
Alberta
OPUNTIA
Wild Rose Country
Honda
OPUNTIA 569

Good Friday 2024

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: Calgary had 25 cm of snow in the week before Good Friday. The snowfall was spread over several days, so every morning I was out there shoveling the sidewalk rather than once and done. Chez Opuntia is on a double-size corner lot so I had to shovel three times more sidewalk than my neighbours.

The Opuntiamobile had been put through a car wash a few days before the snow, thereby guaranteeing the weather change. Had I held off, we would have had desert temperatures. Always thus.

BLUE SKY OVER GOLDEN WHEATFIELD: PART 3
photos by Dale Speirs

[Parts 1 and 2 appeared in OPUNTIA #524 and 548.]

The third annual Pysanky For Peace display was held at the Southcentre Mall in what we call Deep South Calgary. This was by now a traditional lead-up to Easter. Alas, the Russians continue to grind away at Ukraine.

In previous years all the pysankies were one metre tall. This year some of them were that size but many were 50 cm or hand size. Eggs of the latter two sizes were available for sale to aid Ukraine. The smaller sizes would be more manageable for art afficionados who might not have room for the giant size eggs in their living rooms.

At right is a view looking down on the display from the mezzanine. Over the next two pages are examples of pysanky art.


THE ART PIECES
ARE FOR SALE


Stepom/Steppes
Степом
Daena Diduck


Sale.


What Connects Us


Dancing for Hope

PHILATELY OF THE 2022 UKRAINIAN WAR: PART 3
by Dale Speirs

[Parts 1 to 2 appeared in OPUNTIA #544 and 558.]

Postage stamps are not entirely obsolete. They still have value as propaganda, as the Ukrainian post office Ukrposhta is well aware. They have been issuing a steady stream of stamps to raise money for the war effort. (Stamps shown are not to scale.)

Using Google Translate, stamp inscriptions are:

Below: Glory to the armed forces of Ukraine (red, top edge)
We believe in the armed forces of Ukraine (blue, bottom edge)

Lower right: Memory of the defenders of Ukraine (yellow, top edge)

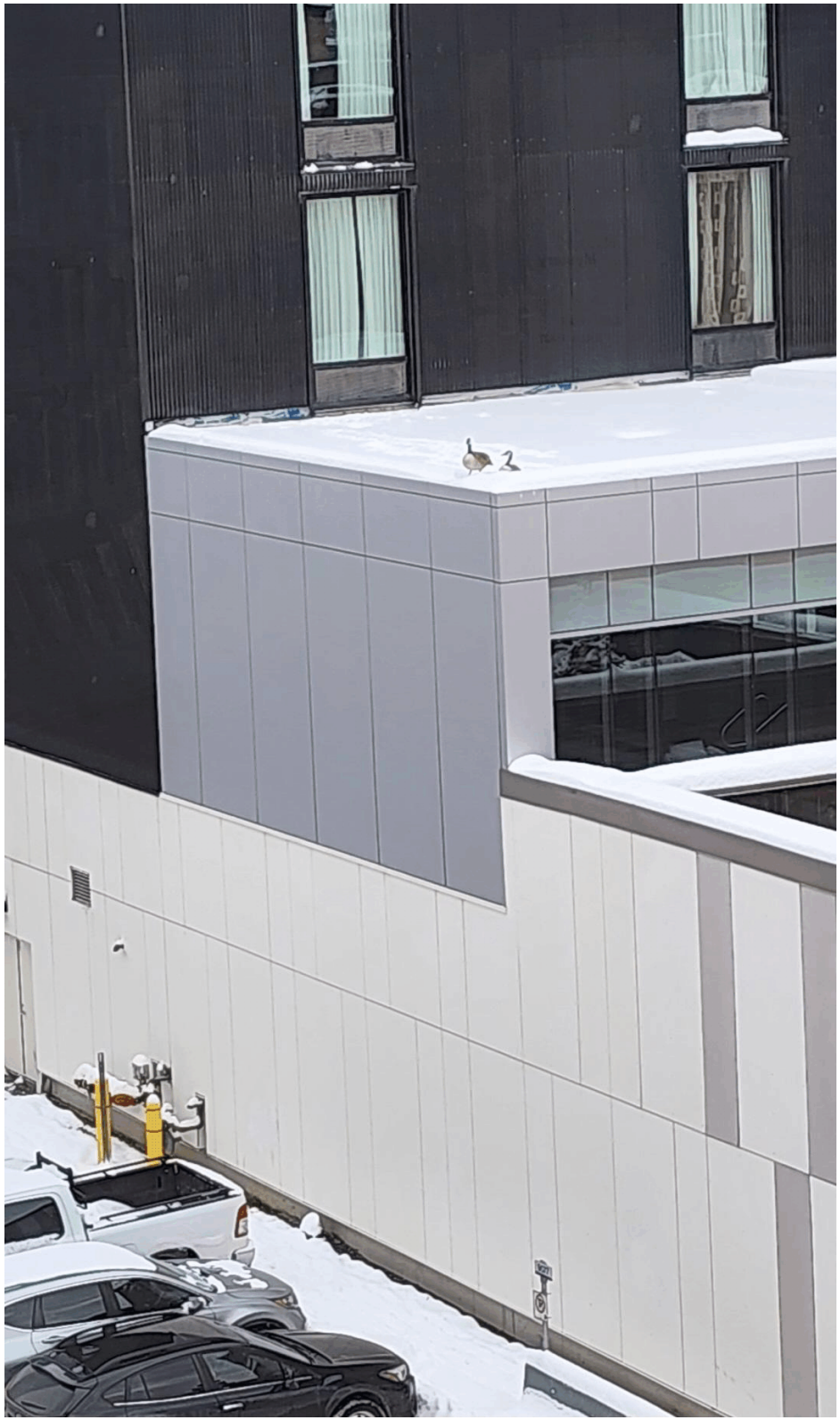
I also collect the stamps genuinely used on cover to show that they weren't just propaganda labels. (Not to scale).

BIRDS AROUND COWTOWN
photos by Dale Speirs

Seen at Peter's Drive-In on 16 Avenue NE. Good hamburgers, best milkshakes in Canada. They have a picnic area for customers.

Part of my day on March 21 was in the New Central Library, where I was working on my postal history of Alberta, now up to the 32rd installment in my other zine JOURNAL OF ALBERTA POSTAL HISTORY. All back issues are available as free pdfs from the Postal History Society of Canada website. Go to: www.postalhistorycanada.net/php/StudyGroups/Alberta

When researching, I like to sit by a window for occasional daydreaming between the slog through reference volumes. I saw a pair of Canada geese sitting on an adjacent building, no doubt annoyed they couldn't get their nest going because of the snow.



On March 24, I cleaned the snow off the Opuntiamobile, a 15-minute job with a snow shovel. Then around Cowtown to do some errands. When I returned and parked the car in the driveway, I saw this hawk sitting on the backyard gate. I didn't want to frighten the bird away so I took this series of smartphone photographs through the windshield.

EASTER FICTION: PART 4
by Dale Speirs

[Parts 1 to 3 appeared in OPUNTIAs #409, 441, and 523.]

There is not a lot of genre fiction incorporating Easter, which is why this column takes so long to fill between installments.

Novels.

THE DEVIL'S BONES (2020) by Carolyn Haines was a novel in a series about private investigator Sarah Booth Delaney. She and friends were visiting Lucedale, Mississippi at Easter. They were there mainly for the spring flowers but also took a trip to a local tourist attraction called the Garden of Bones.

This was a Holy Land exhibit with re-creations of various sites from the Middle East. Sarah and her friends signed up for the sunrise Easter service led by Daniel Reynolds, whose family owned the garden.

So it was that they found themselves at the foot of the Mount of Olives where lay a dead body. The deceased was local lawyer Perry Slay of ill repute. He wasn't going to be resurrected and no stone would be rolled away.

The Deppity Dawg arrived at the crime scene on horseback because the county was too cheap to pay for a police cruiser. Reynolds had been planning to expand the Garden of Bones, with the assistance of Slay, over the opposition of some local residents.

Bible stories notwithstanding, Sarah found plenty of stories of unChristian behaviour. The ending was a bit contrived as one of the culprits suddenly repented of his sins in opposing the Holy Land expansion.

Old-Time Radio.

These shows are available as free downloads from the Old Time Radio Researchers at www.otrr.org/OTRRLibrary

The old-time radio series THE SHADOW, as the opening blurb put it, was in reality Lamont Cranston, wealthy young man about town. He had traveled to Tibet where he learned how to cloud minds so that people could not see him, only hear him. The lovely Margo Lane was the only one who knew his real identity. Her main functions were to scream every time she saw a corpse, be frequently kidnapped or trapped with a killer, and to have the loose threads explained to her in the denouement. The series lasted until 1954.

"The Plot That Failed" aired on 1940-03-24. Twas Easter, and Margo Lane wanted Lamont Cranston to buy 400 eggs for hard boiling and decorating. Their sidekick, cab driver Shreevie, said he would find the eggs.

Professor Brown at City University asked Cranston to find The Shadow. Brown said someone was sabotaging his new communication device. Cranston was suspicious but The Shadow agreed to help.

Brown was indeed up to no good. He gulled The Shadow into distributing his devices around the city. While Lane boiled eggs, Cranston diverted two devices to Lane's apartment for examination. Shreevie mentioned to Cranston that a construction site had been melted down.

Doctor Forbes was Brown's erstwhile accomplice but disposed of the Professor so as to rule the world. Bwah-ha!-ha! and all that. Forbes kidnapped Lane but instead of killing her immediately went into a monologue explaining how the devices worked. They would destroy vital installations such as military bases and police stations.

Cranston qua The Shadow had already figured that out based on Shreevie's comment. First he went about the places where the devices were and disabled them. He had plenty of time because Forbes was doing his monologue with Lane. In the epilogue, Shreevie accidently scrambled the eggs.

George Burns and his wife Gracie Allen began in vaudeville, he as a standup comedian and she and her three sisters as Irish step dancers. They married and were in old-time radio from the 1930s to the 1950s. George became the straight man and Gracie played what was known as a Dumb Dora.

Their comedy hasn't withstood the test of time. Gracie spent her time trying to cajole money out of George. He spent his time cleaning up the messes she made as a blithering idiot. As was the custom in old-time radio, their show was the name of their sponsor, but everyone called it THE BURNS AND ALLEN SHOW.

“Easter Hat War Council” aired on 1947-04-03. There was, and may still be, an American custom that after Easter Sunday services, the women would parade in their finery. Gracie wanted a new hat for the parade but George wouldn’t oblige.

She therefore conspired with her women’s club, the Beverly Hills Uplift Society. They arranged a charade where they called upon George with bundles of old clothes, telling him they had heard the Burns were living in poverty.

He eventually conceded and gave Gracie $30 for a new hat. In today’s depreciated currency that would be equivalent to about $300. One can therefore understand his initial miserly attitude.

There were some twists and turns along the way but by the end of the episode Gracie prevailed. A mildly funny show for our modern times but which left a sour taste.

At far left is a Safeway cupcake that was supposed represent an Easter lamb.

The doughnuts above had candy eggs. At near left are egg-shaped Smarties.

STATELY PILES: PART 9
by Dale Speirs

[Parts 1 to 8 appeared in OPUNTIAs #386, 395, 415, 455, 481, 506, 530, and 545.]

This Old House.

SEALED OFF (2020) by Barbara Ross was a novel in a food cozy series about Julia Snowden of Busman's Harbor, Maine. Jessica Fletcher was busy further along the coast, so Julia substituted as the local sleuth.

The Snowden Clambake Family was busy with leaf peepers in the autumn season but their main excitement was the renovation of an old mansion. The crew clearing out the interior discovered a sealed room, empty for decades.

One of the workers was murdered and another victim soon followed. As anyone knows who has ever renovated their house, the process is stressful enough at the best of times. When the Homicide squad tramp through the job site, there is no upper limit on the aggravation.

Julia did her sleuthing when not baking clams. There were plenty of suspects, with family feuds, romantic entanglements, a paroled convict, and, somewhere in the crowd, the murderer.

The wrecking crew turned out to be human traffickers. They specialized in doing construction jobs along the coast as a cover for bringing in illegal immigrants. The old house proved a good opportunity until a federal agent found out and set off the cascade of alarums and murders.

Haunted Houses.

OLD HAUNTS (2012) by E.J. Copperman (pseudonym of Jeffrey Cohen) was a novel in a cozy series about Alison Kerby of Harbor Haven, New Jersey. She operated a guesthouse with two resident ghosts, Maxie and Paul. She could communicate with them and they helped out by performing on cue for guest tours.

Alison was a busy woman. She was renovating a bedroom for her daughter Melissa and dealing with her ex-husband. Maxie wanted Alison to identify who murdered her husband Big Bob. Paul wanted to know how his fiancée was living. Lots of twists and turns along the way, including the real identity of Big Bob's supposed remains. Plus tour groups to be entertained by Maxie and Paul.

Haunted Renovations.

Juliet Blackwell (pseudonym of Julie Goodson-Lawes) had a cozy series about Melanie Turner of San Francisco, California. She was a general contractor who had a knack for renovating haunted houses. Her reputation as a ghost wrangler spread and she spent as much time chasing ghosts as she did pounding nails.

DEAD BOLT (2011) had Melanie Turner working for Katenka and Jim Daley, who insisted on staying in the house while renovation were underway. The neighbours weren't happy about the noise and debris of the project. Neither were the resident ghosts, who left footprints on the dusty floors and handprints on the ceiling.

Emile Blunt, one of those unhappy neighbours, was seen publicly arguing with Melanie, not long before he was shot dead. She definitely had a battalion of sorrows to deal with. Her sleuthing brought forth a connection between Blunt and Katenka, both of whom had sleazy pasts.

The ghosts had their own sleazy past, a Cain and Abel set of brothers. The denouement brought in some last-chapter characters to take the blame for the murder, then tangled everyone with one connection or another to the ghosts. There were four ghosts all told, who were sent on their way.

MURDER ON THE HOUSE (2012) was the next novel in the series. Melanie Turner was bidding on a job whose owners hoped to operate as a haunted bed-and-breakfast. There were certainly lots of ghosts about. The fresh corpse was most annoying though.

Plenty of alarums among both the living and the dead. The ghosts wanted justice as much as Melanie and the police. The culprit in this world had been hoping for an inheritance, which involved trying to find a will hidden in the house.

That ended up in a messy denouement where Melanie was almost asphyxiated by carbon monoxide. With a single bound she was free, no kidding, and justice was served.

HOME FOR THE HAUNTING (2013) kept Melanie Turner in the ghost business. Her latest project wasn't the scene of hauntings but next door was. The crew found a body in a garden shed on that property. Melanie thus found herself dealing with past and present murders, plus squabbling with her sister.

Also freshening up the plot were ghost hunters waving EMF devices about, dry rot in her project, and a friendly drug dealer known as Duct Tape Dave. Instead of a J'accuse! meting, there was a seance. The killer blabbed all about his psychological problems. One more set of ghosts was disposed of.

KEEPER OF THE CASTLE (2014) followed in the series. Melanie Turner's boyfriend Graham Donovan was also a contractor, currently reconstructing a Scottish monastery in Marin County. The building had been shipped over stone by stone from the Auld Sod but apparently a ghost had come along for the ride.

The corpse found on the site was real, however. Melanie began sleuthing, lest someone else take the low road to Loch Lomond. The denouement, with lengthy explanations about Scottish ghosts and fake monasteries, brought the killer to justice.

The whole thing was a horrible mistake. The murderer thought there was treasure hidden in the stones, based on an ancient text. That was a mis-reading of the text, which was referring to treasure in poetic terms.

A GHOSTLY LIGHT (2017) had Melanie Turner renovating a lighthouse on San Francisco Bay. Alicia Withers wanted to convert the property into an inn. Her abusive ex-husband showed up to utter threats against her and Melanie. He later was found dead in the lighthouse, making Alicia the prime suspect.

Melanie was enlisted as Miss Marple. Oh, the ghosts, mustn't forget them. They were helpful and liked to do the housecleaning. No one can argue against free maid service, even if invisible.

The denouement took place at the top of the lighthouse for maximum drama. Struggling with a killer at ground level wouldn't be as exciting.

The Best Of Families.

Simon Brett has a humourous series about life at Tawcester Towers during the late 1920s. The manor's family, the Lyminsters, was headed by the Dowager Duchess of Tawcester, a battleaxe if ever there was one.

The main protagonists were her younger son Devereux, known as Blotto because while he was a good-natured handsome chap, he was a bit thick-headed. His sister Honoria, who was Milady to her inferiors and Twinks to her family and friends, got the brains.

The oldest son, the Duke, and his wife were busy filling up the manor with daughters in a desperate attempt at a male heir. The family's concern was that if he didn't produce a son, then in the fullness of time Blotto would inherit the estate.

An ongoing problem was the upkeep of Tawcester Towers. If the plumbing wasn't acting up, then it was the heating or the electricals. Any homeowner will understand. I certainly do, and my house is only a bungalow.

BLOTTO, TWINKS, AND THE DEAD DOWAGER DUCHESS (2010) took Blotto, Twinks, and their mother to a weekend house party at Snitterings, the ancestral home of the Melmonts. Blotto didn't want to go. The opening paragraph of the novel summed up what was to come.

If there was one thing Blotto didn't like about weekend house parties, it was the inevitable gathering together of a large number of people with dark secrets in their past, along with the tiresome near-certainty that one of them would get murdered.

Not to mention the unavoidable presence of a know-it-all polymathic amateur sleuth who would be happen to be staying for the weekend. And the obligatory moment when the aforementioned know-it-all polymathic amateur sleuth would dragoon everyone into the library to tell them whodunit.

Sure enough, the Dowager Duchess of Melmont was stabbed with a pitchfork in the kitchen garden. Local amateur sleuth Troubadour Bligh decided the Lyminster's chauffeur Corky Froggett was the culprit, so Twinks had to counter-sleuth. The departed Duchess's daughter Laetitia was a sub-plot, a woman for whom the word 'ugly' had been coined. She was trying to snag Blotto as a husband, a fate worse than death, you'll pardon the expression.

Twinks, Blotto, and Laetitia went hither and yon searching for the murderer. They became entangled with an organization called the League of the Crimson Hand, who wanted to destroy the aristocracy. The murdered Dowager Duchess was just for practice.

The League had a private air force with which to conduct a bombing raid on the House of Lords. Twinks, Blotto, and Laetitia were imprisoned in a castle dungeon while the leader of the League, styled the Crimson Thumb, bwah-ha!-ha!-ed.

The airplanes departed on their raid by were foiled by the sudden intercession of Jerome Handsomely, a lord's son who had his own biplane with working machine guns. That crisis solved, the second one was even more implausibly done away with when Laetitia decided she wanted to become a nun.

BLOTTO, TWINKS, AND THE SUSPICIOUS GUESTS (2022) began with another crisis. The manor house was badly in need of a new boiler and associated plumbing but the Lyminsters hadn't much ready cash.

They were perturbed to learn their neighbour the Earl of Woking had become an innkeeper, renting out his manor to group tours. He wasn't too proud to grub for money, his place being no cheaper to maintain than Tawcester Towers.

The tour organization was Aristotours, a shady outfit who offered to upgrade the plumbing in exchange for Tawcester Tower dining rights. The Dowager, a practical woman, was all for the idea. Blotto and Twinks were very class conscious and appalled at the thought of commoners staying the night. Almost too late they discovered the plumber was an anarchist determined to blow up Tawcester Towers by pumping oil through the central heating system. Since the series was to continue, he was stymied and all the other alarums were disposed of as well.

Cozy Manors.

GRACE AMONG THE THIEVES (2012) by Julie Hyzy was a novel in a cozy series about Grace Wheaton of Emberstowne, North Carolina. She was general manager of Marshfield Manor, a stately pile that was the sole tourist attraction of the village. Not incidently, since Grace arrived the village murder rate had soared and made her the local Miss Marple.

This time around a film crew was at the big house to film a DVD to be sold in the gift shop as a souvenir. Grace was slowly dragging the elderly owner Bennett Marshfield into the 21st Century. His 46-year-old stepdaughter Hillary had arrived for a visit, not to mention an allowance from dear old pater.

Coincidental with her arrival, small thefts occurred of heirlooms and artifacts. Or was the culprit on the film crew? The filming proceeded. Since it was a work-for-hire documentary, there were no giant egos to contend with, ie, actors.

One of the tourists took a dive from the top of a staircase. She was pushed and thereby had the honour of being the first victim. Moments later another guest was shot and wounded. The police detective on the scene asked Grace: *What's going on here, Ms Wheaton? A town like this shouldn't have these kinds of problems.* Well said, that man.

Undaunted the film crew carried on. Grace had to narrate some scenes explaining the manor's history. Later on she had another scene, with the murderer who was also the thief. She survived of course. The stolen items were returned to the manor. All was well, that is until the next novel.

VON NEUMANN MACHINES: PART 3
by Dale Speirs

[Parts 1 to 2 appeared in OPUNTIAs #323 and 471.]

Movies.

MOONFALL was completed in 2021 but not released until early 2022. Because the pandemic shuttered numerous first-run theatres, the movie could not get enough distribution or publicity. Ticket sales were only half the production costs and the movie was a box office bomb. I only found about it by accident and bought the DVD online.

The heroes used American space shuttles which were obsolete for decades in the timeline of the movie as well as our world. The plot was the standard end-of-the-world disaster, where a lone scientist was the only one who had a plan that would save the world.

The SFX were top quality, although not enough to save the movie by themselves. The Moon suddenly came in close and stripped away Earth's atmosphere. There were von Neumann nanomachines attacking Earth's spacecraft.

The Moon used a white dwarf star its centre, which was certainly not plausible. White dwarfs weigh as much as the Sun but are the diameter of Earth. Setting aside the fact that a white dwarf would not fit inside the Moon, the gravitational force would have obliterated Earth the instant it was emplaced gigayears ago.

Some humourous moments broke the tension. A techie who discovered the shift in the Moon's orbit asked himself: "*What would Elon do?*" There was a pet cat called Fuzz Aldrin who had several cameos, including the end twist.

The movie began with an action sequence of the von Neumann machines attacking a space shuttle in 2011, then jumped forward a couple of decades. The pace slowed to a crawl as back stories were set up, such as failed astronauts, wayward sons, caregiving of elderly relatives, divorced spouses, and stonewalling bureaucrats.

But back to the action. The news that the Moon was spiraling into Earth trended on Twitter. It used to be that when disaster movies wanted to infodump, they had the characters watch cable news reports. This movie still did to some extent, but relied on texting to spread the panic.

Soon enough the hypothesis developed that the Moon was actually a megastructure of some kind. A space shuttle was sent to the Moon. The von Neumann machines destroyed it.

On Earth, there were tsunamis, volcanic eruptions, meteorites, and earthquakes as the Moon approached. More angst, more failed plans. The SFX were good, enough to keep me watching. The plot wouldn't by itself. I kept thinking this was a standard disaster movie from The Asylum.

Having run out of shuttles, NASA had to get old ones out of museums and recondition them in days. Fortunately Space X had a fuel depot in Earth orbit. The plan was to dump an EMP bomb inside the Moon and kill the von Neumann machines.

A desperate plan that just might work. With a heigh-ho and an off-to-work-we-go, the ragtag crew set off for space. Eventually they made their way inside the Moon and discovered it was a gigantic ark that had been destabilized.

The movie flipped back and forth between the Moon and various alarums on Earth. Supporting characters went on quests across the disintegrating countryside. Those in the west ran to the east, and those in the east ran to the west. And the rock cried out "There's no hiding place here".

Inside the Moon, the shuttlenauts met an ancient intelligence, enemy to the von Neumann machines. It explained that humans originated far, far away billions of years ago and spread into space. Some excellent SFX followed of ringworlds and the origin of the von Neumann machines.

The original humans had become dependent on a single artificial intelligence. It mutated into self-aware nanomachines that tried to destroy all biological life. An extended infodump explained the ancients escaped and built Dyson spheres as refugia. Very good SFX.

Only one survived and made its way across the galaxy to the Solar System. There it went into orbit around a sterile planet, which it seeded with life. Earth, of course. Then the nanomachines finally found Earth.

And so to the climactic battle, during which the Moon scraped New York City. Well, Manhattan always was a traditional target in disaster movies. One of the supporting characters in the shuttle sacrificed his life to ensure the EMP bomb detonated.

The surviving astronauts made it back to Earth in an Apollo capsule. Huh? Where did that come from? They landed on an ice field out of which the Chrysler skyscraper's spire was sticking. Well, we won't miss Manhattan.

And so to a group hug of all the survivors, all their emotional problems solved. The Moon now orbited Earth peacefully. Its rocky mantle was shed, and its artificial superstructure shone over the world. The von Neumann machines were vanquished.

Short Stories.

"The Hunger" by Marco Frassetto (2021 Sep/Oct, ANALOG) dealt with one flaw of self-replicating Von Neumann machines. Like biological organisms, there is no reason why they wouldn't mutate over time and cause trouble.

Thus the premise of this story, when a swarm of Von Neumann machines entered the Solar System, ready to strip every planet clean of metals. They were evidently mutated mining machines.

The humans counter-programmed the alien locusts to attack each other, and the swarm was thus driven away. A Hollywood movie would end at this point. In the story though, those who did the job were disquieted by the realization that there would not be just one swarm.

"Lonely Planet" by Steve Ingeman (2022 Nov/Dec, ANALOG) was about the evolution of autonomous Mars probes, changing them from explorers to von Neumann machines. The change was illustrated by the life of one probe as it aged past the point of repair. Around it, spreading across Mars were self-reproducing machines.

The machines were not each an individual von Neumann device. Rather, they cooperated with each other in building new machines that were specialists in one task or another. Collectively they increased their numbers as mining machines processed raw ore, manufacturing machines, built parts, and assemblers put them together. Thus they swarmed over Mars.

FREE STUFF ONLINE

I provide sources for the scientific pdfs and mp3s reviewed in this zine. Here is a summary of some good resources, all of which are free.

In particular, the "Seen In The Literature" column cites only peer-reviewed papers. For topics such as climate change or social media effects, more people should be reading these papers instead of blogs where commentators confuse their opinions as being facts.

For scientific papers for which free pdfs are available, the easiest method is to Google either the title of the paper or its digital object identifier, the phrase beginning with doi.org.

Many papers are behind a paywall, so unless you have access to a university library computer, you can only get the abstract. However, the abstract is often enough to understand the gist of the article.

Every scientific periodical has free email notifications of each new issue's table of contents. I subscribe to dozens of notification services, in case you were wondering how I manage to keep up with the literature.

For zines, www.efanzines.com provides current pdf zines as well as some older ones. A club called Fanac at www.fanac.org does the reverse; they provide thousands of old zines from the 1930s to date, with a few current zines. Both sites have a free email notification service you can subscribe to.

The Old Time Radio Researchers have thousands of old-time radio shows (1930s to 1950s) covering all the genres, such as comedy, science fiction, fantasy, and mystery. Visit www.otrr.org/OTRRLibrary.

They also publish a free bulletin OLD RADIO TIMES, available at www.otrr.org/?c=times, with an email notification service. Don't pay money for audio books and listen to a droning voice when you can listen for free to full-cast shows such as Jack Benny or Inner Sanctum from the OTRR.

For pulp fiction magazines from all genres, visit www.archive.org/details/pulpmagazinearchive?&sort=-downloads&page=2
Books in the public domain are free from www.gutenberg.org

SEEN IN THE LITERATURE

Astronomy.

Akiyama, K., et al (2024) **First Sagittarius A* Event Horizon Telescope results. VII. Polarization of the ring.** ASTROPHYSICAL JOURNAL LETTERS 964:doi.org/10.3847/2041-8213/ad2df0 (available as a free pdf)

[Every galaxy rotates around a supermassive black hole. At the centre of the Milky Way, our galaxy, is Sagittarius A*.]

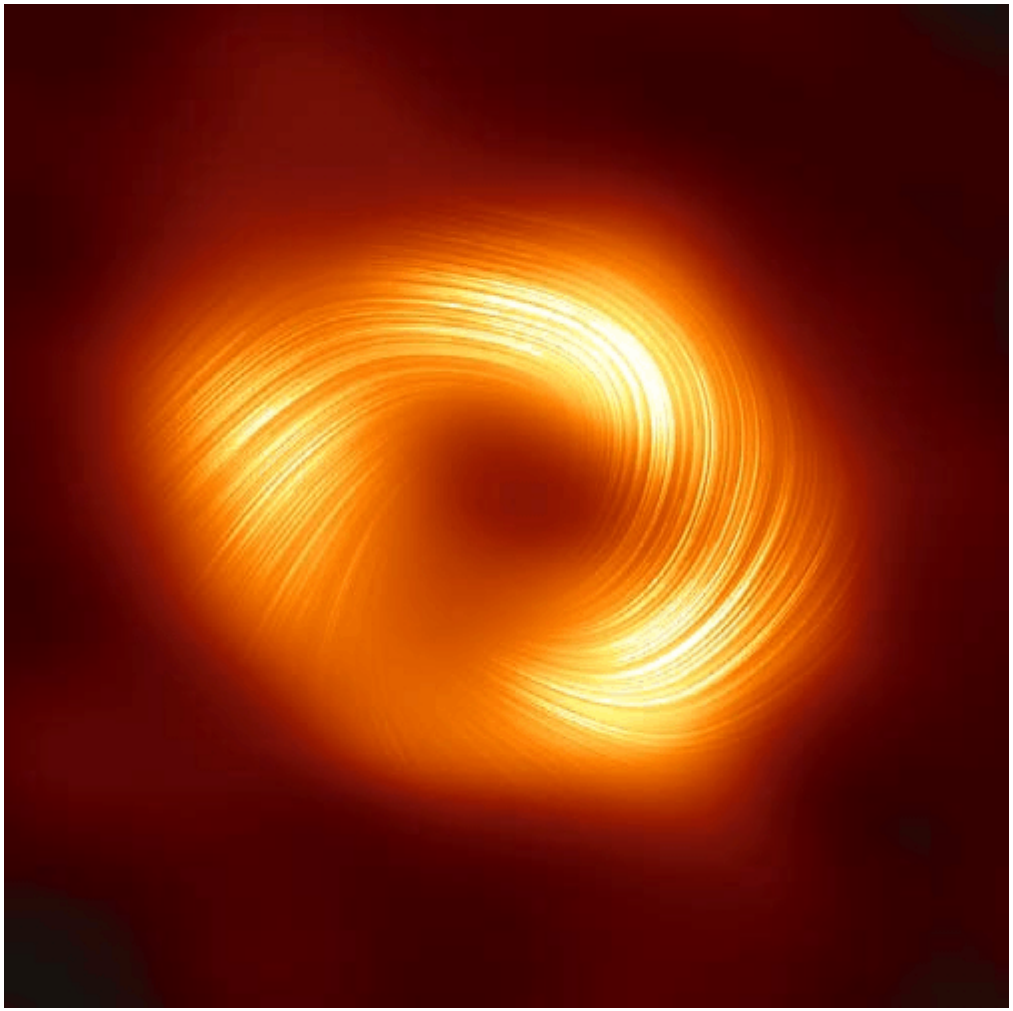
Authors' abstract: *The Event Horizon Telescope observed the horizon-scale synchrotron emission region around the Galactic center supermassive black hole, Sagittarius A* (Sgr A*), in 2017. These observations revealed a bright, thick ring morphology with a diameter of 51.8 ± 2.3 μas and modest azimuthal brightness asymmetry, consistent with the expected appearance of a black hole with mass M¯ 4 × 106Me.*

From these observations, we present the first resolved linear and circular polarimetric images of Sgr A. The linear polarization images demonstrate that the emission ring is highly polarized, exhibiting a prominent spiral electric vector polarization angle pattern with a peak fractional polarization of ~40% in the western portion of the ring.*

The circular polarization images feature a modestly (~5% to 10%) polarized dipole structure along the emission ring, with negative circular polarization in the western region and positive circular polarization in the eastern region, although our methods exhibit stronger disagreement than for linear polarization.

We analyze the data using multiple independent imaging and modeling methods, each of which is validated using a standardized suite of synthetic data sets. While the detailed spatial distribution of the linear polarization along the ring remains uncertain owing to the intrinsic variability of the source, the spiraling polarization structure is robust to methodological choices.

[Image shows the magnetic polarization of Sagittarius A*.]



Malhan, K., and H.W. Rix (2024) **Shiva and Shakti: Presumed proto-galactic fragments in the inner Milky Way.** ASTROPHYSICAL JOURNAL 964:doi.org/10.3847/1538-4357/ad1885 (available as a free pdf)

Authors' abstract: *Using Gaia Data Release 3 astrometry and spectroscopy, we study two new substructures in the orbit-metallicity space of the inner Milky Way: Shakti and Shiva. They were identified as two confined, high-contrast overdensities in the distribution of bright and metal-poor stars.*

Both have stellar masses of about 107 solar masses, and are distributed on prograde orbits inside the solar circle in the Galaxy. Both structures have an orbit-space distribution that points toward an accreted origin; however, their abundance patterns, from APOGEE, are such that are conventionally attributed to an in situ population.

These seemingly contradictory diagnostics could be reconciled if we interpret the abundances [Mg/Fe], [Al/Fe], [Mg/Mn] versus [Fe/H] distribution of their member stars merely as a sign of rapid enrichment. This would then suggest one of two scenarios.

Either these prograde substructures were created by some form of resonant orbit trapping of the field stars by the rotating bar or, Shakti and Shiva were protogalactic fragments that formed stars rapidly and coalesced early, akin to the constituents of the poor old heart of the Milky Way, just less deep in the Galactic potential and still discernible in orbit space.

Liu, F., et al (2024) **At least one in a dozen stars shows evidence of planetary ingestion.** NATURE 627:doi.org/10.1038/s41586-024-07091-y

Authors' abstract: *Stellar chemical compositions can be altered by ingestion of planetary material and/or planet formation, which removes refractory material from the protostellar disk. These 'planet signatures' appear as correlations between elemental abundance differences and the dust condensation temperature.*

Detecting these planet signatures, however, is challenging owing to unknown occurrence rates, small amplitudes and heterogeneous star samples with large differences in stellar ages. Therefore, stars born together (that is, co-natal) with identical compositions can facilitate the detection of planet signatures.

Although previous spectroscopic studies have been limited to a small number of binary stars, the Gaia satellite provides opportunities for detecting stellar chemical signatures of planets among co-moving pairs of stars confirmed to be co-natal.

Here we report high precision chemical abundances for a homogeneous sample of 91 co-natal pairs of stars with a well defined selection function and identify at least seven instances of planetary ingestion, corresponding to an occurrence rate of 8%. An independent Bayesian indicator is deployed, which can effectively disentangle the planet signatures from other factors, such as random abundance variation and atomic diffusion.

Our study provides evidence of planet signatures and facilitates a deeper understanding of the star-planet-chemistry connection by providing observational constraints on the mechanisms of planet engulfment, formation and evolution.

Planets.

Schaible, M.J., et al (2024) **The origins and evolution of planetary systems.** ASTROBIOLOGY 24:doi.org/10.1089/ast.2021.0127 (available as a free pdf)

[CHONPS are the essential elements for life: carbon, hydrogen, oxygen, nitrogen, phosphorus, and sulphur.]

Authors' abstract: *The materials that form the diverse chemicals and structures on Earth, from mountains to oceans and biological organisms, all originated in a universe dominated by hydrogen and helium. Over billions of years, the composition and structure of the galaxies and stars evolved, and the elements of life, CHONPS, were formed through nucleosynthesis in stellar cores.*

Climactic events such as supernovae and stellar collisions produced heavier elements and spread them throughout the cosmos, often to be incorporated into new, more metal-rich stars. Stars typically form in molecular clouds containing small amounts of dust through the collapse of a high density core.

The surrounding nebular material is then pulled into a protoplanetary disk, from which planets, moons, asteroids, and comets eventually accrete. During the accretion of planetary systems, turbulent mixing can expose matter to a variety of different thermal and radiative environments.

Chemical and physical changes in planetary system materials occur before and throughout the process of accretion, though many factors such as distance from the star, impact history, and level of heating experienced combine to ultimately determine the final geophysical characteristics.

In Earth's planetary system, called the Solar System, after the orbits of the planets had settled into their current configuration, large impacts became rare, and the composition of and relative positions of objects became largely fixed.

Further evolution of the respective chemical and physical environments of the planets, geosphere, hydrosphere, and atmosphere, then became dependent on their local geochemistry, their atmospheric interactions with solar radiation, and smaller asteroid impacts.

On Earth, the presence of land, air, and water, along with an abundance of important geophysical and geochemical phenomena, led to a habitable planet where conditions were right for life to thrive.

Asteroids.

Grewal, D.S., et al (2024) **Accretion of the earliest inner Solar System planetesimals beyond the water snowline.** NATURE ASTRONOMY 8:doi.org/10.1038/s41550-023-02172-w

Authors' abstract: *How and where the first generation of inner Solar System planetesimals formed remains poorly understood. Potential formation regions are the silicate condensation line and water snowline of the solar protoplanetary disk.*

Whether the chemical compositions of these planetesimals align with accretion at the silicate condensation line (water-free and reduced) or water snowline (water-bearing and oxidized) is, however, unknown.

Here we use the Fe/Ni and Fe/Co ratios of magmatic iron meteorites to quantify the oxidation states of the earliest planetesimals associated with non-carbonaceous (NC) and carbonaceous (CC) reservoirs, representing the inner and outer Solar System, respectively.

Our results show that the earliest NC planetesimals contained substantial amounts of oxidized Fe in their mantles. In turn, we argue that this required the accretion of water-bearing materials into these NC planetesimals.

The presence of substantial quantities of moderately and highly volatile elements in their parent cores is also inconsistent with their accretion at the silicate condensation line and favours, instead, their formation at or beyond the water snowline.

Similar oxidation states in the early formed parent bodies of NC iron meteorites and those of NC achondrites and chondrites with diverse accretion ages suggest that the formation of oxidized planetesimals from water-bearing materials was widespread in the early history of the inner Solar System.

Dotto, E., et al (2024) **The Dimorphos ejecta plume properties revealed by LICIACube.** NATURE 627:doi.org/10.1038/s41586-023-06998-2 (available as a free pdf)

Authors' abstract: *The Double Asteroid Redirection Test (DART) had an impact with Dimorphos (a satellite of the asteroid Didymos) on 26 September 2022. Ground-based observations showed that the Didymos system brightened by a factor of 8.3 after the impact because of ejecta, returning to the pre-impact brightness 23.7 days afterwards.*

Hubble Space Telescope observations made from 15 minutes after impact to 18.5 days after, with a spatial resolution of 2.1 kilometres per pixel, showed a complex evolution of the ejecta, consistent with other asteroid impact events.

The momentum enhancement factor, determined using the measured binary period change, ranges between 2.2 and 4.9, depending on the assumptions about the mass and density of Dimorphos.

Here we report observations from the LUKE and LEIA instruments on the LICIACube cube satellite, which was deployed 15 days in advance of the impact of DART. Data were taken from 71 seconds before the impact until 320 seconds afterwards.

The ejecta plume was a cone with an aperture angle of 140 ± 4 degrees. The inner region of the plume was blue, becoming redder with increasing distance from Dimorphos.

The ejecta plume exhibited a complex and inhomogeneous structure, characterized by filaments, dust grains and single or clustered boulders. The ejecta velocities ranged from a few tens of metres per second to about 500 metres per second.

Origin Of Life.

Rodriguez, L.E., et al (2024) **A geological and chemical context for the origins of life on early Earth.** ASTROBIOLOGY 24:doi.org/10.1089/ast.2021.0139 (available as a free pdf)

Authors' extracts: *Although the division between life and nonlife is blurry, one possible intermediate structure may have been the assembly of a primitive cell-like compartment called a protocell.*

A protocell is, by definition, a self-sustaining compartment that could have accomplished a number of essential functions including genetic replication, division, and metabolism.

In essence, a protocell may have simply been a primitive compartment containing a replicating genetic molecule and catalytic molecules to perform metabolism, with the ability to grow and divide through external stressors or environmental changes.

The process from which a protocell evolved into a modern cell was likely facilitated by selective chemical evolution, a subset of Darwinian evolution.

Selective chemical evolution of any population results in accumulation of only a subset of the initial population which possesses greater survivability/persistence either through a more stable structure or an efficient/effective function that improves its own survivability.

On primitive Earth, the environment would have supplied selective pressures, perhaps including fluctuating temperatures, mineral surfaces, radiation from sunlight or radioactive elements in Earth, changes in salinity/pH, or even physical processes such as oceanic waves or emission from fumaroles.

These processes could have resulted in the emergence of protocells that
(i) contained structures that were more robust and persistent to environmental perturbations,
(ii) contained catalytic polymers that could efficiently synthesize important reactants or catalyze essential reactions,
(iii) could self-assemble into novel structures capable of adsorbing essential molecules or facilitating essential chemical reactions, or
(iv) might have itself evolved at a greater rate than previous iterations.

Bozdag, G.O., et al (2024) **Major biological innovations in the history of life on Earth.** ASTROBIOLOGY 24:doi.org/10.1089/ast.2021.0119 (available as a free pdf)

Authors' abstract: *All organisms living on Earth descended from a single, common ancestral population of cells, known as LUCA, the last universal common ancestor. Since its emergence, the diversity and complexity of life have increased dramatically.*

This chapter focuses on four key biological innovations throughout Earth's history that had a significant impact on the expansion of phylogenetic diversity, organismal complexity, and ecospace habitation.

First is the emergence of the last universal common ancestor, LUCA, which laid the foundation for all life-forms on Earth.

Second is the evolution of oxygenic photosynthesis, which resulted in global geochemical and biological transformations.

Third is the appearance of a new type of cell, the eukaryotic cell, which led to the origin of a new domain of life and the basis for complex multicellularity.

Fourth is the multiple independent origins of multicellularity, resulting in the emergence of a new level of complex individuality.

Paleobiology.

Cooper, S.L.A. (2024) **Cannibalism in the Early Jurassic Bony Fish *Pachycormus macropterus* (Teleosteomorpha: Pachycormiformes) and its paleoecological significance.** JOURNAL OF VERTEBRATE PALEONTOLOGY 43:doi.org/10.1080/02724634.2023.2294000

Author's abstract: *Cannibalism (conspecific predation) is a surprisingly common and widespread behavior in modern ecosystems; however, direct evidence for cannibalism is strongly lacking in the fossil record.*

Identifying cannibalism is important to help better understand recondite trophic interactions between extinct species, as well as to detect potential resource pressures and competition in their ecosystems.

Here, I describe the first direct evidence for a cannibalistic diet in a pachycormiform fish, based on three exceptionally well-preserved specimens of Pachycormus macropterus with conspecific gut contents from the Early Jurassic (Toarcian) of Normandy (France).

The generalist diet of Pachycormus is proven to be more complex than previously considered, which has recently been shown to include vampyropod squids, belemnoteuthids, ammonites, and small teleosts.

All of the prey fishes were ingested whole in a longitudinal orientation, revealing that Pachycormus actively hunted juveniles of its own kind and was an indiscriminate opportunistic predator.

The cannibal individuals themselves are also juveniles, further supporting previous findings for a dietary shift in Pachycormus from piscivorous to teuthophagous over ontogeny.

Despite a widespread European distribution of Pachycormus, only specimens from the Normandy area show evidence for cannibalism, suggesting that the more conventional prey resources were either scarce or restricted at the site, prompting Pachycormus juveniles to indiscriminately predate on one another.

Dinosaurs.

Troiano, L.P., et al (2024) **A remarkable assemblage of petroglyphs and dinosaur footprints in Northeast Brazil.** SCIENTIFIC REPORTS 14:doi.org/10.1038/s41598-024-56479-3 (available as a free pdf)

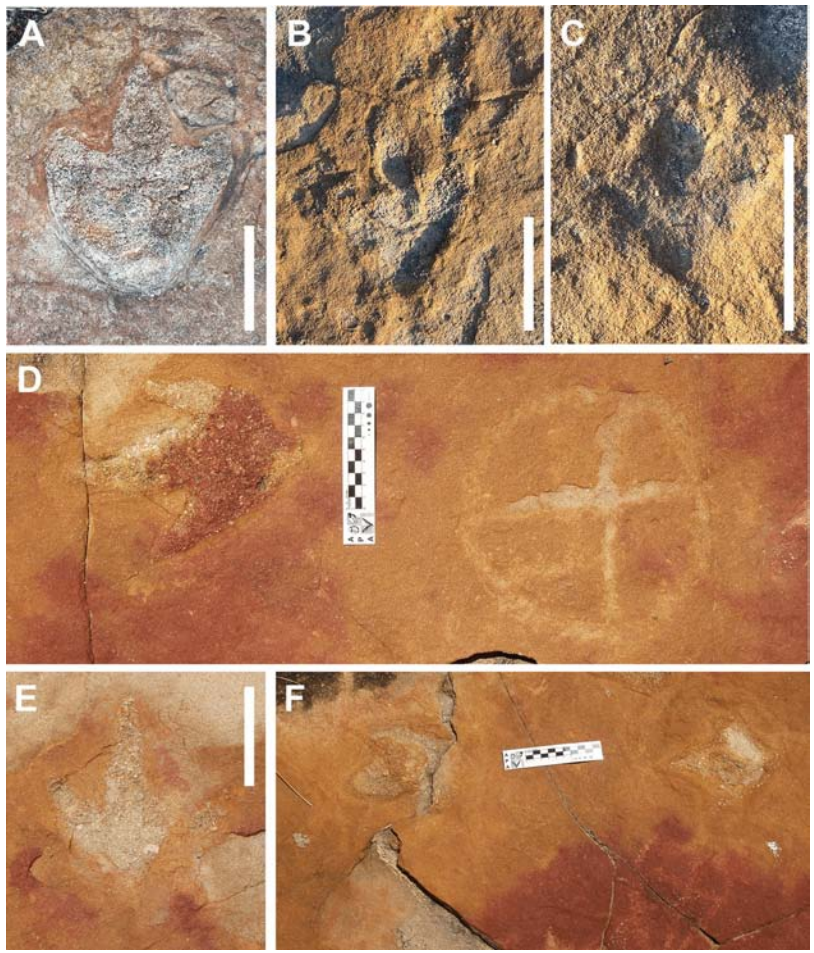
Authors' abstract: *The Serrote do Letreiro Site, found on the northwest periphery of the Sousa Basin, Brazil, presents a remarkable convergence of paleontological and archaeological elements. It is constituted of subhorizontal "lajeiros", or rock outcrops, intermingled with endemic Caatinga vegetation.*

The three prominent outcrops feature fossilized footprints of theropod, sauropod, and iguanodontian dinosaurs from the Early Cretaceous Period. Adjacent to these dinosaur tracks, indigenous petroglyphs adorn the surface.

The petroglyphs, mainly characterized by circular motifs, maintain a striking resemblance to other petroglyphs found in the states of Paraíba and Rio Grande do Norte. This study primarily endeavors to delineate the site's major characteristics while concentrating on the relationship between the dinosaur footprints and the petroglyphs.

The petroglyphs represent a unique and significant record, given their direct association with dinosaur fossil tracks. This ensemble of archaeological and paleontological evidence unequivocally indicates that human populations during the pre-colonial period interacted with and likely assimilated the fossil record, incorporating such record into their graphical expression, a cultural one, and consequently integrating it into its collective identity.

Particularly noteworthy is the evident intentionality in creating petroglyphs near the footprints, revealing active engagement with the fossil material, suggesting that these traces not only caught the attention of the native community but were meaningful and became integrated into their knowledge repertoire.



[Images are from this paper.]

Zoology.

Jouault, C., et al (2024) **The Angiosperm Terrestrial Revolution buffered ants against extinction.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 121:doi.org/10.1073/pnas.2317795121

[Angiosperms are flowering plants which, although they existed during the Cretaceous. didn't expand until after the asteroid. Ants were around before as well but diversified when they began to associate with angiosperms.]

Authors' abstract: *With ~14,000 extant species, ants are ubiquitous and of tremendous ecological importance. They have undergone remarkable diversification throughout their evolutionary history. However, the drivers of their diversity dynamics are not well quantified or understood.*

Previous phylogenetic analyses have suggested patterns of diversity dynamics associated with the Angiosperm Terrestrial Revolution (ATR), but these studies have overlooked valuable information from the fossil record.

To address this gap, we conducted a comprehensive analysis using a large dataset that includes both the ant fossil record (~24,000 individual occurrences) and neontological data (~14,000 occurrences), and tested four hypotheses proposed for ant diversification: co-diversification, competitive extinction, hyperspecialization, and buffered extinction.

Taking into account biases in the fossil record, we found three distinct diversification periods (the latest Cretaceous, Eocene, and Oligo-Miocene) and one extinction period (Late Cretaceous). The competitive extinction hypothesis between stem and crown ants is not supported. Instead, we found support for the co-diversification, buffered extinction, and hyper-specialization hypotheses.

The environmental changes of the ATR, mediated by the angiosperm radiation, likely played a critical role in buffering ants against extinction and favoring their diversification by providing new ecological niches, such as forest litter and arboreal nesting sites, and additional resources.

We also hypothesize that the decline and extinction of stem ants during the Late Cretaceous was due to their hyper-specialized morphology, which limited their ability to expand their dietary niche in changing environments.

Gainett, G., et al (2024) **Vestigial organs alter fossil placements in an ancient group of terrestrial chelicerates.** CURRENT BIOLOGY 34:doi.org/10.1016/j.cub.2024.02.011

Authors' abstract: *Vestigial organs provide a link between ancient and modern traits and therefore have great potential to resolve the phylogeny of contentious fossils that bear features not seen in extant species.*

Here we show that extant daddy-longlegs (Arachnida, Opiliones), a group once thought to possess only one pair of eyes, in fact additionally retain a pair of vestigial median eyes and a pair of vestigial lateral eyes.

Neuroanatomical gene expression surveys of eye-patterning transcription factors, opsins, and other structural proteins in the daddy-longlegs Phalangium opilio show that the vestigial median and lateral eyes innervate regions of the brain positionally homologous to the median and lateral eye neuropils, respectively, of chelicerate groups like spiders and horseshoe crabs.

The existence of lateral eyes in extant daddy-longlegs bears upon the placement of the oldest harvestmen fossils, a putative stem group that possessed both a pair of median eyes and a pair of lateral eyes.

Phylogenetic analysis of harvestman relationships with an updated understanding of lateral eye incidence resolved the four-eyed fossil group as a member of the extant daddy-longlegs suborder, which in turn resulted in older estimated ages of harvestman diversification.

This work underscores that developmental vestiges in extant taxa can influence our understanding of character evolution, placement of fossils, and inference of divergence times.

Ellis S., et al (2024) **The evolution of menopause in toothed whales.** NATURE 627:doi.org/10.1038/s41586-024-07159-9 (available as a free pdf)

Authors' abstract: *Understanding how and why menopause has evolved is a long-standing challenge across disciplines. Females can typically maximize their reproductive success by reproducing for the whole of their adult life.*

In humans, however, women cease reproduction several decades before the end of their natural lifespan. Although progress has been made in understanding the adaptive value of menopause in humans, the generality of these findings remains unclear.

Toothed whales are the only mammal taxon in which menopause has evolved several times, providing a unique opportunity to test the theories of how and why menopause evolves in a comparative context.

Here, we assemble and analyse a comparative database to test competing evolutionary hypotheses. We find that menopause evolved in toothed whales by females extending their lifespan without increasing their reproductive lifespan, as predicted by the 'live-long' hypotheses.

We further show that menopause results in females increasing their opportunity for intergenerational help by increasing their lifespan overlap with their grandoffspring and offspring without increasing their reproductive overlap with their daughters.

Our results provide an informative comparison for the evolution of human life history and demonstrate that the same pathway that led to menopause in humans can also explain the evolution of menopause in toothed whales.

Menopause is a very rare phenomena and humans are the only terrestrial mammals demonstrated to have evolved an extended female postreproductive lifespan under natural conditions. This rarity is perhaps unsurprising: under most circumstances, individuals can maximize their fitness by continuing to reproduce for their entire adult lifespan.

There is evidence that menopause is adaptive in humans. ... Supporting this interpretation, research has found that the presence of mothers and grandmothers can increase the survival of their offspring and grandoffspring and there is evidence that ceasing reproduction can allow older females to avoid costly competition with their relatives.

Research on the evolutionary history of menopause has been constrained because menopause is a rare taxonomic trait in wild populations. In primates, for example, the scope for robust comparisons is limited because menopause has only evolved once and humans are unusual among primates in key aspects of their ecology and life history.

The recent demonstration of the repeated evolution of menopause in toothed whales (suborder Odontoceti) provides a unique opportunity to investigate the evolution of menopause in a comparative context.

In contrast to primates, in toothed whales, menopause has independently evolved at least four times across five species, once in the branch leading to short-finned pilot whales (Globicephala macrorhynchus), false killer whales (Pseudorca crassidens) and killer whales (Orcinus orca) and once in the branch leading to narwhals (Monodon monoceros) and beluga whales (Delphinapterus leucas).

Environmental Science.

Larsen, A.E., et al (2024) **Spillover effects of organic agriculture on pesticide use on nearby fields.** SCIENCE 383:doi.org/10.1126/science.adf2572 (available as a free pdf)

Authors' abstract: *Using about 14,000 field observations per year from 2013 to 2019 in Kern County, California, we postulate that organic crop producers benefit from surrounding organic fields decreasing overall pesticide use and, specifically, pesticides targeting insect pests.*

Conventional fields, by contrast, tend to increase pesticide use as the area of surrounding organic production increases. Our simulation suggests that spatially clustering organic cropland can entirely mitigate spillover effects that lead to an increase in net pesticide use.

Burton, A.C., et al (2024) **Mammal responses to global changes in human activity vary by trophic group and landscape.** NATURE ECOLOGY AND EVOLUTION 8:doi.org/10.1038/s41559-024-02363-2 (available as a free pdf)

Authors' abstract: *We used camera trapping as a lens to view mammal responses to changes in human activity during the COVID-19 pandemic. Across 163 species sampled in 102 projects around the world, changes in the amount and timing of animal activity varied widely.*

Under higher human activity, mammals were less active in undeveloped areas but unexpectedly more active in developed areas while exhibiting greater nocturnality. Carnivores were most sensitive, showing the strongest decreases in activity and greatest increases in nocturnality.

Guoa, W., et al (2024) **The visual effect of wind turbines on property values is small and diminishing in space and time.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 121:doi.org/10.1073/pnas.2309372121 (available as a free pdf)

Authors' abstract: *Wind power is the fastest-growing renewable source of electricity in the United States. However, expanding wind capacity often faces local opposition, partly due to a perceived visual disamenity from large wind turbines.*

Here, we provide a USA-wide assessment of the externality costs of wind power generation through the visibility impact on property values. To this end, we create a database on wind turbine visibility, combining information on the site and height of each utility-scale turbine having fed power into the U.S. grid, with a high-resolution elevation map to account for the underlying topography of the landscape.

Building on hedonic valuation theory, we statistically estimate the impact of wind turbine visibility on home values, informed by data from the majority of home sales in the United States since 1997.

We find that on average, wind turbine visibility negatively affects home values in an economically and statistically significant way in close proximity (<5 miles/8 km). However, the effect diminishes over time and in distance and is indistinguishable from zero for larger distances and toward the end of our sample.

Human Prehistory.

Garba, R., et al (2024) **East-to-west human dispersal into Europe 1.4 million years ago.** NATURE 627:doi.org/10.1038/s41586-024-07151-3

Authors' abstract: *Stone tools stratified in alluvium and loess at Korolevo, western Ukraine, have been studied by several research groups since the discovery of the site in the 1970s.*

Although Korolevo's importance to the European Palaeolithic is widely acknowledged, age constraints on the lowermost lithic artefacts have yet to be determined conclusively.

Here, using two methods of burial dating with cosmogenic nuclides, we report ages of 1.42 ± 0.10 million years and 1.42 ± 0.28 million years for the sedimentary unit that contains Mode-1-type lithic artefacts.

Korolevo represents, to our knowledge, the earliest securely dated hominin presence in Europe, and bridges the spatial and temporal gap between the Caucasus (around 1.85 to 1.78 million years ago) and southwestern Europe (around 1.2 to 1.1 million years ago).

Our findings advance the hypothesis that Europe was colonized from the east, and our analysis of habitat suitability suggests that early hominins exploited warm interglacial periods to disperse into higher latitudes and relatively continental sites, such as Korolevo, well before the Middle Pleistocene Transition.

Muttoni, G., and D.V. Kent (2024) **Hominin population bottleneck coincided with migration from Africa during the Early Pleistocene ice age transition.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 121:doi.org/10.1073/pnas.2318903121

Authors' abstract: *The timing and causes of hominin (pre-Homo sapiens) migrations out of Africa have been of recent interest. Two scenarios, one based on modern genomic data and the other on the chronology of hominin sites, indicate population bottlenecking in the Early Pleistocene. An ice age is invoked as bottleneck trigger in both cases even though they differ in timing, and therefore in the actual event that triggered depopulation.*

Our assessment of the chronology of key hominin sites in Eurasia leads us to conclude that bottlenecking occurred at the first major ice age of the Pleistocene, ~900,000 years ago, in agreement with the genomic model, and coincided with a major diaspora from Africa into Eurasia when hominins came close to extinction.

Two recently published analyses make cases for severe bottlenecking of human populations occurring in the late Early Pleistocene, one case at about 0.9 Mya based on a genomic analysis of modern human populations and the low number of hominin sites of this age in Africa and the other at about 1.1 Mya based on an age inventory of sites of hominin presence in Eurasia.

Both models point to climate change as the bottleneck trigger, albeit manifested at very different times, and have implications for human migrations as a mechanism to elude extinction at bottlenecking.

We suggest that the best available data are consistent with the Galerian hypothesis expanded from Europe to Eurasia as a major migration pulse of fauna including hominins in the late Early Pleistocene as a consequence of the opening of land routes from Africa facilitated by a large sea level drop associated with the first major ice age of the Pleistocene and concurrent with widespread aridity across Africa that occurred during marine isotope stage 22 at ~0.9 Mya.

This timing agrees with the independently dated bottleneck from genomic analysis of modern human populations and allows speculations about the relative roles of climate forcing on the survival of hominins.

Human Health.

Carrasquilla, G.D., et al (2024) **Estimating causality between smoking and abdominal obesity by Mendelian randomization.** ADDICTION 119:doi.org/10.1111/add.16454 (available as a free pdf)

Authors' abstract: *Smokers tend to have a lower body weight than non-smokers, but also more abdominal fat. It remains unclear whether or not the relationship between smoking and abdominal obesity is causal.*

Previous Mendelian randomization (MR) studies have investigated this relationship by relying upon a single genetic variant for smoking heaviness. This approach is sensitive to pleiotropic effects and may produce imprecise causal estimates. We aimed to estimate causality between smoking and abdominal obesity using multiple genetic instruments.

Smoking initiation and higher life-time smoking may lead to increased abdominal fat distribution. The increase in abdominal fat due to smoking is characterized by an increase in visceral fat. Thus, efforts to prevent and cease smoking can have the added benefit of reducing abdominal fat.

Mello, A., et al (2024) **Visualising facial distortions in prosopometamorphopsia.** THE LANCET 403:doi.org/10.1016/S0140-6736(24)00136-3

Authors' abstract: *A 58-year-old man with a 31-month history of seeing peoples' faces as distorted and, in his words, appearing "demonic" visited our laboratory for assessment. The patient stated that the distortions, severely stretched features of the face, with deep grooves on the forehead, cheeks, and chin, were present on every person's face he encountered, but he reported no distortions when looking at objects, such as houses or cars.*

The patient said that even though faces were distorted, he was still able to recognise who they were. Notably, he reported no distortions when viewing facial images on a screen or on paper. The distortions were not accompanied by delusional beliefs about the identities of the people he encountered, such as his family or friends.

[Images are from this paper.]