



OPUNTIA 590

# Edgar Allan Poe's Birthday 2025

Opuntia is published by Dale Speirs, Calgary, Alberta. It is posted on [www.efanzines.com](http://www.efanzines.com) and [www.fanac.org](http://www.fanac.org). There is also an cumulative subject index to all issues available at those sites. My e-mail address is: [opuntia57@hotmail.com](mailto:opuntia57@hotmail.com) When sending me an emailed letter of comment, please include your name and town in the message.

## ABOUT THE COVER

2024-01-12

I took this photo from the south bank of the Bow River in downtown Calgary, looking across the channel to Prince's Island. Despite the sign, the skaters are not in any danger.

The sign was there for legal liability reasons. I worked 31 years for the Parks Dept and at various times was in charge of this park. The channel is controlled by gates at either end. In autumn, the water is drained and a crew cleans out all the garbage that accumulated on the bed during the summer. The ice is then built up in layers as a solid laminated mass by hose spraying.

The island was created more than a century ago by Peter Prince, a pioneer lumberman. He had the channel dug to accumulate logs rafted down the river from the Rocky Mountains. His sawmill was on the south bank about where I took the photo. Just upstream is a service building with a mural honouring him.



# LIFE AT CHEZ OPUNTIA

photo by Dale Speirs

During the winter, magpies are ubiquitous no matter what the weather but squirrels come and go with chinooks. When we have snow on the ground they hibernate. Once a chinook sublimates all the snow, the squirrels come out.

Chinooks are warm winter winds that come out of the adjacent Rocky Mountains and bring the temperature above freezing. They do not melt the snow. Instead the snow is sublimated or vapourized directly into the air. There are no puddles of water.

The photo below was taken January 15 after the lawn at Chez Opuntia was stripped bare of snow by a chinook. My habit is to keep a bag of peanuts inside the front door and scatter a few across the front lawn every time I enter or leave the house.



Two days later I photographed these magpies just as a fresh snowfall began.



# PHILATELY OF THE 2022 UKRAINIAN WAR: PART 5

by Dale Speirs

[Parts 1 to 4 appeared in OPUNTIA #544, 558, 569, and 581.]

Another year as the Ukrainian war drags on, alas. I have continued to accumulate Ukrainian postage stamps. Stamps shown here are not at actual size or to the same scale as each other.

Below is a 2023 Christmas stamp sheetlet showing Saint Nicholas spearing a Russian eagle. Until the Russian invasion the Ukrainian church celebrated Christmas on January 6, the Orthodox tradition. They have since moved to the western observance on December 25.



Above is another 2023 sheetlet showing the Motherland statue with sword and trident.

At immediate left is the 2024 Day of the Defender sheetlet with Saint Mary offering surcoat to soldiers.



## EDGAR GALLOPING POE: PART 11

by Dale Speirs

[Parts 1 to 10 appeared in OPUNTIA's #325, 332, 344, 356, 370, 433, 465, 492, 516, and 564.]

### Commentary.

POE FOR YOUR PROBLEMS (2021) by Catherine Baab-Muguira was subtitled “Uncommon Advice From History’s Least Likely Self-Help Guru”. Edgar Allan Poe was a self-destructive alcoholic who couldn’t keep a job. Nonetheless he persevered and became one of the great authors, recognized as the founder of the detective fiction genre.

In her introduction, CBM noted “*Anyone can get to the top doing all the right things. To make it to the top doing all the wrong things? Now that takes genius.*”

Poe’s problems began with his childhood and he never lost sight of them. Even in later adulthood he obsessed about events from back then. He was orphaned, fostered to the Allan family, and passed around as an unwanted obligation.

CBM suggested that Poe kept going from hubris, the conviction that he was right and everyone else was wrong. He learned that self-publishing poetry chapbooks is all very well if one had the money. To buy food and pay the bills, he had to write thrillers such as bricking up an enemy in a wine cellar.

On page 66 was a most interesting chart showing how little Poe was paid for his work, both in current dollars of his time and adjusted to 2020 dollars. CBM pointed out that one reason Poe suffered financially was because for most of his adult life the American economy was in a multi-decades depression caused by the Panic of 1837. Everybody was poor and scrambling for jobs, not just Poe.

The other difficulty he and other writers faced was lack of international copyright law. American publishers could pirate British books for free and vice versa. That being the case, they declined to pay big money for any of their own country’s writers. Those who blithered in the 1990s about how everything wants to be free on the Internet forgot it also meant no paying jobs either.

Poe seldom held a job longer than a year before being fired. He was a master at padding his resume. One magazine he edited increased its circulation by 40%. When Poe told the story, the boost was 700% and solely because of him.

CBM pointed out that Poe was so good at inflating his biography that his version was accepted at face value for 150 years. Not until a researcher analyzed the actual records in 1991 was the truth discovered that Poe was no good at business economics or publishing. He was always fired for just cause.

After Poe’s wife Virginia died young, he basically went berserk, in a literary sense. The word ‘trolling’ hadn’t been invented yet, but he became a book reviewer and took the opportunity to explain why everyone else was wrong.

This backfired in a way that Poe never knew about. His literary enemy Rufus Wilmot Griswold published an entirely unfavourable obituary about Poe and stole the literary rights from his estate. In later years, a reaction to Griswold set in and the pendulum swung the other way.

Of course, trolling and counter-trolling is not the way to guarantee literary immortality for yourself. You must have published something worth a second read, whether a story about a black cat or a poem about a raven. Not to worry though. As Poe demonstrated, your behaviour in life will not necessarily damage your legacy in death.

### WHEN WORDS COLLIDE 2025

Calgary’s annual readercon When Words Collide has a membership limit of 1,000 plus volunteers and guests. The event always sells out a few months before. Reports of previous WWC conventions appeared in OPUNTIA's #71, 253, 266, 282, 318, 350, 387, 421, 452, 481, 507, 532, 555, and 580.

The 2025 WWC will be held August 15 to 17 at a new location, the Sheraton Cavalier Hotel, 2620 - 32 Avenue NE. The Alexandra Writers Centre in Calgary are the organizers. They did a good job in 2024 and will no doubt do so again in 2025. Details from [www.whenwordscollide.org](http://www.whenwordscollide.org)

Numerous authors, editors, and publishers will be in attendance. The dealer bourse is restricted to books. The average customer buys tote bags full.

## **IF YOU AREN'T SQUAMOUS, THEN WHY ARE YOU TRYING TO BE ELDRITCH?: PART 22**

by Dale Speirs

[Parts 1 to 21 appeared in OPUNTIA's #298, 333, 340, 352, 365, 395, 410, 415, 422, 443, 465, 480, 486, 492, 498, 504, 513, 530, 536, 549, and 559.]

### **From Zinedom.**

PIXEL DREAMS #2 (December 2023) was produced by Alan White and is available as a free pdf from [www.efanzines.com](http://www.efanzines.com). This issue is a tribute to Cthulhu fiction, mostly as full colour computer generated art. Phil DePage had several fiction pieces, including Cthulhu as a private investigator. Rounding out the issue were extracts from Cthulhu's diary.

### **Commentary.**

THE LURKING CHRONOLOGY (2015) by Pete Rawlik was a chapbook about the timeline of the Derleth Mythos stories. Available from Amazon print-on-demand.

What is today commonly known as the Cthulhu Mythos is a blend of various stories by H.P. Lovecraft, his acolyte August Derleth, and others. HPL did not construct his mythos from an outline. Some of his stories used common tropes, settings, and characters which were borrowed, with his consent, by other writers.

Lovecraft would today be forgotten had it not been for Derleth publishing books of HPL's collected stories after his death. Those who knew Derleth thought him a sharp-practice man but did acknowledge his role in saving HPL from oblivion.

After running out of Lovecraft stories, Derleth and others wrote pastiches set in the HPL Mythos. They modified, ignored, or added material to the original ideas.

The Derleth Mythos timeline was therefore created by Rawlik to track the subsequent pastiches. The chronology includes a few sentences for each date. Read in sequence, they provide a brief summary of the entire Derleth Mythos.

### **University Days.**

THE MISKATONIC UNIVERSITY SPIRITUALISM CLUB (2021) by Peter Rawlik was a Cthulhu Mythos novella set in late December 1928. Available as a chapbook from Amazon print-on-demand. The novella was a good read, if I may coin a phrase.

The protagonists were Halsey, Peaslee, and Lydecker, Consulting Detectives. They didn't do divorce or criminal cases. The firm had a contract with Miskatonic University for security investigations.

A mad scientist Jackson Flux had vanished and left a haunted house called The Krag to the university. They proposed to convert it into a rest home for indigent faculty. The problem with that idea was obvious.

They were approached by Dr Socrates Zorba, who wanted them to keep an eye on some of his students. Sent to The Krag were the students, operating as the Spiritualism Club, Zorba, Dr Megan Halsey, and her husband, the narrator Robert Peaslee.

The group were to sweep The Krag clean of ghosts and anything else that looked eldritch. The Krag stood on a seaside cliff as such houses so often do. The house walls were everywhere lined with copper mesh, which the scientific reader will recognize as Faraday cages.

The elderly caretaker Dudley lived in the village and refused to stay at night in the big house. The whole group settled in for the weekend, which straddled Christmas.

After a Christmas Eve dinner, they settled back for a ghost story. The events and people of the story, the teller said, took place in The Krag and were true. The story didn't explain much about Flux's disappearance but shed interesting light on the madness of the house.

On Christmas Day after the breakfast dishes were cleared away, the academics set up their cameras and scientific instruments. The detectives snooped about the house looking for eldritch horrors of a criminal nature. A blizzard trapped the occupants with heavy snow and took down the telephone lines. The stage was set.

There was an extended discussion about how ghosts, goblins, and Mythos beasts were creatures made of dark matter. Flux may have inadvertently trapped such a creature inside the house's Faraday cage.

Soon enough the alarums began. An invisible goblin was the first. People began vanishing one by one. Peaslee and a tech cobbled together a gizmo which, with a bit handwaving, might release the dark matter boojum and return the humans.

Lots of screaming, both human and alien. The plan worked reasonably well. The missing folk were returned, including Flux. The alien was able to escape to whence it had come. A happy ending all around.

### **Peaslee.**

THE PEASLEE PAPERS (2017) by Peter Rawlik was a collection of 22 stories about the Yith and the Peaslee family. Available from Amazon print-on-demand. The stories read well and are worth the attention of Lovecraft fans.

Nathaniel Wingate Peaslee was a professor at Miskatonic University. His wife was Alice Keezar, by whom two sons and a daughter. From 1908 to 1913, a Yith took over his mind, causing no end of troubles.

Peaslee appeared in HPL's story "The Shadow Out Of Time". His insanity is commonly believed to be based on Lovecraft's father, who had been committed to an institution. After HPL's death, August Derleth kept his works in print. After running out of reprints, he began writing pastiches in what became the Cthulhu Mythos.

Most Mythos stories are set in modern times. There is no reason that aliens could not have visited Earth in geological times. Thus it is refreshing to read stories set waaaay back when, not just 1920s et seq. "The Crucifixion Of Yig" led off, set in the Late Cretaceous.

A theropod named Yig was to be executed. Ys and its fellow Yiths had to watch as the overlords, the Q'Hrell, prepared to act. The story introduced a panoply of Lovecraftian life forms. Prior knowledge of the Cthulhu Mythos is not required but is helpful.

The Yiths kept small animals, the early mammals, as pets, which also acted as servants. Yig did not go quietly and killed a couple of Q'Hrell before they subdued him. The foreboding was that the Q'Hrell were on their way out but did not know that, while the pet mammals would eventually triumph.

"Tempus Edax Rerum" took place in 75 AD. This was a tale of intrigue and political maneuvering in Imperial Rome. Those involved could only have a suspicion that alien minds were possessing the prophets and playing a long game with history. The Yith were far in the background but were there manipulating events.

"The Lost Treasure Of Cobbler Keezar" took place in 1875. Alice Keezar was a young girl helping her grandfather search for a moonstone tablet lost by their ancestor. The piece was a scrying stone that could show the possessor the future.

She found it by herself and learned of the fabulous wealth and equally fabulous unhappiness the stone could bring. Without her grandfather knowing, she smashed it and hid the shards. Better to live a normal life.

"Professor Peaslee Plays Paris" was set in 1910, when the namesake makes his first appearance in this collection. At that time he was still possessed by a Yith. The story opened at Tunguska, two years after the bolide leveled a large piece of Siberia.

Peaslee led an expedition which recovered a fragment, the Tear of Azathoth. The stone was too valuable and dangerous to entrust to any museum or government. The problem was solved by taking it to Paris and entrusting it to a fanatic cult who would hide it with all their other treasures, never to be seen again.

"Professor Peaslee's Pandemonium" brought him to Omaha, Nebraska, in 1913 where his circus set up. A young boy Thomas was caught up in the machinations of Peaslee/Yith, which was a time machine in the form of a carousel.

Thomas survived the events. He narrated how in later years he became an inadvertent servant of Peaslee, adjusting the timeline of Earth. An assassination here, a warped event there, producing our timeline.



“Pr Peaslee’s Price” was narrated by Randolph Carter, a familiar name in the HPL Mythos. Still in 1913, he followed Peaslee/Yith and Prof. Laban Shrewsbury (from the Derleth Mythos) to a graveyard. Carter watched the Yith initiate Shrewsbury into the secrets of the Mythos.

Readers familiar with modern astronomy will recognize the clever correlations between the Mythos deities and real-life things such as the supermassive black hole at the centre of the Milky Way galaxy.

“Letter Found On A Dead Sailor” was another 1913 story, set just after the Yith had abandoned Peaslee’s body and returned his mind to him. Alice had divorced him and later remarried.

A letter on the body of a shipwrecked sailor that washed ashore explained that Peaslee had retained enough memory from his possessed state to go after the Yith.

Peaslee stayed off stage but the letter writer, a Yith, explained how Watchers had been set on their trail and destroyed most of them. The survivors set off on a ship on Lake Superior, hoping to reach sanctuary in Canada. A gale-force blizzard sank their ship.

“The Temporary Chronologist” began in 1935 with an expedition from Miskatonic University to explore in the central deserts of Australia. The story was told from multiple viewpoints Peaslee, his grown son Wingate, and various other scientists discovered an immense underground city, abandoned millennia ago.

Evidently the Yith had lived there. Exploration of the city revealed dormant superscience machines. A book inscribed in an unknown language was found. In the back was a sheet of paper with some of the text copied by an unknown hand. Underneath each line was a translation into archaic Hebrew.

From there, a translation of the complete book could be puzzled out with standard cryptographic principles. Various alarms developed, people went mad, some were murdered, and the expedition ended in disaster.

The story was a novella, developed at length by different viewpoints of the same event. The composition read well as a literary work, not pulp fiction. Worth the price of the collection by itself.

“The Time Travelers’ Ex-Wife” was a title that at first glance had the apostrophe in the wrong place but proved correct upon reading through the story. Alice in her old age was leafing through a photo album and remembering her two ex-husbands.

Both had gone traveling through the Lovecraftian spaces between the dimensions. Her reminiscences filled in some of the details of Peaslee’s life and others who flitted into the Mythos and were consumed.

“Hannah And Her Mother Take A Very Long Lunch” began in 1946 when Alice snatched her daughter Hannah out of a car accident that would have killed her. Alice was time traveling and took Hannah with her. They had lunch at a café where they discussed the consequences of fiddling with timelines.

Alice could go back and kill Hitler before he was important but that would only pave the way for a different madman. Not really a plot, just a discussion on the basics of alternative histories. the Tide of History versus the Great Man.

“The Statement Of Lincoln Robinson” took place in a Pennsylvania mill town in 1948. Prof. Peaslee, now an old man, had been lecturing when a poisonous smog made him sick. Robinson, a Negro caregiver, was hired to look after him. Robinson's task was made worse by racism but he tried to persevere.

Peaslee said he could hear eldritch creatures on the roof, come to take him away. The smog got worse and townsfolk died in droves. The creatures got Peaslee, putting paid on his life.

“Operation Switch” began in 1953 with Wingate Peaslee, now a psychologist seeking revenge against the Yith for what they did to his father. His specialty was interrogating brainwashed POWs returned from North Korea or China.

Not all of them, just the few that seemed hale and hearty despite their ordeals. Those were the ones whose minds had been taken over by Yith. Wingate knew how to deal with them but they in turn had their plans.

“Operation Starfish” was in the South Pacific Ocean in 1962. Wingate Peaslee was leading a military task force to eradicate a host of small eldritch forms and a few giant Mythos creatures. The preferred weapons were atomic bombs. Their use was explained as tests.

“Cold War, Yellow Fever” was set in Cuba in 1962. This was another secret history. Radio transmissions from beyond the dimensions were turning everything into amorphous yellow blobs in Cuba. The American and Russian governments covered up their efforts to eradicate the Yellow by manufacturing a missile crisis.

“Operation Alice” took place in 1970. Wingate was now in an asylum, where he kept repeating code words for atomic bomb tests that hadn’t yet occurred. He also had the ability to transfer his mind to other patients for short periods. An FBI agent sent to interrogate Wingate became a victim of his machinations.

“The Watchmaker’s Lament” happened in 1993 in Pennsylvania. Wingate, apparently released from the asylum, was in Punxatawny for the groundhog ceremony.

This was a rewrite of the movie GROUNDHOG DAY except that Wingate died from a stroke every evening before waking up in the morning and repeating his day. He wanted to find a way to evade the stroke but always failed. Nor could he jump into someone else’s body and hijack their mind.

“The Prognosis Of Pandora Peaslee” happened in 1996. Doctor Erbert Ouest, a descendant of the original reanimator, had been experimenting with human cloning. He had created five young Peaslees, one of whom kept slipping forward and backward in time. His research continued.

“The Pestilence Of Pandora Peaslee” moved the train of stories from secret history to alternative history. Set in 2015, the shoggoths had been liberated from their Antarctic prison and laid waste to the world.

Salvation was at hand from a new alliance of humans called the Pacific Union. They soon had world control but assuaged the humans by bring in clean energy, good food, and all the benefits of Utopia.

The Union leaders were humans taken over by Yith. Once paradise was established, they put the humans to work. Pandora led the Resistance, bringing in other Mythos creatures to counter the Yith. The future was grim for everyone.

“The Setting Of The Sine” was dated 2342. The Yith had been driven away, and Cthulhu had come and gone. Various aliens squabbled for control of Earth and human civilization was gone. A reanimated creation of Erbert Ouest tried to establish control of the Yellow.

“In The Hall Of The Yellow King” was set on a planet far away in the year 2406. Ouest was an emissary visiting the Yellow King with a view to usurping him. A wide variety of Mythos creatures attended the court and all regretted having done so. Ouest would rule over all.

“A Sense Of Time” was 3 billion years in the future. This was an extended monologue/infodump as a Yith explained to Pandora Peaslee why she had been brought forward in time for all the horrors that would be.

“The Era Of Regeneration Seki” was the final story, set at the end of the universe. Ys the Yith reappeared, explaining in a long monologue that he would survive the entropic death of the universe and the birth of the next universe. Each cycle he retained his accumulated knowledge and would use it to speed up the evolution of the species that arose. Not humans but whatever would have its turn.

### **The Man From Miskatonic.**

THE MIND-TWISTERS AFFAIR (1967) by Thomas Stratton (pseudonym of Robert Coulson and Gene DeWeese) was a paperback. novel. This was a merchandising spin-off of THE MAN FROM U.N.C.L.E. television series which aired from 1964 to 1968.

I have previously reviewed various aspects of the UNCLE world in “Cry Uncle And Let Slip The Dogs of War”. Parts 1 to 8 appeared in OPUNTIA #361 to 364, 462, 556, 570, and 582.

Dr Willard Morthley was working for UNCLE but couldn’t get his invisibility device to work properly. He suggested the hiring of Dr Richard Armden, who refused the job and called UNCLE all sorts of mean and nasty things.

Napoleon Solo and Ilya Kuryakin drove out to Midford, Indiana, to talk to Armden but he and most of the town folk were bitterly anti-UNCLE. Somehow the enemy agency THRUSH had developed a mind control method and was testing it in the college town where Armden taught.

Solo and Kuryakin were driving the UNCLE Special, a gullwing sports car conspicuous anywhere. They passed themselves off as test drivers, but had the problem of hiding the car when they wanted to be anonymous.

Among the townsfolk were the Whateley family, who had come from coastal Massachusetts in the early 1900s. Lovecraftian readers will recognize the name.

The Whateleys owned WHPL-TV (Lovecraft's grandfather was named Whipple). As Solo and Kuryakin discovered, the station was broadcasting subliminal messages of hate about UNCLE. In point of fact, Jabez Whateley was the head of the Central Indiana THRUSH satrap.

After Solo was captured, Whateley paused for a bitter complaint about the stingy budget from THRUSH Central. For staff vehicles, they sent him Volkswagens, undignified for a satrap. His requisitions for cyanide and the like took months to fill, and expense accounts were laughable.

Whateley put up with those troubles because he was using THRUSH as a cover to research the summoning of Elder Gods. He kept up tradition by having a beautiful daughter who was eventually his undoing. The experiment in brainwashing was terminated by UNCLE. No eldritch creatures, squamous or otherwise, appeared.

### **The Other Mythos.**

Not everything Lovecraft wrote had to do with Cthulhu and the Elder Gods. One of his stories "Pickman's Model" was part of a loosely connected group of horror stories set in the New England states.

PICKMAN'S GALLERY (2018) was an anthology of 17 stories edited by Matthew Carpenter. Available from Amazon print-on-demand. Most of the stories were pastiches involving Pickman's descendants or acquaintances. Pickman himself was often offstage.

Richard Upton Pickman (incorrectly called Robert in the editor's foreword) appeared in one of HPL's stories as an artist. Pickman's paintings were eldritch indeed. He painted ghouls in Boston's North End from life.

"One Night South Of The Border" by Paul McNamee was about a Pickman descendant who went to Mexico. One of the drug lords had an original Pickman

painting, of a ghoul. The family wanted it back. The drug lord found out the hard way that the Pickman clan were far more vicious than his organization.

"The Studies Of Dr Reid" by Peter Rawlik was a narration set in underground Boston, the forgotten basements and tunnels way down below. Reid had noticed Pickman's nocturnal prowling to visit creatures in the cemeteries. They were ghouls, feeding on the dead. Reid in turn hunted ghouls for his anatomical studies.

"The Ghulistan Affair" by Sam Inabinet was two men talking. They were in a back room in a Central Asian town, discussing a failed American expedition. The group had gone into the mountains looking for something but never came out. Lots of innuendo and half-spoken subtleties, all of which signified nothing.

"Pigman" by Dave Haendler was about a cross between the British graffitiist Banksy and Pickman, only more ghastly. The Pigman was wanted for crimes of which machine-gunning people on subway platforms was the least.

The Pigman created horrifying paintings and sculptures which soon commanded a premium among illicit collectors. One art dealer trying to get an exclusive instead became a part of a Pigman conceptual art.

"A Creak In The Floor" by Victoria Dalpe was a standard monster in the abandoned warehouse story. Charlie moved in to a crash pad with weird roommates. He heard back stories about creatures scuttling down below. Eventually he found the truth, personally and the fatal way.

"Pickman's Model" by Maurice Lane was the prequel to the Lovecraft story, explaining how Pickman met his ghoulish model. A nice fit into the Lovecraftian mythos, not to be confused with the Cthulhu Mythos.

"For Susannah" by Tom Lynch was about the final work of Pickman's great-grandson Vincent, also a painter. The lad was inspired and fell into his work, not just figuratively. When he painted a starry night behind a window, he went inside the painting to get the stars done just right.

"A Ghoul's Portrait" by Joshua Reynolds was a variation on the same theme. Ghouls hunted a thief, who took refuge inside a painting. Unfortunately for him, the painting was of the ghouls' god. From the frying pan into the fire.

“A Pickman Original” by Logan Noble was about an art dealer who bought a painting of ghouls from Pickman’s estate. The painting came to life and the dealer came to death.

“Pickman’s Muse” by K.H. Vaughn told of the struggle of the artist against the establishment. Pickman liked to eat and wanted to live in a decent apartment. He therefore had to paint in the conventional manner to please the patrons of the Art Club. He finally got the chance to break out into his style but not in a pleasant way.

“Eigenspace X” by Mike Chinn was about an artist who created a 5th or 6th dimensional sculpture. Computer generated and soon out of control, unfolding into our dimensions to grow.

“The Medium And The Message” by L.C. Von Hessen was in the guise of a master's thesis about a newly-discovered Pickman painting. The canvas had unhealthy effects on those who viewed it too long. Not just a blood-red painting, it was a projection screen.

“Beyond The Veil Of Pretty Pink Lies” by Rebecca J. Allred was about an artist who found her niche painting portraits of the dead. Stillborn babies to wizened old geezers, her work was in demand. She painted them as they were in death, in the next world.

“Pickman’s Model Kit” by Cliff Biggers was a predictable story about a man who bought a plastic model kit in a junk shop. When assembled it was a 3-D version of the famous Pickman ghouls painting. Naturally it came to life, slaughtering humans and dogs in the neighbourhood.

“The Pickman Revival” by Steven M. Vance began in Innsmouth where an art gallery had a showing by several artists. They worked in the style of Pickman, one of them authentically so as events revealed. Critics and dilettantes were invited to a subsequent showing in Pickman’s studio in Boston. They found out the ghouls were still around and as hungry for human flesh.

“The Cleaner’s Tale” by Tom Johnstone was narrated by a Latina janitor at a Miskatonic research lab. She overheard a couple of staff discussing a method to create a living image from a photograph.

They had a special 3-D printer which could do it with cells. Unfortunately the photograph they chose was Pickman’s, the one he used for his final painting depicting a ghouls. Fortunately for the cleaning lady, the police forensic squad were the ones who had to collect the blood and body parts.

“A Photograph From Life” by Robert M. Price was the final story. Pickman had just gone missing, his friend Ethan Thurber called the police, and Detective Arthur Malone investigated.

The two men went to Pickman’s house, found a tunnel descending down, and eventually found a gigantic cavern. There were vegetation, cottages, and an artist who looked like Pickman. But this was the home of ghouls, who enjoyed fresh meat.

All told, the stories were reasonably good. They were not set in the Cthulhu Mythos, the reader must understand, but were part of Lovecraft’s other mythos. As horror fiction these stories were a distinctive part of the genre. Worth reading if you like HPL.

## **WEIRD FICTION: PART 12**

by Dale Speirs

[Parts 1 to 11 appeared in OPUNTIA #412, 458, 484, 493, 501, 511, 536, 542, 559, 577, and 585.]

### **Paranormal Cozies.**

According to her biography, Carol J. Perry truly was born in Salem, Massachusetts, on Halloween Day. Be that as it may, her paranormal cozies set in Salem are presumably not autobiographical. The protagonist of her Witch City Mysteries series was Lee Barrett, assisted by her psychic cat O’Ryan.

FINAL EXAM (2019) began with a 45<sup>th</sup> high school reunion for Lee Barrett’s Aunt Ibbey. So far so good, until police fished out a 1972 Mustang with human remains from a local pond, a flooded and very deep quarry. The body was Ted Thorne, a member of Aunt Ibbey’s graduating class who had gone missing that year.

All the alumni recognized the car. Thorne had been shot before the car went into the pond. There is no statute of limitations on murder. Lee investigated as a friendly Jessica Fletcher helping her auntie.

O’Ryan the cat jumped up onto the table and with his paws sorted out index cards to provide clues. Lee, being a witch, had mystical visions of yore to help with the case. A second murder followed, this time in the present, of one of Thorne’s classmates.

The denouement took place at the quarry pond. The killer took Aunt Ibbey there. In his explanation, he said Thorne’s death had been accidental but those with him had to cover it up. They disappeared him by pushing his car into the pond. Ibbey was also booked for the series and Lee rescued her.

LATE CHECKOUT (2019) began poorly for Lee Barrett, who had her hours cut back at the cable station to make way for the owner’s nephew. Her Aunt Ibbey was a librarian, so Lee began volunteering there.

In a remote section of the stacks she found the body of Wee Willie Wallace. He had a past and had just returned to Salem after 20 years. Lee went investigating, as did the police of course, but we know who would solve the case.

None of that deductive stuff, just good old-fashioned tarot card readings, psychic visions, and an ever-helpful cat to point out clues with his paws. Try to admit any of that into a court and see what the judge says.

In any event, the trail wove about the library. Wallace was an ex-baseball player who was hunting a Honus Wagner trading card, the holy grail of sports card collectors and worth a fortune. So was another collector, who eliminated his competition.

The card had been hidden in a book, one of many the widow of the owner had donated to the library. After the police were done, the card was declared the property of the library, which put it up for sale as a fund raiser.

SEE SOMETHING (2021) kept Lee Barrett busy in her new job as WICH-TV programme director. At home, she and her auntie took in a homeless woman. Lee’s boyfriend police detective Pete Mondello was called to a body washed up on the shore, subsequently identified as John Sawtelle.

The deceased and the Jane Doe were soon tagged together. She was Emily Hemenway, based on her fingerprints and purse found in an abandoned car registered to Sawtelle. Lee and O’Ryan hunted for clues. The cat had more success. Lee was distracted because she was producing a new kiddies show called Ranger Rob’s Rodeo, premiering in a week’s time.

Sawtelle was involved in real estate fraud. The murderer tried to clean up his tracks but during the gunpoint confrontation found himself live on WICH-TV. Lee had her priorities straight. Between reporting on the takedown, she managed to work in promos for Ranger Rob’s Rodeo.

### **Demonic Cozies.**

THE VILLAGE LIBRARY DEMON-HUNTING SOCIETY (2024) by C.M. Waggoner was a novel about Sherry Pinkwhistle of Winesap, upstate New York. She was a librarian when not Marpleing.

Sherry didn’t work alone when sleuthing. The titular VLDHS and others helped her, much to the annoyance of the local sheriff. He had the idea that he was supposed to solve crimes.

The deceased appeared in Chapter 1. Or didn’t rather, as the police hauled away the corpse without waiting for Miss Marple to examine the scene. The victim was John Jacobs, whose wife Charlotte asked Sherry to help investigate.

John was stabbed to death in an art gallery managed by Charlotte. He was a womanizer and a reckless spender who ran their joint accounts into deep debt. She was a suspect ipso facto, which is why she went to Sherry.

From there the sleuthing began, casting a wide net to gather in as many suspects as possible. Sherry began circulating through the village and gathering up back stories. In Chapter 5 a suspect confessed to the murder. Because three-quarters of the book remained, the reader will know the case was nowhere near solving.

Sherry’s boyfriend Alan Thompson was murdered in the next chapter. That hit home to her. Marpleing was no longer a hobby. At this point the novel took a right-angle turn. Various villagers, including the sheriff, were possessed in turns by a demon. The village priest Father Barry was a young man fresh out of seminary. He was not ready for prime time when exorcism was needed.

The demon was open and aboveboard about possessing villagers. Occasionally it possessed her cat and offered help in dealing with the murderer. Sherry went about spritzing people, and her cat, with a spray bottle filled with holy water. Once she exorcized the sheriff and others, she convened a group of friends to form a demon-hunting society.

They held their first meeting in the rectory of the church. Father Barry was annoyed but let them be. Concerns were that the village seemed to have been isolated by the demon. There had been 16 murders in the last few years, turning the village into another Cabot Cove. Yet there was no public outcry. The villagers and police were quite complacent.

Sherry searched for both a murderer and the demon, a more complicated task than regular Marpleing. She drew up tables summarizing her information. These were actual tables, shown amidst the text with suspects versus assorted variables. The investigation got stranger as Sherry went along. The demon wouldn't let her leave town. When she tried, she was blocked by strange accidents.

The village shifted back into the 1980s pre-Internet and no one noticed but her. Father Barry tried to help but he was a rank amateur at exorcizing demons. The supply of suspects steadily increased but with no apparent resolution.

Sherry found a locked room in the library with working computers. She began extensive Googling, then called a J'accuse! meeting. All the suspects were assembled. She reamed them sequentially in traditional Miss Marple fashion before naming the murderer.

In the epilogue, the demon appeared privately to Sherry. It explained that it was a great fan of cozies and created the chain of events because it was bored. That people died because the demon was bored made for a horrifying conclusion.

### **Old-Time Radio.**

HALL OF FANTASY aired on radio during the 1952-53 season and was written by Richard Thorne. The episodes are worth listening to once. The main problem was that many of them had more loose threads and continuity errors than a Star Trek episode. Available as free downloads from the Old Time Radio Researchers at [www.otrr.org/OTRRLibrary](http://www.otrr.org/OTRRLibrary)

“The Silver Flask” aired on 1953-02-02. Some friends attended an art auction. They were Chris Redfield, his wife Pat, and their friend Larry Reardon, who narrated. An ancient Chinese silver flask was up for bidding. Chris took a fancy to it but was outbid by Henry Stebbins.

After the auction, Henry introduced himself as an art collector. He invited the three to dinner at his mansion. There was a flashback to the silver flask's origin. Stebbins told how it was created by a sorcerer for the emperor. A court functionary killed the emperor and stole the flask.

In his room, opening the flask produced a cloud that materialized into a demon which strangled him. Loud screams from the courtier as he died. That didn't make sense because anyone being choked to death would not be able to scream, only faintly gasp.

Back in the present, Chris developed an obsession for the silver flask. Larry intervened and stopped Chris from killing Stebbins. Larry warned Stebbins, who in turn called the police. Larry then killed Stebbins for the flask, thus ensuring Chris would be blamed.

Larry took the flask to his room. In due time a demon emerged, strangling him. No doubt the silver flask would continue through eternity.

“The Beast With The Red Eyes” aired on 1953-03-30. A small black animal with glowing red eyes was haunting a mansion. The dialogue was difficult to follow because a berserk organist frequently drowned out the words with music. People screamed at intervals as the beast appeared and disappeared.

In bizarre counterpoint the two commercials were public service announcements about how wonderful radio was. A chorus of singers cheerfully burred about the joys of listening. Old-time radio was dying at this time and would be gone in two years, killed by television. The commercials seemed pointless since they were preaching to the converted.

Much running about the mansion, up and down the stairs. Some characters were seeking the beast and others fled. Finally the screaming stopped when the protagonist died of fright. As he lay dead, his eyes were two gleaming coals of fire. That was all, with no explanation of what happened next. A final burst of organ music concluded the episode.

2025-01-10

[These are a few extracts from the newsletter. For the complete newsletter, visit [www.fanac.org](http://www.fanac.org)]

The FANAC Fanhistory Project is a project of The Florida Association for Nucleation and Conventions (FANAC) Inc., a non-profit 501(c)(3) educational organization recognized by the IRS.

FANAC.org is archived by the US Library of Congress for long-time preservation and future availability.

Fanzines: 25,886 issues (2,929 titles) consisting of 445,233 pages.

### **Selected Links.**

FANAC.org: <https://www.fanac.org>

Fancylopedia 3: <https://fancylopedia.org>

Fanac YouTube channel: <https://www.youtube.com/c/FanacFanhistory>

Fanzines: [https://fanac.org/fanzines/Classic\\_Fanzines.html](https://fanac.org/fanzines/Classic_Fanzines.html)

References: <https://fanac.org/fanzines/References/>

APA Mailings [https://fanac.org/fanzines/APA\\_Mailings/](https://fanac.org/fanzines/APA_Mailings/)

Alphabetical Listing:

[https://fanac.org/fanzines/alphabetical\\_listing\\_of\\_fanzines.html](https://fanac.org/fanzines/alphabetical_listing_of_fanzines.html)

Chronological Listing:

[https://fanac.org/fanzines/chronological\\_listing\\_of\\_fanzines.html](https://fanac.org/fanzines/chronological_listing_of_fanzines.html)

Country Listing: [https://fanac.org/fanzines/country\\_listing\\_of\\_fanzines.html](https://fanac.org/fanzines/country_listing_of_fanzines.html)

Editor Listing: [https://fanac.org/fanzines/by\\_editor.html](https://fanac.org/fanzines/by_editor.html)

Newszine Project: <https://fanac.org/fanzines/newszines.html>

Core List to Scan: [https://fanac.org/fanzines/desired\\_fanzine\\_list\\_to\\_scan.html](https://fanac.org/fanzines/desired_fanzine_list_to_scan.html)

I don't know American law but in Canada all deaths unattended by a medic must be investigated by police. One can imagine their reaction to a corpse with glowing eyes. Not to mention the paramedics and medical examiner. The autopsy report would be interesting reading.

“The Idol Of Cromm Cruac” was aired on 1953-05-04. A group of people were taking coffee in a tourist cabin on a stormy night. They heard a cry for help from outside. They dashed out and brought in a man who died as they came through the door.

He was dressed in archaic clothes from a few centuries ago. He clutched a small statuette and a strange map. As they gathered around him, an elderly woman dressed in black entered. The next morning they set out hiking, following the map. But wait! What about the dead man? Nothing more was said about him or the elderly woman.

Off they climbed through a narrow crevice into a hidden canyon. There were people living within. A friendly elder came over to them and led them into a village. One of the hikers identified them as the missing colonists of Roanoke, North Carolina.

The hikers learned they were to be sacrificed to the Cromm Cruac. A giant fire was lit. The tribe confiscated the hikers' guns but missed their ammunition. At the right moment the hikers tossed their bullets into the fire and fled. Finis. Again, too many unanswered questions. Did they report the colony to the police? They must have if they reported the dead man.

## LETTERS TO THE EDITOR

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

FROM: Lloyd Penney  
Etobicoke, Ontario

2025-01-13

OPUNTIA #586: We were still not able to find a Remembrance Day ceremony in Etobicoke. I think the Legion is happy to conduct their own remembrance, without strangers being around.

[I'm puzzled by that remark. I did a quick Google for "Etobicoke Remembrance Day" and found several citations for the Etobicoke Civic Centre. The Royal Canadian Legion is quite happy to welcome the general public to the ceremonies. Plus, in Calgary at least, they open the bar after their ceremony.]

I am starting to find King Charles III's head on local coinage, for both 2023 and 2024. Hearing "God Save The King" is a little strange to my ears.

I will shortly be looking at information for Edmonton Worldcon in 2030, but we have preregistered with Montreal in 2027, and we have helped out a little bit. I admit the Montreal bid surprised me a little bit, but then, time marches on, and I know so few people on the committee. We will be attending only, and perhaps do some programming, but I will not help out onsite.

[The website for the Edmonton bid is [www.edmontonin2030.org](http://www.edmontonin2030.org)]

Yvonne and I have purchased our memberships for Can\*con in Ottawa this coming October, and we hope to have it on hand to promote Amazing Stories. We had ourselves a great time in LA for Loscon, but I have been in touch with them to keep up with the horrible fires in LA County.

OPUNTIA #587: Nope, we don't have that kind of snow here, at least, not right now. We seem to have small fits of snow, broken up with several days of really cold temperatures.

[Calgary had a mild winter so far, nothing colder than -10°C by day. Lots of chinooks this year to sublimate the snow into thin air. No doubt as soon as this issue is posted we will get a week of -30°C weather.]

[Re: Bow Valley skyscraper video displays] The electronic artwork looks great, but of course, nothing is free, especially those things they could be making money on, so away goes the art, and in comes the never-ending commercials that bedevil just about every aspect of our lives.

OPUNTIA #588: [Re: Calgary Olympic Plaza redevelopment] It's a shame when even historic venues are torn down for new development. Toronto would rather tear down than save. One building at the iconic corner of Yonge and Bloor was to be declared a historic building some years ago, and overnight, just before the building was to receive its historic designation, the owners came in overnight, and had the building razed.

The postal strike was a pain, and even though I would support them, they chose a bad time to strike, which didn't get them much public sympathy. As this date, I am still waiting for some mail to come along, and only now are we getting Christmas cards from Europe. Today [January 13], the postage rates went wayyyy up.

[For my non-Canadian readers, domestic postage is now \$1.24 for the first increment. Letters to the USA are \$1.75 and international mail is \$3.65. There is no postcard rate in Canada. Thus the reason why OPUNTIA is only pdf.]

No one wants Trudeau in charge again, but given the right candidate, the Liberals might be able to cause a minority Conservative government. Many people have little confidence in Pierre Polievre, but once he actually sees the books, and is informed of the laws, he might not be able to do all the damage he's promising. I wish he'd sign up to read that report, he'd look a little less foolish.

OPUNTIA #589: Transit in Toronto was free over New Year's Eve, but we spent it at home. Who knows what crazies there on the subway? There were guards everywhere, but still... Since Christmas and New Year's, we haven't gained an ounce, and hope to keep it that way.

[The Calgary LRT system is not a subway, although there are a few underpasses, including one that runs directly underneath the full length of the New Central Library. From where I live there is only bus service, which I use on New Year's Eve assuming the weather cooperates. I skipped the last two NYE celebrations because of the weather.]



## SEEN IN THE LITERATURE

### Galaxies.

Garza, S.L., et al (2024) **The CIViL\* Survey: The discovery of a CIV dichotomy in the circumgalactic medium of L\* galaxies.** *ASTROPHYSICAL JOURNAL LETTERS* 978:doi.org/10.3847/2041-8213/ad9c69 (available as a free pdf)

[Galaxies expel matter into intergalactic space from supernovas and stellar winds, but much of this matter drifts back inside the galaxy to form new stars. The intergalactic matter forms halos around galaxies.]

Authors' extracts: *The diffuse gaseous atmosphere surrounding the star-filled inner region of a galaxy is known as its circumgalactic medium (CGM).*

*The CGM plays an essential role in a galaxy's evolution by hosting the gaseous reservoir that feeds the galaxy with gas, replenishing fuel for star formation and keeping a record of metal enriched material ejected from the disk through winds and other feedback processes*

*CGM also provides a potential avenue for exploring how galaxies sustain their star formation since the CGM is a large gaseous reservoir and a source for the galaxy's star forming fuel.*

*Our depletion timescale is comparable or shorter than the dynamical timescale (taken to be 10% of the Hubble time) which suggests that the CGM and molecular gas available to galaxies, assuming no inflows of fresh fuel or recycling of the gas, slowly becomes insufficient to fuel star formation on its own.*

*Therefore, galaxies are most likely undergoing some resupply process either through the conversion of ionized gas from the CGM or IGM (intergalactic medium) or through accretion from the IGM onto the disks of galaxies.*

*Thus, gas in the CGM is only one piece of the large reservoir that galaxies use as fuel for future star formation.*

Chen, Z., et al (2025) **PHAST. The Panchromatic Hubble Andromeda Southern Treasury. I. Ultraviolet and optical photometry of over 90 million stars in M31.** *ASTROPHYSICAL JOURNAL* 979:doi.org/10.3847/1538-4357/ad7e2b (available as a free pdf)

Authors' abstract: *The Panchromatic Hubble Andromeda Southern Treasury (PHAST) is a large 195-orbit Hubble Space Telescope program imaging  $\sim 0.45$  deg<sup>2</sup> of the southern half of M31's star-forming disk at optical and near-ultraviolet (NUV) wavelengths.*

*The PHAST survey area extends the northern coverage of the Panchromatic Hubble Andromeda Treasury (PHAT) down to the southern half of M31, covering out to a radius of  $\sim 13$  kiloparsecs along the southern major axis and in total  $\sim$ two-thirds of M31's star-forming disk.*

*This new legacy imaging yields stellar photometry of over 90 million resolved stars using the Advanced Camera for Surveys in the optical (F475W and F814W), and the Wide Field Camera 3 (WFC3) in the NUV (F275W and F336W).*

*The photometry is derived using all overlapping exposures across all bands, and achieves a 50% completeness-limited depth of F475W  $\sim 27.7$  in the lowest surface density regions of the outer disk and F475W  $\sim 26.0$  in the most crowded, high surface brightness regions near M31's bulge.*

*We provide extensive analysis of the data quality, including artificial star tests to quantify completeness, photometric uncertainties, and flux biases, all of which vary due to the background source density and the number of overlapping exposures.*

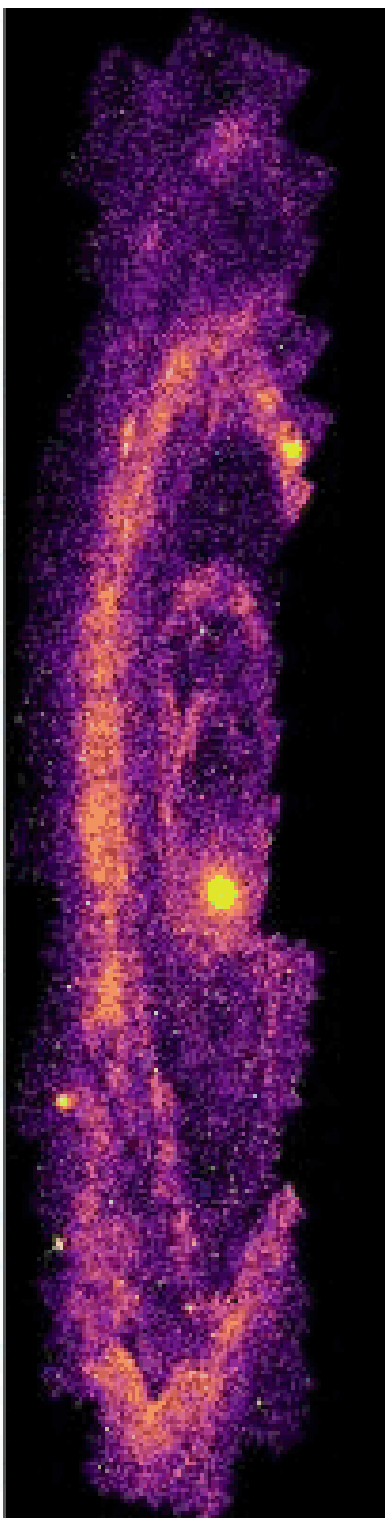
*We also present seamless population maps of the entire M31 disk, which show relatively well-mixed distributions for stellar populations older than 1 to 2 Gyr, and highly structured distributions for younger populations.*

*The combined PHAST + PHAT photometry catalog of  $\sim 0.2$  billion stars is the largest ever produced for equidistant sources and is available for public download by the community.*

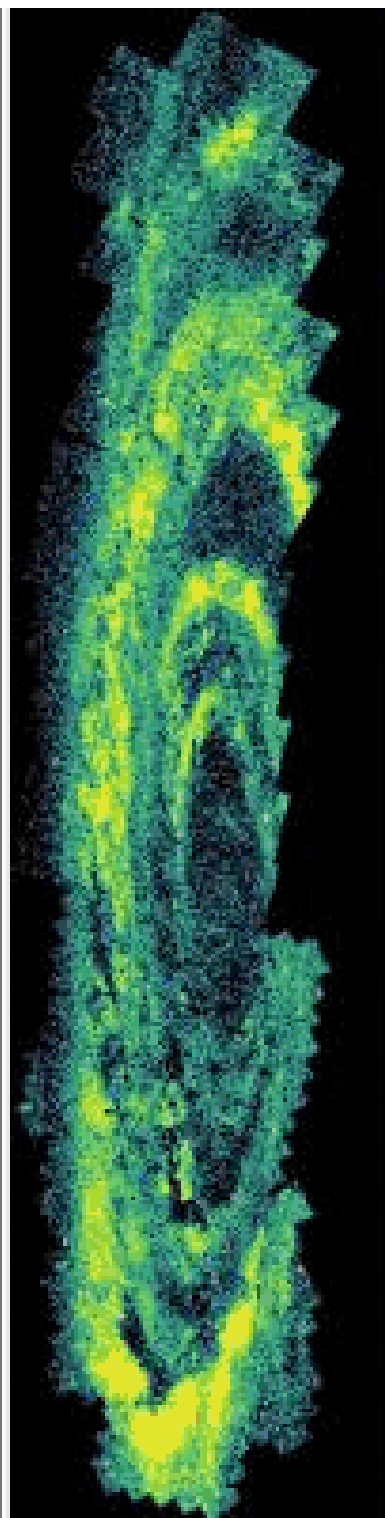
[Images on the next page show Andromeda Galaxy as seen by different telescopes operating at different wavelengths.]



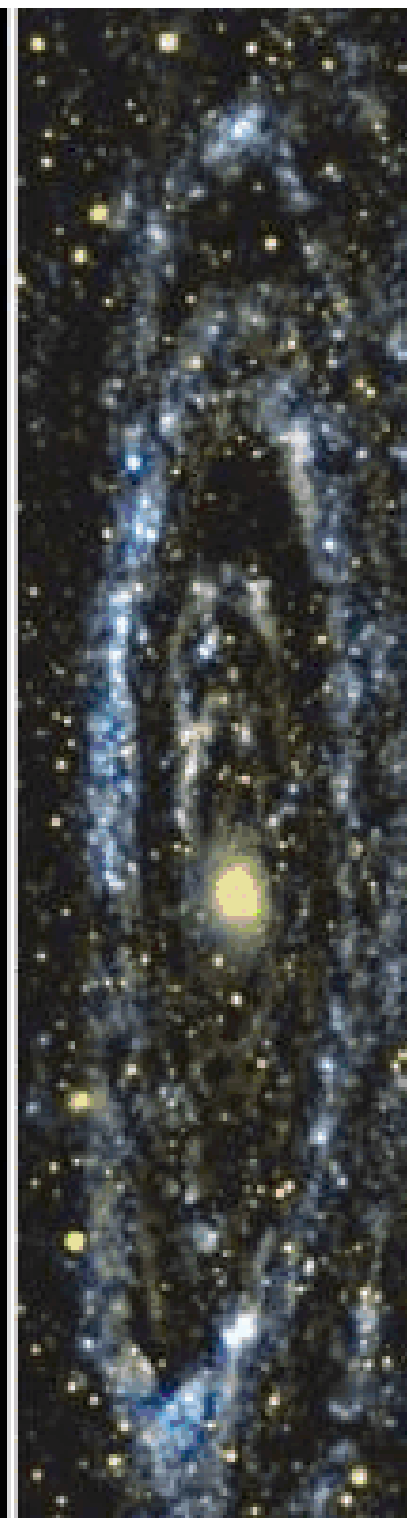
**WISE IR**



**HeB**



**MS**



**GALEX UV**

**Planets.**

Denton, C.A., et al (2025) **Capture of an ancient Charon around Pluto.** NATURE GEOSCIENCE 17:doi.org/10.1038/s41561-024-01612-0 (available as a free pdf)

[Pluto’s satellite Charon is almost as big as itself, bigger than the Moon is in proportion to Earth.]

Authors’ abstract: *Pluto and Charon are the largest binary system in the known population of trans-Neptunian objects in the outer Solar System. Their shared external orbital axis suggests a linked evolutionary history and collisional origin.*

*Their radii, ~1,200 km and ~600 km, respectively, and Charon’s wide circular orbit of about 16 Pluto radii require a formation mechanism that places a large mass fraction into orbit, with sufficient angular momentum to drive tidal orbital expansion.*

*Here we numerically model the collisional capture of Charon by Pluto using simulations that include material strength. In our simulations, friction distributes impact momentum, leading Charon and Pluto to become temporarily*

*connected, instead of merging, for impacts aligned with the target’s rotation. In this ‘kiss-and-capture’ regime, coalescence of the bodies is prevented by strength.*

*For a prograde target rotation consistent with the system angular momentum, Charon is then tidally decoupled and raised into a near-circular orbit from which it migrates outwards to distances consistent with its present orbit.*

*Charon is captured relatively intact in this scenario, retaining its core and most of its mantle, which implies that Charon could be as ancient as Pluto. Pluto and Charon are the best-studied example of a larger class of massive binary trans-Neptunian objects (TNOs), including Eris and Dysnomia, Varda and Ilmarë, and Orcus and Vanth.*

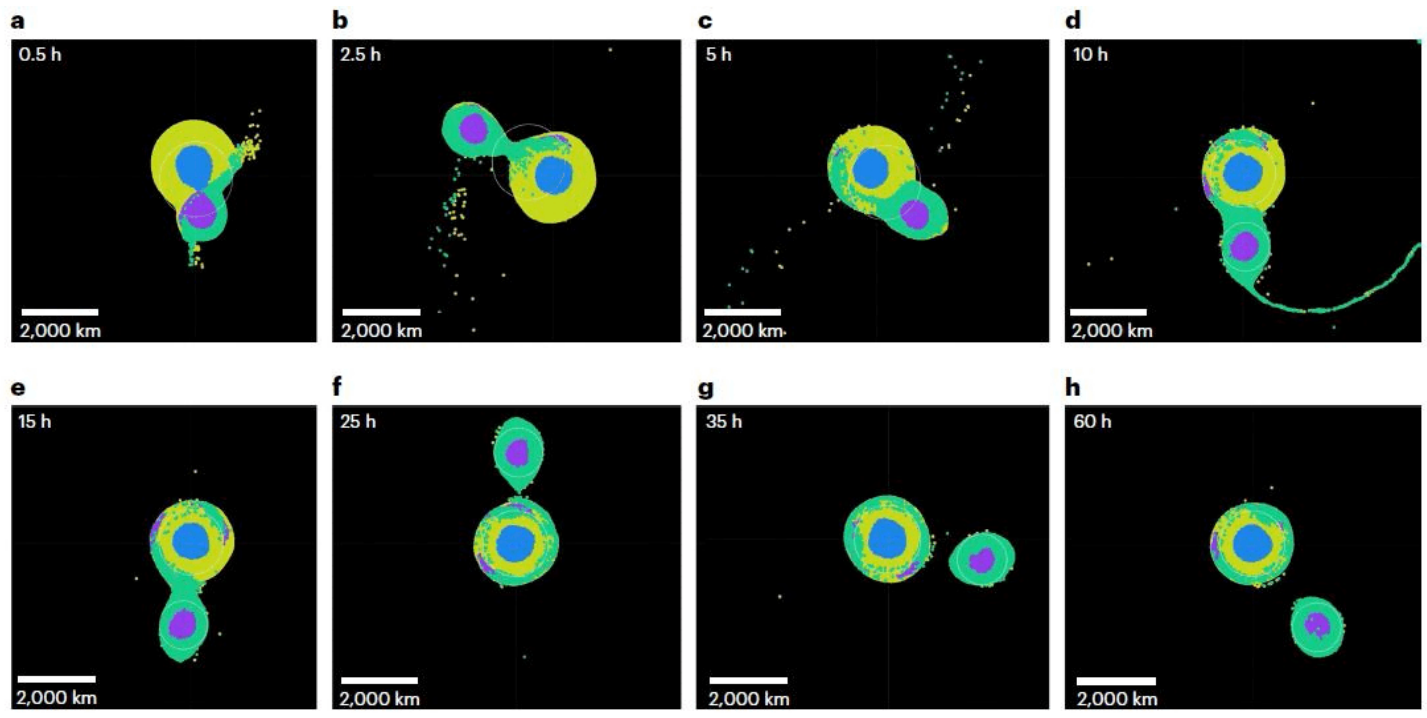
*The number of large-mass binaries among the TNOs has led to suggestions of a common formation history. However, the largest of these binaries are much too massive to be directly explained by the streaming instability, a framework in which solids aggregate to accretionary density by aerodynamic forces in the protoplanetary nebula.*

*The streaming instability can potentially explain the large fraction of smaller TNO binaries and their selectively prograde inclinations but applies only when gas drag is effective, up to ~100 km diameter. At larger sizes, another explanation is needed.*

*The Pluto-Charon system thus provides a critical window into the formation of large icy bodies in the outer Solar System.*

*The system’s orbital and rotational angular momentum is so large that, if combined into a single spheroid, it would be rotationally unstable, so a collisional origin has been inferred.*

[Simulation of how Pluto-Charon system might have developed is from this paper.]



Weller, M.B., and W.S. Kiefer (2025) **The punctuated evolution of the Venusian atmosphere from a transition in mantle convective style and volcanic outgassing.** SCIENCE ADVANCES 11:doi.org/10.1126/sciadv.adn9861 (available as a free pdf)

[In meteorology, 1 bar is roughly Earth's atmospheric pressure at sea level.]

*Authors' abstract: A key question in the planetary sciences centers on the divergence between the sibling planets, Venus and Earth. Venus currently does not operate with plate tectonics, and its thick atmosphere has led to extreme greenhouse conditions.*

*It is unknown if this state was set primordially or if Venus was once more Earth-like. Here, we explore Venus as an example of a planet that recently transitioned between tectonic regimes.*

*Our results show that transitions naturally lead to substantial resurfacing and melt-generated outgassing from lithosphere-breaking events and overturns, with 3 to 10 bars of atmosphere generated per overturn over ~60 million year timescales and ~10 to 100 bars outgassed over billion-year time frames.*

*We find that the observation of Venus with a thick greenhouse atmosphere and the inferences of currently low volcanic rates and previous prodigious volcanic rates are consistent with a planet that has undergone a transition in tectonics, suggesting that Venus once hosted clement surface conditions and was more Earth-like.*

*Venus is the least understood of the terrestrial planets. Despite broad similarities in mass, size, and chemical composition to the Earth, Venus' atmosphere and surface are notably different. Venus is blanketed by a thick ~92-bar atmosphere that is dominated by ~89 bars of CO<sub>2</sub>, with the remainder made up of N<sub>2</sub> and trace amounts of other gases.*

*The atmospheric reservoir of carbon for Venus accounts for ~2.2× the total surficial carbon inventory for the Earth, which has resulted in an extreme greenhouse state with surface temperatures of ~740 K.*

*Vast volcanic plains emplaced within the past 300 million years (Myr) to 1 billion years (Gyr), encompassing ~80% of Venus' surface, are suggestive of relatively recent and prodigious melting events.*

*Much of Venus' surface record is obscured by this relatively recent volcanism, leading to uncertainty in Venus' climatic, atmospheric, and tectonic past. Volcanism, however, is intimately linked to atmosphere generation and tectonic states, and the atmosphere can be viewed as long-lived record of the planet's surface and interior evolution.*

*Therefore, exploring the linked evolution of the atmosphere, surface, tectonics, and interior is critical for understanding observations of Venus today, as well as constraining the distant Venusian past.*

*Currently, Venus shows no clear evidence of Earth-like plate tectonic activity. However, there are several lines of evidence that suggest that Venus once did have a mobile lithosphere perhaps not dissimilar to Earth.*

*The region of Western Ishtar Terra likely formed through convergence and is often considered an analog to the Himalayas and Tibetan Plateau on Earth. Furthermore, active subduction beneath the margins of Artemis and Quetzalpetlatl coronae has been proposed based on gravity and morphological observations.*

*These observations, along with general inferences of current limited large-scale extension, are consistent with suggestions of some form of episodic lid or transitional tectonic regime for Venus, indicating that Venus may be an example of a transition in tectonic regimes.*

*Although we have limited measurements of the current atmosphere and climate of Venus, the planet's atmospheric and climatic evolution is largely unconstrained.*

*Possible scenarios range from an effectively static view of the atmosphere that suggests that Venus' current greenhouse state was set primordially to the idea that Venus was once much wetter and more Earth-like and thus potentially habitable, with the current atmosphere the result of a great climate transition.*

*Despite observations of a relatively quiescent tectonic Venus, there is indirect and sometimes speculative evidence of volcanic activity at differing temporal scales at the surface, suggesting outgassing to the atmosphere within the recent geologic past.*

*Although the specific timing of the emplacement of the Venusian atmosphere is unclear, it is increasingly apparent that the evolution of the atmosphere can influence the style of mantle convection of the planet, suggesting that the evolution of the atmosphere, surface, tectonics, and interior is linked and is critical for understanding current observations of Venus.*

*Their presence suggests formation in a shallow-water (<2 meters) setting that was open to the atmosphere, which requires atmospheric conditions that allow stable surface water.*

[Image is from this paper.]

Mondro, C.A., et al (2025) **Wave ripples formed in ancient, ice-free lakes in Gale crater, Mars.** SCIENCE ADVANCES 11:doi.org/10.1126/sciadv.adr0010 (available as a free pdf)

Authors' abstract: *Symmetrical wave ripples identified with NASA's Curiosity rover in ancient lake deposits at Gale crater provide a key paleoclimate constraint for early Mars.*

*At the time of ripple formation, climate conditions must have supported ice-free liquid water on the surface of Mars. These features are the most definitive examples of wave ripples on another planet.*

*The ripples occur in two stratigraphic intervals within the orbitally defined Layered Sulfate Unit, a thin but laterally extensive unit at the base of the Amapari member of the Mirador formation, and a sandstone lens within the Contigo member of the Mirador formation.*

*In both locations, the ripples have an average wavelength of ~4.5 centimeters. Internal laminae and ripple morphology show an architecture common in wave-influenced environments where wind-generated surface gravity waves mobilize bottom sediment in oscillatory flows.*



Liu, J., et al (2025) **Evolution of the iodine cycle and the late stabilization of the Earth's ozone layer.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 122:doi.org/10.1073/pnas.2412898121

[Fossils have been found back to 3.8 gigayears ago but life did not colonize the land until 500 megayears ago.]

Authors' abstract: *The Earth's ozone layer is a crucial prerequisite for the evolution of complex life on land. Our research demonstrates that sufficient atmospheric oxygen alone was not enough to establish a reliable ozone layer throughout evolutionary history.*

*Instead, the evolving marine iodine cycle on Earth has fundamentally shaped the stability and abundance of the ozone layer for approximately two billion years following the initial oxygenation of the atmosphere.*

*The resulting elevated flux of UV radiation may have restricted complex life to the ocean and potentially explains the relatively late colonization of multicellular life on land.*

*Here, we present evidence for a protracted stabilization of the Earth's ozone layer. The destruction of atmospheric ozone today is inherently linked to the cycling of marine and atmospheric iodine.*

*Supported by multiple independent lines of geological evidence and examined through an iodine mass balance model, we find that elevated marine iodide content prevailed through most of Earth's history.*

*Since the rise of oxygen ~2.4 billion years ago, high marine iodide concentrations would have led to significant inorganic iodine emissions to the atmosphere, facilitating catalytic ozone destruction and resulting in atmospheric ozone instability with periodic or persistently lower ozone levels.*

*At a global scale, unstable and low ozone levels likely persisted for about two billion years until the early Phanerozoic, roughly 0.5 billion years ago. The delayed stabilization of the Earth's ozone layer holds significant implications for the tempo and direction of the evolution of life, in particular life on land.*

**Satellites.**

Dauphas, N., et al (2025) **Completion of lunar magma ocean solidification at 4.43 Ga.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 122:doi.org/10.1073/pnas.2413802121

Authors' abstract: *The Moon started as a fully molten body that gradually separated into layers as it cooled and crystallized. After 99% of the lunar magma ocean solidified, a unique residual liquid called KREEP, enriched in potassium (K), rare earth elements (REE), and phosphorus (P), was formed.*

*Our study indicates that this KREEP liquid formed  $4,429 \pm 76$  Mya, approximately 140 megayears after the solar system's birth. We also found that the KREEP liquid, as sampled by the Apollo missions, was remarkably uniform.*

*Crystallization of the lunar magma ocean yielded a chemically unique liquid residuum named KREEP. This component is expressed as a large patch on the near side of the Moon and a possible smaller patch in the northwest portion of the Moon's South Pole-Aitken basin on the far side.*

*Thermal models estimate that the crystallization of the lunar magma ocean (LMO) could have spanned from 10 and 200 My, while studies of radioactive decay systems have yielded inconsistent ages for the completion of LMO crystallization covering over 160 My.*

*Here, we show that the Moon achieved >99% crystallization at  $4,429 \pm 76$  Ma, indicating a lunar formation age of ~4,450 Ma or possibly older.*

*Using the  $^{176}\text{Lu}/^{176}\text{Hf}$  decay system, we found that the initial  $^{176}\text{Hf}/^{177}\text{Hf}$  ratios of lunar zircons with varied U-Pb ages are consistent with their crystallization from a KREEP-rich reservoir with a consistently low  $^{176}\text{Lu}/^{177}\text{Hf}$  ratio of 0.0167 that emerged ~140 My after solar system formation.*

*The previously proposed younger model age of ~4.33 Ga for the source of mare basalts (240 My after solar system formation) might reflect the timing of a large impact.*

*Our results demonstrate that lunar magma ocean crystallization took place while the Moon was still battered by planetary embryos and planetesimals leftover from the main stage of planetary accretion.*

## Origin Of Life.

Jenewein, C., et al (2025) **Concomitant formation of protocells and prebiotic compounds under a plausible early Earth atmosphere.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 122:doi.org/10.1073/pnas.2413816122 (available as a free pdf)

Authors' abstract: *The synthesis of prebiotic molecular building blocks of life and the first compartmentalization into protocells have been considered two events apart in time, space, or both.*

*We conducted lightning experiments in borosilicate reactors filled with a mixture of gases mimicking plausible geochemical conditions of early Earth. In addition to the variety of prebiotic organic molecules synthesized in these experiments, we investigated the micrometer-thick silica-induced organic film that covers the walls of the reactors and floats at the water-gas interface.*

*We found that the film is formed by aggregation of HCN-polymer nanoclusters whenever water is present, either in the liquid or vapor phase. The organic film morphs into micrometer-scale biomorphic vesicular structures hanging from the organic film into the water.*

*We also show that these structures are hollow and may act as microreactors facilitating chemical pathways toward increasing complexity. We propose that these organic biomorphs form through a bubble-driven mechanism and interfacial precipitation of HCN-polymers.*

*The concomitant synthesis of biomorphic poly-HCN protocells and prebiotic molecules under plausible geochemical conditions of early Earth-like planets and moons and opens a different geochemical scenario for the emergence of life.*

*Our results suggest that the coexistence of molecular building blocks of life and submicron biomorphic structures in the oldest rocks on Earth or any other celestial body does not necessarily mean evidence of life.*

Lotem, N., et al (2025) **Reconciling Archean organic-rich mudrocks with low primary productivity before the Great Oxygenation Event.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 122:doi.org/10.1073/pnas.2417673121

[When life originated, the first cells were anaerobic and did not use oxygen in their metabolism. The arrival of photosynthesis resulted in oxygen suddenly being generated by microscopic algae.]

[Initially the oxygen combined with iron and other minerals in rocks, a process that took billions of years. Once the rocks were oxidized, free oxygen began accumulating in the atmosphere, beginning what is known as the Great Oxidation Event and allowing for multicellular life.]

Authors' abstract: *Constraining the degree of biological productivity on early Earth is crucial for understanding the evolution of Earth's biosphere.*

*The high organic content of ancient, Archean (>2.5 gigayears) mudrocks has been suggested to reflect high biological productivity, while posing a paradox as high productivity was unanticipated for the emerging biosphere.*

*To understand how these organic-rich rocks formed, we quantified sediment accumulation rates of three different Neoproterozoic (2.8 to 2.5 Ga) sections.*

*The age constraints established that these organic-rich sediments accumulated at extraordinarily slow rates, in a fashion very different from how organic-rich sediments accumulated over the past 500 million years, consistent with hypotheses that primary productivity and decomposition were two orders of magnitude lower in the Neoproterozoic than they are today.*

*The organic carbon content of ancient rocks provides a fundamental record of the biosphere on early Earth.*

*For over 50 years, the high organic content of Archean (>2.5 Ga) mudrocks has puzzled geologists and evolutionary biologists, because high biological primary productivity was unexpected for the nascent biosphere before the rise of O<sub>2</sub>.*

*Here, we took a different approach to resolve this apparent paradox, by studying the accumulation rates of Archean organic-rich mudrocks.*

*We evaluated the sedimentation rates of three sections of the Mount McRae Shale and Jeerinah Formation (2.68 to 2.48 Ga, Pilbara Craton, Australia) with new and recently published U-Pb zircon ages from intraformational ash beds.*

*For comparison, we compiled Phanerozoic (<500 Ma) data from comparable depositional settings and developed an idealized model that considers the sedimentation rates for predicting rock organic content.*

*We found that organic-rich Archean mudrocks were deposited under exceptionally low sedimentation rates (~1 metre per megayear), in sharp contrast to organic-rich rocks from the Phanerozoic Eon (10 to 100 metres/Ma).*

*Constrained by observations, model results indicated that the Archean data reflect low primary productivity (~100-fold lower than during the Phanerozoic) and enhanced preservation under anoxic conditions, with the principal control on organic carbon content provided by dilution with inorganic sediment.*

*Thus, the high organic carbon content which is typically attributed to high productivity instead reflects slow accumulation, high preservation, and minimal inorganic dilution, reconciling the geological evidence with a slow carbon cycle cadence during Archean time.*

Stoy, K.S., et al (2024) **Adaptive radiation during the evolution of complex multicellularity.** EVOLUTIONARY JOURNAL OF THE LINNEAN SOCIETY 3:doi.org/10.1093/evolinnean/kzae008 (available as a free pdf)

*Authors' abstract: The evolution of multicellularity led to the origin of new kinds of organisms and, in several lineages, massive adaptive radiations through the formation of entirely new ecosystems.*

*This paper examines three key mechanisms underpinning parallel adaptive radiations within the five clades of 'complex' multicellularity: animals, land plants, fungi, red algae, and brown algae.*

*First, the evolution of key multicellular innovations permitted diversification into new ecological roles.*

*Second, the evolution of large multicellular organisms with strong genetic bottlenecks between generations fundamentally changed the population genetic context of evolution, greatly reducing effective population size and increasing the role of genetic drift.*

*This may be beneficial during adaptive radiations, underpinning nonadaptive expansions of genome size and allowing broader exploration of multicellular trait space.*

*Finally, we explore how evolutionary priority effects provide a first-mover advantage, maintaining ancient adaptive radiations over long time periods by suppressing competition from convergently evolving multicellular taxa.*

*Investigating parallel patterns of diversification across independent origins of complex multicellularity provides insight into the principles underpinning these crucially important adaptive radiations.*

*The evolution of multicellularity was a major transition in the history of life, enabling the evolution of organisms whose size and capacity for cellular differentiation and multicellular morphogenesis underpinned the origin of novel functions.*

*While multicellularity has evolved many times, 'complex' multicellularity is generally thought to have only evolved in five eukaryotic lineages: animals, plants, red algae, brown algae, and fungi.*

*In contrast to 'simple' multicellular organisms, complex lineages are large, are long-lived, and have evolved a high degree of morphological differentiation and functional integration via cellular specialization.*

*The evolution of multicellularity in these clades was a critical prerequisite that enabled subsequent adaptive radiations, the diversification of lineages from a single ancestor with traits suited to exploiting a broad range of new ecological niches.*

*While the ecological impact of multicellularity has long been appreciated, the mechanisms underlying the globally transformative radiations of complex multicellular taxa continue to be explored and debated.*

*The oldest multicellular eukaryotic taxa which can be assigned to an extant multicellular clade are the red algae, which appear to have emerged ~1.6 billion years ago. From these early multicellular progenitors, complex lineages evolved three-dimensional morphological organization affording red algae resilience to harsh marine environments.*



*For example, unique innovations across red algal species, including flexible, filamented thalli containing numerous plastids, holdfasts, gas-filled bladders, and calcified cell walls helped drive the evolution of 5,000 to 6,000 primarily multicellular species adapted to withstand mechanical stress imposed by currents and waves across near-shore marine environments.*

*Fungi evolved multicellularity at least as far back as the Ediacaran, with multicellular fungi-like fossils dating back nearly a billion years. Fungi are among the most diverse clades of eukaryotes, with ~130 000 described species, in which the vast majority are multicellular.*

*Across these lineages, three-dimensional multicellular structures, including hyphae, rhizomorphs, mycorrhizae, and sclerotia permitted efficient acquisition, translocation, and storage of nutrients across patchy environments.*

*Moreover, fruiting bodies facilitated dispersal and protected reproductive cells from predation and infection. These multicellular morphologies allowed fungi to grow in patchy, nutrient-limited environments that would otherwise limit the growth of unicellular species.*

*These three-dimensional, multicellular innovations facilitated fungal radiation into saprobic forms occupying niches as decomposers of organic matter, pathogens, and symbionts in both terrestrial and aquatic ecosystems. The colonization of land by plants instigated a massive terrestrial adaptive radiation emerging ~470 to 515 megayears ago.*

*Early embryophytes gave rise to vascular plants including lycophytes, ferns, and seed plants. Colonization of land was mediated by key morphological innovations that conferred resistance to the distinct challenges of terrestrial environments, especially reduced water availability and increased UV exposure.*

*Waxy cuticles, stomata, root systems, and vascular tissues prevented dehydration by enabling the absorption, retention, and long-distance transportation of water. Moreover, seeds permitted dispersal, conferring advantages in dry terrestrial environments with patchily distributed resources and facilitating radiation into novel environments.*

*Finally, leaves evolved as specialized organs for light uptake and gas exchange. Together, these key innovations appear to have allowed plants to radiate extensively, producing between 420,000 and 450,000 species, including mosses,*

*ferns, and arborescent forms, occupying diverse terrestrial and freshwater habitats.*

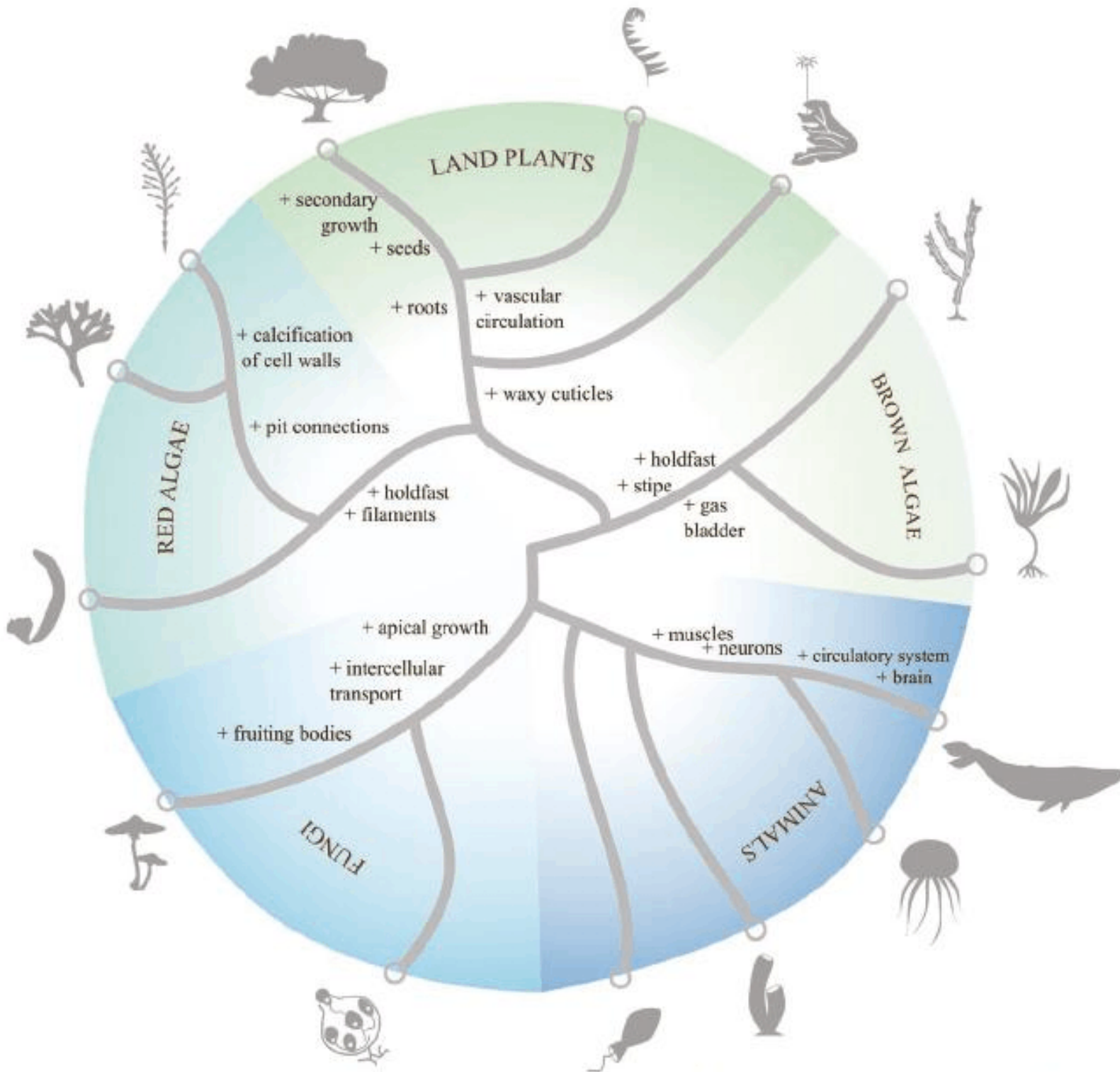
*The Cambrian 'explosion' (541 to 488 Mya) marked a dramatic adaptive radiation of animals. In this relatively brief span of 10 to 25 megayears, most modern animal phyla emerged in the fossil record.*

*Bilaterians split into two major clades, Protostomia and Deuterostomia, which further radiated into diverse body plans with unique morphological innovations well-suited to diverse ecological settings. These key innovations afforded animals increased mobility, expanded dietary ranges, and opened access to broad ecological niches.*

*For example, key innovations across vertebrate taxa such as neurons, muscles, sensory organs, and complex organ systems permitted diversification into motile, predatory, and suspension feeding forms comprising ~58,000 species across marine and terrestrial ecosystems.*

*Perhaps one of the most stunningly diverse adaptive radiations is that of arthropods. The evolution of segmented bodies, jointed appendages, and hardened cuticles allowed specialization for walking, swimming, flying, and burrowin, instigating a massive radiation culminating in ~7 million known species today.*

[Chart on the next page is from this paper.]



The five clades of 'complex' multicellularity. Key innovations underpinning adaptive radiations are shown along the branches.

**Paleobiology.**

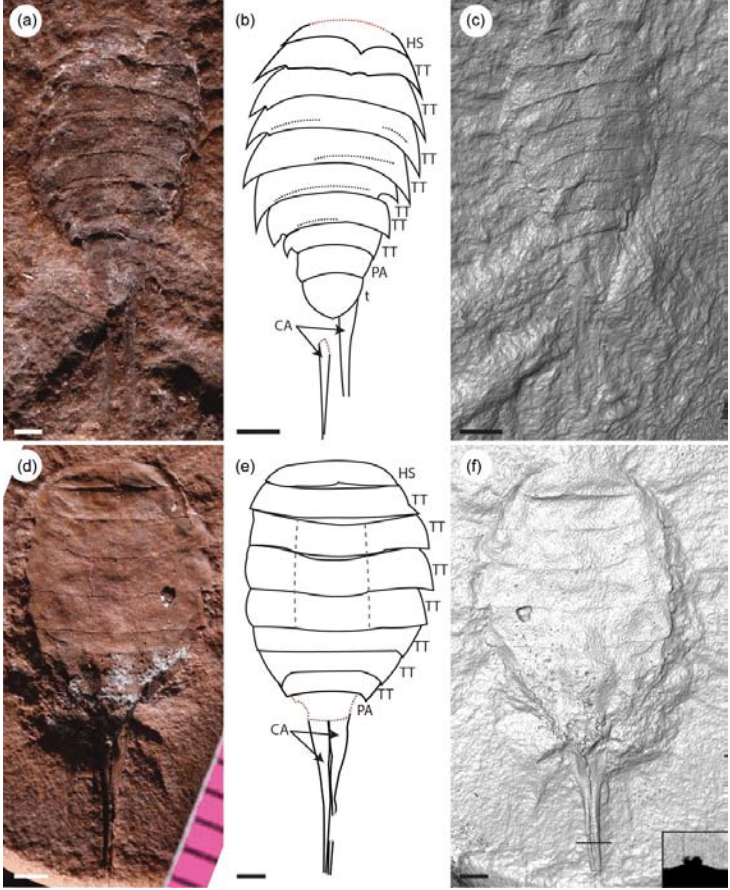
McCoy, V.E., et al (2025) **A possible vicissicaudatan arthropod from the Late Carboniferous Mazon Creek Lagerstätte.** GEOLOGICAL MAGAZINE 162:doi.org/10.1017/S001675682400044X (available as a free pdf)

Authors' abstract: *The Vicissicaudata, a group of artiopods, originated and reached their highest diversity during the Cambrian period. However, relatively few vicissicaudatan species are known from the Paleozoic.*

*Here we report a new species of vicissicaudatan arthropod, sister to the cheloniellids, from the Late Carboniferous Mazon Creek Lagerstätte. The two specimens preserve a small eyeless head, a trunk comprising seven tergites with wide pleural lobes, a narrower postabdomen bearing two long, posteriorly directed caudal appendages, and a short, shield-shaped telson.*

*This new species not only extends the stratigraphic range of the Vicissicaudata into the Late Paleozoic but also represents an intermediate morphology between the cheloniellids and other vicissicaudatans.*

*Etymology. The genus name Tardisia (feminine) is inspired by the TARDIS time machine in the TV show Dr. Who, and refers to the large stratigraphic gap between this species and the next youngest members of the Vicissicaudata.*



[Images of *Tardisia broedae* are from this paper.]



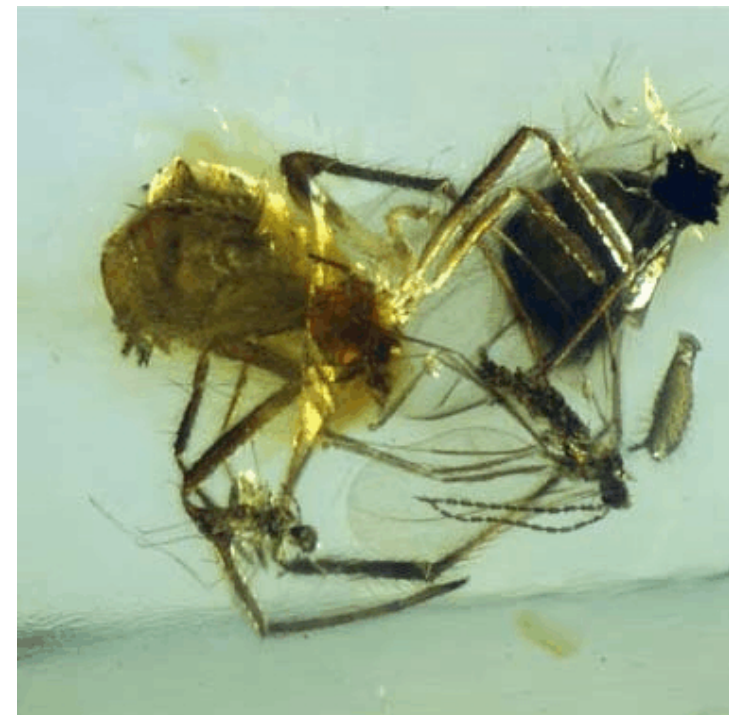
García-Villafuerte, M.A. and G. Carbot-Chanona (2024) **Predator-predator-prey interaction between spiders and insects: First fossil evidence from 23 million-year old Chiapas amber syninclusion.** ACTA PALAEOLOGICA POLONICA 69:/doi.org/10.4202/app.01193.2024 (available as a free pdf)

Authors' abstract: *Although palaeoecological interactions in amber have been documented worldwide, interactions between predators and potential prey are rare.*

*Here, we documented the first evidence in Miocene Chiapas amber of predator-predator-prey interaction involving two spider species and one insect: the araneophagous "pirate spider" *Mimetus* sp., the Theridiidae spider *Thymoites carboti*, and gall flies (*Cecydomiidae*).*

*The interaction between *Mimetus* sp. and *T. carboti* is documented as a possible case of araneophagy or opportunism. Also, the first evidence of a web built by some members of the *Thymoites* genus is presented. The taphonomic analysis of the amber piece indicated that they were all captured at the same time under the same resin flow.*

[Image of spider trapped in amber is from this paper.]



Grohgan, M, et al (2024) **Morphogenesis of pteraspid heterostracan oral plates and the evolutionary origin of teeth.** ROYAL SOCIETY OPEN SCIENCE 11:doi.org/10.1098/rsos.240836 (available as a free pdf)

Authors' abstract: *Teeth are a key vertebrate innovation; their evolution is generally associated with the origin of jawed vertebrates. However, tooth-like structures already occur in jawless stem-gnathostomes; heterostracans bear denticles and morphologically distinct tubercles on their oral plates.*

*We analysed the histology of the heterostracan denticles and plates to elucidate their morphogenesis and test their homology to the gnathostome oral skeleton. We identified a general model of growth for heterostracan oral plates that exhibit proximal episodic addition of tubercle rows.*

*The distal hook exhibits truncated lamellae compatible with resorption, but we observe growth layers to be continuous between denticles. The denticles show no evidence of patterns of apposition or replacement indicating tooth homology.*

*The oral plates and dermal skeleton share the same histological layers. The denticles grew in a manner comparable to the oral plate tubercles and the rest of the dermal skeleton.*

*Our test of phylogenetic congruence reveals that the distribution of internal odontodes is discontinuous, indicating that the capacity to form internal odontodes evolved independently several times among stem-gnathostomes.*

*Our results support the 'outside-in' hypothesis and the origin of teeth through the spread of odontogenic competence from extra-oral to oral epithelia and the subsequent co-option to a tooth function in gnathostomes.*

*The epithelial-mesenchymal interactions governing tooth formation are also active during the development of other organs like hair follicles and mammary glands.*

*Minimally, teeth are composed of dentine, and they may be covered with a hard tissue (e.g. enamel and enameloid) and are attached to the jawbone by bone or ligament, with functional teeth being replaced via loss or sequential addition (in crown-gnathostomes).*

*Besides extant jawed vertebrates, the extinct placoderm groups Arthrodira (Compagopiscis) and Acanthothoraci (Romundina) also possessed teeth (primitively, at least), and so we can infer teeth to have already been present in the last common ancestor of all known jawed vertebrates.*

*Like jaws, teeth must have a deeper evolutionary history, but the evolutionary relationship of teeth to tooth-like structures in jawless vertebrates is unclear.*

*Two main hypotheses have been proposed to explain the evolutionary origins of teeth, the ‘outside-in’ and ‘inside-out’ hypotheses, which differ in terms of the origins of tooth precursors, from external dermal scales versus internal denticles that have a distinct evolutionary origin, respectively.*

## **Dinosaurs.**

Fernandes, A.E., et al (2024) **The oldest monofenestratan pterosaur from the Queso Rallado locality (Cañadón Asfalto Formation, Toarcian) of Chubut Province, Patagonia, Argentina.** ROYAL SOCIETY OPEN SCIENCE 11:doi.org/10.1098/rsos.241238 (available as a free pdf)

Authors’ abstract: *As the first group of tetrapods to achieve powered flight, pterosaurs first appeared in the Late Triassic.*

*They proliferated globally, and by the Late Jurassic through the Cretaceous, the majority of these taxa belonged to the clade Monofenestrata (which includes the well-known Pterodactyloidea as its major subclade), typified by their single undivided fenestra anterior to the orbit.*

*Here, a new taxon Melkamter pateko gen. et sp. nov., represented by the specimen MPEF-PV 11530 (comprising a partial cranium and associated postcranial elements), is reported from the latest Early Jurassic (Toarcian) locality of Queso Rallado (Cañadón Asfalto Formation) and referred to the clade Monofenestrata, increasing our previously known taxonomic and geographic representations, and temporal range for this clade.*

*This occurrence marks the oldest record of Monofenestrata globally and helps to shed critical light on the evolutionary processes undergone during the ‘non-pterodactyloid’-to-pterodactyloid transition within the Pterosauria.*

*In addition, another single isolated tooth from the same locality shows ctenochasmatid affinities. These finds further elucidate the still-poor Gondwanan Jurassic pterosaur fossil record, underscoring that most of our current ideas about the timing and modes of pterosaur evolution during that period are largely based on (and biased by) the pterosaur fossil record of the Northern Hemisphere.*

[Reconstruction is from this paper.]



Cooper, S.L.A., et al (2024) **Dietary tendencies of the Early Jurassic pterosaurs *Campylognathoides Strand, 1928*, and *Dorygnathus Wagner, 1860*, with additional evidence for teuthophagy in Pterosauria.** JOURNAL OF VERTEBRATE PALEONTOLOGY 44:doi.org/10.1080/02724634.2024.2403577

[Teuthophagy means a squid eater, of which modern whales are an example. And, as this paper demonstrates, pterosaurs.]

Authors' abstract: *The diets and feeding strategies of pterosaurs remain a poorly known although speculatively debated topic in vertebrate paleontology.*

*Fossilized gut contents, which offer a crucial direct line of evidence to help decipher these elusive questions, are only known from a handful of pterosaur specimens in a few notable fossil Lagerstätten, such as the Solnhofen Limestone of Bavaria.*

*Although extremely rare, pterosaurs can be exceptionally well preserved in the Lower Jurassic (Toarcian) Posidonia shale of Baden-Württemberg but, until now, none have been reported with identifiable gut contents.*

*Here, we describe fossilized gut contents in two Posidonia Shale pterosaurs: *Dorygnathus banthensis* (Rhamphorhynchidae) and *Campylognathoides zitteli* (Campylognathoididae).*

*Dorygnathus is shown to be piscivorous as indicated by the inclusion of the small teleost *Leptolepis sp.* preserved inside of the abdominal cavity.*

*The gastrointestinal tract of *Campylognathoides* preserves associated accumulations of belemnoid hooklets referable to *Clarkeiteuthis conocauda* and thereby demonstrating a teuthophagous diet.*

*These findings represent the first convincing evidence for belemnoids contributing to the diet of a pterosaur and hint at a possible nocturnal hunting behavior for *Campylognathoides*.*

*Previous hypotheses regarding dietary trophic partitioning based on differentiating skull anatomy in Posidonia Shale pterosaurs are supported.*

Delsett, L.L., et al (2024) **Boreal waterways: An Early Cretaceous plesiosaur from Ellesmere Island, Nunavut, Canadian Arctic and its palaeobiogeography.** ACTA PALAEONTOLOGICA POLONICA 69:doi.org/10.4202/app.01148.2024 (available as a free pdf)

Authors' abstract: *A plesiosaur specimen collected from Ellesmere Island (Nunavut, Arctic Canada) by Danish geologist Johannes Troelsen in 1952 is described for the first time. The plesiosaur is late Berriasian to early Valanginian in age based on palynostratigraphy.*

*The specimen is the only plesiosaur known from the Lower Cretaceous of the Sverdrup Basin in the Canadian Arctic, and is assigned to the cryptoclidid genus *Colymbosaurus*. From a taxonomic point of view, the presence of vertebrae from several regions and four propodials improve our understanding of the morphology of the genus.*

*Furthermore, *Colymbosaurus* is shown to have survived through the Jurassic-Cretaceous transition. Its presence in the Sverdrup Basin is additional evidence for the connectivity of Arctic Canada and the Svalbard region during the Jurassic-Cretaceous transition, at a time when sea levels were low and microplankton, like dinoflagellates, experienced enhanced provincialism.*

*Last but not least, the new plesiosaur adds to our knowledge of the palaeoenvironment of the Sverdrup Basin, ranking at the top of a food chain that is largely unrecorded from the area, due to adverse taphonomy and diagenesis.*

## **Zoology.**

Jiangzuo, Q., et al (2025) **Insights on the evolution and adaptation toward high-altitude and cold environments in the snow leopard lineage.** SCIENCE ADVANCES 11:doi.org/10.1126/sciadv.adp5243 (available as a free pdf)

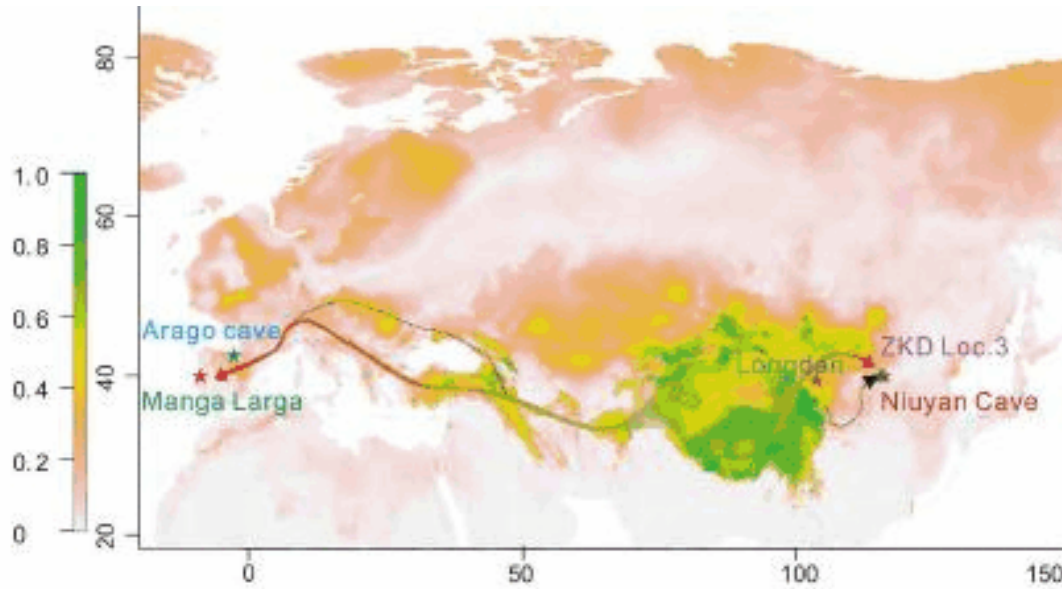
Authors' abstract: *How snow leopard gradually adapted to the extreme environments in Tibet remains unexplored due to the scanty fossil record in Tibet. Here, we recognize five valid outside-Tibet records of the snow leopard lineage. Our results suggest that the snow leopard dispersed out of the Tibetan Plateau multiple times during the Quaternary.*



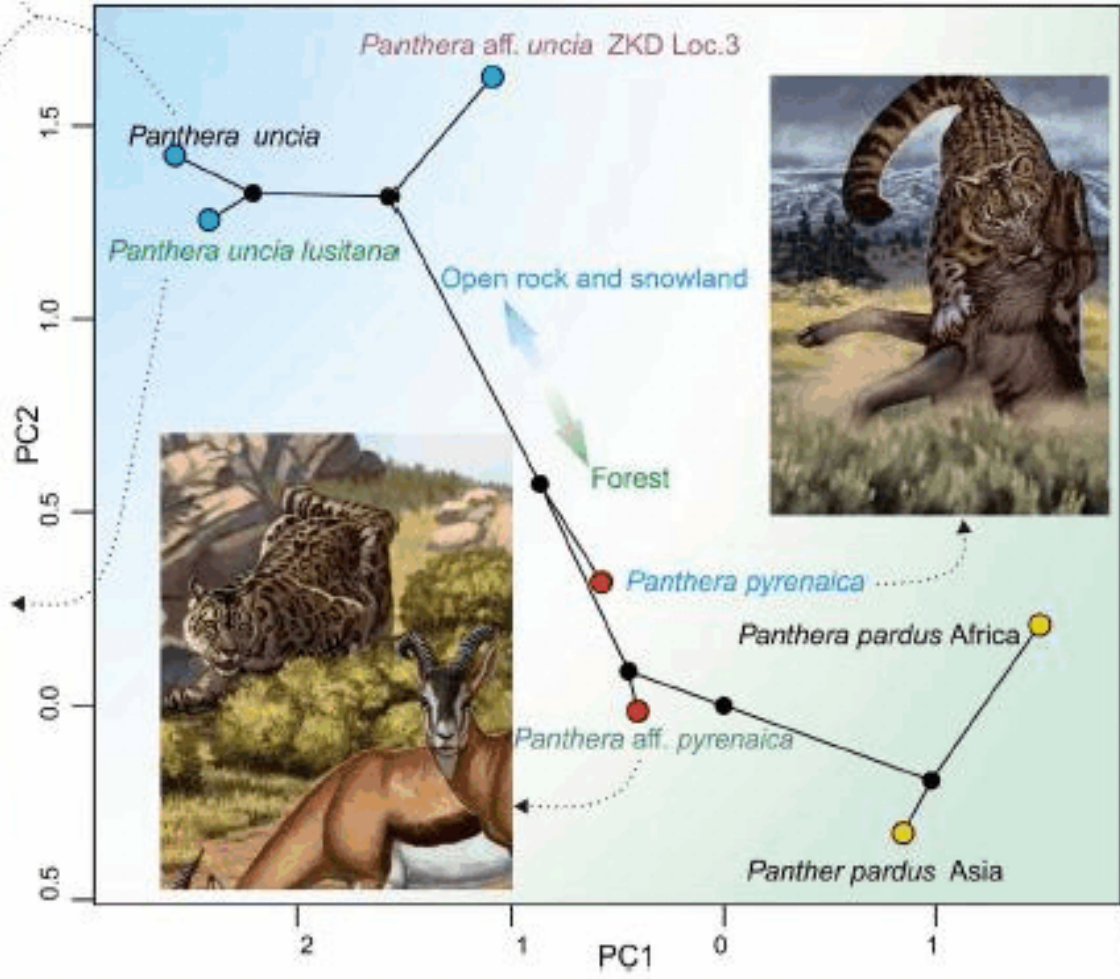
*Panthera uncia*  
modern Tibet



*Panthera uncia*  
Niuyan Cave



A



B

The osteological anatomy of the modern snow leopard shows adaptation to the steep slope and, to a lesser extent, cold/high-altitude environment.

Fossils and phylogeny suggest that the snow leopard experienced a gradual strengthening of such adaptation, especially since the Middle Pleistocene (~0.8 million years).

Species distribution modeling suggests that the locations of the fossil sites are not within most suitable area, and we argue that local landscape features are more influential factors than temperature and altitude alone.

[Images are from this paper.]

Kosiewska, J.R., et al (2024) **White-tailed deer quintuplets in an area with high prevalence of chronic wasting disease.** SOUTHEASTERN NATURALIST 23:doi.org/10.1656/058.023.0405

Authors' abstract: *A female *Odocoileus virginianus* (White-tailed Deer) harvested in West Tennessee (29 January 2024) in an area with high prevalence of chronic wasting disease (CWD), had 5 fetuses (3 males and 2 females). All fetuses had similar development (58 days old) determined by crown-rump length.*

*We estimated conception occurred ~2 December 2023, typical for the area. This case suggests that high reproductive output might be possible even in the face of CWD. However, even with potentially high reproductive output, altered maternal behavior due to CWD infection could affect successful neonate recruitment.*

Dillon, M.N., et al (2024) **Is increased mutation driving genetic diversity in dogs within the Chernobyl exclusion zone?** PLOS ONE 19:doi.org/10.1371/journal.pone.0315244 (available as a free pdf)

Authors' abstract: *The disaster at the Chernobyl Nuclear Power Plant in 1986 and subsequent remediation efforts resulted in contamination of the local environment with radioactive material, heavy metals, and additional environmental toxicants.*

*Many of these are mutagenic in nature, and the full effect of these exposures on local flora and fauna has yet to be understood. Several hundred free-roaming dogs occupy the contaminated area surrounding the Chernobyl Nuclear Power Plant, and previous studies have highlighted a striking level of genetic differentiation between two geographically close populations of these dogs.*

*With this work, we investigate mutation as a possible driver of this genetic differentiation. First, we consider large-scale mutation by assessing the karyotypic architecture of these dogs.*

*We then search for evidence of mutation through short tandem repeat/microsatellite diversity analyses and by calculating the proportion of recently derived alleles in individuals in both populations.*

*Through these analyses, we do not find evidence of differential mutation accumulation for these populations. Thus, we find no evidence that an increased mutation rate is driving the genetic differentiation between these two Chernobyl populations.*

*The dog populations at Chernobyl present a unique opportunity for studying the genetic effects of the long-term exposures they have encountered, and this study expands and builds on previous work done in the area.*

## **Botany.**

Zapata, F., et al (2024) **Darwin's overlooked radiation: genomic evidence points to the early stages of a radiation in the Galápagos prickly pear cactus (*Opuntia*: Cactaceae).** EVOLUTIONARY JOURNAL OF THE LINNEAN SOCIETY 3:doi.org/10.1093/evolinnean/kzae021 (available as a free pdf)

Authors' abstract: *In the Galápagos Islands, much attention has been devoted to the radiation of iconic species like Darwin's finches, yet the Galápagos Islands offer an overlooked but equally remarkable opportunity for investigating plant radiations.*

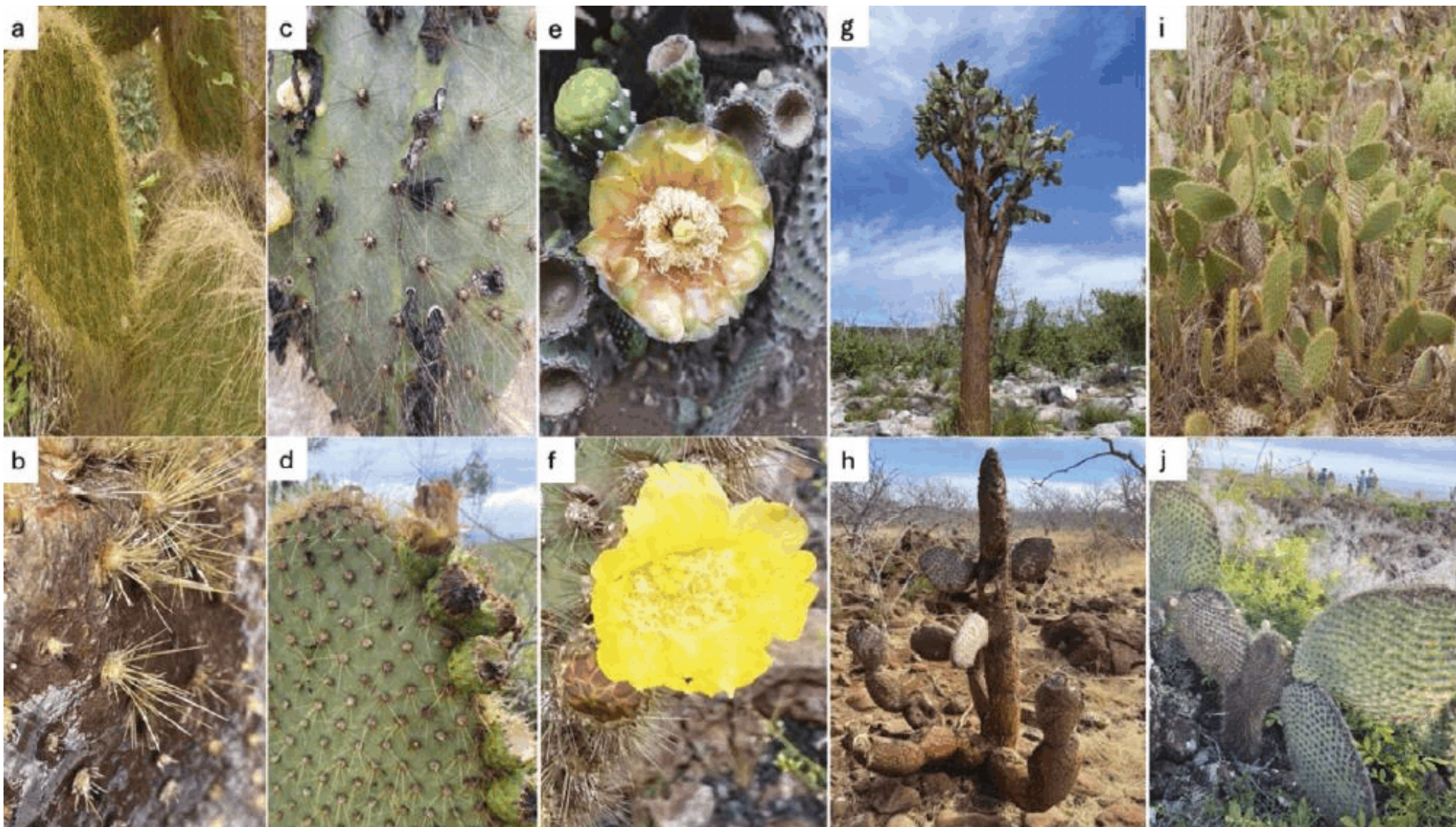
*Using a combination of genomic and phenotypic data, we present evidence of the early stages of a radiation in prickly pear cactus (*Opuntia*), a lineage widespread across the archipelago.*

*We show that despite extensive ecophenotypic variation, there is limited genomic differentiation, consistent with the hypothesis that *Opuntia* is in the early stages of the diversification process.*

*Phylogenomic and population genomic analyses show that notwithstanding low genetic differentiation across islands, there is marked geographical structure that is broadly consistent with the palaeogeography of the Galápagos.*

*Because low genetic differentiation stands in stark contrast to the exceptional eco-phenotypic diversity displayed by cacti, it is plausible that the genetic architecture of phenotypic divergence mismatches our genomic sequencing, that phenotypic plasticity precedes genetic divergence and is the source of adaptive evolution, or that introgression influences local adaptation.*





*Models of population relationships including admixture indicate that gene flow is common, probably facilitated by dispersal via animals known to feed on Opuntia flowers, fruits, and seeds.*

*Because the prickly pear cacti of the Galápagos are a radiation in the making, they provide an exciting opportunity to investigate the interplay between ecological and genomic mechanisms promoting diversification.*

[Photos are from this paper and show some of the many species of *Opuntia* on the Galapagos Islands.]

## Environmental Science.

Qin, C., et al (2025) **Persistent humid climate favored the Qin and Western Han Dynasties in China around 2,200 years ago.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 122:doi.org/10.1073/pnas.2415294121 (available as a free pdf)

Authors' abstract: *The Qin and Western Han dynasties (221 BCE to 24 CE) represent an era of societal prosperity in China. However, due to a lack of high-resolution paleoclimate records it is still unclear whether the agricultural boost documented for this period was associated with more favorable climatic conditions.*

*Here, multiparameter analysis of annually resolved tree-ring records and process-based physiological modeling provide evidence of stable and consistently humid climatic conditions during 270 to 77 BCE in northern China.*

*Precipitation in the Asian summer monsoon region during the Qin-Western Han Dynasties was ~18 to 34% higher compared to present-day conditions.*

*In shifting agricultural and pastoral boundaries ~60 to 100 km northwestward, possibility up to 200 km at times, persistently wetter conditions arguably increased food production, contributing to the socioeconomic prosperity around 2,200 y ago.*

*A gradual wetting trend in the western part of arid northwestern China since the 1980s resembles the historical climate analogue, suggesting that similar benefits for regional environmental and agricultural systems may reoccur under current climate change, at least in the near term.*

Hutchison, W., et al (2025) **The 1831 CE mystery eruption identified as Zavaritskii caldera, Simushir Island (Kurils).** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 122:doi.org/10.1073/pnas.2416699122 (available as a free pdf)

Authors' abstract: *One of the largest volcanic eruptions of the nineteenth century took place in 1831 CE. Although this event led to significant Northern Hemisphere climate cooling, the source of this eruption remains a mystery.*

*Using evidence from well-dated ice cores and stratigraphic records we pinpoint Zavaritskii caldera, an extremely remote volcano located in the Kuril Islands (between Japan and Kamchatka), as the source of this eruption.*

*By reconstructing its magnitude and radiative forcing we show that Zavaritskii can account for the climate cooling in 1831 to 1833 CE.*

*Polar ice cores and historical records evidence a large-magnitude volcanic eruption in 1831 CE. This event was estimated to have injected ~13 teragrammes of sulfur (S) into the stratosphere which produced various atmospheric optical phenomena and led to Northern Hemisphere climate cooling of ~1°C.*

*The source of this volcanic event remains enigmatic, though one hypothesis has linked it to a modest phreatomagmatic eruption of Ferdinandea in the Strait of Sicily, which may have emitted additional S through magma-crust interactions with evaporite rocks.*

*Here, we undertake a high-resolution multiproxy geochemical analysis of ice-core archives spanning the 1831 CE volcanic event.*

*S isotopes confirm a major Northern Hemisphere stratospheric eruption but, importantly, rule out significant contributions from external evaporite S. In multiple ice cores, we identify cryptotephra layers of low K andesite-dacite glass shards occurring in summer 1831 CE and immediately prior to the stratospheric S fallout.*

*This tephra matches the chemistry of the youngest Plinian eruption of Zavaritskii, a remote nested caldera on Simushir Island (Kurils). Radiocarbon ages confirm a recent (<300 years) eruption of Zavaritskii, and erupted volume estimates are consistent with a magnitude 5 to 6 event.*

*The reconstructed radiative forcing of Zavaritskii is comparable to the 1991 CE Pinatubo eruption and can readily account for the climate cooling in 1831 to 1833 CE.*

*These data provide compelling evidence that Zavaritskii was the source of the 1831 CE mystery eruption and solve a confounding case of multiple closely spaced observed and unobserved volcanic eruptions.*

## Human Prehistory.

Bates, K.T., et al (2025) **Running performance in *Australopithecus afarensis***. CURRENT BIOLOGY 35:doi.org/10.1016/j.cub.2024.11.025 (available as a free pdf)

Authors' abstract: *The evolution of bipedal gait is a key adaptive feature in hominids, but the running abilities of early hominins have not been extensively studied.*

*Here, we present physics simulations of *Australopithecus afarensis* that demonstrate this genus was mechanically capable of bipedal running but with absolute and relative (size-normalized) maximum speeds considerably inferior to modern humans.*

*Simulations predicted running energetics for *Australopithecus* that are generally consistent with values for mammals and birds of similar body size, therefore suggesting relatively low cost of transport across a limited speed range.*

*Through model parameterization, we demonstrate the key role of ankle extensor muscle architecture (e.g., the Achilles tendon) in the evolution of hominin running energetics and indeed in an increase in speed range, which may have been intrinsically coupled with enhanced endurance running capacity.*

*We show that skeletal strength was unlikely to have been a limiting factor in the evolution of enhanced running ability, which instead resulted from changes to muscle anatomy and particularly overall body proportions.*

*These findings support the hypothesis that key features in the human body plan evolved specifically for improved running performance and not merely as a byproduct of selection for enhanced walking capabilities.*

Gillis, R.E., et al (2024) **Diverse prehistoric cattle husbandry strategies in the forests of Central Europe**. NATURE ECOLOGY AND EVOLUTION 9:doi.org/10.1038/s41559-024-Article 4-02553-y (available as a free pdf)

Authors' abstract: *During the sixth millennium BCE, the first farmers of Central Europe rapidly expanded across a varied mosaic of forested environments.*

*Such environments would have offered important sources of mineral-rich animal feed and shelter, prompting the question: to what extent did early farmers exploit forests to raise their herds?*

*Here, to resolve this, we have assembled multi-regional datasets, comprising bulk and compound-specific stable isotope values from zooarchaeological remains and pottery, and conducted cross-correlation analyses within a palaeo-environmental framework.*

*Our findings reveal a diversity of pasturing strategies for cattle employed by early farmers, with a notable emphasis on intensive utilization of forests for grazing and seasonal foddering in some regions.*

*This experimentation with forest-based animal feeds by early farmers would have enhanced animal fertility and milk yields for human consumption, concurrently contributing to the expansion of prehistoric farming settlements and the transformation of forest ecosystems.*

*An especially dynamic phase in the evolution of domesticated cattle occurred in Central Europe during the sixth millennium BCE and was associated with the rapid expansion of the 'Linearbandkeramik' (LBK) culture.*

*This expansion occurred over a vast geographical area characterized by diverse forested environments with varying densities of cover.*

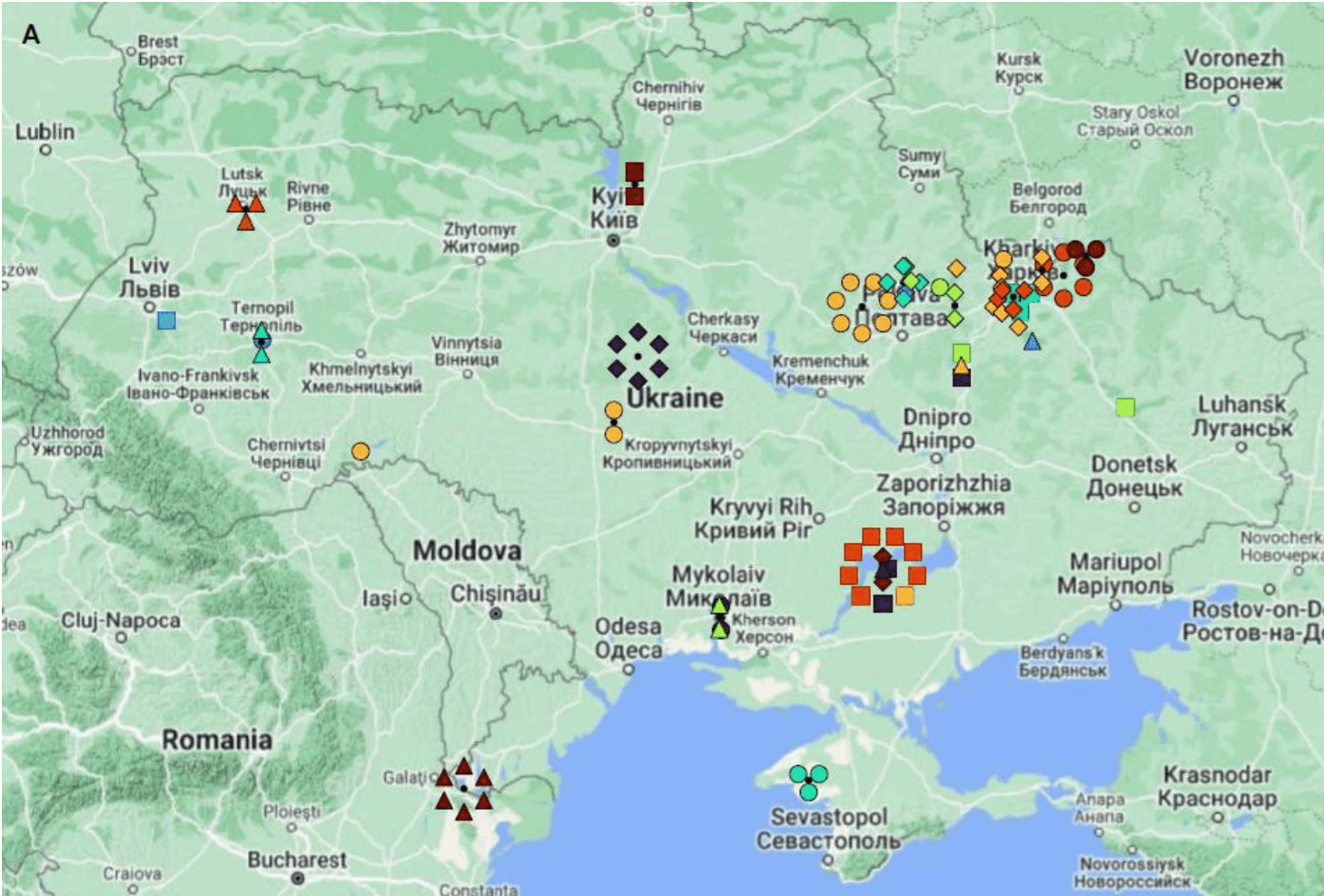
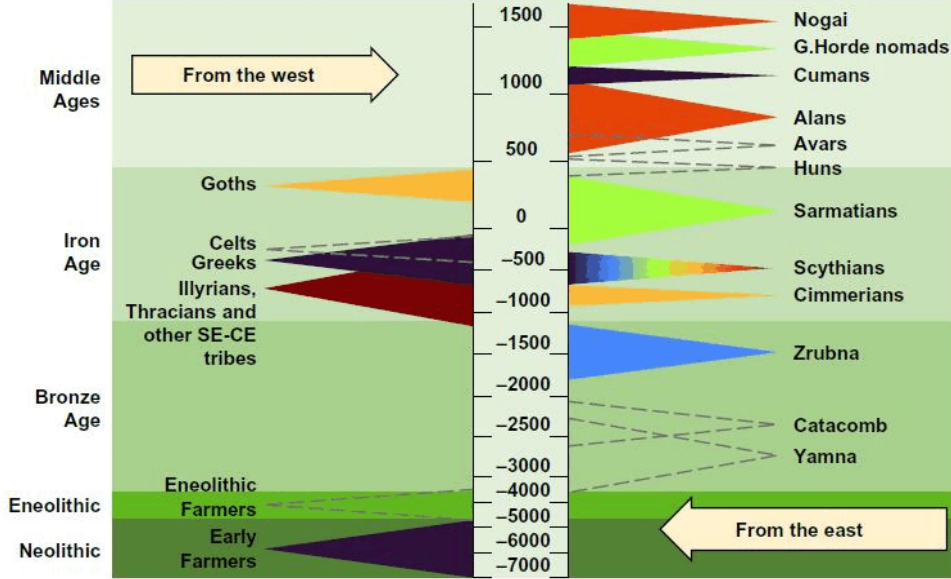
*Natural clearings within the forests occurring within the proximity of rivers and, as a result of lightning strikes and the activities of wild animals, may have been purposefully and deliberately expanded by animal grazing, opening up areas for settlement and agriculture.*

Saag, L., et al (2025) **North Pontic crossroads: Mobility in Ukraine from the Bronze Age to the early modern period.** SCIENCE ADVANCES 11:doi.org/10.1126/sciadv.adr0695 (available as a free pdf)

Authors' abstract: *The North Pontic region, which encompasses present-day Ukraine, was a crossroads of migration, connecting the vast Eurasian Steppe with Central Europe.*

*We generated shotgun-sequenced genomic data for 91 individuals dating from around 7000 BCE to 1800 CE to study migration and mobility history in the region, with a particular focus on historically attested migrating groups during the Iron Age and the medieval period.*

*We infer a high degree of temporal heterogeneity in ancestry, with fluctuating genetic affinities to different present-day Eurasian groups.*



*We also infer high heterogeneity in ancestry within geographically, culturally, and socially defined groups.*

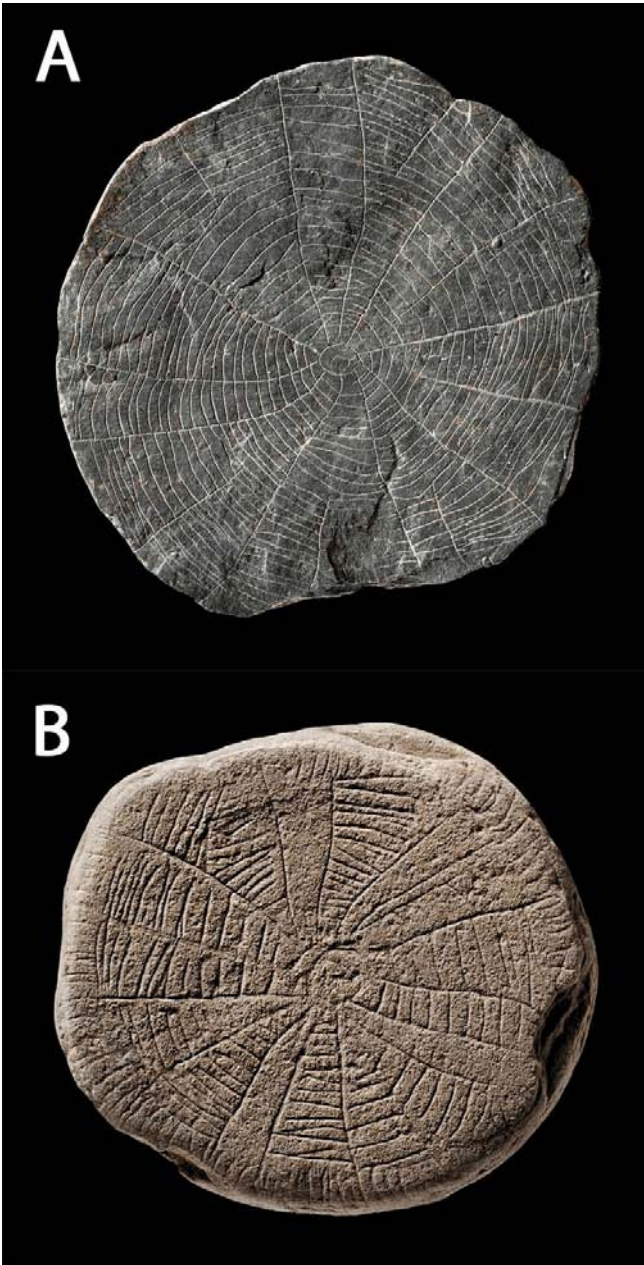
*Despite this, we find that ancestry components which are widespread in Eastern and Central Europe have been present in the Ukraine region since the Bronze Age.*

*In short, our study reveals a diverse range of ancestries in the Ukraine region through time as a result of frequent movements, assimilation, and contacts.*

[Images are from this paper. The coloured symbols on the map correspond to the colours of the chart.]

Iversen, R., et al (2025) **Sun stones and the darkened sun: Neolithic miniature art from the island of Bornholm, Denmark.** ANTIQUITY 98:doi.org/10.15184/aqy.2024.217 (available as a free pdf)

Authors' abstract: *The discovery of more than 600 whole and fragmentary engraved stone plaques in the early third millennium BC infill from the ditches of a causewayed enclosure at Vasagård, on the Danish island of Bornholm, represents a unique find in Neolithic miniature art.*



*Termed 'sun stones' in reference to the rayed images that characterise many of the plaques, the stones were deposited en masse over a short period.*

*This article offers a fundamental classification of the rich imagery captured in the engravings and examines its potential function at a time of possible climatic crisis that impacted not just Bornholm but the wider northern hemisphere.*

[ Images of sunstones are from this paper.]

**Human Health.**

Liang, J., et al (2024) **Global prevalence, trend and projection of myopia in children and adolescents from 1990 to 2050: a comprehensive systematic review and meta-analysis.** BRITISH JOURNAL OF OPHTHALMOLOGY 109:doi.org/10.1136/bjo-2024-325427

Authors' abstract: *An exhaustive literature search was performed on several databases covering the period from their inception to 27 June 2023.*

*The global prevalence of myopia was determined by employing pooled estimates with a 95% CI, and further analysis was conducted to assess variations in prevalence estimates across different subgroups.*

*Additionally, a time series model was utilised to forecast and fit accurately the future prevalence of myopia for the next three decades. This study encompasses a comprehensive analysis of 276 studies, involving a total of 5,410,945 participants from 50 countries across all six continents.*

*The findings revealed a gradual increase in pooled prevalence of myopia, ranging from 24.32% to 35.81%, observed from 1990 to 2023, and projections indicate that this prevalence is expected to reach 36.59% in 2040 and 39.80% in 2050.*

*Notably, individuals residing in East Asia (35.22%) or in urban areas (28.55%), female gender (33.57%), adolescents (47.00%), and high school students (45.71%) exhibit a higher proportion of myopia prevalence.*

*The global prevalence of childhood myopia is substantial, affecting approximately one-third of children and adolescents, with notable variations in prevalence across different demographic groups. It is anticipated that the global incidence of myopia will exceed 740 million cases by 2050.*

Wee, Y.N., et al (2025) **Laws about bodily damage originate from shared intuitions about the value of body parts.** SCIENCE ADVANCES 11:doi.org/10.1126/sciadv.ads3688 (available as a free pdf)

Authors' abstract: *From the biblical lex talionis to the medieval wergild system and modern workers' compensation laws, laws about bodily damage may originate from cognitive mechanisms that capitalize on an enduring regularity. Different body parts vary in their incremental contributions to human functionality.*

*To evaluate this hypothesis, we conducted a preregistered study with materials based on five legal codes from highly diverse cultures and historical eras:*

*the Law of Æthelberht (Kent, approximately 600 CE), the Guta lag (Gotland, approximately 1220 CE), and workers' compensation laws from the United States, the Republic of Korea, and the United Arab Emirates; and 614 laypeople from the United States and India.*

*The data indicate ordinal agreement in the values attached to body parts by ancient and modern lawmakers, as well as by laypeople in the United States and India. The observed agreement across time, space, and levels of legal expertise suggests that laws about bodily damage originate from shared intuitions about the value of body parts.*

Bowland, A.C., et al (2025) **The evolutionary ecology of ethanol.** TRENDS IN ECOLOGY AND EVOLUTION 40:doi.org/10.1016/j.tree.2024.09.005 (available as a free pdf)

Authors' abstract: *The consumption of ethanol has frequently been seen as largely restricted to humans. Here, we take a broad eco-evolutionary approach to understanding ethanol's potential impact on the natural world.*

*There is growing evidence that ethanol is present in many wild fruits, saps, and nectars and that ethanol ingestion offers benefits that favour adaptations for its use in multiple taxa.*

*Explanations for ethanol consumption span both the nutritional and non-nutritional, with potential medicinal value or cognitive effects (with*

*social-behavioural benefits) explored. We conclude that ethanol is ecologically relevant and that it has shaped the evolution of many species and structured symbiotic relationships among organisms, including plants, yeast, bacteria, insects, and mammals.*

*Since the Cretaceous period, fleshy fruits have provided a sugar-rich resource for fermentative yeasts and natural ethanol production. As such, the inclusion of ethanol in animal diets is likely just as ancient.*

*This challenges the current belief that modern humans are the only vertebrate that regularly and uniquely consumes ethanol and leads us to reconsider ethanol's ecological role and evolutionary impact in nature.*

Hu, X., et al (2025) **The HIP mouse and all of its organs are completely invisible to allogeneic immune cells.** iSCIENCE 28:doi.org/10.1016/j.isci.2024.111492 (available as a free pdf)

[Please notice the last sentence.]

Authors' abstract: *Hypoimmune (HIP) allogeneic cell therapeutics hold the promise to allow off-the-shelf treatments for a broad patient population. Our HIP approach includes the depletion of major histocompatibility complex (MHC) class I and II molecules and the overexpression of Cd47.*

*Here, we report the engineering of HIP mice that stably exhibit the HIP phenotype in all cell types. Parabiosis experiments were designed to broadly assess immune evasiveness of all HIP blood cells in fully allogeneic BALB/c mice.*

*HIP blood cells did not induce any immune response and achieved stable engraftment in BALB/c mice. Parabiosis experiments with irradiated HIP mice served as a model for full-body transplantation. There was no measurable cellular or antibody response in immunocompetent, allogeneic BALB/c parabionts.*

*Transplantation of HIP islets into diabetic, allogeneic BALB/c mice reliably treated diabetes in all animals.*