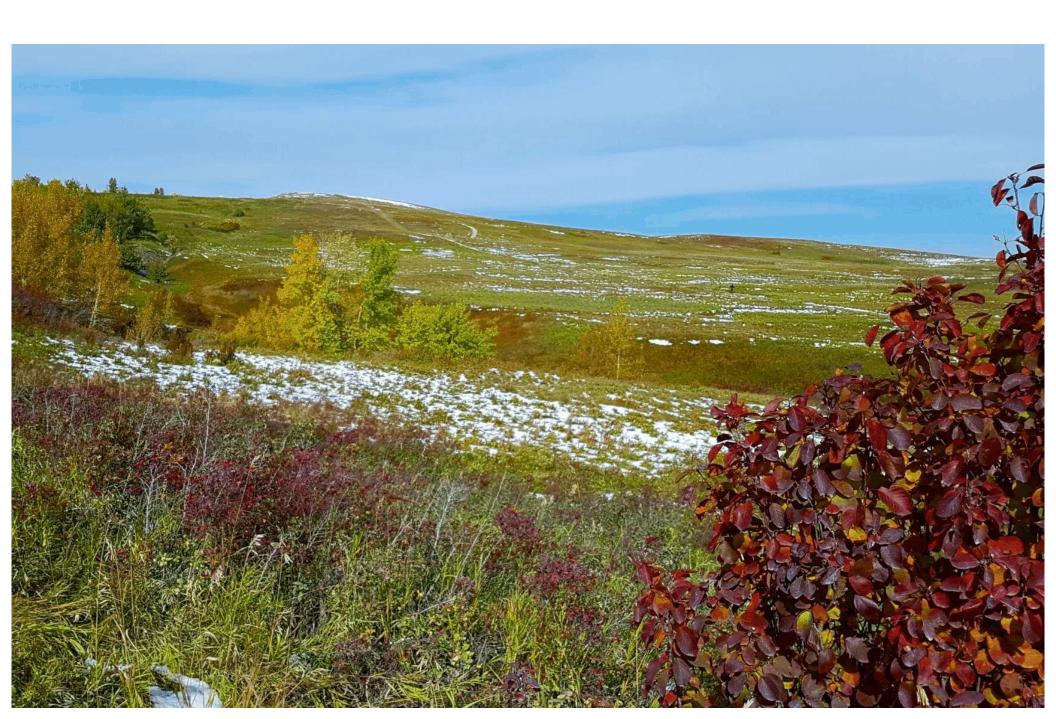
OPUNTIA 457



Thanksgiving 2019

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.

NOSE HILL PARK: EASTERN END

2019-10-03

photos by Dale Speirs

Calgary has two massive natural parks within its boundaries, Nose Hill (municipal) and Fish Creek (provincial). It occurred to me that I haven't depicted them as often as I should have, so over the winter I'll run photos.

Nose Hill is the easternmost foothill of the Rocky Mountains and until the late 1970s was the northern boundary of Calgary. The suburbs have long since sprawled past it. The western half of the hill was overrun by developers and is now covered in houses. A citizen group managed to preserve the eastern half as a natural park.

The hill is bald-headed prairie, but it has coulees and draws along its slope that allow shrubbery and small trees to survive because the rainwater is channeled down them. The cover photo is a typical view of the easternmost end of the hill and shows the vegetation in the draws changing colour.

We had our first snowfall on September 27 but when I photographed the area a week later, most of it had been removed by chinooks. Thanksgiving is usually brown in Calgary but by November we start getting more frequent bursts of snow.

The park is a popular viewpoint, looming over the city as it does, and as you will see on the next few pages.





At left: Looking northeast along 14 Street NW.

Below: An extreme telephoto shot looking due east at the Calgary International Airport. I got tired of waiting for a passenger jet to taxi out and take off. It must have been a slow part of the day.

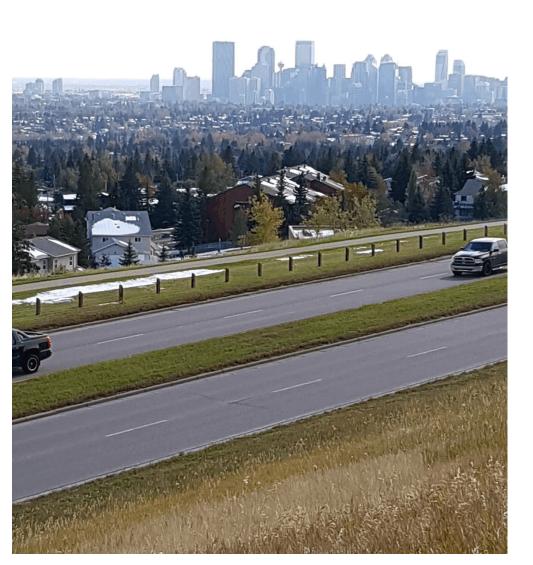


Looking due south at central Calgary and the downtown core.



At right: An old country road that once traversed the hill. After the City took it over they let it go back to nature.

Below: A telephoto view to the southeast.





SHERLOCKIANA: PART 31

by Dale Speirs

[Part 30 appeared in OPUNTIA #433.]

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

Pastiches: Novels.

THE HAUNTING OF TORRE ABBEY (2000) by Carol Buggé was a haunted house mystery that brought Sherlock Holmes to the manor of Lord Cary. The stately pile, known as Torre Abbey, was plagued by a headless ghost. The locals immediately conjured up all manner of superstitions and ancient legends to go with the hitherto unknown ghost. A short time later the cook was murdered, and with that the plot kicked into gear.

To Holmes and Watson it was obvious someone was playing dastardly tricks for reasons unknown. The story was briefly sidetracked into a music hall when a magician was killed during a William Tell style act. Someone had substituted real bullets for the blank cartridges. Holmes tied the magician's death into the Torre Abbey mystery.

Letterboxing also entered the case. During a countryside ramble, Holmes and Watson discovered that the perpetrator was using letterboxes out on the moors to communicate with an accomplice.

The denouement was that an elder Cary had faked his death years ago to give him a free hand in murdering those who might impede his claim to the family fortune. He planned to make a dramatic return years later, claiming amnesia, then inherit the wealth. A reasonably good pastiche.

THE DAUGHTER OF SHERLOCK HOLMES (2017) by Leonard Goldberg was a pastiche novel set in 1914. The protagonist was Joanna Blalock, a nurse who was the daughter of Sherlock Holmes and Irene Adler. Holmes died in 1903 tending his bees on the Sussex Downs.

Blalock had inherited his reasoning powers and studied nursing as the only practical way to learn science, given the way academia treated women in those days.

Blalock and her 10-year-old son Johnnie saw a man fall to his death. Did he jump or was he pushed? She was visited by Watson and his grown son Dr John Watson Jr, and they became a team investigating the murder. The dead man, Charles Harrelston, supposedly owed gambling debts to Christopher Moran, a surname instantly recognizable to Sherlockians.

Harrelston and Moran were part of a group holding onto treasure from India scooped up during the Second Afghanistan War. As these sorts of men will do, there was a falling out over the proceeds. Harrelston was the first but not the last victim, and the death toll steadily climbed.

The denouement was the recovery of the loot from a safe protected by two cobras. Certainly beats a motion detector. All ended well. The finale was a set-up for future novels in what would be a series.

Pastiches: Short Stories.

THE BIG BOOK OF SHERLOCK HOLMES STORIES (2015) is an anthology of 82 stories, edited by Otto Penzler. Relax, I'm not going to review them all here, just a couple of stories in this column and a couple more elsewhere in thematic columns. 789 pages, so it is indeed a big book. Lots of reading while waiting out the next polar vortex.

"The Abandoned Brigantine" (1990) by Sam Benady brought Holmes to explain the Gibralter Admiralty Court hearing on the mysteriously abandoned ship Mary Celeste. This was a real-world incident, about which Doyle had written.

Holmes told Watson that he had been a passenger on the ship, that they had been saved during a storm by an experimental Italian submarine. The ship had been pursued by ruffians, so to avoid them the survivors came ashore anonymously and assumed new identities.

"The Problem Of The Purple Maculas" (1968) by James C. Iraldi is based on a throwaway line by Watson in the canon which mentioned how Holmes helped hang Henry Staunton. It was a double poisoning case, but Staunton's wife was a suicide. She poisoned herself and he was hanged for it. A case where justice was not served.

Marginalia: Cozies.

THE CAT OF THE BASKERVILLES (2018) by Vicki Delany was a novel in a cozy series about Gemma Doyle, proprietor of the Sherlock Holmes Bookshop in West London, Massachusetts. The shop was located at 222 Baker Street and the resident pet cat was named Moriarty. Doyle's uncle, who had a hand in the business, was named Arthur, and claimed he was a distant cousin of the Doyle.

Pouring it on thicker, Doyle's best friend was Jayne Wilson, who operated the adjacent Mrs Hudson's Tea Room. The author seems to have missed a step by not calling her Jayne Watson, or if staying with Wilson, making her a notorious canary trainer.

The drama society was staging THE HOUND OF THE BASKERVILLES with a good local cast. They needed a famous name to bring in the crowds but the best they could afford was Sir Nigel Bellingham. He was on his way down (drinking, you know) while the rest of the cast were young professionals on their way up. Gemma Doyle and Jayne Wilson hosted a fund raising party before the play opened. Jayne's mother Leslie arranged the event. Sir Nigel went missing after, but was soon found at the bottom of a cliff.

Doyle went detecting in the usual amateur manner, such as break-and-enter into suspects' houses to find clues. She busily contaminated evidence everywhere. The play was the thing, though. The J'accuse! meeting was backstage after a performance. The director turned out to be just as ambitious as any actor on the set. She had an opportunity to make HOUND as a movie, and resented a drunken old reprobate spoiling her chance.

Carrying on in the next novel of the series, A SCANDAL IN SCARLET (2018), Gemma Doyle was strolling out one day when perchance she spotted the local museum, the Scarlet House, on fire. The fire badly damaged the building, so the Baker Street shopkeepers organized an auction and tea function to help raise funds to restore the museum.

Jayne Wilson's part in the tea social did not go well. The museum chairwoman Kathy Lamb was strangled in the back room of the tea parlour. By now, Doyle was settling into her role as Miss Marple, and leaped into the fray.

Lamb had not been a diplomatic person in life and had accumulated many enemies. This made it difficult to prune the list of suspects. A second murder

muddied the waters down at the West London Yacht Club. There may have been ties to a third death several years ago. The museum staged a dessert buffet as part of its fund raising. Surprisingly, no one died from a poisoned pastry. Doyle interrogated several people with all the subtlety of Sgt. Joe Friday.

The murders were done by more than one person. Some were done to secure inheritances that would otherwise be lost if a divorce went through. Assorted marriages and re-marriages had produced a tangled web of spouses in debt married to spouses with huge fortunes, not a recipe for a long and happy marriage.

One of the items in the auction had been a Sherlock Holmes first edition donated by Uncle Arthur Doyle. Back room security was sloppy. The back door was unlocked. When the thief went in to get the valuable book, he became a murderer when he found Lamb in the room. All told, a convoluted ending.

Parodies: Radio.

THE NEWLY DISCOVERED CASEBOOK OF SHERLOCK HOLMES was a six-episode miniseries of BBC Radio 2 which aired in early 1999. Free mp3s can be had from www.otrrlibrary.org This was a comedy series that parodied the canon, performed in the music hall style in front of a live audience.

The plots were minimal and served mainly to link the gags together. The humour was broad and low. Holmes and Watson blithered their way up and down the British Isles. Any solutions to the crimes seemed incidental to the setups for jokes. Jolly good fun and worth listening to when you need cheering up.

Pastiches: Radio.

From 1930 to 1956, Sherlock Holmes aired on old-time radio under a variety of titles and networks, with hundreds of episodes. (These and other OTR shows are available as free mp3s from www.otrrlibrary.org.) An example from 1945 was "The Manor House Case", written by Denis Green and Anthony Boucher.

Holmes had gone off on a case in the country without telling Dr Watson where, as a result of which the doctor was rather miffed. Shortly afterwards Inspector Lestrade called at 221B Baker Street, looking for Holmes but having to settle for Watson. There had been an incident in the country where a bomb had been thrown into a manor house where a German diplomatic delegation was staying.

This was in the 1890s, when Germany and Britain were not hostile to each other. The delegation was negotiating a secret treaty with Britain and obviously someone wanted it stopped. The bomb had killed a secretary but the leader of the group survived. What Watson and Lestrade didn't know was that Holmes' brother Mycroft, who was something in the Foreign Ministry, had already called Sherlock into the case.

The German diplomat had to go elsewhere to continue the negotiations, and since the two men looked alike, Sherlock disguised himself as the diplomat. The disguise was good enough to fool Watson and Lestrade.

It should be noted that Watson was played by none other than Nigel Bruce, who always portrayed the character as a buffoon. Watson conducted his own investigation, not seeing through Holmes' disguise. Lestrade wasn't none too bright either.

After a few alarums and excursions, the bomber was exposed. Watson had named the wrong person as the culprit, while Holmes got it in one. However, as Holmes told Watson, a vital clue had been provided by the good doctor, who noticed one of the suspects was a drug addict because she had dilated pupils.

Watson was rather depressed at having botched the case. Holmes tried to cheer him up by pointing out that when he wrote up the case for publication, he could do a little 'editing' and show himself in a better light.

It was noted in the canon that when Holmes solved a criminal case he did not necessarily notify the police if justice had already been served somehow. This was also true in the radio series. "The Adventure Of The Ancient Queen", a 1948 episode written by Max Ehrlich, was about the trouble a British museum was having with a newly imported mummy of an ancient Egyptian queen.

The night watchman had been murdered, and alarums and excursions filled the air. Someone was trying to steal or at least vandalize the mummy. It wasn't until late in the episode that it was realized there were two separate gangs after the mummy, working at cross purposes.

One was a group of jewel thieves who were after the Ruby of Ra, hidden inside the wrappings. The other was a group of Egyptians, trying to get back a portion of their country's looted history. The thieves got the jewel but not for long.

The patriots recovered both the jewel and the mummy, and at once departed for Egypt. Holmes and Watson just missed the Egyptians. Watson suggested the alarm be raised with police, but Holmes said no. The mummy belonged back in its tomb, not in a British museum. Justice was better served that way.

"The Knife Of Vengeance" was a 1949 episode written by Howard Merrill. There's trouble at the steelworks in Sheffield, and Holmes and Watson were called in to help. A partner in a foundry named Pickering was murdered by a vengeful ex-employee named Bennett, whose idea for a new steel alloy had been stolen years ago.

The episode began with an interminable lecture by Bennett during which he told Pickering he was going to murder him with the knife he was holding. The idiot just stood there and listened instead of fleeing or fighting. After the murder, an equally interminable rant followed, as Bennett stood over the corpse and shouted at great length. He did everything but the bwah-ha!-ha!.

Bennett tried to kill his next victim the same way but by that time Holmes and Watson had arrived in Sheffield. His lengthy lecture allowed time for the duo to rescue the victim.

Bennett then fled to the foundry. Because the episode had been padded with so much lecturing, time was running out, so in the final few minutes Holmes and Watson chased Bennett on the catwalks. The matter was decided when Bennett fell into a vat of molten steel. Justice was served without the expense of a trial.

The episode was too much talk and not enough plot. It also relied on Holmes finding a vital clue under the most improbable circumstances and knowing that only one newspaper in the world was published in the Coptic language.

STEAMPUNK REVIEWS: PART 4

by Dale Speirs

[Parts 1 to 3 appeared in OPUNTIAs #364, 393, and 412.]

The Art And Craft Of Steampunking.

THE STEAMPUNK USER'S MANUAL (2014) by Desirina Boskovich and Jeff Vandermeer is a coffee table book about the art, fashion, and performances of this genre. The majority of steampunk fans, as I have observed, did not come into the hobby after reading novels. They were cosplayers or arts-and-crafts hobbyists. This book, while nodding to the literary part, emphasized the visual aspects of this genre.

The authors note that brass goggles, top hats, and corsets are clichés used by lazy cosplayers. They do not make someone steampunkish per se. Any art using gears and clockworks should at least attempt to look functional, rather than sticking gears on at random in impossible configurations.

Spread throughout this book are small projects for the reader to attempt. Some are as simple as bottle cap magnets. Others require ability to work in wood, such as the steam-powered orrery. Art projects should be small to start with, and can increase in size as experience is gained in handling metals and wood. Likewise with steampunk musical instruments.

Costumes need practicality. It is not enough to sew pieces of cloth together. There must be an easy way to dress and undress, and the clothing must hang properly. The wearer should remember that after spending a long amount of time in steampunk garments that they must allow for easy use of the toilet.

There was a brief section on literary steampunk but only a few pages. This book is for the visually oriented steampunker who thinks of the genre in terms of costumes and gadgets. And, of course, brass goggles.

Novels.

Christopher Hoare has a series of steampunk novels set in the Regency period. The heroine was Roberta Stephenson, daughter of George, the Father of Railways. In our timeline he had a son Robert and a daughter Frances who died shortly after birth, so Roberta was one of the divergences. Roberta, succeeded

to management of her father's company but had to struggle to be taken seriously as an engineer.

Another divergence was that Napoleon managed to get most of his army back from the ill-fated expedition to Moscow, then fight the 1813 battle at Leipzig to a draw instead of losing and being forced to abdicate. In these novels, France was still fighting wars and working to develop its steamships.

The first novel in the series was STEAM AND STRATAGEM (2013). Rumours that the French were working on military steamships had been confirmed by a British spy, Lord Bond.

A handsome ladies' man, he got into trouble and was saved by Roberta's sternwheeler. She had trouble keeping him at arm's length, physically speaking, but did appreciate his help in convincing Admiralty House to fund the construction of steam warships.

Many alarums and excursions followed, for French spies were everywhere. Assassination attempts were made, and both sides fumbled about trying to gauge how far the other had gotten in steam technology. Roberta's troubles were constantly magnified by the fact that no one in power would take her seriously because of her gender.

The Stephenson shipyard won the contract for building steam warships to use against the perfidious French. This added more worries for Roberta because a single shipyard could not do the work. She and her father had to contract out some of the construction, which added to the cost and complexity. They had a rich contract from Admiralty House but if they couldn't keep costs under control then the Stephensons would go bankrupt trying to fulfill their obligations.

The construction of the steamships moved at a slow pace. Communications took days even within a country because the postal service had not yet been reformed by Sir Rowland Hill (that came in 1840). The novel may seem to drag to modern readers weaned on telephones and the Internet, but it does make the reader appreciate the slower pace of life, even in war, back then.

The novel cut off with numerous dangling threads. It was mostly set-up and background. The action against the French was only just about to begin when the pages ran out.

SPIES AND SUBTERFUGES (2014) was the next novel in the series. It was not a sequel but a continuation that picked up where the first novel left off. Roberta Stephenson and Lord Bond traveled to the Netherlands, a subjugated province of the French Empire, to do some spying and try to learn about the French pyroscaphes, one of which was rumoured to be a battleship. They were married on board so as to better pass as husband and wife, at which point Roberta learned that if single women had few rights, married women had none.

Most of the novel was taken up by spy and diplomatic narratives that were too tedious to describe as action-adventure. Eventually they caught a glimpse of the new steam battleship under construction. Roberta took notes, and they returned to England for debriefing by Admiralty House.

From there to the third novel, which I did not bother to read. The initial burst of steampunk faded away into alternative history, which in turn became historical fiction. The writing wasn't bad per se, but the pacing trickled along as every nuance of every piece of minutiae was dissected in excessive detail.

THAR SHE BLOWS!: PART 3

by Dale Speirs

[Parts 1 and 2 appeared in OPUNTIA #70.1D and 314.]

Alberta has no volcanos, although we are close enough to Washington State that Calgary was dusted by Mount Saint Helens in 1980. My bright red car turned pale pink, and there was a run in our city for engine air filters. I like stories about volcanos, secure in the knowledge that whatever else may afflict me, they will not force me to evacuate my city. Except, of course, the Yellowstone supervolcano, but it would only bother us if we had a southeast wind, which is rare in Alberta.

"The Thames Valley Catastrophe" by Grant Allen (1897 December, STRAND MAGAZINE, available at www.gutenberg.org) wais a narrative about the flooding of the Thames valley in England by lava after a deep fissure cracked open without warning. The geology of England is all wrong for magmatic floods, but what the hey, it's always good fun to see a city destroyed by natural catastrophe. As long as you don't live in it, or have family there.

The narrator was bicycle riding when he saw the dome of magma rise up at the head of the valley. He frantically pedaled downstream, staying along the ridges, heading to London to get his family. En route, he sounds the alarm to passersby but no one believes his fantastical tale that lava is coming their way.

The lava moved slowly but inexorably, filling the valley as it marched to the sea. London was soon no more. Many towns along the way that were high enough to escape the lava were nonetheless destroyed by fires started from the radiant heat. A good story. I'm surprised Asylum hasn't yet made this into a movie.

"The Great Catastrophe Of 2947" by Woods Peters (1931 May, AMAZING STORIES, available as a free pdf from www.archive.org) was written long before tectonics became an established science. Cities were being destroyed by volcanoes where none would be expected, beginning with Paris, France. Flood lavas erupted in the American grain belt and sent that country into famine.

The narrator was a reporter in Hawaii, and as part of his reportage was sent to find out why, at a time when volcanoes were running amok around the world, Kilauea suddenly went dormant. He fell into a crevasse and found himself at the mercy of a strange subterranean species of bipeds who were out to conquer the surface of the planet. They had a high-tech civilization and bid fair to succeed.

What began the undeclared war was the development of broadcast radio by humans, which interfered severely with the underground technology. Since they controlled volcanoes, they fought back as best as they knew how. The narrator managed to negotiate a truce between the Upper People and the underground people. A slightly facile ending but better than the usual destruction of the bad guys, because they were not bad guys, only defending themselves.

"The Boiling Sea" by Vincent McHugh was a short story published in the 1953 July issue of ARGOSY and later made into an episode of the old-time radio (OTR) series ESCAPE almost unchanged. I haven't seen the written story but do have the mp3 from the radio. (This and hundreds of other OTR shows are available as free mp3s at www.otrrlibrary.org) The story is well done on radio.

The adventure began in 1945 as the Pacific war was winding down, when a freighter took a detachment of military rangers to the Philippines. As the ship

puttered along during the night, everyone noticed a smell of sulphur, and the ship's engineer reported that the temperature of the water intake was steadily rising. At dawn, they were horrified to find out they had sailed into the crater of a newborn volcano, and were surrounded on all sides by the rim.

As the magma rose and heated the water to boiling, they searched for a gap to sail out. It was concluded that they would have to blow open a gap using explosives the rangers were carrying. Various alarums and excursions followed. Finally the ship managed to squeeze out a gap just before the magma surfaced inside the crater. A good story that moved along at a brisk pace.

"The Volcano" (1976 February, MAGAZINE OF FANTASY AND SF) was by Paul Chapin, a pseudonym upon which hangs a story (pardon the pun). As the author's foreword stated, Chapin was a character in a Nero Wolfe novel, THE LEAGUE OF FRIGHTENED MEN, which I reviewed in OPUNTIA #252.

The premise here was that Chapin went on to become a writer, of which this story was one. Getting to the actual prose, it was about a volcano that erupted in the Catskills of New York State, an apparent and blatant impossibility since the geology is all wrong for volcanos. Yet there it was.

At the same time, a private detective was hired by a farmer's daughter in that area to investigate the disappearance of her Mexican boyfriend. She thought her father and brothers may have killed him as they were xenophobic rednecks. The detective found out that this was indeed the case.

The men buried the body in the middle of the cornfield exactly on the spot where the volcano later erupted. Further, an analysis of the volcanic gases by scientists showed that instead of the usual proportions of elements associated with volcanoes, the elements were in the same ratios as those of the human body.

"Fire And Brimstone" by Ken Mitchell (1982 July, ASIMOV'S) was a gloomy story about a cyborg who was horribly burned in an accident when still a human. His brain and spine were salvaged and installed into a cybernetic robot, and despatched by starship to explore. The planet he/it arrived at was dominated by an extremely large active volcano.

After landing, the cyborg decided to commit suicide. Conventional methods didn't work because the body was built to be indestructible, so the cyborg

trekked up to the lip of the volcano to throw himself into the molten lava. A change of heart as the cyborg stared down into the abyss and the abyss stared back. Not too science fictional as it could have just as easily been set on Earth. Avoid reading this on a rainy Sunday afternoon when you are feeling depressed.

FOOD COZIES: PART 13

by Dale Speirs

[Parts 1 to 12 appeared in OPUNTIAs #432, 433, 434, 436, 438, 441, 442, 444, 447, 450, 454, and 456.]

Food cozies are Miss Marple style novels, very popular. Most are worth reading once if you like mysteries, although it is doubtful any of them will stand the test of time. Recipes are generally included, if not at the back of the book, then in between chapters or sometimes integrated into the text. Don't read these books if you have an appetite. I have learned from experience to read these novels on a full stomach.

Baked In Blood.

BAKE SALE MURDER (2006) by Leslie Meier was a novel in a cozy series set in Tinker's Cove, Maine. The local equivalent of Jessica Fletcher was Lucy Stone. She worked as a newspaper columnist in a village that still had a newspaper with paid staff, which obviously makes this fiction.

The ladies of the village were preparing a bake sale in aid of the Hat and Mitten Fund. One of them was Mimi Stanton, a gossipy and contumacious biddy, who while preparing cookies for the sale was rudely interrupted by a knife in the back. Nonetheless the bake sale was a success, bringing in over \$1,200, quite a haul for a small village. Stanton wasn't mourned, having interfered with or insulted almost everyone. Her husband was the prime suspect but Stone went Marpleing. Lots of the usual soap operas were excavated.

The killer was a neighbour housewife whose husband was an escaped murderer, including the murder of Stanton's father. She wanted to ensure the secret stayed that way by killing Stanton and later her brother. The novel wrapped up with plans for another bake sale being discussed.

"Well" began Pam, "you know what a big success the bake sale was, right?" They all nodded in agreement.

"Well, I was thinking about Columbus Day. A lot of people come to Tinker's Cove that weekend to see the foliage. Leaf-peepers. And I was thinking that since we seem to have this bake sale thing nailed, we ought to do it again and get a head start on the Christmas fund. What do you think?"

"Only if I can make my Better-Than-Sex Brownies", said Sue.

"I suppose I can whip up some Kitchen Sink Cookies", groaned Rachel.

Guess what the two recipes were in the appendix. Go ahead, take a chance.

FRENCH PASTRY MURDER (2014) was a later novel in the series. Like Jessica Fletcher from Cabot Cove, Lucy Stone had to go traveling, otherwise Tinker's Cove would be depopulated. In this novel, she went to Paris, France. Neither side was prepared for the other.

Her vacation was to Le Cooking School in Paris. (Where are the language police when you really need them?) She was taking classes from Larry Bruneau, who was a chef involved in more than cooking. Someone stabbed him, and not because the sauce was off.

Stone was used to Marpleing against Deppity Dawgs back in Tinker's Cove. She found out the hard way that the Sureté were different, not to mention France followed the Napoleonic Code law. This put a considerable crimp in her detecting, plus the language difficulties.

Not much about cooking, although everyone was drinking wine in just about every scene. The dead chef had been involved in smuggling and got on the wrong side of a deal involving a rare gold coin. The denouement had to explain a lot of history, but all ended well with another glass of wine. That was in fact the final sentence, a character pouring herself another glass.

MURDER SIMPLY BREWED (2014) by Vannetta Chapman was the first novel in a cozy series set in Amish country. It is peculiar how cozies developed this as a subgenre. There are several series on the theme. Few readers associate the Amish with a high murder rate but enough are buying the books to encourage the writers.

Getting back to the novel, Amber Wright was the general manager of the Amish Artisan Village in Middlebury, Indiana. One of the shops was A Simple Blend,

whose operator Ethan Gray got the plot moving by the manner of his leaving this life. He was found dead by the espresso machine, apparently from a heart attack.

Wright and coffee shop owner Hannah Troyer didn't accept the verdict. The murderer didn't know it but two Miss Marples were trailing him. The women finally got the police interested and everyone drank lots of coffee.

The deceased had quite a back story and there were others with a guilty conscience. Someone was going about leaving notes with quotations from the Book of Daniel, not the most cheerful reading in the Bible.

The murderer was acting out from a combination of drug addiction, a boyfriend with huge gambling debts, and resentment against Wright for a variety of reasons. Be careful the next time you visit a coffee shop.

MURDER FRESHLY BAKED (2015) seemed to change the premise slightly. Amber Bowman operated a bakery in the Amish village. Someone was leaving notes, written in doggerel, that some of her pies were poisoned. She asked Hannah Troyer for help.

Much of the novel was sidetracked into back stories told as flashbacks. One subplot was about an Afghanistan veteran suffering mental problems and the other was a lothario who was shot dead by an ex-girlfriend in the opening chapter. Flashbacks are even more annoying than "As you know, Professor" infodumps, and this novel was riddled with them. No one seemed to be living in the present.

The Poison Poet, getting back to the main thread of the novel, was hurting business at the bakery. The pies tested clean but the notes certainly discouraged customer traffic once the word got out.

It all came down to a bakery employee who was tired of waiting for a promotional opportunity. She thought the embarrassment of the notes might get the manager fired and create a vacancy. She didn't think everything through, for there wasn't much point in getting a promotion if the bakery went bankrupt.

No pie recipes in the book. They'd probably make the reader nervous, even after scanning the lists of ingredients.

A CATERED CHRISTMAS COOKIE EXCHANGE (2013) by Isis Crawford was a novel in a cozy series about sisters Bernie and Libby Simmons of Longely, upstate New York, caterers and Miss Marples to the public. A television show BAKING FOR LIFE was coming to the village for a cookie contest.

There was a local Cookie Club Exchange, with internal politics as vicious as anything in federal politics. The Simmons sisters operated the café A Little Taste Of Heaven. As this was the ninth novel in the series, the name might be better changed to that other place down below.

The front runner in the cookie contest was Millie Piedmont, who quickly exited the stage after a suspicious car accident. She had some fierce competition and it was possible that one of them might have set up the accident. She also had greedy relatives who were tired of waiting for her to die.

After her death, vultures descended and there were multiple break-ins at Piedmont's house. The Simmons sisters were Marpleing inside it, and a pair of Cookie Club Exchange members stole the deceased's recipes. The television producer insisted the show go on because they had a schedule to keep. Chapter 23 concluded with: "Baking as a blood sport", Bernie mused. "It certainly would never have occurred to me."

The accident was a setup by desperate television crew staff who wanted to inject drama and boost the ratings because the series was in danger of being cancelled. Watching a group of middle-aged women bake cookies is dull.

The appendix had some cookie recipes as might be expected. The lead item was more interesting, Christmas Mice, made from chocolate kisses and maraschino cherries.

A BATTER OF LIFE AND DEATH (2015) by Ellie Alexander (pseudonym of Kate Dyer-Seeley) was a novel in a food cozy series about Juliet Capshaw of Ashland, Oregon. Her family operated the Torte bakery and she did Marpleing on the side. She had previously been a chef on a cruise ship but had come back to the village of her birth to join the family business.

Capshaw represented Torte on the Pastry Channel's reality show TAKE THE CAKE. The prize was \$25,000 and a contract for a cooking show. Capshaw had high hopes for her Bavarian Chocolate Cake. The television producers

obviously failed to Google either Capshaw or Torte, for they decided to film some sequences in the village.

One of the contestants was Chef Marco, a legend in his own mind. He was an alcoholic but that was the least objectionable of his many faults. It was therefore no surprise that his body was found face down in a vat of buttercream frosting. Few people mourned the passing of Marco, mainly because they were too wrapped up in their own fussing and feuding.

There were several other high-strung competitors, not to mention the Torte staff and the television crew. Capshaw won the pie making round of the contest, although she didn't win the main prize. She was a busy woman, having to fit in her snooping with the contest and the bakery's regular operations.

There were more alarums and excursions, and the plot thickened like icing. The murderer was one of the competitors, who really, really wanted to win so he could continue his rise to glory as the world's greatest chef. There was a battle between him and Capshaw, with a rolling pin favoured as a blunt instrument.

The novel finally ended well, at least for some people. From there, the reader can enjoy the recipes for Bavarian Chocolate Cake and Amaretto Cookies. I wasn't impressed by the Torte Chili. The Banana Cream Pudding looked delicious, but bear in mind the ingredients included one cup of sugar and three eggs, so it wasn't for anyone on a diet.

Following on was A CRIME OF PASSION FRUIT (2017) when Juliet Capshaw went on a cruise ship as a last-minute replacement chef, talked into it by her estranged husband Carlos. This was the sixth novel in the series. It was stated in the opening paragraph that she had now been in Ashland for eight months. This meant there were five murders in that time period. Even for a Miss Marple she spiked the murder rate sky-high.

The village now being so unsafe that Chicago gang members feared to tread there, this novel returned Capshaw to a cruise ship. Carlos asked her to help out as a substitute until a permanent chef could be found. The first chapter concluded: *Five days in paradise. What could possibly go wrong?*

The reader will already know the answer since there were still 250 pages to go. Capshaw took time out from pastries to discover the body of a young woman. This happened after the ship sailed, so the death wouldn't count against

Ashland. That made it six bodies in eight months for her. One hopes the Oregon State Police had her on a watch list by now.

She had to mix in her Marpleing with making crepes for the passengers. The kitchen ran 24 hours baking all the bread, cakes, and pastries needed. Capshaw had won the captain's heart with her Lemon Jelly Roll, so that helped in the investigating. Plus, being on board a cruise ship, there were no Deppity Dawgs or state troopers getting in her way.

The murderer was a stowaway who had been stalking the dead woman. The usual confrontation and wrap-up explanations were followed by recipes such as Asian Noodle Salad, Peach Coffee Cake, and of course the Lemon Jelly Roll.

TIL DEATH DO US TART (2018) returned to Ashland for more murders. It was late spring and the summer-long Shakespeare Festival was about to begin. Business was hectic for the Torte bakery.

Capshaw's mother was remarrying, which doubled the workload at the bakery because the entire village had been invited to the ceremony and reception. Just to keep the plot bubbling, the bakery was being renovated, and an old friend Lance Brown had returned to the village. Piling on, Carlos was underfoot. One final plot coupon was Capshaw receiving part ownership in the Uva winery, over the objections of another shareholder.

With all these setups, not to mention the frantic cooking, it wasn't surprising that the murder didn't happen until halfway through the novel. At the wedding reception, the victim Megan Antonini drank a glass of poisoned wine. She survived, but after getting out of the hospital, someone finished her off in her office. Capshaw may have been a target as well.

Carrying on in standard Miss Marple mode, such as contaminating a crime scene, theft of evidence, and obstruction of police, she was busy sorting out clues. The killer was working to loot the Brown family trust. Everything was explained over cookies at the Torte.

In the recipes appendix, the Pie Fries were interesting, being French fries made of pie crust and held together with lots of butter. Chili Verde was not a bakery item but was included as a nod to Carlos.

KALE TO THE QUEEN (2017) by Nell Hampton was the first novel in a cozy series about Carrie Ann Cole. She was an American who somehow landed a position as a chef in the Kensington Palace kitchen, cooking for the Duke and Duchess of Cambridge (Wills and Kate, that is).

The head chef Jeffery Butterbottom was not to happy about a Yank in the palace, but the Duchess was the one who hired her, so he had no choice. A good way to start another war between the two countries, one would think. The first few chapters were the setup for her new beginning, so it wasn't until Chapter 4 that she found her first body.

The deceased was Francis Deems, one of Cole's assistant cooks. Somebody got him in the kale beds, a painful place to die. Cole had to keep working in the kitchen: *The palace was old, and I figured that Mr Deems wasn't the first dead man to have been found on the grounds.*

She did take up that fine British tradition of Marpleing, nevermind her constant duties at the stove. Menus were discussed at great length. Don't read this book if you are hungry, for you'll be raiding the refrigerator to make your own fruit compote with lemon ginger sauce.

Deems was a gambling addict whose mother-in-law disposed of him to protect her daughter. The final confrontation in the royal kitchen was fought with knives (the murderer) and skillets (Cole). You know who won. From there to the recipes appendix, with British delicacies such as bread pudding, scones, and Spring Frittata (with kale).

LORD OF THE PIES (2018) was the sequel. Carrie Ann Cole's lemon meringue pie touched off the plot when someone did a face plant into it. She had just begun her Marpleing when another chef dropped. She was also entered in a pie-baking contest, which was definitely waving a red flag. No recipes interspersed between chapters, but the text was padded with infodumps such as the making of Bilberry Pie. I never heard of that one before but Wikipedia said it was the European equivalent of blueberries. Fortunately nothing was said of Spotted Dick, Toad In The Hole, or Bangers And Mash.

The investigation worked out well, which was to say that Cole survived to the end of the book. The murderer was upset about theft of her secret recipes. Two pies comprised the recipes appendix: Rum Banoffe (rum, bananas, and caramel) and Seville Meringue (made with oranges rather than lemons).

CARAMEL CRUSH (2017) by Jenn McKinlay was a novel in a cozy series about Melanie Cooper, Tate Harper, and Angela DeLaura, who were partners in the Fairy Tale Cupcakes bakery in Scottsdale, Arizona. Tate and Angie were getting married, while a friend Diane Earnest was breaking up with her fiancé Mike Bordow.

Earnest wanted Cooper to deliver to Bordow a batch of caramel cupcakes with nasty messages on them announcing the breakup and then record his reaction. Cooper finally tracked the man down but never got his reaction because someone had murdered him. So much for the breakup cupcakes. From there to the screaming and yelling, Marpleing, and confrontations, separated by bouts of baking.

Quite a bit of melodrama ensued. The deceased had slept with a bridesmaid and his future mother-in-law. Cooper moved in with Angie's brother Joe. The bakery had to keep running, not to mention they were displaying at a bridal show. Cooper not only had to bake for all those but for engagement party.

The murderer had been cooking the books at Bordow's catering business and had to silence him before he discovered the false entries. After the denouement was over, it was on to the recipes appendix. It began with Caramel Breakup Cupcakes but without the nasty inscriptions. Following on were other cupcake recipes for Mocha Latte, Key Lime, Cherry Bomb, and Bananas.

Next in the series was WEDDING CAKE CRUMBLE (2018) which carried on with Angie and Tate's wedding preparations. Fairy Tale Cupcakes was busy indeed, including a contract to supply 500 cupcakes to the book signing by controversial author Elise Penworthy. Champagne cupcakes. Her latest novel was a thinly disguised roman-a-clef about the residents in her neighbourhood.

But before that, the first murder. Melanie Cooper was helping Angie run errands for the wedding preparations. The opening chapter began with Cooper fretting that she was a murder magnet. Angie pish-poshed the idea as they stepped into the studio of her wedding photographer and found him dead.

The reader may suspect that the author was having fun with the rules of cozies. The reader will be correct. Cooper had the Homicide number on speed dial, and they had her number on caller ID to speed up the handling of her calls. The body count began to rise at an alarming rate, even for a cozy. The limousine driver booked for the wedding was the next victim.

The book signing was not the usual sedate affair. The woman who stole Penworthy's husband was in the audience. After a screaming match, the woman made for the cupcakes table with obvious intent, but a security guard brought her down with a flying tackle. We never have this sort of trouble at the When Words Collide readercon. Everyone agreed afterward, once the suspects were hauled away, that the cupcakes were delicious.

Penworthy's novel ruined more than a few marriages and reputations. She was the next murder victim, stabbed through the heart with her pen, which proved that it is indeed mightier than the sword. After a fourth victim, the novel had to get to the denouement before Scottsdale was declared a federal disaster area.

The murderer was angry because she had not been included in the roman-a-clef. She wanted to be remembered for something. Concluding the book was the recipes appendix, beginning with Champagne Cupcakes. Judging from the quantities of the ingredients it was not for 500 of them. Other cupcake recipes followed, namely Black Forest, Lemon Lavender, and Bourbon.







Assorted cupcakes from Calgary Safeway supermarkets. Made fresh daily.

A Bakery To Bind Them All.

Joanne Fluke wrote and still writes a series set in the village of Lake Eden, Minnesota, where baker Hannah Swensen was the Miss Marple. The series is up to 25 novels and one cookbook, many of which I have reviewed in previous issues of this zine. Some of the books had two or more murders, so the death toll since Swensen arrived in the village was about thirty or more corpses. I didn't keep an exact count.

I don't know about Minnesota but if the rural village where I was born, Eckville, Alberta, had that many murders, Ottawa would appoint a judicial enquiry. (In Canada, murder is federal jurisdiction, not provincial.) Just once I'd like to see a food cozy series where an angry mob ran the Miss Marple out of town and burned down her store.

Instead of recipe appendices in these novels, the recipes are scattered throughout the text. If someone ate or even mentioned a baked foodstuff, the recipe was in between the chapters.

CHRISTMAS CAKE MURDER (2018) was the 25th novel in this series, but since it was the prequel it will be moved here to the head of the list. It was a flashback to Hannah Swensen's younger days when she was about to move out of her mother's house and open her bakery The Cookie Jar.

Swensen was catering a Christmas Ball in honour of old-timer Essie Granger. The elderly woman was no longer able to look after herself and had to go into a nursing home. The Swensen family helped clear out her apartment for the move. While looking through Granger's old notebooks, Swensen found what appeared to be a crime novel she had been writing.

Lots of baking and talk about it, with recipes every third chapter or so. The Swensen family was somewhat dysfunctional, at least in Hannah's interpretation but not terribly so. As she read through the Granger notebooks, it became evident that the manuscript was based on real events.

Not much happened until the final quarter of the novel when a gunman tried to kill Granger. He died from a heart attack during police interrogation, which threw more gasoline on the fire. The last three pages of the book hurriedly explained the connections between Granger and other characters from days of yore, including a family feud that re-ignited because of Granger's problems.

Lots of cookie and cake recipes throughout the novel. This explained why many of the characters were constantly worrying about their weight. Not surprising when the recipes are examined. For example, the Cashew Butter Blossom Cookies recipe called for 2 cups white sugar, 2 sticks of butter, 2 eggs, and 13 ounces of chocolate.

The first novel proper of the series was CHOCOLATE CHIP COOKIE MURDER (2000), set just after Hannah Swensen had opened her bakery.

Besides all the usual glitches of a startup, Swensen had to deal with her mother, a woman determined to see all her daughters married off and domesticated. Those were all minor details once the Cozy Cow Dairy delivery man was found murdered behind the bakery. Just to sweeten the pot, if you'll pardon the expression, scattered around the corpse of Ron LaSalle were Chocolate Chip Crunchies from the bakery. Well, they would be, wouldn't they?

Chapter 2 began: It wasn't the way that Hannah preferred to attract new clientele, but she had to admit that finding Ron's body had been good for business. The Cookie Jar was jam-packed with customers. Since then, another 24 novels have followed, so the reader will understand why the bakery did so well in a small village like Lake Eden.

And so Swensen went aMarpleing. Besides delivering milk, LaSalle had been making the rounds with a high school coach's wife. The owner of the dairy had a guilty conscience. People who had been missing for years suddenly reappeared, while others disappeared.

After a pause before Chapter 3 for the Chocolate Chip Crunch Cookies recipe, Swensen began excavating soap opera plots and nasty business deals. It all came down to a deadly mix of romance and business, to which LaSalle had been a witness and therefore needed to be silenced.

STRAWBERRY SHORTCAKE MURDER (2001) began with the Hartland Flour company, not having Googled the place or Hannah Swensen's name, choosing Lake Eden for their first annual Dessert Bake-Off. They hired Swensen as Head Judge. The murder was that of assistant judge Boyd Watson, a local high school coach. He was found doing a faceplant into Swensen's strawberry shortcake, recipe given at the end of Chapter 1.

Her bakery/restaurant put a crimp in her Marpleing, but nonetheless she was off and running to beat the police in finding the murderer. Swensen carried a bag of cookies to dispense to everyone she met, which was one way to loosen tongues. Delaying only for the Apricot Bread Pudding recipe, she dug out the scandals and feuds that might have caused Watson's murder.

The cooking contest, mustn't forget that. A contretemps, excluding the murder, and a few more recipes. Be certain to read this book on a full stomach or else you'll be running to the refrigerator every few chapters. Swensen got herself trapped with the killer on the contest stage.

No suspense in the outcome since she was due for another 22 novels in the series while the murderer was a walk-on. He had been supplying steroids to high school students and feared Watson was about to expose him.

One final stop for Chocolate Highlander Cookie Bars. Two cups of sugar, four sticks of butter, and two cups of chocolate chips ensure your diet will be abrogated very decisively.

Be that as it may, let us proceed to BLUEBERRY MUFFIN MURDER (2002), which took place in the run-up to the Lake Eden Winter Carnival. Hannah Swensen was baking away furiously for the big event but became furious for real when the contract for the official Carnival cake went to a cable television chef.

Connie Mac, America's Cooking Sweetheart, as she modestly described herself, arrived in the village with her production crew. Her crew and anyone else who met her described her as rhymes-with-witch. Therefore it was no surprise that she was the victim of this novel, done in by a blunt instrument.

No surprise either was that she was murdered in Hannah's kitchen. She was using it to prepare her cake when she was murdered. The bakery was closed as a crime scene. The cake was burned too. Just one tragedy after another. At the time she was slugged from behind, she had been eating one of Swensen's Blue Blueberry Muffins. The recipe was inserted two chapters ahead of the murder so the reader would be fully informed.

From there to the investigations and recipes. Swensen and the police had different motives for solving the crime. She wanted her bakery back and the police because that is what they do. There was no shortage of suspects and motives. The ending was predictable once Swensen uncovered crucial evidence during a break-and-enter at a suspect's premises.

All kinds of recipes scattered through the novel. I'm not sure why anyone would need a recipe for Grilled Cream Cheese Sandwich. Then again, some people don't know how to boil water for tea.

LEMON MERINGUE PIE MURDER (2003) began with Hannah Swensen's boyfriend at the time, Norman Rhodes, buying a teardown house from local drugstore clerk Rhonda Scharf. The house was full of antiques, of which Rhodes gave Swensen and her mother first choice.

As they sorted through the house, they found Scharf's body. There was a table set for two with partially eaten food, plus one of Swensen's lemon meringue pies (recipe after Chapter 2). On to the Marpleing. As the chapters and recipes alternated, Swensen worried about her weight problem, one of the hazards of being a baker.

Scharf had created some bad feelings by gossiping about a patient's medication, which cost him his job and left him looking for revenge. Her final dinner was with a married man who used it to tell her their affair was over. Scharf knew where a hoard of cash was hidden in the house. As it transpired, that was what the murderer was after.

The confrontation with the killer ended with Swensen being padlocked inside her own walk-in cooler when she was working late at night by herself in the bakery. She survived and justice was served. Also served at the end was a recipe for Pineapple Right-Side-Up Cookie Bars.

SUGAR COOKIE MURDER (2004) started with Hannah Swensen on the committee for the Christmas Buffet. She also produced a cookbook for the occasion. Note that latter item well, for it will appear at the finale.

The plot got rolling when Martin Dubinski attended the buffet in the company of his new wife, a Las Vegas showgirl named Brandi Wyen. The buffet was a night to remember. Hannah's mother had an antique cake knife which was found stuck deep in Wyen's ample cleavage.

A blizzard then blew in, stranding everyone in the community centre. That made it convenient for Swensen, who didn't have all those pesky police officers underfoot while she solved the murder. As another subplot, Swensen's sister Andrea was hugely overdue to give birth but that didn't stop her from attending the buffet.

The death turned out to have been accidental, Andrea went into labour, and the story abruptly terminated on page 168 (trade paperback edition). From there to page 340 was one heck of a recipes appendix, taking up half the book. About 75 recipes at a guess, but I didn't try to count them all. This was in fact the aforementioned cookbook, prefaced with what was a novella.

"The Twelve Desserts Of Christmas" (2006) was a novella by Joanne Fluke in the anthology SUGAR AND SPICE, no editor credited. The main setting was the Lakes Academy boarding school where two teachers, Julie Jansen and Matt Sherwood, were babysitting six teenaged students over the Christmas holidays.

Hormones were running wild, and the students were almost as bad. The school cook was gone for the holidays, not leaving any prepared meals in the freezer on the incorrect assumption that Jansen and Sherwood knew how to cook. Fortunately Jansen had a friend who lived in nearby Lake Eden, none other than Hannah Swensen. When in doubt, get a real cook.

An emergency order went in for 12 dozen Chocolate Chip Crunch Cookies. After a pause for the recipe, plus one for Bon-Bon Brownies, Chapter 2 began with Swensen remarking: *Spending Christmas vacation at school is bad, but kids can survive something like that. Spending Christmas vacation without dessert is the real tragedy.* (Emphasis in the original text.)

Nothing much happened in the story. One student went temporarily missing, and the two teachers became engaged. Nobody was murdered. Very quiet indeed for Miss Marple, pardon me, Hannah Swensen.

The recipes were about the same length as each chapter they followed. Almost all of them started with two cups of sugar and two sticks of butter. Those that didn't only used one cup of sugar, Swensen's idea of diet food.

CANDY FOR CHRISTMAS (2006) began with Hannah Swensen arriving at the bakery and finding a homeless person living there. She was Candice Roberts, whose biography was one of those Lifetime original movies. Don't read this on a rainy Sunday afternoon when you are feeling depressed.

Mostly a melodrama littered with recipes for assorted types of fudge and chocolate items. The good news was that Candy got a job at the bakery and proved good with recipes.

Nobody seemed to pay attention to history in Lake Eden, as witness the 2007 novel KEY LIME PIE MURDER, when Hannah Swensen was appointed a judge in yet another soon to be bloody baking contest. The Tri-County Fair was in progress and Swensen was busy baking goodies for the Chamber of Commerce booth, acting as a magician's assistant, dealing with her vexatious family, and judging a contest. She did, however, have time to find the body of Willa Sunquist, a fellow bake contest judge who was done in by a blunt instrument.

The recipe for Key Lime Pie prefaced Chapter 9, although Sunquist didn't die until Chapter 11. Swensen was carrying a you-can-guess-what pie when she found the body. In her fright, she dropped the pie on the body and it splattered about, a novel method of contaminating a crime scene.

After the Popovers recipe which followed, Swensen began Marpleing. She was experienced at it by now. She still had her bakery to run. The magician act went well. The baking contest was won by Swensen's sister's mother-in-law Regina Todd but the judging was fair and honest.

Todd's recipe was Chippers, flavoured doughballs made with crushed potato chips. The recipe followed immediately after she won the prize. All these events were the prelude to Swensen being trapped on the fairgrounds after hours with the murderer. He had been trying to refinance his business by getting his wife Sunquist out of the way and then marrying an heiress.

A quick wrap-up and then on to the final recipe, Deep-Fried Candy Bars, the epitome of bad carnival food. Et tu, Joanne?

CARROT CAKE MURDER (2008) took place in the summertime, when the living was easy and so was the dying. Hannah Swensen catered a family reunion of her friend Lisa Beeseman, whose long-lost Uncle Gus appeared after having left town decades before. He wasn't in town long, for during the reunion someone stabbed him dead.

Scattered around the corpse were some slices of Swensen's carrot cake. It went without saying that she found the body, and that the recipe for Special Carrot Cake preceded the death. Being well established as a Miss Marple by now, Swensen began investigating. As did the police, but we all know who would solve the crime.

Gus Klein had a past and not a few people who wanted to settle grudges against him. Pausing only for the Funeral Hot Dish recipe, which would probably trigger several more funerals from clogged arteries, Swensen snooped about. Life went on in the midst of death, so she was constantly baking or mixing up salads. Let me repeat my warning never to read these books on an empty stomach.

The Lemon Fluff Jell-O recipe midway through the novel was a lighter repast than most of the recipes, but was later negated by the Chocolate Peanut Butter Cake. Swensen was almost negated by the murderer in a water lily pond. She escaped by hiding in the water amidst the lilies: *She was part of a Monet exhibit, and he wouldn't think to look for her here.*

The killer had settled a bad debt incurred by Klein. Thus we bid adieu to Lake Eden, after a quick stop for Black Forest Brownies.

CREAM PUFF MURDER (2009) took place in the winter when Hannah Swensen's weight problem motivated her to join a fitness club. Someone at the club lost weight the hard way. The body of trainer Ronni Ward was found floating in the jacuzzi by, who else?, Swensen. The Deppity Dawgs immediately suspected Swensen's boyfriend because she had given him a plate of cream puffs to pass on to someone at the fitness club.

Setting aside the question of bearing cream puffs to a gym, the plate of them were found sitting on the deck next to the jacuzzi. That was good enough for the police, although given how many times Swensen's baked goods showed up at a murder in the past, they should have been leery by now.

Swensen therefore went sleuthing. Ward was the town slut who liked married men, so the wives were on the list, as well as angry parents who didn't like her preying on young men. Swensen's first task was to narrow the list of suspects down to about half the village population.

Working her way through a long list of potential culprits, not to mention the recipes every few chapters, Swensen dieted her way to the conclusion. There were 22 recipes for cookies or other bakery sweets, with one strange exception for egg salad. It caused Swensen great anguish to pass by all the food she was cooking.

After a pause for the Lemon Cookies recipe, Swensen went on to the final confrontation, which got her locked in a sauna by the murderer. He had killed Ward because she ruined his nephew, a young man who was like a son to him.

The good news was that despite all her troubles and temptations, Swensen lost enough weight that she had to have her clothes taken in at the waist. Who says you can't have a happy ending to a murder?

DEVIL'S FOOD CAKE MURDER (2011) opened with Hannah Swensen busier than ever in her bakery. Probably all those rubbernecking tourists come to see

the place and craning their necks to see if there was a body lying about. But if it sells cookies ...

The local minister was away on his honeymoon, so the Rev Matthew Walters came in as the locum tenens. After the scene was set with the Red Devil's Food Cake recipe, Swensen found Walters's body in the church study. A single bullet in his head, and yes, that kind of cake scattered on the floor. You knew that already, didn't you.

The cake icing ruined the rug. Swensen's first thought was that hopefully the stain would come out. If that seemed a bit cold-blooded, bear in mind that by now she had discovered about fifteen corpses. Rugs, however, are expensive to clean.

Like all the previous murder victims, Walters had a past. Confusion was added when it appeared that one or more people, including the dead man, may have been imposters. Close attention to the text was necessary to sort out who was impersonating whom.

The why of the murder was stolen jewels from a long-ago heist which had been hidden in the church. The final recipe was Good Kitty Cake, not for human consumption. Swensen had a pet cat, thus the inclusion.

RED VELVET CUPCAKE MURDER (2013) took place during a warm summer at the grand re-opening of the newly renovated Albion Hotel. Hannah Swensen's bakery was catering the event. For the hotel's Red Velvet Lounge, she supplied, well, you read the title of this book.

The guest star and soon to be a corpse was a woman only identified as Doctor Bev to everyone including the reader. She had left town years ago under a cloud but returned on the arm of a wealthy businessman. She was a gold-digger with a past, who left a trail of angry men behind her, and was none too friendly with Swensen.

The Red Velvet Surprise Cupcake recipe was printed after Chapter 2. It turned out to be a surprise to Doctor Bev when someone tranquilized her coffee and then dumped her into a pond. She had been using the coffee to wash down the cupcake, so initially the police suspected Swensen for good and sufficient reason. However, some coffee remained in her thermos, in which tranquilizer was found.

The hotel party was quite an event. Someone pushed Barbara Donnelly off the roof. She survived, just barely. Donnelly was the sheriff's secretary. Plenty of investigating for Swensen to do, in between baking and catering.

The chapters and recipes went by. The Snappy Turtle Pie didn't include any turtles in the list of ingredients. Doctor Bev dropped out of the plot after it was explained she was murdered because she knew who attacked Donnelly. The novel continued on its way as if she had never existed.

The murderer was a Donnelly relative who wanted to adjust the line of succession to the family wealth in his favour. And so to the recipes index, not appendix, since they were scattered through the novel. 21 of them, all fattening.

BLACKBERRY PIE MURDER (2014) began with an article in the local newspaper commenting that it was four months since the last murder. It went on to remark that the Swensen family had discovered all but one body. There followed a box score indicating that Hannah had the most hits, followed by her mother Delores and sister Andrea. The local sheriff told the reporter that Homicide was almost caught up with the paperwork and court testimonies.

Delores was particularly upset by the article because she was getting married again. With 335 pages still to go in the novel (hardcover edition) it was obvious that Hannah had to do something to keep the plot moving. So she did. While delivering cookies in the bakery van, she hit a pedestrian.

After a pause for the Lime Bar Cookies recipe to sooth her nerves, Hannah spent Chapter 4 preparing an order for pirate-shaped cookies for a child's birthday party. She may have seemed a bit callous about the affair, but remember that by now she had dealt with more than twenty murders in the last decade.

The autopsy on the unfortunate pedestrian revealed that he was already dying when Hannah's van hit him. He had been struck several blows to the head and had intercranial hemorrhaging. He also had blackberry pie stains on his shirt. Notwithstanding all that, the Deppity Dawgs charged Hannah with vehicular homicide.

The man was a stranger in town. He turned out to be a pimp chasing down one of his runaway prostitutes. He had gotten into a serious fight with another man. The cookie recipes alternated with investigating and infodumps on what life was really like for prostitutes.

Although the case was solved, there was no happy ending for most of the characters. A grimmer food cozy than most. All those cookies didn't seem to help lighten the mood. Only one pie recipe and you can guess that.

DOUBLE FUDGE BROWNIE MURDER (2015) followed on and was a closely linked sequel to the previous novel. Hannah Swensen was still facing the charge of vehicular homicide on the grounds that she had finished off the victim, not his attacker. It was a bum rap but nonetheless her day in court came. You can imagine the hoorah that erupted when the presiding judge was bludgeoned to death with his own gavel.

Brownie and cupcake recipes alternated with the story setup in the opening chapters. After the recipe for Double Fudge Brownies, Hannah decided to pay a visit to the judge's chambers to talk to him. At this point she was the idiot in the idiot plot. One does not need a law degree to know that you do not attempt to talk to a judge privately if he is trying you in court.

Hannah discovered his body and the rest of the plot was obvious. The judge and the murderer were involved in corrupt politics. That was all anyone needed to know.

The only substance in this novel were the recipes. I use 'substance' as a double meaning, since even for food cozies the recipes were fattening. Double This and Double That. The Banana Frosted Peanut Butter Cookies were something Elvis Presley would enjoy. I'm a teetotaler but to me the Butterscotch Champagne Cocktail seemed to be a travesty and a waste of perfectly good champagne.

WEDDING CAKE MURDER (2016) heralded the imminent wedding of Hannah Swensen to Ross Barton. Before that though, more important matters such as the Food Channel's dessert chef contest in New York City.

Swensen made the journey and won the Hometown Challenge, which brought all the contestants to Lake Eden for the next round. Foolishly the production company didn't Google her name. As this was the 21st novel in the series, they would have learned something to their advantage.

Alain Duquesne, a celebrity chef who needed lessons in human relations, was the late and definitely unlamented victim. He was stabbed to death in a walk-in cooler. Fortunately for Swensen, it was not hers but one at a local inn.

She was quite unhappy because someone had told her that Duquesne liked Vanilla And Butterscotch Hopscotch Cookies. She therefore spent hours preparing some in order to gain his favour. Now it was all in vain. Strangely there was no such recipe in the book.

This time her confrontation with the killer got her locked in a Dumpster bin. She made it out in time to get cleaned up for her wedding ceremony. The murderer had a grudge against Duquesne for the way he treated his mother, a chef in Duquesne's kitchen.

Crockery.

A DEADLY GRIND (2012) by Victoria Hamilton (pseudonym of Donna Lea Simpson) was the first novel in a cozy series about Jaymie Leighton of Queensville, Michigan, near the Canadian border. She collected vintage kitchenware and somehow made a living.

Her sister Rebecca shared title to the house but lived on the Ontario side, having married a Canuck. As the novel opened, Jaymie and Rebecca had just bought an antique kitchen cabinet.

The cabinet was delivered to the house and left on the porch. Also left on the porch was the body of a stranger with no identification on him. Eventually he was named as a rare-documents dealer who operated on the edge of the law. When Jaymie found a letter hidden in the cabinet, written by Button Gwinnett of Revolutionary War fame, that identified the MacGuffin everyone was chasing.

A second murder was done, followed by the usual alarums, excursions, and gunpoint confrontations that make rural villages such dangerous places to live. Move to Chicago and live safer, that's my advice.

The recipes appendix was unusual. There were two variations of Queen Elizabeth Cake, the original World War Two version and a modern interpretation. The recipe had been provided by the late Queen Mother for a charity cookbook. As Victoria Hamilton noted, cooking methods have changed so much over the past seventy years that the vintage recipe was difficult to follow.

BOWLED OVER (2013) was the sequel. Jaymie Leighton had quarreled with an old classmate Kathy Cooper at a Fourth of July picnic. After the fireworks were over, more fireworks erupted when Jaymie found Cooper's body in the park.

Next to the corpse were the smashed remains of a Depression glass bowl, which Jaymie had brought filled with potato salad. The potatoes were gone but her fingerprints weren't. The heavy bowl had been used to bash in the victim's head.

After an infodump explaining what Depression glass is and why it is so valuable, Jaymie began Marpleing. Cooper had back stories and enemies, not to mention life insurance. Jaymie got herself trapped by the murderer but naturally survived.

It all ended on a cheerful note when Jaymie got a contract for a cookbook of vintage recipes. The only one given in this novel was "Jaymie's Fourth Of July Potato Salad". That seemed in bad taste given what happened, even if the result tasted good.

FREEZER I'LL SHOOT (2013) was the third installment in the series. Jaymie Leighton was writing an article about the Ice House Restaurant, owned by her friends the Redmond family. It had been a real ice house long ago and the restaurant was decorated with a collection of ice picks.

At that point, the reader might as well skip ahead 200 pages since the plot was so obvious. For those who didn't get the idea. the murder victim had quarreled with the Redmonds and had an ice pick through his heart. Didn't see that one coming, did you? And Jaymie found his body in her backyard. Just one surprise twist after another.

Jaymie's main problem was writing her "Vintage Eats" column and starting up a foodie blog. Her worries about the murder didn't halt an infodump and the 1950s sandwich loaf, a menu item not missed in today's world. A bloodier than usual finish, but the murderer then conveniently committed suicide, there by saving the State of Michigan the cost of a trial.

On to the recipe, and there was only one, Frosted Layered Sandwich Loaf, which the author recommended for bridal showers. Think of a three-layered submarine sandwich covered in cream cheese frosting.

LETTERS TO THE EDITOR

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

FROM: Lloyd Penney Etobicoke, Ontario 2019-09-28

OPUNTIA #453: I certainly enjoy such events as the festivals held in various parts of Toronto, but more and more, I find them a little dull, and also full of overpriced foods. There was recently a food event at our local shopping mall, in the parking lot, but after seeing some interesting foods for sale, we went home empty handed, and had a great lunch at home.

As a vendor, I understand that you are trying to sell something you have made, with the hopes that someone will like it as much as you do, and will buy it. I am also a smart shopper, which says to me that no matter how much you might like a product, you are under no obligation to buy it, unless you would really like to have it.

When I saw the menu [of the Calgary Arab Festival] with the lamb shawrma on it, it reminded me of the food event we went to, and the horrific prices we saw.

The costumes do remind me of the annual Caribbean Carnival here, but this year, it quickly came and passed, this time with no shootings or anything else that would be reported on the news. So many events have become non-events for us. I guess my slow progress in becoming an old grump is well underway.

[I find one method to avoid becoming an old grump is precisely what I do, get out and look at these events. They're all free with no obligation to buy. All of the Calgary events are put on by volunteers, so as someone who does an immense amount of work for philately, I can appreciate the workload. Think of them as outdoor science fiction relaxicons, each for a different alien society.]

A lot of the old-time radio shows you mention here sound great, but there is never enough time. I wonder if there is a Sirius XM radio channel with OTR shows?

[The Calgary radio station CHQR 770 AM airs old-time radio shows on Friday and Saturday late nights which can be streamed. Look them up on the Internet.

Their Website posts podcasts of some of those shows. Better yet, I download a lot of OTR shows from www.otrrlibrary.org and www.archive.org as free mp3s. The episodes are mostly a half-hour long, which makes them good to listen to if you do a lot of commuting. They certainly beat audiobooks.]

OPUNTIA #454: A friend of ours here says his mother lives in Canmore. He's told us about how Air Farce was not a popular show there years ago, and no one, especially his mother ever got the joke about Mike From Canmore. The routine is long gone, and rightly so.

[It was funny the first few times, but the problem with the Royal Canadian Air Farce comedy troupe was that if a joke got laughs they would repeat it endlessly in future episodes as long as someone chuckled. For the benefit of my non-Canadian readers, the character of Mike From Canmore was always a first-time caller to a radio talk show. He had about three functioning neurons and drove the host crazy with inane comments. Sort of like a verbal version of Twitter now that I think about it.]

[Re: skyscrapers] We all know about the missing 13th floor in most buildings (ours certainly does not have one), but I believe in China, there is no fourth floor in many buildings, as well as 14th, 24th, 34th, etc. The TWILIGHT ZONE episode mentioned, "The After Hours", was also remade in the late 1980s as an episode of the first reboot of TZ.

I asked my wife Yvonne about the French on the Harvey's cup you showed. She said that the average French speaker (and she is one) would take "Comme tu le veux point final" as "As you like it, period", which is something the chain has offered for decades re: topping on your burger.

Over the years, she has seen terrible French translations on domestic consumer products, offered her own far better translation, and then received products as a way of thanks. If there is too much type on a cup or cereal box here, think about some European domestic products, which could have as many as a dozen languages on the packaging. I remember years ago seeing a European box of Frosted Flakes, covered in type, and a small illo of Tony the Tiger up in the corner.

My letter: It looks like I write about all the places we didn't get to, like Fan eXpo and the Canadian National Exhibition. Both events are simply too big for us.

[Alexander Woolcott's quote] "Everything I like is either illegal, immoral or fattening", so true, but if we could make Brussels sprouts taste like chocolate, we'd all be a little healthier.

The Calgary steampunks didn't know the original of the word "steampunk" came from K.W. Jeter? Astonishing.

OPUNTIA #455: Great mountain photos, and I especially like the one with the Canadian Pacific freight train at the bottom. We love trains, and take them as often as we can. Often, there's not enough money, but we do try.

[Re: Beakerhead festival] I like the pet kraken bursting through the Global Pet Foods store.

[Re: reviews of pulp stories] Seeing the old AMAZING STORIES covers from eras past makes me a little proud to be working on the modern-day version. In some ways, I wish I could have been around near the heyday of the SF pulps to be a part of things.

[Excluding, of course, the Great Depression, no health care, and the rise of the Nazis. AMAZING STORIES has had umpty reincarnations. I'm sure that a century from now someone will be reviving it for the fortieth time.]

SEEN IN THE LITERATURE

Paradise, A., et al (2019) **Habitable snowballs: Temperate land conditions, liquid water, and implications for CO₂ weathering.** JOURNAL OF G E O P H Y S I C A L R E S E A R C H: P L A N E T S 124:doi.org/10.1029/2019JE005917

Authors' abstract: Habitable planets are commonly imagined to be temperate planets like Earth, with areas of open ocean and warm land. In contrast, planets in snowball states, where oceans are entirely ice covered, are believed to be inhospitable.

However, we show using a general circulation model that terrestrial planets in the inner habitable zone are able to support large unfrozen areas of land while in a snowball state. Due to their lower albedo, these unfrozen regions reach summer temperatures in excess of 10° C.

Such conditions permit CO_2 weathering, suggesting that continental weathering can provide a mechanism for trapping planets in stable snowball states. The presence of land areas with warm temperatures and liquid surface water motivates a more nuanced understanding of habitability during these snowball events.

Studies examining the ability of Earth-like planets to host life have often used conditions leading to "snowball" events, where sea ice extends all the way to the equator, as a limit to the range of habitable climates. This has been based on the assumption that snowball planets are always below freezing everywhere on their surfaces.

As the chemical process by which CO_2 is removed from the atmosphere and bound in surface rocks relies on warm temperatures and liquid water and therefore would not happen in globally cold conditions, this has also led to the conclusion that snowball events should be temporary, coming to an end when volcanoes release enough accumulated CO_2 to warm the planet enough to melt the ice.

We ran several thousand three-dimensional computer simulations of Earth-like climates and found that if there are inland areas of dark, bare ground under enough sunlight, those regions can be warm enough for liquid water and life without causing the sea ice to retreat.

This suggests that snowball planets should not be excluded as inhospitable to life and that on some planets the burial of CO_2 in surface rocks in these areas could balance volcanic emissions, resulting in permanent snowball conditions.

Woodhead, J., et al (2019) **Kimberlites reveal 2.5-billion-year evolution of a deep, isolated mantle reservoir.** NATURE 573:578-581

Authors' abstract: The widely accepted paradigm of Earth's geochemical evolution states that the successive extraction of melts from the mantle over the past 4.5 billion years formed the continental crust, and produced at least one

complementary melt-depleted reservoir that is now recognized as the upper-mantle source of mid-ocean-ridge basalts.

However, geochemical modelling and the occurrence of high ³He/⁴He (that is, primordial) signatures in some volcanic rocks suggest that volumes of relatively undifferentiated mantle may reside in deeper, isolated regions.

Some basalts from large igneous provinces may provide temporally restricted glimpses of the most primitive parts of the mantle, but key questions regarding the longevity of such sources on planetary timescales, and whether any survive today, remain unresolved.

Kimberlites, small-volume volcanic rocks that are the source of most diamonds, offer rare insights into aspects of the composition of the Earth's deep mantle. The radiogenic isotope ratios of kimberlites of different ages enable us to map the evolution of this domain through time.

Here we show that globally distributed kimberlites originate from a single homogeneous reservoir with an isotopic composition that is indicative of a uniform and pristine mantle source, which evolved in isolation over at least 2.5 billion years of Earth history, to our knowledge, the only such reservoir that has been identified to date. Around 200 million years ago, extensive volumes of the same source were perturbed, probably as a result of contamination by exogenic material.

The distribution of affected kimberlites suggests that this event may be related to subduction along the margin of the Pangaea supercontinent. These results reveal a long-lived and globally extensive mantle reservoir that underwent subsequent disruption, possibly heralding a marked change to large-scale mantle-mixing regimes. These processes may explain why uncontaminated primordial mantle is so difficult to identify in recent mantle-derived melts.

Hsieh, S., et al (2019) **The modern and fossil record of farming behavior.** PALEOBIOLOGY 45:395-404

Authors' abstract: Farming is a behavior in which an organism promotes the growth and reproduction of other organisms in or on a substrate as a food source. A number of trace fossils have been suggested to record the occurrence of farming behavior. These include the deep-sea graphoglyptid trace fossils,

proposed to be microbial farms on the seafloor, and terrestrial fossil social insect nests thought to represent fungicultural behavior.

The presumed farming behavior of graphoglyptids is the basis of the ethological category agrichnia. Four criteria have been proposed as diagnostic of farming behavior, and these can be applied to both observed modern and proposed trace fossil examples of farming behavior. The evidence for farming behavior in the social insect trace record is strong but is much weaker in the case of graphoglyptids. The use of agrichnia as an ethological category should be limited to well supported cases.

Dahl, T.W., et al (2019) **Atmosphere-ocean oxygen and productivity dynamics during early animal radiations.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 116:doi.org/10.1073/pnas.1901178116

[Bioturbating animals were the first mobile predators that burrowed through the seabed for prey.]

Authors' abstract: We have discovered two major oceanic anoxic events (OAEs) in the early Cambrian at the time when animals markedly diversified. We present a multiproxy constraint on the global biogeochemical cycles to show that these events, in contrast to most younger OAEs, could have been driven by declining atmospheric O_2 levels, plausibly set off by the appearance of bioturbating animals.

Pulses of animal appearances may have occurred at different times on different continents, but the last pulse occurred after the OAEs and at a time when we predict higher marine productivity and O_2 levels in the surface oceans suggesting energy supply into the marine food chain was maximal. The proliferation of large, motile animals 540 to 520 megayears ago has been linked to both rising and declining O_2 levels on Earth.

To explore this conundrum, we reconstruct the global extent of seafloor oxygenation at approximately submillion-year resolution based on uranium isotope compositions of 187 marine carbonates samples from China, Siberia, and Morocco, and simulate O_2 levels in the atmosphere and surface oceans using a mass balance model constrained by carbon, sulfur, and strontium isotopes in the same sedimentary successions.

Our results point to a dynamically viable and highly variable state of atmosphere-ocean oxygenation with two massive expansions of seafloor anoxia in the aftermath of a prolonged interval of declining atmospheric pO_2 levels. Although animals began diversifying beforehand, there were relatively few new appearances during these dramatic fluctuations in seafloor oxygenation.

When O_2 levels again rose, it occurred in concert with predicted high rates of photosynthetic production, both of which may have fueled more energy to predators and their armored prey in the evolving marine ecosystem.

Guido, D.M., et al (2019) Life is everywhere in sinters: examples from Jurassic hot-spring environments of Argentine Patagonia. GEOLOGICAL MAGAZINE 156:1631-1638

Authors' abstract: Jurassic siliceous hot-spring (sinter) deposits from Argentine Patagonia were evaluated to determine the distribution and preservation quality of their entombed microbial fabrics. Detailed study showed that the Claudia palaeo-geothermal field hosts the best preserved sinter apron in the Deseado Massif geological province, where we also found hot-spring silica-biotic interactions extending into hydrothermally influenced fluvial and lacustrine settings.

Carbonaceous material was identified by petrography and Raman spectroscopy mapping; it is inter-laminated with silica across proximal vent to distal marsh facies. The ubiquitous presence of microbial biosignatures has application to studies of hydrothermal settings of early life on Earth and potentially Mars.

Koonina, E.V., and M. Krupovic (2019) **Origin of programmed cell death from antiviral defense?** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 116:doi.org/10.1073/pnas.1910303116

[Eukaryotes are cells with nuclei and prokaryotes are those without. All multicellular organisms and many unicellular organisms are eukaryotes.]

Authors' extracts: Viruses and other genetic parasites are ubiquitous in the biosphere, and virtually all cellular organisms evolved multiple defense mechanisms to cope with onslaughts of these parasites. In multicellular life forms, a major class of such mechanisms is programmed cell death (PCD),

whereby an infected cell "commits altruistic suicide" to prevent infection of other cells.

Many unicellular eukaryotes and prokaryotes also possess PCD pathways but, in this case, the function and, especially, the evolution of such self-destructing mechanisms remain controversial topics because it is not immediately clear how unicellular organisms would benefit from suicide.

Gao et al. speculate that PCD evolved from prosurvival defense mechanisms, expanding on a previous model under which PCD evolves as an initially maladaptive by-product of prosurvival defense mechanisms but is subsequently co-opted as an altruistic strategy, via kin selection.

This does not necessarily have to be the case if PCD evolved at an early stage in the evolution of life as an altruistic defense mechanism, via population-level kin selection that would promote primitive forms of multicellularity.

Mathematical models of the evolution of defense systems suggest that such a scenario is realistic. Moreover, given the tight links between PCD and immune mechanisms, it seems plausible that these defense strategies evolved concomitantly such that PCD is turned on when immunity fails.

Hodgskiss, M.S.W., et al (2019) **A productivity collapse to end Earth's Great Oxidation.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 116:17207-17212

Authors' abstract: The Great Oxidation Event (GOE) ca. 2,400 to 2,050 Ma caused the first significant accumulation of free oxygen in the atmosphere and potentially a dramatic growth of oxidant reservoirs on the Earth's surface in a suggested oxygen overshoot. However, the termination of this event remains poorly understood.

Here, we present geochemical data suggesting a drastic decline in gross primary productivity across the end-GOE transition, delineating a shift from feast to famine conditions characteristic of the next 1 billion years.

It has been hypothesized that the overall size of, or efficiency of carbon export from, the biosphere decreased at the end of the GOE. However, the timing, tempo, and trigger for this decrease remain poorly constrained. Here we test

this hypothesis by studying the isotope geochemistry of sulfate minerals from the Belcher Group, in subarctic Canada.

Using insights from sulfur and barium isotope measurements, combined with radiometric ages from bracketing strata, we infer that the sulfate minerals studied here record ambient sulfate in the immediate aftermath of the GOE (ca. 2,018 Ma). These sulfate minerals captured negative triple-oxygen isotope anomalies as low as \sim -0.8‰. Such negative values occurring shortly after the GOE require a rapid reduction in primary productivity of >80%, although even larger reductions are plausible.

Given that these data imply a collapse in primary productivity rather than export efficiency, the trigger for this shift in the Earth system must reflect a change in the availability of nutrients, such as phosphorus. Cumulatively, these data highlight that Earth's GOE is a tale of feast and famine: A geologically unprecedented reduction in the size of the biosphere occurred across the end-GOE transition.

Lindgren, J., et al (2019) Fossil insect eyes shed light on trilobite optics and the arthropod pigment screen. NATURE 573:122-125

Authors' abstract: Fossilized eyes permit inferences of the visual capacity of extinct arthropods. However, structural and/or chemical modifications as a result of taphonomic and diagenetic processes can alter the original features, thereby necessitating comparisons with modern species.

Here we report the detailed molecular composition and microanatomy of the eyes of 54-million-year-old crane-flies, which together provide a proxy for the interpretation of optical systems in some other ancient arthropods. These well-preserved visual organs comprise calcified corneal lenses that are separated by intervening spaces containing eumelanin pigment.

We also show that eumelanin is present in the facet walls of living crane-flies, in which it forms the outermost ommatidial pigment shield in compound eyes incorporating a chitinous cornea. To our knowledge, this is the first record of melanic screening pigments in arthropods, and reveals a fossilization mode in insect eyes that involves a decay-resistant biochrome coupled with early diagenetic mineralization of the ommatidial lenses.

The demonstrable secondary calcification of lens cuticle that was initially chitinous has implications for the proposed calcitic corneas of trilobites, which we posit are artefacts of preservation rather than a product of in vivo biomineralization. Although trilobite eyes might have been partly mineralized for mechanical strength, a (more likely) organic composition would have enhanced function via gradient-index optics and increased control of lens shape.

Godfree, R.C., et al (2019) **Historical reconstruction unveils the risk of mass mortality and ecosystem collapse during pancontinental megadrought.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 116:doi.org/cgi/doi/10.1073/pnas.1902046116

Authors' abstract: It is thought that extreme, decade-scale megadroughts pose a major future threat to global biodiversity under climate change. However, such events occur rarely and so their capacity to drive ecosystem change remains largely unknown.

Here we address this question by reconstructing the impacts of an extreme, historical megadrought period (1891 to 1903) on plant and animal assemblages across the Australian continent. The geographic extent (=2.8 million km2) and taxonomic depth (>45 families) of impacts observed during this event were remarkable and include mass population mortality and broad, bottom-up trophic collapse in multiple subcontinental hotspots.

Trophic analysis reveals a bottom-up pattern of mortality concentrated in primary producer, herbivore, and omnivore guilds. Spatial and temporal reconstruction of premortality rainfall shows that mass mortality and synchronous ecosystem-wide collapse emerged in multiple geographic hotspots after 2 to 4 y of severe (>40%) and intensifying rainfall deficits.

However, the presence of hyperabundant herbivores significantly increased the sensitivity of ecosystems to overgrazing induced meltdown and permanent ecosystem change. The unprecedented taxonomic breadth and spatial scale of these impacts demonstrate that continental-scale megadroughts pose a major future threat to global biodiversity, especially in ecosystems affected by intensive agricultural use, trophic simplification, and invasive species.