

**OPUNTIA
568**



Saint Urho's Day 2024

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

SPRING HAS SPRUNG (WE HOPE)

photos by Dale Speirs

2024-03-13

The photos on the cover and this page were taken from the First Street SW pedestrian bridge over the Elbow River. The river marks the southern and eastern boundaries of central Calgary. The cover photo looks upstream and the photo on this page looks downstream.

In both photos, the river makes a right-angle bend in the far distance which is out of sight. Elbow River meanders through its valley making multiple sharp bends, hence its name. The native tribes all described it by that word, and the

European settlers likewise.

The weather has moderated, although we can anticipate a few more snowfalls. March is historically the snowiest month in southern Alberta.

Daytime temperatures are fluctuating between -10° and + 10°C, which is quite tolerable.



DEATH TO GRASSHOPPERS!

by Dale Speirs

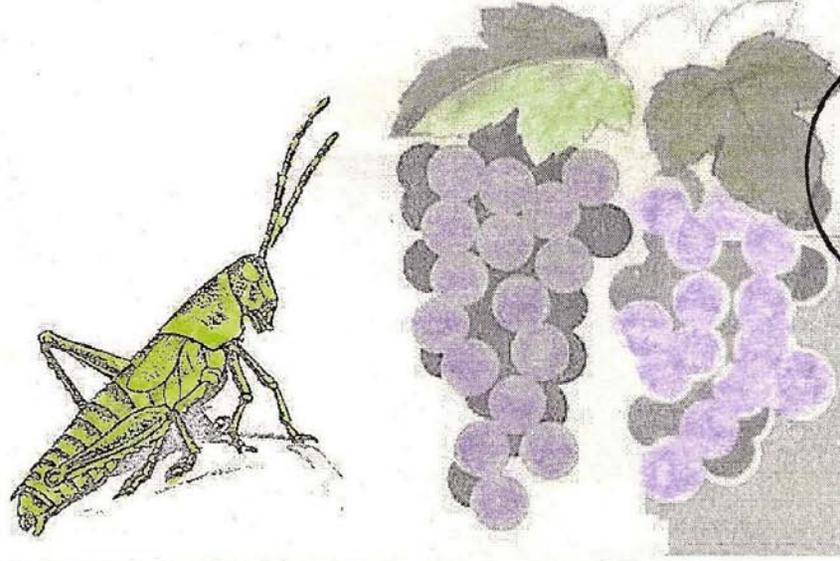
Saint Urho's Day, every March 16, was invented in 1956 by Richard Mattson, a Minnesota native of Finnish extraction.

This is not a Finnish holiday in the Old Country but was invented for Finnish expatriates and those outside the home country descended from Finnish emigrants.

In the legend accepted today, Saint Urho banished a plague of grasshoppers in Finland who were destroying the grape crop. He shouted "Heinäsiirkka, heinäsiirkka, mene täältä hiiteen!", which translates as "Grasshopper, grasshopper, go from here to Hell!", thus saving the crop.

**St. Urho's Day
March 16**

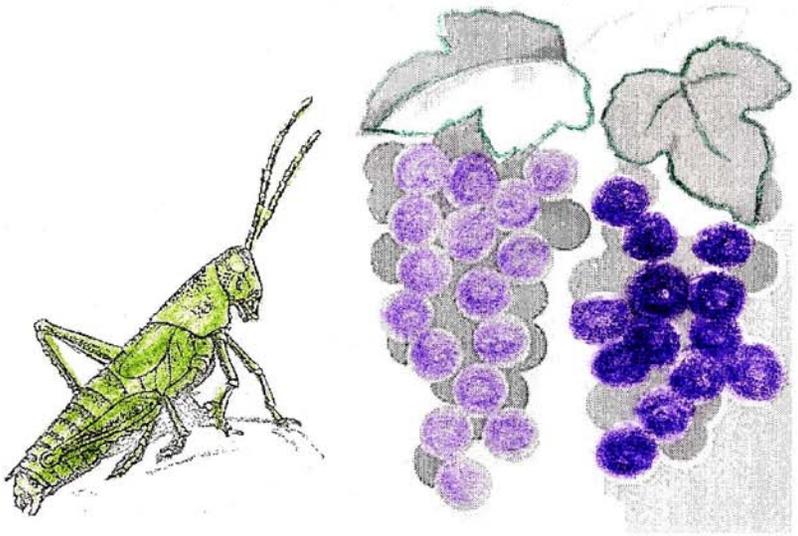
Heinäsiirkka, heinäsiirkka, mene täältä hiiteen!



Dale Speirs
Box 6830
Calgary, Alberta
Canada T2P 2E7

**St. Urho's Day
March 16**

Heinäsiirkka, heinäsiirkka, mene täältä hiiteen!



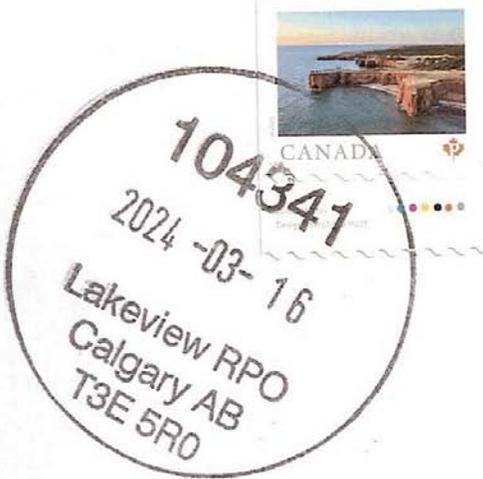
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Box 6830
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My mother Betty was Canadian-born but was pure ethnic Finn on both sides of her family, which makes me half-Finnish.

We always celebrated Saint Urho's Day. My mother and I, being mail artists, always tried to prepare covers postmarked at a local post office. I showed some covers in OPUNTIA #408, page 22, but here are some more.

I had a busy day this year on March 16 because most of the time I was at Paleo 2024, which see on the next page. I did manage to produce some Saint Urho covers, as shown here. The cachet shows a statue of Saint Urho erected in Menahga, Minnesota. He has speared a giant grasshopper with a pitchfork.

SAINT URHO'S DAY
March 16



PALEO 2024
by Dale Speirs

[Reports of previous conventions appeared in OPUNTIA #408, 439, 521, and 546. There were no conventions in 2020 and 2021 due to the COVID-19 pandemic.]

The Alberta Palaeontological Society (www.albertapaleo.org) is headquartered in Calgary and every March hosts an annual conference called Paleo. This year it was on Saint Urho's Day.

The one-day symposium was at Mount Royal University in southwest Calgary. There was a single track of presentations plus poster sessions and various tables.



The poster sessions.



THE FIRST OCCURRENCE OF *PROGNATHODON SP.* (SQUAMATA, MOSASAURIDAE) FROM THE BEARPAW FORMATION OF SASKATCHEWAN, CANADA.

IMPLICATIONS FOR MARINE PALEOECOLOGY IN THE BEARPAW SEA

Emily L. Bamforth¹ and Ryan C. McKellar²

¹University of Saskatchewan, Department of Geological Sciences, 114 Science Hall, Campus Drive, Saskatoon, SK S0N 0A2; ²Royal Saskatchewan Museum, 2445 Albert Street, Regina, SK S4P 0A7

2012 Surface Collection
Above: Top of marine and continental fossiliferous elements and a variety of vertebrates from the 2012 surface collection of the RSM 2493.1 site. Scale bar = 10cm.
Left: The fused base of the parietal in dorsal view. Teeth are indicated by red circles.

PROGNATHODON: THE 'T. REX OF THE SEA'
The Late Cretaceous mosasaur Prognathodon has a global distribution, with specimens found in Campanian and Maastrichtian marine deposits in Europe, New Zealand, North America and the Middle East. With its large body size, blunted snout, and massively built jaws, the animal has earned the moniker 'T. rex of the Sea'.

Canada's Largest Prognathodon
When RSM 2493.1 was prepared and assembled, incorporating specimens collected in the earlier 2012 collection, the skull was measured to be 34.5 cm in length. This is considerably larger than the 24 cm Algonquin specimens described by Kouch et al. (2011), which had lengths of between 80 and 90 cm.
Extrapolating to body size, the animal is estimated to be 80 cm in length, making it the largest Prognathodon found in Canada to date. Continued preservation of the cranial material, and further excavation of the West Block site are required to obtain more information about this remarkable specimen.

OTHER CANADIAN PROGNATHODON TO DATE
Prognathodon and closely related fish-like mosasaurs have been reported from the Campanian Bearpaw Formation of Saskatchewan, including the smaller *Miosaurius* (C. M. Erickson et al., 2011) and *Prognathodon* (M. P. Erickson et al., 2011). These two groups shared the shallow marine eco-space, presumably exploiting different food sources and/or utilizing different trophic niches. Understanding mosasaur niche partitioning and trophic specialization, particularly among the two largest mosasaur species, may provide critical insight into the ecology of Cretaceous marine environments.

References
Erickson, M. P., Erickson, M. D., & Bullard, T. J. (2011). A new species of mosasaurid from the upper Campanian Bearpaw Formation of Saskatchewan, Canada. *Journal of Systematic Palaeontology*, 1(1), 89-94.
Kouch, T., Erickson, D., Muehlen, J. A., & Colwell, M. W. (2011). New mosasaurid species of Prognathodon from the Campanian of Saskatchewan, Canada, and the palaeogeography and biogeography of the genus. *Journal of Systematic Palaeontology*, 1(2), 129-148.
Lynch, A. J., All, J., Pritch, D., Murray, S., & Murray, M. (2018). A new species of Prognathodon (Squamata, Mosasauridae) from the Alton-Township Formation, Saskatchewan, Canada. *Journal of Systematic Palaeontology*, 6(1), 1-11.
Muehlen, J. A., & Erickson, M. P. (2011). Prognathodon from the West Block site are required to obtain more information about this remarkable specimen.

Presentations.

The seminars each averaged about 100 or more people in a lecture theatre. For some reason my smartphone camera renders projection screens blue. Trying to edit the colour out just faded everything else, so my apologies for the blue tinge on so many of these photos..

The Messel Pit, Central Germany: Fossilized Treasures Of The Eocene.
by Tako Koning



This fossil site is a half-hour drive south of Frankfurt, Germany. Tako has visited the site, which was an oil shale mine, then a garbage dump before the citizens took it over and made it a heritage site.

Above right is a small horse about the size of a dog. Bottom right is a boa constrictor. The brown colour is staining by oil. During the Eocene, Germany had a tropical climate.

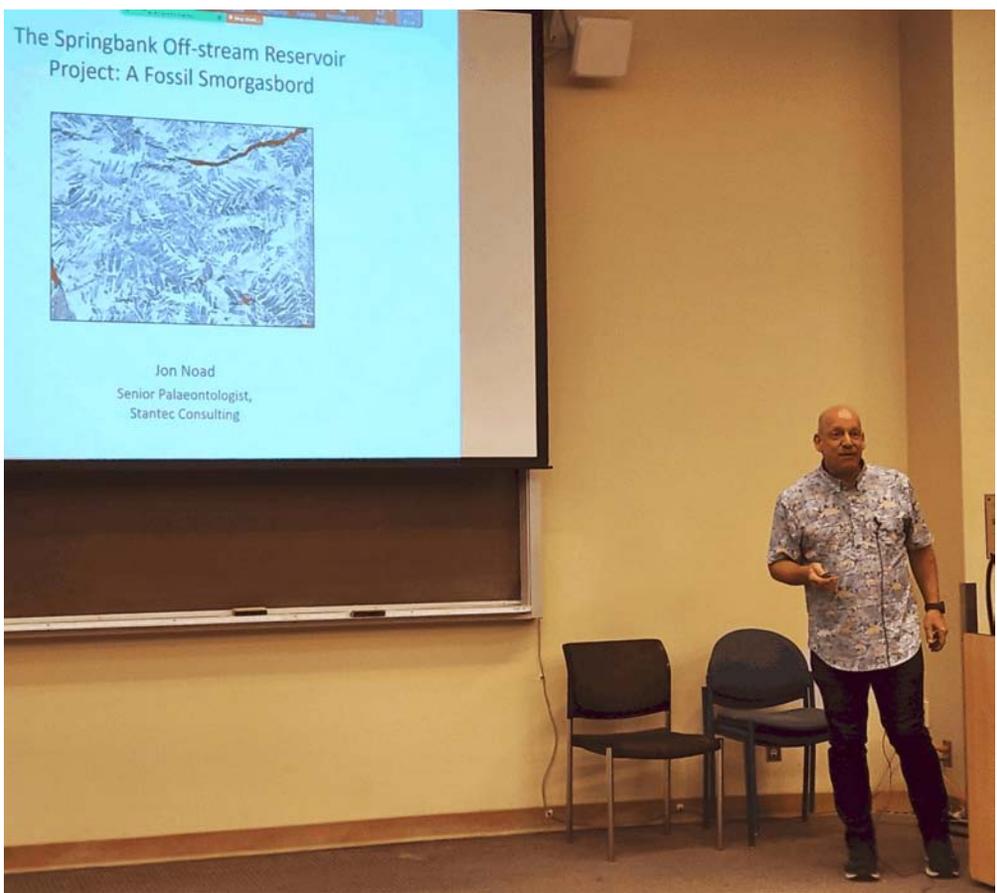
Palaeontology Of The Springbank Off-Stream Reservoir Project.

by Dr Jon Noad

Springbank is a district in the mountains southwest of Calgary, upstream on the Elbow River. During the great flood of June 2013 which devastated Calgary and southwestern Alberta, the Elbow River filled the mountain valleys and flooded 100,000 homes in Calgary.

In the aftermath, an extensive campaign of flood prevention policies began, including construction of dry dams and diversion canals in Springbank. Jon has been working as a geologist on the flood works and in particular identifying fossil deposits exposed by the construction.

The discoveries include dinosaur footprints, Cretaceous oyster beds, and ammonites. Fossil tree trunks still standing vertically with roots in paleosols might well have been grazed by dinosaurs.



Rooted Tree

- Fossil tree exposed
- Still in life position – later sediment deposited around it
- Occurs in the Coalspur Formation
- Likely late Cretaceous age so may have been browsed upon by a dinosaur
- Second rooted tree indicates a significant surface

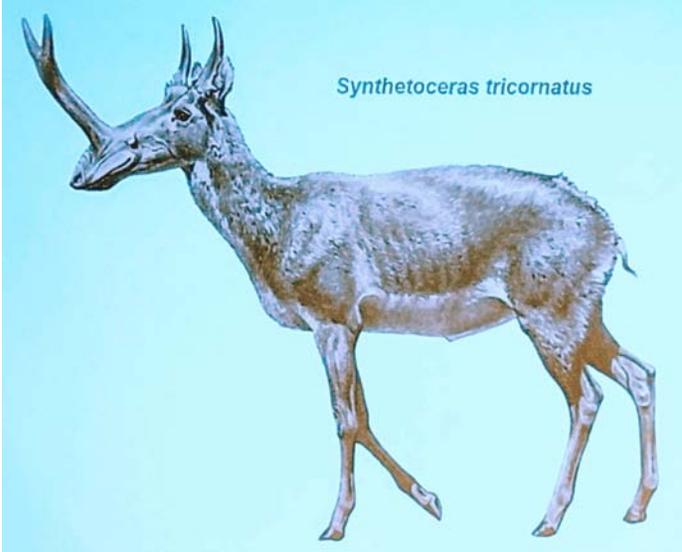
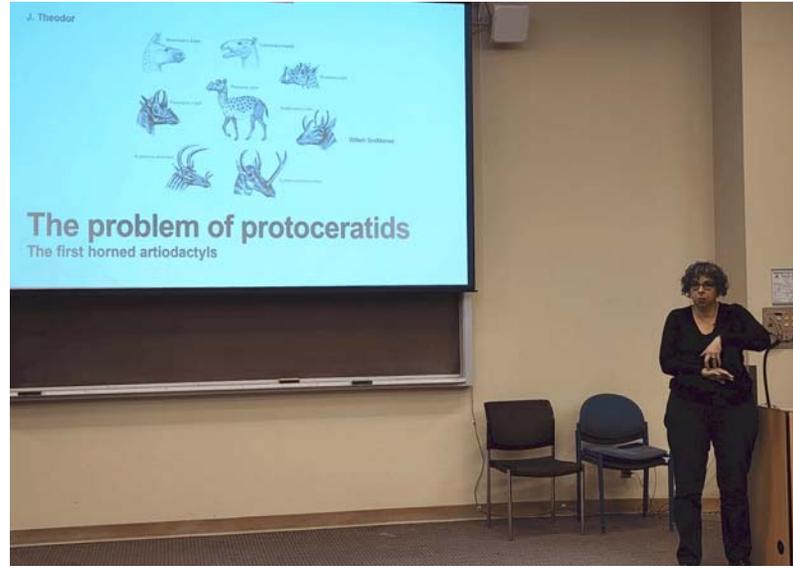
The rocks straddle the Cretaceous-Paleocene boundary, so tests are being done to find iridium anomalies to identify the asteroid impact that ended the dinosaurs.

The Problem Of Protoceratids: The First Horned Artiodactyls.

by Dr Jessica Theodore

Protoceratids look like pronghorns but were not. There is a great deal of controversy as to where they belong on the evolutionary tree. Some say they are next to camels, other say to ruminants (cattle and hoofed animals). Jessica said more work needs to be done and no one can be sure.

Camels originated in North America, spread to Europe, and down into Arabia. The ice ages wiped them out in the north but their fossils are abundant in North America.

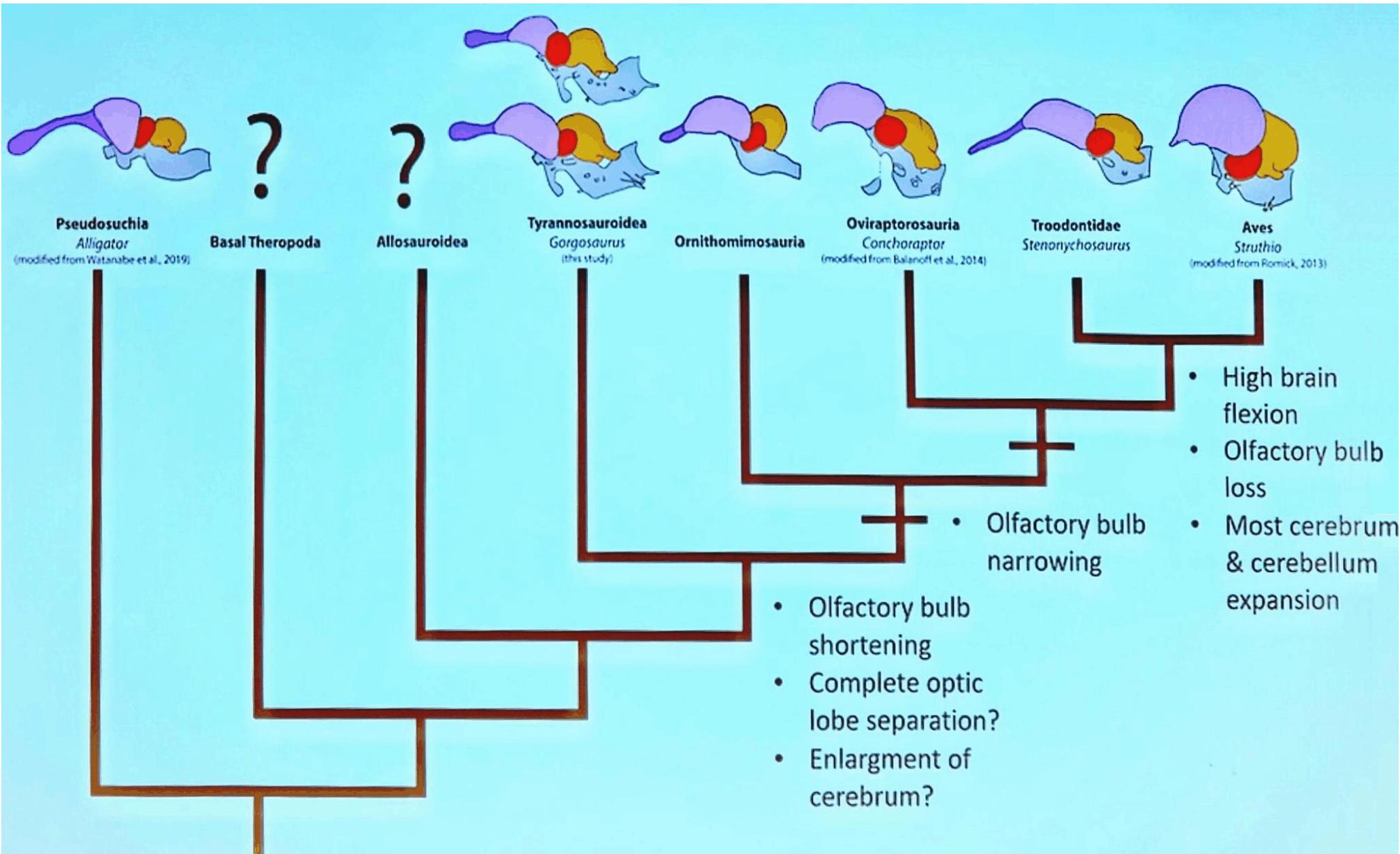


Lizard brain or bird brained? New insight into the evolution of the theropod brain.

by Jared Voris

Paleontologists have been using casts or MRI scans of the inside of fossil skulls to study how brains developed in vertebrates. The problem is that studies on living species show there is little correlation between the the actual brain shapes and casts or scans. The problem is that brains don't fill the entire skull. They hang suspended in shock-absorbing fluid or tissues.





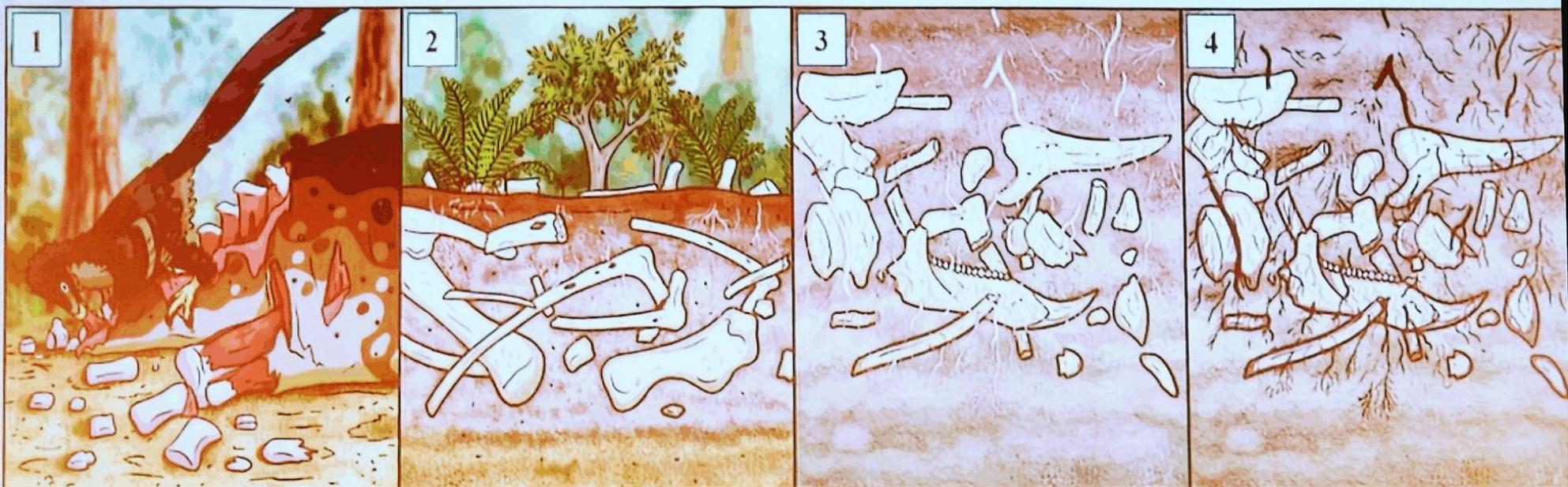
Ichnodiversity And Taphonomy Of Continental Bioerosion Traces On *Triceratops* Bones From The Frenchman Formation Of Saskatchewan.

by Jack Milligan

When an animal dies and is entombed in sediments, it doesn't immediately turn into a hard rock fossil. Scavengers clean the flesh out, and many invertebrates tunnel into the fresh bones to get the marrow. Thus most bone fossils will have microtunnels or pits dug into them. Later on after the remains are covered by sediments, plants send in roots to gather nutrients. All these leave marks on the fossils.



Taphonomic pathway for RSKM P3339.1



- *Triceratops* dies on a floodplain environment
- Disarticulation occurs, water and scavengers (invertebrate decomposers and possibly vertebrates)
- Rosettes, unornamented chambers

- Bones buried during pedogenesis; some bones partially buried
- Plant community begins to establish itself
- Infaunal burrowing, infilled tubes and chambers

- Soil acidity, external pressure cracks bone
- Plant roots anchor themselves to bones
- Biochemical processes begin etching bones, potentially by mycorrhizal fungi

- Flooding event occurs, drowns or removes plant community
- Disturbs uppermost soil layer (organic layer)
- Bones and root system fossilized together

Artwork by Kaitlin Lindblad

Update On The Kaskie Hadrosaur Fieldwork.

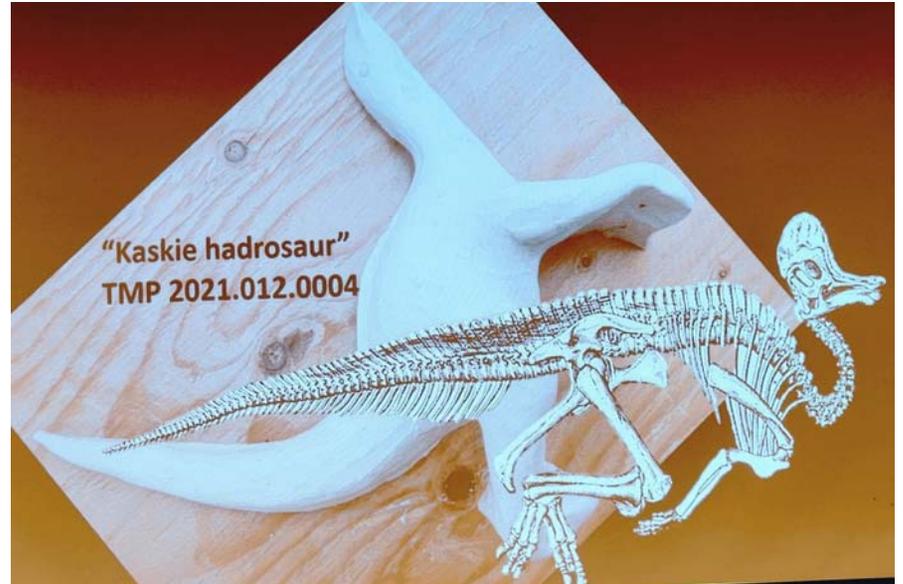
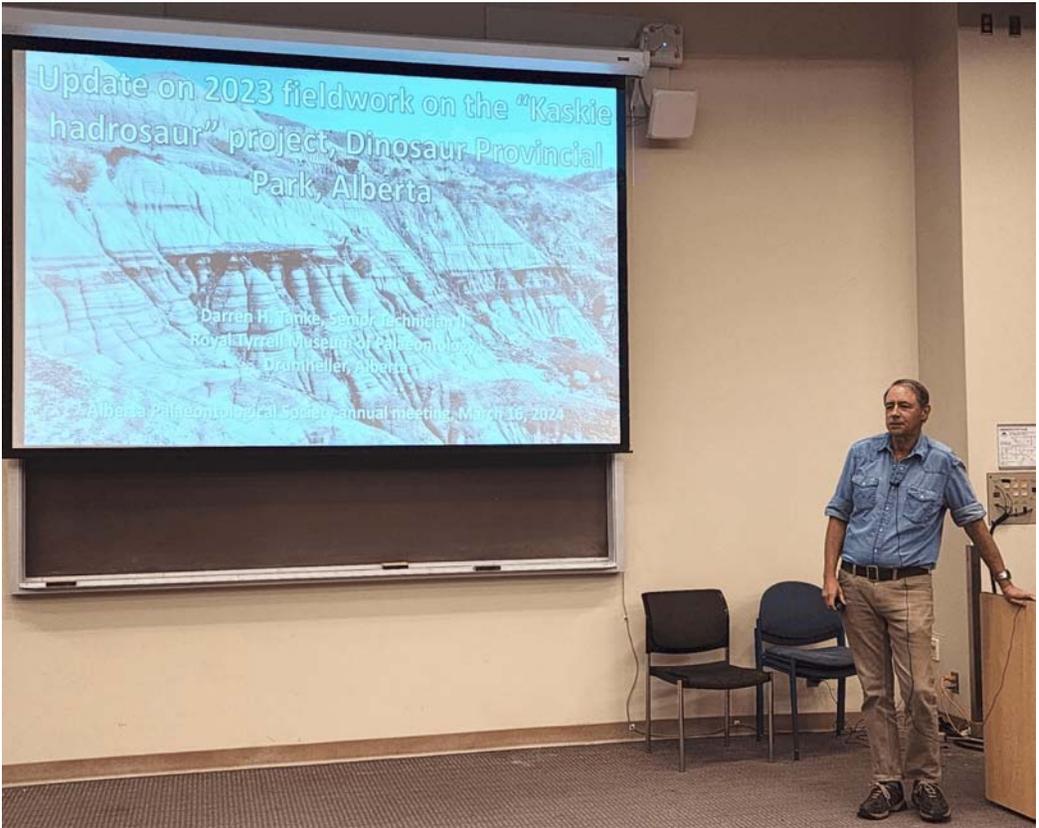
by Darren Tanke

This was the highlight of the symposium. In 2121, Teri Kaskie discovered portions of a mummified hadrosaur peeking out from a hill in Dinosaur Provincial Park. Last year at Paleo 2023, Darren presented the results of the 2022 field work, which involved excavating half the hillside to prepare a huge block of rock containing some of the specimen.

The 2023 field work continued to excavate but to everyone’s dismay the skeleton extended deeper into the hill than thought. They weren’t able to remove the skeleton as planned.

At bottom right, the image shows a skeleton which was thought to be the original position. The white cast is what is now believed to be the actual position of the fossil, with its head bent back into the hill. The rest of the work will have to wait until this year’s season.

The oval encompasses (left to right) the tip of the hadrosaur tail, a large patch of mummified skin, and part of a leg. This was before excavation began.



The hill, three stories tall, had to be excavated by pick and shovel with a gang of volunteers. The park is a desert, blazing hot in summer with temperatures regularly up to 40°C.

The red star is a surveyor mark for photogrammetry. The photo was taken in August 2023 after the partially exposed specimen was jacketed for the winter (white rectangle).





Jenni has been studying fossil-bearing strata with the idea of being able to predict where fossils are. She had two sites, a Pliocene hominid locality in Kenya and a Late Cretaceous site in the Alberta badlands. Her idea is to be able to say what strata contain vertebrate fossils and, at the same localities, where the best place is to locate microfossils.

She used drill cores to identify what strata had fossils and then compare them to each other. For example, in Dinosaur Provincial Park, vertebrate fossils occur just below ironstone layers, while microfossils tend to be above the layers.

Calgary's annual readercon When Words Collide will return for the weekend of August 16 to 18 at the Southland Drive Delta Hotel. The latest report advised that the convention is 90% sold and some of its events are completely subscribed.

Applications are closed for presenters, panelists, and moderators. 200 people put in for those positions. WWC is restricted to 1,000 members plus volunteers and guests, and the hotel books up quickly. The War of the Words Story Competition deadline is March 31. Submission fee is \$5 per story.

In a word, hustle. I have attended every WWC and enjoyed them all. This is a book oriented convention. No superhero actors but lots of publishers, editors, and published authors. Numerous one-on-one pitch sessions are held where writers can meet with editors and publishers.

The dealer bourse is restricted to books only. Lots of small-press publishers in the bourse as well as writers societies from every genre and traditional bookstore dealers.

For more information, visit:

www.alexnadrawriters.org/when-words-collide-2024.html

ZINE LISTINGS

[I only list zines I receive from the Papernet. If the zine is posted on www.efanzines.com or www.fanac.org, then I don't mention it since you can read it directly.]

CHRISTIAN NEW AGE QUARTERLY (US\$5 from Catherine Groves, Box 276, Clifton, New Jersey 07015-0276) This issue was on the theme of Saint Iodasaph (better known to anglophones as Saint Josaphat) and the garbling of Buddhist texts into Christian allegories.

PHILATELIC DINOSAURS



British Post issued a set of stamps in March 2024 depicting dinosaurs and fossils collected by pioneer Mary Anning.

The dinosaur images depicted worldwide species, including several found in Alberta. Only the latter are shown here.



SERIES DETECTIVES: PART 18

by Dale Speirs

[Parts 1 to 17 appeared in OPUNTIA's #402, 406, 425, 448, 459, 467, 472, 477, 485, 491, 497, 500, 509, 517, 528, 541, and 551.]

The old-time radio series mentioned here are available as free downloads from the Old Time Radio Researchers at www.otrr.org/OTRRLibrary

The Fat Man.

THE FAT MAN radio series was based on a character by Dashiell Hammett. Brad Runyon's weight was announced in the intro as either 237 or 239 pounds, depending on the episode. He had a distinctive speaking style, slurring the last word in each sentence.

The series aired from 1946 until 1951 on the American Broadcasting Company network. Like Hammett's other radio shows, the series was wiped out when he was named as a Communist during the Red Scare. There was a second series syndicated on the Australian Broadcasting Corporation for the 1954-55 season. Episodes from both networks are circulating as mp3s.

"The Crooked Horse" aired on 1946-09-09 on the American Broadcasting Company network. No scriptwriter was credited, although everyone else was.

A woman, never named, came to Brad Runyon, saying she thought there had been a murder at the hotel where she was staying. The management didn't agree and said nothing was untoward in the room beside hers.

She peeped through the keyhole of Room 610 and saw a corpse. Summoning the clerk, who said no one was registered in the room, she had him open it. There was no trace of a dead body and the room was undisturbed.

Runyon visited the hotel the next day. Before he could talk to the desk clerk, a hotel guest named Henry Walker cut in and complained to the clerk. His room was too noisy, and he wondered if he could move to Room 610 across the hallway.

The clerk said the room was reserved and sent the man away. When Runyon asked the clerk about the incident during the night, the clerk denied having met

the woman or going to Room 610. Runyon went upstairs and used a passkey to enter Room 610. He found nothing. He went next door to the woman's room, interrogated her, and caught her out in assorted lies.

She then said she was a federal agent working undercover. She needed help, so she hired Runyon. Her story was that the dead man was a foreign agent. He had a partner, identity unknown, who had stolen secret papers.

Runyon suspected Walker and the desk clerk. When he went downstairs, he learned Walker had checked out and the clerk was off duty. The day clerk was most obliging though and gave Runyon the other clerk's room number.

But first Runyon visited the woman and with her went into Walker's room. They found the body, sitting in a chair. Leaving it there, Runyon went up to the clerk's room and found him dead and the room ransacked.

Runyon left everything as was and went to the woman's room. She had been bound and gagged. Once rescued, they searched all the rooms again for the secret papers.

Runyon surmised the formula wasn't on notepaper but had been written on the back of a strip of wallpaper in the hotel room. He noticed the wallpaper strip, with an image of a horse, was crooked.

He hardly had time to gloat before Walker came in. Runyon drop-kicked Walker, then refused to give the woman the paper. He told her that he would send it himself, then sent her on her way.

Mr Keen.

MR KEEN, TRACER OF LOST PERSONS aired on radio from 1937 to 1955. This series was one of many produced by Frank and Anne Hummert. They churned out dozens of soap operas and dominated daytime radio. The episodes were written factory-style by a stable of writers. They didn't have Chatbot AIs in those days but the results were about the same.

"The Case Of The Woman Who Wasn't Needed" aired on 1940-06-05. A middle-aged wife had disappeared because she was convinced her family didn't need her. The children were grown, the husband was always at work, and the servants looked after the house.

Keen was hired and, off stage before the episode began, soon tracked her down in North Carolina. She was returned home, at which point she lectured her family for neglecting her. Her soap opera morality speech filled most of the episode.

"The Case Of Murder In The Air" was broadcast on 1944-02-24. The client was Barbara Halliday, who said three attempts on her life had been made. She detailed them, once when she was walking home from work, the second on the subway, and again in her room.

Pause for a Kolynos toothpaste commercial discussing the safest way to brush one's teeth. Up and down, not sideways, and don't forget to massage the gums. Back to Keen's office, where another client said he wanted to find his missing sister-in-law Barbara Halliday. She had delusions and he wanted to put her in a safe place. Keen had his suspicions and asked her to help set a trap.

Keen said: "*When a hunter in the African jungle wants to bag a tiger, he uses a lamb as bait.*" No he doesn't, because there are no tigers in Africa. Notwithstanding that, Barbara agreed to act as bait to draw out her stalker.

She strolled along Brooklyn Bridge with Keen and his assistant Mike Clancy trailing her. Her brother-in-law appeared and tried to throw her off the bridge. He had murdered her sister, and Barbara was next to inherit. Instead he would go up the river to sit in Old Sparky.

Nick Carter.

This detective first appeared in print in 1886, predating Sherlock Holmes, and often appeared on stage and in movies. Nick Carter appeared in his own pulp magazines and dime novels, written by house authors. Some of the pulp magazines are available on www.gutenberg.org.

NICK CARTER, MASTER DETECTIVE aired on old-time radio from 1943 to 1955. Episodes are available as free mp3s from www.otrr.org/OTRRLibrary.

In this incarnation, he had boundless confidence in his ability and came across as arrogant to all, including his secretary/girlfriend Patsy Bowen. He had his own laboratory, a huge library, and kept better files than the FBI.

I suspect the radio series was why Nick Carter faded away. The stories are not entirely extinct, but his know-it-all attitude on radio would have grated on not a few nerves and made him a harsher version of Sherlock Holmes.

“The Case Of The Devil’s Left Eye” was written by Jim Parsons and aired on 1948-01-04. The case opened with a locked room mystery when a millionaire named Jonathan Briggs was shot dead while alone in his study.

Lucky Brisco was a polite gambling joint owner. When a sucker, pardon me, customer named Harry Willard defaulted on \$50,000 in debts, Brisco offered suggestions, such as borrowing it from his uncle Briggs. No success, as Uncle Jonathan wouldn’t cough up the dough.

Willard tried one last time by telephone from Lake Placid where he was vacationing. While talking to him as Uncle sat alone in his study, a shot was heard, and he departed this life. Since Willard was the heir, he was also the obvious suspect.

The police asked Nick Carter to investigate. Why was a big city like New York contracting out police work in 1948? Carter and Patsy Bowen visited the 23rd-floor apartment, let in by Kerby the butler.

The apartment was decorated with panels and furnishings from a Scottish castle. There was a wall of antique firearms. Supposedly Briggs died while handling a flintlock. Willard rushed back to the city, and Brisco reminded him of his obligations.

Carter and Bowen chatted with Willard about his telescope-making hobby. Kerby came in to clean the stained-glass window, which showed Satan being cast out of Heaven. After some conversation, Carter and Bowen stepped out of the room for a moment.

Just after they did so, Kerby let out an exclamation of surprise. He told Willard that Satan was missing his left eye. Instantly Willard pushed Kerby out the window. It was an accident, he told Carter and Bowen after they heard the scream and rushed back into the study. He slipped and fell.

Willard told Carter the ladder slipped. Carter set up an experiment in his office, hiring a acrobat to fall off the ladder repeatedly. No matter how he did it, the ladder did not fall in the same way as was seen in the study. Kerby didn’t fall,

he was pushed. Back to the study. The flintlock had been set up elsewhere. When it was fired, the recoil kicked it to the floor. Carter brought Willard back and restaged the death scene, panicking him.

Brisco then arrived, waving his gun. Everyone else had forgotten the \$50,000 but not him. He told Willard the amount due was now \$100,000. Shots were fired, Willard and Brisco were wounded, and on to the explanations.

I’m pleased to say I guessed how the original murder was done. Willard replaced the left eye of Satan with a lens that would focus sunlight on the flintlock. Willard had set the gun where the powder pan would receive the concentrated sunlight and ignite, firing at the chair where Uncle always sat.

Barrie Craig.

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

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

A regular character was Jake the elevator operator. He was from a Vermont farm. In each episode he gave Craig a different reason why he left the farm and moved to New York City. My favourite was “*Too close to New Hampshire*”.

“The Lonely Corner” aired on 1953-11-03. Barrie Craig was heading to his office in the poorer part of Manhattan. Jake the elevator operator told him he had a visitor waiting. Craig was a trusting soul, as throughout this series people came and went from his office while he was away. He never seemed to lock the door.

Jake slowly took the elevator up and dropped Craig at his floor. As Craig walked away, he remarked: “*Jake’s elevator headed down at considerably less than the speed of light.*” In his office, Craig found his visitor huddled in a corner, having been stabbed in the heart. No identification on him.

The police came and went, departing with John Doe. The lieutenant told Craig to be on his guard because the murderer might come back to clean up details. Craig hung around his office for a while then went home.

He buzzed for the elevator. It came up fast, which made him wonder why Jake was suddenly moving so quickly. The penny dropped, and Craig backed away from the doors.

When the doors whipped open, Craig hit the floor and rolled. He evaded gunshots from whomever had slugged Jake unconscious and taken over the elevator. Craig raced down the back stairs, but the elevator was empty when he got to the ground floor.

He found Jake and resuscitated him. Getting Jake upright, Craig went outside and got into his car. After moving out from the curb, a woman popped up from the back seat. Like his office, Craig never locked his car.

She introduced herself as Doris Chaney. The dead man in the office was her husband William. She said they separated after she learned he was a break-and-enter thief. She said William had double-crossed his fence John Hurley over a valuable necklace.

Alarums, excursions, clues, and orchestral crescendos followed. Doris had appropriated the necklace, annoying William and Hurley to no end. She silenced her husband and tried to fix the blame on Hurley. Instead, she would be going up the river.

“The Embezzler”, also circulating as “Echo Corners”, aired on 1954-03-30. Barrie Craig was hired by a small-town banker named Wilby to capture Kirk Dennis, an employee who had shorted the ledgers by \$80,000.

Kirk’s whereabouts were unknown and many people wished to remedy that deficiency. The townfolk were divided, something about old feuds dating back years. The sheriff tried to run Craig out of town, but since there was still time left in the episode he failed.

Craig found Kirk’s girlfriend Jenny. She had been supplied with about \$2,000 cash to help her prepare to flee town with Kirk. They were going to Boston to start a new life. She hadn’t actually seen Kirk, just received notes in her mailbox.

With only 90 seconds left in the episode, Craig accused Wilby of being the real embezzler. Putting aside past differences, Craig got the sheriff to bring out the hounds and search the woods. Soon enough they found Kirk’s body. Wilby wouldn’t be able to enjoy his ill-gotten loot.

Johnny Dollar.

YOURS TRULY, JOHNNY DOLLAR was the second-last of the old-time radio series, airing from 1949 to 1962. (The final episode of SUSPENSE aired immediately after the final episode of YTJD.) Almost all the OTR shows had died off by 1955.

The episodes were standard half-hour weekly shows except for a year starting in 1955 October, when the series aired as daily 15-minute installments comprising one complete episode each week, or in other words, 75-minute episodes.

Johnny Dollar was an insurance investigator based in Hartford, Connecticut. Each episode began with a claims adjustor from an insurance company ringing him up and asking him to take on a case.

The running joke of this series was that Dollar shamelessly padded his expense account. Each scene was introduced by Dollar reciting a line item from his expense report, followed by a segue to the action.

“The Calgary Matter” aired on 1950-07-13 and was written by Gil Doud and David Ellis. Johnny Dollar got a telephone call from a Johnny Doe (as he called himself) who offered to inform on a payroll heist.

Calgary Products of Camden, New Jersey, had been hit for \$300,000, back in the days when most people were paid in cash. Well of course this episode had my undivided attention. There are only two Calgarys in the world. The big city of Alberta is named after the manor house of Calgary Bay, Isle of Mull, Scotland.

Pausing only for a commercial about Wrigley Spearmint chewing gum, Dollar was soon on the job for the Alliance Bonding company. He got another telephone call, this time from a Jane Doe. She told him to sign in as Charles Randall at a hotel in Bridgeport, Connecticut.

Johnny Doe met him and took Dollar to where the informant would meet. At a beachfront cabin, Jane Doe greeted him. She told him the informant had canceled out but mollified Dollar by giving him a chunk of the loot.

She said Mr X wanted to turn state's evidence but under very guarded circumstances. Dollar said he needed two days but couldn't promise anything. The prosecutor said protection would be granted but no immunity.

Mr X asked for another meeting out in the countryside. There, he identified himself as Arnold Gannet. The next day they went to the prosecutor's office but someone was waiting for them and opened fire. Gannet never made it to the front door.

He was subsequently identified as a university law professor. A Wrigley's commercial intervened, telling listeners that Spearmint gum helped people to keep going no matter what. Evidently Gannet hadn't been chewing gum.

Dollar left the crime scene and went back out to the beachfront cabin. Jane Doe was Arnold's wife. The other man was Earl Becker, the Gannets' gardener and fishing partner.

Arnold had planned the robbery as a test of his superior knowledge of criminal psychology. Dollar took Mrs Gannet and Becker to her house to learn which student helped her husband. One of them worked part-time for the armoured car agency that had been carrying the Calgary Products payroll.

It all ended in tears for the student and his parents. Expense account total was \$1,180. Very expensive traveling back and forth between New Jersey, Connecticut, Long Island, and Manhattan.

One mystery remained for me. What exactly did Calgary Products manufacture?

"The George Farmer Matter" aired on 1951-06-09 and was written by Blake Edwards. Dollar investigated the decedent's passing, who had apparently died in a fire while smoking in bed at a Catskills resort.

Mrs Farmer was most anxious to collect on the \$100,000 life insurance policy. She had been uncooperative with police and too eager with the insurance company, hence the company sending in Dollar.

After Dollar began investigating, the doctor who passed Farmer on the medical policy went out an 8th-storey window. The insurance agent who sold the policy did not long survive him. Dollar and a police detective went up to the resort to question the owner Richard Phillips and the hired help.

The attending physician who had identified the body after the fire mentioned Farmer had a broken wrist. The question was who forged Farmer's signature if he couldn't sign his name on the policy shortly after.

Back to Mrs Farmer for the J'accuse meeting. Phillips was there, accusations were made, gunfire exchanged, and Phillips became the fourth fatality.

He and Mrs Farmer had been having an affair. He had posed as George to get the policy. Since the doctor and the agent could identify him as the imposter, they had to die. Total expenses for Dollar were only \$33.65. Not that expensive to drive out to the Catskills.

The Shadow: Introduction.

THE SHADOW, as the opening blurb put it, was in reality Lamont Cranston, wealthy young man about town. He had traveled to Tibet where he learned how to cloud minds so that people could not see him, only hear him.

His voice also changed when he became invisible, courtesy of switching to a crystal microphone. He always announced himself as The Shadow with maniacal laughter, the original bwah-ha!-ha!.

The radio series had a complicated genealogy that began in 1930 and didn't evolve the familiar version of The Shadow until 1933. Several dozen episodes are available free from www.otrr.org/OTRRLibrary The series lasted until 1954.

Lamont Cranston and The Shadow both dealt with Police Commissioner Weston but not simultaneously of course. Weston was usually the arresting officer and frequently worked without any uniformed officers present. Not tenable in a genuine police department, where a real commissioner is a desk-bound bureaucrat and does not involve himself in individual cases.

The lovely Margo Lane was the only one who knew his real identity. Her main functions were to scream every time she saw a corpse, be frequently kidnapped

or trapped with a killer, and to have the loose threads explained to her in the denouement.

What was interesting for those days was that she and Cranston were supposedly single and living in different apartments, but they commonly had scenes where they ate breakfast or stayed in hotels together. The network executives and sponsors of those times weren't as prudish as often thought, or else never noticed.

The Shadow began as a narrator on a radio show. He then became a character in his own right and spawned a monthly magazine, followed by books and movies. There was no continuity between his appearances in different media. In the movies, for example, he was a middle-aged radio reporter who used The Shadow name as the title of his show but was known to his coworkers by his real name.

Like the print stories, credit was seldom given to writers. Sometimes a house name was credited, but usually nothing was said in the closing credits about who the writer was. In the late 1940s, credits were often given, but rarely before or after. Never expect logical plots.

The opening musical theme for the episodes was "Le Rouet d'Omphale" ("Omphale's Spinning Wheel"), composed in 1871 by Camille Saint-Saens. It was beautifully played on the organ and provided an ominous note, in both senses of that word, to introduce the show.

The Shadow: 1937 Et Seq.

"Circle Of Death" aired on 1937-11-28. In New York City on Broadway, random bombings of taxis and cars had killed 15. The theatres were in trouble because patrons were frightened about being the next victims. The killer sent notes to the newspapers saying he hated crowds.

A mass meeting was held, baying for Police Commissioner Weston's resignation. Lamont Cranston sent Margo Lane as a shill, waiting for her moment to shout that The Shadow could solve the case. Having wiretapped the public address system, The Shadow cut in and said he would end the terror.

He publicly challenged the bomber to walk through the crowd at the Central Arcade the next evening. Rather pointless, but in the mob the bomber did drop

a note saying he would strike again later that night. Through some unexplained method, Cranston told Lane that he had indeed identified the culprit.

The police closed the theatre district. They stopped one man named Anton Spivak, who said he was the night watchman for a subway construction site. The construction was open during the day but after hours the openings were covered with thick boards that cars could drive over. Spivak went to his job and began gloating about how many people he would kill.

Pause for digression. One form of monologue that does not carry well from print into performing arts are the internal thoughts of a character. What reads well in print has to be spoken out loud on radio. Thus Spivak talked to himself as he walked his rounds in the empty tunnels, explaining to the audience what was to be done.

He didn't know it, but The Shadow was listening and then spoke to him. Voices from thin air didn't perturb him since, as he explained, he heard voices lots of times, and one more was no big deal. They talked.

Naturally Spivak wanted to know how The Shadow made the identification. He replied he watched everyone's eyes. He knew how much the bomber hated crowds, so he just observed faces.

Spivak bragged to The Shadow how he did the bombings. At a traffic light, when a car stopped overhead, Spivak popped some boards underneath the vehicle and attached a bomb to the underside. This explained why the explosions were randomized over Manhattan.

The Shadow tricked Spivak into thinking he was invisible, then convinced him to go upstairs onto the street, carrying a bomb. The police officers at the top of the stairs grabbed him. Weston showed up to claim the glory but The Shadow didn't mind.

The Shadow: The 1940s.

"The Unburied Dead" was written by Frank Kane and aired on 1946-04-14. A mortician named the Deacon, aided by Gabby and Ace, was in the business of supplying corpses duplicating men who wanted to disappear. His supply came from unclaimed bodies at the city morgue, where ostensibly they would be taken to Potter's Field but for the Deacon's charity.

Mr Peck was one of the Deacon's clients who wanted to disappear. Trouble was, he had a distinct appearance, very tall and bright red hair. Not too many corpses like that laying about, so the Deacon sent Abe and Gabby out to rustle one up from amongst the living.

More trouble yet, Peck's secretary Hilda didn't believe he died in a car accident. The police wouldn't listen to her so she went to Lamont Cranston, wealthy young man about town and well-known amateur criminologist.

They got no satisfaction at the morgue when they inspected Peck's supposed body. While they were there, Cranston and Margo Lane noticed Ace and Gabby. The morgue attendant mentioned they worked for the Deacon's burial society, and often claimed bodies otherwise bound for Potter's Field.

Ace and Gabby noticed the others as well, and mentioned them to the Deacon. Later that night, Cranston and Lane arrived at the Deacon's place to commit break-and-enter, pardon me, investigate for clues.

Cranston wandered off on his own, leaving Lane alone to discover dead bodies and scream her head off. This was the traditional signal for the middle commercial. An announcer extolled the financial benefits of buying U.S. Savings Bonds by payroll deductions.

Back in the burial society, Cranston first had to calm Lane. Given that by now she had seen hundreds of dead bodies, two or three every week for years, the listener will wonder why she always became hysterical. She should be just shrugging her shoulders and telling Cranston "*Oy, Lamont! Another one bit the dust.*"

The Shadow went to the city morgue and harangued the attendant. Peck's body had already been claimed. Cranston realized Hilda was in danger and rushed to aid her. Ace and Gabby got there first and took her to the burial society. The Deacon called the real Peck out of his hiding place to substitute him for the fake body.

Once again The Shadow arrived, this time to torment the trio of the burial society. He rescued those who needed rescuing and sent up those who needed sending up the river.

The Avenger.

THE AVENGER was a carbon-copy of The Shadow, produced by the same people. The market for such heroes was saturated and the show never succeeded. The first series aired during the 1941-42 season and has since vanished into the mists of time. The network did not transcribe the series and no air checks are known.

The second version aired during the 1945-46 season, written by Ruth and Gilbert Braun. This series was syndicated on transcribed disks and thus survived. Those disks were later converted to mp3s.

Jim Brandon, a superscience biochemist, was the alter-ego of The Avenger or perhaps vice versa. His lovely companion was Fern Collier, who was the only person who knew the true identity of The Avenger.

Brandon didn't learn any strange and mysterious powers in the Orient but instead relied on superscience devices. His two main gizmos were the Telepathic Indicator, a mind-reading device, and the Secret Diffusion Capsule, which made him invisible. The capsule was always heralded by a popping sound followed by the hissing of gas.

"The High Tide Murders" aired on 1945-06-08. A gang leader named Scrawny improved his share of profits at his waterfront hideout by dropping his henchman through a trapdoor into the outgoing tide.

Jump cut to Jim Brandon, who was lecturing Fern Collier on why she nor anyone else could use the secret diffusion capsule. First, as he explained, he captured light rays invisible to humans and concentrated them into the capsule.

Secondly, he perfected a serum that absorbed the concentrated rays into his body when released from the capsule and rendered him invisible. Sure they did. This was radio, where no listener could see him anyway.

On to the telepathic indicator, which chose that moment to alert Brandon to a dying man's last anguish. Twas the henchman. The police called Brandon about a body in the water. They wanted him to do a chemical analysis, which he did, but he also did his own sleuthing.

Brandon identified four missing jewelers, all supposedly on long business trips. He visited the shop of one of them and was roused out at gunpoint by a man named Vickers.

Not to worry, as The Avenger returned and popped a diffusion capsule. He left without finding anything. As he went out the door, Vickers was stabbed to death by Scrawny, who had been hiding in a back room.

Brandon and Collier visited an old mariner Captain Peabody, who knew the tides. Brandon went with him on his boat to inspect possible waterfront sites where the waterlogged body might have come from.

Meanwhile, Collier went to be kidnapped as she so often was. Scrawny took her to his lair and waited for the tide to turn to drop her through the trapdoor. A popping sound was heard and The Avenger bwah-ha!-ha!-ed.

Scrawny rushed about trying to find The Avenger and fell through his own trapdoor. The denouement explained that Scrawny had been fencing smuggled jewels. When he switched to currency, the jewelers still wanted a cut so he eliminated them. After all was explained, Brandon suggested dinner. Collier agreed on the condition of no seafood.

“The Cradle Of Doom” aired on 1945-10-26. Edith Wiley was the damsel in distress. Her fiancé John Martin had been falsely declared insane by his evil brother Tobias and was committed to the White Ridge sanitarium. The family wealth was at stake.

Dr Marcus Farko and his wife Joanna operated the sanitarium. Jim Brandon and Fern Collier visited but were refused entry to see John. Not to worry, as Brandon returned at night and infiltrated the sanitarium.

He spoke with John, who confirmed his confinement was a plot by Tobias and Farko to get control of the estate. John said his regular family physician Dr Stanley Meyers could give him a clean bill of health.

Farko was doing experiments in the time-honoured bwah-ha!-ha! tradition. One gadget was a room suspended on a swing, which was to gently rock patients like a cradle and calm them. Someone locked both Farkos inside it and set the controls to high speed to batter them to death.

Brandon and Collier found the bodies, freed John from his cell, and told him to go home pending developments. Back at the manor, John and Edith explained to each other how Tobias would be framed for everything. John would thus have complete control of the estate.

As they completed their explanation, there was a popping noise and a whoosh. The Avenger gloated that their time was nigh. And so to the epilogue where Brandon explained away the loose ends.

Michael Shayne.

Michael Shayne began as a series of novels by Davis Dresser, writing under the pseudonym of Brett Halliday. As a fictional detective, Shayne appeared not only in print but as an old-time radio series, movies, television, and a mystery fiction digest. So as you see, multimedia is not a new thing.

Dresser quit writing Shayne stories after 1958 but farmed out the Halliday pseudonym as a house name to other writers, so the stories continued to appear for decades afterwards.

THE NEW ADVENTURES OF MICHAEL SHAYNE aired on radio from 1944 to 1953. The series was based on the novels by Brett Halliday, although the episodes were pastiches. From 1944 to 1948, Shayne was located in San Francisco and had a pretty secretary named Phyllis Knight. Wally Maher voiced Shayne as a relatively sedate and average detective.

From 1948 to 1950, Shayne lived in New Orleans without a secretary. He was voiced by Jeff Chandler, who narrated the show in tones of rising hysteria, even if he was just crossing the street. That period could best be described as frenetic. Thereafter a variety of forgettable actors portrayed Shayne.

“A Big Voice Means A Big Body” aired on 1945-05-07 and was written by Richard de Graffe. The download I got from the Old Time Radio Researchers was titled “Rigoletto’s Score”, but every other reference used the former title. This was a San Francisco episode, with a mild-mannered Michael Shayne and his secretary Phyllis Knight.

As was common in those days, many shows didn’t have episode titles because they were meant to air only once and then be forgotten. Collectors who recorded air checks on the technology of the day, usually wire recorders, assigned their

own titles. This is why old-time radio fans today are plagued by duplicated episodes circulating under different names.

The 'Big' title of this episode came from an opening remark by the client, opera singer Madame Elaine Toulou, who weighed as much as Nero Wolfe. Knight inadvertently insulted Toulou by gushing that when a little girl she had seen Toulou perform. But that passed.

Toulou was about to publish her tell-all memoirs and had received threatening letters warning her against doing so. She gave Shayne a list of suspects to be going on with, and invited them to attend her performance that night.

Various characters with bad Italian accents were introduced. Toulou was to perform in the second half of an operatic double bill, but didn't survive. Her next grand entrance would be at the city morgue.

The episode paused for a commercial urging motorists to make their cars last longer under wartime restrictions by having Union Oil service stations inspect the spark plugs. A group of bad plugs could waste one tank of gasoline in ten by incomplete ignition.

The cost of inspection was only a few cents per plug, which illustrates how labour rates have changed. In those days, a good meal in a sit-down restaurant was 25 cents, so about 40 cents for a spark plug inspection on a V-8 engine was reasonable.

Back at the opera, or rather not, Shayne and Knight accompanied their friend SFPD Inspector Faraday to the Toulou house. Not to be confused with Inspector Farraday (two 'r's) of NYPD, the nemesis of Boston Blackie in another series.

There were two bodies, Toulou and her secretary Helen Smith. In the fireplace was the partially burned manuscript of Toulou's memoirs. Scattered by the piano were pages of an opera score from Rigoletto.

Several suspects conveniently arrived at the house to be questioned. They were all poor liars. Knight knew music better than Shayne and used the score pages to investigate another diva.

Unfortunately Knight contaminated the evidence and tipped off the suspects. One of the main suspects was shot while talking on the telephone with Shayne.

The episode then paused while the announcer advised listeners that as long as they were having their spark plugs checked, they should also have the ignition wires inspected. Old wires leaked electricity so that even new spark plugs wouldn't fire properly.

Back at the investigation, Shayne called a J'accuse! meeting. He gave everyone a lesson in operatic clues which proved Helen was the love child of Toulou and the murderer. The killer hadn't known Helen was his daughter and confessed all under the load of guilt.

"The Case Of The Phantom Gun" aired on 1948-08-06 with no writer credited. This was a Jeff Chandler in New Orleans episode, at full volume. Michael Shayne had been hired by a woman Phyllis Kenney to check if her husband Dick was seeing another woman.

The answer was no, but he was involved in a blackmail scheme against his employer Duval. Shayne went out to the Duval estate. Dick was the chauffeur, so Shayne went out to the garage.

Not for the first time, even in this episode, Shayne was slugged unconscious. He barely had time to shout about his impending doom before he woke up in a ditch with Dick's body nearby. Shayne toddled home without bothering to tell police. They would find out soon enough.

The next morning Shayne received a package in the mail which contained his handgun. He hadn't known it was missing from his desk. Like most private eyes in fiction, he was very casual about leaving his gun where anyone could take it away and use it for a murder.

The police arrived, took the gun, and checked the ballistics. As the listener will not be surprised to hear, Dick had been shot with the gun. Shayne therefore had to run about trying to prove his innocence by identifying the true murderer.

The usual alarms ensued back and forth across New Orleans. Duval departed this world, also from Shayne's gun. What the killer didn't know was that the gun was sitting in the evidence room and couldn't possibly have been used. Even the police had to admit Shayne couldn't have done it.

The real blackmailer was the gardener Jasper, for whom Dick had been working. Jasper had stolen the gun, fired some shots into a pillow, and collected the spent bullets. After mailing the gun back to Shayne, Jasper used those bullets by embedding them into wadding and firing them from a shotgun.

That left the bullets with their original ballistics in the victim's bodies. Duval's widow Judith had set up the blackmail when she learned her husband had never divorced his first wife. That made him a bigamist susceptible to blackmail, using Jasper as a front.

After her husband's murder, Judith suddenly realized she couldn't inherit his estate if the probate court learned of the first wife. Jasper was the only other person who knew, so she dispatched him with the trick shotgun. She forgot about the ballistics. Shayne escorted her down to the police station. He remarked that she was bound for a place where she couldn't spend any money.

Sam Spade.

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

Unlike the movie, where Spade was a serious man, the radio series played him as a happy-go-lucky fellow, sometimes swerving into slapstick. After Duff left, the series struggled on for a few more episodes as a sustained show with no advertisers. No corporation dared to be associated with it. The replacement actor Steven Dunne couldn't live up to Duff's characterization.

Spade worked in San Francisco. His secretary was Effie Perrine, a scatterbrained young woman who took down his narration in the form of a report. Each episode began with Spade telephoning Effie and telling her to rush down to the office to meet him there and transcribe a report on the case he had just solved.

The report was a letter to a local police officer keeping him informed of criminal matters, or occasionally addressed to the client. On one occasion, he told Effie to bring a pencil and \$20,000 in cash. *"But Sam, where am I going to find a pencil at this time of night?"*

"The Death Bed Caper" aired on 1948-06-20 and was written by Robert Tallman and Gil Doud. Howard Duff played Sam Spade. The client was Dan Starbuck, who wanted Sam Spade to act as a witness at his brother Gord's death bed. He was afraid he would be accused of murder.

The brothers didn't get along. The night before they were both fighting drunk. Dan blacked out and now Gord was dying from head injuries. The police and two doctors were there plus Gord's wife Maggie.

The sheriff asked Gord his name and address, then asked him if he understood he was dying. Gord answered rationally. The dying man breathed Dan's name when asked by the sheriff who mortally wounded him.

Dan made a run for it and escaped. What was startling was that a corpse was soon found who had been killed by the same blunt instrument that fatally wounded Gord. Both deceased were bludgeoned about the head. The episode then paused for a Wildroot hair cream commercial. The choice of men who put good grooming first for hair, presumably non-bludgeoned.

At the return from the commercial, the announcer call the episode "Caper With Two Death Beds", even though Sam Spade clearly stated in the intro that he called it "The Death Bed Caper". The next morning Maggie arrived at Spade's office to hire him. She admitted she never loved Gord and had a love affair with the other dead man. She wanted to help Dan.

Spade pointed out that a deathbed declaration was accepted in courts if the deceased knew he was dying, which is why the sheriff asked the questions he did. Reluctantly, Spade agreed to investigate further.

He found Dan and a boatswain Nils Halverson who had worked for Gord. Halverson was dead. Spade staged a fake interview with Halverson in anticipation of the real culprit eavesdropping. That culprit was Maggie, who had a knack with blunt instruments but blabbed all when Spade bluffed her with the fake deathbed confession.

Sam Spade Variants.

There are some Sam Spade stories that aren't parodies or pastiches, so I'll just call them variants. Randy McCharles has a series about Sam Sparrow of East Hartford, Connecticut, in our time. He was a not-good cop who became a

private detective not any better. Sparrow kept being hauled back in time to mythological eras, usually Dark Ages Britain.

A CONNECTICUT GUMSHOE IN KING ARTHUR'S COURT (2020) was the first novel in the series. Sam Sparrow was whipped back in time and over the ocean by Merlin, a magician who needed no introduction.

Merlin put him in charge of castle security before disappearing on his own tasks. Sparrow then met the expected cast of characters of King Arthur's court. That this was fantasy was demonstrated by references to people receiving daily mail from the post office, something I noticed because I am a postal historian.

Britain didn't have a postal system until King Henry VIII, and then only for government officials, tradesmen, and nobility. The modern post office didn't develop until mass literacy did in the early 1800s.

But I digress as I so often do. Sir Lancelot was the first murder victim, in one of the dark alleys of London. Sir Logris was the second victim. Sparrow, now operating as Sam Spade, was hauled into the investigation.

The story then mashed with THE MALTESE FALCON, except that Jesus (not Joel) Cairo was looking for a black chicken. The Fat Man appeared, while various knights came and went. From the Fat Man, Sparrow qua Spade learned that the black chicken really was a chicken, not a statuette.

The bird was a rare breed known only in Malta. The black chickens laid four eggs where other chickens gave one. If the Fat Man could establish the breed in Britain, he could rule the egg trade, bwah-ha!-ha! He never got the chance. The chicken was a fake, painted black by the Maltese farmer who sold it to the Fat Man. The mashup with the knights wrapped up in a hurry and Merlin reappeared, as if by magic.

Merlin sent Sparrow, this time qua Sparrow, back to East Hartford and modern times. Since the novel was only half done, the plot took a turn into something else. After six months in East Hartford, the Lady of the Lake visited Sparrow.

There was something rotten in Camelot and it wasn't Danish cheese. The Lady snapped Sparrow back to Camelot without telling him what the case was. Upon arrival, Sparrow qua Spade, as he once again was, found Merlin missing, also once again. He was now six years into the future of Camelot.

Vivian du Lac was asserting herself, or was she Morgan le Fay, perhaps even the Lady of the Lake? Her son Mordred was making a nuisance of himself. The Holy Grail had been found, then substituted with a fake.

Sam recovered the Holy Grail from Le Fay's bedroom but that was only the beginning of the end. The excursions wrapped up after Merlin was located and freed. Assorted loose threads were tied off and Sparrow returned to his time. More to come though.

A CONNECTICUT GUMSHOE IN SHERWOOD FOREST (2021) was the sequel. The plot took Sam Sparrow to Merrie Old England, as one might easily surmise from the title. Robin of Locksley and his not that merry band of men rescued Sam Spade, as he became again, from a group of nasty Scots and set the plot in motion.

A few characters from Camelot appeared, so this was not a chronological account. Then again, Camelot and Robin Hood were 99% fictional, so no problem. The Sheriff of Nottingham had been one of the Knights of the Round Table. Call it anachronistic fiction.

The mysteries to Sam were, first and foremost, who snapped him back from Connecticut to England and why. Merlin had disappeared, Mordred had leveled Camelot and killed Arthur, and now King John ruled while Richard the Lionheart was overseas.

Sam Spade's secretary Effie was in town, although this version was a nobleman's daughter who now worked in a betting shop. Robin was competing in the archery tournament, so the shop was busy. Not only bets for or against Robin but other players as well.

Sam had his problems, such as foot sores because his city slicker shoes weren't adapted for medieval life. The monks had a salve that healed slowly, but Sam hobbled rather than walked. Murders, the Sheriff's men, bad food, and just plain trying to survive filled his days.

Action next shifted to the tournament, where Robin made a perfect score. The Sheriff disputed that, and the tournament ended prematurely in disorder. From there, an endless series of alarms and excursions followed, with everyone scurrying to and fro.

There was a grand battle during which the Sheriff got his head chopped off. Another kerfuffle followed, then a wrap-up meeting during which all the loose threads were balled up and tossed into a bin. Sam and company found themselves back in Connecticut. Sam Sparrow, no longer Sam Spade, but still with Effie.

Sam Spade: Revival Radio.

MATTHEW SLADE, PRIVATE INVESTIGATOR was a short series of mp3s from the Old Time Radio Researchers at www.otrr.org/OTRRLibrary. The series was produced in 1964 by the Pacifica Players. Scriptwriters were Robert Frederick and Brian Adams.

Matthew Slade was a San Francisco private investigator. His secretary/girlfriend was Loretta “Jonesy” Jones. No cliché from hard-boiled detective stories was overlooked.

“Day Of The Phoenix” was a three-part episode that aired in July 1964. Part 3 has not been found, which leaves the listener hanging. Think of this as the radio equivalent of Edwin Drood.

The story began with two murders, a millionaire art collector named Richard Marlowe and his chauffeur Howard Morris. The police suspected Slade and tried to set him up to take the fall.

Laura Marlowe, the widow, mentioned trouble with a shady antiques dealer Edward DeSilva. A short time later, Slade was approached by Joel Cairo, pardon me, Aaron Belasaro, who had lavender business cards and not just figuratively.

Belasaro said he was searching for a figurine of a bird called the Jade Phoenix. He had been on the trail of it for years. The plot paused for his lengthy infodump on the history of the statuette. At this point, Belasaro was distressed to learn that Marlowe had been murdered and the bird stolen.

Slade interviewed DeSilva at a health spa. Leaving him there, he figured now was a good time to search DeSilva’s house. He found evidence that DeSilva was running a call-girl operation. While he was there, someone got him with a syringe of sedative.

He woke up on board a ship. A large man dressed in a white linen suit stood

over him. No, not Kasper Gutman but Lyle Jackman, who was also searching for the Jade Phoenix. So ended Part 1.

The actor playing Jackman was to be complimented for his Sydney Greenstreet impersonation. Spot on, both voice and mannerism. As Part 2 began, Jackman explained in ever so cultured tones his claim to the Jade Phoenix, worth \$500,000 if genuine or \$200 if a replica.

Wilmer Cook, Gutman’s sleazy little sneak, was represented in this pastiche as Jackman’s flunky Dallas Hawkes. Slade and Jackman agreed to search together for the Jade Phoenix.

Back on the trail, Slade tailed Laura Marlowe as she drove to DeSilva’s house. Alarums ensued and excursions were made. Jackman found out about the DeSilva connection and worried that he had been double-crossed.

Slade visited an art collector for more infodumps about the history of the statuette. At that point, Part 2 ended. Alas, we shall never know how close to the original story this pastiche stayed.

George Valentine.

LET GEORGE DO IT aired on radio from 1946 to 1954, sponsored by Standard Oil for its Chevron stations. The series was about George Valentine, a private investigator.

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

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

“The Empress Of Fishfalls” aired on 1949-08-22 and was written by David Victor and Jackson Gillis. The episode opened with the sound effects man hard at work splashing water as George Valentine and Claire Brooks fished in a mountain lake. LAPD Lieutenant Riley was with them, also vacationing.

They didn't catch any fish but did bring up the body of a grey-haired midget, later identified as Shorty Macdonald. Shot three times and the body was still fresh. The local police officer wasn't available, having gone to the ocean for deep-sea fishing.

About 30 of the villagers were retired circus performers, which explained why the dead midget was there. The Empress was Meryl Bender, a rich old dear with eccentric servants, one of whom was an 8-foot giant. She said she had been with the circus and her husband had been a lion tamer.

She knew about the midget but wasn't very helpful. Riley finally reached the sheriff, who wasn't helpful either. However they did learn that Bender was unknown in the circus trade. The Elephant Man (fat, not deformed, the size of a hippopotamus) beat up Valentine. Other circus folk weren't much politer.

Bender handled the hospital charity fund. When Riley charged her with stealing the donations, she changed her story and said she had been robbed earlier that day. The giant tried to run but got nowhere. The money was recovered. Brooksie caught a fish. All was well.

"Everything Is Nice" aired on 1949-09-05 and was written by David Victor and Jackson Gillis. The letter writer E.F. Sunderman was concerned about his wayward daughter Bebe and wanted her associates investigated.

George Valentine messed up from the beginning. He tried to befriend Bebe in a cheap tavern but she rejected his advances, went upstairs, and promptly got herself shot and seriously wounded by an unknown assailant.

Rushing up the stairs, Valentine intercepted a tall Englishman named Osgood Leyden, who became the prime suspect. The next available culprit was Bill McGee, the tavern owner, who had a nasty past.

Valentine talked to Bebe's stepmother Dora, who said Bebe hated her. The two women were about the same age. Next to depart this world was E.F., shot dead in his home. Valentine set up a J'accuse! meeting that splattered tomato surprises all over the walls.

Leyden was Dora's husband. Yes, she was a bigamist. They were living off the money she got from Sunderman. The idea was to knock Bebe out of the line of succession and then Dora could inherit E.F.'s estate.

Philo Vance.

S.S. Van Dine was the pseudonym of American art critic Willard Huntington Wright. During World War One, he loudly advocated for the Germans, which got him run out of town and not just figuratively. Years later he made a comeback under the Van Dine pseudonym.

Vance was a wealthy young man about town but unlike the later Lamont Cranston, didn't keep his detecting a secret. What I hadn't previously known was made explicit in the books: "*This man was a young social aristocrat, whom, for purposes of anonymity, I have chosen to call Philo Vance.*"

In the movies and radio series, everyone addressed him as Philo Vance as his real name. In the novels he spoke with a phony English accent despite being an uptown New Yorker. Detractors referred to Vance as a soft-boiled detective.

Philo Vance detected in 12 novels, 15 movies, and well over 100 old-time radio episodes. In the books, Vance's lawyer and amanuensis, named Van Dine, narrated the story a la Watson.

The PHILO VANCE series aired on old-time radio from 1945 to 1950. Script writers were not credited. Markham frequently came out and did field investigations, something a real D.A. would not do.

The police occasionally appeared but usually just the two men brought in the culprit. Markham narrated the second half of each episode, after the commercial break.

Henry Sylvern was the berserk organist who supplied incidental and segue music. He continually outdid himself with staccato outbursts and crescendos for each scene change. Some of the episodes are worth listening to just for him.

THE GREENE MURDER CASE (1928) by S.S. Van Dine was the third Philo Vance novel, available as a free download from <https://gutenberg.org> The Greene mansion had been the scene of a break-in.

Two grown daughters of the household had been shot, Julia fatally and Ada still clinging to life. District Attorney John Markham and the police called it a botched burglary. If that were actuality, then the story would have finished up in a few pages.

Philo Vance, tagging at the heels of Markham, doubted the police conclusion. If the burglar was after the silverware, he wouldn't have gone upstairs and shot the two sleeping women in their separate bedrooms.

Chester Greene, brother of the two women, called on Markham because he didn't believe the accepted scenario. There were several questions.

Firstly, the women were shot two minutes apart, though their bedrooms were on the same hallway a few steps from each other. Two minutes is a long time, so what was the culprit doing in the meantime?

One sister had been shot in the back and the other victim in her front. Both bedroom lights were turned on, but the light switch for one was hidden where only an insider would know.

Floor plans of the mansion were helpfully provided to the reader. Besides the five servants on a different floor, there were an additional brother Rex and sister Sibella, and their mother, who was bedridden. Five siblings and mother all told, each with their own bedroom.

As Vance and Markham questioned the household, they soon found there was little love between the siblings. The evidence for a burglary was nonsensical. All that changed a few days later when someone shot Chester dead in his bedroom.

Any hypothesis of a burglar was forgotten. Ballistics showed that all three victims were shot with the same gun. Over the next two weeks Ada recovered but Rex became the next victim of gunshot.

Still later, Ada was poisoned with morphine but she was a tough old gal and survived the dose. Mother Greene was poisoned with strychnine during the following night. That left Ada and her sister Sibella.

From there to a two-part denouement. First, the guilty sister was exposed as she tried to kill her remaining sibling and thereby inherit the Greene fortune.

Vance then explained at length, with charts, why the murderer acted as she did. The family was not a happy one, and the motives stretched back decades. In the aftermath, the mansion was sold and torn down to make way for a skyscraper. The Greene family went the way of the Ushers.

Jack Webb: Parodies.

DRAGNET was a popular subject for parody. Jack Webb was good-natured about making fun of his show and often participated in parodies.

THE MARTIN AND LEWIS SHOW had Jack Webb as a guest on 1953-01-13, where he demonstrated his ability as a deadpan comedian. By this time, DRAGNET was airing on television. The sponsor for both series was Chesterfield cigarettes, so they all worked themselves into the commercials.

Webb began by telling Dean Martin and Jerry Lewis about the Cape Cod Kipper Keeper Cooper Caper. Say that real fast as Webb did. He went on to tell about the troubles of a clipper ship and a man named Cooper who kept kippers at Cape Cod.

Having concluded that caper, Webb then performed, with the assistance of Martin and Lewis, a retelling of the Goldilocks fable, titled "Hairnet". Webb, qua Sgt Joe Friday, began by saying he was wearing his usual outfit: yellow shoes, argyle beret, and a plaid coat with satin lapels. He was, of course, a plainclothes officer, which convulsed the studio audience.

Lewis said he was Friday's younger brother Thursday, who walked a beat. Martin was Friday's older brother A Week From Tuesday, who worked for the Crime Commission. They were investigating the Three Bears case, and took in Goldilocks as a suspect.

They went out to the bears' cottage, checking the closets for skeletons. Once they ran out of jokes, the case was solved. They arrested Cooper, the culprit from Cape Cod.

Bulldog Drummond.

Bulldog Drummond was based on the novels by H.C. McNeile. There was little continuity between the books, the movies, and the radio series. The novels and movies were set in Britain where Hugh Drummond was some sort of police detective.

In the books, he was a married man, in the movies he was forever affianced, and in the radio series he was a loner. The movies were played as comedy and the radio series as grim action-adventure.

The radio series soon moved Drummond to the USA. He roamed the country as a paladin with no visible source of income and unspecified police powers, assisted by his valet Denny, a blithering idiot. The radio series aired from 1941 to 1954.

The episodes were mediocre, worth listening to once and then forgotten. They did have a distinct opening, the sound of foghorns and slow deliberate steps.

“The Case Of The Axis Submarine” aired on 1943-09-19. The war’s outcome was not yet certain, and U-boats were creating havoc along the Atlantic coast of North America and even into the Gulf of St Lawrence.

On board an oil tanker moored in harbour, a night watchman Tim Reagan was murdered. Captain Hugh Drummond was on the case. The murderer was a crewman named Slim, identified to the listening audience but not Drummond or his aide Denny.

As the two investigators strolled along the docks, shots were fired and the organist played a crescendo. Drummond vanished and Denny called police to search but nothing was found.

Meanwhile, a woman named Belle, no better than she should be, was manipulating men and events. Drummond and Denny would up being held prisoner on board on a barge.

Belle and Slim were aiding Nazi spies who wanted the barge to refuel two U-boats. The barge had been filled from the tanker with stolen fuel. The alarums were predictable, but since Drummond and Denny were booked for the series there was no real suspense.

Much screaming and, later, splashing around in the water. A destroyer sank the two U-boats and grabbed the racketeers. In the epilogue, Drummond patiently explained away all the loose details to Denny.

One little detail the American scriptwriter missed. Drummond spoke with a British accent. In the episode he spelled out loud a word with ‘z’, pronouncing it ‘zee’ as Americans say it, not ‘zed’ as British and Canadians do.

Rex Saunders.

THE PRIVATE FILES OF REX SAUNDERS aired in the summer of 1951 and was a blatant imitation of Bulldog Drummond, including the opening sequence of foghorns and loud footsteps. Rex Saunders and his sidekick Alec roamed America as paladins. Ed Adamson wrote the episodes.

“Shallow Graves” aired on 1951-05-30. A man named Mark Goodrich was searching for his nephew Eddie. A woman named Linda seemed to be involved. Saunders became involved when Eddie visited him at gunpoint and told him to lay off.

Since Saunders knew nothing about the case, it wasn’t difficult for him to comply. However, Mark soon made contact and briefed him. Eddie had supposedly been kidnapped and a ransom demanded. The alarums proceeded from there.

Mark had been involved in some shady business deals. Eddie had been blackmailing him for years until his uncle decided to end it the hard way. Blood will tell in more ways than one. After murdering his nephew, Mark tried to set up Linda and her boyfriend as kidnapers/murderers in a convoluted plot. Ultimately the matter was settled by Saunders, who had the various culprits sent off to the prosecutor’s office.

Mr Monk.

There are several mystery television series long since discontinued but still existing as book series. Jessica Fletcher in MURDER, SHE WROTE immediately comes to mind but another series was MONK, which aired from 2002 until 2009.

This was a comedy drama series about private investigator Adrian Monk, who worked mainly as a consultant to the San Francisco Police Department. He had previously been a police officer but became unhinged after his wife Trudy was murdered.

Monk was given a medical discharge but occasionally hired by SFPD as a consultant. Adrian Monk developed severe obsessive-compulsive disorder and was a germophobe. He could and did take scattered seemingly irrelevant clues at a crime scene and link them in logical order to identify the culprit.

The novels were mostly original stories, but occasionally novelizations of television episodes. Lee Goldberg wrote most of them but the later novels were written by Hy Conrad. The two both worked on the television series as writers and producers, so the hand-off was a natural one.

MR MONK GOES TO GERMANY (2008) by Lee Goldberg began with a crisis when Adrian Monk discovered one of his socks was missing after doing his laundry. He called the police and was indignant they didn't take him seriously.

The sergeant told Monk that if they filed a report then they would have to hang about for a couple of hours until the psych team arrived to take Monk away. Fortunately Captain Stottlemeyer called from Homicide with a murder.

Monk didn't want to take the case but Stottlemeyer promised to call out the Sock Recovery Task Force. The murder case was a young married couple who were in witness protection, apparently poisoned.

They had preserved a piece of their wedding cake and ate it on their first wedding anniversary. The culprits were smart enough to realize what would transpire, so a plant among the wait staff poisoned the piece before giving it to them.

The sock crisis was averted when it was found in the dryer, stuck there by static electricity, but a new alarm arose. Monk's psychiatrist Dr Kroger was going to a conference in Lohr, Germany. He had a locum tenens to cover for him but the title of this novel predicted what would happen.

Monk decided to keep his next appointment in Germany, taking Natalie Teeger along with him. As expected, there was an eruption of murder and mayhem in Lohr after Monk arrived.

He fixated on a six-fingered man and soon had the Germans baffled in both languages. The killer was brought to justice because he used a feather pillow as a silencer and got feathers all over himself.

MR MONK IS MISERABLE (2008) took Adrian Monk to Paris, France, tagging along with Natalie Teeger. After what happened in Germany, she wasn't happy to have him along but a paycheck is a paycheck. During the flight he solved a mid-air murder because he saw a stewardess wipe her hands on her pant legs after serving a sandwich to the victim.

Arriving in Paris, Monk decided on a tour of the sewer system and catacombs beneath the city. Among the ancient skulls of the latter, he found a fresh one. This became the case of the supposed death of Nathan Chalmers, a San Francisco pyramid scheme operator who ten years ago supposedly killed himself in a tree mulcher after being exposed.

The skull was identified as that of Chalmers, and not ten years old. Murder and mayhem followed Monk and Natalie around Paris, not to mention the baffled Sûreté.

The Freegans were involved, those who lived off dumpster diving and considered themselves morally superior. Except in this instance, where jealousy and emotion moved them to murder. The threads of the plot multiplied, but as usual were all neatly tied off by Monk in the denouement.

Scotland Yard.

PURSUIT was a police procedural which aired on radio from 1949 until 1952. The production history was complicated, including airing the show as a subtitled series within an anthology series called THEATER OF THE MIND. Available as free downloads from the Old Time Radio Researchers at www.otrr.org/OTRRLibrary

Scotland Yard Inspector Peter Black was the chief investigator, assisted by Sergeant Moffet. Their boss was Chief Inspector Harkness.

"Pursuit Of The Loch Ness Killers" aired on 1951-12-11, written by Antony Ellis. The action began with a car bomb in the village of Bannock, Inverness district of Scotland, killing James Corgay.

Black and Moffat were sent by request of the Chief Constable of Inverness. The local constabulary were Sgt Ross and Constable MacNeish, none too happy about sassanachs swanning in to their jurisdiction. They and the other Scottish characters subsequently appearing all spoke with accents thick enough to cut with a knife. Och aye, that they did.

Sgt Ross had arrested Gordon Sim on suspicion and put him in the local jail. When they escorted Black to the cells, Sims was gone, as were the bars on his cell windows. An old building with crumbling mortar that made the bars loose.

They all motored out to the Sim cottage on the banks of Loch Ness to visit Gordon's wife Maggie. Moffat went round the back while the others entered the cottage and talked to Maggie. She wasn't helpful but did say James and Gordon had feuded over a missing set of oarlocks on a rowboat.

Meanwhile, Moffat was slugged unconscious by someone hiding in the shrubbery. The police returned to the station, taking Maggie with them. Just as they arrived, a telephone call came in about another murder, that of Andrew Stewart.

At that moment Gordon strolled into the station. The police were flummoxed. He denied everything. Black and Moffat went to examine the bits and pieces of Corgay's car. They deduced a dynamite bomb had been affixed underneath. The fuse cord had been tied to the exhaust manifold. After the car had been driven a while, the manifold became hot enough to ignite the fuse cord.

Maggie was questioned again. She admitted an affair with James while Gordon was serving in North Africa during World War Two. During that time she worked in a munitions factory and learned how to handle dynamite.

Postwar, James tried to take up with Maggie again but she refused him. (Remember that this episode was aired not long after the war.) She killed him. Gordon's brief excursion was to warn her to stay silent.

Returning to the jail, Gordon met Andrew, who recognized him as the escaped prisoner. Gordon only meant to knock Andrew unconscious but the victim struck his head on a rock when he fell and died. The Sims were convicted. Aye, that was the rub.

Singletons.

THE LONE WOLF was based on eight novels by Louis Joseph Vance, featuring Michael Lanyard as a reformed jewel thief who became a private detective. The character was featured in 24 movies between 1917 and 1949.

A brief radio series aired during the 1948-49 season. Only one episode survived, available from the Old Time Radio Researchers at www.otrr.org/OTRRLibrary

My suspicion is that the series failed because of competition from Boston Blackie, also a reformed thief, whose radio show aired from 1944 until 1950.

The narration by Lanyard was exactly like a dozen other detective shows airing at the time.

"The Adventure Of The Golden Santa" aired on 1949-01-01 and was written by Louis Vittes. The intro was much like the Boston Blackie episodes, with a berserk organist running wild. Michael Lanyard was feeling sorry for himself because Christmas was not a happy time for lone wolves.

Drowning his sorrows in a tavern, he was approached by a stranger named Peggy. She had lost a solid gold figurine of Santa Claus and wanted his help.

The trail led through various nightclubs. All the head waiters said they had never seen Peggy in their nightclub. Eventually they arrived at a speakeasy, where Sondra Crane objected to Peggy as a golddigger trying to steal her millionaire husband Walter.

The lights suddenly went out. A gunshot was fired. When the lights were turned back on, Sondra's bodyguard Joe was dead. Lanyard hypothesized that Joe had been shot because he knew who stole the gold Santa.

Lanyard and Peggy drove to the Crane mansion, which was deserted and locked up tight. Lanyard sent Peggy home and waited for Crane. Sondra arrived and let Lanyard inside, where they found Walter's body in the library. Shot by a single bullet.

Sondra wasn't any good at faking shock or remorse. Lying next to the body was the gold figurine. Sondra immediately put the blame on Peggy. Assorted alarms ensued, and lots of to-ing and fro-ing kept everyone busy. Lanyard confronted Sondra's boyfriend Peter Farrell.

They all convened at the Crane mansion for the J'accuse! meeting. "*Here we all are, one big happy family*", said Sondra. Joe had been a blackmailer. Peggy had a handgun missing two bullets.

Lanyard expostulated for several minutes about how she had done the killings and why. Having turned Peggy over to the police, Lanyard then went on a date with a wealthy young widow.

FREE STUFF ONLINE

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

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

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

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

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

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

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

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

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

SEEN IN THE LITERATURE

Physics.

Prohira, S. (2024) **The forest as a neutrino detector.** arXiv:2401.14454v1 [hep-ex] (available as a free pdf)

Author’s abstract: *The primary challenge in detecting ultrahigh energy (UHE) neutrinos with energies exceeding 10^{16} eV is to instrument a large enough volume to detect the extremely low flux, which falls as E^{-2} . We explore in this article the feasibility of using the forest as a detector.*

Trees have been shown to be efficient broadband antennas, and may, without damage to the tree, be instrumented with a minimum of apparatus. A large scale array of such trees may be the key to achieving the requisite target volumes for UHE neutrino astronomy.

Trees are intrinsically broadband detectors, with existing studies documenting trees as antennas from VLF (3-30 kHz) up through HF (3-30MHz), motivating more study at frequencies greater than 30MHz.

Such an instrument could be deployed in any number of forests in any number of locations all around the globe, in collaboration with local communities and governing agencies.

Studies beginning in the 20th century demonstrated clearly that trees were efficient broadband antennas. Their study was originally military in nature, the idea being that trees could serve as both transmitters and receivers in remote situations.

Comparisons of reception performance relative to manufactured antennas in varying weather conditions were performed with systems that inductively couple the tree to a receiver system via a simple toroidal coil. Phasing of trees (and other structures) was performed, indicating that multiple trees may be employed as a phased radio array.

In studies of jungle trees, the instrumented trees outperformed manufactured antennas for 4.6MHz in terms of signal strength and signal to noise ratio, in some cases by up to 20 dB.

Astronomy.

Maiolino, R., et al (2024) **A small and vigorous black hole in the early Universe.** NATURE 627:doi.org/10.1038/s41586-024-07052-5 (available as a free pdf)

Authors' abstract: *Several theories have been proposed to describe the formation of black hole seeds in the early Universe and to explain the emergence of very massive black holes observed in the first thousand million years after the Big Bang.*

Models consider different seeding and accretion scenarios, which require the detection and characterization of black holes in the first few hundred million years after the Big Bang to be validated.

Here we present an extensive analysis of the JWST-NIRSpec spectrum of GN-z11, an exceptionally luminous galaxy at $z = 10.6$... These spectral features indicate that GN-z11 hosts an accreting black hole.

Surti, T., et al (2024) **The central kinematics and black hole mass of 4C + 37.11.** ASTRONOMICAL JOURNAL 160:doi.org/10.3847/1538-4357/ad14fa (available as a free pdf)

[Two supermassive black holes are stuck in the centre of their galaxy. Having cleaned out the core of stars, and the remaining stars orbiting at a safe distance, the pair have remained unchanged for 3 gigayears.]

Authors' abstract: *We report on integral field unit measurements of the host of the radio source 4C+37.11. This massive elliptical contains the only resolved double compact nucleus at parsec-scale separation, likely a bound supermassive black hole binary (SMBHB).*

Analysis of the core infers a total SMBHB mass of 2.8×10^{10} solar masses, making this one of the most massive black hole systems known. Our data indicate that there has been significant scouring of the central kiloparsec of the host galaxy.

The dynamical mass for 4C+37.11's SMBHB is one of the largest measured in the local Universe. This fits well with the picture that the host is a fossil cluster,

the product of several major mergers. If these mergers were largely dry, dissipation-less events, they would grow the central black hole mass faster than the stellar velocity dispersion.

In addition, the back-action from the current binary (and likely from earlier binary phases) has scoured the core, removing stars capable of exerting dynamical friction via three-body gravitational slingshots.

Planets.

Facchini, S., et al (2024) **Resolved ALMA observations of water in the inner astronomical units of the HL Tau disk.** NATURE ASTRONOMY 8:doi.org/10.1038/s41550-024-02207-w (available as a free pdf)

Authors' abstract: *The water molecule is a key ingredient in the formation of planetary systems, with the water snowline being a favourable location for the growth of massive planetary cores.*

Here we present Atacama Large Millimeter/submillimeter Array data of the ringed protoplanetary disk orbiting the young star HL Tauri that show centrally peaked, bright emission arising from three distinct transitions of the main water isotopologue ($H_2^{16}O$).

The spatially and spectrally resolved water content probes gas in a thermal range down to the water sublimation temperature. Our analysis implies a stringent lower limit of 3.7 Earth oceans of water vapour available within the inner 17 astronomical units of the system.

The water molecule is undoubtedly one of the most important molecular species in the whole Universe. Being an extremely efficient solvent, water had a key role in the emergence of life as we know it on our planet. For this reason, the chemical characterization of exoplanetary atmospheres is often focused on detecting this particular molecular species.

Formed by the common H and O atoms, water plays a fundamental role in the physics of the formation of planetary systems, due to its very high abundance in both gaseous and icy forms. Theoretical models predict that at the location of the phase transition from gaseous to solid form, dust grains can accumulate and grow very efficiently, promoting the fast formation of planetary cores.

Across this particular radial location, called the 'snowline', grains can drastically change their drift and fragmentation velocity, composition and opacity. In synergy with vapour radial diffusion, these physical discontinuities can lead to the accumulation and growth of dust grains into planetesimals.

The position of the snowline also defines the chemistry of the available planet building blocks. Since the H₂O molecule is the major elemental oxygen carrier in the disk, its desorption and freezing affect the elemental C/O ratio in both the gas and solid phases.

Because of its large binding energy, the H₂O transition from ice to gas happens a few astronomical units (au) from the young star where the midplane temperatures are in the range from 100° to 200°K, making it the last major ice component to sublimate.

However, the proximity to the host star makes the detection of the snowline complicated even in the closest star-forming regions. Both cold and warm water lines have been detected in a few disks by Herschel, Spitzer, JWST and ground-based observatories, but the low angular resolution did not allow robust inferences about the extent of the water snowline.

Berne, O., et al (2024) **A far-ultraviolet-driven photoevaporation flow observed in a protoplanetary disk.** SCIENCE 383:doi.org/10.1126/science.adh2861

Authors' abstract: Most low-mass stars form in stellar clusters that also contain massive stars, which are sources of far-ultraviolet (FUV) radiation. Theoretical models predict that this FUV radiation produces photodissociation regions (PDRs) on the surfaces of protoplanetary disks around low-mass stars, which affects planet formation within the disks.

We report James Webb Space Telescope and Atacama Large Millimeter Array observations of a FUV-irradiated protoplanetary disk in the Orion Nebula. Emission lines are detected from the PDR; modeling their kinematics and excitation allowed us to constrain the physical conditions within the gas.

We quantified the mass-loss rate induced by the FUV irradiation and found that it is sufficient to remove gas from the disk in less than a million years. This is rapid enough to affect giant planet formation in the disk.

During their formation process, young stars are surrounded by a protoplanetary disk of gas and dust within which planets can form. Stars mostly form in clusters, and bright, high-mass stars irradiate the disks around low-mass stars with ultraviolet light.

We combined infrared, submillimeter, and optical observations of a protoplanetary disk in the Orion Nebula to determine the effect of ultraviolet irradiation. We found that the heating and ionization induced by the ultraviolet photons caused gas to be lost.

Geology.

Bristow, C.S., and G.A.T. Duller (2024) **Structure and chronology of a star dune at Erg Chebbi, Morocco, reveals why star dunes are rarely recognised in the rock record.** SCIENTIFIC REPORTS 14:doi.org/10.1038/s41598-024-53485-3 (available as a free pdf)

Authors' abstract: Star dunes are the tallest dunes on Earth and are amongst the larger and more spectacular aeolian landforms. Although they are widespread in modern sandy deserts, star dunes are rarely recognised in the rock record probably due to a lack of suitable sedimentary models.

This paper presents a new sedimentary model for the structure of a star dune at Erg Chebbi in Morocco (Sahara Desert) on the basis of ground-penetrating radar surveys.

Individual sedimentary structures in star dunes are similar to those in linear or barchanoid dunes, likely leading to misidentification in the rock record. However, the suite of features described in this paper will permit identification of star dunes in future studies of the rock record.

Optically stimulated luminescence (OSL) dating shows that accumulation of the Erg Chebbi star dune post-dates the end of the African Humid Period. At the base of the dune, there is an ~ 8,000-year hiatus in the record.

Since then, the dune has grown rapidly to create a 100-metre high dune within the past 1,000 years and is migrating towards the west. Changes in the cross-strata support the idea that star dune construction was accompanied by a change in the wind directions.

[Image shows the star dune. For an idea of its scale, look closely to see the humans along the top of the dune and their footprints on the climb up.]



Origin Of Life.

Ortega-Arzola, E., et al (2024) **The minimum energy required to build a cell.** SCIENTIFIC REPORTS 14:doi.org/10.1038/s41598-024-54303-6 (available as a free pdf)

Authors' abstract: *Understanding the energy requirements for cell synthesis accurately and comprehensively has been a longstanding challenge. We introduce a computational model that estimates the minimum energy necessary to build any cell from its constituent parts.*

This method combines omics and internal cell compositions from various sources to calculate the Gibbs Free Energy of biosynthesis independently of specific metabolic pathways. Our public tool, Synercell, can be used with other models for minimum species-specific energy estimations in any well-sequenced species.

The energy for synthesising the genome, transcriptome, proteome, and lipid bilayer of four cell types: Escherichia coli, Saccharomyces cerevisiae, an average mammalian cell and JCVI-syn3A were estimated.

Gram-for-gram synthesis of lipid bilayers requires the most energy, followed by the proteome, genome, and transcriptome. The average per gram cost of biomass synthesis is in the 300s of J/g for all four cells.

Walton, C.R., et al (2024) **Cosmic dust fertilization of glacial prebiotic chemistry on early Earth.** NATURE ASTRONOMY 8:doi.org/10.1038/s41550-024-02212-z (available as a free pdf)

Authors' abstract: *Earth's surface is deficient in available forms of many elements considered limiting for prebiotic chemistry. In contrast, many extraterrestrial rocky objects are rich in these same elements.*

Limiting prebiotic ingredients may, therefore, have been delivered by exogenous material; however, the mechanisms by which exogenous material may be reliably and non-destructively supplied to a planetary surface remains unclear.

Today, the flux of extraterrestrial matter to Earth is dominated by fine-grained cosmic dust. Although this material is rarely discussed in a prebiotic context

due to its delivery over a large surface area, concentrated cosmic dust deposits are known to form on Earth today due to the action of sedimentary processes.

Here we combine empirical constraints on dust sedimentation with dynamical simulations of dust formation and planetary accretion to show that localized sedimentary deposits of cosmic dust could have accumulated in arid environments on early Earth, in particular glacial settings that today produce cryoconite sediments.

Our results challenge the widely held assumption that cosmic dust is incapable of fertilizing prebiotic chemistry. Cosmic dust deposits may have plausibly formed on early Earth and acted to fertilize prebiotic chemistry.

The origin of life on Earth probably resulted from interacting solid, liquid and gaseous reservoirs of bioessential elements in reactive molecular forms. Experimental work demonstrates that high to moderate concentrations of simple species (for example, HCN, PO_3^{4-} and HSO_3^-) can produce high yields of biologically relevant molecules, such as nucleic acids, lipids and peptides.

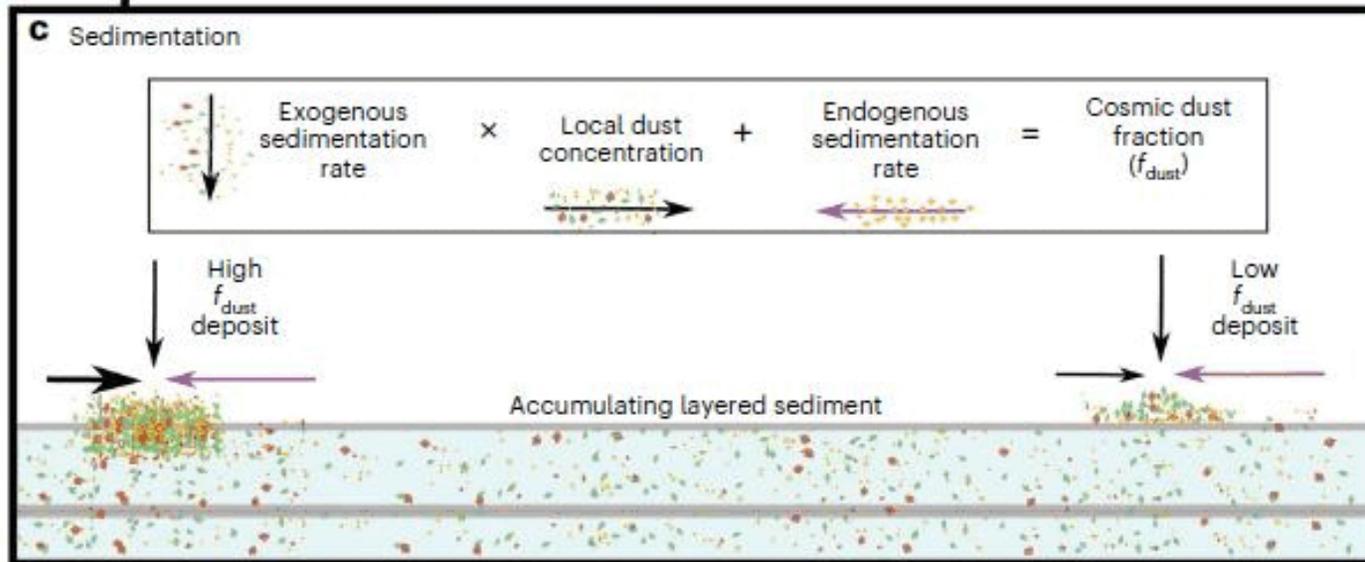
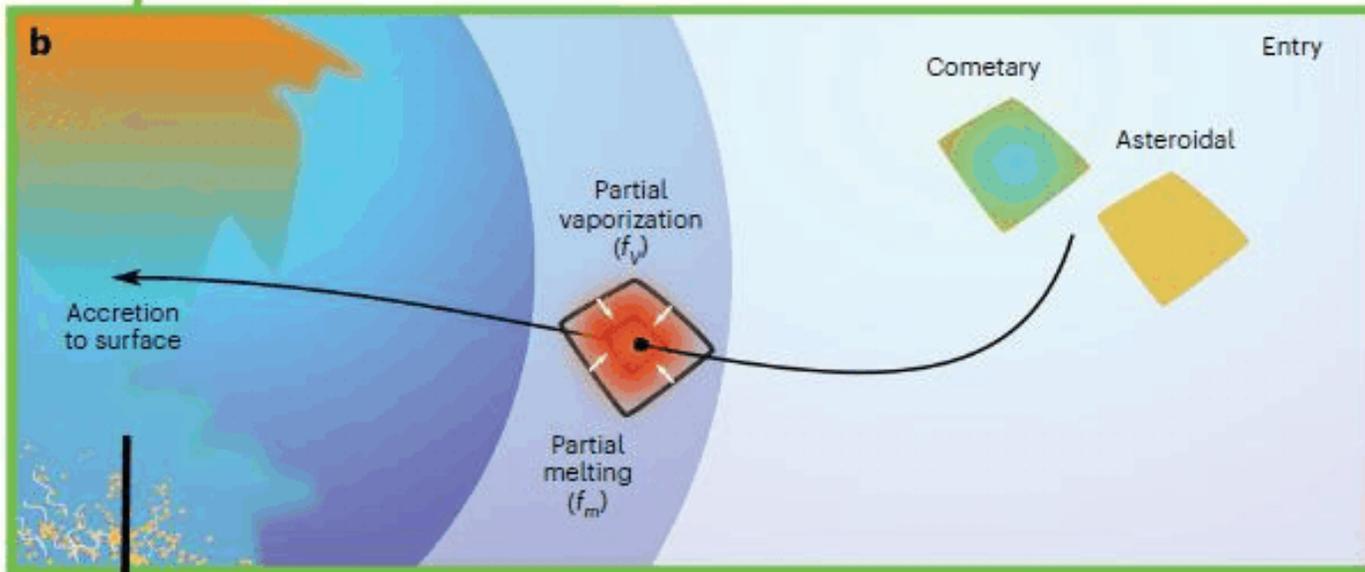
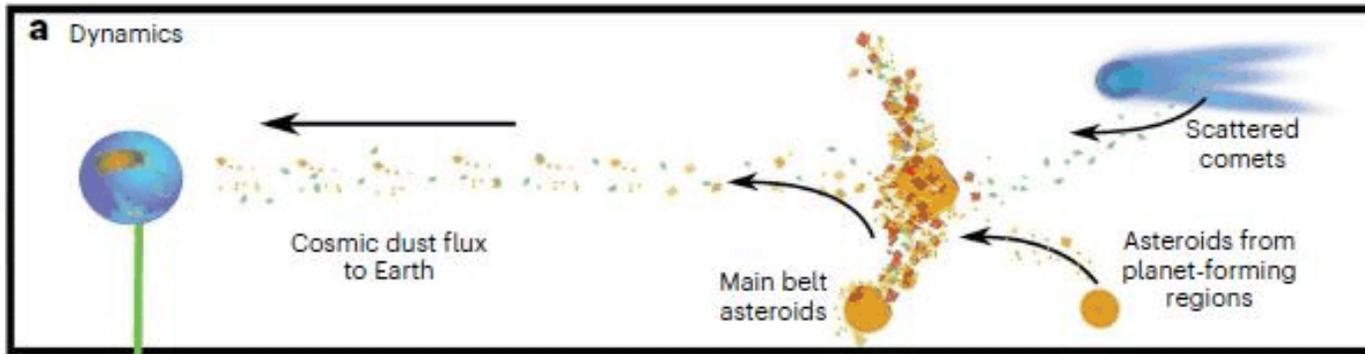
However, a remaining gap in our understanding of the geological context of prebiotic chemistry on Earth is the mechanisms by which concentrated feedstocks were produced. Common terrestrial rocks are relatively poor in reactive and soluble forms of the key elements mentioned above: phosphorus (P), sulfur (S), nitrogen (N) and carbon (C).

Indeed, life on Earth is engaged in fierce competition for the limited, endogenous, bioavailable reservoirs of these elements.

Complex enzymatic machinery has evolved in response to this challenge, such that life can extract these species from the environment even when they occur in limited concentration or in largely inert chemical form.

The pre-enzymatic world of prebiotic chemistry must have initially lacked such mechanisms to enhance the availability of key species. However, certain processes in Earth's early history may have gone part or all of the way towards solving this apparent paradox.

One such possibility is the accretion and surficial sedimentary sorting of cosmic dust (here defined as grains of size <3 mm). Cosmic dust comprises mineral grain aggregates produced by collisions between asteroids and the sublimation



and disintegration of comets. Such particles produced further from the Sun can then drift inwards due to Poynting–Robertson drag and be accreted by Earth.

Cosmic dust contains bioessential elements (for terrestrial life), for example, P, S, N and C, at concentrations well above that of Earth's crust.

[Images are from this paper.]

Paleobiology.

Na, L., et al (2024) **Revisiting the Phanerozoic rock-diversity relationship.** GEOLOGICAL MAGAZINE 160:doi.org/10.1017/S0016756823000742 (available as a free pdf)

[The Phanerozoic era is the time between the advent of multicellular life 541 megayears ago and the present day.]

Authors' abstract: *The congruence between rock quantity and biodiversity through the Phanerozoic has long been acknowledged.*

Rock record bias and common cause are the most discussed hypotheses: the former emphasizes that the changes in diversity through time fully reflect rock availability; the latter posits that the correlation between rock and fossil records is driven by a common cause, such as sea-level changes.

Here, we use the Geobiodiversity Database (GBDB), a large compilation of the rock and fossil records, to test the rock bias hypothesis. In contrast to other databases on fossil occurrences, the section-based GBDB also records unfossiliferous units.

Our multiple regression analysis shows that 85% of the variation in sampled diversity can be attributed to the rock record, meaning that major peaks and drops in observed diversity are mainly due to the rock record.

Our results support a strong covariation between the number of unfossiliferous units and sampled diversity, indicating a genuine rock bias that arose from sampling effort that is independent of fossil content. This provides a compelling argument that the rock record bias is more prominent than common cause in explaining large-scale variations in sampled diversity.

Our study suggests that

- (1) no single proxy can fully represent rock record bias in predicting biodiversity,*
- (2) rock bias strongly governs sampled diversity in both marine and terrestrial communities, and*
- (3) unfossiliferous strata contain critical information in predicting diversity of marine and terrestrial animals.*

Ferreira, G.S., et al (2024) **The latest freshwater giants: a new *Peltocephalus* (Pleurodira: Podocnemididae) turtle from the Late Pleistocene of the Brazilian Amazon.** BIOLOGY LETTERS 20:doi.org/10.1098/rsbl.2024.0010

Authors' abstract: *Overkill of large mammals is recognized as a key driver of Pleistocene megafaunal extinctions in the Americas and Australia. While this phenomenon primarily affected mega-mammals, its impact on large Quaternary reptiles has been debated.*

*Freshwater turtles, due to the scarcity of giant forms in the Quaternary record, have been largely neglected in such discussions. Here we present a new giant podocnemidid turtle, *Peltocephalus maturin* sp. nov., from the Late Pleistocene Rio Madeira Formation in the Brazilian Amazon, that challenges this assumption.*

Morphological and phylogenetic analyses of the holotype, a massive partial lower jaw, reveal close affinities to extant Amazonian species and suggest an omnivorous diet.

*Body size regressions indicate *Pe. maturin* possibly reached about 180 cm in carapace length and is among the largest freshwater turtles ever found. This finding presents the latest known occurrence of giant freshwater turtles, hinting at coexistence with early human inhabitants in the Amazon.*



Dinosaurs.

Longrich, N.R., et al (2024) **A bizarre new plioplacarpine mosasaurid from the Maastrichtian of Morocco.** CRETACEOUS RESEARCH 155:doi.org/10.1016/j.cretres.2024.105870

Authors' abstract: *The Upper Maastrichtian of Morocco has produced a remarkably diverse fauna of mosasaurids, the most diverse known for any time or place. As apex predators, Mosasauridae provide a picture of the marine ecosystem just before the end-Cretaceous mass extinction.*

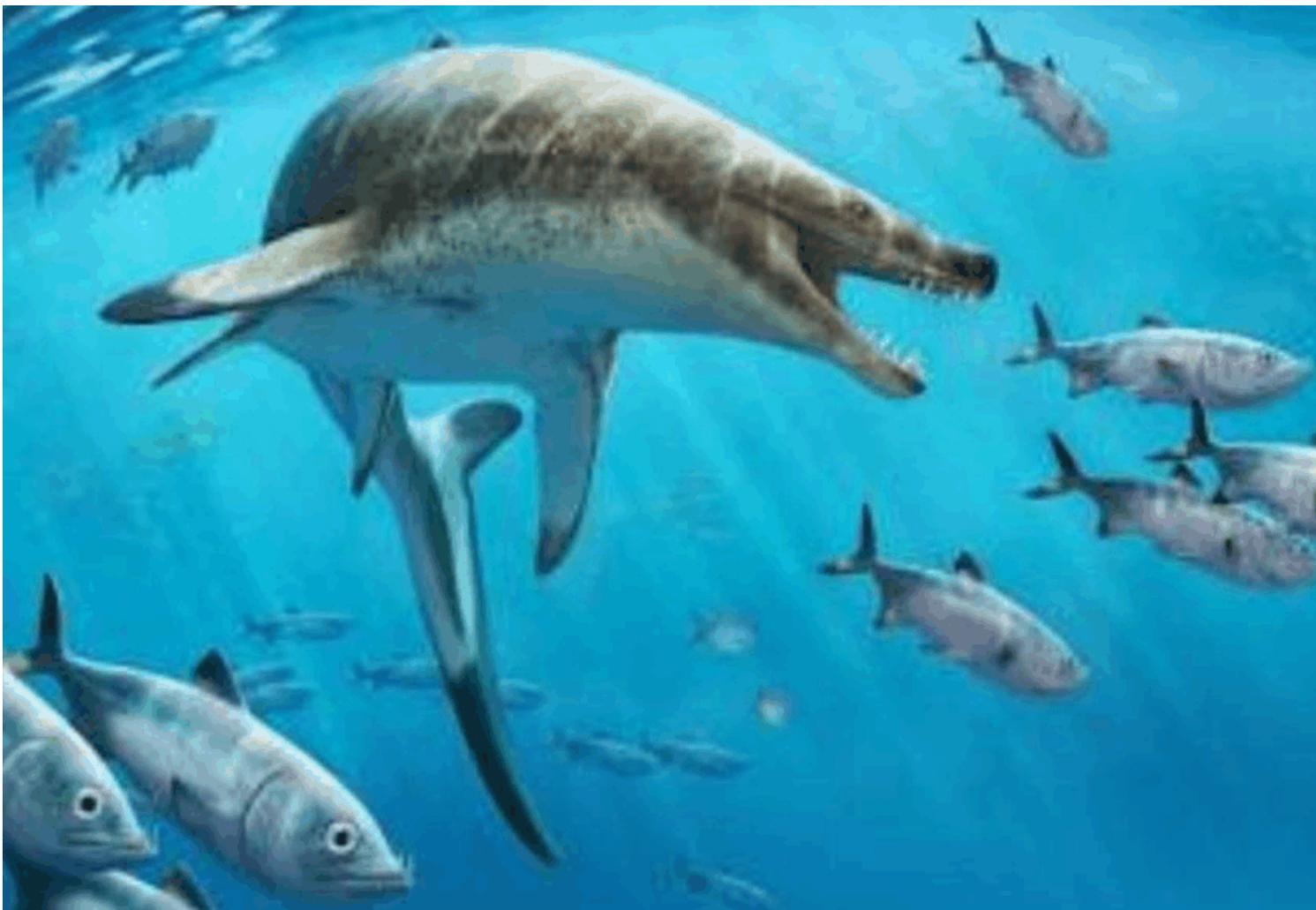
Here we describe a bizarre new plioplacarpine mosasaurid, Khinjaria acuta, characterized by enlarged, dagger-like anterior teeth, short, robust jaws, and posterior elongation of the skull. Khinjaria is related to Goronyosaurus

nigeriensis from Nigeria and Niger, and Gavialimimus almaghribensis from Morocco.

These species form a distinct clade of specialized mosasaurids so far unknown outside of Africa. Mosasaurids show high endemism in the Maastrichtian, with different lineages occurring in different regions, implying that mosasaurid diversity is underestimated because of limited geographic sampling.

The large size, robust jaws, akinetic skull, and bladelike teeth of Khinjaria suggest it was an apex predator, but the unusual skull and jaw differ from those of contemporary predators like Hainosaurus, Thalassotitan, and Mosasaurus, suggesting a distinct feeding strategy.

Mosasaurids became increasingly specialized in the latest Cretaceous, repeatedly evolving to occupy the apex predator niche, suggesting a diverse marine ecosystem persisted up to the K-Pg boundary. Late Cretaceous marine ecosystems differ from modern marine ecosystems in the high diversity of large predators.



Fiorillo, A.R., et al (2024) **New dinosaur ichnological, sedimentological, and geochemical data from a Cretaceous high-latitude terrestrial greenhouse ecosystem, Nanushuk Formation, North Slope, Alaska.** GEOSCIENCES 36:doi.org/10.3390/geosciences14020036

Authors' abstract: *The Nanushuk Formation (Albian-Cenomanian) crops out over much of the central and western North Slope of Alaska, varying from ~1500 to ~250 metres thick from west to northeast.*

The Nanushuk Formation records an inter-tonguing succession of marine and nonmarine conglomerate, sandstone, mudstone, and coal. These rock units comprise the Kukpowruk and Corwin formations of the former Nanushuk Group, respectively.

Work presented here is centered in the foothills of the DeLong Mountains along the Kukpowruk River, from an area west of Igloo Mountain in the Coke Basin to the Barabara Syncline, approximately 80 km to the north. A radiometric date recovered from a tuff in our study area suggests a Cenomanian age for at least some of these rocks.

Outcrops along the Kukpowruk River contain a well-preserved fossil flora previously recovered from marine, marginal marine, and terrestrial sediments. Our own work focuses on detailed measured sections of terrestrial rocks, interpretation of sedimentary facies and facies associations, and documentation of fossil vertebrates.

Eight facies associations are identified in the study area that together are interpreted to represent meandering fluvial and upper delta plain environments. Plant fossils are common and include standing tree trunks up to 58 cm in diameter at some locations. Approximately 75 newly discovered tracksites, and a heretofore unknown, rich fossil vertebrate ichnofauna, are present.

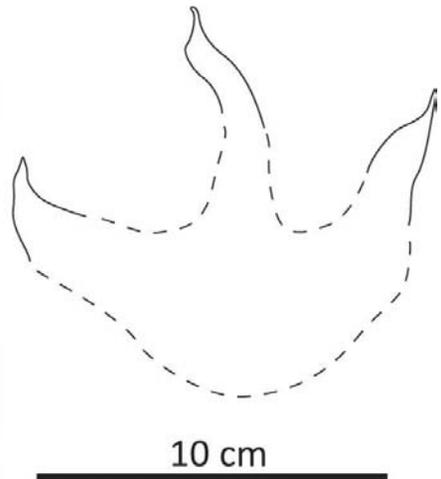
The ichnofaunal assemblage includes evidence of small and large theropod dinosaurs (including birds) and bipedal and quadrupedal ornithischian dinosaurs. Approximately 15% of the dinosaur ichnofauna record is represented by fossil bird tracks.

Wood fragments from the Nanushuk Formation were analyzed for their carbon isotopic composition to relate $\delta^{13}C$ to mean annual precipitation. Samples averaged -26.4‰VPDB , suggesting an average mean annual precipitation of

1,412 mm/year. This record of increased precipitation in the Nanushuk Fm. during the mid-Cretaceous provides new data that supports global precipitation patterns associated with the Cretaceous Thermal Maximum.

This work provides an important framework for much-needed further paleoecological and paleoclimatic analyses into greenhouse conditions in the terrestrial Cretaceous Arctic during this important window in time.

[Image is from this paper.]



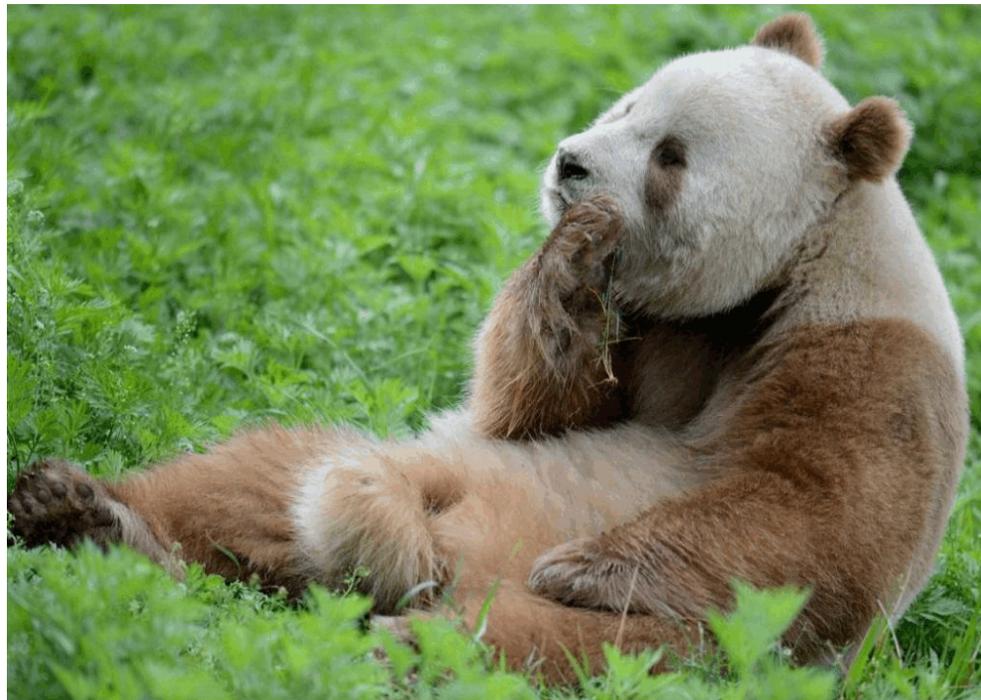
Zoology.

Guan, D., et al (2024) **Taking a color photo: A homozygous 25-bp deletion in Bace2 may cause brown-and-white coat color in giant pandas.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 121:doi.org/10.1073/pnas.2317430121

Authors' abstract: *Brown-and-white giant pandas (hereafter brown pandas) are distinct coat color mutants found exclusively in the Qinling Mountains, Shaanxi, China. However, its genetic mechanism has remained unclear since their discovery in 1985.*

Here, we identified the genetic basis for this coat color variation using a combination of field ecological data, population genomic data, and a CRISPR–Cas9 knockout mouse model.

We de novo assembled a long-read-based giant panda genome and resequenced the genomes of 35 giant pandas, including two brown pandas and two family trios associated with a brown panda.



We identified a homozygous 25-bp deletion in the first exon of Bace2, a gene encoding amyloid precursor protein cleaving enzyme, as the most likely genetic basis for brown-and-white coat color. This deletion was further validated using PCR and Sanger sequencing of another 192 black giant pandas and CRISPRCas9 edited knockout mice.

Our investigation revealed that this mutation reduced the number and size of melanosomes of the hairs in knockout mice and possibly in the brown panda, further leading to the hypopigmentation.

[Image is from Wikipedia.]

Botany.

Fan, Z., et al (2024) **Chemical and genetic basis of orange flavor.** SCIENCE ADVANCES 10:doi.org/10.1126/sciadv.adk2051 (available as a free pdf)

Authors' extracts and abstract: *Citrus production in the United States has been devastated by Huanglongbing (HLB) or citrus greening disease, especially in Florida where historically citrus production was 90% sweet orange [*Citrus sinensis* (L.) Osbeck], a citrus type highly susceptible to *Candidatus liberibacter asiaticus*, the bacterium considered responsible for the disease.*

In the 2022–2023 season, Florida citrus production had the lowest output in nine decades, taking acreage down to ~50% and production to ~10% of levels before the arrival of the disease. Thus far, there is no effective way to control HLB.

By 2017, the cumulative economic loss due to HLB was estimated to be \$6 billion. The most sustainable solution to maintain orange production is to plant cultivars that are resistant or tolerant to HLB.

*Now, only a narrow range of citrus cultivars are classified as sweet orange, *C. sinensis*, which are all derived from cumulative somatic mutations derived from a presumed single complex interspecific introgression hybrid of mandarin (*Citrus reticulata*) and pummelo (*Citrus maxima*).*

Therefore, the limited genetic diversity of sweet orange has rendered it difficult to find a resistant source within the species. Breeding new cultivars via outcrossing with HLB-tolerant materials provides the best breeding solution.

Poncirus trifoliata (L.), conferring tolerance to HLB, has been used for citrus breeding. It is challenging to improve the fruit quality of hybrids harboring Poncirus introgressions, because fruits of the parent P. trifoliata have unacceptable flavor, and the hybrids with Citrus present various levels of off-flavor even after a few generations of backcrossing to elite citrus cultivars.

However, after generations of backcrosses to mandarin, new generations of orange-like hybrids are available, such as “US SunDragon” included in this study, which has P. trifoliata in its pedigree and low P. trifoliata off-taste. US SunDragon exhibits tolerance to HLB and a high resemblance to orange flavor and, thus, is a promising new variety to sustain the orange juice industry in Florida.

Sweet orange (Citrus sinensis) exhibits limited genetic diversity and high susceptibility to Huanglongbing (HLB). Breeding HLB-tolerant orange-like hybrids is in dire need.

However, our understanding of the key compounds responsible for orange flavor and their genetic regulation remains elusive. Evaluating 179 juice samples, including oranges, mandarins, Poncirus trifoliata, and hybrids, distinct volatile compositions were found.

A random forest model predicted untrained samples with 78% accuracy and identified 26 compounds crucial for orange flavor. Notably, seven esters differentiated orange from mandarin flavor.

Cluster analysis showed six esters with shared genetic control. Differential gene expression analysis identified C. sinensis alcohol acyltransferase 1 responsible for ester production in orange.

Its activity was validated through overexpression assays. Phylogeny revealed the functional allele was inherited from pummelo. A SNP-based DNA marker in the coding region accurately predicted phenotypes.

This study enhances our understanding of orange flavor compounds and their biosynthetic pathways and expands breeding options for orange-like cultivars.

Environmental Science.

Rogger, J., et al (2024) **Speed of thermal adaptation of terrestrial vegetation alters Earth’s long-term climate.** SCIENCE ADVANCES 10:doi.org/10.1126/sciadv.adj4408 (available as a free pdf)

Authors’ abstract: Earth’s long-term climate is driven by the cycling of carbon between geologic reservoirs and the atmosphere-ocean system. Our understanding of carbon-climate regulation remains incomplete, with large discrepancies remaining between biogeochemical model predictions and the geologic record.

Here, we evaluate the importance of the continuous biological climate adaptation of vegetation as a regulation mechanism in the geologic carbon cycle since the establishment of forest ecosystems.

Using a model, we show that the vegetation’s speed of adaptation to temperature changes through eco-evolutionary processes can strongly influence global rates of organic carbon burial and silicate weathering.

Considering a limited thermal adaptation capacity of the vegetation results in a closer balance of reconstructed carbon fluxes into and out of the atmosphere-ocean system, which is a prerequisite to maintain habitable conditions on Earth’s surface on a multimillion-year timescale.

We conclude that the long-term carbon-climate system is more sensitive to biological dynamics than previously expected, which may help to explain large shifts in Phanerozoic climate.

Earth’s long-term climate is controlled by the balance of CO₂ released from geological reservoirs during volcanism, metamorphism, and the oxidation of buried organic material and the consumption of atmospheric CO₂ through the weathering of silicate rocks as well as the burial of organic carbon.

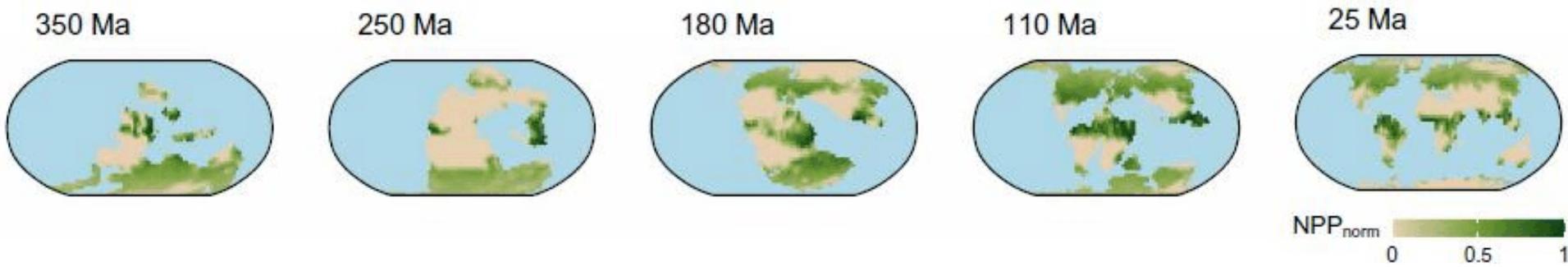
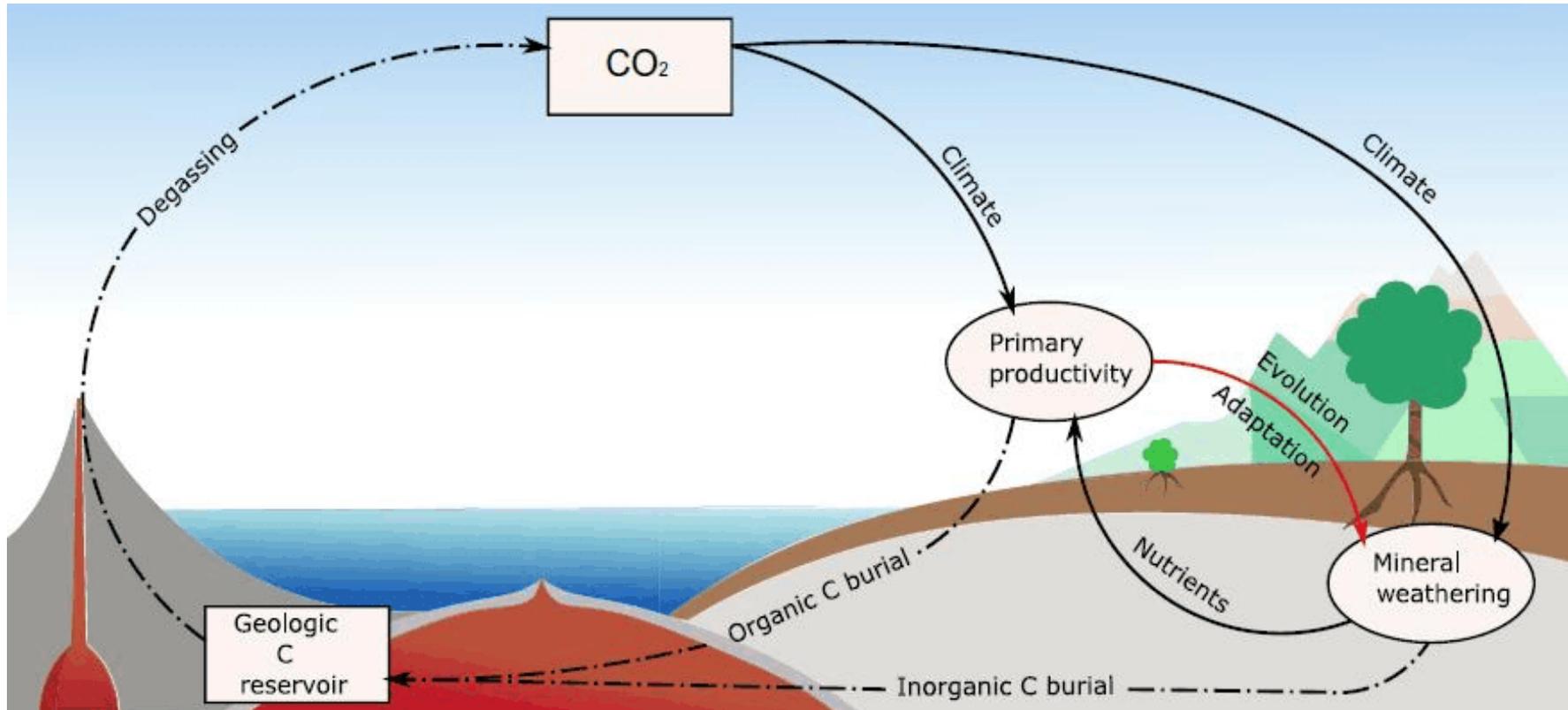
The terrestrial vegetation affects the global carbon cycle in two major ways. First, primary productivity determines the amount of photosynthetically fixed atmospheric CO₂ and contributes to the burial of carbon in organic forms. Second, plants and their symbiotic associations (e.g., mycorrhiza) enhance the CO₂ consumption by silicate mineral weathering through multiple feedback mechanisms.

These include the release of reactive species into the soil volume (e.g., hydrogen ions, organic acids, and chelators) to acquire growth-limiting nutrients, increasing the soil CO₂ concentrations during respiration, increasing the concentration of reactive species in the soil following plant litter decomposition, and, finally, by mediating physical processes such as an intensified evapotranspiration-precipitation cycle or the stabilization of soils, permitting continued chemical weathering of primary minerals.

Together, these processes result in vegetated areas showing up to 10-fold increases in weathering rates compared to unvegetated land. The strength of the weathering enhancement increases with high rates of primary productivity and plant biomass, driven by increased carbon, nutrient, and water fluxes.

Major transitions in Earth's climate and atmospheric composition are being attributed to the rise and evolution of terrestrial plants and subsequent changes in carbon burial rates and silicate weathering

[Images are from this paper.]



Wang, X., et al (2024) **Effects of street plants on atmospheric particulate dispersion in urban streets: A review.** ENVIRONMENTAL REVIEWS 32:://doi.org/10.1139/er-2023-0103

Authors' abstract: *Numerous empirical studies have demonstrated that street trees not only reduce dust pollution and absorb particulate matter (PM) but also improve microclimates, providing both ecological functions and aesthetic value.*

However, recent research has revealed that street tree canopy cover can impede the dispersion of atmospheric PM within street canyons, leading to the accumulation of street pollutants.

Although many studies have investigated the impact of street trees on air pollutant dispersion within street canyons, the extent of their influence remains unclear and uncertain.

Pollutant accumulation corresponds to the specific characteristics of individual street canyons, coupled with meteorological factors and pollution source strength. Notably, the characteristics of street tree canopy cover also exert a significant influence.

There is still a quantitative research gap on street tree cover impacts with respect to pollution and dust reduction control measures within street spaces. To improve urban traffic environments, policymakers have mainly focused on scientifically based street vegetation deployment initiatives in building ecological garden cities and improving the living environment.

Human Prehistory.

Xia, B., et al (2024) **On the genetic basis of tail-loss evolution in humans and apes.** NATURE 626:doi.org/10.1038/s41586-024-07095-8 (available as a free pdf)

Authors' abstract: *The loss of the tail is among the most notable anatomical changes to have occurred along the evolutionary lineage leading to humans and to the anthropomorphous apes, with a proposed role in contributing to human bipedalism. Yet, the genetic mechanism that facilitated tail-loss evolution in hominoids remains unknown.*

Here we present evidence that an individual insertion of an Alu element in the genome of the hominoid ancestor may have contributed to tail-loss evolution.

We demonstrate that this Alu element, inserted into an intron of the TBXT gene, pairs with a neighbouring ancestral Alu element encoded in the reverse genomic orientation and leads to a hominoid-specific alternative splicing event.

To study the effect of this splicing event, we generated multiple mouse models that express both full-length and exon-skipped isoforms of Tbx1, mimicking the expression pattern of its hominoid orthologue TBXT.

Mice expressing both Tbx1 isoforms exhibit a complete absence of the tail or a shortened tail depending on the relative abundance of Tbx1 isoforms expressed at the embryonic tail bud. These results support the notion that the exon-skipped transcript is sufficient to induce a tail-loss phenotype.

Moreover, mice expressing the exon-skipped Tbx1 isoform develop neural tube defects, a condition that affects approximately 1 in 1,000 neonates in humans. Thus, tail-loss evolution may have been associated with an adaptive cost of the potential for neural tube defects, which continue to affect human health today.

Hominoids, which include humans and the apes, lost their external tail during evolution. The loss of the tail is inferred to have occurred around 25 million years ago when the hominoid lineage diverged from the ancient Old World monkeys, leaving only 3 to 5 caudal vertebrae to form the coccyx, or tailbone, in modern humans.

Human Health.

Kochert, K., et al (2024) **Adaptive immune responses are larger and functionally preserved in a hypervaccinated individual.** LANCET INFECTIOUS DISEASES 24:doi.org/10.1016/S1473-3099(24)00134-8 (available as a free pdf)

Authors' extracts: *Here, we report on a 62-year-old male hypervaccinated individual from Magdeburg, Germany (HIM), who deliberately and for private reasons received 217 vaccinations against SARS-CoV-2 within a period of 29 months.*

HIM's hypervaccination occurred outside of a clinical study context and against national vaccination recommendations. Evidence for 130 vaccinations in a 9-month period was collected by the public prosecutor of Magdeburg, Germany, who opened an investigation of this case with the allegation of fraud, but criminal charges were not filed.

HIM then actively and voluntarily consented to provide medical information and donate blood and saliva. Throughout the entire hypervaccination schedule HIM did not report any vaccination-related side effects.

Furthermore, HIM had no signs of a past SARS-CoV-2 infection, as indicated by repeatedly negative SARS-CoV-2 antigen tests, PCRs and nucleocapsid serology.

In summary, our case report shows that SARS-CoV-2 hypervaccination did not lead to adverse events and increased the quantity of spike-specific antibodies and T cells without having a strong positive or negative effect on the intrinsic quality of adaptive immune responses.

While we found no signs of SARS-CoV-2 breakthrough infections in HIM to date, it cannot be clarified whether this is causally related to the hypervaccination regimen. Importantly, we do not endorse hypervaccination as a strategy to enhance adaptive immunity.

Morais, S., et al (2024) Cryptic diversity of cellulose-degrading gut bacteria in industrialized humans. SCIENCE 383:doi.org/10.1126/science.adj9223

Authors' abstract: The guts of urbanized people worldwide are known to contain less microbial biodiversity than those of humans living rurally. The worry is that the loss of key species contributes to the increasing prevalence of poor metabolic health among urbanized people.

By searching for key genes involved in cellulose degradation in metagenome-assembled genomes, we discovered cellulolytic bacteria in humans. All candidate Ruminococcus species assembled active cellulosomes, enzyme complexes capable of degrading microcrystalline cellulose.

Mammals, including humans, rely on their gut's microbial community to break down plant cell wall components, notably cellulose and associated

polysaccharides. However, there is limited evidence for cellulose fermentation in the human gut despite the benefits of cellulose-containing dietary fiber for gut-microbiome health and overall human well-being.

Previously unknown ruminococcal species were discovered in the human-gut microbiota and provisionally named Candidatus Ruminococcus primaciens, Ruminococcus hominiciens, and Ruminococcus ruminiciens, all of which assemble functional multienzymatic cellulosome systems that degrade crystalline cellulose.

These species are prevalent among the great apes and other nonhuman primates, ancient human societies, hunter-gatherer communities, and rural populations. Although widespread geographically they are conspicuously rare within industrialized societies.

Our evolutionary analysis strongly suggests that R. hominiciens likely originated in the ruminant gut and later transferred to humans, possibly during domestication. High gene expression levels were observed for these species, reflecting their considerable activity in their respective gut systems.

Furthermore, their gene expression profile aligns with their hosts' dietary preferences, highlighting their adaptability. Our analyses show that these novel species adapt to their host ecosystems by acquiring genes from co-resident gut microbes.

The human associated strains possess functional adaptability highlighted by the acquisition of genes that can degrade specific plant fibers of monocots such as maize, rice, and wheat, major components of the human diet.

Likewise, the nonhuman primate-associated strain exhibits the potential for degrading chitin, a polymer abundant in the insect exoskeleton, part of the diet of nonhuman primates.

Speirs: This article made me curious as to what my gut fauna is. I was born and raised in a rural area where my father kept 200 head of cattle. In 1973 I went off to university and ever since then have been a city slicker. I wonder if I am still a cellulose digester or if I have since lost those bacteria.