

OPUNTIA 533



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

ALONG THE BOW RIVER

photos by Dale Speirs

About The Cover.

I was sitting at a picnic table on the south bank of the Bow River in the Inglewood district when this *Megachile* leaf cutter bee landed. She fiddled about with the leaf and readjusted her load before flying off to her nest. I managed to get a smartphone photo and cropped it to enlarge.



The Bow River Promenade.

Further west on the Bow River along the downtown core was this talking bench. I have a very strict rule: I don't talk to furniture and have no interest in what they might have to say to me.



On the north bank in the Sunnyside district where a pedestrian bridge crosses the river, I saw this. From a distance I thought it was a Little Free Library and went over to look. It was instead an art project that probably meant something to somebody.





Above: Looking downstream along the Bow River at Peace Bridge, a pedestrian bridge at the west end of the downtown core.

At left: Looking further downstream from the Peace Bridge at Prince's Island.

Sidewalk Chemistry.

Seen on 3 Street SW heading south from the Bow River Promenade.



FANDOM MATTERS: PART 2

by Dale Speirs

[Part 1 appeared in OPUNTIA #522.]

COSPLAY: A HISTORY (2022) by Andrew Liptak was a 361-page tome which looked back at costuming in science fiction fandom. Costume parties date back for centuries but the focus of this book was on fans dressing up as their favourite characters.

The first Worldcon in 1939 is considered the birth of costuming in fandom. Forrest J. Ackerman and Myrtle R. Douglas caused a sensation by appearing in costumes, the only two fans to do so. Subsequent conventions held formal masquerades. The tradition then developed of hall costuming, wearing outfits during the convention's daily schedule or just strolling about for fun.

The earliest cosplayers based their costumes on literary science fiction. They had to, or could, interpret the design of costume from text descriptions. This gave them flexibility. Later cosplayers adapted their designs from television or movie characters, which constricted how the costumes looked.

The first Renaissance fair was held in 1963. The Society for Creative Anachronism was founded in 1966. Although both had cross-connections with science fiction conventions, they quickly diverged onto their own paths.

Costume-Con 1 was held in 1983, building on a fandom much larger than the traditional literary science fiction fans. The Trekkies and comics fans made their numbers felt in a big way. What gave costuming its biggest boost was the arrival of the Star Wars series in 1977.

Liptak pointed out that back then there were no store-bought costumes. Fans had to make their own costumes, using magazine photos as a guide. In those days, many types of fabrics were unsuitable for costuming but had to be adapted somehow.

By the 1990s, high-quality ready-made costumes were becoming affordable. What we know today as cosplaying began to evolve. Fans realized that strutting back and forth in a costume was not enough. Soon the expectation was that groups would perform a skit during masquerades, not just stand about like fashion models.

Liptak mentioned his own experiences as a Star Wars stormtrooper. One fan dressed as a stormtrooper was risible, a pathetic geek. A group of stormtroopers marching in military precision, however, was impressive.

Comic cons began developing in the 1980s and 1990s but didn't explode into mega-events until the turn of the Millennium. Boosting their attendances were the arrival of anime cosplayers (the word was invented by a Japanese translator), video game players, and superhero fans. DVDs, the World Wide Web, and online streaming sped up the spread of cosplaying around the world.

The 2000s began the calling out of racists, misogynists, and molesters. Those battles are mostly online but even now there are incidents at conventions, although sometimes the wokers themselves go too far.

From there, Liptak turned to re-enactors on both sides of the Atlantic. The Americans stage simulations of Revolutionary or Civil war battles. The British have millennia of history to play with, from Roman testudos to Scottish battles to English knighthood.

Halloween, mustn't forget that. As Liptak remarked, even those who never heard of cosplaying probably did it in their childhood every October 31. The Halloween costume industry benefitted cosplayers. Most ready-made costumes would be too expensive if only marketed to cosplayers, but the Halloween trade allowed economies of scale.

The quality of fabrics has improved tremendously, such as four-way stretchable cloth and colour-fast designs. Helmets, armour, and accessories are now made of lightweight plastics to professional standards based on movie studio blueprints.

Hollywood studios contract out rights to businesses that supply ready-made costumes. Not all cosplayers can or wish to make their own from scratch. Liptak discussed the development of online marketplaces to supply costumes or, for do-it-yourself fans, material such as fabrics and precast pieces such as armour plate or helmets.

New types of materials such as EVA foam plastic allow cosplayers to fabricate lightweight armour and helmets (always the most difficult to detail) with a soldering iron and glue. 3D-printers now only cost a few thousand dollars after the patents expired in the 2010s. Free or nominal-cost patterns are available.

The popularity of costumes varied. Star Wars stormtroopers are perennial favourites but more obscure characters come and go. Much depends on whether a television or movie series has regular new episodes, which sustain cosplayer interest. A video game that died a decade ago will not attract many cosplayers.

Cosplayers found YouTube an excellent place for tutorials or podcasting. There are several popular social media sites that allow creators to earn money from viewers, although not enough to live on. They do help defray costume costs though.

The main problem with online cosplay activity is burnout. Anyone can make a few podcasts, but keeping a steady stream flowing week after week is exhausting.

Another difficulty is the disappearance of online forums when a parent company shuts down a service and makes no effort to archive the material. An example was Yahoo Groups, which not only shut down in 2020 but deleted much valuable material instead of leaving an archive. Cosplay online forums ebb and flow as interests shift and service providers come and go.

Liptak finished up with a quick look at the effects of COVID-19 on cosplaying. Since conventions are a major aspect of this hobby, the coronavirus constricted the ability of fans to socialize. Worse yet, conventions during 2021 played a major role as superspreader events.

The book was an interesting read. I'm not a cosplayer but maintain an interest in all types of science fiction fandom, which is why I bought the book. Well worth reading.

FAR SPEAKING STORIES: PART 11

by Dale Speirs

[Parts 1 to 10 appeared in OPUNTIA's #313, 327, 337, 361, 372, 389, 410, 444, 473, and 505.]

The telephone and telegraph were astounding inventions if you think about them. Then and now, since Morse and Bell, someone could send a message to the far side of the planet, or talk to a friend on the opposite shore of a continent. Today we have both combined into a thin pocket-sized slab, a science fictional device if ever there was one.

Modern Technology Back When.

An early prediction of what we today call cellphones was in the story “Finality Unlimited” by Donald Wandrei, published in the 1936 September issue of ASTOUNDING (available as a free pdf from www.archive.org).

“Each individual carried an identification tag and a pocket radiophone that permitted conversation with any one anywhere on the globe.”

That wasn't just a throwaway line, as the protagonist of the story used the device: *“Stanley King had dressed and begun packing when he heard the signal of his pocket radiophone.”*

“The Phone Message” by Robert Cummins (2021 Mar/Apr, ELLERY QUEEN) was about a woman who used a remote-control system to send a voicemail from her laptop to her husband elsewhere that she would be late meeting him.

The call was timed for after she had murdered him, and the voicemail was her alibi. The police could track cellphone locations and calls, but couldn't establish evidence that would stand up in court. A twist ending, as she got away with the crime. Don't try this at home.

Whatever Happened To Videophones?

They did eventually arrive, but not in the style envisioned at those world fairs back in the 1960s. We take video calls on smartphones and laptops, not while standing at a wall staring into a big screen. Videoconferencing took a giant leap forward thanks to the COVID-19 pandemic. The preferred version was Zoom.

“The Secret Sharer” by W. Edward Blain (2022 Jul/Aug, ELLERY QUEEN) used the pandemic lockdown as a clever device for murder. Or was it?

A college professor, like so many others, was teaching his classes via Zoom teleconferencing. His students were scattered across the country, having gone back to their homes for the duration.

Wade, one of his students, had parents who were counterespionage agents in fear of their lives from the enemy. They first moved secretly to another place far away and wired their original home with massive explosives. The bomb was detonated while Wade was supposedly at home on Zoom.

Instead he and his parents were actually far away. On Zoom, nobody knows where you really are. They dropped out of the Zoom screen at the moment the bomb detonated, thus faking their deaths.

Trolling.

Trolling and hacking is nothing new. As telephones spread in the late 1800s and early 1900s, sharp practice men found them a useful adjunct for fraud. Pranksters were common, as witnessed by the following old-time radio episode.

In his time, Jack Benny (real name Benjamin Kubelsky) was by far the most successful comedian in North America, on radio from 1932 to 1955. His radio shows are available as free mp3s from the Old Time Radio Researchers at www.otrr.org/OTRRLibrary

Among his regular cast was a tenor singer Dennis Day, who played the part of the village idiot, if Beverley Hills can be said to be a village. He sang a song in each episode and was a supporting actor.

“Dennis Imitates People On The Phone” aired on 1953-11-22. The title explains one of the story lines. Dennis Day kept telephoning Jack Benny in the voices of Ronald Colman, Jimmy Durante, and Eddie Cantor.

Benny had just done a television show, so Day used his imitations to flatter him effusively. Benny was so thrilled he forgot his miserliness and offered to treat his friends to dinner at a restaurant, money no object.

Day’s stunt backfired when a call was forwarded to the restaurant purportedly from Jimmie Stewart. Since Benny saw Stewart sitting at a table nearby, the jig was up. Benny canceled the meal orders and no one got dinner.

Returning home, Benny got a telephone call from his sponsor’s agent Mr Lewis. Thinking the call was yet another prank, he reacted sarcastically. Day arrived at the house to apologize but not before the damage was done.

THE ECHO CHAMBER (2021) by John Boyne took on a modern theme, the consequences of easy communication via smartphones. A troll can make tweets to drown out a Nobel Prize winner. Wokers and cancellers can destroy reputations in the time it takes to press the Enter button.

This humorous novel presented the Cleverley family. George was a television interviewer who was a legend in his own mind. His wife Beverley was, as she liked to believe, a celebrated novelist. Their children Nelson, Elizabeth, and Achilles were, well, just plain teenagers.

They all had their secrets. George fathered a love child. Beverley used ghost writers for her novels and had a young lover on the side, who was probably the one who got her pregnant. They were plagued by political correctness but managed to sidestep most of it.

Until Elizabeth got onto Twitter and began trashing famous people. Smartphones are very convenient for that. Elizabeth was arrested by police for making specific threats against politicians. Worse yet, her Twitter account was suspended.

George was nailed by the woke mob when he referred to “crippled people” in a tweet. The scandals came crashing down on the family. There was nothing to do but move to a Scottish isle with no wifi.

For the record by the way, Dale Speirs of Calgary has never been on any social media such as Twitter, Facebook, Instagram, Tik Tok, or whatever else is fashionable these days. Like most people, I check my name on Google occasionally. Most Dale Speirs’ are from Scotland.

The surname is from the Lowlands, whence came my father’s ancestors to Canada in the early 1830s. One of the Scottish Dale Speirs is a young man trying to make a musical career, and another is a university academic.

Vanished Technology.

Many stories, whether print or broadcast, have been made out-of-date by technological advance. An example was the old-time radio episode “Homer’s Party” of THE ALDRICH FAMILY, written by Del Dimsdale and Patricia Joudry and aired on 1948-12-16.

The series was a bland but successful sitcom about a suburban family, which aired from 1939 to 1953. Sam and Alice Aldrich had two teenagers, Henry and Mary. The boy was the lead actor, played by middle-aged Ezra Stone, who made a career doing a teenage boy’s cracked voice.

A party was planned at the house of Homer Brown, Henry’s classmate. Telephone calls were made back and forth. Last-minute changes resulted in people, teenagers and parents, dashing madly about town on errands.

Those excursions caused the complications, since the people running about were out of communication. The town rolled up its sidewalks at sunset, which meant that stores with available telephone booths were scarce.

Meetings were missed and errands fouled up due to the constantly changing plans for the party. As a result, Henry and his friends were frantically telephoning around town trying to locate each other. Messages were left but not received.

Those same messages were obsolete when picked up later, but the recipients didn’t know that and acted on incorrect instructions. The chaos spread.

Today, of course, everyone has cellphones. Such a plot would make no sense since it wouldn’t matter where the kids were. They would be getting texts or voice calls to resolve the problems. No one would be running about trying to borrow someone’s landline or find a telephone booth.

When was the last time you saw a public phone booth on a street corner? I can’t recall when phone booths vanished in Calgary but at least two decades ago. While browsing through www.gutenberg.org, I came across the novel THE PHONE BOOTH MYSTERY (1924) by John Ironside. Set in England almost a century ago, it was about a murder victim found in a telephone booth.

In Canada, telephone services were never associated with the postal system. They were mostly privately operated or, in a few provinces, owned by the provincial government.

By contrast, many European countries such as Britain originally had their telephone systems as a department of their post offices. Over the past few decades, most such systems have been privatized or at least taken away from the post offices.

The novel at hand was set when British villagers seldom had their own telephones. They had to go to their local post office and ask the postmistress to put through a call for them. If they were lucky, there was a booth in the shop where they could talk privately. Otherwise they had to chat at the end of the counter where everyone in the shop could hear their business.

And so to the manor house of Sir Robert Rawson, who was something in foreign intelligence. His confidential secretary Roger Carling translated and summarized various intercepts. On this night he was rushing to do so because the morrow morn was his wedding day. He put the papers into the wall safe and went to bed.

A hue and cry arose the next morning because the papers had been stolen. An even bigger hue and cry arose when Sir Robert’s young wife Paula, foreign born as was carefully specified, was murdered in a telephone booth at the village post office.

She had gone to make a call, stepped inside the booth after the postmistress rang the number, and came out a fresh corpse. No one saw who stabbed her while she was inside the booth.

Carling got married but was the main suspect. Much to-ing and fro-ing by police, who gathered evidence to fit their suspect, and filling in the backgrounds of those in the manor. The culprit was one of Sir Robert’s menservants, who had observed Lady Paula steal the papers.

He followed her to the post office. While the postmistress had her back to the booth, he casually pulled out his switchblade, stabbed Lady Paula, and walked past without missing a step. Simple and direct. At the end of the novel, when Carling had been vindicated, the murderer blabbed all, then pleaded insanity and was institutionalized instead of being hanged.

A cheat ending. The book is an example not only of obsolete technology but obsolete murder plotting.

Vanished Services.

In this modern era, we forget how expensive telephone calls used to be. Long distance calls had to be routed through several operators. Researching on Google showed that back in the 1940s long distance calls were at least \$4 per minute and proportionally higher for international calls.

Which brings us to the comedy team George Burns and Gracie Allen, who were on the air from 1932 to 1950. Their radio series titles varied with their sponsor but most people just called their programmes “The Burns And Allen Show”. Burns was the straight man and his wife played a Dumb Dora, as that type of act was known in those days.

“George Owes Money For A Telephone Call” aired on 1940-09-09, sponsored by Spam. The episode opened with a wrap-up from the previous show, part of a story arc about George Burns being sued for \$200,000. He got lucky and escaped judgement but had to pay \$25 court costs. The payment was due that day of the episode.

Gracie Allen was indignant about the costs and said she knew a man who could fix the matter. She made a long distance call from Hollywood to New York City for \$19. Multiply by 10 for today’s depreciated currency.

The man wasn’t there, so Gracie telephoned Montreal. That cost \$152. The fixer got around. He wasn’t there either, having moved on to Honolulu, which cost \$149 to telephone.

George couldn’t make Gracie understand that she wasn’t saving him any money. Undeterred, she called Asia (country not specified) and ran up a tariff of \$1,600.

From there, the next call was \$700 to Alaska, \$500 to Tahiti, \$500 to South Africa, and an unspecified amount for Zanzibar. The grand total was \$25,000 for all the telephone calls.

The sheriff arrived with a summons for the unpaid court bill. Gracie tore up the papers in front of him and got another summons for contempt of court for \$1,000.

LITERA SCRIPTA MORTEM: PART 8
by Dale Speirs

[Parts 1 to 7 appeared in OPUNTIA’s #424, 428, 440, 469, 505, 513, and 515.]

Book Clubs.

DYING TO READ (2012) by Lorena McCourtney was the first novel in a series about Cate Kinkaid of Eugene, Oregon. Unemployed and desperate, she got a job with her uncle Joe Belmont, who was a private investigator. Her first assignment was to check a woman named Willow Bishop, who worked for Amelia Robinson.

Upon arrival at the residence, Cate found members of the Whodunit Book Club milling about, unable to enter. The doorbell not having made any impression, Cate led the book club inside. They found Amelia dead at the bottom of some stairs. Did she trip or was she pushed? No sign of Bishop, whose room was cleared out.

Uncle Joe fell off a ladder and broke his hip, so Cate found herself running the detective agency solo and with no experience or training. Bishop, whose real name wasn’t Willow, was being stalked by an abusive ex-boyfriend.

Greedy relatives of Amelia abounded, cats were everywhere (one of which was an heir to the estate), and the book club members faded in and out. The murder was done for an inheritance. Nuff said.

READ TO DEATH (2016) by Terrie Farley Moran was a cozy novel in a series about Sassy Cabot and Bridgy Mayfield of Fort Myers, Florida. (Someday I will write a rant about the names which cozy authors give their protagonists.) The two women operated the Read ‘Em and Eat Café and Book Corner. They also supported the Cool Reads/Warm Climate Book Club, total membership of six.

The club took a day trip, hiring a van driven by Oscar Frieland. He didn’t survive past Chapter 3. The Deppity Dawgs figured one of the book club members dunnit. All were squabblers and some had past connections to Frieland. Nor were Cabot and Mayfield above suspicion.

All and sundry went Marpleing, much to the annoyance of the police, who insisted they had jurisdiction. Eight Miss Marples wasn't quite as bad as a hurricane but not by much.

The good news was that café business boomed, what with the rubberneckers and gossipers checking out the scene. The book club had trouble meeting there as usual, what with all the noisy tourists taking over the tables.

Back stories about Frieland were uncovered, which only increased the number of suspects. The murderer was a book club member he knew back when they were both in Atlantic City in the casino underworld. Frieland made jokes about an unsolved murder they had seen, but she took his remarks seriously. There is no statute of limitations for murder, so she killed him.

There was a recipes appendix since the book club met in a café. The Old Man And The Sea Chowder was straightforward. The Drunken Raisin Scones recipe called for a quarter-cup of whiskey, so don't eat and drive.

LAW AND AUTHOR (2016) by Erika Chase (pseudonym of Linda Wiken) was a novel in a cozy series about the Ashton Corners Mystery Readers and Cheese Straws Society.

This book club was way down yonder in Alabama. One member was a self-published novelist who had one book in print-on-demand, which gave her airs as a professional. We've all met people like her at convention panels.

All the members were Miss Marples. In a ridiculous foreboding at a club meeting, a member asked Molly Matthews: "*You don't have another body hidden away somewhere that needs a heaping of justice, do you?*" Replied Molly: "*Heavens no*".

Three chapters later a body was found in her backyard and the plot shifted into overdrive. Away went the book club, elucidating clues and busily annoying the police, who felt the matter was under their jurisdiction.

The conclusion was rougher than most cozies, as the dead men had been trying to muscle in on a drug ring. The book club thought the murder investigation was fun and games, but quickly learned that drug dealers had no sense of humour.

The novel wrapped up with an appendix containing recommended reading lists from each of the characters in the book club. About half the titles were cozies. Go figure.

MURDER ON CAPE COD (2019) by Maddie Day (pseudonym of Edith Maxwell) was the debut novel of a cozy series about Mackenzie Almeida of Westham, Massachusetts. The hamlet was a seaside resort where she operated a bicycle shop.

Mac, as she was known, would therefore be a Fletcher, not a Marple. She belonged to a book club called Cozy Capers. There are no prizes for guessing what they specialized in.

Local handyman John Lacey was stabbed to death. Mac had been seen arguing with him a few hours before his death. That was sufficient evidence for the Deppity Dawgs to suspect her, especially since she found the body. What she didn't tell them was the knife stuck into Lacey was a distinctive style used by her brother Derrick Searle.

The book club members kept busy digging up gossip on a plethora of subjects. Just as well, because Mac was tied down by the bicycle shop, which was very busy with rentals to tourists. In a nod to real-world economics, there was a mention that the local shops had only a three-month season to make money.

Mac was also kept busy with threatening notes, not to mention someone tried to run her down with a Harley-Davidson. Fletcherer was strenuous work. Matters were not helped by book club members speculating wildly in the absence of any evidence. At least the Deppity Dawgs made a pretense at getting something admissible in court.

As usual with Fletchers and Marples, Mac got herself trapped with the killer, who had wanted some valuable real estate that Lacey owned. The rescue was what a long-time cozy reader would expect. The book finished up with a recipes appendix, rather strange for a bicycle shop cozy. However there was some logic. Mac's boyfriend was a baker, one book club member had a candy shop, and another a pizzeria.

The lead-off recipe was Killer Pizza, which seemed rather ordinary to me. Following on was Cranberry-Orange Bread and Seared Scallops. To wash those down there was Cape Cod Wine Spritzer.

LITTLE BOOKSHOP OF MURDER (2020) by Maggie Blackburn (pseudonym of Mollie Cox Bryan) was the first novel in a cozy series about Summer Merriweather of Brigid’s Island, North Carolina. She was a Shakespearean professor returned home after her mother Hildy’s death.

Beach Reads was a bookstore operated by Hildy and now the inheritance of Summer. As she settled the estate, she found a threatening note addressed to Hildy and learned the business owner next door was trying to buy force her out and buy the property. Her house was torched and trouble and strife were everywhere.

The local book club weren’t much help either. As events transpired, one of their members killed Hilary. The murderer was delusional and blamed her victim for imagined wrongs. Not the traditional confrontation with a gun pointed at Miss Marple, pardon me, Summer. In this instance, Summer had a piece of lead pipe and wasn’t afraid to use it.

ONCE UPON A SEASIDE MURDER (2021) was the sequel. Summer Merriweather took a sabbatical and was operating the bookstore. She had to deal with the Mermaid Pie Book Club, which kept imposing itself on her. Christmas was nigh and it was the busy season for Beach Reads.

There had been an unsolved murder on Brigid’s Island 35 years ago. Among Hildy’s estate was a carton full of newspaper clippings and documents about the murder. In spite of herself, Summer was drawn into the case.

Complicating factors were a long-lost biological family who might have had a connection with the murder, and a cozy author who had based one of her novels on the crime. The finishing touch was the arrival of a man she had left standing at the altar 14 years ago.

Assorted alarums ensued, as much from Summer’s dysfunctional family as any villains. Kidnapping, aggravated assault, grand theft, break-and-enter, and murders in the plural. The usual sort of rubbish that hitherto peaceful villages experience when a Miss Marple takes up residence.

The bookstore seemed to be at the centre of the strife. Summer debated selling the place to be rid of her woes. The ending finally blew apart when it was discovered one of her more distant relatives had committed the long-ago murder. Justice was somewhat served. A darker novel than most cozies.

A STUDY IN MURDER (2020) by Callie Hutton (pseudonym of Colleen Greene) was the first novel in a new cozy series. The venue was Bath, England, in 1890. Lady Amy Lovell wrote mystery novels, under a pseudonym of course, since respectable women didn’t descend to that sort of thing.

She was, however, a member of the Bath Mystery Book Club, since literary salons were acceptable. The talk among the members was about a new author named Doyle, who had just published a lengthy story about a detective with the improbable name of Sherlock Holmes.

Lady Amy received an anonymous letter saying that her fiance Ronald St. Vincent was an opium dealer. She investigated and found the allegations were true. When she confronted him at her house, he admitted the accusations, whereupon she broke off the engagement.

He stalked into the library to cool off, but while he was in there, someone cooled him off permanently with a knife. The constabulary made Lady Amy the prime suspect. In self-defense she began sleuthing. She was assisted by a fellow member of the book club, the Viscount William Wethington.

As per usual, the first victim had many enemies. It was a wonder that St Vincent had lived as long as he had. Victorian society may have been prim and proper on the surface but underneath it abounded with scandal and sharp practice.

Lady Amy soon found plenty of back stories among the suspects. The death toll rose. She found herself living in her own novels but without the assurance that she could write her way to a satisfactory ending.

The murderer had resented St Vincent corrupting her son into the opium trade. There was a final confrontation at gunpoint, in the library since this was a manor house. Wethington rescued her at the last moment, which proved it paid to belong to a book club.

RAILROADED 4 MURDER (2021) by J.C. Eaton (pseudonym of Ann I. Goldfarb and James E. Clapp) was the eighth novel in a series about Sophie Kimball of Sun City West, Arizona. She was a bookkeeper for a private detective agency, which put her one up over other Miss Marples.

Kimball was a member of the Booked 4 Murder literary club, headed by her overbearing mother Harriet. The members felt that reading all those mysteries qualified them to investigate crimes. One Miss Marple is bad enough for any village but imagine a whole pack of them.

The murder victim in the spotlight, or at least on a marble slab, was William Maines, president of the local model train club. He wasn't a model husband and was rumoured to dally with members of the Choo-Choo Chicks (the ladies' auxiliary) and/or the Rhythm Tappers (elderly tap dancers).

A tapdance shoe was found by the body and that was enough to convince the Deppity Dawgs where to look for a suspect. Kimball was to be married in three months. That kept her busy, mostly fending off her mother's ideas for an elaborate ceremony.

The book club began their investigation of the murder, using standard forensic references such as Harlan Cobb novels and food cozies. They used the code name Operation Agatha, after Christie, and planned to infiltrate both the model train clubs and the tap dancers.

As was to be expected, the alarums and confusions spread across the Arizona desert. The horde of Marples ravished the hobby clubs. Kimball, being the star of the series, caught the murderer, a woman whose brother had been financially ruined by Maines.

THE SECRET, BOOK, AND SCONE SOCIETY (2017) by Ellery Adams (pseudonym of Jennifer Stanley) was the first novel in a cozy series set in Miracle Springs, North Carolina. The main protagonist was Nora Pennington, owner of Miracle Books.

She was also the founder of a book club called the Secret, Book, and Scone Society. Note those commas well. The club was not about secret books nor did it operate as a secret society. Rather, the members had dark secrets, liked to read books, and munched on scones.

Nora was a recovering burn victim, badly scarred on her face and arms. She originally opened the bookstore as a place to hide from her past and bury herself in novels where she could forget, if only for a moment, about her troubles.

From empathy, she began recommending novels to customers who had their own scars, if only psychological. She formed the book club from such lost souls.

A businessman was murdered in a local park. Nora and the Secret, Book, and Scone Society became Miss Marples en masse. Lots of skullduggery and back stories to uncover.

The murders, and there were more, had been committed by a gang of real estate fraudsters. They were about to skip town with their loot when the trouble began. The denouement was an arson fire, whose effect on Nora can easily be imagined. She survived and so did the book club.

THE WHISPERED WORD (2018) was the sequel. A stranger named Abilene needed help, so Nora Pennington and the Secret, Book, and Scone Society obliged. Nora tried her standard therapy of offering a novel to read that might fit the situation.

That didn't prevent a fresh spate of murders, so the book club went afield. The MacGuffin was a diamond-studded pocket watch. A race developed between those seeking it, both the bad guys and the book club. The denouement ended with Nora recommending novels to all and sundry.

THE BOOK OF CANDLELIGHT (2020) was the third novel in the series. It was raining in North Carolina. You know how it is; nothing to do and nothing good on television. Accordingly, when a body washed up on the banks of the flooding Miracle River, Nora Pennington and the Secret, Book, and Scone Society sprang into action. The victim had been murdered, not drowned.

By now, Nora was calling herself a bibliotherapist, healing people by recommending novels to read. No licence needed to practice. Alarums spread through the village, and Nora's bookstore was vandalized.

An old diary had been found and once read through had triggered greed among descendants of the writer. They staged a land grab, or tried to, by criminal means at first, with the possibility of legal chicanery as a last resort.

And so to the denouement, where Nora suggested various novels to the survivors. Science fiction this time, though most dystopian novels.

Bookstore Cozies.

A DEADLY DELETION (2021) by Lorna Barrett (pseudonym of Lorraine Bartlett) was the 15th novel in a cozy series set in Stoneham, New Hampshire. Tricia Miles operated Haven't Got A Clue, a bookstore specializing in mystery fiction.

The gimmick of the village was its concentration of bookstores, the equivalent of Hay-on-Wye, Wales. Stoneham billed itself as Booktown and depended heavily on the tourist trade.

Miles was courted by two men, Marshall Cambridge and police chief Grant Baker. A white pickup truck killed Cambridge in a deliberate hit-and-run. A short time later, the same vehicle tried to run down Miles but failed because she was booked for the series.

Back at the bookshop, a federal marshal David Kirby arrived and told Miles that Cambridge had been in witness protection. By now, her reputation among the townsfolk was such that, quoting from the opening of Chapter 4: *Because of the many deaths that had plagued the village since her arrival, some of the villagers considered her a jinx, which was ridiculous.*

So she thought, but an outsider would be on the side of the villagers. Be that as it may, Miles went sleuthing. (I forgot to mention her cat was named Miss Marple.) Her sister Angelica operated the Booked For Lunch café, the Cookery bookstore, and the Sheer Comfort Inn. The incidents had caused Angelica to question the splashy way she was living her life.

She decided to simplify her life. She suffered foot pains because she wore designer stiletto heels, so she donated them all to a homeless shelter. The thought of drunken panhandlers trying to shuffle down sidewalks in spike heels was almost worth the price of the book by itself.

But I digress. Miles went sleuthing. Cambridge's ex-wife arrived. He had never changed his will and she was still executrix of his estate. She was rather condescending about Stoneham. As Miles narrated: *"We're rather a quiet hamlet" Except for being the murder capital of New Hampshire, that was.* [she thought to herself.]"

The new tourist season was starting up, so Miles still had a bookstore to run. Alarums came and went. A house was torched, the death toll rose, and one of her employees lost a capped tooth while eating a toffee apple. Everywhere there was tragedy. The ending was a twist, and a bit of a cheat, when it was revealed that a Deppity Dawg had dunnit. He shot himself in remorse and saved the state the cost of a trial.

Since Angelica operated a café, that was a good excuse for a recipes appendix. Miles had prepared Apple Crisps in the text of the novel, so that recipe led off. The Beer Dip was to be served with pretzels. Don't eat and drive. Finally there was Garlic Cheese Dip. Wear a mask after eating, and not because of the pandemic.

UNDER THE COVER OF MURDER (2021) by Lauren Elliott was the sixth novel in a cozy series about Addie Greyborne, the resident Jessica Fletcher of Greyborne Harbor, somewhere on the New England coast. She operated the Beyond The Page bookstore and sleuthed on the side. The murder rate of the village had soared since her arrival.

The big excitement was the wedding of wealthy Zach Ludlow and Serena Chandler. His family's yacht was moored in the harbor for the ceremony. Two bodies washed ashore, one before and one after the wedding. The first victim had a torn page in his pocket, but Greyborne couldn't identify the text.

After the second killing, Greyborne was allowed to examine the ship's library. The books were supposedly rare first editions but Greyborne noticed some were fakes. She stayed on board, busily annoying the police with her snooping and dredging up illicit romances and guilty secrets.

The murderer trapped her at gunpoint, as they usually do in cozies. Instead of immediately shooting her and tossing the body overboard, he gave her an extended lecture on how his book faking operation operated, using the yacht as a base. The police listened in from behind and took him into custody after he finished his bwah-ha!-ha!-ing.

DIGGING UP TROUBLE (2021) by Kitt Crowe (pseudonym of Stephanie Jacobson) was the debut novel of a cozy series set in Confection, Oregon. Strangely it was a bookstore cozy, not a food cozy. The soon-to-be Miss Marple was Lexi, no surname given, who operated the Sweet Fiction Bookshop.

She and her dog Cookie were closely watched by the local Deppity Dawgs because Cookie kept digging up the rose beds in the village green. Obviously not a lot of crime happened in the village. However Cookie took care of that when she dug up the neighbour's flower bed and found his body.

The murder didn't seem to hurt bookstore sales. Even the Deppity Dawgs remained regular customers. Assisting Miss Marple, pardon me, Lexi, were the Confection Garden Club who were appalled at the heinous crime. The dug-up flower bed, that is, not the murder.

The deceased was a moneylender, an occupation never popular since Biblical times. Eventually everything was sorted out. Lexi went down into a basement by herself to confront the murderer and blabbed all to him. That she survived the encounter demonstrated that natural selection doesn't always work.

A POISONOUS PAGE (2022) was the sequel. Lexi Jones (surname finally given) was enjoying increased sales at her bookstore, and was a member of the Macaroon Book Club, every one of them a Miss Marple in waiting.

They got their chance when two council members died within a week of each other, supposedly from natural causes. Subsequently, word of secret real estate transactions came to light. Lexi and the Macaroons were in full cry. Never mind book reviews, actual murders were so much more fun to speculate about at club meetings.

The Deppity Dawgs were very huffy about them barging into an ongoing investigation. The book club stirred up enough muddy water to hide a submarine as they pried into people's lives. Lots of illicit romantic liaisons and sharp practice deals in the village.

The murderer was a jealous woman who drugged her victims and almost got Lexi the same way. Since the cozy series was Lexi's she survived and justice was served.

FOR WHOM THE BOOK TOLLS (2020) by Laura Gail Black (pseudonym of Laura Stone) was the first novel in a cozy series about Jenna Quinn of Hokes Folly, North Carolina.

Her uncle Paul Baxter operated an antiquarian bookstore but didn't survive past the first chapter. She inherited a sizable estate. She had a past history elsewhere

which, combined with her windfall inheritance, initially made her the prime suspect. Quinn became a Miss Marple to defend her liberty and her inheritance.

Extensive infodumps then followed to establish Quinn's back story and the history of the village. Fortunately, for her anyway, the police arrested a young man Mason Craig, a disgruntled ex-employee who Baxter terminated for stealing from the cash register.

With only a little time off for Marpleing, Quinn had to learn how to operate a bookstore from scratch. Duties included being polite to rude customers, inventory control, and because of the nature of the business, authentication of rare books.

A major roadblock appeared when a claim jumper Norman Childers said he was Baxter's illegitimate son and deserved the estate. He was soon murdered in a local hotel. Quinn had the usual gunpoint confrontation with the murderer, a Hokes descendant who said both Baxter and Childers were after a diary that would benefit the Hokes family.

Nobody benefitted but Quinn, who was now established as a bookseller and had clear title, pardon the pun.

MURDER BY THE BOOKEND (2021) was the sequel. Now that Jenna Quinn had become the resident Miss Marple, the murder rate in the village climbed. The denizens of Hokes Folly were about to learn what life would be like with a murder magnet.

Having re-opened the bookstore, Quinn staged a grand party to celebrate. The local library's rare book curator Linus Talbot got a brief speaking part before he was murdered in the parking lot with a solid-glass bookend. Other than the murder, the party was a success.

By now Quinn was dating a police detective, which helped with her Marpleing. After much to-ing and fro-ing, the climax came when Quinn was trapped with the killer, who was wielding a cast-iron skillet and knew how to use it.

Saved at the last second though. Talbot had caught the killer stealing rare manuscripts from the library, hence him being checked out.

VERSE AND VENGEANCE (2019) by Amanda Flower was a novel in a cozy series about Violet Waverly of Cascade Springs, New York, in the Niagara wine country. She operated the Charming Books with the assistance of her Grandma Daisy. The store had some sort of magical influence pervading it.

The village was in a financial pickle. Daisy had just become the new mayor. As a fund raiser, she organized a bike race called Tour de Cascade. Joel Redding, a private investigator, had been lurking about, watching the bookstore. He wouldn't say why when Violet challenged him.

When Redding was murdered as a competitor during the bike race, Violet became the prime suspect. She began Marpleing. The bookstore, enchanted as it was, left Walt Whitman's poetry lying about as a clue. Emerson the bookstore cat stalked about doing his part, mostly obstruction.

A MacGuffin appeared near the end, a handwritten letter from Abraham Lincoln to Walt Whitman. That proved to be the turning point. The village secretary wanted the letter to augment her pension and killed those who got in her way. The final confrontation was in a dark basement where Violet stymied the murderer with a well-thrown half-brick.

CRIMES AND COVERS (2022) began with the marriage of Violet Waverly and the village police chief David Rainwater. The month was December but the Niagara River hadn't frozen over yet. That mattered because a woman's body floated by in the water, adjacent to the wedding reception on the river bank.

Policemen and Miss Marples are always on duty, so the happy couple were on the job immediately. Violet recognized the deceased as someone who had been at her bookstore two days before. She had offered for sale a first edition of Henry David Thoreau's book WALDEN.

The search began for the murderer and the book. Along the way, Violet met thieves and a woman who believed she was a descendant of Thoreau. (He and his three siblings all died childless; their line is extinct.)

There was a standard denouement, that is, a final confrontation plus a last-second rescue by police, in this case, her new husband.

Roman A Clef Bookselling.

V.M. Burns wrote a cozy series about Samantha Washington and her grandmother Nana Jo of North Harbor, Michigan. Samantha operated a bookstore specializing in mysteries. Specifically stated was that North Harbor was a rural backwater village with little tourist trade. Presumably the bookstore relied on Internet sales.

As events occurred in her life, Samantha wrote them as manor house mystery novels. The installments were interpolated into the books as parallel plots, and as a psychoanalytic guide to Samantha.

A TOURIST'S GUIDE TO MURDER (2021) was the sixth novel. Samantha was in England, ostensibly on a mystery book lovers tour (Baker Street, etcetera) and to meet a publisher who was offering a contract.

It must be said honestly that the trip would also spread out the death toll that every Miss Marple or Jessica Fletcher inflicts on her home village. North Harbor needed a respite, whereas London, England, would barely notice a few more murders.

The tour group, who should have been aware of what happens when Miss Marple is invited, lost two of its members to murder. Suspicion was thrown about like rock salt on an icy road.

The culprit was trying to speed up her inheritance. This time Miss Marple wasn't the only one held at gunpoint. The murderer figured she could only hang once, so she tried to wipe out the entire tour group by staging a coach accident.

KILLER WORDS (2021) was the seventh novel in the series. The action began when a Deppity Dawg named Bradley Pitt punched out mayoral candidate John Cloverton. John's wife Mildred was previously Pitt's wife. The bad blood between the two men went back years. Pitt's life went from bad to worse when Cloverton was murdered.

Nana Jo had been a school teacher and Pitt one of her students. She and Samantha found themselves sleuthing on his behalf. The bookstore didn't do that much walk-in business, so Samantha had plenty of time on her hands when she wasn't writing her next novel.

Samantha’s first novel was about to be published. She was already working on a sequel when not sleuthing. As per standard cozy practice, Samantha got herself trapped by the killer at gunpoint. The murderer was a woman scorned and not a little insane. With a single bound, etcetera, and Samantha had the final chapter for her next novel.

Stand Scottish Bookstores As They Did?

SCONES AND SCOUNDRELS (2018) by Molly MacRae was part of a cosy series set in Inversgail, on the west coast of Scotland. Janet Marsh operated the Yon Bonny Books shop and tea room, and did amateur sleuthing on the side.

Daphne Wood, a bestselling author and born in Inversgail, returned home after three decades of living in the Canadian woods. She was writer-in-residence for the local school system. When an American tourist was murdered nearby, Wood asked Marsh to investigate in her capacity as the resident Miss Marple.

Wood also began sleuthing but died of a poisoned scone from the tea room. This meant Marsh had to investigate two murders, the second one to clear her name and that of the tea room. A third death was apparently the suicide of the murderer. There were still 50 pages left in the novel, so the case couldn’t be that simple.

The finish was the standard gunpoint confrontation. The killer was a psychopath who liked to manipulate people and watch the results. Every so often he spiced up the action with a murder.

THISTLES AND THIEVES (2020) was the next novel in the series. Janet Marsh was bicycling in yon bonny glens outside Inversgail when she found the body of Malcolm Murray. He was apparently the victim of a hit-and-run driver. A few days later she visited the house of Malcolm’s brother Gerald and found him stabbed to death.

At this point, the reader may wonder why the villagers didn’t band together and run Marsh out of town. Had none of them ever heard of Miss Marple? How many more villagers must die before the truth was recognized? Notwithstanding that, the casualty toll steadily increased.

But back to the plot. Someone left a box of rare first editions on the doorstep of Yon Bonnie Books, with a note saying to look after them. That created

another mystery to be sorted. The culprit was a psychotic acting out on delusions from decades ago. The rare books had their part, one of which was a zhen xian bao. I had to look up that one on Google.

LITTLE BLACK BOOK (2021) by Kate Carlisle (pseudonym of Kathleen Beaver) was a novel in a cozy series about Brooklyn Wainwright, a book restorer in San Francisco. Someone in Scotland mailed her a rare book but there was no return address.

The next day a friend arrived and said the book was from her aunt in Scotland. The book had some kind of coded message, indicating trouble in the glens. There was also trouble in San Francisco, as dead bodies with connections to the book kept appearing.

Brooklyn and company decamped to Loch Ness to snoop about castles, secret passages, a treasure hunt, the works. Coded messages in books led to bell towers and underground hideouts. Two knife fights later, the culprits were captured. They were disputing an inheritance, castle included, and Auntie was in the way.

Uncozy Bookstores.

DEATH IN A BOOKSTORE (2010) by Augusto De Angelis was an English translation of a 1936 novel in Italian. The author (1888-1944) was beaten to death by Fascists. Mussolini had banned mystery novels set in Italy because they implied that Italy was not a perfect society. The murder of a mystery novelist seemed to close the circle.

But to the novel, a noir set in Italy with flashes of black comedy. Senator Magni was murdered during the night in a bookstore. The staff reported that a rare book had gone missing. Why the corpse was there, no one could say.

So began the police procedural, the plodding work of questioning people who didn’t want to be questioned. The deceased had been involved in an occult group and, more fatally, with a married woman.

The cuckolded husband lured Magni into the bookstore with a promise of a rare pornographic book. When Magni casually remarked that all women were whores, he signed his own death warrant. The angry husband killed him and then took the book as a trophy.

BEHIND THE CREAKING DOOR

by Dale Speirs

INNER SANCTUM MYSTERIES was an old-time radio mystery anthology series that aired from 1941 to 1952. These and other episodes are available as free mp3s from www.otrr.org/OTRRLibrary. The host was a smarmy man who liked to make ghoulish puns. Each episode opened with the sound of a door slowly creaking open, a sound so distinctive that the network trademarked it..

“Dead To Rights” was written by Sigmund Miller and aired on 1945-05-22. Lou and Dorothy Dunn learned that the elderly bachelor living in the apartment above them had \$20,000 in cash. They decided to stage a suicide by leaving the gas on while he slept.

The landlady Mrs Scully interfered and tripped them up. Dorothy had grabbed half the cash. An alarm was raised when the body was discovered. The Dunns panicked and fled when no one pursued. Lou went to pieces.

Dorothy braced him up. They took the subway and got off at the next station. They hid their cash at the platform. Their paranoia was realized when a policeman followed them into a building. They fled and fell down a 15-storey elevator shaft to their deaths.

The policeman telephoned his report to the station. He said he had recognized the Dunns after handling the gas suicide earlier that night. He thought it unusual to have three suicides in one night from the same place.

“The Last Story” was written by Christopher Mayo and aired on 1945-09-12. The episode was set in Flounder Cove, Maine, but long before Jessica Fletcher, so it’s not a cozy.

Tony Mews was sent by his big-city newspaper to the village to get a story about fishermen. One wonders about the editorial judgement but that wasn’t in the plot. As Mews strolled past a churchyard cemetery, he heard a young woman sobbing over her mother’s grave and begging forgiveness for murder.

Mews introduced himself. Rita Shermet, as she introduced herself, said her mother died when she was born. Her eyes were pure yellow, the same as her mother.

Later the local Deppity Dawg told Mews that Rita had been born in prison where her mother had been serving a life sentence for murder. Mews provided the idiot in the idiot plot by falling love in with her and trying to reform her.

Her uncle was murdered that night with a harpoon. Mamie Hathaway killed him for his money and hoped to blame it on Shermet. Alas, the man had spent all his money, so Hathaway wasn’t going to get his loot. She would, however, get to sit in the electric chair.

Shermet took the train to New York City from fear she would be blamed. Mews followed and eventually found her. Assorted alarms followed and she revealed herself to be a psychological mess.

Nonetheless he wooed her. She was under the influence of her psychiatrist Dr Donald White, so Mews became a murderer. He then married her and they honeymooned at Flounder Cove. Their first night was marred by her sleepwalking and attempting to kill him.

Mews decided the only way to resolve the problem was to shoot her dead as she slept, type up a confession, and then jump off a nearby cliff. Everybody died but the cat.

“The Confession” was written by Michael Sklar and Richard Manoff, and aired on 1946-01-22. A dying bank robber James Kirk (no ‘T’) stumbled into a pharmacy. He had been wounded in a bank robbery and offered \$1,000 for medical aid. There was \$78,000 in loot.

The pharmacist Alex Sturges was impoverished, so he let Kirk die. He and his young wife Lenora disposed of the robber off a pier. She had constantly complained about lack of money but suddenly had an attack of conscience.

A man calling himself an insurance investigator was waiting for Alex in the pharmacy the next morning. He had followed the trail of blood to the pharmacy. Blackmail came next.

Alex slid down the slope. One step led to another and he descended into hell. Lenora said she was leaving him, to which he choked her to death in a fit of anger. The insurance investigator was next but in the struggle, Alex was shot and mortally wounded. “*Smoked Sturges*” said the announcer as Alex died.

“I Walk In The Night” was written by Emile Tepperman and aired on 1946-02-26. Peter Lang’s wife Myrna was murdered by an unknown intruder in her bedroom. He was the obvious suspect, at least in his own mind. Separate bedrooms, public quarrels, and all that.

Phil and Henrietta Judson, next door neighbours, told police that they had seen an intruder leave. They and Lang’s employee Ted Hale had been there the previous evening. Hale was also a suspect because Myrna had property in her own right and named him in her will.

Phil was the family lawyer who took charge of the cover up. Substantial cash and bonds were missing from Lang’s office safe. Hale had been hiding in the Lang basement but was removed from the suspect list when his body was found, beaten to death.

Phil and Peter dumped the body. Peter was a gutless whimpering pile of jelly. He thought he was the murderer, who had killed while sleepwalking. He confessed all to police.

The detective told Peter not to worry as he knew who the killer was. The police arrested Phil. The twist was Henrietta and Peter were lovers who arranged the frame-up. The second twist was the detective eavesdropped on Peter and Henrietta and got them for the murders and conspiracy.

“Lady With A Plan” was written by Michael Sklar and Richard Manoff, and aired on 1946-04-09. The lady of the title was no lady but Gladys Karr, the wife of a prison warden.

She wanted a divorce but Edward wouldn’t give her one. Later, Gladys met with her boyfriend Steven Bromley, the assistant warden. The two plotted the use of a particular prisoner Buckley, who would be put near Edward to let his hatred run wild.

She snuck Buckley into the staff residence inside the prison compound. Before the plan commenced, his absence from his cell was noted and the alarm sounded. When Edward returned to the house after the chase, Buckley ambushed him and strangled him dead.

She gave Buckley the escape route out of the prison compound and told him he had two hours to get clear. Instead she waited only two minutes before

telephoning the prison control centre. Buckley managed to survive the machine gun fire and get over the wall. Gladys was now living in fear because he knew he had been betrayed.

She couldn’t stay in the residence because the new warden was incoming and needed the house. That meant she had to live outside the secure compound, and sooner rather than later Buckley would find her.

Bromley tried to calm her and put her into a safe place at a hotel room. Buckley soon found her. She fled and waited in terror in her unlit room. A man entered and in a blind panic she stabbed him to death. The victim was Bromley.

Hardly had the body bounced on the floor when Buckley entered. Jump cut to the denouement. Buckley was minutes from execution when he asked to see Gladys. When she entered, he grabbed her throat and choked her to death. As he said to the warders, he couldn’t be executed twice.

“You Could Die Laughing” was written by Michael Sklar and aired on 1946-05-07, part of the Lipton Tea sponsorship series. After the squeaking door, the host invited the listeners to enter.

He said to pay no mind to those bodies dangling from the ceiling. Some people just hang around, you know. The Lipton Tea lady Mary Bennett burred that perhaps they were waiting for tea to be served.

Elwood Fitch was the unfortunate protagonist. Three different doctors had given him a year to live unless he moved to Arizona. Back in those days, that would suggest he had tuberculosis or severe allergies, as desert air was the only known palliative back then.

While still digesting this information, he was returning home from the movies one night with his wife Katherine. They argued as he drove. He reminded her that if they moved there he would have trouble finding a job and their finances were nonexistent.

The argument came to an abrupt halt when Elwood drove through a red light. He killed a pedestrian subsequently identified as a gangster named Stenga. Fitch didn’t want to spend his last year of life in the court and prison systems. He fled the scene.

An eyewitness named Jack Chandler decided to earn some extra cash by blackmailing Fitch. A deal was struck on the doorstep of the Fitch house, \$1,000 in twenties. Elwood got it from his jacket pocket. The listener will be immediately on alert, for who carries that kind of cash so casually?

After Chandler left, Katherine wanted to know as well, since he had been telling her that he was broke. Elwood said he had lifted the cash from Stenga's jacket as he was checking for a heartbeat. The next question would be what happened when Chandler returned for more money.

Chandler returned the next day, saying he was moving in because the police were after him for murder. He basically kept them hostage. When Elwood tried to call the police, Chandler interrupted at the point of a gun. *"You've made your last mistake."*

Cue the organ crescendo and Mary Bennett fretting about Elwood's difficulties. Not to worry though. She related how just the other day she was tramping through the woods picking flowers when the skies clouded over. Fortunately she had a thermos of hot Lipton tea to warm her up and chase the clouds away. Lipton saved the day.

Not for Elwood though. Back at the plot, Chandler ripped out the phone. The doorbell rang. Chandler took Katherine into the next room and told Elwood to answer the door casual like. The man there was Police Detective Farley, asking about the hit-and-run. He was not satisfied with Elwood's answers and said he would return.

Chandler overheard the conversation. He said he had one murder rap over him and two more wouldn't matter. There was a struggle for his gun which he lost. The Fitches got back the \$1,000 from his jacket, loaded the body into their car, and headed for Arizona. Before they could dump the body, they ran out of gas.

The twist came. While refueling, the front-end attendant told them the radio news said Stenga had been mortally wounded by a gunshot when he staggered out in front of the Fitch car. The police knew who the murderer was, none other than Chandler.

Another twist. Elwood paid for the fuel with one of Stenga's \$20 bills. The attendant recognized the banknote as a counterfeit and called police, who soon tracked them down. At the police station, Elwood confessed all. The detective

said Stenga was a counterfeiter by trade. The Fitches went to trial but were acquitted. Off to sunny Arizona. *"Fooled you that time"* said the host. A happy ending for once. Mary Bennett was positively ecstatic in her final plug for Lipton Tea.

"Murder Comes To Life" was written by John Roeburt and aired on 1949-01-10. One of those amnesiac stories, where the narrator John LeBlanc agonized at great length as he slowly recovered his memory. He pieced together his life as a gangster.

Bounty hunters sought him here and there, and not with thimbles. There was a \$50,000 reward for him, dead or alive. LeBlanc survived several attempts on his life, much to the dismay of his enemies. In return, he killed them, with better success.

Everybody died in the end, including LeBlanc. Depressing, so don't listen to this episode on a rainy Sunday afternoon with nothing else to do. The host of the show tried to lighten the ending with a few quips, concluding with *"Drop in again, any old crime."*

"Only The Dead Die Twice" was a 1949 episode written by Edward Adamson and Robert Sloane. The protagonist was Johnny Bright, who drove a hearse. He didn't live up to his surname and was basically a blithering idiot. No one liked him, friend or foe, nor the listener, who will be annoyed at his cowardice.

A stranger named Vera offered Bright \$1,000 to haul away her husband Alex Craig, whom she admitted murdering. Bright took the job and went to the address. The building superintendent said Alex wasn't married, and there was no Mrs Craig. There was, however, a body.

Police Detective Baxter arrived but the body had vanished, puzzling both men. Vera showed up immediately after Baxter left, and said she hid the body in a closet. She confided she had killed Alex who was blackmailing her.

Bright panicked and tried to back out of the deal, but Vera pointed out that the superintendent and the detective had seen him, so he had to remove the body or be caught. On to the cemetery, where Baxter once again reappeared. Vera was his wife and he thought they were cheating.

She gave Bright a gun to kill Baxter, after which he then buried him. He walked back to the hearse to find Alex alive. Vera and Alex laughed at Bright. They said they were lovers who wanted a chump to do the dirty work for them. Bright ran Alex down with the hearse, then got Vera with the gun. A convoluted plot with several twists. Worth listening to once.

“Murder Off The Record”, no writer credited, aired on 1952-08-03. A more convoluted plot I’ve never heard, but it all tied up neatly at the end with twist after twist.

The story began with a drifter named Happy Dolan riding the rods into Reno, Nevada. He narrated the events, not directly to the listener but in a record store where customers could sit in a booth and cut a record with their message, which could then be mailed in a special envelope.

Dolan began by saying he had spent his last penny on a weighing machine. As they did in those days, the machine spit out a card with his weight printed on one side and a fortune on the other. The fortune read “*Danger, fortune, and marriage await you.*”

Dolan strolled out into the night, meandering along the river. He was accosted at gunpoint by a man who pushed him into the river for no apparent reason. As Dolan splashed about drowning, he was pulled out of the water by a woman named Jessie.

She told him she had a fortune card from the same weighing machine, telling her to cast her troubles on the waters if she wanted to see her future. He thanked her, then they went their separate ways.

The night was still young. He walked back into town. Along the way he spotted a wallet lying on the street and picked it up. Another man came up to him and said the wallet was his, reinforcing his claim with a gun.

Dolan was getting tired of people pointing guns at him. The man introduced himself as Simon O’Toole. He was prepared to believe Dolan wasn’t a thief, telling him a weighing machine had told him that any investment he made would be wonderfully successful.

O’Toole grubstaked Dolan to a flophouse room to clean up himself, then took him to a casino where Dolan cleaned up the table in turn. O’Toole had made Dolan sign a contract splitting all his future earnings fifty-fifty.

Dolan thought that meant casino winnings but there was more to come. Jessie showed up in the casino and convinced Dolan to marry her in a wedding chapel, not that he needed much convincing. Immediately after the ceremony she cut and ran.

O’Toole reappeared, gave him an address in Chicago, and put him on the next train. The train had just departed the station when a passenger approached Dolan, none other than the man who had pushed Dolan into the river. Call me Smith, said the man, but Dolan was fed up with him and jumped him. The two struggled on a train platform, then both fell off onto the tracks.

The gun landed between them. The injured men struggled for it and Dolan won. He shot Smith dead, dragged the body into the bushes, and then began the long walk back into Reno. By now the listeners would be thoroughly mystified but cheer up, for explanations would soon come.

Arriving back at his flophouse room, and remember this all happened in one night, Dolan found the body of Jessie. He had been a widower longer than a husband. O’Toole arrived and explained the meaning of it all.

Because Dolan had been a drifter, he hadn’t read the newspapers or seen the stories and photos of him. He had inherited a fortune from a rich uncle in Chicago and didn’t know it. Other people did, and recognized him.

Smith, real name Michael Dolan, was a distant cousin who was next in line for the fortune. That explained him trying to kill Happy Dolan. Jessie’s approach was to become a widow very soon and inherit from her short-lived husband. O’Toole would use his contract to claim half the fortune, since it was future earnings.

Dolan finished his recording but the store manager had overheard him and called police. The evidence couldn’t have been better, a voluntary confession on vinyl. The good news was that Dolan could probably escape a murder charge by reason of self defence. The bad news was that there was a twist in his uncle’s will and he wouldn’t get the fortune, nor O’Toole his half.

SEEN IN THE LITERATURE

Planets.

Brown, G., and H. Rein (2022) **On the long-term stability of the Solar system in the presence of weak perturbations from stellar flybys.** MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY 515:doi.org/10.1093/mnras/stac1763

Authors’ abstract: *The architecture and evolution of planetary systems are shaped in part by stellar flybys. Within this context, we look at stellar encounters that are too weak to immediately destabilize a planetary system but are nevertheless strong enough to measurably perturb the system’s dynamical state.*

We estimate the strength of such perturbations on secularly evolving systems using a simple analytic model and confirm those estimates with direct N-body simulations. We then run long-term integrations and show that even small perturbations from stellar flybys can influence the stability of planetary systems over their lifetime.

We find that small perturbations to the outer planets’ orbits are transferred between planets, increasing the likelihood that the inner planetary system will destabilize.

Specifically, our results for the Solar system show that relative perturbations to Neptune’s semimajor axis of order 0.1 per cent are strong enough to increase the probability of destabilizing the Solar system within 5 gigayears by one order of magnitude.

Cadieux, C., et al (2022) **TOI-1452 b: SPIRou and TESS reveal a super-Earth in a temperate orbit transiting an M4 dwarf.** ASTRONOMICAL JOURNAL 164:doi.org/10.3847/1538-3881/ac7cea (available as a free pdf)

Authors’ abstract: *Here, we report the discovery of TOI-1452b, a transiting super-Earth in an 11.1 day temperate orbit around the primary member of a nearby visual-binary M dwarf.*

The transits were first detected by the Transiting Exoplanet Survey Satellite, then successfully isolated between the two companions with ground-based photometry from the Observatoire du Mont-Mégantic and MuSCAT3.

The planetary nature of TOI-1452b was established through high-precision velocimetry with the near-infrared SPIRou spectropolarimeter as part of the ongoing SPIRou Legacy Survey. The measured planetary mass is suggestive of a rocky core surrounded by a volatile-rich envelope.

More quantitatively, the mass and radius of TOI-1452b, combined with the stellar abundance of refractory elements (Fe, Mg, and Si) measured by SPIRou, is consistent with a core-mass fraction of $18\% \pm 6\%$ and a water-mass fraction of 22 (+21% and -13%).

The water world candidate TOI-1452b is a prime target for future atmospheric characterization with JWST, featuring a transmission spectroscopy metric similar to other well-known temperate small planets such as LHS 1140b and K2-18 b. The system is located near Webb’s northern continuous viewing zone, implying that it can be followed at almost any moment of the year.

Lagain, A., et al (2022) **Early crustal processes revealed by the ejection site of the oldest Martian meteorite.** NATURE COMMUNICATIONS 13:doi.org/10.1038/s41467-022-31444-8 (available as a free pdf)

Authors’ abstract: *The formation and differentiation of the crust of Mars in the first tens of millions of years after its accretion can only be deciphered from incredibly limited records. The Martian breccia NWA 7034 and its paired stones is one of them.*

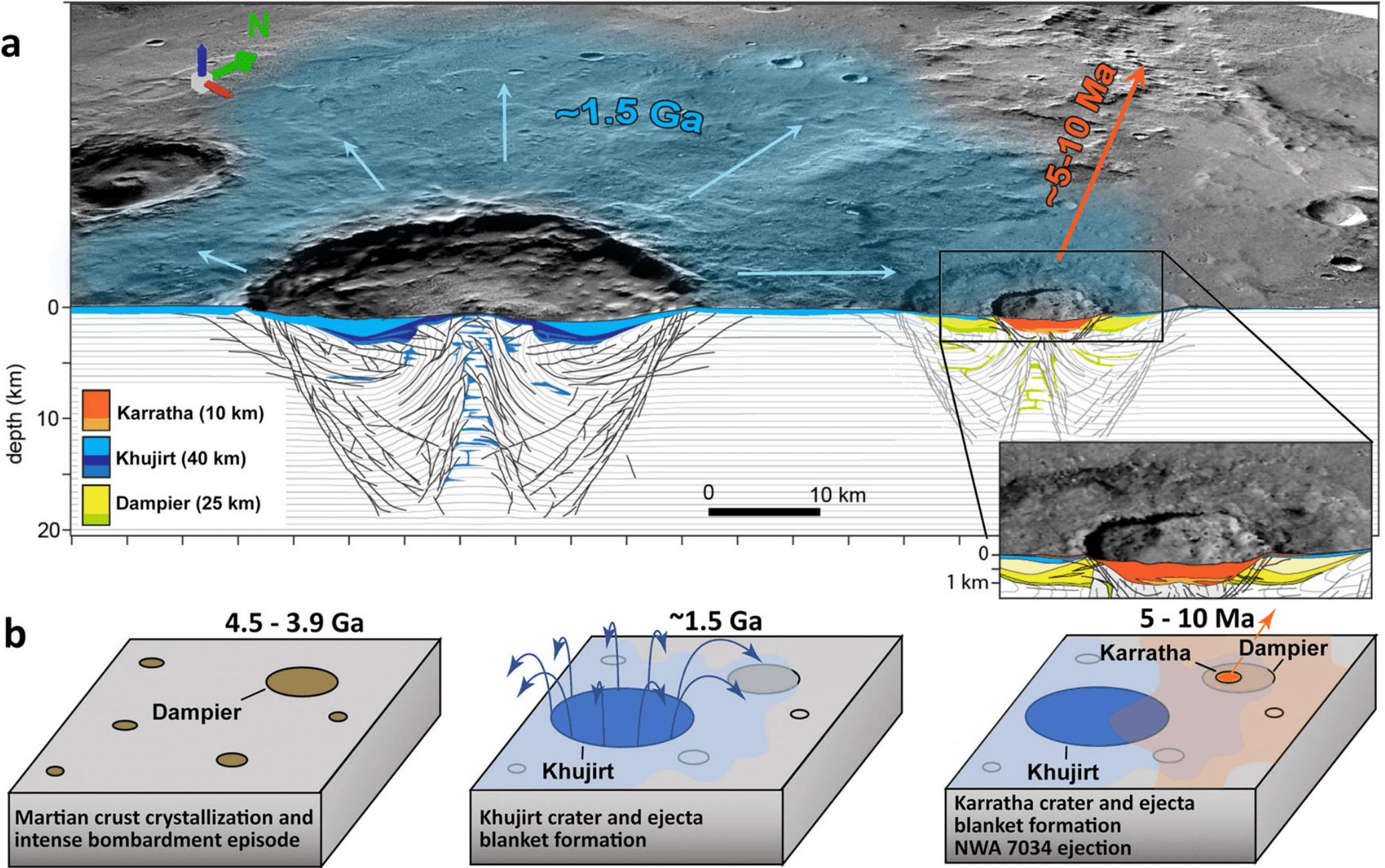
This meteorite contains the oldest Martian igneous material ever dated: ~4.5 gigayears old. However, its source and geological context have so far remained unknown. Here, we show that the meteorite was ejected 5 to 10 megayears ago from the north-east of the Terra Cimmeria-Sirenum province, in the southern hemisphere of Mars.

More specifically, the breccia belongs to the ejecta deposits of the Khujirt crater formed 1.5 Ga ago, and it was ejected as a result of the formation of the Karratha crater 5 to 10 Ma ago.

Our findings demonstrate that the Terra Cimmeria-Sirenum province is a relic of the differentiated primordial Martian crust, formed shortly after the accretion of the planet, and that it constitutes a unique record of early crustal processes.

This province is an ideal landing site for future missions aiming to unravel the first tens of millions of years of the history of Mars and, by extension, of all terrestrial planets, including the Earth.

[Images are from this paper.]



Aliens.

Suphapolthaworn, S., et al (2022) **Earth through the looking glass: how frequently are we detected by other civilizations through photometric microlensing?** MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY 515:doi.org/10.1093/mnras/stac1855

Authors’ abstract: *Microlensing is proving to be one of the best techniques to detect distant, low-mass planets around the most common stars in the Galaxy. In principle, Earth’s microlensing signal could offer the chance for other technological civilizations to find the Earth across Galactic distances.*

We consider the photometric microlensing signal of Earth to other potential technological civilizations and dub the regions of our Galaxy from which Earth’s photometric microlensing signal is most readily observable as the ‘Earth microlensing zone’ (EMZ).

The EMZ can be thought of as the microlensing analogue of the Earth Transit Zone (ETZ) from where observers see Earth transit the Sun. Just as for the ETZ, the EMZ could represent a game-theoretic Schelling point for targeted searches for extra-terrestrial intelligence (SETI).

To compute the EMZ, we use the Gaia DR2 catalogue with magnitude $G < 20$ to generate Earth microlensing probability and detection rate maps to other observers. While our Solar system is a multiplanet system, we show that Earth’s photometric microlensing signature is almost always well approximated by a binary lens assumption.

We then show that the Earth is in fact well hidden to observers with technology comparable to our own. Specifically, even if observers are located around every Gaia DR2 star with $G < 20$, we expect photometric microlensing signatures from the Earth to be observable on average only tens per year by any of them.

In addition, the EMZs overlap with the ETZ near the Galactic Centres which could be the main areas for future SETI searches.

Kipping, D., and R. Gray (2022) **Could the ‘Wow’ signal have originated from a stochastic repeating beacon?** MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY 515:doi.org/10.1093/mnras/stac1807

Authors’ abstract: *The famous ‘Wow’ signal detected in 1977 remains arguably the most compelling SETI signal ever found. The original Big Ear data require that the signal turned on/off over the span of ~ 3 minutes (time difference between the dual antennae), yet persisted for 72 seconds (duration of a single beam sweep).*

Combined with the substantial and negative follow-up efforts, these observations limit the allowed range of signal repeat schedules, to the extent that one might question the credibility of the signal itself. Previous work has largely excluded the hypothesis of a strictly periodic repeating source, for periods shorter than 40 hours.

However, a non-periodic, stochastic repeater remains largely unexplored. Here, we employ a likelihood emulator using the Big Ear observing logs to infer the probable signal properties under this hypothesis.

We find that the maximum a-posteriori solution has a likelihood of 32.3%, highly compatible with the Big Ear data, with a broad 2sigma credible interval of signal duration $72 \text{ sec} < T < 77 \text{ min}$ and mean repeat rate $0.043 \text{ days}^{-1} < \lambda < 59.8 \text{ days}^{-1}$.

We extend our analysis to include 192 hours of subsequent observations from META, Hobart, and ATA, which drops the peak likelihood to 1.78%, and thus in tension with the available data at the 2.4sigma level.

Accordingly, the Wow signal cannot be excluded as a stochastic repeater with available data, and we estimate that 62 days of accumulated additional observations would be necessary to surpass 3sigma confidence.

Extinctions.

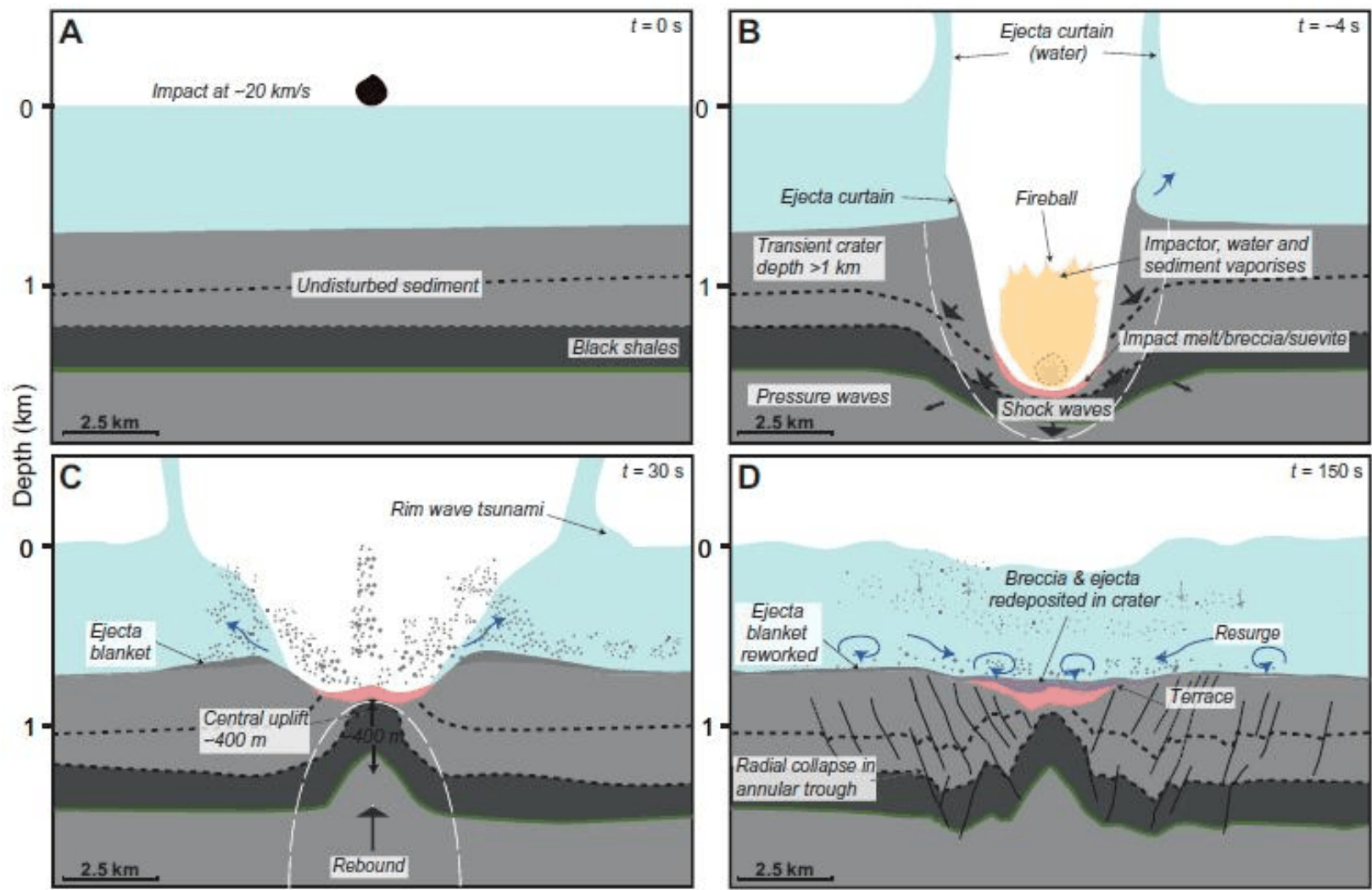
Nicholson, U., et al (2022) **The Nadir Crater offshore West Africa: A candidate Cretaceous–Paleogene impact structure.** SCIENCE ADVANCES 8:doi.org/10.1126/sciadv.abn3096 (available as a free pdf)

[Was the end-Cretaceous extinction caused by more than one asteroid impact?]

Authors’ abstract: *Evidence of marine target impacts, binary impact craters, or impact clusters are rare on Earth. Seismic reflection data from the Guinea Plateau, West Africa, reveal a ~8.5-km-wide structure buried below ~300 to 400 metres of Paleogene sediment with characteristics consistent with a complex impact crater.*

These include an elevated rim above a terraced crater floor, a pronounced central uplift, and extensive subsurface deformation. Numerical simulations of crater formation indicate a marine target (~800-metre water depth) impact of a ~400-metre asteroid, resulting in a train of large tsunami waves and the potential release of substantial quantities of greenhouse gases from shallow buried black shale deposits.

Our stratigraphic framework suggests that the crater formed at or near the Cretaceous–Paleogene boundary (~66 million years ago), approximately the same age as the Chicxulub impact crater. We hypothesize that this formed as part of a closely timed impact cluster or by breakup of a common parent asteroid.



[Images are from this paper.]

Geology.

Smittarello, D, et al (2022) **Precursor-free eruption triggered by edifice rupture at Nyiragongo volcano.** NATURE 609:doi.org/10.1038/s41586-022-05047-8 (available as a free pdf)

Authors’ abstract: *Classical mechanisms of volcanic eruptions mostly involve pressure buildup and magma ascent towards the surface. Such processes produce geophysical and geochemical signals that may be detected and interpreted as eruption precursors.*

On 22 May 2021, Mount Nyiragongo (Democratic Republic of the Congo), an open-vent volcano with a persistent lava lake perched within its summit crater, shook up this interpretation by producing an approximately six-hour-long flank eruption without apparent precursors, followed, rather than preceded, by lateral magma motion into the crust.

Here we show that this reversed sequence was most likely initiated by a rupture of the edifice, producing deadly lava flows and triggering a voluminous 25-km-long dyke intrusion.

The dyke propagated southwards at very shallow depth (less than 500 metres) underneath the cities of Goma (Democratic Republic of the Congo) and Gisenyi (Rwanda), as well as Lake Kivu.

An ‘open-vent’ volcano is a system in which a conduit connected to a magma reservoir allows gas and/or magma to reach the ground surface. This usually limits pressure buildup in the plumbing system, favouring persistent effusive or strombolian eruptive activity.

In such a context, detecting geophysical precursors of an impending eruption is complicated by the presence of background signals related to that persistent activity. Located in the western branch of the East African Rift, in the Congolese part of the Virunga Volcanic Province, Mount Nyiragongo and its neighbour, Nyamulagira, are amongst the most active volcanoes on Earth.

Nyiragongo (3,470 metres above sea level) is a typical open system: its summit hosts a large (200 to 250 metres wide), highly fluid lava lake that has been characteristic of its eruptive activity since at least 1928.

Nyiragongo represents a direct threat to the nearby cities of Goma (with more than 1 million inhabitants) in the Democratic Republic of the Congo (DR Congo) and Gisenyi (with around 110,000 inhabitants) in Rwanda, located at 1,500 metres above sea level.

Paleobiology.

Iwama, R.E., et al (2022) **Leech anticoagulants are ancestral and likely to be multifunctional.** ZOOLOGICAL JOURNAL OF THE LINNEAN SOCIETY 196:doi.org/10.1093/zoolinlean/zlab126

Authors’ abstract: *Bloodfeeding leeches have powerful anticoagulants that allow them to feed for extended periods. However, many leech species are predatory rather than bloodfeeding.*

It is not known whether they express these proteins and whether the proteins are co-opted for other purposes. Little is known about salivary secretions of the sister groups of leeches, where blood is not part of the diet.

We screened the transcriptomes of four non-bloodfeeding leeches and four leech relatives to identify major lineages of anticoagulant genes, helping to determine their evolutionary origin and maintenance. We estimated selection regimes that are expected after a change in feeding behaviour.

We found widespread presence of putative anticoagulants, although our results also indicate that several of these are members of multicopy gene families.

Our analyses suggest that homologues to leech anticoagulants were already present before the origin of bloodfeeding in leeches and that negative selection is the major driver of evolutionary rates even in non-bloodfeeding taxa.

These results point to the retention of the original function by these molecules in non-bloodfeeding species. Ultimately, the proteins might not be involved in bloodfeeding or it seems likely that their putative pleiotropic effects are of great importance.

[Exuviae are the shed skins or plates of animals that molt.]

Authors’ abstract: *Trilobite exuviae record the development of individual trilobites and their molting process and can also contain information on their behavior.*

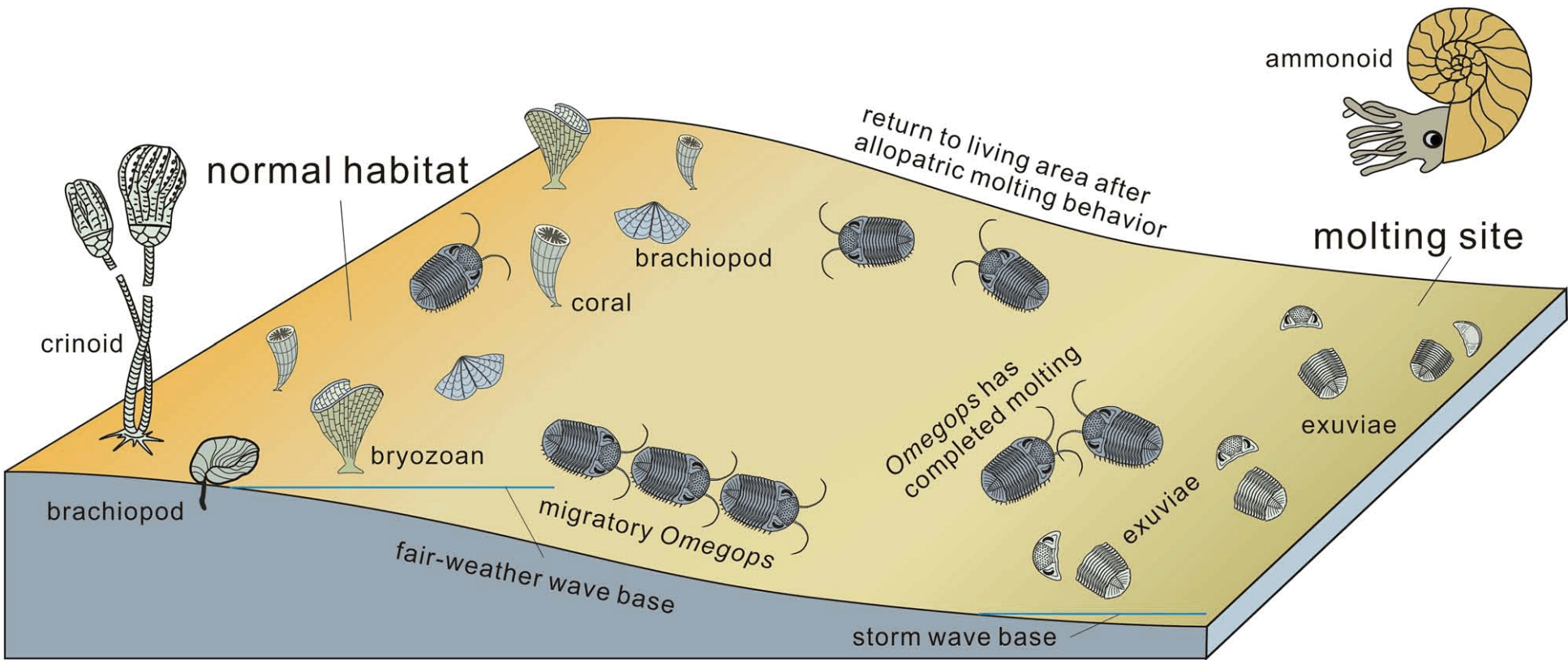
The silt- to fine-grained tuffites of the middle part of the Middle Member of the Upper Devonian Hongguleleng Formation in western Junggar contains abundant phacopidae trilobite, specifically Omegops sp. A, almost all of which are exuviae.

Based on the preservation pattern, burial environment, and set of organisms co-occurring with Omegops sp. A, we speculate that the environment represented by the middle part of the Middle Member of the Hongguleleng Formation served only as the molting site of Omegops sp. A, and that their primary habitat was elsewhere.

Omegops sp. A would have thus travelled to deep-water to molt. The reasons for allopatric molting may have included avoiding predators and interference from competing organisms during molting.

This implies that the migratory behavior of some modern arthropods may have existed since at least the Devonian. This behavior suggests that Late Devonian phacopidae trilobites may have migrated to deeper water expanded their ecological domain as a survival strategy in response to unfavorable ecological environment.

[Image is from this paper.]



Cooper, J.A., et al (2022) **The extinct shark *Otodus megalodon* was a transoceanic superpredator: Inferences from 3D modeling.** SCIENCE ADVANCES 8:doi.org/10.1126/sciadv.abm9424 (available as a free pdf)

Authors’ abstract: *Although shark teeth are abundant in the fossil record, their bodies are rarely preserved. Thus, our understanding of the anatomy of the extinct Otodus megalodon remains rudimentary.*

We used an exceptionally well-preserved fossil to create the first three-dimensional model of the body of this giant shark and used it to infer its movement and feeding ecology.

We estimate that an adult O. megalodon could cruise at faster absolute speeds than any shark species today and fully consume prey the size of modern apex predators.

A dietary preference for large prey potentially enabled O. megalodon to minimize competition and provided a constant source of energy to fuel prolonged migrations without further feeding.

Together, our results suggest that O. megalodon played an important ecological role as a transoceanic superpredator. Hence, its extinction likely had large impacts on global nutrient transfer and trophic food webs.

Weaver, L.N., et al (2022) **Multituberculate mammals show evidence of a life history strategy similar to that of placentals, not marsupials.** AMERICAN NATURALIST 200:383-400

[There were three major groups of mammals: placentals, marsupials, and multituberculates. The latter died out at the end of the Eocene, and marsupials have dwindled down to a few species. Placentals are the dominant form of mammals today.]

Authors’ abstract: *The remarkable evolutionary success of placental mammals has been partly attributed to their reproductive strategy of prolonged gestation and birthing of relatively precocial, quickly weaned neonates.*

Although this strategy was conventionally considered derived relative to that of marsupials with highly altricial neonates and long lactation periods, mounting

evidence has challenged this view. Until now the fossil record has been relatively silent on this debate.

Here we find that proportions of different bone tissue microstructures in the femoral cortices of small extant marsupials and placentals correlate with length of lactation period, allowing us to apply this histological correlate of reproductive strategies to Late Cretaceous and Paleocene members of Multituberculata, an extinct mammalian clade that is phylogenetically stemward of Theria.

Multituberculate bone histology closely resembles that of placentals, suggesting that they had similar life history strategies. A stem-therian clade exhibiting evidence of placental-like life histories supports the hypothesis that intense maternal fetal contact characteristic of placentals is ancestral for therians.

Alternatively, multituberculates and placentals may have independently evolved prolonged gestation and abbreviated lactation periods. Our results challenge the hypothesis that the rise of placental mammals was driven by unique life history innovations and shed new light on early mammalian diversification.

Ecology.

Gittins, D.A., et al (2022) **Geological processes mediate a microbial dispersal loop in the deep biosphere.** SCIENCE ADVANCES 8:doi.org/10.1126/sciadv.abn3485 (available as a free pdf)

Authors’ abstract: *The deep biosphere is the largest microbial habitat on Earth and features abundant bacterial endospores. Whereas dormancy and survival at theoretical energy minima are hallmarks of microbial physiology in the subsurface, ecological processes such as dispersal and selection in the deep biosphere remain poorly understood.*

We investigated the biogeography of dispersing bacteria in the deep sea where upward hydrocarbon seepage was confirmed by acoustic imagery and geochemistry.

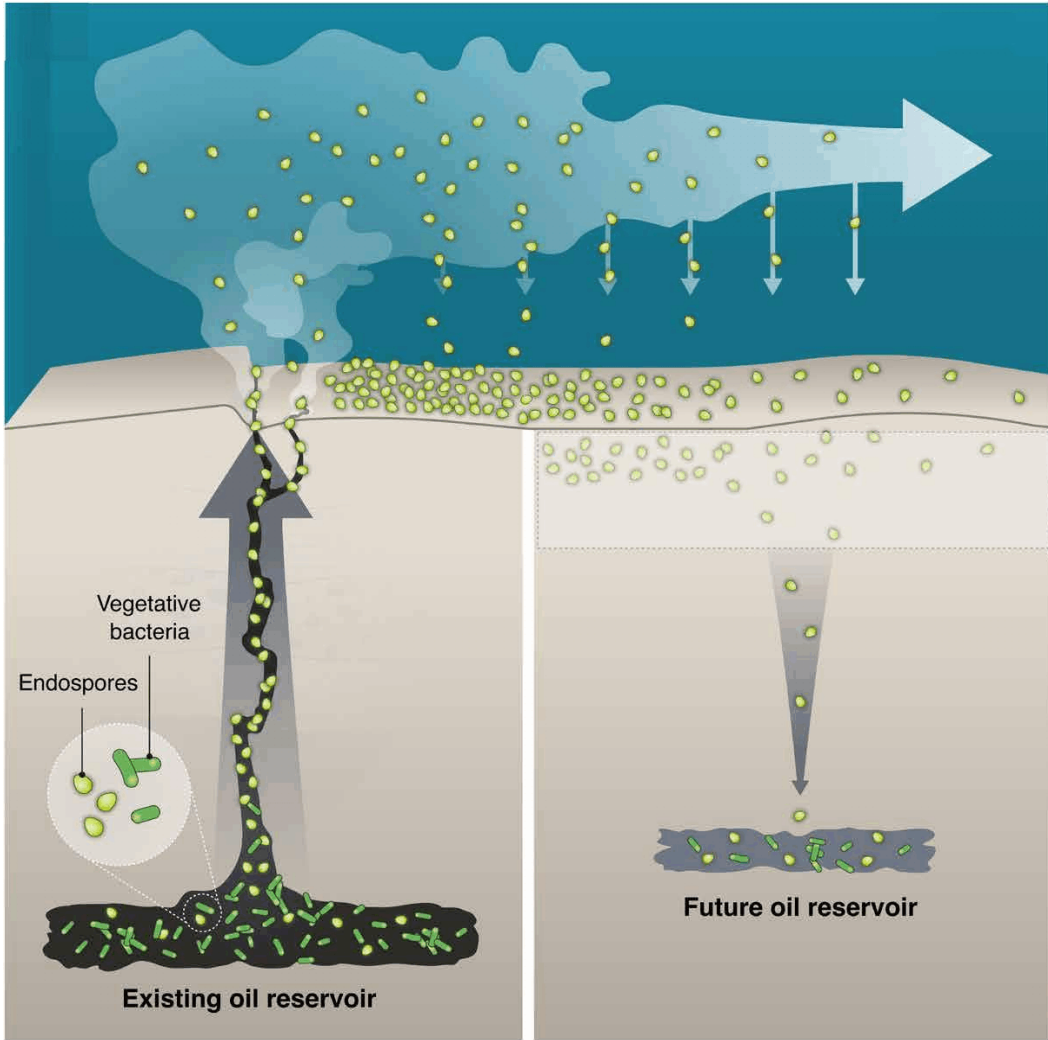
Thermophilic endospores in the permanently cold seabed correlated with underlying seep conduits reveal geofluid-facilitated cell migration pathways originating in deep petroleum-bearing sediments.

Endospore genomes highlight adaptations to life in anoxic petroleum systems and bear close resemblance to oil reservoir microbiomes globally.

Upon transport out of the subsurface, viable thermophilic endospores re-enter the geosphere by sediment burial, enabling germination and environmental selection at depth where new petroleum systems establish. This microbial dispersal loop circulates living biomass in and out of the deep biosphere.

Bacterial endospores are equipped to survive dispersal over long distances and time scales, with reports of viable spores ~2.5 km beneath the seafloor suggesting journeys lasting millions of years.

[Image is from this paper.]



Alves, J.M., et al (2022) **A single introduction of wild rabbits triggered the biological invasion of Australia.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 119:doi.org/10.1073/pnas.2122734119

Authors' abstract: *The colonization of Australia by the European rabbit is one of the most iconic and devastating biological invasions in recorded history.*

Here, we show that despite numerous introductions over a 70-year period, this invasion was triggered by a single release of a few animals that spread thousands of kilometers across the continent.

We found genetic support for historical accounts that these were English rabbits imported in 1859 by a settler named Thomas Austin and traced the origin of the invasive population back to his birthplace in England.

We also find evidence of additional introductions that established local populations but have not spread geographically.

Combining genomic and historical data we show that, contrary to the earlier introductions, which consisted mostly of domestic animals, the invasive rabbits had wild ancestry. In New Zealand and Tasmania, rabbits also became a pest several decades after being introduced.

We argue that the common denominator of these invasions was the arrival of a new genotype that was better adapted to the natural environment.

These findings demonstrate how the genetic composition of invasive individuals can determine the success of an introduction and provide a mechanism by which multiple introductions can be required for a biological invasion.

Climate Change.

Simões, T.R., et al (2022) **Successive climate crises in the deep past drove the early evolution and radiation of reptiles.** SCIENCE ADVANCES 8:doi.org/10.1126/sciadv.abq1898 (available as a free pdf)

[Climate change is nothing new and has constantly altered the evolution of species on Earth. The genus *Homo* evolved during a massive drought in eastern Africa. Geological movements have altered climate far more often and in greater magnitude than any human agency ever will.]

[The end-Permian extinction 251 megayears ago was the worst mass extinction in Earth’s history. 97% of species were killed off by extreme heat generated by flood magmas burying continents under lava flows kilometres deep.]

Authors’ abstract: *Here, we provide a new time tree for the early evolution of reptiles and their closest relatives to reconstruct how the Permian-Triassic climatic crises shaped their long-term evolutionary trajectory.*

By combining rates of phenotypic evolution, mode of selection, body size, and global temperature data, we reveal an intimate association between reptile evolutionary dynamics and climate change in the deep past.

We show that the origin and phenotypic radiation of reptiles was not solely driven by ecological opportunity following the end-Permian extinction as previously thought but also the result of multiple adaptive responses to climatic shifts spanning 57 million years.

Xia, L., et al (2022) **Global food insecurity and famine from reduced crop, marine fishery, and livestock production due to climate disruption from nuclear war soot injection.** NATURE FOOD 3:doi.org/10.1038/s43016-022-00573-0 (available as a free pdf)

Authors’ abstract: *Atmospheric soot loadings from nuclear weapon detonation would cause disruptions to the Earth’s climate, limiting terrestrial and aquatic food production. Here, we use climate, crop and fishery models to estimate the impacts arising from six scenarios of stratospheric soot injection, predicting the total food calories available in each nation post-war after stored food is consumed.*

In quantifying impacts away from target areas, we demonstrate that soot injections larger than 5 teragrammes would lead to mass food shortages, and livestock and aquatic food production would be unable to compensate for reduced crop output, in almost all countries. Adaptation measures such as food waste reduction would have limited impact on increasing available calories.

We estimate more than 2 billion people could die from nuclear war between India and Pakistan, and more than 5 billion could die from a war between the United States and Russia, underlining the importance of global cooperation in preventing nuclear war.

For a nuclear war, the global cooling would depend on the yields of the weapons, the number of weapons and the targets, among other atmospheric and geographic factors. In a nuclear war, bombs targeted on cities and industrial areas would start firestorms, injecting large amounts of soot into the upper atmosphere, which would spread globally and rapidly cool the planet.

Such soot loadings would cause decadal disruptions in Earth’s climate, which would impact food production systems on land and in the oceans. In the 1980s, there were investigations of nuclear winter impacts on global agricultural production and food availability for 15 nations, but new information now allows us to update those estimates.

Several studies have recently analysed changes of major grain crops and marine wild catch fisheries for different scenarios of regional nuclear war using climate, crop and fishery models. A war between India and Pakistan, which recently are accumulating more nuclear weapons with higher yield, could produce a stratospheric loading of 5 to 47 Tg of soot.

A war between the United States, its allies and Russia, who possess more than 90% of the global nuclear arsenal, could produce more than 150 Tg of soot and a nuclear winter. While amounts of soot injection into the stratosphere from the use of fewer nuclear weapons would have smaller global impacts, once a nuclear war starts, it may be very difficult to limit escalation.

Recent catastrophic forest fires in Canada in 2017-19 and Australia in 2019 and 2020 produced 0.3 to 1 Tg of smoke (0.006 to 0.02 Tg soot), which was subsequently heated by sunlight and lofted high in the stratosphere. The smoke was transported around the world and lasted for many months.

This adds confidence to our simulations that predict the same process would occur after nuclear war. Nuclear war would primarily contaminate soil and water close to where nuclear weapons were used. Soot disperses globally once it reaches the upper atmosphere; thus, our results are globally relevant regardless of the warring nations.

Xie, Y., and Z. Niu (2022) Late Eocene onset of the East Asian Monsoon in the Qingjiang Basin of Central Jiangxi Province (Southeast China) revealed by a major vegetation transition from desert to forest. PALAEOGEOGRAPHY, PALAEOCLIMATOLOGY, PALAEOECOLOGY 602:doi.org/10.1016/j.palaeo.2022.111179

[Maps are from this paper. At left, India had broken away from Africa and was rafting north to Asia on a breakaway tectonic plate. India would collide with Asia, closing off the seaway and raising up the Himalayan mountains. That altered the flow of moist air from the east and changed the climate of southern China.]

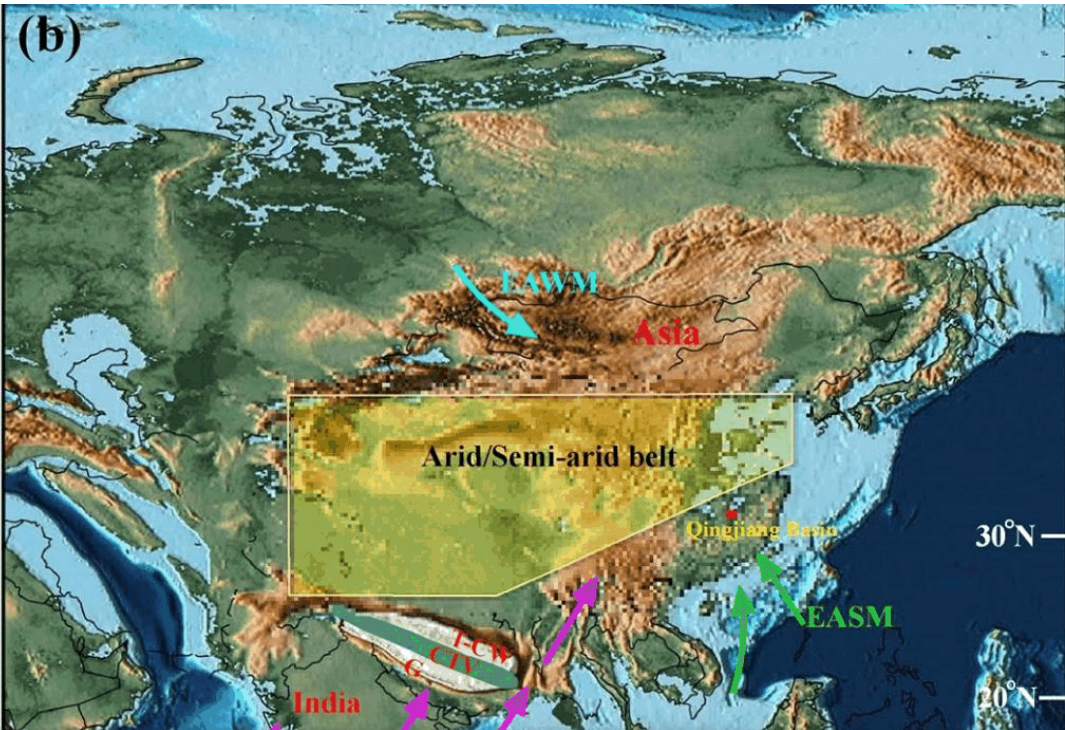
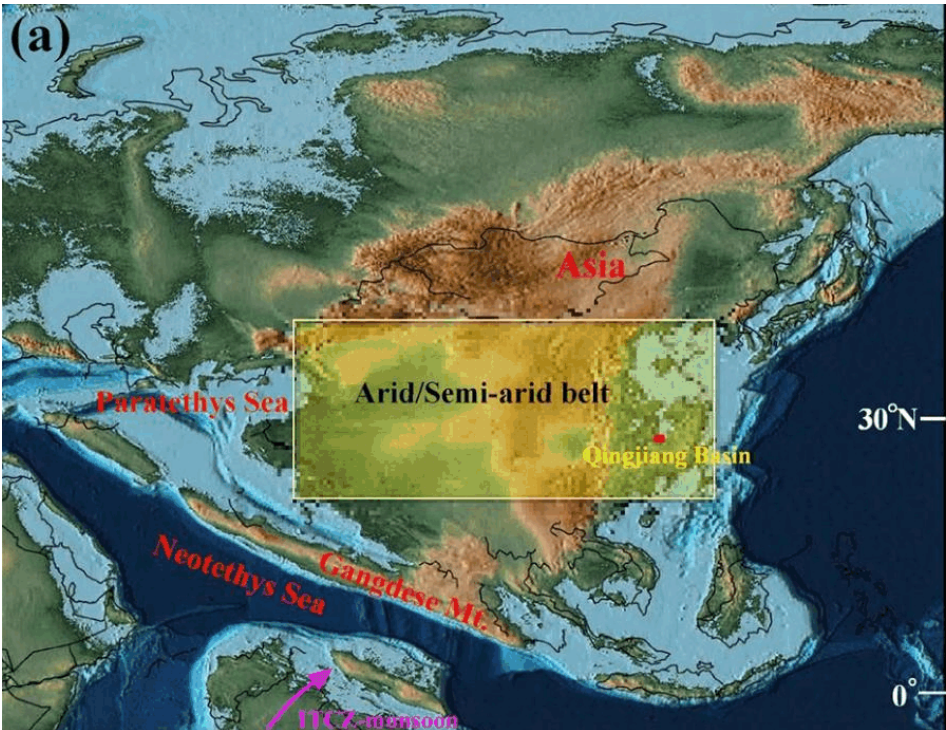
Authors’ abstract: *The vast humid regions in southeast China are strongly influenced by the East Asian Monsoon (EAM); however, the origin and underlying mechanisms driving the EAM in this area remains uncertain.*

Here, we present Eocene palynological records from two sedimentary successions in the Qingjiang Basin of central Jiangxi Province, southeast China, which reveals a major vegetation transition from an early Eocene Ephedra-dominated shrub desert to late Eocene taxodioid Cupressaceae-dominated swamp forests.

Using the Coexistence Approach and the Climatic Amplitude method, we quantitatively reconstructed climatic parameters, which indicate a climate shift from arid conditions with mean annual precipitation (MAP) lower than 200 mm to humid conditions with a MAP of 1479 ± 373 mm.

We infer that this sharp increase in humidity is linked to the onset of a modern-style EAM, implying that the EAM has prevailed in southeast China since at least the late Eocene, much earlier than previously thought.

We conclude that the establishment of the EAM in southeast China by the late Eocene was primarily controlled by paleogeographic changes, not changes in atmospheric CO₂ levels.



Human Prehistory.

Daver, G., et al (2022) **Postcranial evidence of late Miocene hominin bipedalism in Chad.** NATURE 609:94-100

Authors’ abstract: *Bipedal locomotion is one of the key adaptations that define the hominin clade. Evidence of bipedalism is known from postcranial remains of late Miocene hominins as early as 6 million years ago (Ma) in eastern Africa.*

Bipedality of Sahelanthropus tchadensis was hitherto inferred about 7 Ma in central Africa (Chad) based on cranial evidence. Here we present postcranial evidence of the locomotor behaviour of S. tchadensis, with new insights into bipedalism at the early stage of hominin evolutionary history.

The original material was discovered at locality TM 266 of the Toros-Ménalla fossiliferous area and consists of one left femur and two, right and left, ulnae. The morphology of the femur is most parsimonious with habitual bipedality, and the ulnae preserve evidence of substantial arboreal behaviour.

Taken together, these findings suggest that hominins were already bipeds at around 7 Ma but also suggest that arboreal clambering was probably a significant part of their locomotor repertoire.

Lazaridis, I., plus 203 co-authors** (2022) **The genetic history of the Southern Arc: A bridge between West Asia and Europe.** SCIENCE 377:doi.org/10.1126/science.abm4247

Authors’ abstract: *Stories about the peopling, and people, of Southern Europe and West Asia have been passed down for thousands of years, and these stories have contributed to our historical understanding of populations. Genomic data provide the opportunity to truly understand these patterns independently from written history.*

We examined more than 700 ancient genomes from across this region, the Southern Arc, spanning 11,000 years, from the earliest farming cultures to post-Medieval times.

** Now you know why I keep using the term “et al” instead of listing all the co-authors.

On the basis of these results, the authors suggest that earlier reliance on modern phenotypes and ancient writings and artistic depictions provided an inaccurate picture of early Indo-Europeans, and provide a revised history of the complex migrations and population integrations that shaped these cultures.

For thousands of years, humans moved across the Southern Arc, the area bridging Europe through Anatolia with West Asia.

We report ancient DNA data from 727 individuals of this region over the past 11,000 years, which we co-analyzed with the published archaeogenetic record to understand the origins of its people.

We focused on the Chalcolithic and Bronze Ages about 7000 to 3000 years ago, when Indo-European language speakers first appeared. Genetic data are relevant for understanding linguistic evolution because they can identify movement-driven opportunities for language spread.

We investigated how the changing ancestral landscape of the Southern Arc, as reflected in DNA, corresponds to the structure inferred by linguistics, which links Anatolian (e.g., Hittite and Luwian) and Indo-European (e.g., Greek, Armenian, Latin, and Sanskrit) languages as twin daughters of a Proto-Indo-Anatolian language.

Steppe pastoralists of the Yamnaya culture initiated a chain of migrations linking Europe in the west to China and India in the East. Some people across the Balkans (about 5000 to 4500 years ago) traced almost all their genes to this expansion.

Steppe migrants soon admixed with locals, creating a tapestry of diverse ancestry from which speakers of the Greek, Paleo-Balkan, and Albanian languages arose.

The Yamnaya expansion also crossed the Caucasus, and by about 4000 years ago, Armenia had become an enclave of low but pervasive steppe ancestry in West Asia, where the patrilineal descendants of Yamnaya men, virtually extinct on the steppe, persisted.

The Armenian language was born there, related to Indo-European languages of Europe such as Greek by their shared Yamnaya heritage.

Neolithic Anatolians (in modern Turkey) were descended from both local hunter-gatherers and Eastern populations of the Caucasus, Mesopotamia, and the Levant.

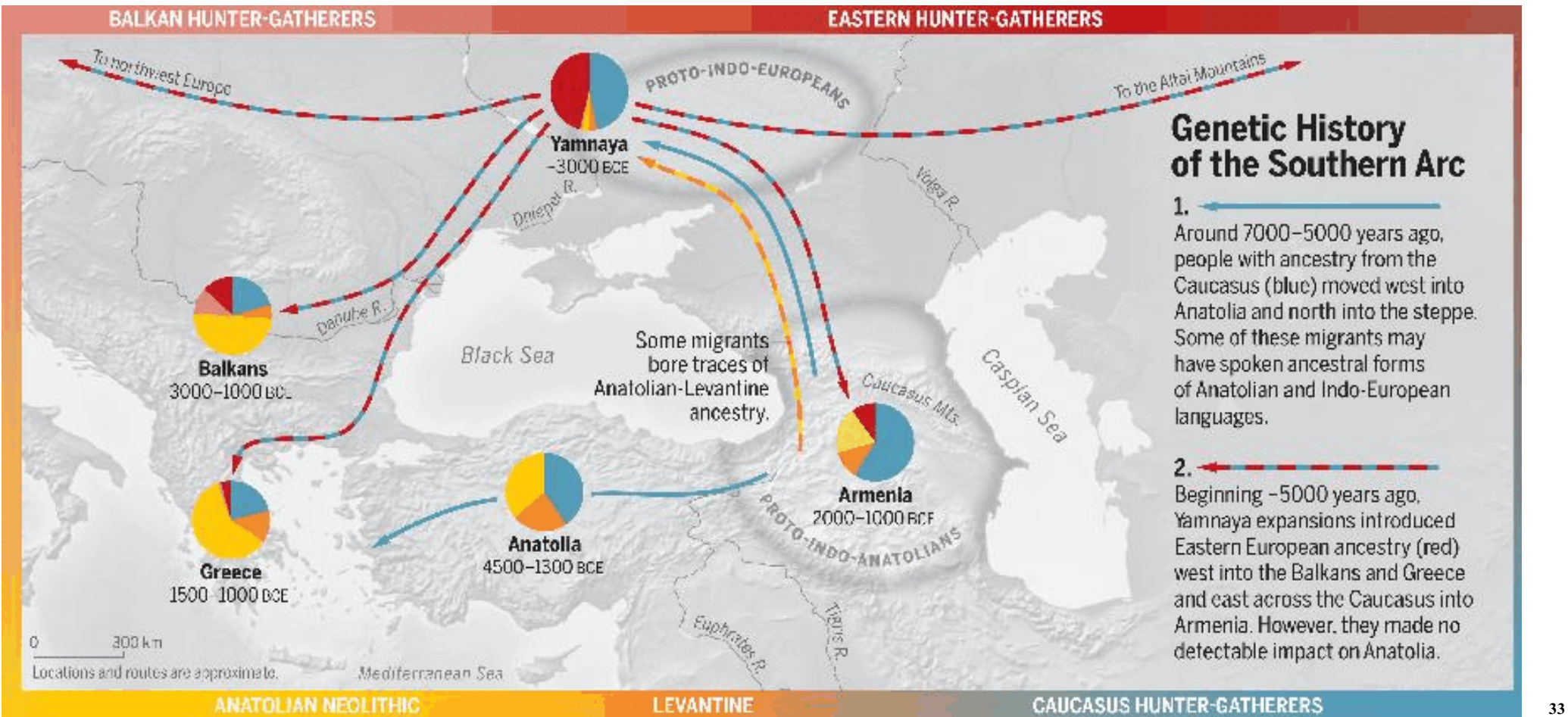
By about 6500 years ago and thereafter, Anatolians became more genetically homogeneous, a process driven by the flow of Eastern ancestry across the peninsula. Earlier forms of Anatolian and non-Indo-European languages such as Hattic and Hurrian were likely spoken by migrants and locals participating in this great mixture.

Anatolia is remarkable for its lack of steppe ancestry down to the Bronze Age. The ancestry of the Yamnaya was, by contrast, only partly local; half of it was West Asian, from both the Caucasus and the more southern Anatolian-Levantine continuum.

Migration into the steppe started by about 7000 years ago, making the later expansion of the Yamnaya into the Caucasus a return to the homeland of about half their ancestors.

All ancient Indo-European speakers can be traced back to the Yamnaya culture, whose southward expansions into the Southern Arc left a trace in the DNA of the Bronze Age people of the region.

[Map is from this paper.]



Modern Humans.

Mammola, S., et al (2022) **The global spread of misinformation on spiders.** CURRENT BIOLOGY 32:doi.org/10.1016/j.cub.2022.07.026 (available as a free pdf. Warning! 35 megabyte download, takes five minutes to open.)

Authors’ extract: *Here, we studied the global spread of (mis-)information on spiders using a high-resolution global database of online newspaper articles on spider-human interactions, covering stories of spider-human encounters and biting events published from 2010 to 2020.*

We found that 47% of articles contained errors and 43% were sensationalist. Moreover, we show that the flow of spider related news occurs within a highly interconnected global network and provide evidence that sensationalism is a key factor underlying the spread of misinformation.

van Casteren, A., et al (2022) **The cost of chewing: The energetics and evolutionary significance of mastication in humans.** SCIENCE ADVANCES 8:doi.org/10.1126/sciadv.abn8351 (available as a free pdf)

Authors’ abstract: *Any change in the energetic cost of mammalian mastication will affect the net energy gain from foods. Although the energetic efficiency of masticatory effort is fundamental in understanding the evolution of the human masticatory system, nothing is known currently about the associated metabolic costs of chewing different items.*

Here, using respirometry and electromyography of the masseter muscle, we demonstrate that chewing by human subjects represents a measurable energy sink. Chewing a tasteless odorless gum elevates metabolic rate by 10 to 15% above basal levels.

Energy expenditure increases with gum stiffness and is paid for by greater muscle recruitment. For modern humans, it is likely that mastication represents a small part of the daily energy budget.

However, for our ancestors, before the onset of cooking and sophisticated food processing methods, the costs must have been relatively high, adding a previously unexplored energetic dimension to the interpretation of hominin dentofacial fossils.

Worobey, M., et al (2022) **The Huanan Seafood Wholesale Market in Wuhan was the early epicenter of the COVID-19 pandemic.** SCIENCE 377:doi.org/10.1126/science.abp8715 (available as a free pdf)

Authors’ abstract: *Understanding how severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) emerged in 2019 is critical to preventing future zoonotic outbreaks before they become the next pandemic.*

The Huanan Seafood Wholesale Market in Wuhan, China, was identified as a likely source of cases in early reports, but later this conclusion became controversial.

We show here that the earliest known COVID-19 cases from December 2019, including those without reported direct links, were geographically centered on this market.

We report that live SARS-CoV-2–susceptible mammals were sold at the market in late 2019 and that within the market, SARS-CoV-2–positive environmental samples were spatially associated with vendors selling live mammals.

Although there is insufficient evidence to define upstream events, and exact circumstances remain obscure, our analyses indicate that the emergence of SARS-CoV-2 occurred through the live wildlife trade in China and show that the Huanan market was the epicenter of the COVID-19 pandemic.

Speirs: Some very fascinating maps in this paper. Based on contact tracing of the first few victims, the researchers were even able to locate what aisle of the Huanan market the infected animals were located. Well worth downloading.

Technology.

Naito, M., and S. Kodaira (2022) **Considerations for practical dose equivalent assessment of space radiation and exposure risk reduction in deep space.** SCIENTIFIC REPORTS 12:doi.org/10.1038/s41598-022-17079-1 (available as a free pdf)

Authors’ abstract: *Shielding from space radiation, especially galactic cosmic rays (GCRs), is a significant safety challenge for future human activities in deep space.*

In this study, the shielding performances of potential materials [aluminum (Al), polyethylene (PE), and carbon fiber reinforced plastic (CFRP)] were investigated using Geant4 Monte Carlo simulation considering two types of biological scale parameters, the International Commission on Radiological Protection (ICRP) quality factor (QF) and the plausible biological effectiveness (RBE), for GCRs.

The effective dose equivalent was reduced by 50% for QF and 38% for RBE when shielding using 20 g/cm² of CFRP. A spacecraft made from CFRP will have a better radiation shielding performance than conventional Al-based spacecraft.

The contribution of heavy ions for QF based effective dose equivalent was larger by a factor of ~3 compared to that for RBE based effective dose equivalent.

QF and RBE have advantages and disadvantages in quantifying the dose equivalent of space radiation, and the establishment of a standard parameter specified for a mixed radiation environment occupied by protons and heavy ions is necessary for practical dose assessment in deep space.

SPACE FILLER 2022-06-21

At right: Seen on the Stephen Avenue pedestrian mall in the downtown core.

