

OPUNTIA 565



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.

CHINOOK BLAST 2024

photos by Dale Speirs

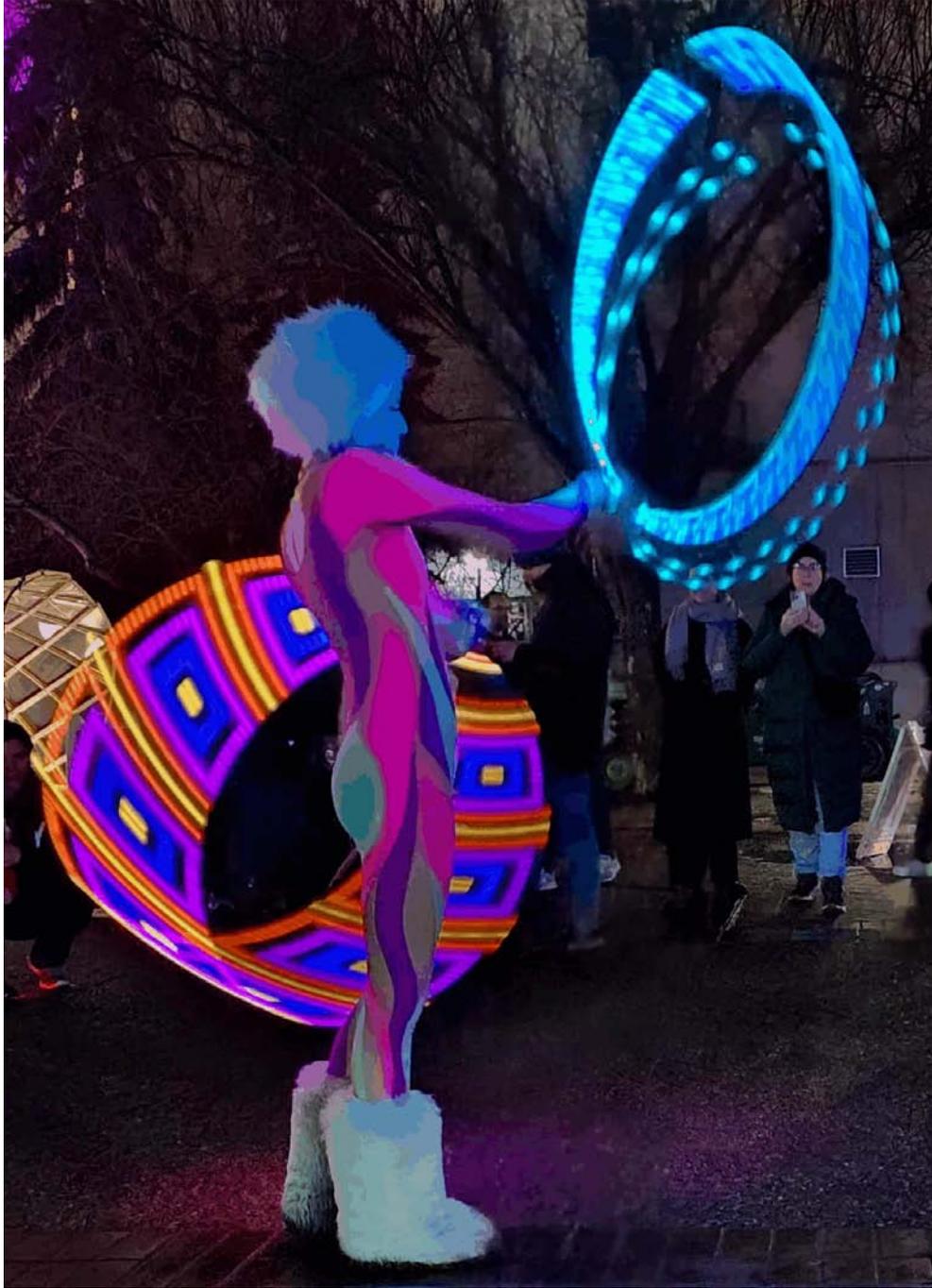
Calgary's annual winter festival is Chinook Blast, this year running from February 2 to 9 in the downtown core. The cover shows the Olympic Plaza skating rink (a wading pool in summer).

There was a band on the stage in that blaze of light but I had trouble getting the camera light meter to behave. When everyone took a break for the Zamboni, I managed to get a better photo.

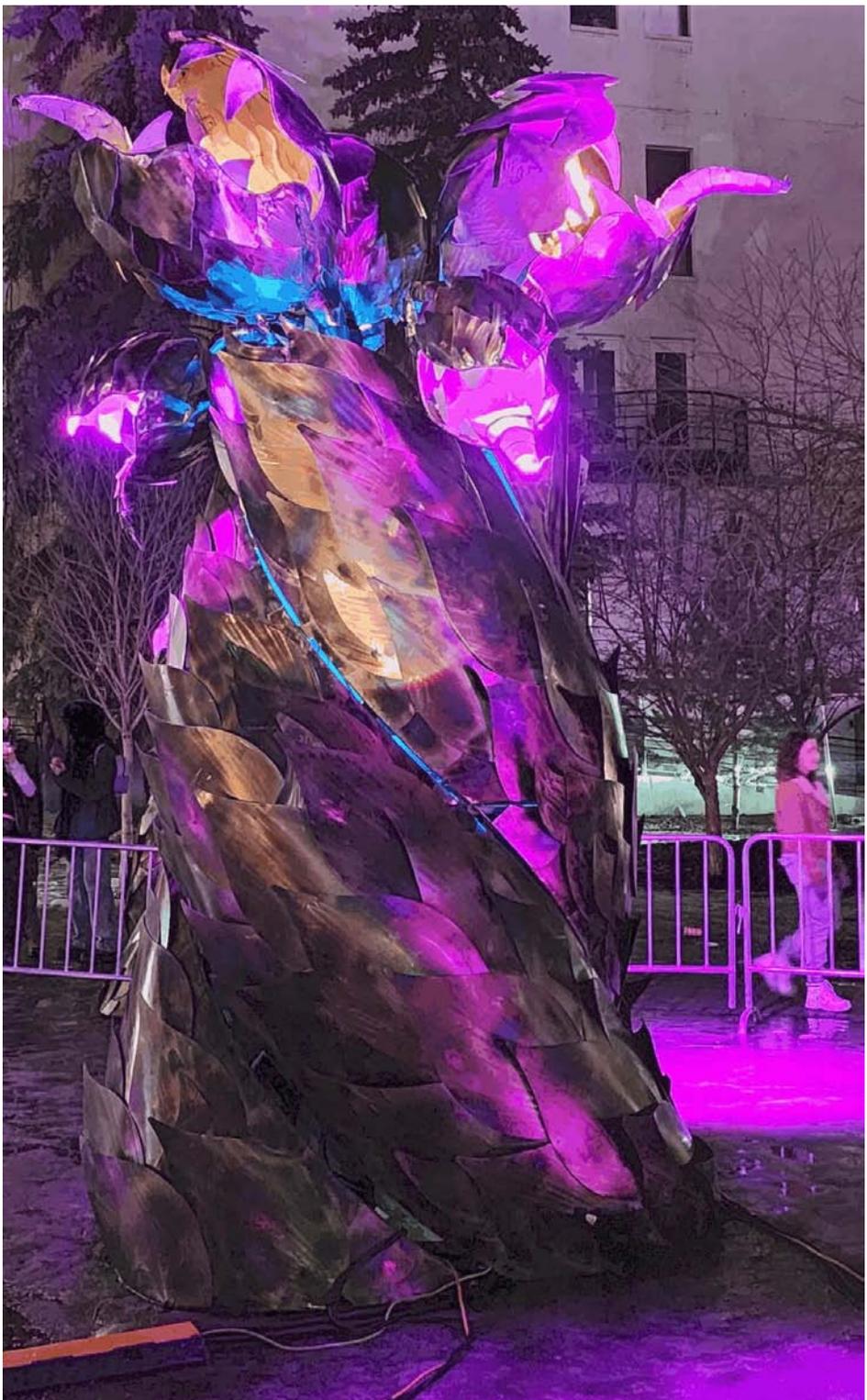


This was a new one on me. The dancer was using hoops with computerized LEDs that created patterns of light as the hoops spun. Not just colour changes or blinking, but actual shapes as the hoops moved.

The photo below shows her at the start. At right she is not spinning thick bands but hoops that left a trail of patterns.



Here be dragons.



The blue barrel at right has a silhouette of the Calgary Tower, in case you were wondering what it was. These barrels were scattered all over the plaza.



This juggler was using illuminated blue pins.

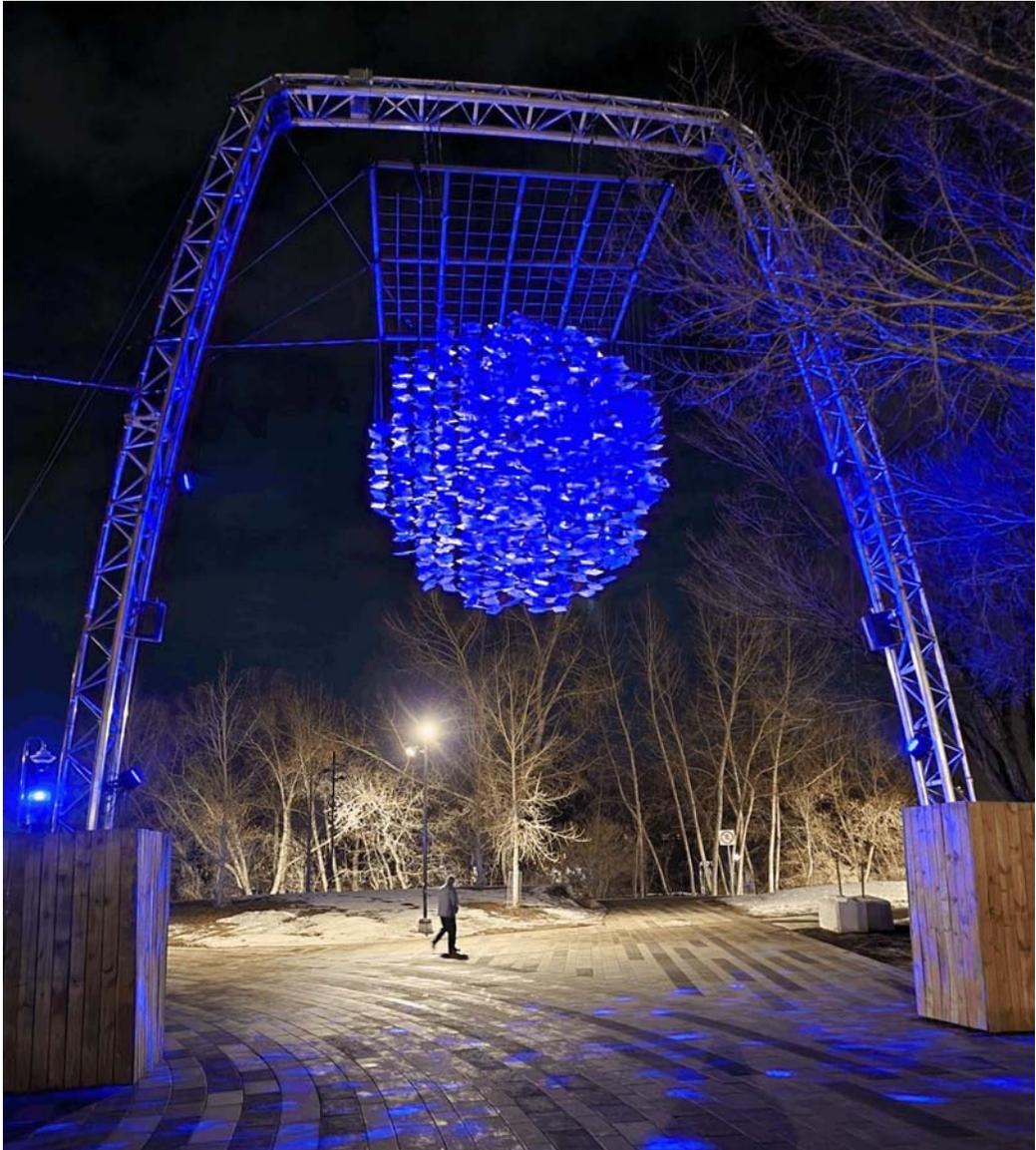


The Olympic Plaza is the eastern terminus of the Stephen Avenue pedestrian mall, which is 8 Avenue South in the downtown core. Walking westward from the plaza, I came to these fire dancers using hoops with torches attached.



Below: This display was on the far northwest corner of the downtown core at the 6 Street SW entrance to the Bow River Promenade.

At right: And, of course, food trucks on the pedestrian mall. I had an Italian smokie from one further down the line.



FOOD COZIES: PART 26

by Dale Speirs

[Parts 1 to 25 appeared in OPUNTIA #432 to 434, 436, 438, 441, 442, 444, 447, 450, 454, 456 to 458, 460 to 462, 465, 475, 507, 512, 524, 530, 538, and 550.]

I'll use the above photograph as a flimsy excuse to segue to one of my favourite genres, or sub-genre to be more correct. Cozies are Miss Marple stories where she operates some kind of small business in a rural village. Her arrival immediately spikes the murder rate.

I like cozies because I was born and raised in rural west-central Alberta and know village life quite well. I read these novels as humour. In real life any Miss Marple would be quickly run in by the police.

The Cozy Way To Cook.

THE COZY COOKBOOK (2015), no editor named, was a compilation of recipes from previously published food cozies. If the Miss Marples in the kitchen were annoying but you always read the recipes, then here are hundreds in a 372-page tome.

The recipes are sorted as Breakfast, Baked Goodies, Soups, Salads, Sandwiches, Drinks, Appetizers, Main Courses, Side Dishes, and Desserts. Sprinkled in between the recipes are a few random extracts from the actual mysteries, mentioning, of course, the food in the plot. At the end is a subject index, food cozy series lists, and author biographies.

To pick a few recipes at random from each section, the Breakfast recipes range from the prosaic Grilled Breakfast Sandwich to the exotic Pancakes with Gouda and Eggs.

For the bake, batter, and rolls crowd (that phrase sounds like it might make a catchy song) there is Pumpkin Chocolate Chip Bread. The Bacon Cheddar Muffin is not something I've seen in bakeries but might be worth trying. But no bloody way will I ever eat Zucchini Bread, made from a vegetable almost as worthless as iceberg lettuce or celery.

Further on, the soups I would mostly pass, particularly the Cucumber Yogurt Walnut Soup. Some people will eat anything. For sandwiches, the Brie, Apple, and Turkey Grilled Cheese seemed nice. The appetizers ranged from Cucumber Cups Stuffed With Feta (eeeew!) to Smoked Salmon Florets.

The Drinks recipes were mostly tea or coffee flavoured with assorted ingredients. I'm a teetotaler so the cocktails were beyond me. Even if I did drink alcohol, I doubt that I would try the Huckleberry Martinis.

In the Main Courses section, being a barbecue man myself, I'll go with Grilled Flank Steak or Grilled Chicken Breasts. There are recipes for both Fried Chicken and Fake Fried Chicken. The latter was simply shake-and-bake chicken strips.

Being a flatlander born and raised, I'll skip the Nantucket Sea Scallops. My confidence was not inspired by the opening sentences of this recipe: "*Cooking scallops is easy. Cleaning them is hard.*"

The Side Dishes were mostly potato or rice based. Whatever their merits, I'll have to pass on them while struggling to control my weight.

The Desserts section finished up the cookbook. Again, too many carbs for me no matter how delicious. The Brie Blueberry Ice Cream seemed interesting. The Moose Mincemeat Pie was not a joke. The recipe specified real moose meat. You might prefer the Aphrodisiac Brownies.

Bake, Batter, And Rolls.

HOW THE MURDER CRUMBLES (2023) by Debra Sennefelder was the first novel in a food cozy series about Mallory Monroe of Wingate, Connecticut. She operated a cookie shop, taught baking classes, and found herself in a mess of trouble in her kitchen.

Not just figuratively. Shortly after being seen in a public argument with food blogger Beatrice Wright, her body was found in the cookie shop kitchen. Blood and flour everywhere. Mallory found the body, of course.

Mallory was the prime suspect, which didn't help sales. When sorrows come, they arrive in battalions. She also had to deal with employee problems and a boyfriend. She went Marpleing in self-defense and dredged up adultery and assorted scandals.

The murderer wasn't idle either, leaving threats at the cookie shop and slugging Mallory unconscious. Beatrice's husband soon joined her in the next world. When Mallory had her final confrontation with the killer, the reason had to do with a third unrelated murder decades before.

The killer feared the Wrights would inadvertently dig up the bones while building a new garden shed. For such reasons, people die. On a more cheerful note, the recipes appendix had three cookie recipes, for Almond Meltaway, Peanut Butter, and Oatmeal Raisin.

DONUT DISTURB (2022) by Ellie Alexander (pseudonym of Katherine Dyer-Seeley) was a novel in a food cozy series about Juliet Capshaw of Ashland, Oregon. She worked in her family's bakery, called Torte. They were catering the wedding reception of Thomas and Kerry Adams. The blight was Kerry's father, just released from prison and destroying her peace of mind when he arrived for the wedding.

Surprisingly, the murder victim was the bass fiddle player in the band hired for the reception. The good news was that the food was delicious. A 5-tier cake, potato salad with special spices, club sandwiches, and raspberry doughnuts.

The happy couple departed on their honeymoon. Juliet Capshaw settled down to baking and sleuthing. The killer had disputed with the band over a share of the profits. Juliet stepped into the middle as Miss Marples so often do, and was rescued at the last moment by police, ditto.

All ended well with pastries for everyone who wasn't dead or in jail. The recipes appendix began with Fruit Salsa, then Vodka Penne. For dessert, Shortbread Chocolate Raspberry Cups. Then on to Potato Salad, Lemon Chiffon Pie, and Champagne Latte.



Lime and tangerine doughnuts from the Jelly franchise in Calgary.

Chocolate Crimes.

DEATH BY CHOCOLATE MARSHMALLOW PIE (2023) by Sarah Graves was the fifth novel in a food cozy series about Jacobia Tiptree and Ellie White of Eastport, Maine. She operated a bakery called The Chocolate Moose and did some Fletchering on the side. Jessica was busy further along the Maine coast.

The problems began when Brad Fairway opened a rival bakery called Choco. He used sneaky tactics to sabotage The Chocolate Moose. Ellie had an argument with him. When he was found dead by her gun, the Deppity Dawgs

knew who to arrest. Fairway was unloved by all who knew him. He was involved in several rackets for which Choco was a front.

This novel was riddled with items such as chocolate-dipped bacon and chocolate macaroons filled with cherry jam. In other words, don't read this book on an empty stomach.

The back stories were convoluted and noir. Jacobia was hampered in her sleuthing because in the big city she had been a money launderer for the Mafia before she skipped town with a car trunk packed full of cash. Both the Mafia and the city police would have been pleased to learn of her current whereabouts.

The death toll rose and so did the number of shady characters. The murderer was someone who wanted to take over Fairway's rackets. After disposing of the culprit, the book moved on to an appendix which had just one recipe, for Chocolate Marshmallow Gingerbread.

Tea For Trouble.

THE JASMINE MOON MURDER (2004) by Laura Childs (pseudonym of Gerry Schmitt) was a novel in a food cozy series about Theodosia Browning of Charleston, South Carolina. She operated the Indigo Tea Shop and did part-time sleuthing.

The tea shop was catering the Ghost Crawl, a tour of the historic Jasmine Cemetery. The organizer Dr Jasper Davis became one of the dead during the tour. Theodosia was there when he croaked, found the murder weapon, and so forth to the usual routine of Miss Marples.

Tea shop business didn't seem to suffer, if only because of the extra customers who wore badges and couldn't find a doughnut shop. The tourist season helped and the menu was excellent. Theodosia also judged the teapot category at the ceramics club annual show, so she was a busy woman.

The murderer had sought revenge on Davis for a failed cardiac procedure he performed on her father. But enough about murder, on to the recipes appendix.

Ham And Apricot Preserves Sandwiches began the list, then Buttermilk Scones, Tea-Smoked Chicken (which was exactly as it seemed), Chocolate Sour Cream Muffins, Chocolate Zucchini Bread, and Poached Pears With Chocolate (which

were mentioned in the plot). Then on to Carrot Bisque, Jasmine Tea Truffles, Chicken Bog, Crabby Apple Salad (seafood crabs, not the apple's disposition), Sweet Potato Pie, and Green Tea Tippler (vodka cocktail). That should do you until supper.

DEATH IN A BUDAPEST BUTTERFLY (2019) by Julia Buckley was the first novel in a food cozy series about Hana Keller of suburban Chicago, Illinois. Her family operated Maggie's Tea House. They and the tea shop were Hungarian, with lots of infodumps about the Old Country. (Buckley, despite her surname, was of Hungarian descent.)

The butterfly of the title was an antique teacup decorated with said insect and which contained poisoned tea. Hana perforce had to become a Miss Marple to protect the family business. The deceased was Ava Novak, who had her share of enemies.

The tea house managed to keep serving pastries and catering events such as bridal parties and book clubs. The murderer had taken revenge against Novak for a childhood wrong. The recipes appendix began with Chicken Paprika, then Nokedli (dumplings), Stuffed Cabbage, and Kiflis (pastry).

Coffee Contretemps.

LIVE AND LET GRIND (2022) by Tara Lush was the third novel in a food cozy series about Lana Lewis of Devil's Beach, Florida. She operated a coffee shop called Perkatory. Like many Miss Marples, her boyfriend was the local Deppity Dawg.

The case at hand was her neighbour Gus Bailey, who obsessively used a leaf blower several times per day, annoying all and sundry. One day the blower exploded and killed him, delighting all and sundry.

Nonetheless, even in a place named for the Devil, that sort of thing cannot be tolerated. Lana and the police were on the case straightaway.

Gus had enemies, basically anyone who knew him. However the short list began with his much younger wife Honey, who was beginning the divorce process. He had a loud public argument with Lana's friend Erica, which made her a suspect to the police. He had also cheated a couple of men out of their money in a business transaction.

Lana still had her coffee shop to run. The big issue was if the coffee flavour of the month should be orange or mushroom. The casualties mounted, as did the alarums, with Lana always in the middle.

The final confrontation had Erica, not Lana, kidnapped, but the killer's fate was predictable. He had been taking revenge against Gus for sharp practice. What, no recipes appendix?

Cooking Shows.

Since cable television began booming in the 1980s, food channels have been a reliable money spinner. Now they are online, either streaming or as podcasts. But life isn't always a bowl of cherries.

MURDER SPILLS THE TEA (2022) by Vicki Delany was a novel in a food cozy series about Lily Roberts of Cape Cod, Massachusetts. She operated the Tea By The Sea restaurant. This was the third novel in the series so by now she was established as the local version of Jessica Fletcher.

Lily had entered a television cooking show "America Bakes!", helmed by celebrity chef Tommy Greene. He was an ill-mannered boor who harangued the kitchen staff, fellow judges, film crew, and anyone else who happened to walk past.

No one mourned when he was battered to death in the tearoom kitchen with Lily's rolling pin. Since everyone had a motive, Lily, and the police of course, had to investigate along other lines. Lots of local politics, competitors in the show, and just plain nasty people.

Lily followed the time-honoured cliché of meeting the killer at a remote cliff top without telling anyone where she was going. The murderer had been engaged in a power struggle with Greene over the show. Unfortunately natural selection doesn't always work, and Lily survived.

The show was cancelled or disintegrated, whichever interpretation could be used. All ended well for Lily, in the tea shop with a slice of cake with her boyfriend. Segueing to the recipes appendix, the Herbed Cucumber Sandwiches led off, followed by Coconut Lime Cake and Coffee Cake.

FOUR LEAF CLEAVER (2023) by Maddie Day (pseudonym of Edith Maxwell) was a novel in a food cozy series about Robbie Jordan of South Lick, Indiana. She was the proprietor of Pans 'N Pancakes, which sold vintage cookware and pancakes.

Saint Patrick's Day was nigh. Robbie wasn't Irish but her husband Abe O'Neill was of the descent. The cafe celebrated with Irish fare such as shepherd's pie and Guinness brownies. Adding to the festivities was a television cooking competition on site.

The show was called "Holiday Hot-Off", which was an odd name for a cable show, but they were paying good money to rent the cafe. The eight contestants had to make a meal within an hour using not more than 15 ingredients, one of which had to be the sponsor's Irish stout.

The show's producer Tara O'Hara Moore didn't survive past Chapter 5. Unlike most murder victims, she wasn't really a bad sort. Unfortunately someone used a cleaver on her. Luck of the Irish indeed.

By now, Robbie was an experienced Miss Marple and went to work digging out clues. Yes, yes, the police were there too, as was their wont. The show must go on though, but the troubles weren't over yet. When the cameras rolled, one of the contestants was poisoned live and in colour.

Robbie resolved never to host another cooking show. The killer confronted her but she took him out with a gallon jar full of corn meal. He had run amok because of professional jealousy in the production crew over promotions.

The recipes appendix featured Irish Steak And Stout Stew, the Stout Cheese Biscuits, Raspberry Scones (what, no stout?), Irish Cheddar Cheese Soup, and Irish Whiskey Cocoa.

A CLUE IN THE CRUMBS (2023) by Lucy Burdette (pseudonym of Roberta Isleib) was a novel in a cozy series about food critic Hayley Snow of Key West, Florida. The big excitement for the local foodies was the arrival of Violet and Bettina Booth.

They were elderly Scottish sisters who were filming an episode of their British cooking show in Key West. The sisters had their own excitement because just before they arrived, the bed-and-breakfast they had booked was torched by an

arsonist. A friend of Hayley found a houseboat for them. The television episode the sisters were filming carried on.

Three contestants were vying for foodie fame. The first part of the show was for scones. Harry Sweeting had triple-ginger cherry scones, Martina Bevis offered blueberry scones, and Rayna Humboldt with peach scones.

Rayna and her abusive husband Vincent owned the burned-down bed-and-breakfast. He later started the plot rolling when his body was discovered. Embedded in him was a kitchen knife stolen from the Booth sisters. While the Marpleing went on, so did the show.

When not filming, the sisters and Hayley were out and about sleuthing. Rayna bravely carried on. Loaf cakes were next on the episode's agenda. Notwithstanding the alarms, assaults, and other daily events in the life of the Miss Marples, the show continued.

For once the obvious suspect was indeed the murderer. After the messy details were explained, on to the recipes appendix. Roasted Shrimp In Butter Sauce was followed by Cinnamon Scones, then Irish Soda Bread and Chocolate Loaf Cake. Unfortunately the final recipe was Corned Beef And Cabbage, proof to me that some people will eat anything.

Café Life.

UP TO NO GOUDA (2022) by Linda Reilly was the first novel in a new food cozy series about Carly Hale of Balsam Dell, Vermont. A recent widow, she returned to her native village where she opened Carly's Grilled Cheese Eatery.

The place was popular with tourists and locals but not her new landlord Lyle Bagley. Following the time-honoured tradition of cozies, his body was discovered behind her café after he had quarreled with her.

The police picked on of her employees as the prime suspect. Also of interest was Lyle's girlfriend Tiffany. Carly began sleuthing and dug up lots of back stories.

She spent more time researching than running the café. She eventually found the killer, a criminal associate of Bagley. The two had a falling-out so she took him out.

From there to the recipes appendix, all for grilled cheese sandwiches. Party Havarti and Smoky Steals The Bacon were obvious. Vermont Jammin' used brie and fig jam on cranberry-pecan bread.

Ethnic Food.

Mia P. Mamamsala has a food cozy series about Lila Macapagal of Shady Palms, Illinois. Lila operated a Filipino food restaurant called the Brew-ha Cafe when not Marpleing. Her aunt operated Tita Rosie's Kitchen adjacent to the cafe. (Tita is the Filipino word for 'aunt'.)

The recipes appendixes were for Filipino menus. Thinking back, I don't believe I've ever eaten Filipino food in my life, so these were all novel to me.

ARSENIC AND ADOBO (2021) was the first novel in the series. The opening sentence was "*My name is Lila Macapagal and my life has become a rom-com cliché.*" That foretold the plot for any experienced cozy reader.

Lila had failed in the big city of Chicago, both romantically and professionally. She came crawling back to Shady Palms, Illinois. The town was named by a Caribbean millionaire way back when a million was the same as a billion today. He found out the hard way that the trees of his homeland did not survive Illinois winters. He replaced the dead palms with plastic replicas.

Lila's aunt was having trouble with her restaurant and a nasty landlord. Even nastier was a food critic who fell dead moments after an argument with Lila. Poisoned, he was, and not mourned.

The police considered they had an open-and-shut case against Lila, which forced her into the Marpleing business. Lila also had to run interference with matchmaking aunties determined to see her married off.

Lila worked in Tita Rosie's Kitchen, which provided opportunities to explain Filipino food and insert mini-infodumps on Filipino culture. Much snooping about later, the culprits were found to be part of a fake pharmaceuticals ring.

Lila survived the final confrontation, which was to be expected. She decided to establish the Brew-ha Cafe, a pun on the Tagalog word 'bruha', meaning 'witch'.

Thus to the recipes appendix, with Ube Crinkles (purple yam cookies), Salabat Banana Bread, Minnatamis Na Bao (coconut caramel jam), and Chicken Adobo (marinated chicken).

HOMICIDE AND HALO-HALO (2022) was the sequel. Lila Macapagal was still setting up her cafe and working in Tita Rosie's Kitchen. Summer was here, including the Miss Teen Shady Palms Pageant. Back when, Lila had won the crown, which her cousin Bernadette had resented.

The pageant had trouble this year when the head judge was murdered. The Macapagal family then had their own trouble when Bernadette was named head suspect. And so to the Marpleing and food serving in the restaurant.

The beauty contest had back-room politics that made federal politics look like a walk in the park. The denouement was the actual ceremony, which was vicious enough behind the curtain to make a squaddie blanch. The murderer was acting out on her trauma at the pageant years before.

The recipes appendix began with Grilled Adobo Chicken Wings, then Turon (spring rolls), Halo-Halo Ice Candy, and to wash it all down, Brew-ha #1 (iced coffee made in coconut water).

BLACKMAIL AND BIBINGKA (2022) began when Lila's ne-er-do-well cousin Ronnie returned after a 15-year absence and bought a winery. He hadn't been missed. Tita Rosie was his mother. In between serving food, Lila learned of the shady affairs of Ronnie and the winery.

When Ronnie became a murder suspect, Lila was involuntarily forced in sleuthing on his behalf. He was family after all, and for all his sins didn't seem the murdering kind. Ronnie's past included a 3-year-old son he hadn't told his family about.

There was a lot of embezzlement at the winery by more than one person. Blackmail made subsequent events uglier. The denouement was fought with bottles in the wine cellar.

Getting whacked in the head with a full wine bottle thrown at maximum strength was a bloody business and no laughing matter. The murderer was among the casualties in a messy ending.

Leading off the recipes appendix was Champorado (cocoa rice porridge). Then on to Bibingka (grilled rice cakes with assorted toppings), Salabat Squares (ginger and cinnamon bars), and Coquito (rum coconut egnog). That last recipe called for a 750-ml bottle of rum, so make certain you have a designated driver.

We All Scream.

A GAME OF CONES (2021) by Abby Collette was an ice cream parlour cozy. Not to be confused with GAME OF CONES (2020) by Cynthia Baxter, also an ice cream parlour cozy, which I reviewed in OPUNTIA #507. George R.R. Martin has a lot to answer for.

Collette's version was set in Chagrin Falls, Ohio, where Bronwyn 'Win' Crewse became involved in the family business Crewse Creamery. Trouble and strife soon developed.

A rapacious real estate developer came to the village to develop a mall. A civic-minded murderer took him out in the first chapter. One of Win's friends was a prime suspect, so that got her Marpling. She also had to deal with her Aunt Jacqueline, known as Aunt Jack, who was a battleaxe trying to take over the operation of the ice cream shop.

The plot trundled along as Win scooped up the back stories when she was not scooping ice cream for her customers. Some fancy shenanigans in local real estate were uncovered. The murderer turned out to be an art forger about to be exposed by the deceased. Even developers have a few scruples.

The ice cream shop shenanigans were mild by comparison as Win tried to wend her way between feuding family members. And so to the recipes appendix for those who like to mix their own ice cream blends.

Mint Mojito Coffee Ice Cream had a one-third cup of rum in it, so don't lick and drive. There followed Peppermint Candy Ice Cream and Summer Mango Sorbet.



I saw this van in downtown Calgary in 2023.

The Drinks Are On Miss Marple.

MURDER SERVED NEAT (2023) by Michelle Hillen Klump was a novel in a cozy series about Samantha Warren, somewhere in Texas. She was a mixologist, well alright, a cocktail waitress, currently working a temp job at the German Texas Lodge festival.

The Lodge members were divided over a proposal to build a fancy new country club tennis facility. The main proponent for the plan was hammered dead by a shovel. The police arrested the main opponent, who was Samantha's mother's best friend.

Samantha was no slouch as a mixologist. She paused her sleuthing from time to time to think on the theory and practice of creating cocktails. As an example, she dwelt on preparing blackberry-flavoured gin drinks (add vinegar and sugar).

The murderer hadn't meant to kill and swatted the deceased just a bit too hard with the shovel. Twas a personal argument gone badly astray. The final confrontation was between the killer with a handgun and Samantha with a tennis ball cannon.

The recipes appendix began with Blackberry-Glazed Salmon, then Fig Cakes and two cocktails, one of which was the aforementioned gin concoction.

WINED AND DIED IN NEW ORLEANS (2023) by Ellen Byron was a novel in a food cozy series about Miracle Fleur-de-Lis James-Diaz of New Orleans, Louisiana. For obvious reasons she went by the name of Ricki. She operated a vintage cookbook and kitchenware shop when not Marpleing.

Her shop was located in the Bon Vee Culinary House Museum. Renovations uncovered crates of valuable French wines that had been buried by the builder Jean-Louis Charbonnet back in the 1850s.

He hid them because his creditors were after him, so he skipped to France where he intended to lie low until the heat was off. Unfortunately he caught pneumonia and died there. No one knew where he had hidden the wines.

Ricki couldn't keep quiet about the wine and blabbed all on social media. As a result, Charbonnet descendants surfaced from everywhere with claims to the wine. Oh, and it was hurricane season. The novel began with Ricki taping her windows and putting mattresses against the glass.

From there to the discovery of the wine and the appearance of competing claimants. One of them was found dead behind Ricki's shop, his head bashed in with a vintage meat tenderizer.

Eugenia Charbonnet Felice, the legitimate head of the family, was the prime suspect. She was head of the museum and Ricki's landlady, so off to the sleuthing. The lawyers were quickly into action and so was the hurricane bearing down on the city.

Alarums and excursions were everywhere in the midst of the family feud. There were two culprits, operating at cross-purposes for different reasons. That confrontation and subsequent arrests were, strangely, not the actual climax. Ricki went out into the hurricane to rescue her two dogs. A stupid thing to do but she was booked for the series, so no harm.

The recipes appendix featured items from cookbooks of the 1960s and 1970s, most with wine added. Biscuit Tortoni began the recipes, followed by Curried Chicken and Brabeque Frankfurters (with red plonk). For the more culture reader there was Barbeque Turkey. Then on to Beer Hush Puppies and finally a 1942 recipe for Brownies.

Catering For Crime.

DIAL A FOR AUNTIES (2021) by Jesse Q. Sutanto was about Meddelin Chan of San Gabriel Valley, California. She belonged to an extended Chinese-Indonesian family, most of whom worked together in a catering business.

Their current contract was the wedding of a billionaire, cooking for 2,000 guests. Meddy lived under the control of her mother and four aunts, all of whom were determined to see her married sooner rather than later.

They set her up on a date with a rich hotel owner named Jake. No last name given but none needed since Meddy accidently killed him. He tried to rape her and she responded with a Taser in self-defence, inadvertently causing his death.

She told her mother, who in turn called in the aunties to help dispose of the body. The police? What of them? The women dined on a fruit plate as they discussed how to get rid of Jake. Meddy didn't have much of an appetite but her elders cleaned the plate.

Firstly, they had to stash the body until they could figure out how to dispose of it. Wrapping the corpse in blankets, they managed to carry him away. They stuffed him into a large food container, covered the body with baking supplies, and stored him in the industrial-size freezer in a bakery owned by one of the aunties.

Unfortunately the next morning some of the bakery staff shipped the cooler to the billionaire's yacht, thinking the container held supplies for the wedding reception. The alarums commenced in slapstick style. There was a Deppity Dawg who didn't think much of rich folk who owned yachts.

The denouement was complicated by a second death, a thief who was trying for the wedding gifts. All ended well, for Meddy at least. The whole family went to a dim sum restaurant where Meddy's ex-boyfriend from school days proposed and became her fiance.

Ah, Ah, Honey Don't.

A MATTER OF HIVE AND DEATH (2021) by Nancy Coco was a novel in a food cozy series about Wren Johnson of Oceanview, Oregon. She was an apiculturist who operated the Let It Bee honey shop when not Marpleing.

Nearby McMinnville was hosting a UFO festival. Wren's aunt Eloise was in the cosplay parade, with her cat in a matching outfit. Wren herself went to visit Elias Brentwood, a beekeeper who supplied her store with fruit tree honey.

She had more excitement than Auntie did, when she found Elias dead on the ground and his hives smashed. All in the first chapter, which ended with a recipe for Honey Peanut Butter Cookies. No recipes appendix because instead they were scattered through the text.

Recovering the body was tricky. The paramedics had to borrow protective clothing from other beekeepers. The forensics squad wasn't happy either. Nor was Wren when she returned home and found ex-boyfriend Travis Hutton. He had dumped her years ago and now he was back.

Millie Brown, fiancée of Elias, showed up and gave Wren an envelope. Elias had told Millie to pass it on to Wren in the event of his death. The message within was vague. He had been investigating a series of hive vandalisms throughout the district. Beyond that he wrote nothing useful.

The beekeepers' association called an emergency meeting, pausing only for a Honey And Blueberry Muffins recipe. The local Deppity Dawg stopped by during the meeting. They impressed upon him that the hive vandalism wasn't just kids larking about for fun. The meeting concluded in time for a No-Bake Chocolate Peanut Butter Honey Bits recipe.

Wren went into full Marple mode, barging into police interrogations and hiring lawyers for suspects who hadn't asked for one. She collected plenty of hearsay but also managed to get some potential witnesses to talk before reaching the Apple Honey Cake recipe.

The Deppity Dawg in charge of the case spoke with Wren in a severe manner. He warned her about withholding information from police while simultaneously posting that data on social media. A good way to ruin a court prosecution. Or be prosecuted.

One of the witnesses Wren blabbed about online was stabbed by intruders in his home. She found him, of course, barely alive. The next day she visited another beekeeper. Moments after her arrival a sniper opened up with rifle fire and put him in hospital intensive care.

She was putting so many of her acquaintances in hospital that a conversation she had with a next-of-kin about health insurance was a natural fit. Since the Americans don't have free universal health care, the conversation dwelled on the types of private health care available to the survivors.

After a Baklava Bites recipe, Wren and Aunt Eloise went to McMinnville for the UFO cosplaying. Remember the UFO festival? The event hadn't been mentioned since the opening chapters but now the two women were there in silver lamé spacesuits. Plus their cats, also in lamé.

Some Trekkies intercepted Wren at the UFO parade. They had met Elias, who told them about the mysterious hive smashings. Some believed Bigfoot was the culprit, while others thought smugglers had been using the hives to transport drugs or contraband.

During the summer, beekeepers move their hives from one orchard or farm to another as different crops bloom. Seemed like a complicated and dangerous way to move illegal goods, especially since the hives stayed in the same county.

Wren still had her shop to run in between all the Marpleing and alarums. Each night before bed she worked late, preparing honey this and honey that. She did take time for a date with Travis in McMinnville.

Remember him? After being mentioned at the start of the novel, then disappearing, he suddenly reappeared in the plot.

Following that brief interlude the action shifted back to Oceanview. Someone trashed Wren's shop and apartment (she lived above) looking for something. After a recipe for Crustless Honey Cheesecake, the plot resumed.

More alarums as two different criminals were using bee hives to transport illegal biologicals for the one and stem cells for the other. Wren had the usual gunpoint confrontation and was rescued at the last second.

Quite frankly, the idea made no sense. If they were using hives for international or cross-nation smuggling, then okay. The rationale for moving stolen biologicals around a county or within a state was to avoid detection.

The problem was that the police had no idea about the smuggling until the hive vandalism drew their attention. The simplest method would be to put the vials

of biologicals in their shirt pockets and drive to the drop-off. Stay under the speed limit, make the exchange in someone's office, and no outsider would have been any wiser.

Fudge.

GIVE FUDGE A CHANCE (2023) by Nancy Coco (pseudonym of Nancy J. Parra) was the thirteenth novel in a food cozy series about Allie McMurphy of Mackinac Island, Michigan. She operated a hotel and fudge shop, besides being an experienced Miss Marple and corpse finder.

That last talent came into play on page 3 when she and a friend found a body at the Mackinac County Fair. They were touring a haunted house attraction and stepped over a corpse that wasn't a prop. Allie knew the 9-1-1 dispatcher by name, who was not surprised she had yet another murder for the police. They were quickly on the scene and identified the deceased as Mike Sanders.

Chapter 1 ended with a recipe for Dark Chocolate Mint Fudge. Unlike other food cozy authors, Nancy Coco dispersed the recipes throughout the text instead of compiling them in an appendix.

Allie was a busy woman. Running a small hotel and a fudge shop were enough work to begin with but she was entered in the festival's fudge contest. She and other business owners were plagued by rooftop parkour fans, point-to-point foot racers who ignored property rights and risks.

The fudge competition went very well for Allie and she won the category. All the candy classes winners then competed for Best in Show. She not only won that, she defeated Christine Keller, whose caramels had taken that award for twenty years in a row. Christine was a sore loser so Allie made a new enemy. Christine began a campaign of slanderous gossip and uttering threats, both on- and off-line.

The next death, and there was another, was Hazel Green, a parkour fan who fell four storeys off the roof of Allie's hotel. That incident was bookended between two recipes, Champagne Fudge and Dark Chocolate Coffee Fudge.

The police said Hazel's death was murder, not a parkour accident. Half the hotel guests checked out early but the tourist season was in high gear so the vacancies were quickly filled.

Allie had time for the book club meeting that night. A full crowd of Miss Marples they were, who set up bulletin boards for each of the murders and pinned information on them. The members divided up responsibilities for who would investigate what.

"Still, it seems strange that we have two murders so close together", Frances said.

"Yes, before Allie arrived we hadn't recorded a single murder. Ever since, it seems there's one every other month." Irma pursed her lips. "It's an odd phenomenon."

Yes indeed. To complicate the mix, two podcasters who were wanna-be influencers arrived on the island. They were determined to make a day-in-the-life video about Allie and her fudge shop, with highlights of the book club doings.

The plot had by now meandered along quite a distance without a recipe, so there was a break for Grand Champion Penuche Fudge. Carmelized brown sugar and cream of tartar, and pronounced "pe-noo-che".

Paul Patterson, business partner of Sanders, was next. Allie found him unconscious after someone bashed him in the head. Honestly, there wasn't a bloodhound in the country who could sniff out victims the way she did. The 9-1-1 dispatcher was not surprised to get her call.

Patterson revived in the hospital but didn't remember anything. Not surprising since there was still one-third of the novel left. Allie visited him. As they chatted, she learned that Keller was his mother. Their surnames were different because his father had died and she had remarried.

The shock was slightly ameliorated by a recipe for No-Bake Fudge Bites. Then some more alarums but the crowning glory was Allie exploring an abandoned cellar out in the woods by herself. Chocolate Peanut Butter Cups followed, although Reese's would be faster and easier.

She found a tunnel, at the far end of which the two podcasters were bound and gagged. They had been with an islander Carol but she was missing. A subsequent search revealed a network of tunnels under the village, probably left over from Prohibition smugglers. Someone was still using them.

Triple-Chocolate Cookies followed, then back to the plot. The denouement was complicated, with embezzlement as the initial crime. The killer dragged his mistress (she was married to someone else) in as an accomplice, then his mother. The island police filled their jail cells that night.

NOT FOOD COZIES: PART 2

by Dale Speirs

[Part 1 appeared in OPUNTIA #550.]

Dieting The Hard Way.

THE NANTUCKET DIET MURDERS (1985) by Virginia Rich (deceased 1985) was her final novel in a series about Eugenia Potter of Nantucket, Massachusetts. In those days, such novels were called culinary mysteries. The term ‘cozies’ had not yet come into common use.

A group of idle rich women were paying large sums of money to a handsome young quack to lose weight. The diets were not medically approved. While Potter was investigating, a murderer was settling old grudges with cyanide tea. A vicious life out there on the island.

The quack skipped town and the killer was silenced. From there to the recipes appendix, which included Rum Pie, Cranberry Cheese Nut Bread, Tennessee Mountain Stickies, Apple Pancakes, Cranberry Cup Puddings, and Mocha Walnut Torte.

A BODY TO DIE FOR (2009) by G.A. McKevevett (pseudonym of Sonja Massie) was a novel in a series about private investigator Savannah Reid. She was a plus-size woman who preferred to think of herself as voluptuous.

She therefore had more than just professional interest when police called her in to consult on the murder of Bill Jardin. His wife Clarissa was a weight-loss guru whose claim to fame was a set of before and after photos showing her transition from a beached whale to a svelte nymph.

Her exercise routine was the basis for a fortune selling books, videos, diet foods, and workout clothes. Bill’s death unraveled her financial empire. Clarissa had always been thin since childhood. The before photos were her sister Rachel, fat then and now.

Rachel extorted money from Clarissa for years. Bill had been carrying on with Rachel but had another mistress on the side. The denouement was a twist ending. The only evidence was cellphone records. Fortunately, as per usual in mystery fiction, the murderer broke down and confessed everything.

Cooking On The Eve Of Destruction.

GRIFFIN AND THE SPURIOUS CORRELATIONS (2021) by Krista Wallace was not your mother’s food cozy. The protagonist Griffin Trowbridge played in a band that self-destructed in the opening pages.

She landed on her feet, sort of, working for Rickenbacker Topiary as a pastry chef in a restaurant and also for their house band Spurious Correlations. What she didn’t know was that she was an unwitting participant in his live action role playing tournament.

She had her problems with a messy ex-boyfriend, a boss from hell, family troubles, and an inability to stand up to people. Her pastry cooking was a success though.

Too successful, as she didn’t surmise but the reader quickly would, that there was magic in the air. Not just a phrase, but her kitchen life was entwined with magic, altering her ability to cook for the better.

Also what she didn’t surmise but the reader was told in other scenes was that Rickenbacker was setting up Griffin to be the patsy in a other-worldly RPG. He was gaslighting her to set up a final confrontation to win the game.

However the magic and the gaslighting went on a bit too much. Repetitious scenes of cooking disasters and personal problems blurred the eyes, and made me begin skimming pages. The ending was a 180-degree turn as Rickenbacker made amends, magically. Everything wrong in Griffin’s life was abruptly corrected and set right. The food, the band, and everything. This would have made a better novella than a novel but the book is out there for better or worse.

The Lighter Side Of Eating.

HANCOCK'S HALF HOUR was a British comedy series that aired on radio from 1954 to 1959 and on television from 1956 to 1961. Available as free downloads from the Old Time Radio Researchers at www.otrr.org/OTRRLibrary

Tony Hancock was the star, who played himself earning his living as a comedian with the BBC and in music halls. His household in East Cheam included tenants Sidney James (a Cockney spiv), Bill Kerr (an Australian who played the part of the village idiot), and Hattie Jacques (a battleaxe who was Hancock's secretary).

They all used their real names as character names. Supporting them was Kenneth Williams, who played a variety of characters from authority figures to upper-class twits, often several in one episode.

"The Gourmet" aired in October 1959 and was written by Ray Galton and Alan Simpson. The episode opened in a posh restaurant where Tony Hancock was having supper with his friends

Hancock was at his pretentious best, learnedly discussing the menu item by item, ingredient by ingredient. Sidney and Bill went ahead and ordered such plain fare as roast beef or fish and chips, and enjoyed a full meal.

After about an hour and a half of drivel, Hancock was ready to order. By then it was 23h00 and the waiter told him the kitchen was closed. The best that Hancock could get was a sandwich and bottle of beer from the bar.

The next day Sidney was out and about when he encountered one of his friends on parole and going straight. The man was now managing a competitive eater, for whom 12 roast beef sandwiches was a light snack before supper.

The British National All-Comers Eating Championship was nigh. The prize was £1,000, say about \$50,000 in today's currency. Plus, and this was appreciated by Sidney and many others, side bets. Sidney and Bill cornered Hancock into competing.

Hancock made it to the finals. The announcer was BBC sports commentator, Ray Glendenning, who played it straight as he did the gulp-by-gulp narration.

The first round was 12 dozen oysters, with 14 more courses following. At the halfway mark was 2,000 yards of spaghetti, at which point Hancock defaulted because he didn't like washing it down with white burgundy.

"Fred's Pie Stall" aired on 1959-11-10. Tony Hancock was indignant because Old Fred had been ordered out of the market square. His meat pie stall had been there since Hancock's parents' time. The Cheam town council wanted to modernize the square and considered the stall unhygienic.

The conversation of Tony and his friends devolved into how Cheam's food outlets were now ethnic, such as Italian or French, instead of selling butties and chips. Sidney James resented one of the waitresses calling him plebeian because he refused a cappuccino and asked for a "cap u tea".

Hancock was surprised when Bill Kerr told him that Old Fred was an Italian. That was different though, since he sold meat pies, a good solid British food. The three men decided to visit Old Fred and see what help could be given to him in fighting the eviction.

The decision was to stage a festival in the square. The Lord Mayor and his lady wife were invited. Fred did a roaring business and his shop was saved. So much so that Fred put up his prices. Hancock and company decided to eat in the ethnic shops instead. The waitresses were nice and the food was more hygienic as well.

The Wheels Go Round And Round.

Cressida McLaughlin wrote a series about Charlie Quilter of Cornwall, England, who inherited a double-decker bus from her uncle and converted it into a mobile cafe. Charlie had a bakery from which she supplied her bus with goodies and tea from her base in Porthgolow. Not a cozy series, since there was no Marpleing.

The first novel was THE CORNISH CREAM TEA BUS (2019). Life wasn't entirely sweets and tea. Hotel owner Daniel Harper wasn't happy about her parking outside his upscale spa. She in turn developed a crush on him. Lots of misunderstandings and low-level strife. In the denouement, she got her man and, even better, sales from the bus were very good.

THE CORNISH CREAM TEA SUMMER (2020) was the sequel. A television series was filming in the Porthgolow district. The director discovered the cream tea bus and added it into the series. Good business for Charlie Quilter.

Her cousin Delilah Forest came to town and helped cater to the film crew and cast. Delilah fell for the leading man Sam Magee, which kept the middle part of the novel filled.

When she wasn't pouring tea, Delilah was mooning over Sam. She even managed to get a part in front of the camera. All ended well as would be expected.

SEEN IN THE LITERATURE

Astronomy.

Event Horizon Telescope Collaboration [a page and half of names; I would guess about 100 co-authors] (2024) **The persistent shadow of the supermassive black hole of M87 I. Observations, calibration, imaging, and analysis.** ASTRONOMY AND ASTROPHYSICS 681:doi.org/10.1051/0004-6361/202347932 (available as a free pdf)

Authors' abstract: *In April 2019, the Event Horizon Telescope (EHT) Collaboration reported the first-ever event-horizon-scale images of a black hole, resolving the central compact radio source in the giant elliptical galaxy M87.*

These images reveal a ring with a southerly brightness distribution and a diameter of 42 μ as, consistent with the predicted size and shape of a shadow produced by the gravitationally lensed emission around a supermassive black hole.

These results were obtained as part of the April 2017 EHT observation campaign, using a global very long baseline interferometric radio array operating at a wavelength of 1.3 mm. Here, we present results based on the second EHT observing campaign, taking place in April 2018 with an improved array, wider frequency coverage, and increased bandwidth.

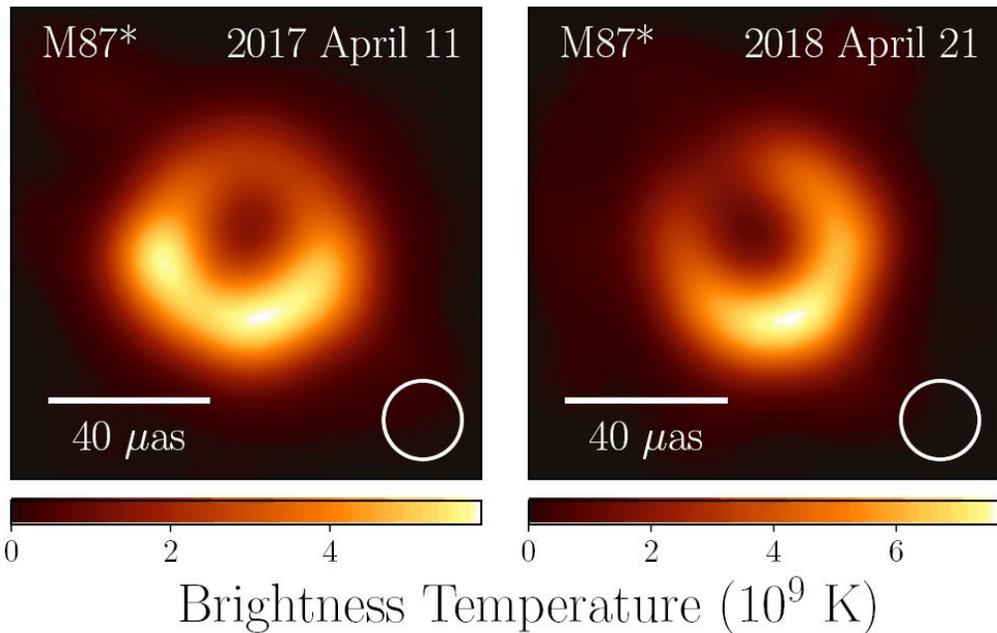
In particular, the additional baselines provided by the Greenland telescope improved the coverage of the array. Multiyear EHT observations provide independent snapshots of the horizon-scale emission, allowing us to confirm the persistence, size, and shape of the black hole shadow, and constrain the intrinsic structural variability of the accretion flow.

We have confirmed the presence of an asymmetric ring structure, brighter in the southwest, with a median diameter of 43.3 μ as. The diameter of the 2018 ring is remarkably consistent with the diameter obtained from the previous 2017 observations.

On the other hand, the position angle of the brightness asymmetry in 2018 is shifted by about 30° relative to 2017. The perennial persistence of the ring and its diameter robustly support the interpretation that the ring is formed by lensed emission surrounding a Kerr black hole with a mass 6.5×10^9 solar masses.

The significant change in the ring brightness asymmetry implies a spin axis that is more consistent with the position angle of the large-scale jet.

[Images are from this paper.]



Planets.

Sun, Y, et al (2024) **Unveiling the effect of Ni on the formation and structure of Earth's inner core.** EARTH, ATMOSPHERIC, AND PLANETARY SCIENCES 121:doi.org/10.1073/pnas.2316477121

[For those who have forgotten their high-school chemistry, Ni is nickel and Fe is iron.]

Authors' abstract: *The Earth's inner core growth is a key process for understanding Earth's evolution. This process is inherently related to the crystallization properties of the core's constituents, primarily Fe, Ni, and some light elements.*

This work demonstrates that the core's second most abundant element, Ni, strongly affects Fe's crystallization process.

Ni can stabilize the bcc phase and accelerate Fe's crystallization under core pressures. The simulation results suggest that alloying Fe with Ni can promote the coexistence of the bcc and hcp phases in the solid inner core. This is critical in understanding the inner core's nucleation and the origin of its complex solid structure.

Ni is the second most abundant element in the Earth's core. Yet, its effects on the inner core's structure and formation process are usually disregarded because of its electronic and size similarity with Fe.

Using ab initio molecular dynamics simulations, we find that the bcc phase can spontaneously crystallize in liquid Ni at temperatures above Fe's melting point at inner core pressures.

The melting temperature of Ni is shown to be 700 to 800 K higher than that of Fe at 323 to 360 GPa. hcp, bcc, and liquid phase relations differ for Fe and Ni. Ni can be a bcc stabilizer for Fe at high temperatures and inner core pressures.

A small amount of Ni can accelerate Fe's crystallization at core pressures. These results suggest that Ni may substantially impact the structure and formation process of the solid inner core.

Rothman, D.H. (2024) **Slow closure of Earth's carbon cycle.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 121:doi.org/10.1073/pnas.2310998121

Author's abstract: *Roughly half of Earth's carbon cycle consists of respiration, the biological processes that convert organic carbon to carbon dioxide via mechanisms that consume oxidants. Microbes degrade organic compounds in marine sediments, but respiration rates and microbial population densities enigmatically decrease as distinct powers of sediment age.*

This study shows quantitatively that these and other scaling laws follow from the assumption that degradation is limited by progressively rare extreme fluctuations in the energy available for microbial metabolism.

The resulting aging dynamics indicate that the extraordinarily slow power-law decay of organic matter precludes complete oxidation of organic carbon in sediments, thereby releasing a corresponding amount of molecular oxygen to accumulate in the atmosphere.

Carbon near the Earth's surface cycles between the production and consumption of organic carbon; the former sequesters carbon dioxide while the latter releases it. Microbes attempt to close the loop, but the longer organic matter survives, the slower microbial degradation becomes.

This aging effect leaves observable quantitative signatures. Organic matter decays at rates that are inversely proportional to its age, while microbial populations and concentrations of organic carbon in ocean sediments decrease at distinct powers of age. Yet mechanisms that predict this collective organization remain unknown.

Here, I show that these and other observations follow from the assumption that the decay of organic matter is limited by progressively rare extreme fluctuations in the energy available to microbes for decomposition.

The theory successfully predicts not only observed scaling exponents but also a previously unobserved scaling regime that emerges when microbes subsist on the minimum energy flux required for survival.

The resulting picture suggests that the carbon cycle's age-dependent dynamics are analogous to the slow approach to equilibrium in disordered systems. The

impact of these slow dynamics is profound: They preclude complete oxidation of organic carbon in sediments, thereby freeing molecular oxygen to accumulate in the atmosphere.

Paige, D.A., et al (2024) **Ground penetrating radar observations of the contact between the western delta and the crater floor of Jezero crater, Mars.** SCIENCE ADVANCES 10:doi.org/10.1126/sciadv.adi8339 (available as a free pdf)

Authors' abstract: *The delta deposits in Jezero crater contain sedimentary records of potentially habitable conditions on Mars.*

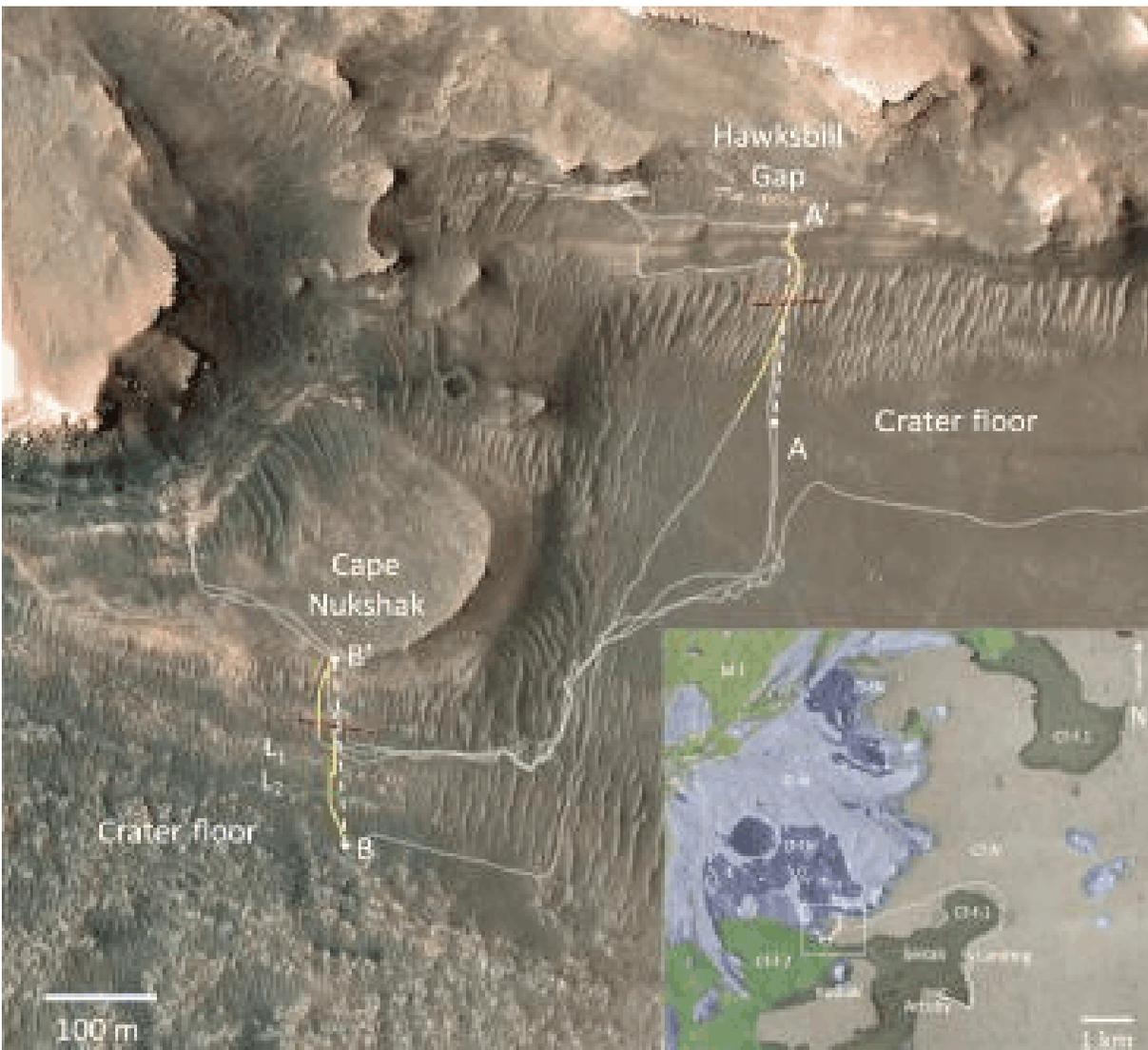
NASA's Perseverance rover is exploring the Jezero western delta with a suite of instruments that include the RIMFAX ground penetrating radar, which provides continuous subsurface images that probe up to 20 meters below the rover.

As Perseverance traversed across the contact between the Jezero crater floor and the delta, RIMFAX detected a distinct discontinuity in the subsurface layer structure. Below the contact boundary are older crater floor units exhibiting discontinuous inclined layering. Above the contact boundary are younger basal delta units exhibiting regular horizontal layering.

At one location, there is a clear unconformity between the crater floor and delta layers, which implies that the crater floor experienced a period of erosion before the deposition of the overlying delta strata.

The regularity and horizontality of the basal delta sediments observed in the radar cross sections indicate that they were deposited in a low-energy lake environment.

[Image is from this paper.]



Roy, P.A., et al (2024) **Water absorption in the transmission spectrum of the waterworld candidate GJ 9827 d.** ASTROPHYSICAL JOURNAL LETTERS 954:doi.org/10.3847/2041-8213/acebf0 (available as a free pdf)

Authors' abstract: *Recent work on the characterization of small exoplanets has allowed us to accumulate growing evidence that sub-Neptunes with radii greater than ~ 2.5 Earth radius often host H_2/He -dominated atmospheres both from measurements of their low bulk densities and from direct detections of their low mean molecular mass atmospheres.*

However, the smaller sub-Neptunes in the 1.5 to 2.2 Earth radius size regime are much less understood and often have bulk densities that can be explained either by the H_2/He -rich scenario or by a volatile-dominated composition known as the “water world” scenario.

Here we report the detection of water vapor in the transmission spectrum of the 1.96 ± 0.08 Earth radius sub-Neptune GJ 9827 d obtained with the Hubble Space Telescope (HST). We observe 11 HST Wide Field Camera 3 transits of GJ 9827 d and find an absorption feature at $1.4 \mu m$ in its transit spectrum, which is best explained by the presence of water in GJ 9827 d's atmosphere.

We further show that this feature cannot be caused by unocculted starspots during the transits by combining an analysis of the K2 photometry and transit light source effect retrievals.

We reveal that the water absorption feature can be similarly well explained by a small amount of water vapor in a cloudy H_2/He atmosphere or a water vapor envelope on GJ 9827 d.

Given that recent studies have inferred an important mass-loss rate (>0.5 Earth masses per gigayear) for GJ 9827 d, making it unlikely to retain a H -dominated envelope, our findings highlight GJ 9827 d as a promising water world candidate that could host a volatile-dominated atmosphere.

This water detection also makes GJ 9827 d the smallest exoplanet with an atmospheric molecular detection to date.

Paleobiology.

Miao, L., et al (2024) **1.63-billion-year-old multicellular eukaryotes from the Chuanlinggou Formation in North China.** SCIENCE ADVANCES 10:doi.org/10.1126/sciadv.adk3208 (available as a free pdf)

[Eukaryotes are cells with nuclei containing their chromosomes, as opposed to prokaryotes, which have no nuclei and were the first type of cells.]

Authors' abstract: *Multicellularity is key to the functional and ecological success of the Eukarya, underpinning much of their modern diversity in both terrestrial and marine ecosystems. Despite the widespread occurrence of simple multicellular organisms among eukaryotes, when this innovation arose remains an open question.*

Here, we report cellularly preserved multicellular microfossils (Qingshania magnifica) from the ~ 1635 -million-year-old Chuanlinggou Formation, North China. The fossils consist of large uniseriate, unbranched filaments with cell diameters up to 190 micrometers; spheroidal structures, possibly spores, occur within some cells.

In combination with spectroscopic characteristics, the large size and morphological complexity of these fossils support their interpretation as eukaryotes, likely photosynthetic, based on comparisons with extant organisms.

The occurrence of multicellular eukaryotes in Paleoproterozoic rocks not much younger than those containing the oldest unambiguous evidence of eukaryotes as a whole supports the hypothesis that simple multicellularity arose early in eukaryotic history, as much as a billion years before complex multicellular organisms diversified in the oceans.

The cell is the fundamental unit of life on Earth. The first organisms were most likely unicellular, and numerous clades still complete their life cycles as single cells.

That said, multicellularity has arisen many times within bacteria and the Eukarya. Most of these clades comprise simple multicellular organisms, with cell-cell adhesion but limited communication or differentiation among constituent cells.

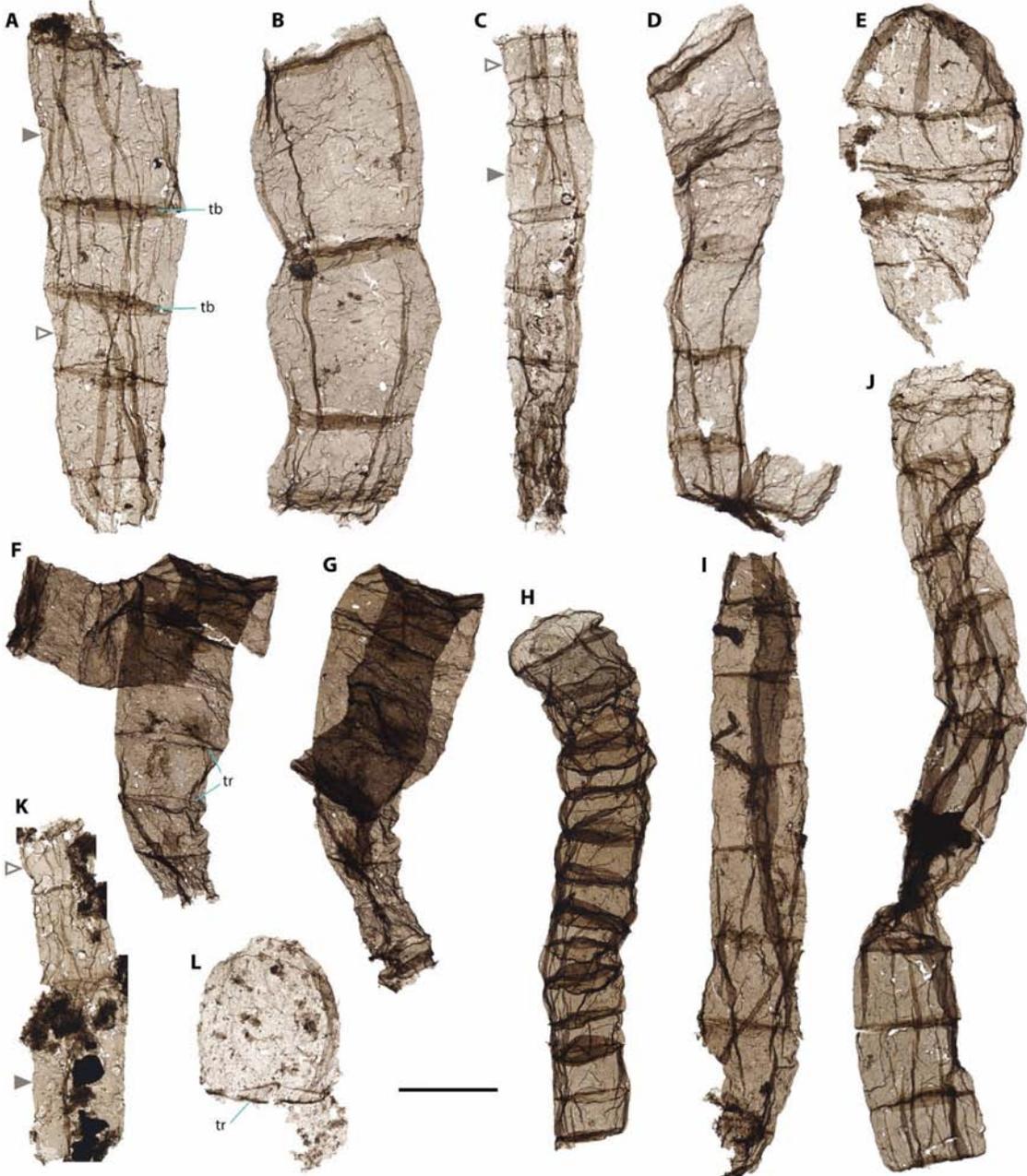
Complex multicellularity, with greater directed intercellular communication and more pronounced cell and tissue differentiation, has arisen only six to seven times, all within the Eukarya.

The evolution of multicellularity is a question of history and process, and paleontological records can potentially tell us when and under what conditions multicellular eukaryotes first evolved.

Fossils found on several continents show that in the oceans, simple multicellular eukaryotes, such as uniseriate filaments and coenobia, arose long before the advent of complex multicellular animals and algae. Prokaryotic multicellularity extends even further back into the Archean.

Relatively abundant late Mesoproterozoic to early Neoproterozoic populations include forms interpreted as red [*Bangiomorpha pubescens*, ~1,050 million years (Ma), arctic Canada] or green [*Proterocladus antiquus*, ~950 Ma, North China] algae, as well as putative early fungi [*Ourasphaira giraldae*, ~890 Ma, Arctic Canada] and eukaryotic problematica, including *Eosolena loculosa* [~1,030 Ma, Siberia], *Arctacellularia tetragonala* [~1,000 Ma, Congo], and *Archaeochaeta guncho* [~950 Ma, northwestern Canada].

[Images show microscopic fossils 1.63 gigayears old. Taken from this paper.]



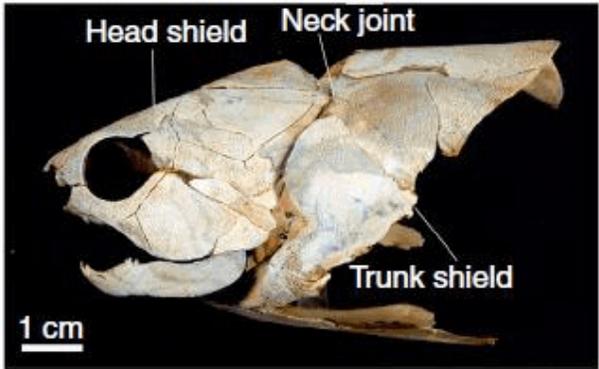
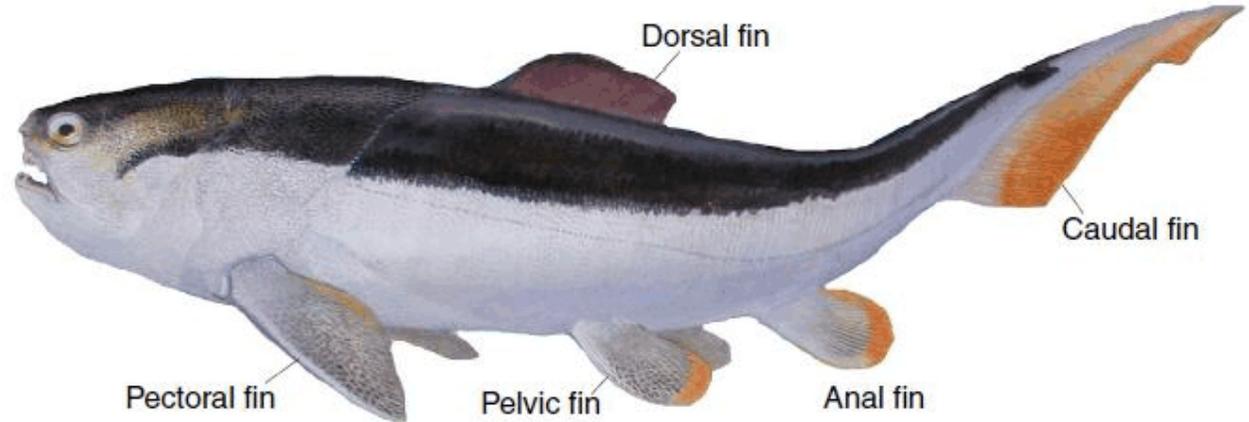
Authors' extracts: *For over 70 million years, during the Paleozoic, the placoderms (Greek for 'plated skin'), an extinct group of armoured fishes, were the most abundant and diverse vertebrates on our planet.*

All placoderms bear thick overlapping dermal plates around the head (called the 'head shield') and an area of the body covered in similar overlapping plates enveloping the pectoral to anal region (called the 'trunk-shield').

Placoderm fossils are known from every continent on Earth ranging from the early Silurian (~438 million years ago) to the end Devonian (~359 million years ago) when they became extinct.

Placoderms are now placed on the ancestral line leading to all other jawed vertebrates, as the sister group to sharks, bony fishes and tetrapods.

[Images are from this paper.]



Author's abstract: *When vertebrates first conquered the land, they encountered a visual world that was radically distinct from that of their aquatic ancestors. Fish exploit the strong wavelength-dependent interactions of light with water by differentially feeding the signals from up to 5 spectral photoreceptor types into distinct behavioural programmes.*

However, above the water the same spectral rules do not apply, and this called for an update to visual circuit strategies. Early tetrapods soon evolved the double cone, a still poorly understood pair of new photoreceptors that brought the "ancestral terrestrial" complement from 5 to 7.

Subsequent non-mammalian lineages differentially adapted this highly parallelised retinal input strategy for their diverse visual ecologies. By contrast, mammals shed most ancestral photoreceptors and converged on an input strategy that is exceptionally general.

In eutherian mammals including in humans, parallelisation emerges gradually as the visual signal traverses the layers of the retina and into the brain.

[Arborescence is woody tree or shrub growth.]

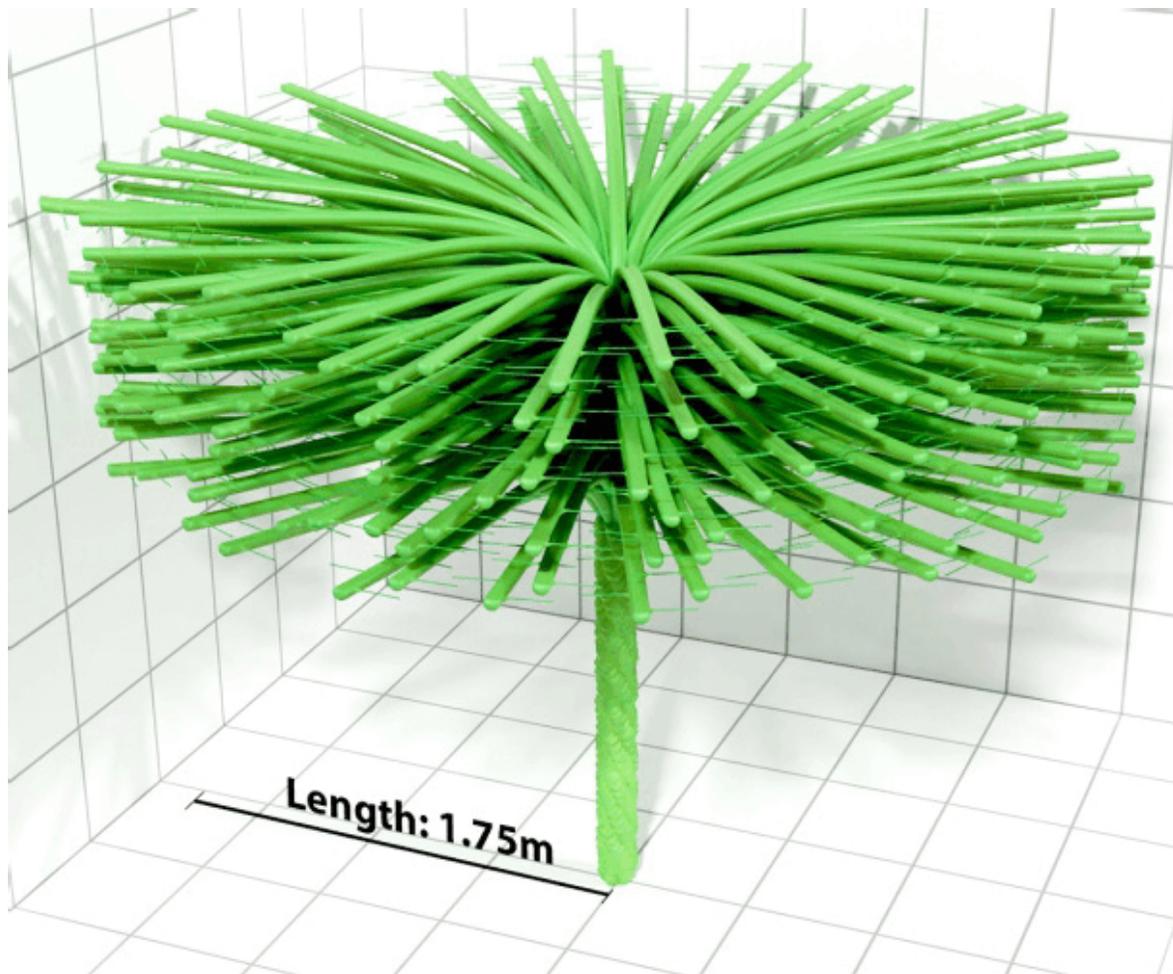
Authors' abstract: *The evolution of arborescence in Devonian plants, followed by their architectural radiation in the Carboniferous, is a transition fundamental to Earth-system processes and ecological development.*

However, this evolutionary transition in trees is based on preserved trunks, of which only a few known specimens possess crowns.

We describe Mississippian-aged (Tournaisian) trees with a unique three-dimensional crown morphology from New Brunswick, Canada. The trees were preserved by earthquake-induced, catastrophic burial of lake-margin vegetation.

The tree architecture consists of an unbranched, 16-cm-diameter trunk with compound leaves arranged in spirals of 13 and compressed into 14 cm of vertical trunk length.

Compound leaves in the upper 0.75 metres of the trunk measure >1.75 metres in length and preserve alternately arranged secondary laterals beginning at 0.5 metres from the trunk; the area below the trunk bears only persistent leaf bases.



The principal specimen lacks either apical or basal sections, although an apex is preserved in another. Apically, the leaves become less relaxed toward horizontal and are borne straight at an acute angle at the crown. The compact leaf organization and leaf length created a crown volume of >20 to 30 cubic metres.

This growth strategy likely maximized light interception and reduced resource competition from groundcover. From their growth morphology, canopy size, and volume, we propose that these fossils represent the earliest evidence of arborescent subcanopy-tiering.

Moreover, although systematically unresolved, this specimen shows that Early Carboniferous vegetation was more complex than realized, signaling that it was a time of experimental, possibly transitional and varied, growth architectures.

[Image is from this paper and shows a reconstruction of the fossil tree.]

Wu, Q., et al (2024) **The terrestrial end-Permian mass extinction in the paleotropics postdates the marine extinction.** SCIENCE ADVANCES 10:doi.org/10.1126/sciadv.adi7284 (available as a free pdf)

[The greatest mass extinction of all time occurred 251 megayears ago when 97% of all species went extinct. The cause is believed to be massive flood lavas called the Siberian Traps, which covered tens of thousands of square kilometres with lava several kilometres deep, heating up Earth to killing temperatures.]

Authors' abstract: *The end-Permian mass extinction was the most severe ecological event during the Phanerozoic and has long been presumed contemporaneous across terrestrial and marine realms with global environmental deterioration triggered by the Siberian Traps Large Igneous Province.*

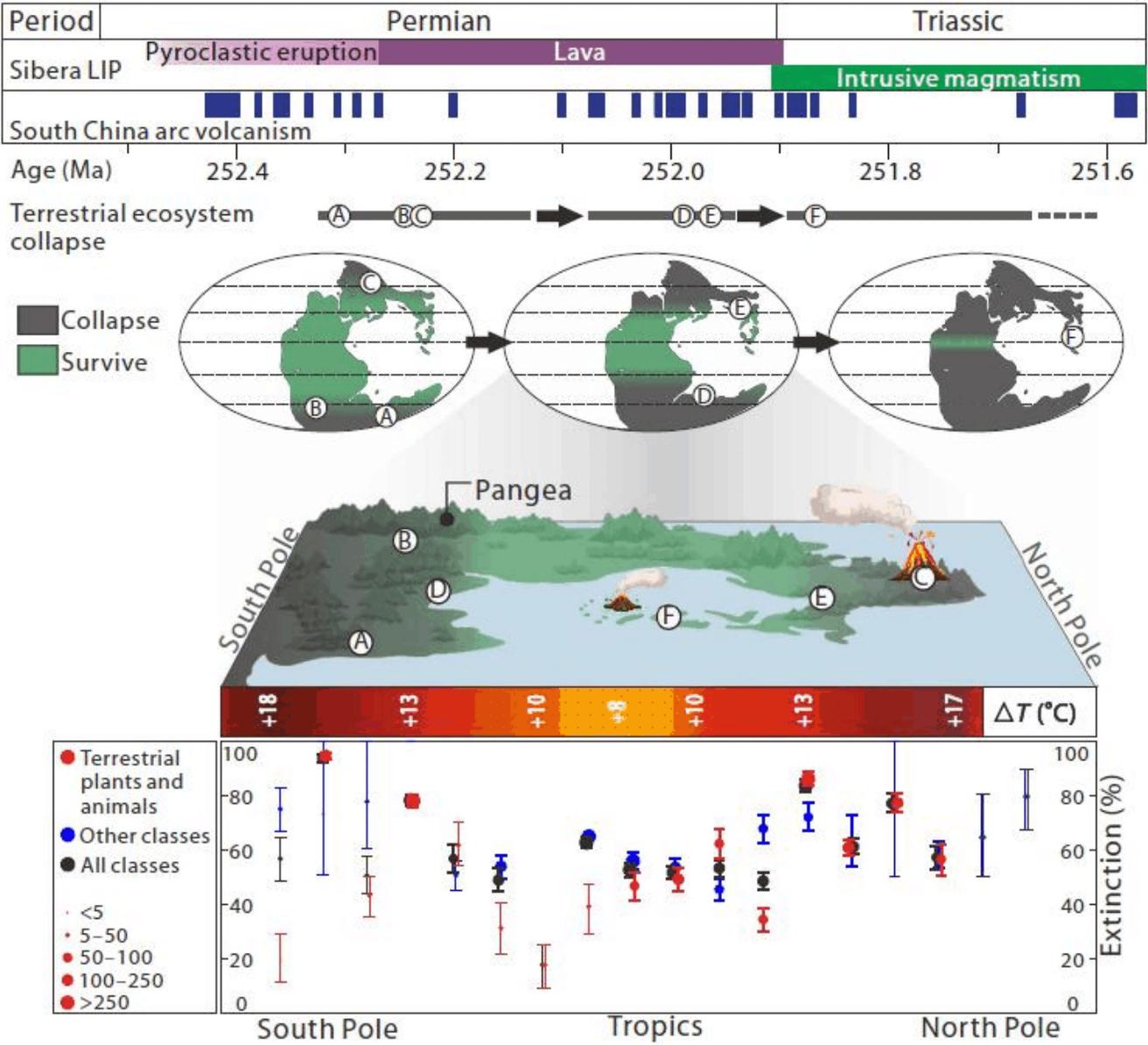
We present high-precision zircon U-Pb geochronology by the chemical abrasion–isotope dilution–thermal ionization mass spectrometry technique on tuffs from terrestrial to transitional

coastal settings in Southwest China, which reveals a protracted collapse of the Cathaysian rainforest beginning after the onset of the end-Permian marine extinction.

This latitudinal age gradient may have been related to variations in surface warming with more degraded environmental conditions at higher latitudes contributing to higher extinction rates.

Integrated with high-resolution geochronology from coeval successions, our results suggest that the terrestrial extinction occurred diachronously with latitude, beginning at high latitudes during the late Changhsingian and progressing to the tropics by the early Induan, spanning a duration of nearly 1 million years.

[Images are from this paper.]



Lee, J., et al (2024) **Microtomography of an enigmatic fossil egg clutch from the Oligocene John Day Formation, Oregon, USA, reveals an exquisitely preserved 29-million-year-old fossil grasshopper ootheca.** PARKS STEWARDSHIP FORUM 40:doi.org/10.5070/P540162928 (available as a free pdf)

Authors' abstract: *Eggs are one of the least understood life stages of insects, and are poorly represented in the fossil record.*

Using microtomography, we studied an enigmatic fossil egg clutch of a presumed entomological affinity from the Oligocene Turtle Cove Member, John Day Formation, from the National Park Service-administered lands of John Day Fossil Beds National Monument, Oregon.

A highly organized egg mass comprising a large clutch size of approximately 50 slightly curved ellipsoidal eggs arranged radially in several planes is preserved, enclosed in a disc-shaped layer of cemented and compacted soil particles.

Based on the morphology of the overall structure and the eggs, we conclude that the specimen represents a fossilized underground ootheca of the grasshoppers and locusts (Orthoptera: Caelifera), also known as an egg pod.

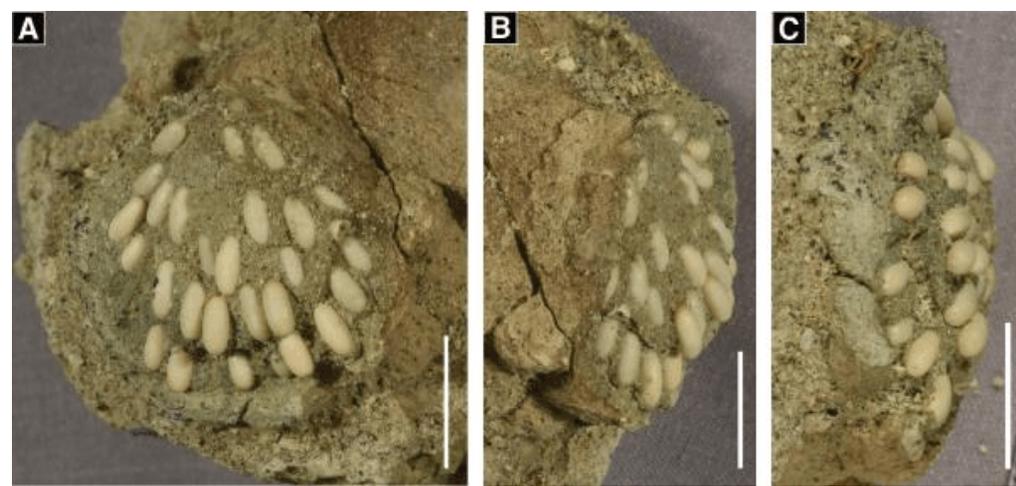
*This likely represents the oldest and the first unambiguous fossil evidence of a grasshopper egg pod. We describe *Subterroothecichnus radialis* gen. et isp. nov. and *Curvellipsoentomoolithus laddi* oogen. et oosp. nov., representing the egg pod and the eggs, respectively.*

We advocate for adopting ootaxonomy in studying fossil eggs of entomological affinities, as widely practiced with fossil amniotic eggs.

*An additional 26 individual and clustered *C. laddi* collected throughout the A–H subunits of the Turtle Cove Member suggest the stable presence of grasshoppers in the Turtle Cove fauna, and we discuss the paleoecological implications.*

Oothecae have convergently evolved several times in several insect groups. This ovipositional strategy likely contributed to the fossilization of this lesser-known ontogenetic stage, enriching our understanding of past insect life.

[Images are from this paper.]



Rowe, A.G., et al (2024) **A female woolly mammoth's lifetime movements end in an ancient Alaskan hunter-gatherer camp.** SCIENCE ADVANCES 10:doi.org/10.1126/sciadv.adk0818 (available as a free pdf)

Authors' abstract: *Woolly mammoths in mainland Alaska overlapped with the region's first people for at least a millennium. However, it is unclear how mammoths used the space shared with people.*

Here, we use detailed isotopic analyses of a female mammoth tusk found in a 14,000-year-old archaeological site to show that she moved ~1,000 kilometers from northwestern Canada to inhabit an area with the highest density of early archaeological sites in interior Alaska until her death.

DNA from the tusk and other local contemporaneous archaeological mammoth remains revealed that multiple mammoth herds congregated in this region. Early Alaskans seem to have structured their settlements partly based on mammoth prevalence and made use of mammoths for raw materials and likely food.

The DNA of the Swan Point tusk showed that this mammoth was female and closely related to the other mammoth individuals we analyzed from Swan Point and more distantly related to the tusk from the nearby Holzman site.

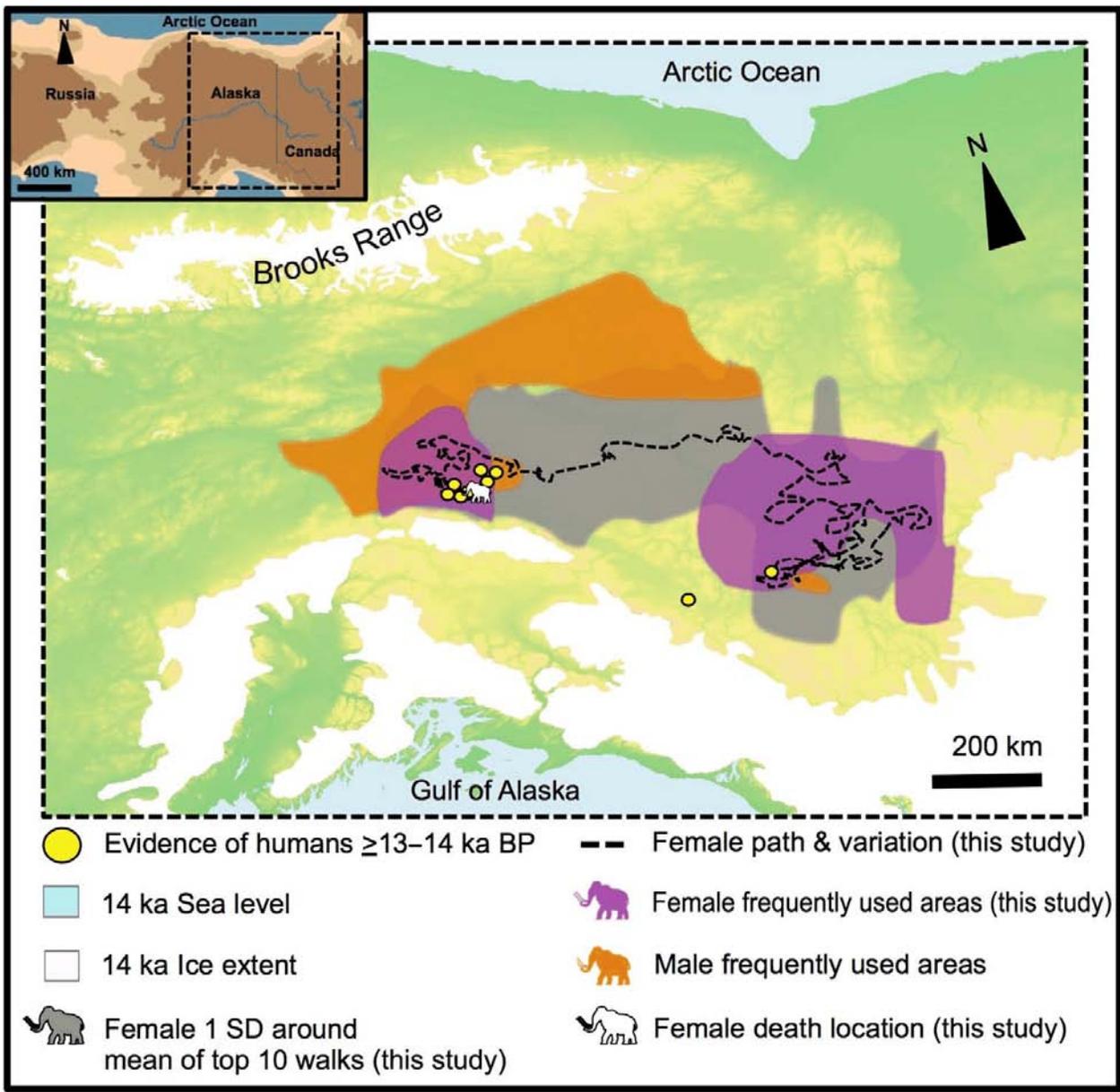
These specimens included the remains of a male neonate and male juvenile mammoth from Swan Point CZ4b. Mammoth remains at Swan Point number in the hundreds, most being fragments of ivory from tusk reduction. At least three full tusks are present, including the adult and juvenile tusks sampled in this paper.

More than a hundred cheek teeth fragments were documented, which together account for at least two cheek teeth from a juvenile or juveniles. At least twelve rib fragments are present and account for a minimum of eight elements, the

sizes of which are consistent with having been obtained from a single neonate mammoth. If mammoths behaved in similar ways to elephants, the neonate and juvenile would have needed to travel with a matriarchal herd until their maturity.

The mitochondrial genomes reconstructed from eight of the mammoths showed that, although mainly contemporaneous, the mammoths at these archaeological sites consisted primarily of members from at least two, closely related (ancestor and descendant) but distinct herds.

[Map is from this paper.]



Zoology.

Eglit, Y., et al (2024) *Meteora sporadica*, a protist with incredible cell architecture, is related to Hemimastigophora. CURRENT BIOLOGY 34:doi.org/10.1016/j.cub.2023.12.032 (available as a free pdf)

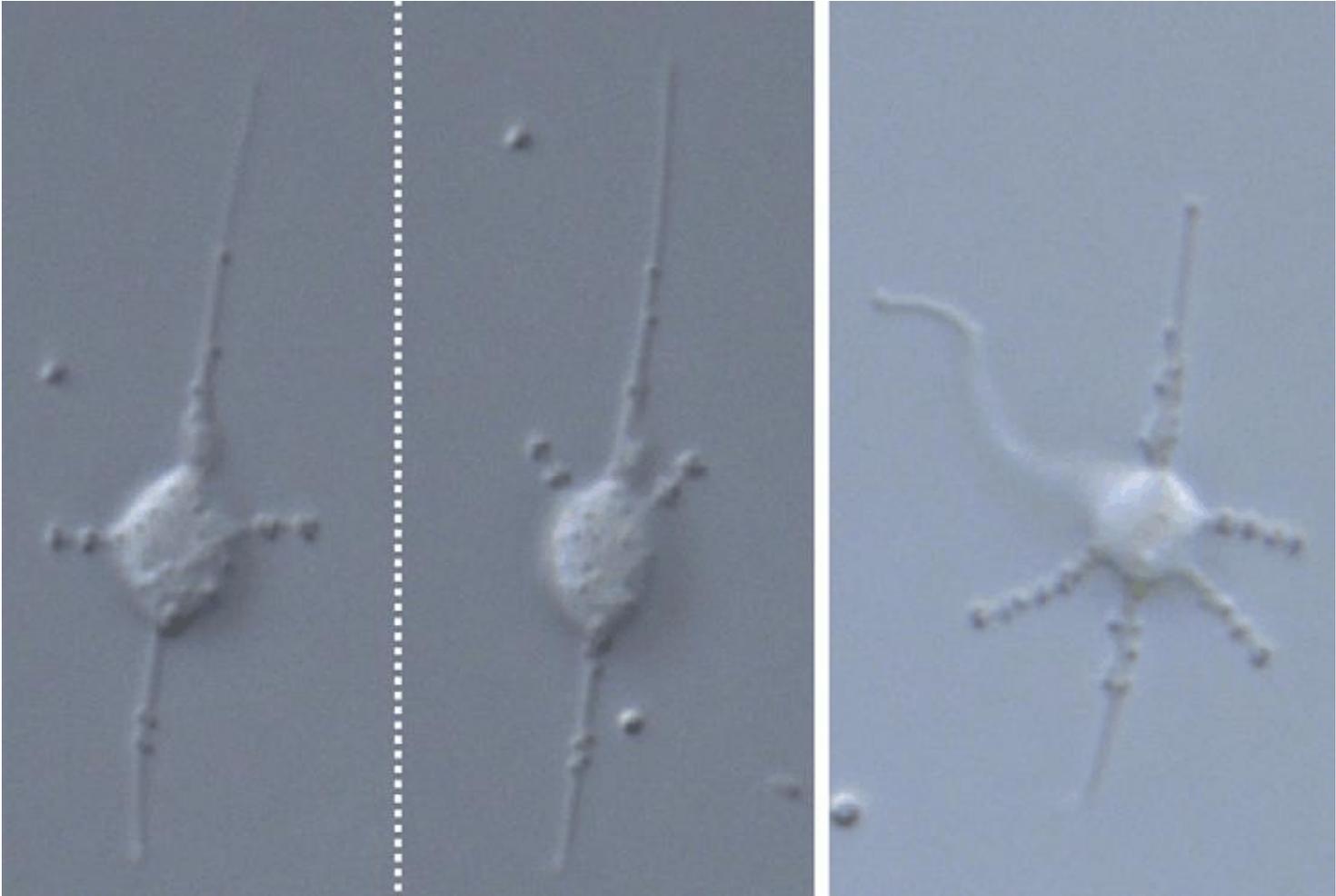
Authors' abstract: *Meteora sporadica* is a protist with a unique morphology; cells glide over substrates along a long axis of anterior and posterior projections while a pair of lateral "arms" swing back and forth, a motility system without any obvious parallels.

Originally, *Meteora* was described by light microscopy only, from a short-term enrichment of deep-sea sediment. A small subunit ribosomal RNA sequence was reported recently, but the phylogenetic placement of *Meteora* remained unresolved.

Here, we investigated two cultivated *Meteora sporadica* isolates in detail. Transmission electron microscopy showed that both the anterior-posterior projections and the arms are supported by microtubules originating from a cluster of subnuclear microtubule organizing centers.

Neither have a flagellar axoneme-like structure. Sequencing the mitochondrial genome showed this to be among the most gene-rich known, outside jakobids. Remarkably, phylogenomic analyses of 254 nuclear protein-coding genes robustly support a close relationship with Hemimastigophora.

Our study suggests that *Meteora* and Hemimastigophora together represent a morphologically diverse "supergroup" and thus are important for resolving the tree of eukaryote life and early eukaryote evolution.



[Images show the amoebas with their arms, the knobby things.]

Hayashi, K., et al (2024) **Counting Nemo: anemonefish *Amphiprion ocellaris* identify species by number of white bars.** JOURNAL OF EXPERIMENTAL BIOLOGY 227:doi.org/10.1242/jeb.246357

Authors' abstract: *The brilliant colors of coral reef fish have received much research attention. This is well exemplified by anemonefish, which have distinct white bar patterns and inhabit host anemones and defend them as a territory. The 28 described species have between 0 and 3 white bars present, which has been suggested to be important for species recognition.*

*In the present study, we found that *Amphiprion ocellaris* (a species that displays three white bars) hatched and reared in aquaria, when faced with an intruder fish, attacked their own species more frequently than other species of intruding anemonefish.*

*Additionally, we explicitly tested whether this species could distinguish models with different numbers of bars. For this, 120 individuals of *A. ocellaris* were presented with four different models (no bars, and 1, 2 and 3 bars) and we compared whether the frequency of aggressive behavior towards the model differed according to the number of bars.*

*The frequency of aggressive behavior toward the 3-bar model was the same as against living *A. ocellaris*, and was higher than towards any of the other models.*

*We conclude that *A. ocellaris* use the number of white bars as a cue to identify and attack only competitors that might use the same host. We considered this as an important behavior for efficient host defense.*



[Image is from Wikipedia.]

Botany.

Kuhnhäuser, B. G., et al (2023) **Hiding in plain sight: The underground palm *Pinanga subterranea*.** PLANTS, PEOPLE, PLANET 5:doi.org/10.1002/ppp3.10393 (available as a free pdf)

Authors' extracts: *The vast majority of flowering plants (angiosperms) develop their flowers and fruits above ground, facilitating pollination and seed dispersal. A very few species, however, employ the seemingly paradoxical reproductive strategy of subterranean flowering (geoflory) and fruiting (geocarpy), which would seem to hinder pollinator access and seed dispersal from the parent plant.*

*Active geocarpy occurs, for instance, in the peanut (*Arachis hypogaea*, Fabaceae), in which flowering occurs above ground followed by burial of the fertilised flower and fruit development below ground.*

*In palms (Arecaceae), neither geoflory nor geocarpy has been reported until now. The discovery and description of *Pinanga subterranea* as a species new to science are therefore remarkable.*

The flowers and fruits of this acaulescent (i.e., lacking an aerial stem) species from Borneo are usually entirely hidden below ground.

This discovery raises many questions and challenges. How did geoflory and geocarpy in palms evolve? What pollinates its underground flowers? How is dispersal possible if its seeds are buried directly next to the mother plant?

*Nevertheless, fruit and seed set in *Pinanga subterranea* is usually high, indicating an efficient mode of pollination exists. Insect pollination is the predominant mechanism in palms and pollination by beetles has been observed in *Pinanga*, suggesting that insects may be potential pollen vectors for *P. subterranea*.*

Selfing, which occurs in the underground and predominantly cleistogamous (permanently closed) flowers of most amphicarpic plants, may be an alternative mode of pollination. Selfing is widely observed in palms, although the broader landscape of selfcompatibility and -incompatibility is not understood in the family.

Buried fruits present a similar challenge of seed dispersal. Field observations show that bearded pigs (*Sus barbatus*) are effective seed dispersers of *Pinanga subterranea*. The pigs dig up and eat the fruits, dispersing them locally in the process of digging.

Furthermore, *Pinanga subterranea* seeds retrieved from bearded pig faeces have been successfully cultivated. It is currently unknown how the pigs are able to locate the fruits.

Based on our observations, no scent can be noticed in ripe fruit. However, we cannot rule out that pigs are able to smell the fruits because of their much finer sense of smell. Intriguingly, the fruits are bright red despite being underground, which may serve as a visual aid once fruiting plants have been dug out.

Although the fruits are hidden below ground, they are actively sought after as a forest snack by people in Central Kalimantan (Indonesia) when the palm is encountered. By bending down the leaf crown, the top of the inflorescence is exposed, with the bright red colour of ripe fruits being usually visible. The sweet, succulent flesh is chewed and the hard seeds spat out.

[Images are from this paper. I never knew there was such a thing as bearded pigs (bottom right).]



Environmental Science.

Pironon, S., et al (2024) **The global distribution of plants used by humans.** SCIENCE 383:doi.org/10.1126/science.adg8028 (available as a free pdf)

Authors' abstract: *Plants sustain human life. Understanding geographic patterns of the diversity of species used by people is thus essential for the sustainable management of plant resources.*

Here, we investigate the global distribution of 35,687 utilized plant species spanning 10 use categories (e.g., food, medicine, material). Our findings indicate general concordance between utilized and total plant diversity, supporting the potential for simultaneously conserving species diversity and its contributions to people.

Although Indigenous lands across Mesoamerica, the Horn of Africa, and Southern Asia harbor a disproportionate diversity of utilized plants, the incidence of protected areas is negatively correlated with utilized species richness.

Finding mechanisms to preserve areas containing concentrations of utilized plants and traditional knowledge must become a priority for the implementation of the Kunming-Montreal Global Biodiversity Framework.

Jagiello, Z., et al (2024) **The plastic homes of hermit crabs in the Anthropocene.** SCIENCE OF THE TOTAL ENVIRONMENT 913:doi.org/10.1016/j.scitotenv.2023.168959 (available as a free pdf)

Authors' abstract: *Plastic is the most pervasive element of marine waste, with harmful impact on wildlife. By using iEcology (i.e., internet Ecology, use of online data sources as a new tool in ecological research), we report on the emergence of a novel behaviour in hermit crabs related to the use of plastic or other anthropogenic materials as protective shells.*

We analysed images posted on social media to identify 386 individuals with artificial shells, mainly plastic caps (85 %). We report that 10 of the world's 16 terrestrial hermit crabs use artificial shells, a behaviour observed on all of the Earth's tropical coasts.

Four non-exclusive mechanisms may drive individual choice for artificial shells: sexual signaling, lightness of artificial shells, odour cues, and camouflage in a polluted environment.

[Images are from this paper.]



Kamaru, D.N., et al (2024) **Disruption of an ant-plant mutualism shapes interactions between lions and their primary prey.** SCIENCE 383:doi.org/10.1126/science.adg1464

Authors' abstract: *Mutualisms often define ecosystems, but they are susceptible to human activities. Combining experiments, animal tracking, and mortality investigations, we show that the invasive big-headed ant (Pheidole megacephala) makes lions (Panthera leo) less effective at killing their primary prey, plains zebra (Equus quagga).*

Big-headed ants disrupted the mutualism between native ants (Crematogaster spp.) and the dominant whistling-thorn tree (Vachellia drepanolobium), rendering trees vulnerable to elephant (Loxodonta africana) browsing and resulting in landscapes with higher visibility.

Although zebra kills were significantly less likely to occur in higher-visibility, invaded areas, lion numbers did not decline since the onset of the invasion, likely because of prey-switching to African buffalo (Syncerus caffer). We show that by controlling biophysical structure across landscapes, a tiny invader reconfigured predator-prey dynamics among iconic species.

Jørgensen, C.J., et al (2024) **Large mercury release from the Greenland Ice Sheet invalidated.** SCIENCE ADVANCES 10:doi.org/10.1126/sciadv.adi7760 (available as a free pdf)

Authors' abstract: *The major input of mercury (Hg) to the Arctic is normally ascribed to long-range transport of anthropogenic Hg emissions. Recently, alarming concentrations of Hg in meltwater from the Greenland Ice Sheet (GrIS) were reported with bedrock as the proposed source.*

Reported Hg concentrations were 100 to 1000 times higher than in known freshwater systems of Greenland, calling for independent validation of the extraordinary concentrations and conclusions.

Here, we present measurements of Hg at 21 glacial outlets in West Greenland showing that extreme Hg concentrations cannot be reproduced. In contrast, we find that meltwater from below the GrIS is very low in Hg, has minor implications for the global Hg budget, and pose only a very limited risk for local communities and the natural environment of Greenland.

Human Prehistory.

Mylopotamitaki, D., et al (2024) **Homo sapiens reached the higher latitudes of Europe by 45,000 years ago.** NATURE 626:doi.org/10.1038/s41586-023-06923-7 (available as a free pdf)

Authors' abstract: *The Middle to Upper Palaeolithic transition in Europe is associated with the regional disappearance of Neanderthals and the spread of Homo sapiens.*

Late Neanderthals persisted in western Europe several millennia after the occurrence of H. sapiens in eastern Europe¹. Local hybridization between the two groups occurred, but not on all occasions.

Archaeological evidence also indicates the presence of several technocomplexes during this transition, complicating our understanding and the association of behavioural adaptations with specific hominin groups.

One such technocomplex for which the makers are unknown is the Lincombian-Ranisian-Jerzmanowician (LRJ), which has been described in northwestern and central Europe.

Here we present the morphological and proteomic taxonomic identification, mitochondrial DNA analysis and direct radiocarbon dating of human remains directly associated with an LRJ assemblage at the site Ilsenhöhle in Ranis (Germany).

These human remains are among the earliest directly dated Upper Palaeolithic H. sapiens remains in Eurasia. We show that early H. sapiens associated with the LRJ were present in central and northwestern Europe long before the extinction of late Neanderthals in southwestern Europe.

Our results strengthen the notion of a patchwork of distinct human populations and technocomplexes present in Europe during this transitional period.

In this fragmented ichnological record, we report the discovery of 85 human footprints on a Late Pleistocene now indurated beach surface of about 2,800 square metres at Larache (northwest coast of Morocco).

Authors' abstract: Footprints represent a relevant vestige providing direct information on the biology, locomotion, and behaviour of the individuals who left them. However, the spatiotemporal distribution of hominin footprints is heterogeneous, particularly in North Africa, where no footprint sites were known before the Holocene.

The wide range of sizes of the footprints suggests that several individuals from different age groups made the tracks while moving landward and seaward across a semi-dissipative bar-trough sandy beach foreshore.

This region is important in the evolution of hominins. It notably includes the earliest currently known Homo sapiens (Jebel Irhoud) and the oldest and richest African Middle Stone Age hominin sites.

A geological investigation and an optically stimulated luminescence dating of a rock sample extracted from the tracksite places this hominin footprint surface at 90.3 ± 7.6 kiloyears ago (MIS 5, Late Pleistocene).

The Larache footprints are, therefore, the oldest attributed to Homo sapiens in Northern Africa and the Southern Mediterranean.

[Images are from this paper.]

