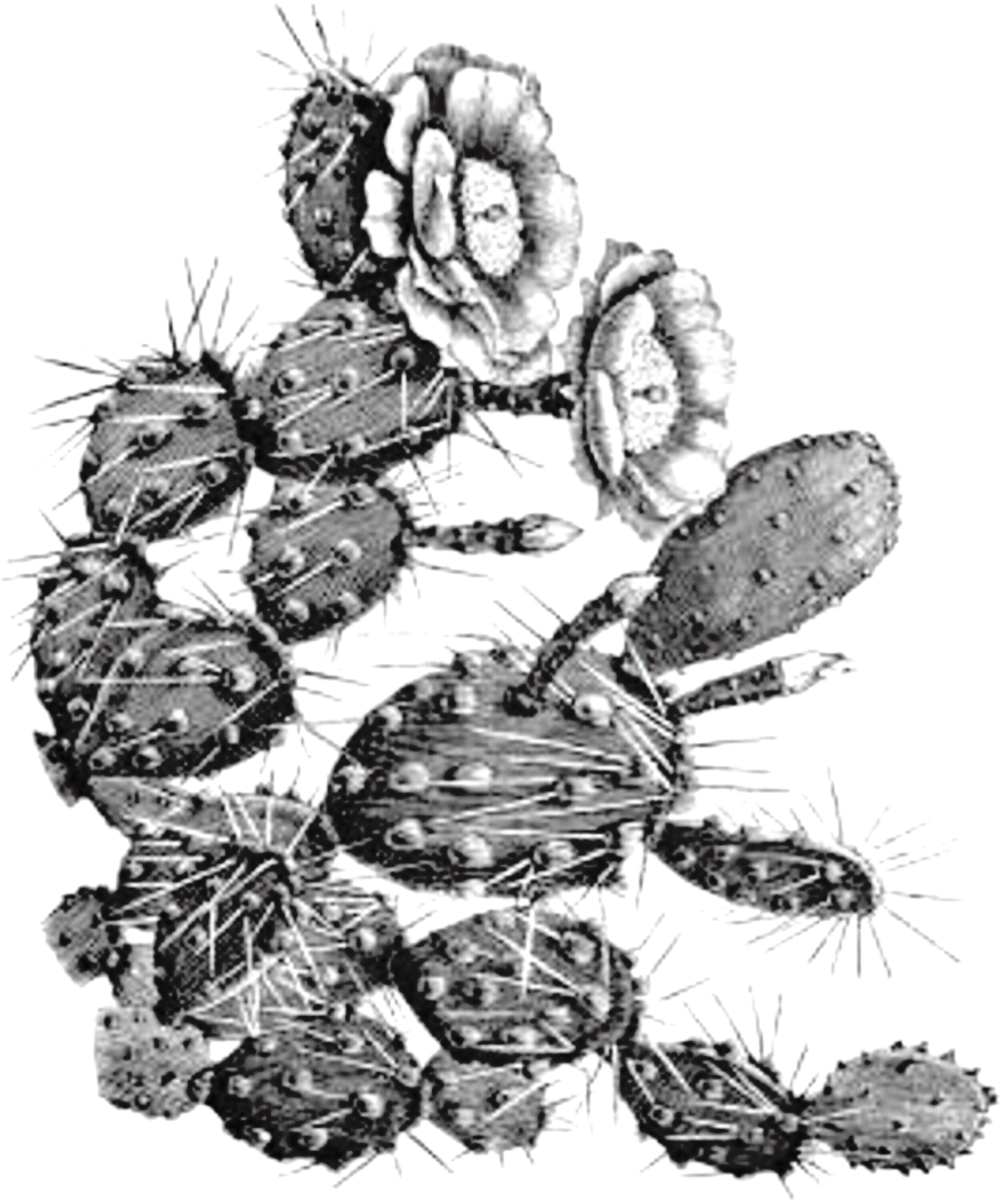
OPUNTIA 433



Edgar Allan Poe's Birthday 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.

ABOUT THE COVER: The cover of this issue depicts *Opuntia macrorhiza* var. *filipendula*. The image comes from CACTUS CULTURE FOR AMATEURS, published in England by W. Watson in 1889, and downloaded from www.gutenberg.org. At that time he was Assistant Curator at the Royal Botanic Gardens in Kew, London.

AROUND COWTOWN
by Dale Speirs

January is the winter doldrums in Calgary, so nothing on the cover about goings-on in our fair city. We've had a mild winter so far, with temperatures averaging about -10ºC in a dry cold.

Cannabis in all forms was legalized in Canada on October 17, 2018, by federal law. The stuff with active ingredients is sold only in specialized stores, in the same way that alcohol can only be bought in liquor stores or a tavern off-licence. However, there are other forms now appearing in stores. I photographed the example at right in a Safeway supermarket. And no, I don't indulge.

The first driving while impaired by marijuana cases are showing up in police reports, and I've seen a few stoners prancing along the downtown sidewalks. Our brave new world.

EDGAR GALLOPING POE: PART 6
by Dale Speirs

[Parts 1 to 5 appeared in OPUNTIAs #325, 332, 344, 356, and 370.]

The Secret Death And Life Of Edgar Allan Poe.

In the real world, Edgar Allan Poe died in 1849, after being found lying in the streets of Baltimore, delirious from the final stages of alcoholism and wearing cheap clothes not the ones he had dressed in earlier. His last words were the name 'Reynolds', repeated several times. None of his friends, nor did anyone else, recognized the name.

Poe's life was a mess at the time of his death. Several stories have used the premise that he faked his death so he could get away and make a new start under a new identity.

"Poe Posthumous, Or, The Light House" (2008) by Joyce Carol Oates, is from her short-story collection WILD NIGHTS. It is based on a single-page manuscript found in Poe's estate after his death in 1849, which Oates extrapolated.

The narrator was Poe himself, as a written diary. He had just taken up a six month tour of duty as a lighthouse keeper in the South Pacific, west of Chile. The date of the first entry was October 7, 1849, the date that he supposedly died in Baltimore in our timeline. He had successfully faked his death and now looked forward to peace and quiet.

His moods fluctuated from optimism that he would do some great writing to crushing depression about his loneliness. A bipolar man. Matters were not helped when he discovered that he was part of an experiment on how humans react to isolation over long periods of time.

Poe gradually went insane, turning into an animal, and not just figuratively. The finish to the story reads like something Lovecraft would have written. There were descriptions of eldritch creatures who would have been at home in the Cthulhu Mythos. The madness of Poe is stereotypical in pastiche fiction but Oates managed to come up with a different look to it.

"Father Of The Man" (2018) by Stephen Volk appeared in the anthology GASLIGHT GOTHIC, edited by J.R. Campbell and Charles Prepolec, a collection of original Holmes pastiches. The story rather neatly ties together several true life, pastiche, and canon events from both Poe's life and fiction and Sherlockiana. Poe is considered the father of detective fiction.

Sherlock Holmes was a young man, in Paris studying the new science of forensic detection invented by Poe. His tutor was C. Auguste Dupin, none other than Poe himself, who had fled America after faking his death in 1849 for a fresh start in France under the identity of his fictional detective. Currently they were working on a serial killer who was terrorizing prostitutes in Paris.

The dead man left behind in Baltimore was named Reynolds, a doppelganger for Poe. They met by accident and as Poe saw him dying in the street, he seized the unexpected opportunity to switch identities and disappear over the ocean on board the ship Gloria Scott (which name Sherlockians will recognize). As Dupin, he built up a reputation as a consulting detective with the Sureté.

A man claiming to be a Pinkerton detective arrived with a Daguerreotype of Reynolds, and was looking for proof that he is dead or alive in Paris. This put Holmes in a quandary, so he arranged an elaborate plan with Poe qua Dupin to be buried alive in a coffin, made up to look like a corpse, then be exhumed to prove Reynolds was dead.

The Pinkerton man was revealed to be Reynolds's illegitimate son and the serial killer. He was arrested by the Sureté, escaped, and vanished. Years later, Holmes set up his practice in London, about the same time Jack the Ripper began his killing spree. The inference was obvious.

The story will read better to Sherlockians, for there are many subtle references to the canon that neatly tie in with Poe as well. A good story overall.

I'm With The Raven.

THE PORT-WINE STAIN (2016) by Norman Lock is an angst-ridden novel narrated by the protagonist Edward Fenzil. In the winter of 1844, he met Poe while working for Thomas Dent Muetter, a surgeon who collected medical curiosities. The book was an over-long whine about how sad Fenzil's life was.

His meeting with Poe was not on the order of Johnson and Boswell but a gloomier version. Poe dragged Fenzil down to his level, the sybaritic life. The narrative became one long vignette about the association between the two, and the long decline of both.

A few good lines though. Fenzil visited Poe's house and found a parrot that kept saying 'Nevermore'. But those lines are few and far between. Poe declined to his death on a Baltimore street, and Fenzil to his incarceration in an insane asylum. Not a book to read on a rainy Sunday afternoon when you are feeling depressed.

EDGAR ALLAN POE AND THE JEWEL OF PERU (2018) by Karen Lee Street was set in Philadelphia in 1844. Political tensions were high between nativist bigots and Irish immigrants. Poe and his friend, the French detective C. Auguste Dupin, were asked by Helena Loddiges to investigate the death of her boyfriend Jeremiah Mathews, just after he returned from Peru.

Poe had his own problems. His wife Virginia was seriously ill. He was receiving threatening parcels. The first contained three dead crows (what? no ravens?), the second a male voodoo doll, and the third a female doll obviously meant to be Virginia.

Reading through Mathews's diary and examining personal effects turned up lots about Peruvian birds. Soon it became obvious that a jewel had been stolen and was the MacGuffin of the story. Poe was a pioneer cryptographer who popularized secret codes as puzzles for newspaper readers. He found a message to be puzzled over. A priest was murdered, a man named Reynolds appeared, and the plot meandered about.

The crimes were mostly solved and the perpetrators mostly given justice. Instead of ending with a traditional denouement, either a J'accuse! meeting or an "As you know" infodump, the novel concluded with reportage of the anti-Catholic riots of that year. The nativists declared the only good Papist was a dead one. As the city burned and the streets filled with tumult, the Poes fled to New York City where, I am sure, the next installment in this series will be set.

Cozies.

THE TELL-TALE TARTE (2017) by Maya Corrigan is a novel in a cozy series about Val Deniston of Bayport, Maryland. She managed a café but got in lots of Miss Marple time. All the more annoying for her when her grandfather took an online course in private investigation and then set up in business.

Granddad's first paid job was for Rick Usher, a local author who wrote Edgar Allan Poe pastiches. Granddad was asked to change his appearance to look like Usher and substitute for him at public engagements. The excitement began when a different doppelganger was murdered in a shopping centre parking lot. No one knew if the deceased was the actual target or if the killer thought he was attacking Usher.

The defunct was a small-time actor who impersonated Poe on the side. With a wig and makeup, that is, for neither he nor Usher looked like Poe otherwise. In Maryland, Poe is very big, especially around Baltimore, and is considered a local boy made good. They have an entire industry of Poe impersonators putting on one-man shows.

Another connection was established when Deniston was hired to work in Usher's café, called, to no one's surprise, House of Usher. Only then did she discover what Granddad had been up to. She learned that Usher's books were 'co-written' by Clancy Curren, who actually did all the work.

The real Usher didn't show himself in public. He might be dead or mentally incapacitated. The doppelgangers were hired to allow the fraud to go on. The plot complicated as more and more people impersonated each other, either in person or in writing. One has to compile a list to tell all the players apart.

The war between the living pastiches ended up at Poe's grave in Baltimore. The denouement came at the grave when Curren tried another murder, and his elaborate plot was unmasked. There were lots of threads to follow. I think they were all tied up at the end but am not entirely certain.

The Days Of Wine And Masonry.

"The Cask Of Amontillado", first published 1846, is one of Poe's most famous stories, that of the man Fortunato being walled up alive in a catacomb by Montresor. The idea has been re-used a number of times, both as straightforward adaptations of Poe's story and by incorporating the concept into other shows. Old-time radio series that aired the story were WEIRD CIRCLE and HALL OF FANTASY.

CANDY MATSON was an old-time radio series that ran from 1949 to 1951, about a female private investigator. (This and other OTR shows are available as free mp3s from www.otrrlibrary.org.) It was unusual for the time. Candy Matson didn't scream or have fainting spells in her job and was as tough as her male counterparts when it came to violent situations. The episodes were written and produced by Monte Masters, whose wife Natalie Park played the lead role.

The dialogue was snappy and the action brisk. Matson lived in a penthouse apartment on Telegraph Hill in San Francisco, from where most of her cases began. Her boyfriend was SFPD Detective Ray Mallard.

Her best friend and confident was Rembrandt Watson, who operated a photography studio. He was a blatant poofter, rather surprising for broadcast shows in those days when homosexuality wasn't just a sin but a felony offense. His part was played seriously, not as a comic turn.

"The Egyptian Amulet" was a 1950 episode which began when Matson dropped by police headquarters to visit Mallard. He was sitting at his desk mulling over an amulet recovered from the body of a murder victim. It might be a clue but he couldn't read the inscription on it. Matson told him that Watson knew a number of languages and might be able to translate it. Mallard handed the amulet to her and away she went. So much for chain of custody of evidence.

Watson was in a dither when she arrived at his apartment, having just been served with notice to vacate because the neighbourhood was being redeveloped, including his building. He identified the inscription as Egyptian and quickly translated it. With that out of the way, the two of them went looking for new quarters for him.

They found what seemed an ideal site, one that he could even buy outright instead of just renting. It was a two-story building, so he could live above his shop. While talking to the landlord, they noticed an inscription written on one of the ceiling beams. Yes, that one. Too coincidental, but there it was. The building had previously been used as a temple by a mystic.

The two decided to come back later and snoop around. They were caught by the bad guys, who, it transpired, had been milking gullible people of money with their mumbo-jumbo mysticism. The murder victim had intended to complain to the police when she learned she had been taken in by the racket.

Matson was held in the basement, where the con man began walling her up in a recess. This was good for dragging out the suspense. As the villain mortared the bricks into place, he explained at length his nefarious deeds. He set the last brick in the wall, but before he could go bwah-ha!ha!, Mallard burst in with gun drawn and rescued her.

Not up to the best standards of old-time radio, but worth listening to once. Too many wild coincidences to be believable.

WHEN WORDS COLLIDE 2019

Calgary's annual readercon When Words Collide will be held again on the weekend of August 9 to 11, 2019. The venue is the Delta South Marriott hotel on Southland Drive SE on Bonaventure Drive. A writing-centred convention, with an excellent dealer bourse where only books can be sold. My reports on previous WWCs can be found in OPUNTIAs #71, 253, 266, 282, 318, 350, 387, and 421.

The membership is capped at 750 plus volunteers and guests, and always sells out by June, as do room reservations and banquet tickets. More details from: www.whenwordscollide.org

FOOD COZIES: PART 2
by Dale Speirs

[Part 1 appeared in OPUNTIA #432.]

Cozy mysteries 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. Like zines and Websites, there numerous specialized cozies. I have learned from experience to read these novels on a full stomach. Recipes are generally included, if not at the back of the book, then in between chapters or sometimes integrated into the text. It can be very dangerous to read these books if you have an appetite.

How To Be A Whiz With Cheese.

LOST AND FONDUE (2011) by Avery Aames (pseudonym of Daryl Wood Gerber) is a novel in a food cozy series about Charlotte Bessette of Providence, Ohio. She operated Fromagerie Bessette, which the less pretentious town folk called The Cheese Shop. Bessette had agreed to cater a wine-and-cheese fundraiser for a new college to be built in an abandoned winery. There were legends that treasure was buried there, but notwithstanding that, the building was neglected for decades. The party spirit was dampened when the body of a local artist was found in the wine cellar during the fundraiser. A friend's niece was the chief suspect so Bessette began sleuthing.

Even before the crime, the village was not that quiet. A separated couple were having a very noisy and public battle over child custody. The deceased had gambling debts, and after his death someone stole his artworks. A widow got herself pregnant by her dead husband using a sperm bank. Descendants of the original winery owner were back in town looking for the treasure.

The finale took place in the cellar of the winery where the killer decided that what was good enough for Poe and Montresor was good enough for him. He attempted to wall up Bessette in an alcove but with a single bound she was free and all that. The murderer was a descendant of the winery founder who wanted the treasure and stopped at nothing to get it.

The recipes in the appendix didn't inspire me. Adding cheese to something doesn't make it a gourmet item.

TO BRIE OR NOT TO BRIE (2013) carried on the adventures of Charlotte Bessette. She was in a serious relationship, catering to a local Shakespeare production, and catering her cousin's wedding. She had time to invent Brie Blueberry Ice Cream. Pay attention to that one.

The first body, and of course there was one, was that of a stranger found dead in the freezer room of the Igloo Ice Cream Parlor. The blunt instrument used on him was a 5-gallon container of Bessette's ice cream. Other than force of habit, there seemed no reason for Bessette to go a-Marpleing but a well-trained fire horse always answers the bell.

The defunct was an ex-husband of the villager. For additional text padding, one of the shopkeepers was on the edge of bankruptcy. Bessette annoyed the local police by racing them to every potential witness. In between her snooping, she was forced to spend time in her shop actually earning a living. It was, as per cozy economics, a remarkably busy store for such a small place.

There was a complicated tangle of past relationships amongst the villagers. Assorted exes, grown children, and immature adults clouded the view. It all came down to money or the lack of it. The victim had left a substantial estate.

The recipes appendix began with Brie Blueberry Ice Cream, which is cooked on a stove, go figure. Can be served with the next recipe, Broccolini, Pine Nut, and Edam Cheese Quiche. Diet? What diet?

DAYS OF WINE AND ROQUEFORT (2014) began quietly enough. Nothing much happened except that Charlotte Bessette was asked to host a visiting sommelier Noelle Adams, who had been hired by a local winery as a consultant.

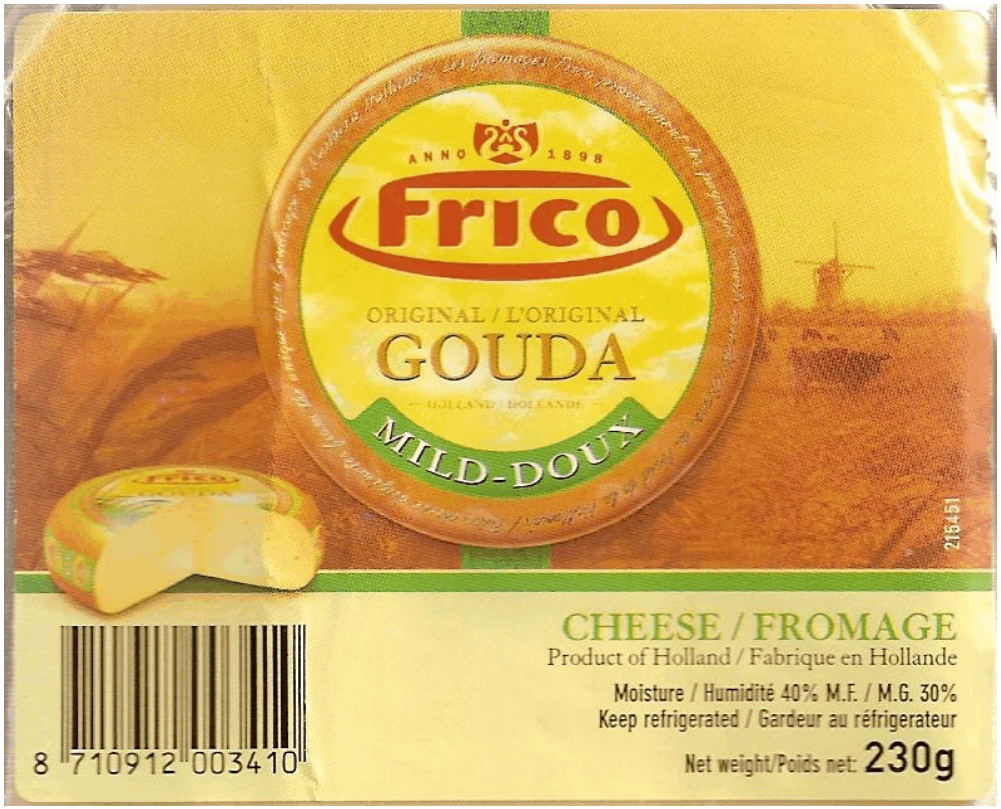
Foolish woman that Adams was, she did not Google the name Bessette, and for that neglect died in Bessette's garage with a bottle corkscrew in her throat. The culprit might have been a violent ex-boyfriend. The winery management were a shifty lot. Adams was a woman with a past who left a trail of broken hearts behind her. Bessette uncovered other past entanglements between village folk. Each chapter dredged up a fresh suspect.

Ordinary life had to go on. The cheese shop needed restocking as villagers wandered in and bought up rare types of cheeses that no big-city shop would carry. I wonder about that.

I grew up in rural west-central Alberta, where no village had or has today a specialty cheese shop. Farm wives do not ask for a wedge of Chiriboga Bleu and a bottle of Plavac Mali Croatian wine to go with it, as happened in this novel. I feel safe in saying that in any village, Bessette's or my birthplace, the best selling wine is Thunderbird, just the thing to go with a brick of Co-op cheddar.

But I digress. Bessette managed to fit in quite a bit of sleuthing when she wasn't slinging cheese over the counter. She got herself trapped with the killer, as Miss Marples always do, but managed to fight her way out. The murderer had been substituting wine at the winery, replacing vintages with plonk, and had killed Adams before he could be exposed.

After all that, one can refresh the palate with a variety of recipes in the appendix, such as Turkey Chevre Pizza a la Pepere (turkey and goat cheese pizza) or, for the truly pretentious, Roquefort Bosc Pear Quiche.



AS GOUDA AS DEAD (2015) took place during the run-up to Valentine's Day. Bessette was about to be married to cheese farmer Jordan Pace when a local tavern owner was discovered drowned in a vat of milk on the Pace farm. The murderer was in serious trouble because Bessette did not want her wedding plans ruined by a murder investigation. She was out for blood.

It didn't help that the cheese shop was busy, with lots of sales such as baskets of heart-shaped cheeses. A fresh set of villagers as supporting characters meant a fresh set of back stories to be uncovered, with lots of clues that pointed to everybody. A second murder pepped up the middle of the novel.

It all came down to adultery. Bessette found the killer the hard way but since she was the star of the series, there was no suspense about her surviving the encounter.

The murders were good for business, as the epilogue revealed, with the cheese shop doing a roaring trade. Maybe all those Miss Marple shopkeepers are on to something. Open a specialized shop in a rural village and then investigate every murder in the county. That would bring in the customers.

The recipes appendix went slumming with Cheese Pops and Macaroni and Cheese Appetizer. The Apple Bacon Gouda Quiche seemed better.

FOR CHEDDAR OR WORSE (2016) took place during the annual Cheese Festival. Presumably the Providence, Ohio, district was dairy country enough to justify it. Charlotte Bessette had a hitherto unmentioned friend named Erin Emerald who owned a country inn on a dairy farm specializing in goat and Cheddar cheeses. As part of the festival, Emerald was hosting a conference for cheese makers, marketers, and food critics.

Lara Berry was an author and cheese fancier who met her demise at the inn. She was Standard Murder Victim #1, that is, a loud-mouthed boor with a trail of ex-lovers, former business partners, victims of her harsh food critic columns, and just plain enemies. Her murder was not a complete surprise to those who knew her. Bessette leaped into the fray to help Emerald.

The festival did distract Bessette though, what with the artisanal cheese contest and the surge of pedestrian traffic through her store. She detailed the immense amount of cheeses and wines she was selling. Granted that there was a village festival underway, but she had more sell-through in a few hours than a big-city cheese shop would do all day.

Specifically mentioned was that she sold a $500 bottle of Lafite Rothschild Pauillac, then convinced the buyer to take $100 worth of Boerenkaas Gouda to go with it. No wonder she could afford to spend so much time Marpleing. She was wasted out there in the village.

Few village wine shops have Rothschild on the shelves, although any of them could special-order it from a wholesaler for a customer. If you're a drinker, just for fun, ask about it the next time you stop by your local off-licence for a bottle of plonk. I'd like to know.

Be that as it may, Bessette did her snooping about, bringing to light that which preferred to stay in the dark, and getting herself trapped with the murderer. Berry's KTF review of the killer's family cheese business had destroyed it. Revenge, like cheese, is best served cold.

In the recipes appendix, neither the Zucchini Cheddar Kebab nor the Penne Tomato Vodka Cream Sauce appealed to me. In the latter, the recipe included thick cream and kosher salt, which didn't seem right. The Peanut Butter Quiche should be banned by international treaty.

Spicy Stories.

Unlike other food cozies, I have no problems with over-eating while reading novels about spicy cooking. It doesn't agree with me. My idea of spicy is putting HP sauce on steak.

REVENGE OF THE CHILI QUEENS (2015) by Kylie Logan (pseudonym of Connie Laux) is a novel in a cozy series about Maxie Pierce and her half-sister Sylvia, proprietors of the Hot-Cha Chili Seasoning Palace. They were taking part in the Chili Showdown at San Antonio, Texas, which is not a village. That meant the murder would go unnoticed in the crime statistics.

The victim was a musician nobody had heard of before, performing in the Chili Showdown. There was a lot of vicious competition among the vendors, particularly against a company that sold canned chili. The prime suspect was on the Show Committee, and about whom both Maxie and Sylvia dreamed amorous thoughts. So they turned up the heat on the investigation, and not with spices.

There was a beauty contest for Miss Consolidated Chili (the canned goods), with nasty feelings between Miss Texas Triangle and Miss Texas Chili Pepper, both vying for the title. The murder came down to revenge for an incident that happened years ago and had nothing to do with chili. The defunct musician had been responsible for an innocent man being railroaded into prison. One of the beauty queens hadn't forgotten that.

The wrap-up had only one recipe in the appendix, for Almost Authentic Chili Queens Chili.

HERE TODAY, GONE TOMALE (2015) by Rebecca Adler was the debut novel in a cozy series about Josie Callahan of Broken Boot, Texas. She lost her newspaper job in the big city, her fiancé unfriended her on Facebook, and the best employment she could find was waitress at the Milagro Tex-Mex restaurant. It was owned by her aunt and uncle Linda and Eddie Martinez, who had raised her after she was orphaned when she was twelve.

The Wild West Festival was about to begin. The Milagro hosted a tamale-making party in preparation for the tamale eating contest. One of the attendees was local jewelry maker Dixie Honeycutt, left over from 1960s hippiedom. She didn't make it to the Festival, having been murdered outside the Milagro after

the party had concluded. Worse yet, the air conditioner in the Milagro broke down, no laughing matter during a west Texas summer.

The police arrested one of the waiters because he was Mexican and that was good enough for them. Callahan had romantic designs on him, so she went into the Miss Marple business. Honeycutt had been strangled with her own turquoise necklace, which then disappeared.

It re-appeared at the eating contest inside a tamale, when Elaine Burnett, a contestant, swallowed it whole and almost died from choking. The crowd watching the contest were disappointed there wasn't a fair finish to the contest. Some of them must have had bets down.

There were some other emotional entanglements and past histories with Callahan's classmates. There was bad blood between several families. Callahan wasn't impressed by the local Deppity Dawgs.

Honeycutt had been a blackmailer. Burnett had hidden the necklace among the tamale ingredients at the party, and hadn't been able to retrieve it after the police came and went. She had almost been hoist on her own petard.

The ending was slightly bizarre but its pieces did fit together nicely. And so to the tamale recipes in the appendix. A fair start for the series.

THE GOOD, THE BAD, AND THE GUACAMOLE (2016) was the second novel in the series. Josie Callahan was still waitressing at the family restaurant but was now a part-time news reporter. This time around, the Homestead Days celebration was on. At the Two Boots dance hall, country singer Jeff Clark was the headliner. He had been courting Callahan's friend Patti Perez, who was in the singer-songwriter competition.

Callahan did not approve and went to Perez's house, only to discover Clark's body at the kitchen table, face down in a bowl of guacamole. He was naked and had been beaten to death with Perez's electric guitar. He was a skirt chaser but had other enemies.

His band certainly didn't miss a beat. Since they were booked for two more weeks at the Two Boots, the backup singer took over and they became the Clay Conley Band.

Callahan now had the excuse of being a news reporter to justify her snooping. So it was off to the Marpleing again, searching out back stories. She even dined once with a suspect at Burnett's restaurant. Elaine was doing hard time in Huntsville prison, and the restaurant was operated by her daughter Suellen.

Perez had a competitor in the Homestead Days singer competition who wanted to thin out her rivals. The grand finale was during a football game. Callahan confronted the killer along the sidelines, who then ran the field. At the start of the chase was the funniest line in the novel when Callahan shouted "*That woman has a gun!*". The audience was confused, for what woman in Texas didn't?

The motive came out of bounds, to carry on the football theme, when it was revealed that Clark hadn't gotten the murderer pregnant. A Texas soap opera indeed. Like its predecessor, this novel used a complicated twist ending, but it read well.

The recipe appendix began with a plain guacamole recipe, as might be expected, then segued into Mexican Lime Soup, Cheese Enchiladas, and Pecan Crusted Tilapia, all to be washed down with a Peach Margarita.

The third installment was CINCO DE MURDER (2018). As might be guessed from the title, it was set during the Cinco de Mayo festival. The villagers of Broken Boot had a parade and every restaurant doubled down on their Tex-Mex recipes. Josie Callahan's Uncle Ernie sponsored a Chili Cook-Off, and she was dancing in a folklorico group.

One of the chili competitors was Lucky Straw, as nasty a man you'd never want to meet. His nickname was a misnomer, as he didn't survive past Chapter 3. It might have been murder, a heart attack, or food poisoning. Not to worry though, as the cook-off continued. The dances went off without a hitch.

The alarums that littered the pages of this novel eventually resolved themselves into revenge against Straw by an angry ex-employee who had been fired without a reference. That was four years ago, but revenge is a dish best served cold, unlike chili.

The closing recipes were too spicy for me, beginning with the Venison Chili. The Texas Eggs recipe was what we in Alberta call a Western Omelet.

SHERLOCKIANA: PART 30
by Dale Speirs

[Parts 1 to 29 appeared in OPUNTIAs #63.1B, 63.1C, 63.1D, 67.1D, 68.1C, 69.1E, 70.1A, 71.1B, 251, 253, 256, 261, 269, 270, 276, 288, 309, 333, 340, 348, 356, 359, 365, 370, 383, 397, 410, 416, and 423.]

The original Sherlock Holmes stories written by Sir Arthur Conan Doyle are known as the canon. Later stories written by other authors are called pastiches. Sherlock Holmes was born on January 6, so I'll put this installment in this issue to share the honours with Edgar Allan Poe, whom Doyle acknowledged as the founder of the detective story as we know it today.

Pastiches: Novels.

THE FINAL SOLUTION (2004) by Michael Chabon began on the Sussex Downs of England in 1944, where an extremely elderly man lived. Once a famous detective, he now kept bees and rusticated as he waited for his end.

A 9-year-old refugee German Jewish boy appeared, as if by magic, carrying an African grey parrot that recited code numbers in German, interspersed with poetry by Goethe and Schiller. The parrot was stolen, murder was done, and the ancient Holmes toddled off at the request of authorities to investigate what those German numbers represented. The search led through bombed-out cities, and to a spy who kidnapped the parrot to hear it recite the numbers.

That part of the novel wrapped up with the recovery of the bird, but the question remained about what the numbers represented. The ending was a twist, taking place at a train station where a troop transport rumbled past.

The boy began chanting the train numbers as they went by, and it became obvious the parrot was mimicking him. For the boy had seen such trains in Germany and memorized their numbers, only they weren't carrying troops. If you don't understand that, re-read the title of this novel.

Pastiches: Short Stories.

The 2019 Jan/Feb issue of ELLERY QUEEN MYSTERY MAGAZINE carried on its tradition of featuring pastiches in the first issue of each year. The first was "The Dragon's Mark" by Keith Hann, which had from Watson one of the funniest opening lines I've ever read: "*There is a creature of Celtic legend whose wail, it is said, can shatter glass, turn one's hair grey, and wake the very dead. I speak, of course, of our dear landlady Mrs Hudson.*"

She had good reason to wail, as a bloodied intruder had entered 221B Baker Street. The man had been severely bitten and his last words were "*The dragon!*". Holmes did some investigating but came to a dead end, you'll pardon the expression.

The story jumped to an apparently unrelated case when Wesley Hadderton, the trustee of a pension fund, came to Holmes for help. The pensioners were all disappearing without a trace. The story took a bizarre trip past reptile smugglers, the Opium Wars, and the revenge of a Chinaman against Hadderton and others who created the opium trade that destroyed his country.

"The Cardboard Box" by Terence Faherty is part of a series of "first drafts" of the canon stories. Faherty imagines that the published versions were cleaned up and heavily edited from the original stories, so he re-wrote them, and included Watson's marginal notes and editorial remarks. The results are hilarious.

In this one, Holmes kept mis-diagnosing his deductions and clue interpretations, necessitating Watson to fix up the logic holes. This case was about the sudden disappearance of Abigail Crusher after she received a small cardboard box in the mail. She had two sisters who didn't like her, there was a bigamist sailor, and the earrings of all three were vital clues. An amusing read.

"Mrs Hudson Investigates" by Tony Lee and Bevis Musson (2016, in the anthology ECHOES OF SHERLOCK HOLMES, edited by Laurie R. King and Leslie S. Klinger) was set just after Holmes apparently fell to his death at Reichenbach Falls. The story was told in comic strip form, well drawn by Musson. The graphics carried good humour in both the text and the background artwork. For example, 221B had a cello conspicuous in the background. Holmes, of course, played the violin.

Mrs Hudson took up detecting, to Watson's disbelief and doubt. Her first case was for the Bank of England, to find out who intercepted a shipment of banknotes. Irene Adler made an appearance, along with her housekeeper Mrs Stabknife, formerly a servant of the late Professor Moriarty. Hudson broke the case, sending Adler and Stabknife up the river. Said Watson: *"Well done, Mrs Hudson. You know, I always felt that Adler was an untrustworthy bitch*."

Pastiches: Radio Series.

The radio series was long-running, from 1930 to 1955. From 1939 to 1946, Basil Rathbone and Nigel Bruce played the parts they had made famous in the movies. Rathbone did not want to be stereotyped, so he left the series for another one, where he played an English detective. Spot the difference. Bruce stayed on for another year before retiring.

"The Haunted Bagpipes" was a 1947 episode, no writer credit given. It began with a discussion of Edinburgh's mists. Any other place it would be a heavy rainfall warning. Holmes and Watson visited the Old Town of Edinburgh, where Moriarty was holed up, although they didn't know it at first. It was raining, or as Holmes insisted, a Scottish mist.

They had been hired by a landlord whose tenements on Hangman's Lane had been evacuated by renters who were fleeing because of a haunting in one of the houses. It had been boarded up for centuries because its inhabitants died of the Black Death. Nonetheless, the sound of bagpipes could be heard coming from within. No one would venture inside to investigate it for fear of the plague.

Holmes told Watson of the legend of a tunnel between Edinburgh Castle and Holyrood Palace. Long ago a piper took a bet to walk the length of the tunnel, while a crowd followed his sounds from above ground. Halfway along, the music suddenly cut off, and the piper never emerged, nor was anyone brave enough to go down inside.

The story said that the Devil liked the piper's music so much that he spirited him away to Hell. Watson, a sensible doctor, replied that more likely a pocket of poisonous gas had accumulated in the tunnel.

At Hangman's Lane, they heard the haunted bagpipes in the abandoned house and went into it to investigate. As they entered, they noticed a crack in the building foundation. Mark that well; it will be mentioned again, for the house was unstable and shifting.

Inside, they found some recent bodies dead from the plague. Moriarty appeared, puffing away on the bagpipes. He told them he had been experimenting with the plague, reconstituting the bacteria from samples gathered inside the house and then tested on some street people.

Revenge was his motive, for complex reasons duly explained at great length. He granted Holmes a last request, to play the bagpipes. Holmes did so at a different pitch, designed to crack the walls further. The vibrations brought down the house. Holmes and Watson fled in one direction and Moriarty in another. Holmes set the ruins on fire to destroy the plague samples and purify the land.

A slightly better than average pastiche. Watson, for once, was played as an intelligent man as he would be if a medical doctor and former military officer.

Another 1947 episode, again no writer credit given, was "The Carpathian Horror". Holmes and Watson were hired to travel to Carpathia and assist Count Paul Romania. The poor fellow feared he was going mad and might be the vampire blamed for terrorizing the village, etcetera. The usual sort of goings-on that one expects in castles in that part of Europe.

It was all a plot against the Count. He had been poisoned with small doses of cannabis to drive him mad. It was done by a servant who wanted revenge for the way his family had been treated by the Count's family. A rational explanation for irrational behaviour.

This will be an interesting episode for Canadian readers, because cannabis in all its forms became legal on October 17, 2018, by federal law. Humans have been poisoning themselves with tobacco and alcohol for millennia, and now we add another one to the list in the Great White North.

Pastiches: Television Series.

In 1954-55, Sheldon Reynolds wrote, directed, and produced a series of new adventures of Sherlock Holmes. To save costs, the shows were filmed in France. Holmes was played by Ronald Howard and Watson by Howard Marion Crawford.

The episodes were pastiches or very loose adaptations of canon stories, sometimes just using a similar title but different plot. There was continuity between episodes, as characters occasionally referred to something which happened in a previous episode. The plots were mostly mundane but watchable.

The series is in the public domain and consequently popular with boxed DVD set purveyors. I have it on the Ultimate Sherlock Holmes TV set but it is

missing a few episodes which, however, are covered by some other boxed sets. The video transfers are good, albeit some scenes quite dark due to primitive television cameras in those days.

Watson was portrayed as a reasonably intelligent man, not as the blithering fool that Nigel Bruce made him and which fixed the public's image of Watson. Crawford does sometimes bumble along, but for the most part is what one would expect of a trained surgeon and ex-military man. Inspector Lestrade is played as a buffoon for comic relief. One wonders how he made it past foot patrol.

The first episode in the series was "The Case Of The Cunningham Heritage". Watson had just returned from Afghanistan and was introduced to Holmes. They took up quarters in 221B Baker Street. Inspector Lestrade, as he was in subsequent episodes, tramped through the crime scene and arrested the obvious suspect. No surer proof of innocence can be obtained than the fact that Lestrade had arrested the guest star.

Young Peter Cunningham was stabbed to death in a mansion. His mother and brother Ralph blamed his fiancee Joan, who has a prior criminal record for petty offences. There were a couple of twists, for Joan revealed that she was secretly married to Peter the week before, and will therefore inherit. Ralph was the black sheep of the family, and had been blackmailing Peter for money. He'll hang for fratricide.

The story moved along steadily, but had a mundane plot. Without Holmes, it would be a forgettable mystery story.

EXOBIOLOGY FOR FUN AND PROFIT
by Dale Speirs

I believe there is life elsewhere in our galaxy and certainly the rest of the universe. There probably is sentient life on other planets, and very likely sapient life, possibly with the same sort of space travel we are capable of. I do not believe in UFOs or alien conspiracies, mainly because the speed of light isn't just a good idea, it's the law. Aliens aren't going to spend centuries traversing the stars just to give enemas to American rednecks.

"The Take Me To Your Leader Affair" (1966) was a Season 3 episode of THE MAN FROM U.N.C.L.E., written by Bernie Giler. Radio astronomer Dr Adrian Cool, assisted by Dr Trebush, had spotted a UFO heading to Earth. Cool's beautiful daughter Coco (really? that's what her parents named her?) was kidnapped, providing one of the basic functions of a mad scientist's daughter.

Cool had informed UNCLE, which dispatched Solo and Kuryakin to investigate. The opening sequence was an aerial shot of a jungle-covered Caribbean island, which suddenly zoomed down into a desert terrain with a radio telescope complex that was not visible in the aerial shot despite the huge size of the dishes. It then jumped to the UNCLE agents arriving on an obvious studio stage set with assorted potted plants.

Solo and Kuryakin were met by Coco (Nancy Sinatra in a bikini and thigh boots made for walking). She was not a scientist and was bored silly. Her father talked to the agents and told them he wanted UNCLE to put a lid on the story to avoid causing a world panic. Coco was then kidnapped, and Kuryakin taken with her while trying to rescue her.

It turned out there was a second mad scientist in the mix, a millionaire (billionaire in today's currency) named Simon Sparrow. He arrived at the island on his yacht after Solo departed to find Kuryakin and Coco. Sparrow Dynamics built the observatory and supplied all the other radio observatories in the world with equipment.

Sparrow told Cool the signals are fake, part of his plan for world domination, bwah ha! ha!. He had kidnapped Coco to ensure her father's cooperation. There were various excursions as Solo and Kuryakin went about their separate business. Solo came across Sparrow's fiancee and romanced her, while Coco wasn't having much luck romancing Kuryakin in their lockup.

Kuryakin escaped by cutting the window bars with a miniature chainsaw hidden in the heel of his shoe. Even Maxwell Smart over at CONTROL never had anything so ridiculous, but then again Season 3 of TMFU was played as comedy. Everyone, agents and women, ended up back in captivity, and were taken aboard Sparrow's flying machine, a triangular UFO.

Sparrow launched his UFO from the ground, a triangular barrage balloon used by the television studio on a tight budget. He broadcasted from it, telling the leaders of the world that the aliens had decided to leave the planet in peace

subject to the stipulation that a man named Simon Sparrow should be designated World Leader.

A fight in the back of the UFO broke out as the agents attacked the henchmen. Surprisingly, the women don't just watch helplessly and scream during the fight. Coco kicked one of the bad guys overboard through a hatch, and the fiancee grabed a handgun and emptied the clip into Sparrow's back. All was well.

MARTIANS IN MAGGODY (1994) by the late Joan Hess was part of a series about Arly Hanks, chief of police and the entire police force in the village of Maggody, Arkansas. The novel began with a local farmer announcing that crop circles had appeared mysteriously in his cornfield. He was known as a teller of tall tales, and charged tourists $1 a head to look at the circles. That didn't stop the news media from piling on, quickly followed by UFO nuts and tabloid reporters.

The local citizenry compounded events with reports of strange lights in the sky, silver-headed aliens roaming about, cattle mutilations, and hairy humanoids with big feet. A 300-pound woman claimed she was impregnated by an alien, although her husband begged to differ. All of them felt compelled to report these events to the police force, ie, Arly Hanks, as if she could do anything about it. Everyone in the village was trying to make money from the craze.

Against her better judgement, Hanks went out to a remote creek to check one such disturbance. She found UFO nut Brian Quint, lying dead on the bank from poisoning. The investigation was hampered by the flood of people roaming around looking for ETs. Eventually she determined that Quint had a falling out with his fellow UFO nuts. He tried to take them out the hard way but they were faster and more vicious.

There was a J'accuse! meeting, followed by an extended epilogue in which all the events are exposed one by one as hoaxes. The novel was quite amusing and a good read, unless you genuinely believe in UFOs.

Reverse Exobiology.

From the point of view of aliens, Earthlings can be annoying as well. Take for example the spread of weeds or pests on other worlds. "To Choke An Ocean" by Jesse F. Bone (1960 September, WORLDS OF IF) is about the invasion of the oceans of the planet Niobe by oysters.

The Niobians were humanoids who were adapted to a very spicy diet, hotter than any chili lover on Earth could withstand. They considered Earth food very bland. They produced an anti-aging substance called gerontin, so Earthlings were desperate to get some kind of trade going.

Then someone introduced them to oysters in pure tabasco sauce. Starship economics being what they were, it was too expensive to ship oysters on the shell to Niobe, so as a friendly gesture, live oysters were sent to seed one of their ocean bays for future growth. The plot became obvious:

"They're nice healthy specimens of terrestrial Ostrea lurida. We found a floating limb with about a dozen spat clinging to it."

"Spat?"
"Immature oysters."
"Oh. Is that bad?"

"Sure it's bad. I suppose I'd better explain", Bergdorf said. "On Earth an oyster wouldn't be anything to worry about, even though it produces somewhere between sixteen and sixty million fertile eggs every year. On Earth this tremendous fertility is necessary for survival, but here on Niobe where there are no natural enemies to speak of, it's absolutely deadly!"

"Just take these dozen spat we found. Year after next, they'd be breeding size, and would produce about three hundred million larvae. If everything went right, some three years later those three hundred million would produce nine thousand trillion baby oysters! Can you image how much territory nine thousand trillion oysters would cover?"

Well, yes we can, and so the story unfolded. Having wrecked Niobe's oceanic ecology, the Earthlings had to convince them to accept the natural predator of oysters for introduction, the starfish The Niobians also liked to eat starfish, so they could keep both populations in check as needed..

There were complications, more to do with Terran and Niobian politics than the actual ecological problem, but finally success. The story emphasized problems such as slow-moving bureaucrats and the forced reorganization of Niobian culture. They had been a loose confederation of tribes, but effective pest control required a planet-wide government with ability to act. The cultural changes caused by oysters were greater than the ecological changes.

SEEN IN THE LITERATURE

Lingam, M., and A. Loeb (2019) **Relative likelihood of success in the search for primitive versus intelligent extraterrestrial life.** ASTROBIOLOGY 19:28-39

Authors' abstract: *We estimate the relative likelihood of success in the searches for primitive versus intelligent life on other planets. Taking into account the larger search volume for detectable artificial electromagnetic signals, we conclude that both searches should be performed concurrently, albeit with significantly more funding dedicated to primitive life.*

Based on the current federal funding allocated to the search for biosignatures, our analysis suggests that the search for extraterrestrial intelligence (SETI) may merit a federal funding level of at least $10 million per year, assuming that the average lifetime of technological species exceeds a millennium.

Totani, T., et al (2019) **Lethal radiation from nearby supernovae helps explain the small cosmological constant.** ASTROBIOLOGY 19:126-131

[Lambda is the symbol of the cosmological constant, the rate at which the universe is expanding. It is normally shown as a symbol, a capital A without the crossbar, but I can't get that to work in my software, so I spelled it out. Lambda is the value determined from equations. $Lambda_{obs}$ is the actual observed lambda.]

Authors' abstract: *The observed value $Lambda_{obs}$ of the cosmological constant Lambda is extremely smaller than theoretical expectations, and the anthropic argument has been proposed as a solution to this problem because galaxies do not form when Lambda »$Lambda_{obs}$. However, the contemporary galaxy formation theory predicts that stars form even with a high value of $Lambda/Lambda_{obs}$ ~ 50, which makes the anthropic argument less persuasive.*

Here we calculate the probability distribution of Lambda using a model of cosmological galaxy formation, considering extinction of observers caused by radiation from nearby supernovae. The life survival probability decreases in a large Lambda universe because of higher stellar density. Using a reasonable rate of lethal supernovae, we find that the mean expectation value of Lambda can be close to $Lambda_{obs}$; hence this effect may be essential to understand the small but nonzero value of Lambda. It is predicted that we are located on the edge of habitable regions about stellar density in the Galaxy, which may be tested by future exoplanet studies.

Speirs: $Lambda_{obs}$ is the observed cosmological constant, which is far smaller than the theoretical calculations. Even Einstein couldn't get the equations to work properly. Physicists have been tying themselves into knots trying to resolve the contradiction, inventing dark matter and dark energy to help explain away the discrepancy.

It has a bearing on our existence because Lambda determines the density of stars in a galaxy. The higher the density, the less likely life can evolve because it would constantly be scrubbed out by supernovas. Earth is out on the edge of the Milky Way where there are few close supernovas, hence our survival. This means that there can be no life in the core or inner bands of a galaxy.

Retallack, G.J., and N. Noffke (2019) **Are there ancient soils in the 3.7 Ga Isua Greenstone Belt, Greenland?** PALAEOGEOGRAPHY, PALAEOCLIMATOLOGY, PALAEOECOLOGY 514:18-30

[A paleosol is a set of fossilized soil layers.]

Authors' abstract: *A lens of black schist within 3.7 gigayear old quartzites of Greenland may be Earth's oldest known alluvial paleosol. The suspect metamorphic rock is a lens in orthoquartzite of berthierine schist with crystals of ripidolite, but it has a truncated top above dark gray grading down to gray color, ptygmatically folded surface cracks filled with silt grains, and large sand crystals, unusual for sedimentary or metamorphic rocks.*

The paleosol hypothesis was tested with thin sections showing plausible mineral weathering trends, and by chemical analysis showing molar weathering ratios and REE distribution like those of soils. The schist is deeply weathered and at the culmination of weathering trends from analysis of other metasediments of the Isukasia area. The protolith can be reconstructed as a saponite clay with a salt-rich horizon of kieserite, like other acid-sulfate paleosols of the early Earth.

Models for proton and electron consumption of paleosols applied to the profile reveal an atmosphere with only 36 ± 510 ppm O_2 and 820 ± 201 ppm CO_2 , and humid, cool temperate paleoclimate. The profile has organic $d^{13}C_{PDB}$ consistently of -24.2 to -27.4‰, and modest Raleigh distillation near the top.

Similar consistent values and trends are produced by decay of organic matter in living soils, but biotic carbon isotopic composition of sediments is erratic from bed to bed, and abiotic carbon compounds of meteorites differ dramatically for each kerogen particle. Thus life in this very ancient soil is not precluded by our analyses, but ultrastructural and geochemical testing of carbon particles would further test this hypothesis.

Boag, T.H., et al (2018) **Oxygen, temperature, and the deep-marine stenothermal cradle of Ediacaran evolution.** PROCEEDINGS OF THE ROYAL SOCIETY OF LONDON 285B:doi.org/10.1098/rspb.2018.1724

Authors' abstract: *Ediacaran fossils document the early evolution of complex megascopic life, contemporaneous with geochemical evidence for widespread marine anoxia. These data suggest early animals experienced frequent hypoxia. Research has thus focused on the concentration of molecular oxygen (O_2) required by early animals, while also considering the impacts of climate.*

One model, the Cold Cradle hypothesis, proposed the Ediacaran biota originated in cold, shallow-water environments owing to increased O_2 solubility.

First, we demonstrate using principles of gas exchange that temperature does have a critical role in governing the bioavailability of O_2, but in cooler water the supply of O_2 is actually lower. Second, the fossil record suggests the Ediacara biota initially occur approximately 571 megayears ago (Ma) in deepwater facies, before appearing in shelf environments approximately 555 Ma.

We propose an ecophysiological underpinning for this pattern. By combining oceanographic data with new respirometry experiments we show that in the shallow mixed layer where seasonal temperatures fluctuate widely, thermal and partial pressure (pO_2) effects are highly synergistic.

The result is that temperature change away from species-specific optima impairs tolerance to low pO_2. We hypothesize that deep and particularly stenothermal (narrow temperature range) environments in the Ediacaran ocean were a physiological refuge from the synergistic effects of temperature and low pO_2.

Interdisciplinary research spanning palaeontology, geochemistry, and molecular biology increasingly tie changes in Earth's surface environment to the emergence and subsequent radiation of animals across the Neoproterozoic-early Palaeozoic transition approximately 800 to 500 million years ago.

This interval is marked by evidence for extreme climate fluctuations and biogeochemical perturbations, including two long-lasting glaciation events (i.e. snowball earth glaciations) during the Cryogenian Period ca 720 to 635 Ma, and extremely positive carbonate carbon isotope records punctuated by negative excursions.

The first large, morphologically complex fossils do not appear in the fossil record until the Ediacaran Period ca 635 to 541 Ma. Multi-proxy geochemical evidence suggests early animal evolution occurred against a backdrop of widespread marine subsurface anoxia.

Foffa, D., et al (2018) **The long-term ecology and evolution of marine reptiles in a Jurassic seaway.** NATURE ECOLOGY AND EVOLUTION 2:1548-1555

Authors' abstract: *Marine reptiles flourished in the Mesozoic oceans, filling ecological roles today dominated by crocodylians, large fish, sharks and cetaceans. Many groups of these reptiles coexisted for over 50 million years (Myr), through major environmental changes. However, little is known about how the structure of their ecosystems or their ecologies changed over millions of years.*

We use the most common marine reptile fossils, teeth, to establish a quantitative system that assigns species to dietary guilds and then track the evolution of these guilds over the roughly 18-million-year history of a single seaway, the Jurassic Sub-Boreal Seaway of the United Kingdom. Groups did not significantly overlap in guild space, indicating that dietary niche partitioning

enabled many species to live together. Although a highly diverse fauna was present throughout the history of the seaway, fish and squid eaters with piercing teeth declined over time while hard-object and large-prey specialists diversified, in concert with rising sea levels.

High niche partitioning and spatial variation in dietary ecology related to sea depth also characterize modern marine tetrapod faunas, indicating a conserved ecological structure of the world's oceans that has persisted for over 150 Myr.

Kölbl-Ebert, M., et al (2018) **A piranha-like pycnodontiform fish from the Late Jurassic.** CURRENT BIOLOGY 28:doi.org/10.1016/j.cub.2018.09.013

Authors' abstract: *We describe a new Jurassic pyncnodontiform fish, Piranhamesodon pinnatomus. From the same deposits as Archeopteryx, Piranhamesodon pinnatomus has piranha-like teeth. The deposits yielded both the predator and potential victims with damaged fins. Piranhamesodon pinnatomus is the oldest known flesh-eating ray-finned fish.*

Pycnodontiformes are an extinct order of ray-finned fishes from the Triassic to Eocene, with a characteristic crushing dentition reflecting a highly specialized diet. However, our discovery of a new pycnodontiform from the Late Jurassic (ca. 152 Ma) Plattenkalk deposits of the Solnhofen Archipelago revealed long, pointed teeth along the vomer and triangular teeth with cutting edges along the pre-articulars.

This is the earliest evidence of specialized flesh cutting in a ray-finned fish. The dentition pattern, tooth shape, jaw morphology, and mechanics are all indicative of a feeding apparatus suitable for slicing flesh or fins, thus pioneering a new ecological niche. Evidence suggests that it may have exploited aggressive mimicry in a striking parallel to the feeding patterns of modern piranha. Remarkably, fossil fishes recovered from the same deposits as the new pycnodontiform show injuries to fins and fin bases.

Blomenkemper, P., et al (2018) **A hidden cradle of plant evolution in Permian tropical lowlands.** SCIENCE 362:1414-1416

Authors' abstract: *The great evolutionary expansion of seed plants took place in the Mesozoic era, which began after the Permian mass extinction 252 million years ago. Blomenkemper et al. report the discovery of seed plant fossils from Late Permian (252-million to 260-million-year-old) deposits on the margins of the Dead Sea in Jordan. This area represents an equatorial habitat with pronounced dry seasons.*

These fossils, which include the earliest records of conifers, push back the ages of several important seed-plant lineages. Some of these lineages appear to span the mass extinction event at the end of the Permian, which suggests that the communities they supported may have been more stable than expected over this transition. Thus, early evolutionary innovations can occur in drought prone tropical habitats, which rarely offer the conditions needed for fossil preservation.

The latitudinal biodiversity gradient today has deep roots in the evolutionary history of Earth's biota over geologic time. In the marine realm, earliest fossil occurrences at low latitudes reveal a tropical cradle for many animal groups. However, the terrestrial fossil record, especially from drier environments that are thought to drive evolutionary innovation, is sparse.

We present mixed plant fossil assemblages from Permian equatorial lowlands in present day Jordan that harbor precocious records of three major seed-plant lineages that all became dominant during the Mesozoic, including the oldest representative of any living conifer family.

These finds offer a glimpse of the early evolutionary origins of modern plant groups in disturbance-prone tropical habitats that are usually hidden from observation.

Cai, C., et al (2018) **Beetle pollination of cycads in the Mesozoic.** CURRENT BIOLOGY 28:2806-2812

[Gymnosperms are cone-bearing plants such as conifers and cycads. Angiosperms are flowering plants.]

Authors' abstract: *A specialized beetle-mediated pollination mode is reported from Burmese amber. The mid-Cretaceous boganiid beetle has many pollen feeding adaptations. The fossil boganiid was probably a pollinator of Encephalarteae cycads. This suggests a probable ancient origin of beetle pollination of cycads in the Mesozoic.*

Cycads, unlike modern wind-pollinated conifers and Ginkgo, are unusual in that they are an ancient group of gymnosperms pollinated by insects. Although it is well documented that cycads were diverse and abundant during the mid-Mesozoic, little is known about their biogeography and pollination before the rise of angiosperms. Direct fossil evidence illuminating the evolutionary history of cycads is extremely rare.

Here we report a specialized beetle-mediated pollination mode from the mid-Cretaceous of Myanmar, wherein a new boganiid beetle, Cretoparacucujus cycadophilus, with specialized pollen-feeding adaptations in its mouth parts and legs, was associated with many pollen grains of Cycadopites. Phylogenetic analyses indicate Cretoparacucujus as a sister group to the extant Australian Paracucujus, which pollinate the cycad Macrozamia riedlei.

Our discovery, along with the current disjunct distribution of related beetle-herbivore (tribe Paracucujini) and cycad-host (tribe Encephalarteae) pairs in South Africa and Australia, indicate a probable ancient origin of beetle pollination of cycads at least in the Early Jurassic, long before angiosperm dominance and the radiation of flowering-plant pollinators later in the Cretaceous.

Wiemann, J., et al (2018) **Dinosaur egg colour had a single evolutionary origin.** NATURE 563:555-558

Authors' abstract: *Birds are the only living amniotes with coloured eggs, which have long been considered to be an avian innovation. A recent study has demonstrated the presence of both red-brown protoporphyrin IX and blue-green biliverdin, the pigments responsible for all the variation in avian egg colour, in fossilized eggshell of a nonavian dinosaur. This raises the fundamental question of whether modern birds inherited egg colour from their nonavian dinosaur ancestors, or whether egg colour evolved independently multiple times.*

Here we present a phylogenetic assessment of egg colour in nonavian dinosaurs. We applied high-resolution Raman microspectroscopy to eggshells that represent all of the major clades of dinosaurs, and found that egg colour pigments were preserved in all eumaniraptorans: egg colour had a single evolutionary origin in nonavian theropod dinosaurs. The absence of colour in ornithischian and sauropod eggs represents a true signal rather than a taphonomic artefact.

Pigment surface maps revealed that nonavian eumaniraptoran eggs were spotted and speckled, and colour pattern diversity in these eggs approaches that in extant birds, which indicates that reproductive behaviours in nonavian dinosaurs were far more complex than previously known.

Depth profiles demonstrated identical mechanisms of pigment deposition in nonavian and avian dinosaur eggs. Birds were not the first amniotes to produce coloured eggs: as with many other characteristics this is an attribute that evolved deep within the dinosaur tree and long before the spectacular radiation of modern birds.

Karp, A.T., et al (2018) **Grassland fire ecology has roots in the late Miocene.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 116:doi.org/cgi/doi/10.1073/pnas.1809758115

[There are three types of photosynthesis, C_3 (most plants in moist habitats), C_4 (dryland plants, especially grasses), and CAM (desert plants and aquatic plants in nutrient-poor water). The Miocene period was 23 to 5.33 megayears ago, and the Pliocene was 5.33 to 2.58 megayears ago.]

Authors' abstract: *Fire is crucial to maintaining modern subtropical grasslands, yet the geologic and ecological history of this association is not well constrained. Here, we test the role of fire during the expansion of C_4 grassland ecosystems in the Mio-Pliocene through innovative molecular proxies from ancient soils in Pakistan.*

We produce a synoptic terrestrial record of fire and vegetation change in this region, which indicates that increased fire occurrence accompanied two stages of landscape opening. Proxy data confirm that a pronounced fire-grassland feedback was a critical component of grassland ecosystems since their origination and fostered the rise of C_4-dominated grasslands.

T*hat fire facilitated the late Miocene C_4 grassland expansion is widely suspected but poorly documented. Fire potentially tied global climate to this profound biosphere transition by serving as a regional-to-local driver of vegetation change.*

In modern environments, seasonal extremes in moisture amplify the occurrence of fire, disturbing forest ecosystems to create niche space for flammable

grasses, which in turn provide fuel for frequent fires. On the Indian subcontinent, C_4 expansion was accompanied by increased seasonal extremes in rainfall (evidenced by delta $^{18}O_{carbonate}$), which set the stage for fuel accumulation and fire-linked clearance during wet-to-dry seasonal transitions.

Here, we test the role of fire directly by examining the abundance and distribution patterns of fire-derived polycyclic aromatic hydrocarbons (PAHs) and terrestrial vegetation signatures in n-alkane carbon isotopes from paleosol samples of the Siwalik Group (Pakistan). Two million years before the C_4 grassland transition, fire-derived PAH concentrations increased as conifer vegetation declined, as indicated by a decrease in retene.

This early increase in molecular fire signatures suggests a transition to more fire-prone vegetation such as a C_3 grassland and/or dry deciduous woodland. Between 8.0 and 6.0 million years ago, fire, precipitation seasonality, and C_4-grass dominance increased simultaneously (within resolution) as marked by sharp increases in fire-derived PAHs, delta $^{18}O_{carbonate}$, and ^{13}C enrichment in n-alkanes diagnostic of C_4 grasses.

The strong association of evidence for fire occurrence, vegetation change, and landscape opening indicates that a dynamic fire-grassland feedback system was both a necessary precondition and a driver for grassland ecology during the first emergence of C_4 grasslands.

Speirs: This was of interest to me, being a prairie farm boy. The grasslands of North America today support most of the continent's grain production. Wheat, oats, barley, rye, and corn are all grasses.

Cerioli, A., et al (2019) **Newcomb-Benford law and the detection of frauds in international trade.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 116:106-115

Authors' abstract: *In this work we consider fraud detection through the Newcomb-Benford law (NBL). This law defines a probability distribution for patterns of significant digits in real positive numbers. It relies on the intriguing fact that in many natural and human phenomena the leading, that is, the first significant, digits are not uniformly scattered, as one could naively expect, but follow a logarithmic-type distribution.*

The detection of frauds is one of the most prominent applications of the Newcomb-Benford law for significant digits. However, no general theory can exactly anticipate whether this law provides a valid model for genuine, that is, nonfraudulent, empirical observations, whose generating process cannot be known with certainty.

Our first aim is then to establish conditions for the validity of the Newcomb-Benford law in the field of international trade data, where frauds typically involve huge amounts of money and constitute a major threat for national budgets.

We also provide approximations to the distribution of test statistics when the Newcomb-Benford law does not hold, thus opening the door to the development of statistical procedures with good inferential properties and wide applicability.

The contrast of fraud in international trade is a crucial task of modern economic regulations. We develop statistical tools for the detection of frauds in customs declarations that rely on the Newcomb-Benford law for significant digits. Our first contribution is to show the features, in the context of a European Union market, of the traders for which the law should hold in the absence of fraudulent data manipulation.

Our results shed light on a relevant and debated question, since no general known theory can exactly predict validity of the law for genuine empirical data. We also provide approximations to the distribution of test statistics when the Newcomb-Benford law does not hold. These approximations open the door to the development of modified goodness-of-fit procedures with wide applicability and good inferential properties.

Bain, N., and D. Bartolo (2019) **Dynamic response and hydrodynamics of polarized crowds.** SCIENCE 363:46-49

Authors' abstract: *Modeling crowd motion is central to situations as diverse as risk prevention in mass events and visual effects rendering in the motion picture industry. The difficulty of performing quantitative measurements in model experiments has limited our ability to model pedestrian flows. We use tens of thousands of road-race participants in starting corrals to elucidate the flowing behavior of polarized crowds by probing its response to boundary motion.*

We establish that speed information propagates over system-spanning scales through polarized crowds, whereas orientational fluctuations are locally suppressed. Building on these observations, we lay out a hydrodynamic theory of polarized crowds and demonstrate its predictive power. We expect this description of human groups as active continua to provide quantitative guidelines for crowd management.

We can show the predictive power of our hydrodynamic model, as calibrating the celerity of the speed waves and the damping rate on a single race in Paris is sufficient to quantitatively predict the dynamics of queuing crowds observed in Chicago and Atlanta months later.

In addition, our description of crowds as active continua provides effective guidelines for the management of crowds. For instance, we show that stimulations from side boundaries are inefficient and that optimal information transfer is achieved when guiding a crowd from its forefront.

We show that reorienting the direction of motion of a polarized crowd at once is impossible when relying only on locally accessible signals. Orientational cues must be provided to the entire assembly to change its direction of motion.

We also predict the time it takes to set in motion, or to stop, a crowd of a given extent by providing information at its boundary. Beyond these predictions, the description of crowds as continua should be useful to elucidate their response to large-amplitude perturbations and their transitions from flowing liquids to amorphous solids, two situations where crowd dynamics become hazardous.

Herrmann, E., et al (2019) **Human children but not chimpanzees make irrational decisions driven by social comparison.** PROCEEDINGS OF THE ROYAL SOCIETY OF LONDON 286B:doi.org/10.1098/rspb.2018.2228

Authors' abstract: *Human evolutionary success is often argued to be rooted in specialized social skills and motivations that result in more prosocial, rational and cooperative decisions. One manifestation of human ultra-sociality is the tendency to engage in social comparison.*

While social comparison studies typically focus on cooperative behaviour and emphasize concern for fairness and equality, here we investigate the competitive dimension of social comparison: a preference for getting more than others, expressed in a willingness to maximize relative payoff at the cost of absolute payoff.

Chimpanzees and human children (5 to 6- and 9 to 10-year-olds) could decide between an option that maximized their absolute payoff (but put their partner at an advantage) and an option that maximized their relative payoff (but decreased their own and their partner's payoff).

Results show that, in contrast to chimpanzees and young children, who consistently selected the rational and payoff-maximizing option, older children paid a cost to reduce their partner's payoff to a level below their own. This finding demonstrates that uniquely human social skills and motivations do not necessarily lead to more prosocial, rational and cooperative decision-making.

ZINE LISTINGS

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

CHRISTIAN NEW AGE QUARTERLY V23#4 (US$5 from Catherine Groves, Box 276, Clifton, New Jersey 07015-0276) This issue has an article by Robert M. Price about how humans would do missionary work among aliens if they made contact. If the aliens were unfallen, the question is whether missionaries would even recognize that state of being. Granted the likelihood of alien contact is minimal, the discussion of the subject is revealing in itself of Christian attitudes.