ashville, North Carolina, for a week-long group tour with their library's book club. Therefore it was Ashville's problem when Denis Kilbride was murdered in his hotel room. The deceased was argumentative and an all-around boor in his life. He was bisexual and there were a number of jilted lovers from both genders. Rather unusual for a cozy to acknowledge, much less make a major part of the plot.

Harris and Diesel got into the detecting business again. The suspects were plentiful. Denis' girlfriend was the next victim. Then an attempted murder staged to look like suicide. In the denouement, the killer quietly confessed at a J'accuse! meeting. All very civilized and for once there was no gunpoint confrontation. Book clubs are like that, most of the time.

Writer's Block.

BOX 13 was a syndicated radio series that began airing in 1948-49 and repeated into the 1950s. Syndication in those days meant putting an episode on a disk and selling the disks to independent radio stations, which kept them and replayed them as many times as they liked. This and other syndicated series usually make the best mp3s because they were copied from the original disk, not a taped air check with static.

Dan Holiday was the protagonist, who had quit his newspaper job to become a novelist and then discovered he couldn't think up any plots. He ran a classified advertisement in a newspaper offering to investigate unusual cases for free. Letters to Box 13 at the newspaper.

"Flash Of Light" was written by Russell Hughes and aired on 1949-02-20. The client Jerry Fuller wrote Dan Holiday, saying he had lost two days of his life. Fuller was a farm boy was visiting the big city for the first time and toured a nightclub. His last memory was a flash of light. The case seemed to be a typical case of a drunk being rolled.

Holiday quickly got mixed up with a goon Marty Caine, and Fuller got beaten up. The latter wasn't telling the whole story, so Holiday called the police. He thought Fuller might be more talkative from a jail cell. Meanwhile he sleuthed about, stirring up trouble.

He found a scarlet woman who had a connection to Caine. Assorted contretemps followed. Fuller had accidently learned some underworld gossip about a gangland killing. Holiday went to the nightclub and found a photographer who had taken a picture of Fuller. In the background was Caine taking money from the dead man. The rest was a wrap.

"The Perfect Crime" was written by Russell Hughes and aired on 1949-07-24. Dr John Dobbs wrote to Dan Holiday saying he was going to commit the perfect crime. Dobbs was a Professor of Criminology who had been given three months to live.

Holiday met him and they chatted. They agreed the perfect crime was one where the body was never found. This was actually a fallacy as many people have been convicted of murder without the body of their victim ever found.

Dobbs convinced him to fly together to Chicago. At a police station, Dobbs confessed to a murder in the news but the police had already arrested the murderer. He then continued to confess to murders and built up a reputation as a crank.

Having established himself as a eccentric, Dobbs then selected a real victim, a complete stranger named Alexander Ferris, and told Holiday in advance. Ferris disappeared from his Chicago hotel room, next door to Dobbs' room.

Dobbs confessed to police but they didn't believe him because of his reputation. Holiday did his own sleuthing and learned Ferris never came to the hotel. Dobbs had killed him in his home town, then assumed his identity to stage a fake murder.

The local police found the body. Dobbs cheated by taking poison, so he was never charged.

MURDER IN THE MARGINS (2020) by Margaret Loudon (pseudonym of Peg Cochrane) was the first novel in a cozy series about Penelope Parish, an American author specializing in gothic novels. She was suffering from writer's block and decided to go to England, where a change of venue might inspire her.

Parish visited Upper Chumley-on-Stoke, where she became entangled in the affairs of the Open Book shop, operated by Mabel Morris. While Parish was there, the chairwoman of the village fete was murdered, thus kicking the plot into gear.

The main suspect was Charlotte Davenport, an American romance writer who was the fiancee of the Duke of Worthington. Morris and Parish went into the Marpleing business and set out to clear her name.

Parish was still stumbling through her latest novel. Her block didn't stop her from establishing a writers group at the bookstore. "*She felt like a bit of a fraud running a group of writers when she was struggling so much with her own manuscript.*" Seems like any community college writing class.

The murderer trapped Parish in the wine cellar, much classier than the usual venues. She survived of course. And so back to the greater horror, trying to finish her novel.

The October 2021 issue of MYSTERY MAGAZINE, formerly MYSTERY WEEKLY MAGAZINE, was a special Sherlock Holmes issue. It is available from www.mysterymagazine.ca or as a print-on-demand from Amazon, which is how I bought it.

Leading off was "The Case Of The Teller Of Tales" by Martin Rosenstock. A best-selling author Herman Starkey had been killed in his house during a fight with an unknown assailant. Inspector Lestrade, baffled as usual, called in Holmes and Watson.

The fight was an unusual one. Starkey collected medieval armour and weapons used by knights of yore. He had been stabbed to death with a halberd and the evidence suggested he had managed to wound his assailant with a mace. Holmes' deductions led to a nearby house, whose owner Agatha Gettson was harbouring a wounded man. He was Adrian Dalrymple, who was Starkey's publisher.

The story was an old one. Starkey was a reliable novelist who produced a bestseller each year. He became a wine, women, and song man. The quality of his novels declined to the point where Dalrymple had to hire Gettson as a ghostwriter.

The fight between the two men began over those circumstances as Starkey slipped into the final stages of alcoholism. The evidence was ambiguous and it seemed likely that Dalrymple would get off by pleading self-defence.

SEEN IN THE LITERATURE

Astronomy.

Shah, P., et al (2021) **A buyer's guide to the Hubble constant.** ASTRONOMY AND ASTROPHYSICS REVIEW 29:doi.org/10.1007/s00159-021-00137-4 (available as a free pdf)

Authors' abstract: *Since the expansion of the universe was first established by Edwin Hubble and Georges Lemaitre about a century ago, the Hubble constant H_0 which measures its rate has been of great interest to astronomers. Besides being interesting in its own right, few properties of the universe can be deduced without it.*

In the last decade, a significant gap has emerged between different methods of measuring it, some anchored in the nearby universe, others at cosmological distances. The SH0ES team has found H_0 = 73.2 plus/minus 1.3 km per second per megaparsecs locally, whereas the value found for the early universe by the Planck Collaboration is H_0 = 67.4 plus/minus 0:5 km per second per megaparsecs from measurements of the cosmic microwave background.

Hayakawa, H., et al (2021) **Analyses of a datable solar eclipse record in Maya Classic period monumental inscriptions.** PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN 73:doi.org/10.1093/pasj/psab088

Authors' abstract: *Historical records of total solar eclipses provide vital information for computing the rotation of the Earth and understanding its long-term variations in the time before modern measurements. While eclipses recorded around Eurasia and North Africa for millennia have been subjected to consideration in this context, eclipse records in the American continents have received little attention.*

In this study, we analysed the solitary observational record for a solar eclipse conducted by the ancient Maya on 790 July 16 in the Julian calendar, recorded on the Stela 3 of Santa Elena Poco Uinic (N16˚35', W91˚44'). This stela has an eclipse glyph and is associated with a total solar eclipse.

Taking the up-to-date Earth rotation (delta T) rate into account, our calculations locate this site slightly out of the totality path. The visibility of the

total solar eclipse from Santa Elena Poco Uinic would require delta T to be 4074 seconds < delta T < 4873 s. In comparison with the contemporary eclipse records, this yields a short-term increase in delta T > 800 s between 761 and 790 and a decrease in delta T > 580 s between 790 and 873.

Therefore, the total solar eclipse on 790 July 16 cannot be expected to have been visible from Santa Elena Poco Uinic, unlike what has been previously considered. We conclude that this stela probably records a partial solar eclipse of great magnitude (~0.946) visible under favourable meteorological conditions or is based on hearsay from the southern coastal area.

Planets.

Miret-Roig, N., et al (2021) A **rich population of free-floating planets in the Upper Scorpius young stellar association.** NATURE ASTRONOMY 5:doi.org/10.1038/s41550-021-01513-x

Authors' abstract: *The nature and origin of free-floating planets (FFPs) are still largely unconstrained because of a lack of large homogeneous samples to enable a statistical analysis of their properties. So far, most FFPs have been discovered using indirect methods; microlensing surveys have proved particularly successful to detect these objects down to a few Earth masses.*

However, the ephemeral nature of microlensing events prevents any follow-up observations and individual characterization. Several studies have identified FFPs in young stellar clusters and the Galactic field but their samples are small or heterogeneous in age and origin.

Here we report the discovery of between 70 and 170 FFPs (depending on the assumed age) in the region encompassing Upper Scorpius and Ophiuchus, the closest young OB association to the Sun. We found an excess of FFPs by a factor of up to seven compared with core-collapse model predictions, demonstrating that other formation mechanisms may be at work.

We estimate that ejection from planetary systems might have a contribution comparable to that of core collapse in the formation of FFPs. Therefore, ejections due to dynamical instabilities in giant exoplanet systems must be frequent within the first 10 megayears of a system's life.

[Image is from ESO, www.skysurvey.org The red circles are the rogue planets, all traveling together in a giant cluster.]

Speirs: I wonder how many planets were ejected from our Solar System during its birth, and where they are now. Rogue planets floating through space without a star are apparently more common than thought.

Burkhardt, C., et al (2021) **Terrestrial planet formation from lost inner solar system material.** SCIENCE ADVANCES 7:doi.org/10.1126/sciadv.abj7601 (available as a free pdf)

Authors' abstract: *Two fundamentally different processes of rocky planet formation exist, but it is unclear which one built the terrestrial planets of the solar system. They formed either by collisions among planetary embryos from the inner solar system or by accreting sunward-drifting millimeter-sized "pebbles" from the outer solar system.*

We show that the isotopic compositions of Earth and Mars are governed by two-component mixing among inner solar system materials, including material from the innermost disk unsampled by meteorites, whereas the contribution of outer solar system material is limited to a few percent by mass.

This refutes a pebble accretion origin of the terrestrial planets but is consistent with collisional growth from inner solar system embryos. The low fraction of outer solar system material in Earth and Mars indicates the presence of a persistent dust-drift barrier in the disk, highlighting the specific pathway of rocky planet formation in the solar system.

Lam, K.W.F., et al (2021) GJ 367b: **A dense, ultrashort-period sub-Earth planet transiting a nearby red dwarf star.** SCIENCE 374:doi.org/10.1126/science.aay3253

Authors' abstract: *The mass and radius of an exoplanet determine its mean density, which provides information about the possible interior structure. We have identified a planet on a 7.7-hour orbit around a nearby red dwarf star.*

The planet, known as GJ 367b, circles a small, dim red dwarf star just 31 light-years from the sun. We determined the planet's radius from the transit, then used radial velocity observations to measure the mass.

We found a sub-Earth-sized planet with a density almost equivalent to pure iron. Its high surface temperature is close to the vaporization point of iron, suggesting that it is the iron core of a planet that has lost its outer mantle.

Ultrashort-period (USP) exoplanets have orbital periods shorter than 1 day. Precise masses and radii of USP exoplanets could provide constraints on their unknown formation and evolution processes. We report the detection and characterization of the USP planet GJ 367b using high-precision photometry and radial velocity observations.

GJ 367b orbits a bright (V-band magnitude of 10.2), nearby, and red (M-type) dwarf star every 7.7 hours. GJ 367b has a radius of 0.718 ± 0.054 Earth-radii and a mass of 0.546 ± 0.078 Earth-masses, making it a sub-Earth planet.

The corresponding bulk density is 8.106 ± 2.165 grams per cubic centimeter, close to that of iron. An interior structure model predicts that the planet has an iron core radius fraction of 86 ± 5%, similar to that of Mercury's interior.

Janson, M., et al (2021) **A wide-orbit giant planet in the high-mass b Centauri binary system.** NATURE 600:231-234

Authors' abstract: *Planet formation occurs around a wide range of stellar masses and stellar system architectures. An improved understanding of the formation process can be achieved by studying it across the full parameter space, particularly towards the extremes.*

Earlier studies of planets in close-in orbits around high-mass stars have revealed an increase in giant planet frequency with increasing stellar mass until a turnover point at 1.9 solar masses, above which the frequency rapidly decreases.
This could potentially imply that planet formation is impeded around more massive stars, and that giant planets around stars exceeding 3 solar masses may be rare or non-existent.

However, the methods used to detect planets in small orbits are insensitive to planets in wide orbits. Here we demonstrate the existence of a planet at 560 times the Sun-Earth distance from the 6- to 10-solar masses binary b Centauri through direct imaging.

The planet-to-star mass ratio of 0.10–0.17% is similar to the Jupiter-Sun ratio, but the separation of the detected planet is about 100 times wider than that of Jupiter.

Our results show that planets can reside in much more massive stellar systems than what would be expected from extrapolation of previous results. The planet

is unlikely to have formed in situ through the conventional core accretion mechanism, but might have formed elsewhere and arrived to its present location through dynamical interactions, or might have formed via gravitational instability.

Kodama, T., et al (2021) **The onset of a globally ice-covered state for a land planet.** JOURNAL OF GEOPHYSICAL RESEARCH: PLANETS 126:doi.org/10.1029/2021JE006975

Authors' abstract: *Some exoplanets are thought to be Earth-like rocky planets within the habitable zone, where liquid water is stable on the planetary surface. Land planets with a small amount of surface water have the advantage of maintaining liquid water on their surface.*

We investigated the complete freezing limit using a three-dimensional general circulation model assuming various surface water distributions. The insolations at the complete freezing limit gradually decrease from that for a water-rich planet to that for a dry planet with an increasing dry area.

Our results showed that the amount of water significantly affects the initiation of a global ice-covered state for Earth-like exoplanets. The climates of terrestrial planets with a small amount of water on their surface, called land planets, are significantly different from the climates of planets having a large amount of surface water.

Land planets have a higher runaway greenhouse threshold than aqua planets, which extends the inner edge of the habitable zone inward. Land planets also have the advantage of avoiding global freezing due to drier tropics, leading to a lower planetary albedo.

In this study, we systematically investigate the complete freezing limit for various surface water distributions using a three-dimensional dynamic atmospheric model.

As in a previous study, we found that a land planet climate has dry tropics that result in less snow and fewer clouds. The complete freezing limit decreases from that for aqua planets (92% S0, where S0 is Earth's present insolation) to that for land planets (77% S0) with an increasing dry area.

Values for the complete freezing limit for zonally uniform surface water distributions are consistently lower than those for meridionally uniform surface water distribution. This is because the surface water distribution in the tropics in the meridionally uniform cases causes ice-albedo feedback until a planet lapses into the complete freezing state.

For a surface water distribution using the topographies of the terrestrial planets, the complete freezing limit has values near those for the meridionally uniform cases. Our results indicate that the water distribution is important for the onset of a global ice-covered state for Earth-like exoplanets.

Péron, S., et al (2021) **Deep-mantle krypton reveals Earth's early accretion of carbonaceous matter.** NATURE 600:462-467

Authors' abstract: *Establishing when, and from where, carbon, nitrogen and water were delivered to Earth is a fundamental objective in understanding the origin of habitable planets such as Earth. Yet, volatile delivery to Earth remains controversial.*

Krypton isotopes provide insights on volatile delivery owing to their substantial isotopic variations among sources, although pervasive atmospheric contamination has hampered analytical efforts.

Here we present the full suite of krypton isotopes from the deep mantle of the Galápagos and Iceland plumes, which have the most primitive helium, neon and tungsten isotopic compositions.

Except for ^{86}Kr, the krypton isotopic compositions are similar to a mixture of chondritic and atmospheric krypton. These results suggest early accretion of carbonaceous material by proto-Earth and rule out any combination of hydrodynamic loss with outgassing of the deep or shallow mantle to explain atmospheric noble gases.

Unexpectedly, the deep-mantle sources have a deficit in the neutron-rich ^{86}Kr relative to the average composition of carbonaceous meteorites, which suggests a nucleosynthetic anomaly. Although the relative depletion of neutron-rich isotopes on Earth compared with carbonaceous meteorites has been documented for a range of refractory elements, our observations suggest such a depletion for a volatile element.

This finding indicates that accretion of volatile and refractory elements occurred simultaneously, with krypton recording concomitant accretion of non-solar volatiles from more than one type of material, possibly including outer Solar System planetesimals.

Botany.

Ruchardson, A.E., et al (2021) **Evolution of the grass leaf by primordium extension and petiole-lamina remodeling.** SCIENCE 374:10.1126/science.abf9407

[Flowering plants are divided into two groups, the dicotyledonous and the more evolved monocotyledonous. Cotyledons are the first seed leaves produced by a germinating seed. They form inside the seed as the embryo develops after fertilization of the ovule, or egg, by pollen.]

[Thereafter the plant begins generating new leaves from the growing point. Dicots, as the name suggests, produce a pair of seed leaves, while monocots produce a single seed leaf. Dicots have broad leaves with netted veins, while monocots have parallel veined leaves.]

[If you look at the vegetative growth of grasses, which are monocots, their leaves do not stick out from a twig but are sheathed around the stem. In both dicots and monocots, the petiole is the leaf stalk and the lamina is the leaf blade. Sometimes, especially in monocots, it can be difficult to tell where one ends and the other begins.]

[Grasses are the most common, widespread, and successful of flowering plants. Because they are wind-pollinated, their flowers are much reduced and microscopic in size. Rice, corn, wheat, oats, barley, and rye are all grasses and make up the majority of human food worldwide. Cattle and sheep feed on vegetative grasses.]

Authors' abstract: *The long, narrow leaves of grasses look rather different from the often shorter, flatter leaves of eudicot plants. Richardson et al. combined developmental genetics and computational modeling to reveal that these two types of leaves, which are widely separated by evolution, have more in common than expected.*

Expression of similar patterning genes in the primordial zone is confined to a wedge for the eudicot leaf but expanded to concentric domains in the grass leaf, driving development of the cylindrical, encircling sheath characteristic of grass leaves.

Addition or removal of gene expression in a marginal zone contributes to the development of the broader leaf characteristic of eudicots. Thus, grass and eudicot leaves are diversified elaborations of shared toolkits.

The sheathing leaf found in grasses and other monocots is an evolutionary innovation, yet its origin has been a subject of long-standing debate. Here, we revisit the problem in the light of developmental genetics and computational modeling.

We show that the sheathing leaf likely arose through WOX gene-dependent extension of a primordial zone straddling concentric domains around the shoot apex. Patterned growth within this zone, oriented by two polarity fields, accounts for wild-type, mutant and mosaic grass leaf development, whereas zone contraction and growth remodeling accounts for eudicot leaf development.

In contrast to the prevailing view, our results suggest that the sheath derives from petiole, whereas the blade derives from the lamina of the eudicot leaf, consistent with homologies proposed in the 19th century.

Keenan, T.F., et al (2021) **A constraint on historic growth in global photosynthesis due to increasing CO_2.** NATURE 600:253-258

Authors' abstract: *The global terrestrial carbon sink is increasing, offsetting roughly a third of anthropogenic CO_2 released into the atmosphere each decade, and thus serving to slow the growth of atmospheric CO_2.*

It has been suggested that a CO_2-induced long-term increase in global photosynthesis, a process known as CO_2 fertilization, is responsible for a large proportion of the current terrestrial carbon sink.

The estimated magnitude of the historic increase in photosynthesis as result of increasing atmospheric CO_2 concentrations, however, differs by an order of magnitude between long-term proxies and terrestrial biosphere models.

Here we quantify the historic effect of CO_2 on global photosynthesis by identifying an emergent constraint that combines terrestrial biosphere models with global carbon budget estimates.

Our analysis suggests that CO_2 fertilization increased global annual photosynthesis by 11.85 ± 1.4%, or 13.98 ± 1.63 petagrams carbon (mean ± 95% confidence interval) between 1981 and 2020.

Our results help resolve conflicting estimates of the historic sensitivity of global photosynthesis to CO_2, and highlight the large impact anthropogenic emissions have had on ecosystems worldwide.

Palaeobiology.

Huang, Y., and G. Li (2021) **Two pulses of increasing terrestrial input to marine environment during the Permian-Triassic transition.** PALAEOGEOGRAPHY, PALAEOCLIMATOLOGY, PALAEOECOLOGY 586:doi.org/10.1016/j.palaeo.2021.110753

[The greatest mass extinction of Earth occurred 251 megayears ago at the end of the Permian period. Massive lava outflows on continent-wide scales heated up the planet and caused 97% of life to become extinct. The extinction of most plants led to an increase in soil erosion, which washed into the oceans and suffocated marine life.]

Authors' abstract: *Geochemical data reveal a two-pulse terrigenous input nearby the Permian-Triassic Boundary (PTB). The first pulse was linked to the end-Permian terrestrial mass extinction, as a prelude of the marine mass extinction. The second pulse terminated microbialite, linked to the devastation of vegetation and soil erosion in the Early Triassic.*

The destruction of both terrestrial and marine ecosystems generally shows a process of rapid extinction followed by the wipe out of the Permian-type relics in the Permian-Triassic mass extinction, but the relationship between the terrestrial and marine ecosystem collapses is not clear until now.

The terrestrial input from the land to marine system is an important link between them. Previous study has demonstrated a substantial increase of terrestrial influx to the marine water most likely corresponding to the Permian-Triassic mass extinction. Our new geochemical data from the Laolongdong section in the shallow marine carbonate platform of South China, reveal that the elevated terrestrial input nearby the PTB is actually marked by a two-pulse scenario.

The first pulse represents a ~ 3- to ~ 6-fold increase of the terrestrial flux. The onset of the increase took place in the extinction horizon at the basal part of microbialites at Laolongdong, basically corresponding to Bed 24a of Meishan section and prior to the end-Permian mass extinction zenith; then the increase continued and spanned the extinction zenith.

The second pulse is characterized a ~ 21- to ~ 35-fold increase in the terrestrial flux, equivalent to the widespread, abundant presence of mudstones in the earliest Triassic and roughly corresponding to the stage where the Permian-type survivors were thoroughly wiped out.

A two-pulse terrestrial input is also clearly recorded at Cili, Shangsi and Meishan of South China, western Australia and Arctic Canada. Two episodes of the enhanced terrestrial input provide strong evidence for the devastation of the terrestrial ecosystem and insights into the reasonable explanation for the relationship between terrestrial and marine ecosystem collapses nearby the PTB.

Dinosaurs.

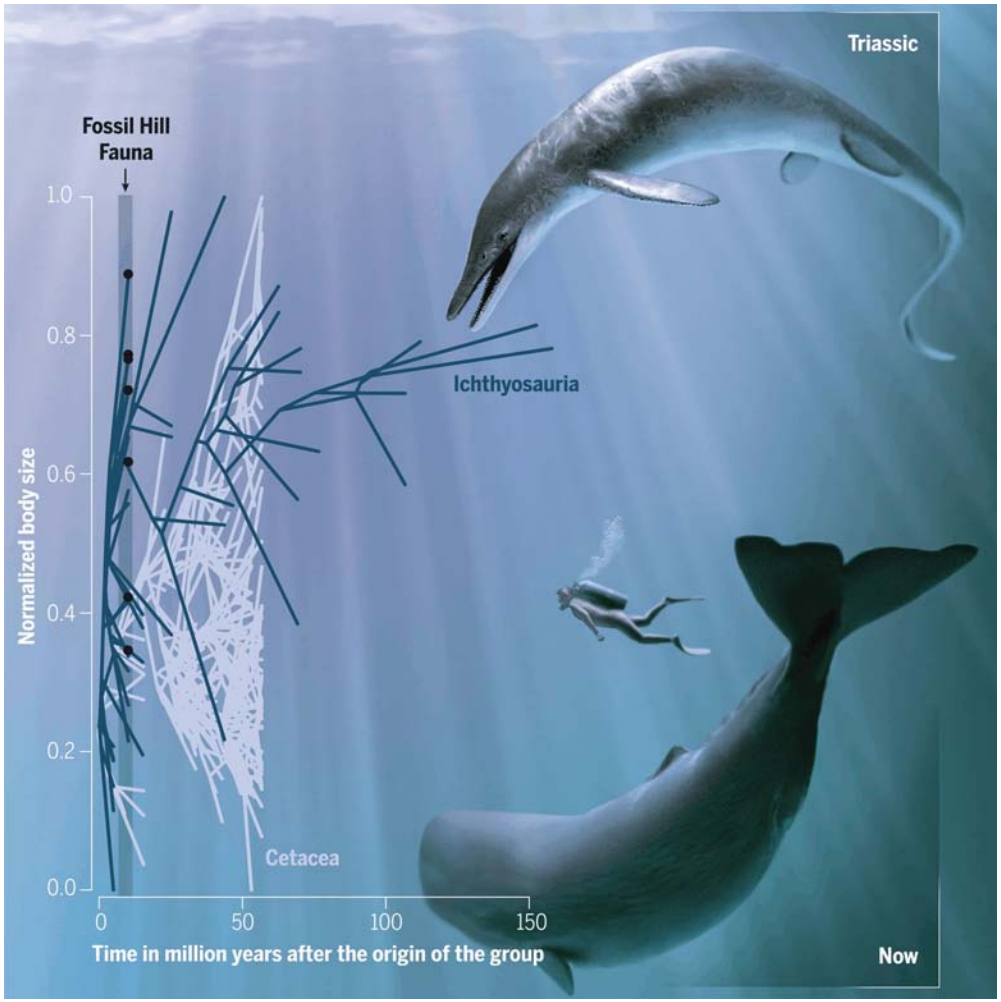
Sander, P.M., et al (2021) **Early giant reveals faster evolution of large body size in ichthyosaurs than in cetaceans.** SCIENCE 374:doi.org/10.1126/science.abf5787

Authors' abstract: *Our paleontological fieldwork in the Fossil Hill Member (Middle Triassic, Nevada, USA) provided the basis for the marine reptile data and resulted in finds of giant ichthyosaurs as part of the pelagic Fossil Hill Fauna.*

We describe an ichthyosaur with a 2-m-long skull from the Fossil Hill Fauna as a new species of Cymbospondylus. At present, this is the largest known tetrapod of its time, on land or in the sea, and is the first in a series of ocean giants. The Fossil Hill Fauna includes several other large-bodied ichthyosaurs in the Cymbospondylus radiation.

The body-size range in this Triassic fauna rivals the range seen in modern whale faunas, from a total length of about 2 m in Phalarodon to more than 17 m in the new species. As preserved in the fossil record, the Fossil Hill Fauna represents a stable trophic network and could even have supported another large ichthyosaur if it bulk fed on small, but abundant, prey such as ammonoids.

In absolute time, the new ocean giant lived 246 million years ago, only about 3 million years after the appearance of the first ichthyosaurs. Our research suggests that ichthyosaurs evolved large body size very early on in the clade's history, comparatively earlier than whales.



The iterative evolution of secondarily marine tetrapods since the Paleozoic offers the promise of better understanding how the anatomy and ecology of animals change when returning to the sea. Recurring patterns of convergence in the geological past may suggest predictability of evolution when transitioning from full-time life on land to full-time life in the ocean.

Ichthyosaurs (fish-shaped marine reptiles of the Mesozoic) and today's cetaceans (whales, dolphins, and porpoises) are two of the most informative lineages to exemplify secondary returns to the sea.

The notable resemblance in body shape and lifestyle of ichthyosaurs and cetaceans contrasts with their separation in time by nearly 200 million years, providing an often-cited example of convergent evolution.

Ichthyosaurs arose 249 million years ago and populated the oceans for the next 150 million years. Cetaceans did not evolve until about 56 million years ago. As tail-propelled swimmers, ichthyosaurs and cetaceans evolved not only convergent body shapes but also large body sizes.

[Image is from this paper.]

Brown, M.A., et al (2021) **The discovery, local distribution, and curation of the giant azhdarchid pterosaurs from Big Bend National Park.** JOURNAL OF VERTEBRATE PALEONTOLOGY 41:doi.org/10.1080/02724634.2019.1780599 (available as a free pdf)

Authors' abstract: *Field crews from The University of Texas at Austin first identified pterosaur remains from the Upper Cretaceous Javelina Formation of Big Bend National Park in 1971 and continued excavation of these animals for decades.*

The announcement of the giant Quetzalcoatlus northropi in 1975 by graduate student Douglas Lawson drew worldwide attention, and fossil preparators William Amaral and Robert Rainey discovered several key localities in a region informally called Pterodactyl Ridge that have been thoroughly collected and documented.

The Pterodactyl Ridge sites produced hundreds of bones from surface collection and quarries through 1986, but later surface collection yielded poorer results.

The majority of these elements represent an animal substantially smaller than Q. northropi, Quetzalcoatlus lawsoni, historically referred to as Quetzalcoatlus sp.

These and subsequent field expeditions from several institutions have reported occurrences of pterosaurs from both the Aguja and Javelina formations, but this study limits only the Javelina Formation material to pterosaurs.

Quetzalcoatlus northropi is known within Big Bend National Park only from stream channel facies, and the smaller Q. lawsoni from the upper abandoned channel-lake facies at Pterodactyl Ridge.

The lower abandoned channel-lake facies strata of Pterodactyl Ridge produce a third genus and species, Wellnhopterus brevirostris Andres and Langston, 2021. In addition, a smaller azhdarchid is found in the overbank floodplain facies.

Lehman, T.M. (2021) **Habitat of the giant pterosaur *Quetzalcoatlus* Lawson 1975 (Pterodactyloidea: Azhdarchoidea): A paleoenvironmental reconstruction of the Javelina Formation (Upper Cretaceous), Big Bend National Park, Texas.** JOURNAL OF VERTEBRATE PALEONTOLOGY 41:doi.org/10.1080/02724634.2019.1593184 (available as a free pdf)

Author's abstract: *The giant Late Cretaceous azhdarchid pterosaur Quetzalcoatlus northropi was among the largest animals that ever flew.*

The Maastrichtian Javelina Formation of southwestern Texas comprises a thick sequence of stream channel and floodplain deposits accumulated in a broad southeast-trending valley, several hundred kilometers inland from the Late Cretaceous shoreline.

Three pterosaur species are found here. Remains of Quetzalcoatlus lawsoni, sp. nov., are concentrated in deposits of shallow alkaline lakes that developed in abandoned reaches of stream channels. Areas surrounding the lakes were vegetated with fan palms, and the higher floodplain supported a subtropical forest dominated by the dicot tree Javelinoxylon and araucariacean conifers.

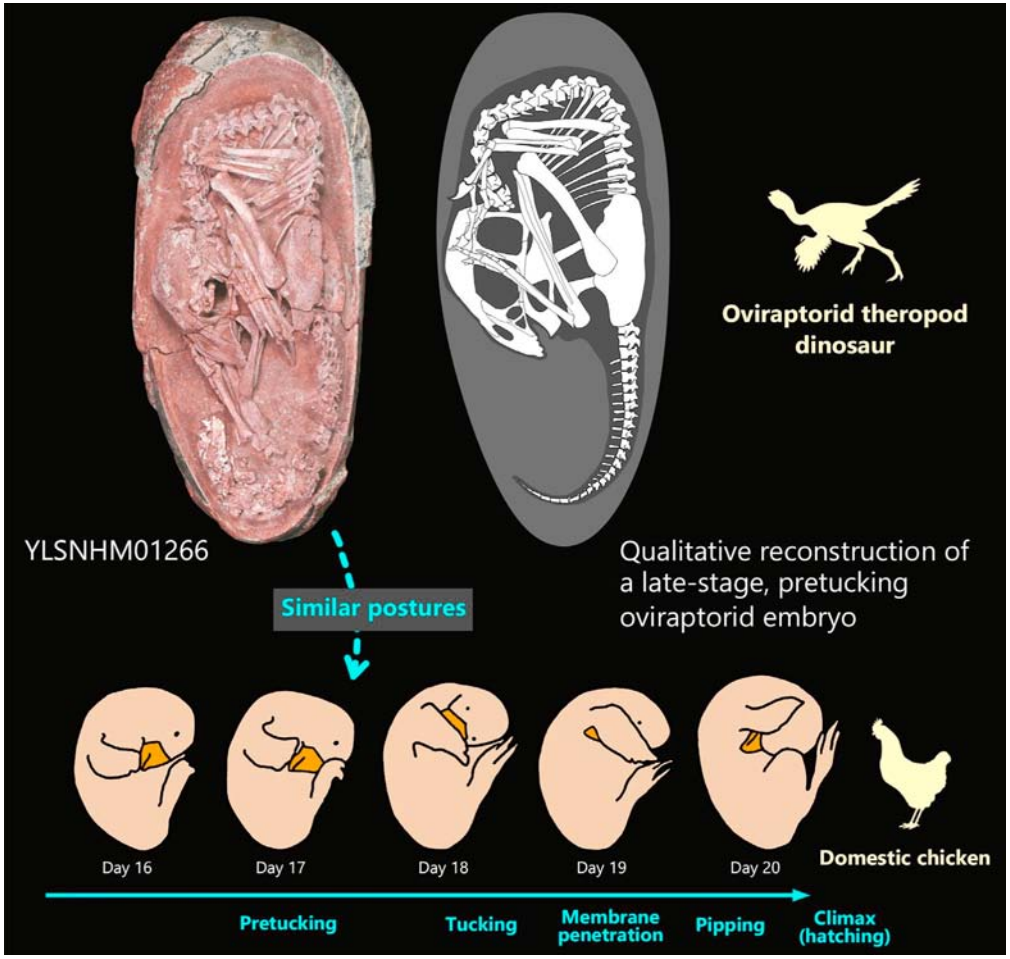
The shallow lakes were inhabited by a diverse invertebrate fauna of arthropods, gastropods, and bivalves, a likely food source for the slender-beaked Quetzalcoatlus lawsoni, sp. nov., which may have had a lifestyle similar to modern large gregarious wading birds.

In contrast, remains of the giant Q. northropi are rare and found instead only in stream channel facies. It may have had a more solitary lifestyle and preferred riparian habitats. The warm, dry, subtropical but nonseasonal conditions of the region may represent a preferred climatic regime for azhdarchid pterosaurs generally.

[Image is from this paper.]

Xing, L., et al (2021) **An exquisitely preserved in-ovo theropod dinosaur embryo sheds light on avian-like prehatching postures.** iSCIENCE doi.org/10.1016/j.isci.2021.103516 (available as a free pdf)

Authors' abstract: *Despite the discovery of many dinosaur eggs and nests over the past 100 years, articulated in-ovo embryos are remarkably rare. Here we report an exceptionally preserved, articulated oviraptorid embryo inside an elongatoolithid egg, from the Late Cretaceous Hekou Formation of southern China.*



The head lies ventral to the body, with the feet on either side, and the back curled along the blunt pole of the egg, in a posture previously unrecognized in a non-avian dinosaur, but reminiscent of a late-stage modern bird embryo.

Comparison to other late stage oviraptorid embryos suggests that prehatch oviraptorids developed avian-like postures late in incubation, which in modern birds are related to coordinated embryonic movements associated with tucking, a behavior controlled by the central nervous system, critical for hatching success.

We propose that such pre-hatching behavior, previously considered unique to birds, may have originated among non-avian theropods, which can be further investigated with additional discoveries of embryo fossils.

[Images are from this paper.]

Ecology.

Tyne, R.L., et al (2021) **Rapid microbial methanogenesis during CO_2 storage in hydrocarbon reservoirs.** NATURE 600:doi.org/10.1038/s41586-021-04153-3 (available as a free pdf)

Authors' abstract: *Carbon capture and storage (CCS) is a key technology to mitigate the environmental impact of carbon dioxide (CO_2) emissions. An understanding of the potential trapping and storage mechanisms is required to provide confidence in safe and secure CO_2 geological sequestration.*

Depleted hydrocarbon reservoirs have substantial CO_2 storage potential, and numerous hydrocarbon reservoirs have undergone CO_2 injection as a means of enhanced oil recovery (CO_2-EOR), providing an opportunity to evaluate the (bio)geochemical behaviour of injected carbon.

Here we present noble gas, stable isotope, clumped isotope and gene-sequencing analyses from a CO_2-EOR project in the Olla Field (Louisiana, USA).

We show that microbial methanogenesis converted as much as 13 to 19% of the injected CO_2 to methane (CH_4) and up to an additional 74% of CO_2 was dissolved in the groundwater. We calculate an in situ microbial methanogenesis rate from within a natural system of 73 to 109 millimoles of CH_4 per cubic metre (standard temperature and pressure) per year for the Olla Field.

Similar geochemical trends in both injected and natural CO_2 fields suggest that microbial methanogenesis may be an important subsurface sink of CO_2 globally. For CO_2 sequestration sites within the environmental window for microbial methanogenesis, conversion to CH_4 should be considered in site selection.

Speirs: The major component of natural gas is methane, so this conversion is good news. The methane can be extracted and used for home heating and generating electricity.

Lapointe, F., and R.S. Bradley (2021) **Little Ice Age abruptly triggered by intrusion of Atlantic waters into the Nordic Seas.** SCIENCE ADVANCES 7:doi.org/10.1126/sciadv.abi8230 (available as a free pdf)

Authors' abstract: *The Little Ice Age (LIA) was one of the coldest periods of the postglacial period in the Northern Hemisphere. Although there is increasing evidence that this time interval was associated with weakening of the subpolar gyre (SPG), the sequence of events that led to its weakened state has yet to be explained.*

Here, we show that the LIA was preceded by an exceptional intrusion of warm Atlantic water into the Nordic Seas in the late 1300s. The intrusion was a consequence of persistent atmospheric blocking over the North Atlantic, linked to unusually high solar activity.

The warmer water led to the breakup of sea ice and calving of tidewater glaciers; weakening of the blocking anomaly in the late 1300s allowed the large volume of ice that had accumulated to be exported into the North Atlantic. This led to a weakening of the SPG, setting the stage for the subsequent LIA.

Human Evolution.

McNutt, E.J., et al (2021) **Footprint evidence of early hominin locomotor diversity at Laetoli, Tanzania.** NATURE 600:doi.org/10.1038/s41586-021-04187-7 (available as a free pdf)

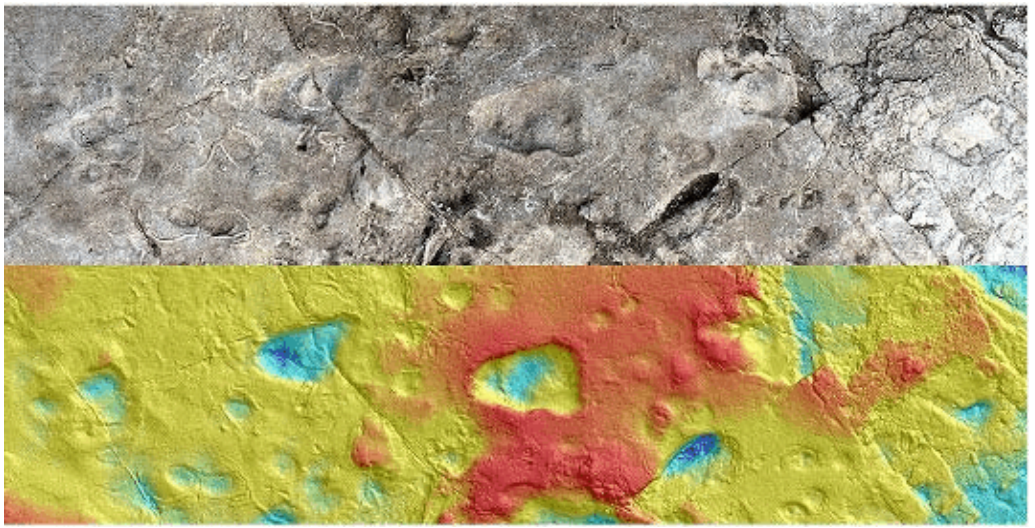
Authors' abstract: *Bipedal trackways discovered in 1978 at Laetoli site G, Tanzania and dated to 3.66 million years ago are widely accepted as the oldest unequivocal evidence of obligate bipedalism in the human lineage.*

Another trackway discovered two years earlier at nearby site A was partially excavated and attributed to a hominin, but curious affinities with bears (ursids) marginalized its importance to the paleoanthropological community, and the location of these footprints fell into obscurity.

In 2019, we located, excavated and cleaned the site A trackway, producing a digital archive using 3D photogrammetry and laser scanning. Here we compare the footprints at this site with those of American black bears, chimpanzees and humans, and we show that they resemble those of hominins more than ursids. In fact, the narrow step width corroborates the original interpretation of a small, cross-stepping bipedal hominin.

However, the inferred foot proportions, gait parameters and 3D morphologies of footprints at site A are readily distinguished from those at site G, indicating that a minimum of two hominin taxa with different feet and gaits coexisted at Laetoli.

[Images are from this paper.]



Roebroeks, W., et al (2021) **Landscape modification by Last Interglacial Neanderthals.** SCIENCE ADVANCES 7:doi.org/10.1126/sciadv.abj5567 (available as a free pdf)

Authors' abstract: *Little is known about the antiquity, nature, and scale of Pleistocene hunter-gatherer impact on their ecosystems, despite the importance for studies of conservation and human evolution. Such impact is likely to be limited, mainly because of low population densities, and challenging to detect and interpret in terms of cause-effect dynamics.*

We present high-resolution paleoenvironmental and archaeological data from the Last Interglacial locality of Neumark-Nord (Germany). Among the factors that shaped vegetation structure and succession in this lake landscape, we identify a distinct ecological footprint of hominin activities, including fire use.

We compare these data with evidence from archaeological and baseline sites from the same region. At Neumark-Nord, notably open vegetation coincides with a virtually continuous circa 2000-year-long hominin presence, and the comparative data strongly suggest that hominins were a contributing factor. With an age of circa 125,000 years, Neumark-Nord provides an early example of a hominin role in vegetation transformation.

Kraft T.S., et al (2021) **The energetics of uniquely human subsistence strategies.** SCIENCE 374:doi.org_10.1126/science.abf0130

Authors' abstract: *Relative to other great apes, humans have large brains, long life spans, higher fertility and larger neonates, and protracted periods of childhood dependency and development.*

Although these traits constitute the unique human life history that underlies the ecological success of our species, they also require human adults to meet extraordinarily high energetic demands.

Determining how human subsistence strategies have met such extreme energy needs, given time and energy expenditure constraints, is thus key to understanding the origins of derived human traits. Two major transitions in hominin subsistence strategies are thought to have elevated energy capture:

(i) the development of hunting and gathering ~2.5 million years ago, which coincided with brain enlargement and extended postnatal growth, and
(ii) the rise of agriculture ~12,000 years ago, which was accompanied by substantial increases in fertility and population densities.

These transitions are associated with the exploitation of novel food sources, but it is not clear how the energy and time budgets of early human foragers and farmers shifted to accommodate expensive traits.

Some evolutionary reconstructions contend that economical locomotion, cooperation, the use of sophisticated tools, and eventually agriculture increased energy efficiency (i.e., energy gained versus energy spent), beyond that of other great apes.

Alternatively, unique human subsistence strategies may reduce time and improve yield, increasing return rates (i.e., energy gained versus time spent).

To test these ideas, we compared subsistence costs (energy and time) and energy acquisition among wild orangutans, gorillas, and chimpanzees with high-resolution data on total energy expenditure, food acquisition, and time allocation, collected among Tanzanian hunter-gatherers (Hadza) and Bolivian forager-horticulturalists (Tsimane).

Both populations actively forage (hunt, gather), whereas the Tsimane also practice slash-and-burn horticulture, which permits exploration of further changes in the energetics of subsistence associated with farming. We also assembled a global subsistence energetics database of contemporary hunter-gatherers and horticulturalists.

Relative to other great apes, human hunter-gatherers and horticulturalists spend more energy daily on subsistence, and they achieve similar energy efficiencies despite having more economical locomotion and using sophisticated technologies. In contrast, humans attain much greater return rates, spending less time on subsistence while acquiring more energy per hour.

Further, horticulture is associated with higher return rates than hunting and gathering, despite minimal differences in the amount of time devoted to subsistence. Findings from our detailed study of the Hadza and Tsimane were consistent with those from the larger cross-cultural database of subsistence-level societies.

Together, these results support prior evidence that the adoption of farming could have been motivated by greater gains per time spent working, and refute the notion that farming lifestyles are necessarily associated with increased labor time.

These findings revise our understanding of human energetics and evolution, indicating that humans afford expanded energy budgets primarily by increasing rates of energy acquisition, and not through energy-saving adaptations (such as economical bipedalism or sophisticated tool use) that decrease overall costs.

Relative to other great apes, human subsistence strategies are characterized by high intensity, high-cost extractive activities and expanded day ranges that provide more calories in less time.

These results suggest that energy gained from improvements in efficiency throughout human evolution were primarily channeled toward further increasing foraging intensity rather than reducing the energetic costs of subsistence.

Human Prehistory.

Robbeets, M., et al (2021) **Triangulation supports agricultural spread of the Transeurasian languages.** NATURE 599:doi.org/10.1038/s41586-021-04108-8 (available as a free pdf)

Authors' abstract: *The origin and early dispersal of speakers of Transeurasian languages, that is, Japanese, Korean, Tungusic, Mongolic and Turkic, is among the most disputed issues of Eurasian population history. A key problem is the relationship between linguistic dispersals, agricultural expansions and population movements.*

Here we address this question by 'triangulating' genetics, archaeology and linguistics in a unified perspective. We report wide-ranging datasets from these disciplines, including a comprehensive Transeurasian agropastoral and basic vocabulary; an archaeological database of 255 Neolithic-Bronze Age sites from Northeast Asia; and a collection of ancient genomes from Korea, the Ryukyu islands and early cereal farmers in Japan, complementing previously published genomes from East Asia.

Challenging the traditional 'pastoralist hypothesis', we show that the common ancestry and primary dispersals of Transeurasian languages can be traced back to the first farmers moving across Northeast Asia from the Early Neolithic onwards, but that this shared heritage has been masked by extensive cultural interaction since the Bronze Age.

As well as marking considerable progress in the three individual disciplines, by combining their converging evidence we show that the early spread of Transeurasian speakers was driven by agriculture.

Dembitzer, J., and S. Meiri (2022) **Levantine overkill: 1.5 million years of hunting down the body size distribution.** QUATERNARY SCIENCE REVIEWS 276:doi.org/10.1016/j.quascirev.2021.107316Get rights and content

Authors' abstract: *Multiple large-bodied species went extinct during the Pleistocene. hanging climates and/or human hunting are the main hypotheses used to explain these extinctions. We studied the causes of Pleistocene extinctions in the Southern Levant, and their subsequent effect on local hominin food spectra, by examining faunal remains in archaeological sites across the last 1.5 million years.*

We examined whether climate and climate changes, and/or human cultures, are associated with these declines. We recorded animal abundances published in the literature from 133 stratigraphic layers, across 58 Pleistocene and Early Holocene archaeological sites, in the Southern Levant.

We used linear regressions and mixed models to assess the weighted mean mass of faunal assemblages through time and whether it was associated with temperature, paleo-rainfall, or paleo-environment (C3 vs. C4 vegetation).

We found that weighted mean body mass declined log-linearly through time. Mean hunted animal masses 10,500 years ago, were only 1.7% of those 1.5 million years ago. Neither body size at any period, nor size change from one layer to the next, were related to global temperature or to temperature changes.

Throughout the Pleistocene, new human lineages hunted significantly smaller prey than the preceding ones. This suggests that humans extirpated megafauna throughout the Pleistocene, and when the largest species were depleted the next-largest were targeted.

Technological advancements likely enabled subsequent human lineages to effectively hunt smaller prey replacing larger species that were hunted to extinction or until they became exceedingly rare.

Modern Humans.

Roberts, M.K. (2021) **Spontaneous human combustion and Claude-Nicolas Le Cat's hunt for fame.** JOURNAL OF MODERN HISTORY 93:749-782

Author's abstract: *This article discusses eighteenth-century ideas about spontaneous human combustion: the idea that the human body, but especially the bodies of idle and liquor-drinking women, could burst into flames with no external source.*

It focuses particularly on the ideas and career strategies of the author of the most well-known text on this phenomenon, the master surgeon, medical popularizer, and academician Claude-Nicolas Le Cat.

Le Cat was deeply involved in efforts to popularize medicine and science and was, at the same time, a deeply ambitious individual anxious to elevate himself to ever-greater prominence. To accomplish these aims, he needed to find ways to attract attention for himself and his ideas while maintaining his image as a serious man of science and not a charlatan.

He and other medical authors worked in a kind of feedback loop, in which their pessimistic views about health, modernity, and degeneration led them to imagine ambitious reform projects that would improve health by transforming society itself. To do so, they needed to grab the public's attention, which encouraged them to state their fears and concerns in sensational and alarmist terms.

The article contributes to the history of medicine and science and explores larger themes of celebrity, expertise, and publicity. Engaging the public, even as an expert, neither was nor is a purely rational exercise, and studying Le Cat's public relations strategies as well as his ideas makes clear how fraught this endeavor could be.

Casquete, J. (2021) **Street fighters with insurance coverage: The insurance system of the Nazi Storm Section (Sturmabteilung).** JOURNAL OF HISTORICAL SOCIOLOGY 34:doi.org/10.1002/johs.12351 (available as a free pdf)

Author's abstract: *The Storm Section (Sturmabteilung, or SA) was organized throughout the Weimar Republic as a paramilitary force entrusted with the 'fight for the streets' during the so-called 'time of struggle' (Kampfzeit).*

To offset the potentially paralyzing effects of activism entailing risks of injury or death, the leaders of the movement devised and implemented an insurance system, which was retained throughout the following years.

This insurance system smoothed the way for the most radical uncivility to hold sway without restriction during the final years of the Republic. Starting from late 1926, the National Socialist mechanism for overcoming the barriers to participation in violent activities that could potentially involve a high cost was to introduce an insurance system to facilitate their activists' willingness to 'sacrifice' themselves.

The visceral anti-Semitism of the Nazis was central to the negotiations and agreements reached with different insurers. The Nazis introduced an insurance policy for their activists that would cover them while carrying out their obligations as militants in the 'fight' against Social Democrats and, more often, Communists.

By lowering the potential costs of participation in a high-risk instance of activism, the insurance system contributed to stoking a 'latent civil war' in the German streets during the final years of the Republic.

Lieberman, D.E., et al (2021) **The active grandparent hypothesis: Physical activity and the evolution of extended human healthspans and lifespans.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 118:doi.org/10.1073/pnas.2107621118

Authors' abstract: *The proximate mechanisms by which physical activity (PA) slows senescence and decreases morbidity and mortality have been extensively documented. However, we lack an ultimate, evolutionary explanation for why lifelong PA, particularly during middle and older age, promotes health.*

As the growing worldwide epidemic of physical inactivity accelerates the prevalence of noncommunicable diseases among aging populations, integrating evolutionary and biomedical perspectives can foster new insights into how and why lifelong PA helps preserve health and extend lifespans.

Building on previous life-history research, we assess the evidence that humans were selected not just to live several decades after they cease reproducing but also to be moderately physically active during those postreproductive years.

We next review the longstanding hypothesis that PA promotes health by allocating energy away from potentially harmful overinvestments in fat storage and reproductive tissues and propose the novel hypothesis that PA also stimulates energy allocation toward repair and maintenance processes.

We hypothesize that selection in humans for lifelong PA, including during postreproductive years to provision offspring, promoted selection for both energy allocation pathways which synergistically slow senescence and reduce vulnerability to many forms of chronic diseases.

As a result, extended human health spans and lifespans are both a cause and an effect of habitual PA, helping explain why lack of lifelong PA in humans can increase disease risk and reduce longevity.

Parkinson, T., et al (2021) **Overcooling of offices reveals gender inequity in thermal comfort.** SCIENTIFIC REPORTS 11:doi.org/10.1038/s41598-021-03121-1 (available as a free pdf)

Authors' abstract: *Growth in energy use for indoor cooling tripled between 1990 and 2016 to outpace any other end use in buildings. Part of this energy demand is wasted on excessive cooling of offices, a practice known as overcooling. Overcooling has been attributed to poorly designed or managed air-conditioning systems with thermostats that are often set below recommended comfort temperatures.*

Prior research has reported lower thermal comfort for women in office buildings, but there is insufficient evidence to explain the reasons for this disparity. We use two large and independent datasets from US buildings to show that office temperatures are less comfortable for women largely due to overcooling.

Survey responses show that uncomfortable temperatures are more likely to be cold than hot regardless of season. Crowd-sourced data suggests that overcooling is a common problem in warm weather in offices across the US. The associated impacts of this pervasive overcooling on well-being and performance are borne predominantly by women.

The problem is likely to increase in the future due to growing demand for cooling in increasingly extreme climates. There is a need to rethink the approach to air conditioning office buildings in light of this gender inequity caused by overcooling.

Scheffer, M., et al (2021) **The rise and fall of rationality in language.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 118:doi.org/10.1073/pnas.2107848118

Authors' abstract: *The post-truth era has taken many by surprise. Here, we use massive language analysis to demonstrate that the rise of fact-free argumentation may perhaps be understood as part of a deeper change.*

After the year 1850, the use of sentiment-laden words in Google Books declined systematically, while the use of words associated with fact-based argumentation rose steadily. This pattern reversed in the 1980s.

This change accelerated around 2007, when across languages, the frequency of fact-related words dropped while emotion-laden language surged, a trend paralleled by a shift from collectivistic to individualistic language.

The surge of post-truth political argumentation suggests that we are living in a special historical period when it comes to the balance between emotion and reasoning. To explore if this is indeed the case, we analyze language in millions of books covering the period from 1850 to 2019 represented in Google nGram data.

We show that the use of words associated with rationality, such as "determine" and "conclusion", rose systematically after 1850, while words related to human experience such as "feel" and "believe" declined. This pattern reversed over the past decades, paralleled by a shift from a collectivistic to an individualistic focus as reflected, among other things, by the ratio of singular to plural pronouns such as "I"/"we" and "he"/"they."

Interpreting this synchronous sea change in book language remains challenging. However, as we show, the nature of this reversal occurs in fiction as well as nonfiction.

Moreover, the pattern of change in the ratio between sentiment and rationality flag words since 1850 also occurs in New York Times articles, suggesting that it is not an artifact of the book corpora we analyzed.

Finally, we show that word trends in books parallel trends in corresponding Google search terms, supporting the idea that changes in book language do in part reflect changes in interest. All in all, our results suggest that over the past decades, there has been a marked shift in public interest from the collective to the individual, and from rationality toward emotion.

NEW YEAR'S DAY ON THE RANGE
by Dale Speirs

A screenshot of my smartphone on December 31. Google added festive trimmings to its search engine. The background screen is a photo I took on New Year's Day 2012 after a strong chinook blew through southern Alberta. We had shirtsleeve weather, so I drove out to the Highwood Mountains southwest of Calgary, part of the eastern slopes of the Rocky Mountains.

This image was cropped from a larger photo of a herd of rangeland cattle. Evidently the steer looking at me had not since a human before. Quite plausible, since calves are born out on the land and may never see a dismounted human until a roundup.

The steer is a black baldie, a cross between a Hereford cow and a Black Angus bull. Such crosses are unstable genetically but in the first generation they produce feeder calves with heterosis, or hybrid vigour, which gives them better weight gain and hardiness. Such calves are called F1, and are all sold to feedlots. They are not bred because the F2 generation would be a genetic mess and not produce the same yields.