

OPUNTIA
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Canada Day 2023

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.

COWTOWN CANUCKS

photos by Dale Speirs

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We had beautiful weather for Canada Day in southern Alberta. The rainy season in June cleared away the forest fire smoke from northern Alberta, giving Calgarians sunny skies and warm temperatures.

I met my brother Neil downtown and we strolled about enjoying the street fairs and displays.

The cover shows a trio of belles at Fort Calgary Park. On this page at left is myself decked in all my Canada Day finery.

Top right: Seen on the Stephen Avenue pedestrian mall which runs through the downtown core. You're not a true patriot strong and free unless you wave a flag.



Food trucks, the main reason we have summer holidays. I had the dinner plate sized pepperoni pizza. Neil went Mexican with real tacos from the Golden Cactus.

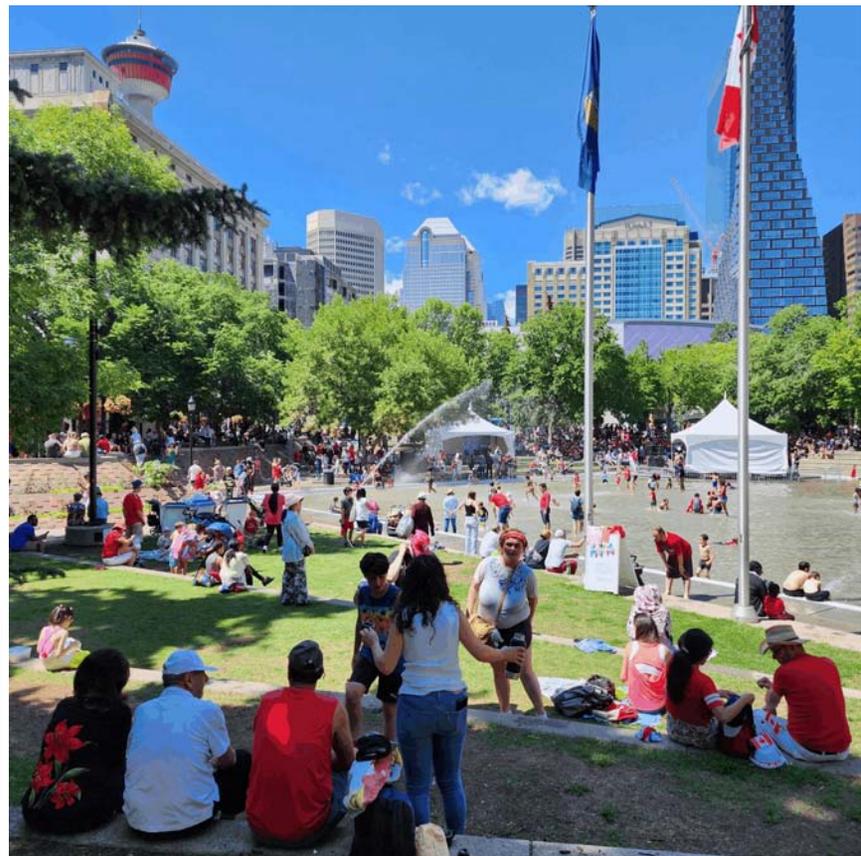




Top left: Looking west from Fort Calgary Park towards East Village.

Bottom left: A street fair scene in East Village. The way the singer was hunched over her sheet music, it was apparent she hadn't been to rehearsal.

Below: The Olympic Plaza wading pool was a popular spot.



SHERLOCKIANA: PART 41

by Dale Speirs

[Parts 1 to 40 appeared in OPUNTIA's #63.1B, 63.1C, 63.1D, 67.1D, 68.1C, 69.1E, 70.1A, 71.1B, 251, 253, 256, 261, 269, 270, 276, 288, 309, 333, 340, 348, 356, 359, 365, 370, 383, 397, 410, 416, 423, 433, 457, 470, 474, 486, 492, 496, 501, 510, 526, and 539.]

The original Sherlock Holmes stories written by Sir Arthur Conan Doyle are referred to as the canon, while stories written by other authors are called pastiches.

Pastiches: Novels.

THE SIGN OF FEAR (2016) by Robert Ryan took place in 1917. Dr John Watson was now Major John Watson. London had been bombarded by aircraft but the Germans denied raiding that night.

They were believed because the weather on the other side of the channel kept aircraft grounded. There was, however, a rogue German attempting to speed up the war.

A grim novel, very noir, with gruesome details about what real combat is like. The tracks of the several subplots crossed each other as the novel progressed. Holmes made occasional appearances in this novel but by and large was a supporting character. The focus was on Watson as an investigator, not the bumbling idiot image saddled on him by Nigel Bruce.

Watson met up with the renegade German and played a game of chess with him. He remarked how much better it would be if wars could be settled by a chess tournament. Watson summed up his contemporaries' view of the Great War: *"To this day, I am not entirely sure how we got to this point from a bullet in Sarajevo"*.

THE ADVENTURE OF THE PECULIAR PROTOCOLS (2019) by Nicholas Meyer was set in 1905 when Mycroft Holmes summoned his brother and Watson for a clandestine operation.

A British agent was found floating in the Thames River with a document indicating a secret society was trying to take over the world. The title of the document translated into English as "The Protocols Of The Elders Of Zion".

Mycroft sent Sherlock to Russia to find the perpetrator of the fraud. He succeeded after many trials and tribulations. Sherlock extracted a confession that the protocols were fake and returned home in triumph. His brother informed him that while the mission was a success, the battle was lost.

The anti-Jewish bigots would continue to believe the protocols were real. Nothing Mycroft, the Foreign Service, or MI-6 could say or do would stop the conspiracy theorists.

Pastiches: Warlock Holmes.

G.S. Denning had a series about Warlock Holmes, pastiches whose basic premise can be guessed from the series title. Warlock was his given name, not just a title.

Each book had a half-dozen or more humorous short stories or novellas taking Warlock Holmes and Dr Watson into the realms of fantasy and magic. The stories were alternate takes or secret histories of canon stories. I'll only review a few from each volume.

The Scotland Yard staff were introduced: Torg Grogson (a troll) and Inspector Vladislav Lestrade (a vampire). The constabulary did not like Holmes but tolerated him as long as Grogson and Lestrade ran interference. They didn't like the two detectives either, but Holmes made sure they got credit for solving crimes, which kept them in good graces with the high command.

Quickly established was that Holmes relied on magic and demonology to do his work for him. He couldn't deduce "2 + 2 = ?". Watson was the real detective. Warlock Holmes was a learning experience for Watson. Not just the chemical experiments and the accordion playing, but various paranormal excursions.

A STUDY IN BRIMSTONE (2016) was the first book in the series, with six stories. "A Study In Brimstone" began the set, with Watson having dinner with Stamford, who recommended Holmes as a roommate. After settling into 221B Baker Street, the two eventually got their first murder.

The deceased was an American. The word 'rache' was written in blood on the wall. A vital clue was a doughnut wrapper. This led Holmes to put a classified ad in a newspaper beginning: *"Found: one bakery wrapper ..."* That quickly brought out the killer.

As with the canon story “A Study In Scarlet”, the middle section took place in America. In the canon, Doyle jammed in a huge infodump about the Mormons, so this parody jammed in a fight between three men stranded in the desert over who got to eat the last remaining doughnut.

Digression: Doyle wrote considerable historical fiction which today is mostly unreadable. He thought those works would be his legacy but they are seldom read. If Doyle had only written them and not Sherlock Holmes, he would be forgotten now.

Meanwhile, in both canon and pastiche, the third section returned the story to England. One of those three men out in the desert was Jefferson Hope, who was run to earth and jailed. His death was considerably bloodier than the canon. Lestrade insisted on cleaning the crime scene himself.

“The Adventure Of The Resident Sacrifice” had Percy Trevelyn as the client. He had been bankrolled as a trapeze performer by a man named Blessington. The latter’s cash box was paired with another box as a matter transmitter.

Blessington put one box for safekeeping in a bank vault and the other in his room. A hungry monster was sent into the bank box. When the beast went prowling for food, usually a night watchman, it busted open the vault. The robbers then arrived and stuffed cash into the box, sending it back to Blessington’s room.

“The Adventure Of The Yellow Bastard” retold the canon story of the woman who had a shameful secret. She had borne an out-of-wedlock daughter, who was now brought to her home. This one was 3 feet tall, bulbous, double-jointed, fanged, and had bright yellow skin.

WARLOCK HOLMES: THE HELL-HOUND OF THE BASKERVILLES (2017) began with “The Adventure Of The Blackened Beryl”, a different look at the Beryl Coronet. Each gem contained a life-restoring spell which could only be used once, after which the stone turned black and lifeless.

Holmes was dead thanks to Moriarty but his body was slowly rotting in his bed at 221B. Watson took up the case of the stolen beryls with an eye to use them to revive Holmes. Also to pay the back rent to Mrs Hudson, since the black ones were still worth something to a jeweler.

“Silver Blaze: Murder Horse” began with Watson bringing Lestrade, who was a vampire, to 221B to prove Holmes was still alive, albeit an invalid. Lestrade gave Holmes a betting slip as a gift, £20 on Silver Blaze, about to run in the Wessex Cup were it not for the horse’s disappearance.

Holmes summoned assorted demons to find the horse. Watson did better sleuthing, however. The plot zigzagged between magic and mundane, but eventually Silver Blaze ran the race.

“The Reigateway To Another World” began with Watson attacked in 221B by a scarecrow. That was resolved, although Mrs Hudson was not pleased by the mess in the hallway. Straw, twigs, and tattered clothes everywhere.

To get to the plot, Colonel Hayter, a country squire, was having trouble with his neighbours and called upon Holmes for help. A standard murder out at the manor but a non-standard bit of detecting.

Some gruesome humour. The case went nowhere in the courts but the culprit was turned into the village idiot, so justice prevailed.

“The Adventure Of The Solitary Tricyclist” brought Miss Violet Smith to 221B, escorted by Lestrade. Whenever she went riding on her bicycle, she was trailed by a man on a tricycle. Elaboration of the plot eventually led to a tricycle chase with a bloody ending.

“The Hell-Hound Of The Baskervilles” finished up this book but I already reviewed this story in Part 29 of this column in OPUNTIA #423. One of my favourite pastiches, for the line where Watson meets a lumberjack who suddenly appeared at 221B: *“By God!” I cried, staggering back. “A Canadian!”*.

WARLOCK HOLMES: MY GRAVE RITUAL (2018) had eight stories, of which I’ll mention two here. “The Adventure Of The Blue Gob-Rumble” began with Inspector Vladislav Lestrade stopping by 221B at Christmas. He was carrying a live goose and told Watson he only wanted the blood. Holmes, Watson, and Hudson could have the rest.

Lestrade said the goose had been the central party in a fight between two men who ran away after he broke up the fight. The goose was abnormally intelligent and managed to free itself from its bonds. Alas for it, the vampire was faster.

As it flew to the window, Lestrade intercepted it, bit off the head, and drank the goose dry of blood. The rest was given to Mrs Hudson to prepare for dinner.

Since cooking a full-size goose takes several hours, the three men went tracking the source of the goose. The bird contained a blue sigil, as they discovered at dinner. The sigil portended doom for the world but that was for later in the story arc.

“The Adventure Of My Grave Ritual” took place, as any Sherlockian would guess, at the manor house of Reginald Musgrave. He was having servant problems. The butler Brunton was snooping about trying to decipher the ritual of the hidden treasure. He was also having an affair with the housemaid.

All and sundry began pacing out measurements between trees, looking for the loot buried centuries ago. Brunton found it first, an iron crown, but was trapped and died. The crown had magical powers but couldn’t save him.

WARLOCK HOLMES: THE SIGN OF NINE (2019) contained nine stories. Unfortunately some of them were “but it was only a dream” stories. Watson had smoked some of Holmes’ shag, which was not tobacco as Watson thought. I skipped these.

“The Adventure Of Beppo Vs Napoleon (A Fight In Six Rounds) was based on the canon story of someone smashing busts of Napoleon. As in the other Warlock Holmes stories, most of the deductions were made by Watson.

Scotland Yard refused to investigate petty vandalism, until one of the smashed busts was found in propinquity with a severely bludgeoned corpse. Holmes and Watson traced the source of the busts.

The dead man was an Italian, possibly a chimpanzee. You have to read the story to see how that almost made sense. Lots of Italian jokes, which gave way to Canadian jokes, Watson being prejudiced against them. Laugh, I thought I’d die.

Everyone thought one of the busts must have contained the Black Pearl of the Borgias. Instead it contained an iron facies. More to come was implied as the story ended.

“The Adventure Of The Ring Of Red Faction” was about an Italian political faction and its battle against the Pinkerton Detective Agency on both sides of the Atlantic. The struggle was for a doomsday weapon. The reader may have trouble distinguishing which of the two were evil.

Holmes and Watson got themselves in the middle. Not just those two organizations, but also a friend of Mrs Hudson, a battleaxe landlady named Mrs Warren.

WARLOCK HOLMES: THE FINALITY PROBLEM (2020) had nine stories. “The Man With The Twisted Everything” was the search for an errant husband Neville St Clair. Watson was sent trudging through the East End in search of an opium den. He discovered St Clair was a professional beggar, not a businessman.

Behind the den was a portal into demonic dimensions, which distorted St Clair’s body and twisted everything. Made him a great beggar. At the end of his working day, he stepped through the portal again to reverse himself back to normality.

“The Engineer’s Dumb” began with Victor Hatherlay presenting himself to Watson’s medical office. His thumb had been chopped off while on a contract hydraulic engineering job. So far, so canon.

The wine press the villains needed Hatherlay to repair was used to make juice. Human juice, made from real humans, no artificial ingredients. The juice was mixed with substances to extend the imbiber’s life and vitality.

Pastiches: The Modern Era.

Barry Grant had a series about Sherlock Holmes revived by stem cell technology in our times. He was now rooming with James Wilson, not Watson, who had been wounded in Afghanistan in a more modern war. Holmes used the Internet to catch up on what he had missed. There was an Inspector Lestrade, grandson of the original.

Which brings us to SHERLOCK HOLMES AND THE SHAKESPEARE LETTER (2010). The MacGuffin of the plot was obvious from the title. The letter was stolen, which might be a forgery or might be genuine. The Baconites might have done the theft lest it prove them wrong.

Along the way, Holmes and Wilson picked up the trail of an arms dealer selling to terrorists. Someone was setting microbombs into personal possessions such as pens or hearing aids.

Holmes and Wilson found the manufacturer, who believed that microbombs would be profitable when sold to terrorists. Scatter them by the millions into chocolate bars, shirt buttons, or musical instruments. They wouldn't kill but would wound people, and certainly terrorize the public.

The trail led hither and yon, then to Scotland. The bomb maker had the stolen letter as well but was satisfied it was a fake. Holmes got him in a clever way by turning his own devices on him. Those who live by the microbomb die by the microbomb.

SHERLOCK HOLMES AND THE SWEDISH ENIGMA (2012) had a variety of seemingly trifle crimes leading into international crime. Holmes had become famous for stopping the microbomber. The bloggers were running amok, or at least typing madly.

A variety of clues and assorted oddball characters eventually led to a Swede named Lars Lindblad as a kingpin. There being no Professor Moriarty at hand, Lindblad filled the gap. Someone was stealing ancient Greek artifacts in England and shipping them out of the country.

Greek nationalists were blamed but Lindblad was an art collector. His mistake that had him caught was painting his boat blue and yellow, the national colours of Sweden.

Pastiches: Short Stories.

THE ADVENTURE OF THE PLATED SPOON AND OTHER TALES OF SHERLOCK HOLMES (2014) was an anthology of 12 stories edited by Loren D. Estleman. These were mostly older stories but a few original stories were mixed in. I'll mention a couple of original stories here.

"The Mysterious Case Of The Urn Of ASH; Or, What Would Sherlock Do?" by Deborah Morgan was a peripheral pastiche. The protagonist was antiques dealer Jeff Talbot, who acquired from an estate a trunk full of Sherlockiana. At the bottom was an urn full of ashes, which sent Talbot on an odyssey to learn whose they were.

He used Sherlockian procedure. Elderly twin sisters were involved but which one was in the urn and who was the survivor who lived decades in a nursing home with guilt?

The anthology concluded with Estleman's own story "The Adventure Of The Plated Spoon". This brought the American detective Nick Carter to London. The original Carter, that is, first published in 1886, a year before the first Holmes story. White slavers were busy, including a snatch of Mary Watson. The three detectives followed the clues and alarms to a resolution.

THE CARBOLIC SMOKE BALL TRAGEDY AND OTHER STORIES (2022) by Mike Hogan was a collection of five stories. They were set in 1889 and subsequent three years during a major influenza pandemic. (Some researchers suggest it may have been a coronavirus rather than influenza.)

Watson was annoyed by the fearful populace who blamed the pandemic on electricity, telegraph wires, volcanoes, or that old reliable The Wrath of God. Most refused to wear masks and some denied the pandemic even existed. We've come a long way since then, haven't we?

Leading off was "The Carbolic Smoke Ball Tragedy". Mrs Hudson and Billy the pageboy were both stricken with influenza, so Holmes and Watson had to manage for themselves.

Holmes was hired by a Québec millionaire named Lemelin to find his wayward son. Lemelin owned the Carbolic Smoke Ball company, which was being sued for quackery. That had nothing to do with the case however.

All ended in tragedy. Lemelin lost his son to murder by his illegitimate son, who in turn lost his life by accident. For what shall it profit a man, if he shall gain the whole world and lose his sons?

"Kismet, Or The Running Footman" took Holmes and Watson north to Scotland for a holiday. Their train compartment was next to an imperious lady who at every station sent her footman running on errands.

The Kismet part was the name of a stage show, whose troupe occupied the two end cars as they moved on to their next booking. The train was held up by heavy snow. As the snow covered the countryside, two crimes were uncovered on the train.

One offence was shipping a dead body by parcel freight. Holmes and the police let that go as they were distracted by a jewel theft from Milady.

As subsequently discovered, the theft was insurance fraud. The plan would have gone off except the train was snowbound, forcing the Lord and Lady to improvise. Trouble was, footprints in the snow gave them away.

“A Fine Kettle Of Fish” was about a murder at a dinner of epicurans where fugu was served. That dish is made from pufferfish and if not properly prepared will kill the diner within minutes. As indeed happened.

Since only one of the guests died from a communal serving, the poison wasn't the chef's fault but must have been added by the host as he served. Holmes deduced the method but the problem was there was no way to get a conviction. Sometimes the guilty escape.

“The Thurstowe Abbey Affair” was a manor house mystery that read well. A weekend in the country, that sort of thing. General Mobrai was the lord of the manor. He invited Holmes, who brought Watson with him, to inspect what he thought was a Saxon burial mound.

The party of guests celebrated Guy Fawkes Night with the traditional bonfire built on top of the mound. His daughter Edwynna fancied herself a Druid priestess. The Mobrais were rich, so they were merely eccentric, not crazy.

That night the General went to join his ancestors, Saxon or otherwise. Holmes and Watson suspected he was poisoned and soon confirmed the dose was from a hemlock plant in the garden.

The suspects were many but the culprit was an obscure servant. He had intended the poison for the general's son but was happy with the actual result.

“The Khansamah And The Adulterated Chota Peg” started with Watson receiving a gift from a friend in India. The item was wrapped in sheets of old newspapers, which Watson read.

There was a report of a khansamah (Indian butler) accused of poisoning his master's chota peg (whiskey) with ground glass. Since ground glass doesn't kill, and stories of it doing so are urban legends, Holmes sent a telegramme to India denouncing the idea.

Because mail from India took months, Holmes and Watson assumed the khansamah had been convicted and hanged. They learned by cable that the man was still alive because of lengthy legal appeals but time was running out.

A doctor familiar with the victim arrived home on leave and briefed Holmes and Watson on the details. The victim was an elderly colonel and his wife was a beautiful young Indian. Gossip abounded at the regiment.

With remote clues, Holmes deduced the colonel had inadvertently poisoned himself. There was more to that, as those in the deceased's household had their own vendettas.

All told, these stories were easy reading. Watson was not made a Nigel Bruce fool but contributed his own knowledge as a trained doctor and military man.

Pastiches: Magazines.

THE NEW SHERLOCKIAN (2022) was an anthology edited by Kelvin I. Jones of articles and pastiches from a short-lived British journal of the middle 1980s titled THE SHERLOCKIAN. The book also contained some fresh material and updates.

“Sherlock Holmes On The Screen” by Roger Johnson reviewed the plethora of movies and television shows from 1900 until the middle 1980s. The vast majority seldom followed the canon. The original stories portrayed Holmes and Watson as young men but in movies and television they were almost always middle-aged, sometimes of pensionable age.

Most of the silent movies have been lost, to say nothing of BBC's habit of wiping master tapes of television series so they could re-use the tapes. Hollywood's compulsion to rewrite classics will be familiar to everyone.

“Whatever Happened To Baby Rucastle?” by Ray Betzner considered a point in the canon story “The Copper Beeches”. After the detecting and shooting was over, Watson summarized the subsequent fates of all the characters except one.

The child Edward Rucastle was not mentioned. Betzner surmised that the boy had been a werewolf. Past tense, because in his canine form he was shot and killed, but Watson declined to legitimize such a fantastic occurrence.

Following on were numerous brief notes about the minutiae of Sherlockiana. Lots of geographical excursions into Holmes' London, most of which no longer exists due to redevelopment and urbanization.

The Baskerville name and genealogy of that unfortunate family are discussed several times. The consensus was the name was Norman French.

Doyle originally wrote the dog story after a friend told him the legend of a spectral hound. The folk tale of Black Shuck was from Norfolk but Doyle moved it to the moors of Devon.

There were some pastiches. As an example, "The Sudden Death Of Cardinal Tosca" by George Cleve Haynes used a throwaway line by Watson. The Pope asked Holmes to investigate Tosca's murder. Without leaving London, Holmes identified the murderer, who had been a plant by Professor Moriarty.

"The Lincoln Street Minister" by David Marcum was about Rev. Philo Tate Simmons, a street church minister who attracted the ire of wealthy Thaddeus Hellifield.

The latter's daughter Lydia supported Simmons. She was angry that her father objected to bankrolling the church. She also wanted her inheritance sooner than later.

Thaddeus went to Holmes and Watson, asking them to act as witnesses when he went to expose Simmons as a fraud. Instead, the duo were witnesses to Thaddeus' death, murdered on stage in front of the congregation by cyanide.

The question was who killed him. Lydia gave the term "Bible thumper" a new meaning. She hid a syringe inside a Bible, then jabbed her father in the arm with the book as he came on stage.

The October 2021 issue of MYSTERY MAGAZINE, formerly MYSTERY WEEKLY MAGAZINE, was a special Sherlock Holmes issue. It is available from www.mysterymagazine.ca (note the domain name; their offices are in Ontario) or as a print-on-demand from Amazon, which was how I bought it.

"The Adventure Of The Man In Two Places" by Michael Mallory dealt with a murderer who claimed an unshakable alibi. Francis Tovey had been seen hurrying away from his London house moments after his wife was murdered.

The hue and cry couldn't find him, but two days later he appeared again, claiming he had spent a week in Blackpool. As proof, he had photographs of himself standing in front of the Blackpool Tower, holding a newspaper for the day of the murder.

An elaborate alibi such as that was unbelievable but police couldn't break it. Detailed examination showed the photographs were not faked. Holmes and Watson visited Blackpool and found the photographer.

Holmes noticed that in every photograph, without exception, Tovey had an identical expression, to the millimetre. Nobody photographs identically in a sequence of photos.

Tovey's photographer had made a life mask of him out of wax, painted it flesh, and had an accomplice wear it at Blackpool landmarks. The local constables soon broke the two accomplices and Tovey would head for the gallows.

"Scandal At The Savoy: The Monocle Murder" by C.J. Verburg was set in modern-day San Francisco. A new theatre was designed such that plays would be performed among the audience in settings such as a hotel bar and restaurant. The actors would circulate amongst the audience, or perhaps the other way around.

The debut was a Sherlockian pastiche. During the performance a supporting actor was almost strangled to death and left unconscious on the floor. The actor who portrayed Holmes realized the game was afoot.

His investigation uncovered the attempted murder as a diversion, designed to draw police away from a nearby location where a jewel heist was in progress. He convinced the police to abandon the play and head to where the heist was in progress.

A very elaborate and messy plot. However, if you're going to be implausible, then pile it on thick.

"In The Land Of The Living" by Gretchen Altabef began in the immediate aftermath of Holmes' fight to the death with Professor Moriarty on the cliffs of Reichenbach Falls. Landing on his feet and not just figuratively, Holmes began running, pursued by Col. Sebastian Moran, who was Moriarty's second-in-command.

The pursuit went over the Swiss Alps into the far valleys. There, Holmes turned about and the hunter became the hunted. Holmes captured Moran, to be shipped off in handcuffs to England. Brother Mycroft then sent money and orders to his brother to visit Tibet to rescue the Dalai Lama from his Chinese kidnappers.

All hush-hush and which was the reason Holmes' disappearance, known as the Great Hiatus to Sherlockians, was so long. Some of Holmes' abilities were implausible, an example being his ability to learn the Tibetan and Russian languages simultaneously within a few weeks.

"The Saville Row Mystery" introduced J.M. Barrie as the client, who had mysteriously been fired from his job as a clothing salesman. The proprietor Horace Willoughby had a secret past which intersected with Barrie's past.

The ramifications were worked out as a secret history of the life and times of the author of the Peter Pan stories. When Willoughby was murdered in his shop just after firing Barrie, the case seemed obvious to Inspector Lestrade.

Holmes worked out that the murder was done by a different employee in the shop. As is too common in Sherlockian pastiches, the solution was based on secret knowledge Holmes obtained which was withheld from the reader.

"A Study Of Death" by Teel James Glenn took place during The Great Hiatus, when Holmes was presumed dead at Reichenbach Falls. His brother Mycroft called in Dr Watson to assist in a murder investigation in a London embassy.

Negotiations were underway for a treaty in Europe, so neither the foreign countries nor Whitehall wanted any publicity. The case was a locked room mystery.

The plot was one often read before, where the culprit was able to manipulate a skeleton key from outside using a fine thread and a stylus. He could thus lock the room after killing his victim and exiting.

Leading off in the October 2022 special issue of MYSTERY MAGAZINE was "The Adventure Of The Five Sherlocks" by Ralph E. Vaughan. The setting was an afterlife which contained all the timelines of London from Londinium to strange far-future versions.

Basil Rathbone hosted a monthly meeting of the Sherlock Holmes Club. The membership was small but very select. Included were Christopher Lee, Peter Cushing, and Jeremy Brett.

They were visited by Lady Julia of Londinium, under the misapprehension that Sherlock Holmes was real. Her brother Gaius Julius Caesar had disappeared under mysterious circumstances.

This gave the author an opportunity for infodumps about ancient Rome and Londinium. The conclusion of the four Sherlockians was that Caesar had gone to find his lost daughter and would return. And so he did, in the company of Sherlock Holmes himself, who was fictional and should not exist.

"The Adventure Of The Maundy Threepence" by Michael Mallory began when labourers taking down an old wall at the Tower of London found a skeleton inside it. Not entirely unexpected given the Tower's bloody history, but there was an 1882 threepence coin inside the ribs.

Holmes did some research on the labourers, one of whom had committed murder three years before. After the corpse was reduced to a skeleton, the man dumped the bones down the wall. He thought the bones would be assumed to be another royal victim and might have got away with it but for the coin.

"The Adventure Of The Shared Dream" by Gerard J. Waggett brought a client Mrs Rathbone to Holmes. She had received threats against her family and someone tried to kidnap her young son Basil. Yes, that one, who as a young boy would have been contemporaneous with Holmes and Watson.

Eventually the schemer was discovered to be running a life insurance policy racket. The plot and investigation were complicated, with many false leads, but wrapped up well.

"Sherlock Holmes And The Jade Buddha" by Edward Lodi took place in Cornwall, where Holmes and Watson were vacationing. A local resident Colonel Knackbull was robbed of a small valuable piece of jade.

The burglar was surprised in the act and ran outside. The Colonel was an expert marksman and shot the thief in the shoulder. The culprit ran into a neighbour's conservatory wherein were kept various reptiles, including a large boa constrictor.

In countless mysteries where the hero was shot in the shoulder, especially in Hollywood, he shrugged off the wound and a few scenes later was fully healed. In reality, the shoulder is one of the worse places to be hit by a bullet.

Through the shoulder passes a major artery, there is a major joint, and the collar bone. If the bullet hits the first, the victim will bleed to death. If the joint is damaged, setting aside the incredible pain, the arm will flop about uselessly. The collar bone anchors the neck muscles. If hit and broken, then the head will flop helplessly to one side.

So it was the burglar died, but not before he hid the small jade somewhere in the conservatory. Holmes noticed the boa was apparently digesting a meal, judging by a lump halfway along its body. He correctly surmised where the jade went and told the police not to worry. Time would tell.

“Sherlock Holmes And The Cabinet Conundrum” by Greg Maughan was set during Holmes’ beekeeping retirement. The illusionist Harry Houdini came to him for help. He had been lurking at a séance of Madame Voltov, ready to expose her as a fake.

Instead, she predicted that his next performance would go wrong and he would die. Houdini suspected sabotage but Holmes refused to take the case. He doubted anything would happen and sensed Houdini just wanted to use him for publicity.

However Holmes spotted the real story behind Madame Voltov and crashed her séance that night. Among those attending was a witless young socialite wearing a diamond necklace. Voltov obviously had her eye on the necklace, and Holmes had his eye on Voltov. The ending was predictable.

“The Adventure Of The Canny Cabby” by Martin Hill Ortiz was about Jules Pfennig of 223 Baker Street. He was an unsuccessful private consulting detective whose neighbour had no idea about him.

Pfennig met a cabby who had a treasure map but couldn’t place where in London it was located. They agreed to split the treasure. Success turned into disappointment when the treasure was found to hold toys and a few coins. The map had been made for a child’s birthday party. They kept the coins.

Pastiches: Old-Time Radio.

Sherlock Holmes was very successful on radio. He aired on several networks with several sets of actors from 1930 to 1956, encompassing the entire lifespan of old-time radio.

Basil Rathbone and Nigel Bruce had a long run, but others played the parts before and after. Available as free downloads from the Old Time Radio Researchers at www.otrr.org/OTRRLibrary

In the canon stories, Watson mentioned about 100 cases as throwaway lines. Someday he would write up those cases but never did. My personal favourite was “Wilson, the notorious canary trainer”. Pastiche writers have been mining those unwritten cases for decades.

In the radio series, “The Darlington Substitution Case” was one such pastiche. The episode aired on 1947-01-04 and was written by Denis Green and Anthony Boucher. The case occurred early in Holmes’ career when he and Watson owed Mrs Hudson two months back rent.

Reginald Tremaine was the client, recently returned from a trip to the continent. His safety had been threatened by his cousin Lord Darlington, who said he would thrash him within an inch of his life. Yes, people talked like that in those days.

Tremaine wanted Holmes to shake Darlington with a counter threat about how he would ruin his Lordship's reputation with scandal. After taking a £20 fee from Tremaine (very big money in those days), Holmes surmised that Darlington had made the threat because Tremaine had started the trouble.

Holmes decided to work both sides of the street. Taking Watson with him, they called on Darlington. Tremaine was there ahead of them, asking his cousin for £10,000 to keep quiet about the scandal. Lady Clara Darlington was there as well.

Tremaine then laid out the scandal, that the infant son and heir of the Darlingtons was not their child. The real heir was stillborn. About the same time, her Ladyship’s maid Maude Harris gave birth and her son substituted as the heir. Clara denied everything.

Lord Darlington then hired Holmes to disprove the claim. Tremaine was indignant but Holmes pointed out he had only been hired to protect him from a thrashing. Holmes therefore was being paid by both sides.

Holmes and Watson went off to visit the physician who had attended the birth. Someone got there the day before and shot the physician dead. Holmes examined the clues and quickly identified the murderer.

That didn't solve the problem about the substitution. Back to the Darlington manor where Holmes convened everyone for a J'accuse! meeting. In the meantime his Lordship had paid Harris £10,000 in cash, which she slipped into her handbag. A handbag?

Holmes ignored that and made his accusation. Tremaine was the murderer. He bolted but Holmes had a pair of constables outside. At this point, Holmes arranged for Watson to toss a smoke bomb and shout Fire!, a plot device borrowed from "A Scandal In Bohemia".

Also borrowing from King Solomon, Holmes noted that Harris ran for her handbag and Clara went for the baby. That solved the second half of the mystery.

"The Adventure Of The Stuttering Ghost" aired on 1946-10-12 and was written by Denis Green and Anthony Boucher. In the opening scene, a client was ushered on by Mrs Hudson, who spoke with a music hall Cockney accent. The canon stories identified Hudson as a Scot, so her voice will annoy the Sherlockian.

Proceeding onward, the client was Mrs Frampton and her darling little Pekingese named Ferdinand. She pulled a gun on Holmes and stole his files on an old case involving the theft of emeralds years ago. One of the thieves, Stuttering Steve Hacker, was reported to have died in prison.

Fortunately Watson had copied some of the essential parts of the file, hoping someday to get another STRAND story from it. There was a coded message and the search was on.

Holmes and Watson visited a private museum owned by Joseph Gaunt, which seemed a likely place to hide the emeralds. One of the thieves had worked there at the time of the theft.

There were some amusing fluffs. The actor playing Gaunt said "*Dr Holmes and Dr Watson*". A moment later, Tom Conway, playing Holmes, tripped over his tongue and said he wanted to "*deduct, uh, conduct*" an investigation.

Gaunt mentioned the lady and a companion had visited the museum earlier that day. Holmes surmised they were casing the place and would come back for the jewels. Using the coded paper, Holmes and Watson eventually figured out where the jewels were hidden. They exulted but Gaunt arrived waving a gun.

The other two criminals, now identified as Gertrude and Alfie, joined him. Holmes ran with the emeralds into a dark cul-de-sac but Watson was too slow and was held by the other three.

The stand-off was broken by the stuttering voice of Steve Hacker, somehow back from the dead. He told everyone he had bribed the prison doctor and escaped. Hacker's voice from the dark ordered the trio to drop their guns at Watson's feet.

Then Holmes came out, having impersonated the voice. Hacker really was dead. The rest was details to be summed up at 221B. After that, Mrs Hudson entered.

Ferdinand the Pekingese was still there, having been overlooked by all during the day's excitement. They dumped him on Watson, who in the epilogue told the announcer that he had been stuck with the dog until it finally died of old age.

Pastiches: Modern Radio.

THE MIS-ADVENTURES OF SHERLOCK HOLMES was a humorous radio series that aired in the 2010s and is available from www.otrr.org/OTRRLibrary. Dr Watson narrated. Mrs Hudson was Irish instead of Scottish and had a different personality than usually portrayed. Holmes was played as an idiot and Watson was the smart one who fixed up the narrative in his stories.

The mp3 episodes are mis-numbered. The internal dialogue does mention the correct episode number most of the time. The episodes are generally standalone but are best listened to in sequence because they continue story arcs across several chapters.

When I tried to research the mp3s, the Google results kept bringing up Vince Stadon as the script writer, but the mp3s credit Joe Bevilacqua and Daws Butler as the writers.

I suspect there are two radio series floating around out there with identical titles and which happened to be aired about the same time in the 2010s. Bevilacqua's Wikipedia biography made no mention of this series, but the Stadon references are different episode titles than the ones from OTRR.

Joe Bevilacqua did the intro and outro commentaries for the episodes. He gave co-credit for the scripts and occasionally full credit to Daws Butler. The sound quality of the episodes was excellent. Good humour and well recommended.

"The Giant Rat Of Sumatra" was episode 7 of the series. No writer was credited although everyone else was. This time Holmes narrated instead of Watson. The doctor had been bitten by the rat Holmes had brought back from Sumatra. Consequently Watson was hors de combat with Coolie's Disease and a severe infestation of fleas.

Mrs Hudson found the rat. Much to her and Holmes' surprise, it began talking to them in English. She allowed Holmes to keep it because the lease only said he couldn't keep dogs. At this point, the plot veered into surrealism and disconnected fantasy, much like Monty Python or the Goon Show.

Mrs Hudson was Professor Moriarty in drag. The rat, now named Sinbad, was eating cheese by the pound daily. It grew to the size of a medium dog, and so did its dialogue. Another right turn followed when Holmes was out walking Sinbad.

They met Inspector Lestrade and his boyfriend Percy, who were just coming home from their favourite pub, the Queen's Closet. There followed suggestive jokes about Oscar Wilde and the Marquess of Queensberry, those two men being contemporaries with Holmes.

Lestrade bwah-ha!-ha!-ed and said he was Moriarty in disguise. Everywhere Holmes went, the people were all Moriarty. Sinbad kept growing, to room size, then left to roam Baker Street as house size. Sinbad pillaged cheese shops near and far.

Holmes' violin began talking to him in an Italian accent, demanding that Holmes take lessons. It said it was tired of sounding like a cat in pain, mentioning Stover's feline as an example. Holmes was sensitive about that cat and responded accordingly. After Holmes' playing improved, he used it to lure Sinbad into a dark alley.

Sinbad grew smaller and turned into Jack the Ripper, who then began slashing away at Holmes. At that point, the episode cut off, leaving a cliffhanger for the next installment.

"Tales From The Vienna Wards" was written by Joe Bevilacqua and Robert Cirasa. As episode 8 and so announced, it continued Holmes' saga, picking up directly from his confrontation with Jack the Ripper. The writers had trapped themselves in a corner at the end of the previous episode.

They got out of it by beginning this episode with Holmes waking up screaming from his nightmare. Yes, the old but-it-was-only-a-dream escape hatch. Normally I oppose the death penalty but would agree to bringing back the noose for any writer using this type of ending. Where's Arthur Ellis when you really need him?

Meanwhile, back at the episode, Holmes awoke to find himself in a Vienna institution, with Sigmund Freud attending him and Watson sitting by. The psychoanalyzing continued, with Freud trying to shoehorn Holmes into his psychological theories.

Freud ran amok, not only locking up Holmes but Watson as well. Then Irene Adler. Mrs Hudson he hired as the institution's cook. She did some psychoanalyzing on the side, using Watson and Adler as victims. Her only menu was oysters in mustard sauce. Freud and his daughter Anna finished up the episode with a music hall comic song.

Pastiches: Television.

In 1954 and 1955, a television series SHERLOCK HOLMES was aired on NBC. It was produced by Sheldon Reynolds in France, where production costs were much lower.

Ronald Howard portrayed Holmes and H. Marion Crawford played Watson. Howard was relatively young and fit the canon better than the more famous

Rathbone. Crawford was into middle age but played Watson as an intelligent man, not the blithering idiot that Nigel Bruce did.

Most of the episodes were pastiches but some were based on canon stories, however loosely. Interestingly there was some continuity between episodes when characters referred back to previous events. That was unusual for the times, as most television show episodes were zero-reset.

The episodes are in the public domain and therefore available in several different DVD box sets. The episodes I'll cite here are from the set issued by the St. Clair Entertainment Group, "Ultimate Sherlock Holmes TV".

"The Case Of The Deadly Prophecy" was written by Gertrude and George Fass, and aired on 1955-03-14. The venue was the village of Arno, Belgium. Each full moon, a schoolboy named Antoine arose from his bed in the school dormitory and sleepwalked to the church. There he chalked the name of a villager on the steps, said person dying shortly thereafter.

When the headmaster became the fourth victim, schoolteacher Marie Grande wrote to Holmes for help. Upon arrival, he and Watson investigated. The deaths were random, but autopsies showed poisoning. The local physician Dr Dimanche had said natural causes. He therefore came under suspicion.

Antoine was being hypnotized, and wasn't sleepwalking. The deaths were a buildup by Dimanche to extort 100,000 francs from the Comte de Passevant, elsewise his name would be next to appear on the church steps.

The matter was resolved at a midnight J'accuse! meeting. Holmes bluffed he knew where the poison came from. Dimanche panicked and tried to shoot his way out. Watson struggled with the doctor and won.

"The Case Of The Violent Suitor" was written by Lou Morheim and aired on 1955-04-18. Alex Doogle was a sports writer for a newspaper who also wrote an advice column under the pseudonym Aunt Lottie.

A young woman Susan Dearing asked if she should break off her engagement because her fiancé was a violent man. The answer was obvious. Not long after, the fiancé Jack Murdock appeared at the editorial offices and gave Doogle a damned good thrashing.

Afterwards, on threats from Murdock, a cowed Doogle went to the Dearing manor to retract his advice. She didn't believe him. She had no one to turn to for advice, hence her letter, because her father had recently died suddenly.

Still later, Doogle suddenly remembered where he had seen Murdock before. The scoundrel was actually Freddie Brill, a racetrack tout. He said as much when Brill qua Murdock returned to the newspaper office. Brill countered the argument by brandishing a revolver, not fired, but used to emphasize his threats.

Doogle consulted with Holmes. Checking his files, Holmes deduced that Brill had murdered Dearing's father with a simulated heart attack. There was no doubt that after Brill married her, her life expectancy would be dramatically shortened. He would then inherit the family fortune.

A confrontation occurred at the manor, followed by a chase through the woods and other assorted alarums. Dearing's maid Tilda was in cahoots to share the estate with Murdock but turned on him in the denouement. They both got their just rewards.

Marginalia.

The stand-up comedian Bob Hope worked the entire span of old-time radio from 1935 to 1955. His shows had a variety of names depending on the sponsor, but they are collectively THE BOB HOPE SHOW.

"Guest - Basil Rathbone" aired on 1941-01-28. As he always did, Bob Hope opened the show with a rapid fire of one-line jokes. If one gag missed, another one was on its way to fill the gap. He began with a series of gags about getting licence plates from the DMV.

After a musical number, Basil Rathbone was introduced. He and Hope compared their shows. Rathbone noted the Sherlock Holmes episodes were done without a studio audience. "*You mean you don't get any laughs?*", asked Hope. Replied Rathbone, "*Yes, but we have an excuse*".

They traded cross-talk about both working at Paramount Studios. Rathbone always got the best of each exchange, while Hope played the straight man. Rathbone mentioned his latest movie was THE MAD DOCTOR, which segued into a parody of the movie. This time Hope got the laughs, while Rathbone deliberately overacted as a raging mad scientist.

A musical number followed, then a toothpaste commercial. The next sketch used a running gag “Who’s Yehudi?” that originated on Hope’s show and became a popular catchphrase nationwide and in the wartime military.

The phrase originated a few years previously when violinist Yehudi Menuhin was a guest on the Hope show. Hope’s second banana was Jerry Colonna, who refused to believe that anyone could have a name like that. Over subsequent shows, Colonna kept asking “*Who’s Yehudi?*”, which always got a laugh.

In the sketch, Hope and Rathbone worked their way through a swamp as private detectives searching for Yehudi, doing various gags en route. They found an old hotel operated by vampires.

Colonna was there ahead of Hope and Rathbone, searching for Yehudi and beautiful women, not necessarily in that order. The three men barged about the hotel doing gags, then Rathbone turned into the Mad Doctor again.

Hope hollered at Rathbone to calm down, and reminded him he was a guest on his show. “*What do you think made me mad?*”, Rathbone shouted. Finis.

Pastiches: Crossovers.

THE STRANGE CASE OF ELIZA DOOLITTLE (2021) by Timothy Miller brought Holmes and Watson to investigate the true identity of a Cockney woman.

Colonel Pickering had known her when she was a flower girl. He thought her transformation into a fair lady wasn’t done by Professor Henry Higgins’ elocution lessons but by substituting a different woman.

Not quite that simple though, as Eliza may have been drugged into civilized behaviour with a formula invented by a certain Dr Jekyll. No one could find him and his assistant Mr Hyde refused to help.

Holmes and Watson tried to nail Higgins for something or other but failed within the law. There was no offense in being a Svengali. Accordingly the novel trickled to an end.

SHERLOCK HOLMES AND COUNT DRACULA (2021) by Christian Klaver was an episodic novel in four parts which dragged in Victorian-era characters

from assorted novels. Part 1 began with Count Dracula calling upon Holmes for help.

His wife Mina had been kidnapped. Dracula provided an infodump on the vampires of London, including Mina, and disparaged the nonsense that Stoker had put about with his novel.

Watson went off his rocker after his wife Mary was converted into a vampire. He needed careful handling by Holmes, because she turned him into a semi-vampire.

Mina was soon recovered, which occasioned much talk about the Mariner Priest. A mysterious character he was, which segued to Part 2, subtitled “The Innsmouth Whaler”.

Miss Lucja Nowak, an American, checked into a London hotel and then vanished after a murder occurred there. Watson found her, then lost her again after a fishy-looking man appeared. Fishy as in the Cthulhu Mythos, not as a synonym for suspicious.

The London docks had some eldritch sailors waddling about. The trail led back to Innsmouth on the other side of the Atlantic. Most of the action happened off stage over there and was explained away at length in the epilogue.

Part 3 was “The Adventure Of The Lustrous Pearl” which began with a body in a cemetery that some careless villain forgot to bury. The trail led to smugglers, Americans, vampires, and in the case of a few suspects, all three. And it isn’t a real pastiche unless Moriarty was dragged in. He was the Mariner Priest.

Part 4 was titled “Old Enemies”. Moriarty’s attacks escalated. Dracula and Mina returned to London to help combat the flood of vampires who were not as well behaved as the Count.

Once more there was a fight to the death with Moriarty, this time on top of a moving train. He was killed, supposedly.

SEEN IN THE LITERATURE

Astronomy.

Domínguez-Gómez, J., et al (2023) **Galaxies in voids assemble their stars slowly**. NATURE 618:doi.org/10.1038/s41586-023-06109-1

Authors' abstract: *Galaxies in the Universe are distributed in a web-like structure characterized by different large-scale environments: dense clusters, elongated filaments, sheetlike walls and under-dense regions, called voids.*

The low density in voids is expected to affect the properties of their galaxies. Indeed, previous studies have shown that galaxies in voids are, on average, bluer and less massive, and have later morphologies and higher current star formation rates than galaxies in denser large-scale environments.

However, it has never been observationally proved that the star formation histories (SFHs) in voids are substantially different from those in filaments, walls and clusters. Here we show that void galaxies have had, on average, slower SFHs than galaxies in denser large-scale environments.

We also find two main SFH types present in all the environments: 'short-timescale' galaxies are not affected by their large-scale environment at early times but only later in their lives; 'long-timescale' galaxies have been continuously affected by their environment and stellar mass.

Both types have evolved more slowly in voids than in filaments, walls and clusters.

Marin, F., et al (2023) **X-ray polarization evidence for a 200-year-old flare of Sgr A***. NATURE 618:doi.org/10.1038/s41586-023-06064-x (available as a free pdf)

[At the centre of each galaxy, including ours, is a supermassive black hole. Contrary to popular myth, black holes are not constantly swallowing up stars and planets. Once they sweep their neighbourhood clear, the billions of stars orbiting them at a sufficient distance, such as the Sun, are quite safe.]

[Every once in a while, something gets too close and is swallowed. When that happens, there is a burst of energy spraying outward as the victim's atoms are shredded into subatomic particles. This paper demonstrates that 200 years ago Sagittarius A* swallowed a star and then burped.]

Authors' abstract: *The centre of the Milky Way Galaxy hosts a black hole with a solar mass of about 4 million (Sagittarius A* (Sgr A)) that is very quiescent at present with a luminosity many orders of magnitude below those of active galactic nuclei.*

Reflection of X-rays from Sgr A by dense gas in the Galactic Centre region offers a means to study its past flaring activity on timescales of hundreds and thousands of years.*

The shape of the X-ray continuum and the strong fluorescent iron line observed from giant molecular clouds in the vicinity of Sgr A are consistent with the reflection scenario.*

If this interpretation is correct, the reflected continuum emission should be polarized. Here we report observations of polarized X-ray emission in the direction of the molecular clouds in the Galactic Centre using the Imaging X-ray Polarimetry Explorer.

We measure a polarization degree of $31\% \pm 11\%$, and a polarization angle of $-48^\circ \pm 11^\circ$. The polarization angle is consistent with Sgr A being the primary source of the emission, and the polarization degree implies that some 200 years ago, the X-ray luminosity of Sgr A* was briefly comparable to that of a Seyfert galaxy.*

Asteroids.

Cukier, W.Z., and J.R. Szalay (2023) **Formation, structure, and detectability of the Geminids meteoroid stream**. PLANETARY SCIENCE JOURNAL 4:doi.org/10.3847/PSJ/acd538 (available as a free pdf)

Authors' abstract: *The Geminids meteoroid stream produces one of the most intense meteor showers at Earth. It is an unusual stream in that its parent body is understood to be an asteroid, (3200) Phaethon, unlike most streams, which are formed via ongoing cometary activity.*

Until recently, our primary understanding of this stream came from Earth-based measurements of the Geminids meteor shower. However, the Parker Solar Probe (PSP) spacecraft has transited near the core of the stream close to its perihelion and provides a new platform to better understand this unique stream.

Here, we create a dynamical model of the Geminids meteoroid stream, calibrate its total density to Earth-based measurements, and compare this model to recent observations of the dust environment near the Sun by PSP.

For the formation mechanisms considered, we find with the exception of very near perihelion the core of the meteoroid stream predominantly lies interior to the orbit of its parent body and we expect grains in the stream to be $\sim 10 \mu\text{m}$ in radius.

Data-model comparisons of the location of the stream relative to Phaethon's orbit near perihelion are more consistent with a catastrophic formation scenario, with the core stream residing near or outside the orbit of its parent body consistent with PSP observations.

This is in contrast to a cometary formation mechanism, where even near the Sun the meteoroid stream is interior to the orbit of its parent body.

Finally, while PSP transits very near the core of the stream, the impact rate expected from Geminids meteoroids is orders of magnitude below the impact rates observed by PSP, and hence undetectable in situ.

Comparing to remote imaging of the Geminids stream, we find the observed stream location external to the orbit of (3200) Phaethon is most consistent with a formation mechanism of a rapid low-speed release of material near perihelion, not with a more temporally extended cometary formation mechanism.

Hence, this comparison suggests the Geminids may have formed via a more violent, catastrophic destruction of bodies that transited very near to the Sun.

This is also consistent with the cross comparison of mass of the Geminids stream and mass of (3200) Phaethon, which are comparable and suggestive of a catastrophic origin.

Similarly, the weaker Daytime Sextantids meteoroid stream, suggested to be part of the Geminid-Phaethon stream complex, has been estimated to also be comparably massive to its proposed parent body, asteroid 2005 UD, also consistent with a catastrophic common origin for both streams.

Planets: Earth.

Zhang, Q., et al (2023) **No evidence of supracrustal recycling in Si-O isotopes of Earth's oldest rocks 4 Ga ago.** SCIENCE ADVANCES 9:doi.org/10.1126/sciadv.adf0693 (available as a free pdf)

[Earth is the only known planet with plate tectonics, without which life could not exist. Tectonics insures constant mixing of fresh minerals from below up to the surface to provide nutrients for life. But when did tectonics begin? This paper indicates 3.8 gigayears ago.]

Authors' abstract: *The recycling of surface materials via crustal dynamics, i.e., supracrustal recycling, depends on a planet or moon's geodynamic mode.*

As one end-member, a stagnant-lid regime does not involve supracrustal materials in convection. At the other end of the spectrum, a mobile-lid regime, i.e., plate tectonics, involves continuous surface recycling in the form of subduction.

The operation of plate tectonics makes planet Earth unique within the solar system. However, the key questions of whether early Earth was uniformly characterized by a mobile-lid regime or whether its geodynamics might have changed from a stagnant-lid to a mobile-lid regime remain hotly debated.

Isotope analysis is an effective means of detecting the transportation of surface materials into regions of melting; thus, testing Earth's oldest known rocks should provide clues about early geodynamic modes.

Identifying the oldest evidence for the recycling of hydrated crust into magma on Earth is important because it is most effectively achieved by subduction. However, given the sparse geological record of early Earth, the timing of first supracrustal recycling is controversial.

Silicon and oxygen isotopes have been used as indicators of crustal evolution on Archean igneous rocks and minerals to trace supracrustal recycling but with variable results.

We present Si-O isotopes of Earth's oldest rocks (4.0 billion years ago (Ga)) from the Acasta Gneiss Complex, northwest Canada, obtained using multiple techniques applied to zircon, quartz, and whole rock samples.

Undisturbed zircon is considered the most reliable recorder of primary Si signatures. By combining reliable Si isotope data from the Acasta samples with filtered data from Archean rocks globally, we observe that widespread evidence for a heavy Si signature is recorded since 3.8 Ga, marking the earliest record of surface silicon recycling.

Shang, Haitao (2023) **Mineral evolution facilitated Earth's oxidation.** COMMUNICATIONS EARTH AND ENVIRONMENT 4:doi.org/10.1038/s43247-023-00824-3 (available as a free pdf)

Author's abstract: Oxygenation events remarkably altered the distribution, diversity, and abundance of minerals on Earth's surface. However, the causality in the opposite direction, the influence of mineral evolution on atmospheric oxygen levels, has rarely been explored.

Here I propose that mineral evolution might have led Earth's oxygen cycle to lose stability, facilitating oxygenation events in deep time. First, I introduce a conceptual model for the system of organic matter and minerals and investigate their interactions via a probabilistic approach.

Second, in light of the theoretical results, I suggest that the evolution of iron and clay minerals likely had an underappreciated relevance to the Great Oxidation Event and Neoproterozoic Oxidation Event, respectively.

Finally, I use the parameter values estimated from observations in modern environments as benchmarks to test these speculations. This study provides a minimalistic theoretical framework illustrating the possible influence of mineral evolution on Earth's oxygen cycle over geologic time.

Dodd, M.S., et al (2023) **Uncovering the Ediacaran phosphorus cycle.** NATURE 618:doi.org/10.1038/s41586-023-06077-6

Authors' abstract: Phosphorus is a limiting nutrient that is thought to control oceanic oxygen levels to a large extent.

A possible increase in marine phosphorus concentrations during the Ediacaran Period (about 635 to 539 million years ago) has been proposed as a driver for increasing oxygen levels.

However, little is known about the nature and evolution of phosphorus cycling during this time. Here we use carbonate-associated phosphate (CAP) from six globally distributed sections to reconstruct oceanic phosphorus concentrations during a large negative carbon-isotope excursion, the Shuram excursion (SE), which co-occurred with global oceanic oxygenation.

Our data suggest pulsed increases in oceanic phosphorus concentrations during the falling and rising limbs of the SE.

Using a quantitative biogeochemical model, we propose that this observation could be explained by carbon dioxide and phosphorus release from marine organic-matter oxidation primarily by sulfate, with further phosphorus release from carbon-dioxide-driven weathering on land.

Collectively, this may have resulted in elevated organic-pyrite burial and ocean oxygenation. Our CAP data also seem to suggest equivalent oceanic phosphorus concentrations under maximum and minimum extents of ocean anoxia across the SE.

This observation may reflect decoupled phosphorus and ocean anoxia cycles, as opposed to their coupled nature in the modern ocean.

Our findings point to external stimuli such as sulfate weathering rather than internal oceanic phosphorus-oxygen cycling alone as a possible control on oceanic oxygenation in the Ediacaran. In turn, this may help explain the prolonged rise of atmospheric oxygen levels.

Wang, C., et al (2023) **Neoproterozoic reorganization of the Circum-Mozambique orogens and growth of megacontinent Gondwana.** COMMUNICATIONS EARTH AND ENVIRONMENT 4:doi.org/10.1038/s43247-023-00883-6 (available as a free pdf)

Authors' abstract: *The serpentine orogenic belts that formed during the Neoproterozoic assembly of Gondwana resulted in geodynamic changes on the planet in advance of the Cambrian radiation. The details of Gondwana assembly associated with the closure of the Mozambique Ocean are enigmatic.*

We compile published geological and paleomagnetic data to argue that the Tarim block was associated with the Azania and Afif-Abas-Lhasa terranes and they were the locus of long-lived Andean-type subduction during the ~900 to 650 megayears interval.

Our model suggests a subduction system reorganization between 750 to 720 Ma, which resulted in two distinct phases of Mozambique ocean evolution. Between 870 to 750 Ma, a north-south oriented subduction system marks the locus of ocean crust consumption driven by the extension of the Mozambique Ocean.

Beginning ~720 megayears ago, a newly developed ~east-west oriented subduction system began to consume the Mozambique Ocean and led to the assembly of eastern Gondwana.

Our new reconstruction uses true polar wander to constrain the relative paleolongitude of Tarim, South China and West Africa. In this scenario, the closure of the Mozambique Ocean and formation of Gondwana was orthogonal [at right angles] to the preceding supercontinent Rodinia.

The assembly of Gondwana coincides with a period of Earth's history marked by dramatic changes in atmospheric circulation, oceanic circulation, the rapid motion of continents, nucleation of the inner core, hyperactive reversing magnetic field, a decrease of geothermal gradients along subduction zones, climatic variations, steep increase in O₂ and the rise of metazoan life.

Speirs: Lots of tectonic maps to show how supercontinent Rodina broke apart and the pieces were then glued back into Gondwana.

Planets: Various.

Hon, M., et al (2023) **A close-in giant planet escapes engulfment by its star.** NATURE 618:doi.org/10.1038/s41586-023-06029-0

[AU is the astronomical unit, which is the median distance between Earth and the Sun. It is widely used as a measurement of distance by astronomers.]

Authors' abstract: *When main-sequence stars expand into red giants, they are expected to engulf close-in planets. Until now, the absence of planets with short orbital periods around post-expansion, core-helium-burning red giants has been interpreted as evidence that short-period planets around Sun-like stars do not survive the giant expansion phase of their host stars.*

Here we present the discovery that the giant planet 8 Ursae Minoris b orbits a core-helium-burning red giant. At a distance of only 0.5 AU from its host star, the planet would have been engulfed by its host star, which is predicted by standard single-star evolution to have previously expanded to a radius of 0.7 AU.

Given the brief lifetime of helium-burning giants, the nearly circular orbit of the planet is challenging to reconcile with scenarios in which the planet survives by having a distant orbit initially.

Instead, the planet may have avoided engulfment through a stellar merger that either altered the evolution of the host star or produced 8 Ursae Minoris b as a second-generation planet.

This system shows that core-helium-burning red giants can harbour close planets and provides evidence for the role of non-canonical stellar evolution in the extended survival of late-stage exoplanetary systems.

Witze, Alexandra (2023) **JWST hints at lower number of habitable planets.** NATURE 618:897-898 (available as a free pdf)

Author's extracts: *For the second time, the James Webb Space Telescope (JWST) has looked for and failed to find a thick atmosphere on an exoplanet in one of the most exciting planetary systems known.*

Astronomers report that there is probably no tantalizing atmosphere on the planet TRAPPIST-1 c, just as they reported months ago for its neighbour TRAPPIST-1 b.

There is still a chance that some of the five other planets in the TRAPPIST-1 system might have thick atmospheres containing geologically and biologically interesting compounds such as carbon dioxide, methane or oxygen. But the two planets studied so far seem to be without, or almost without, an atmosphere.

All of the seven TRAPPIST-1 planets, which orbit a star some 12 parsecs (40 light years) from Earth, have rocky surfaces and are roughly the size of Earth. Astronomers consider the system to be one of the best natural laboratories for studying how planets form, evolve and potentially become habitable.

TRAPPIST-1 c's surface temperature, on the side that faces its star, registers at around 107 °C, too hot to maintain a thick atmosphere that is rich in carbon dioxide.

Paleobiology.

Griffiths, M.L., et al (2023) **Endothermic physiology of extinct megatooth sharks.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 120:doi.org/10.1073/pnas.2218153120 (available as a free pdf)

Authors' abstract: *Otodus megalodon* was a gigantic shark that went extinct around 3.6 megayears ago. It could grow to the enormous size of at least 15 metres long, making it one of the largest apex marine predators since the Mesozoic.

The evolution of the extinct megatooth shark, *Otodus megalodon*, and its close phylogenetic relatives remains enigmatic.

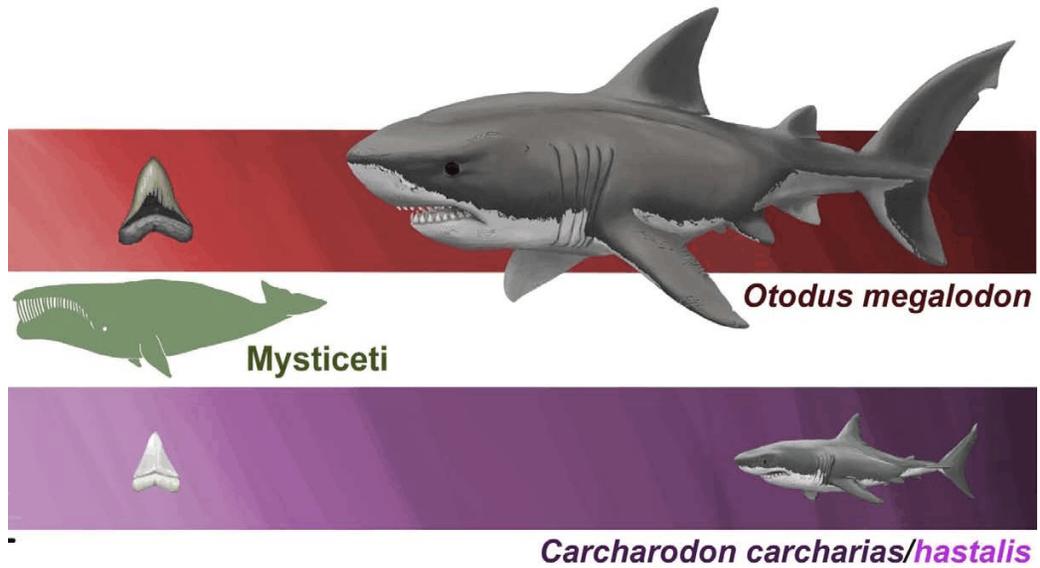
A central question persists regarding the thermophysiological origins of these large predatory sharks through geologic time, including whether *O. megalodon* was ectothermic or endothermic (including regional endothermy), and whether its thermophysiology could help to explain the iconic shark's gigantism and eventual demise during the Pliocene.

To address these uncertainties, we present unique geochemical evidence for thermoregulation in *O. megalodon* from both clumped isotope paleothermometry and phosphate oxygen isotopes.

Our results show that *O. megalodon* had an overall warmer body temperature compared with its ambient environment and other coexisting shark species, providing quantitative and experimental support for recent biophysical modeling studies that suggest endothermy was one of the key drivers for gigantism in *O. megalodon* and other lamniform sharks.

The gigantic body size with high metabolic costs of having high body temperatures may have contributed to the vulnerability of *Otodus* species to extinction when compared to other sympatric sharks that survived the Pliocene epoch.

[Images are from this paper. A megatooth shark could gulp down a full-sized whale as if it were a bait fish.]



Dinosaurs.

Croudace, A.D., et al (2023) **Iridescent plumage in a juvenile dromaeosaurid theropod dinosaur.** ACTA PALAEONTOLOGICA POLONICA 68:doi.org/10.4202/app.01004.2022 (available as a free pdf)

Authors' abstract: *Colour reconstructions have provided new insights into the lives of dinosaurs and other extinct animals, by predicting colouration patterns from fossilised pigment-bearing organelles called melanosomes.*

Although these methods have become increasingly popular, only a small number of dinosaurs have been studied using these techniques, which require exceptional preservation of fossil feathers, leaving open key questions such as whether dinosaurs changed their plumage patterns during ontogeny.

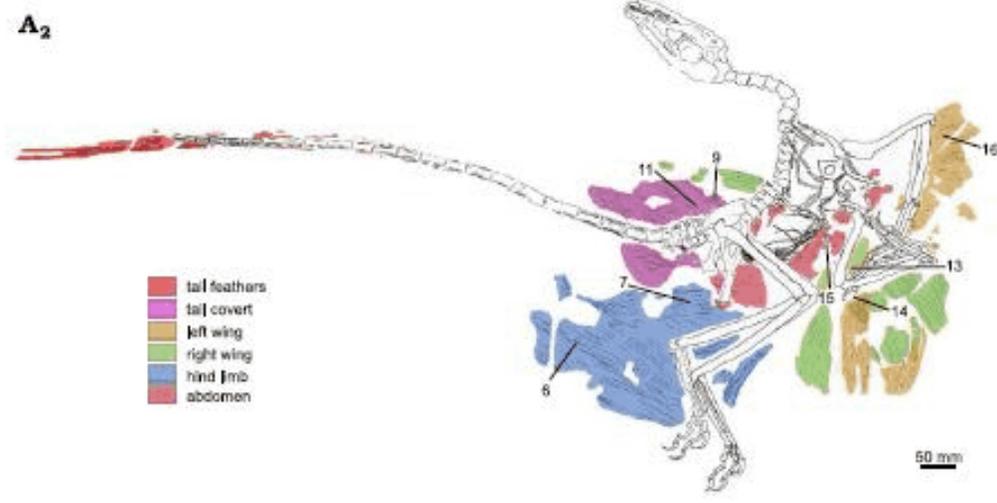
Here we reconstruct the feather colouration of an approximately one-year-old individual of the Early Cretaceous dromaeosaurid theropod Wulong bohaiensis, which to our knowledge is the first unequivocal juvenile paravian for which aspects of the original colour has been predicted.

Using quadratic discriminant analysis (QDA) and multinomial logistic regression (MLR) on the most comprehensive available datasets, we find strong evidence for iridescent plumage of the forelimb and hindlimb remiges and grey plumage on other portions of the body.

This suggests that some juvenile paravians used shiny iridescent feathers for signalling purposes, possibly even before reaching somatic or sexual maturity, and thus we can conclude that this paravian used iridescent signalling for intraspecific communication other than sexual signalling.

Finally, our results show that when analysing fossil datasets that are entirely comprised of solid and cylindrical melanosomes QDA consistently outperforms MLR, providing more accurate and higher classification probability colour predictions.

[Images are from this paper.]



Zoology.

Borowsky, Richard (2023) **Selection maintains the phenotypic divergence of cave and surface fish.** AMERICAN NATURALIST 202:55-63 (available as a free pdf)

Author's extracts and abstract: *Cave-adapted species hold a particular fascination for evolutionists for several reasons:*

First, regardless of taxon, they typically converge phenotypically on a predictable suite of traits, which includes losses of eyes and pigmentation, augmentation of other nonoptical senses, and changes in physiology and behavior.

Second, these changes are primarily driven by a single aspect of the cave environment: perpetual darkness. In the absence of light, both vision and pigmentation are functionless. In addition, photosynthesis cannot occur, so food is scarce and restricted to what can be imported from the surface.

Thus, cave species face numerous challenges to survival and provide abundant opportunities to study how environmental shifts affect phenotypic evolution and adaptation.

*The characid fish, *Astyanax mexicanus*, is an excellent model system to study this question, as it inhabits both surface and underground waters of northeastern Mexico in the region known as the El Abra.*

*Cave populations of *Astyanax* in this area have evolved from surface fish at least four times independently, thus facilitating studies of parallel and convergent evolution.*

*Importantly, in spite of this complex history, individuals from all *Astyanax* cave populations tested remain interfertile with one another and with the surface forms.*

Surface fish are widespread in the region, and there are 29 known populations of cave-adapted fish. In contrast to the well-pigmented and eyed surface fish, the cave morphs are largely unpigmented and lack external eyes.

The cave fish also have numerous specialized physiological and behavioral traits that enhance their survival in the cave environment. Thus, the two morphs are strongly diverged genetically and phenotypically.



Top: Normal sighted *A. mexicanus*

Bottom: Blind cave fish

**Astyanax mexicanus* is of special interest because its cave and surface habitats are often separated by only a few tens of meters. Surface individuals can enter into caves and potentially seed new populations or contribute to existing ones.*

Genetic divergence in the presence of gene flow has been well documented, but there is little information on the specific factors maintaining divergence.

*The present study investigates this in the Mexican tetra (*Astyanax mexicanus*), an excellent model for studying this question because surface and cave populations differ markedly in phenotype and genotype but are interfertile.*

Previous population studies documented significant gene flow among cave and surface populations, but they focused on analyses of neutral markers whose evolutionary dynamics likely differ from those of genes involved in cave adaptation.

The present study advances our understanding of this question by focusing specifically on the genetics responsible for eye and pigmentation reduction, signature traits of cave populations.

Direct observations of two cave populations over the course of 63 years verify that surface fish frequently move into the caves and even hybridize with the cave fish.

Importantly, however, historical records show that surface alleles for pigmentation and eye size do not persist but are rapidly eliminated from the cave gene pool.

It has been argued that regression of eyes and pigmentation was driven by drift, but the results of this study suggest that strong selection actively eliminates surface alleles from the cave populations.

[Images are from Wikipedia.]

Geology.

Doronzo, D.M., et al (2023) **Magma reservoir growth and ground deformation preceding the 79 CE Plinian eruption of Vesuvius.** COMMUNICATIONS EARTH AND ENVIRONMENT 4:doi.org/10.1038/s43247-023-00880-9 (available as a free pdf)

Authors' abstract: *The 79 CE eruption of Vesuvius is the first documented Plinian eruption, also famous for the archaeological ruins of Pompeii and*

Herculaneum. Although much is known regarding the eruption dynamics and magma reservoir, little is known about the reservoir shape and growth, and related ground deformation.

Numerical modelling by Finite Element Method was carried out, aimed at simulating the reservoir growth and ground deformation with respect to the reservoir shape (prolate, spherical, oblate) and magma overpressure.

The modelling was tuned with volcanological, petrological and paleoenvironmental ground deformation constraints.

Results indicate that the highest magma overpressure is achieved considering a prolate reservoir, making it as the most likely shape that led to eruption. Similar deformations but lower overpressures are obtained considering spherical and oblate reservoirs.

These results demonstrate that ground deformation may not be indicative of eruption probability, style/size, and this has direct implications on surveillance at active explosive volcanoes.

Botany.

Parra-Sanchez, E., and L. Baquero (2023) **Circumscription, first confirmed locality, and conservation status of *Dracula anthracina* (Orchidaceae).** SYSTEMATIC BOTANY 48:doi.org/10.1600/036364423X16847773873080

Authors' abstract: *Thirteen species (18%) in the genus *Dracula* (Orchidaceae) in Colombia lack basic information about their ecology and biogeography. *Dracula anthracina* has remained as a charismatic market-valued species with no information on its natural habitat.*

*We found the precise location of *D. anthracina* in explorations across the Colombian eastern Cordillera.*

*Our observations of wild populations and cultivated plants suggest that *D. nigriflora* should be reduced to a synonym of *D. anthracina* based on morphological characters.*

Furthermore, the species seems to be rare, geographically restricted, and has small populations. Hence, we suggest that *D. anthracina* should be considered of conservation concern and should be excluded from Ecuador's flora.

[Image, from Wikipedia, shows *Dracula vampira*, a similar species.]



Environmental Science.

Seo, K.W., et al (2023) **Drift of Earth's pole confirms groundwater depletion as a significant contributor to global sea level rise 1993-2010.** GEOPHYSICAL RESEARCH LETTERS 50:doi.org/10.1029/2023GL103509 (available as a free pdf)

Authors' abstract: *Melting of polar ice sheets and mountain glaciers has been understood as a main cause of sea level rise associated with contemporary*

climate warming. It has been proposed that an important anthropogenic contribution is sea level rise due to groundwater depletion resulting from irrigation.

A climate model estimate for the period 1993-2010 gives total groundwater depletion of 2,150 gigatonnes, equivalent to global sea level rise of 6.24 mm. However, direct observational evidence supporting this estimate has been lacking.

In this study, we show that the model estimate of water redistribution from aquifers to the oceans would result in a drift of Earth's rotational pole, about 78.48 cm toward 64.16° E.

In combination with other well-understood sources of water redistribution, such as melting of polar ice sheets and mountain glaciers, good agreement with PM observations serves as an independent confirmation of the groundwater depletion model estimate.

Shaw, T.A., et al (2023) **Deglacial perspectives of future sea level for Singapore.** COMMUNICATIONS EARTH AND ENVIRONMENT 4:doi.org/10.1038/s43247-023-00868-5 (available as a free pdf)

Authors' abstract: *Low elevation equatorial and tropical coastal regions are highly vulnerable to sea level rise. Here we provide probability perspectives of future sea level for Singapore using regional geological reconstructions and instrumental records since the last glacial maximum ~21.5 thousand years ago.*

We quantify magnitudes and rates of sea-level change showing deglacial sea level rose from ~121 metres below present level and increased at averaged rates up to ~15 mm/year, which reduced the paleogeographic landscape by ~2.3 million km².

Projections under a moderate emissions scenario show sea level rising 0.95 metres at a rate of 7.3 mm/year by 2150 which has only been exceeded (at least 99% probability) during rapid ice mass loss events ~14.5 and ~9 thousand years ago.

Projections under a high emissions scenario incorporating low confidence ice-sheet processes, however, have no precedent during the last deglaciation.

Arzeno-Soltero, I.B., et al (2023) **Large global variations in the carbon dioxide removal potential of seaweed farming due to biophysical constraints.** COMMUNICATIONS EARTH AND ENVIRONMENT 4:doi.org/10.1038/s43247-023-00833-2 (available as a free pdf)

Authors' abstract: *Estimates suggest that over 4 gigatons per year of carbon dioxide (Gt-CO₂ year⁻¹) be removed from the atmosphere by 2050 to meet international climate goals. One strategy for carbon dioxide removal is seaweed farming; however its global potential remains highly uncertain.*

Here, we apply a dynamic seaweed growth model that includes growth-limiting mechanisms, such as nitrate supply, to estimate the global potential yield of four types of seaweed.

We estimate that harvesting 1 gigatons per year of seaweed carbon would require farming over 1 million km² of the most productive exclusive economic zones, located in the equatorial Pacific.

The cultivation area would need to be tripled to attain an additional 1 Gt year⁻¹ of harvested carbon, indicating dramatic reductions in carbon harvest efficiency beyond the most productive waters.

Improving the accuracy of annual harvest yield estimates requires better understanding of biophysical constraints such as seaweed loss rates (e.g., infestation, disease, grazing, wave erosion).

Thompson, G.L., et al (2023) **Soil microbiomes in lawns reveal land-use legacy impacts on urban landscapes.** OECOLOGIA 202:doi.org/10.1007/s00442-023-05389-8 (available as a free pdf)

Authors' abstract: *Land-use change is highly dynamic globally and there is great uncertainty about the effects of land-use legacies on contemporary environmental performance.*

We used a chronosequence of urban grasslands (lawns) that were converted from agricultural and forested lands from 10 to over 130 years prior to determine if land-use legacy influences components of soil biodiversity and composition over time.

We used historical aerial imagery to identify sites in Baltimore County, MD (USA) with agricultural versus forest land-use history.

Soil samples were taken from these sites as well as from existing well-studied agricultural and forest sites used as historical references by the National Science Foundation Long-Term Ecological Research Baltimore Ecosystem Study program.

We found that the microbiomes in lawns of agricultural origin were similar to those in agricultural reference sites, which suggests that the ecological parameters on lawns and reference agricultural systems are similar in how they influence soil microbial community dynamics.

In contrast, lawns that were previously forest showed distinct shifts in soil bacterial composition upon recent conversion but reverted back in composition similar to forest soils as the lawns aged over decades.

Soil fungal communities shifted after forested land was converted to lawns, but unlike bacterial communities, did not revert in composition over time.

Our results show that components of bacterial biodiversity and composition are resistant to change in previously forested lawns despite urbanization processes. Therefore land-use legacy, depending on the prior use, is an important factor to consider when examining urban ecological homogenization.

Human Prehistory.

Bintliff, John (2023) **Agricultural intensification and the evidence from offsite survey archaeology.** JOURNAL OF WORLD PREHISTORY 36:doi.org/10.1007/s10963-023-09176-4 (available as a free pdf)

Author's abstract: *The enhancement of crop yields through manuring has been attested since early farming prehistory in many parts of the world. This article reviews the history of research into the potential archaeological evidence for this practice in Europe, the Mediterranean lands and the Near East.*

The focus is on the interpretation of ceramic data recovered in surface field surveys conducted since 1950 and what sorts of activities may be plausibly inferred from them.

The article examines the origins of the model, objections to it, and recent analyses which again strengthen it. A particular case-study analyses the evidence for the protohistoric and early historic periods in Greece.

The methodological and empirical arguments tend to strongly reaffirm the importance of artificial manuring in agrarian regimes of all periods, and its significance in furthering understandings of economic and demographic history and prehistory.

Xhauflair, H., et al (2023) **The invisible plant technology of prehistoric southeast Asia: Indirect evidence for basket and rope making at Tabon Cave, Philippines, 39 to 33,000 years ago.** PLOS ONE 18:doi.org/10.1371/journal.pone.0281415 (available as a free pdf)

Authors' abstract: *A large part of our material culture is made of organic materials, and this was likely the case also during prehistory.*

Amongst this prehistoric organic material culture are textiles and cordages, taking advantage of the flexibility and resistance of plant fibres.

While in very exceptional cases and under very favourable circumstances, fragments of baskets and cords have survived and were discovered in late Pleistocene and Holocene archaeological sites, these objects are generally not preserved, especially in tropical regions.

We report here indirect evidence of basket/tying material making found on stone tools dating to 39 to 33,000 BP from Tabon Cave, Palawan Philippines.

The distribution of use-wear on these artefacts is the same as the distribution observed on experimental tools used to thin fibres, following a technique that is widespread in the region currently.

The goal of this activity is to turn hard plant segments into supple strips suitable as tying material or to weave baskets, traps, and even boats.

This study shows early evidence of this practice in Southeast Asia and adds to the growing set of discoveries showing that fibre technology was an integral part of late Pleistocene skillset.

This paper also provides a new way to identify supple strips of fibres made of tropical plants in the archaeological record, an organic technology that is otherwise most of the time invisible.

Modern History.

Midura, Rachel (2023) **'They hide from me, like the Devil from the Cross': Transalpine postal routes as intelligence work, 1555-1645.** HISTORY 108:303-327 (available as a free pdf)

Author's abstract: *Tracing patterns of letter interception across the Alps provides a new geography of Habsburg communications, espionage, and counter-espionage in seventeenth-century Europe.*

Using the correspondence of the Tassis family of imperial and Spanish postmasters, this article demonstrates that despite increasingly martial rhetoric, battles in information security took place along different geography than the military campaigns of the Thirty Years War.

Instead of the 'Spanish Road', the article proposes the consideration of two alternative roads debated by postal administrators: the 'German Road' through Augsburg and the 'Swiss Road' through Lucerne.

Letter interceptions along these roads demonstrate that information security differed from martial security in two key ways:

First, Habsburg postal systems relied upon international cooperation rather than territorial control. The desire to avoid information leaks had to be balanced with the financial necessity of contracting postal operations to Alpine towns such as Lindau.

Second, postmasters themselves responded to the information security needs of cosmopolitan private patrons and multiple princes, complicating their allegiances as state agents.

Cases such as the imperial Postmistress General of Brussels and Spanish postmaster of Milan demonstrate that postmasters served as both 'honorable spies' and spy-catchers, proposing new itineraries to circumvent espionage.

Postal interference featured prominently in the Swedish King Gustavus Adolphus's manifesto on entering the Thirty Years War (1618-48). The 1630 declaration appeared in five languages and twenty-three editions, seeing the widest known circulation of a pamphlet to that time.

The first explanation for Swedish intervention was the interception of Gustavus' letters to the Prince of Transylvania:

“after they had been opened, and false glosses put upon them, to load His Majesty with the people's hatred, and render him odious everywhere, they were maliciously published; and the courier who carried them was put in prison, and treated as a criminal by open and public violence contrary to the law of nations”.

Several such letter interceptions and publications took place over the course of the conflict, including entire chancelleries abandoned in the aftermath of battle.

Yet, Gustavus' manifesto made the rare connection between interception and an overarching code of conduct in international relations, nominally guaranteeing the immunity of mail and its agents.

The incident represented the “thousands of secret and open practices and threats made use of by the Spaniards and their partisans”. The pamphlet set forth the unprecedented claim that such abuse was a casus belli.

Zhou, J., et al (2023) **Viral emissions into the air and environment after SARS-CoV-2 human challenge: a phase 1, open label, first-in-human study.** LANCET MICROBE 4:doi.org/10.1016/S2666-5247(23)00101-5 (available as a free pdf)

Authors' abstract: After controlled experimental inoculation, the timing, extent, and routes of viral emissions was heterogeneous.

We observed that a minority of participants were high airborne virus emitters, giving support to the notion of superspreading individuals or events.

Our data implicates the nose as the most important source of emissions. Frequent self-testing coupled with isolation upon awareness of first symptoms could reduce onward transmissions.

Our data implicates the nose as an import portal for virus emissions, which has important implications for public health messaging, such as to cover the nose when using a facemask, and suggests the nasal mucosa as a key target for interventions that aim to block transmission, such as antiviral nasal sprays.

Recovering viable virus from surfaces and correlation with viral load on hands suggests a role for hand hygiene and indoor surface cleaning in addition to vital measures to interrupt SARS-CoV-2 airborne transmission.

Technology.

Lécuyer, Christophe (2023) **Gordon Moore (1929-2023)** NATURE 618:669 (available as a free pdf)

Author's extracts: Gordon Moore played a pivotal part in the development of the semiconductor technology and industry in the United States, co-founding both Fairchild Semiconductor and Intel Corporation.

He made the observation about the development of computing power now known as Moore's Law, and established the technology road map for semiconductors that drove innovation in microelectronics, in accordance with the law, for nearly one-quarter of a century. He died on 24 March, aged 94.

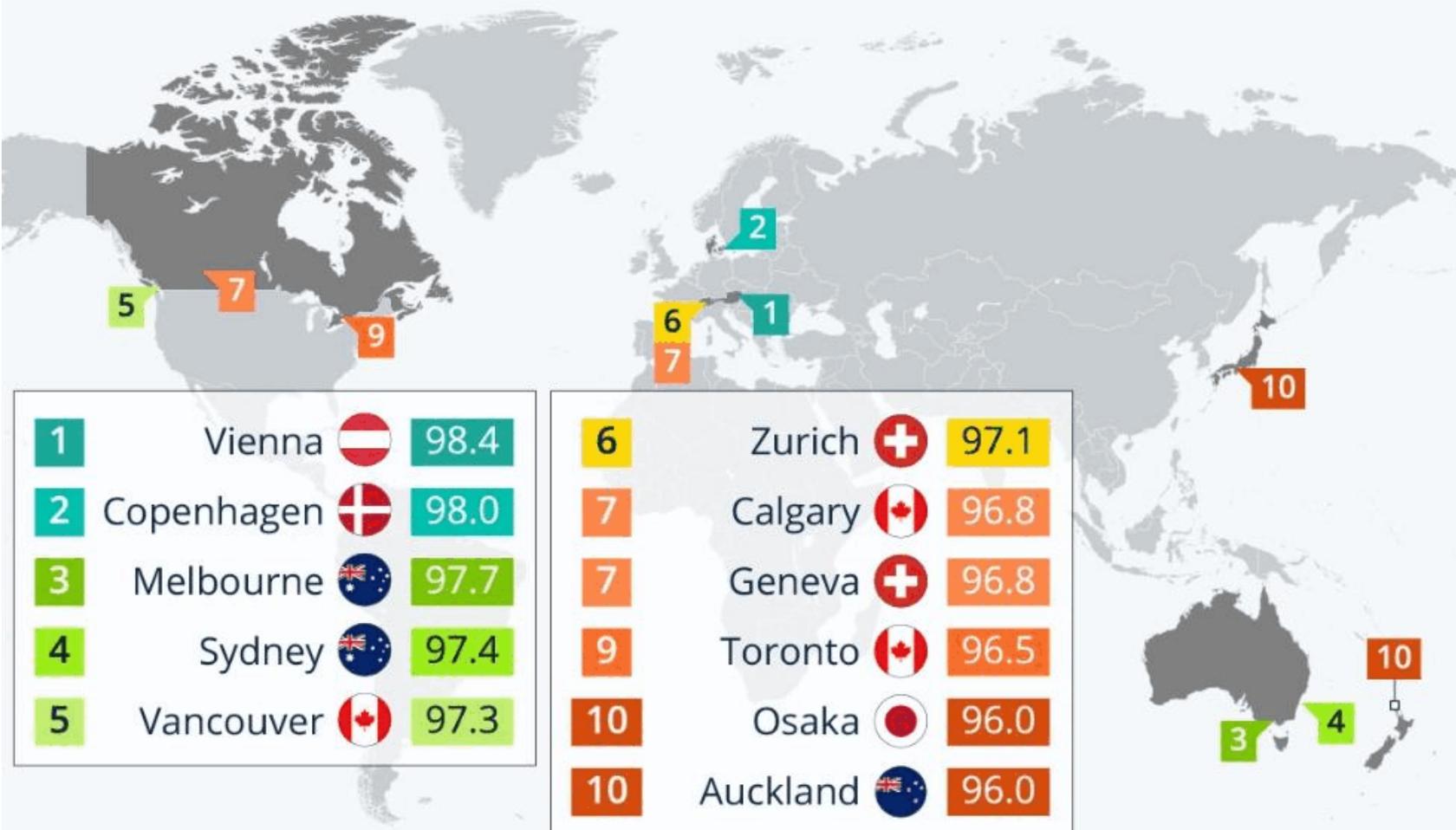
In 1965, Moore published his now-famous article, 'Cramming more components onto integrated circuits', in Electronics, a trade magazine.

He argued that integrated circuits would rapidly grow in complexity, driving down the cost of electronic functions. 'Moore's plot' showed that the number of components per microchip had doubled each year since the development of the planar transistor in 1959.

As a result, Moore's plot became increasingly known as Moore's Law in the late 1970s.

The World's Most Liveable Cities

Global cities ranked by living conditions in 2023 (100=ideal)



The survey assesses 173 cities, ranking them according to their stability, healthcare, culture and environment, education and infrastructure.

Source: The Global Liveability Index 2023 - The Economist Intelligence Unit