

# OPUNTIA 445



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

**About The Cover:** I photographed this LRT track gate in the Sunnyside district of central Calgary at 2 Avenue SW and 9 Street. It is part of a public art campaign to reduce graffiti.

**TRANSIT FANNING IN CALGARY: PART 26**  
by Dale Speirs

[Parts 1 to 25 appeared in OPUNTIA's #256, 258, 260, 264, 269, 275, 283, 298, 302, 327, 333, 341, 348, 357, 359, 365, 369, 371, 392, 394, 396, 407, 412, 426, and 435.]

**Traffic Jams.**

The Holy Bible predicted traffic jams. Refer to Nahum 2:4  
*The chariots shall rage in the streets.*  
*They shall jostle one against another in the broad ways.*  
*They shall seem like torches.*  
*They shall run like the lightnings.*

Numerous science fiction pulp magazines have been and are being scanned as free downloads from [www.gutenberg.org](http://www.gutenberg.org) and [www.archive.org](http://www.archive.org). No longer do you have to spend a fortune and countless hours trying to track down old and brittle magazines. Well worth browsing, either by title or theme on the site search engines.

As an example, from the 1929 April issue of AMAZING STORIES was “The Terror Of The Streets” by George McLociard. The mad scientist of this story had developed a method of invisibility, but that was actually a minor subplot. What he was really mad about was the traffic in downtown Chicago. He therefore built an large armoured car shaped like a turtle, so he could bash careless drivers out of the way.

The police couldn't restrain the car because gunfire didn't stop it. The Terror, as it became known, appeared out of nowhere and body-checked any bad drivers out of the way. Threatening notes were sent to the press (there was no 'media' in those days) warning drivers to be courteous and obey the laws because The Terror wouldn't. The mad scientist ended up the way his ilk often do, but it was fun while it lasted.





**Transit Fiction.**

SUSPENSE was an old-time radio series that aired from 1942 to 1962. It was an anthology show, mostly mystery or action-adventure, but often science fiction and fantasy. The episodes were well done in general and the series was favourably received during its lifetime. (This and other OTR shows are available as free mp3s from [www.otrlibrary.org](http://www.otrlibrary.org).)

“Commuter’s Ticket”, written by Roy Grandy and Robert Tallman, aired in 1946. It was about Bert Gavin, who narrated the story about how he would kill his cheating wife. They lived next to the train tracks, where the roar and rattle of passing trains would drown out her screams when he did the job.

His plan was to sneak off home early from work. Gavin drugged the night watchman’s coffee so as to avoid detection coming and going. He then rode the commuter train home, and killed his wife by striking her with a fireplace poker as a train went by and covered up her screams. Then he got back on a return train, where he would sneak back into work undetected, giving him an alibi.

The guilty flee when no one pursues, and they also over-react with fear to ordinary incidents because they think they might be exposed. Gavin wanted to be anonymous on the train, just another commuter, but failed.

Someone noticed blood on his hands, others noticed his nervous behaviour, and he couldn’t find his ticket when the conductor asked for it. He blundered up and down the train, making himself conspicuous as he desperately and unsuccessfully tried to blend in with the commuters.

Finally he made it back to work. When he left for his second and supposedly legitimate return home, the night watchman was still sound asleep. Gavin never made it past the train station, as a police detective was waiting for him and took him into custody for the murder of the night watchman. Gavin had overdosed the man, who died and was not just sleeping as supposed.

The wife survived long enough to make a deposition, then died, resulting in another murder charge. Gavin tried to clear himself but no matter which way he did it, he would be proving himself guilty of one crime or the other.

**Transit Sprinting.**

Below is a familiar sight in any city. Alas, this poor fellow didn’t catch his bus as it was already in motion and sped away.





TRANSPORTATION AROUND COWTOWN  
photos by Dale Speirs

Licence plates seen here and there.





This patriotic car, with Canadian and Alberta flags on the bumper, is funnier if you know that Melville is in Saskatchewan.





Cowtown parking. What part of the yellow lines didn't the driver understand?



Auto body shops are expensive, therefore this do-it-yourself surgery.





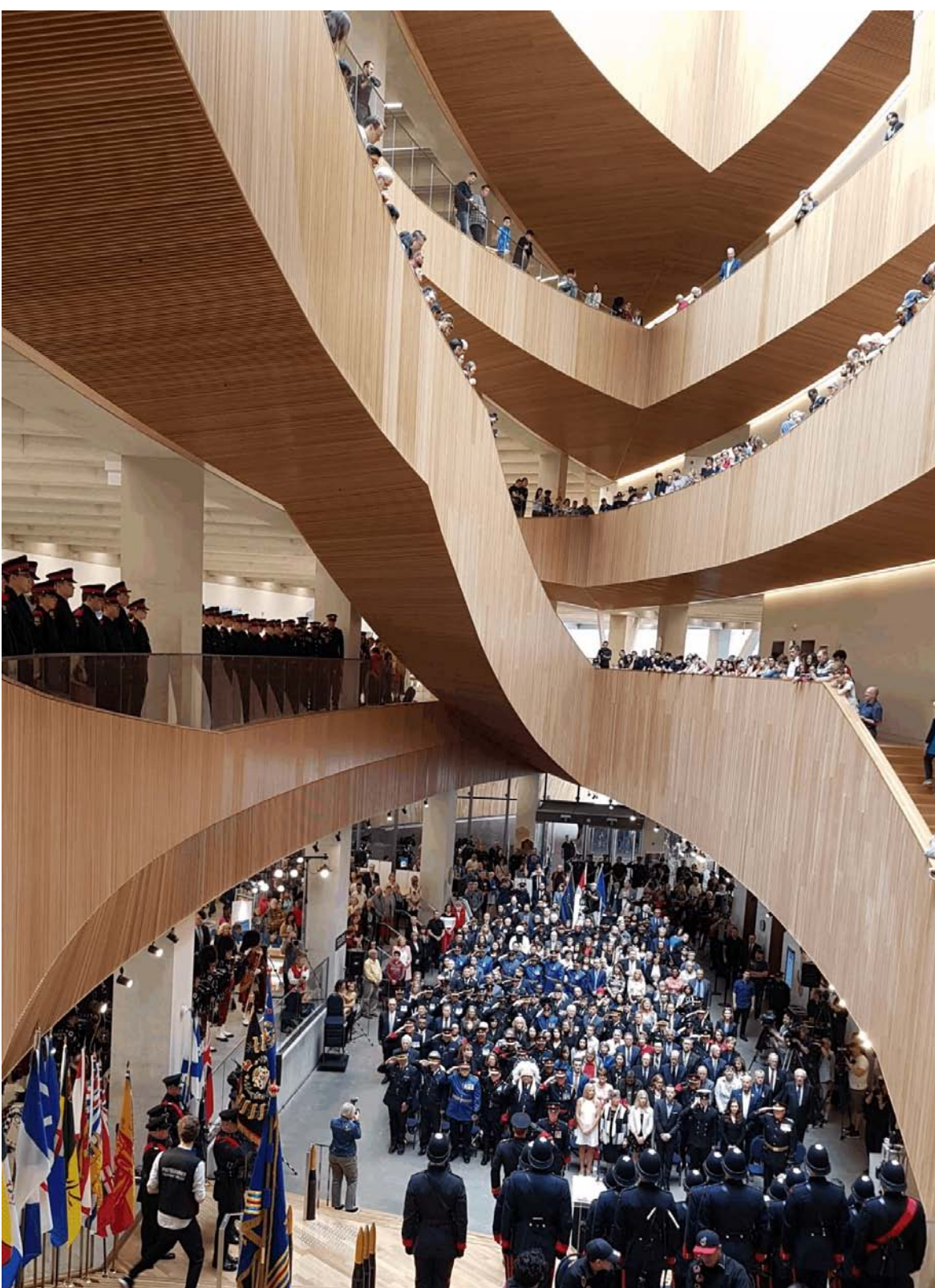
## THE CONSTABULARY AROUND COWTOWN

photos by Dale Speirs

On June 10, I walked into the New Central Library to do some reading and writing, and discovered there was a ceremony in the atrium. The Calgary Police Service was installing its new Chief Constable (as the Chief of Police is legally known) Mark Neufeld.

I went up to the second floor where I usually do my research but before settling down with books, took a few photographs. The ceremony lasted about an hour, with frequent punctuations by bagpipes and drums, not to mention speechifying. Fortunately the sound was directional along the ground floor so the library users weren't too bothered.

The New Central Library, completed in November 2018, has been a tremendous success, with 50,000 visitors per month. See OPUNTIA #428 for my account of its grand opening.





At lower left is a colour guard of the Calgary Police Service, which wore bobby helmets when it was first created in 1885, which is why they are dressed like bobbies. Fort Calgary was founded by the Mounties, at that time the North West Mounted Police, but later decided to have its own police. The RCMP still have a detachment in Calgary today but concentrate on federal and provincial laws. All but Ontario and Québec contract out provincial law enforcement to the RCMP, and the vast majority of municipalities also contract to the Mounties. However, many large cities have their own police forces.

Below right is the pipe and drum band of the CPS. The honour guard arrayed along the balcony are wearing forage caps, but the CPS is slowly converting to black cowboy hats. Down below, walking behind the colour guard, is a constable with the cowboy hat.





# THE MAN FROM MONTENEGRO: PART 19

by Dale Speirs

[Parts 1 to 18 appeared in OPUNTIA's #252, 253, 275, 278, 279, 289, 304, 307, 319, 332, 335, 337, 344, 355, 364, 365, 382, and 415.]

Nero Wolfe, a mountain of a man, was a private detective loath to leave the security of his brownstone, preferring to tend his orchids in a rooftop greenhouse of his Manhattan brownstone, eat gourmet meals prepared by his chef, and read books.

Wolfe did the thinking. The practical work of investigating his cases was done by his secretary Archie Goodwin. The original stories and novels by Rex Stout (died 1975) are referred to as the corpus, and stories by other authors as pastiches.

Murder was often done during the cases or was the cause of the investigation. The duo were therefore well acquainted with the local NYPD Homicide Squad, headed by Inspector Cramer. The NCO was Sergeant Purley Stebbins, and the 2-in-C was Lieutenant Rowcliff, a nasty man in the corpus, as a result of which many pastiche writers liked to give him a nasty death.

## Pastiches: Short Stories.

“Post No Bulls” by Marvin Kaye (2018 Jul/Aug, ELLERY QUEEN) opens within the front hallway of Wolfe’s brownstone. A courier delivered a long heavy package which Goodwin accepted. It proved to be the body of Rowcliff.

In this pastiche, Rowcliff was on his third wife. She found some letters he had exchanged with his second wife, saying that he would come back to her as soon as he could arrange a divorce. After mixing some ground glass into his food, she had the body delivered to Wolfe just to annoy him.

The story didn’t work. In a good pastiche, the writer must be able to match the mood and dialogue patterns of the originals. This story seemed rushed. Characters were hustled in and out to do their set pieces, and then got off the stage. It didn’t help to murder a major character from the corpus either.

Far better is WOLFE TALES (2018) by Anthony Shaw, a collection of his pastiches. Unlike the average pastiche collection, whether Wolfe, Holmes, or

anyone else, only a few these stories are about cases. The rest are vignettes to fill in the back stories of the supporting characters, such as Wolfe’s cook Fritz and Archie’s girlfriend Lily Rowan.

The question as to the exact house number of Wolfe’s brownstone, which changed frequently in the corpus, was easily disposed of, as indeed other pastiche writers did before. Goodwin never gave the true address so that he and Wolfe would not be bothered by tourists or criminals seeking revenge.

In the corpus, Rex Stout made the decision that Wolfe and all the others would not change or age, even though their times changed. Goodwin went from using a typewriter to a word processor. Shaw did the same here. Goodwin mentioned the fall of the Twin Towers, and characters had cellphones.

Nothing much happened in most of the vignettes. Shaw instead gave the supporting characters their histories and motivations. Goodwin discussed his ongoing relationship with Lily Rowan, best described as friends with benefits. Inspector Cramer, who chomped on cigars, was frustrated because no one had ashtrays anymore.

Wolfe was a gourmet and spent many long hours discussing meal plans with Fritz. This might seem a dull subject for a vignette but Shaw pulled it off. Not much about orchids, but the brownstone had been modernized with a state-of-the-art security system. Wolfe needed it, considering the company he and Goodwin kept, and the number of criminals they sent up the river who had since been paroled.

The book read more like a fix-up novel, each episodic chapter leading into the next, with vignettes as side trips. Not the usual type of puzzle stories that one expects from pastiche writers. Well written and well recommended.

## Pastiches: Novels.

DEATH OF AN ART COLLECTOR (2019) by Robert Goldsborough is the latest in a series of books by an authorized pastiche writer. (Rex Stout’s works are not yet in the public domain.) The art collector was wealthy businessman Arthur Wordell.

His office was on the twentieth floor in Manhattan and had a view. He liked to sit out on the windowsill and dangle his legs over thin air while admiring the



scenery. After doing it for years, he finally fell to his death. The NYPD figured it was accidental, but everyone who knew him, family, friends, or business associates, said it was murder. The novel was set in 1959 just as the Guggenheim museum was to open. Wordell had considered donating his art collection to them but some of his relatives and acquaintances had other ideas.

Wordell's daughter Nadia hired Wolfe to investigate. There were no witnesses to the fall. While most who knew Wordell didn't like him, it seemed unlikely that any one of them was driven to pushing him off the windowsill. Neither Wolfe nor the police had any kind of evidence to support a murder charge.

Very little actually happened in this novel. In a way, Goldsborough reminded me of Isaac Asimov's Foundation and robot novels, where the action happened offstage and the characters spent most of their time discussing it afterwards. So it was with this novel.

Firstly, all the characters were introduced and fleshed out. In the middle half of the book, they all came one by one to Wolfe's brownstone to discuss the death. The consensus was that Wordell didn't jump, he was pushed. As no one saw the fall, nothing could be proved.

Wolfe then staged a meeting as a fishing expedition rather than his usual J'accuse! gathering. He hit the jackpot as the guilty man fled when no one pursued. At least not initially.

Archie Goodwin chased him over to Wordell's office, where the killer intended to commit suicide by diving out that same window. He was flummoxed by Goodwin, as a result of which the State and People of New York would be required to spend time and money on a court trial before sending him up the river to sit in Old Sparky. Although not much happened in the novel save at the beginning and the close, it was a good read and a steady page-turner.

### **Pastiches: Radio.**

Under various titles, the Nero Wolfe old-time radio series aired from 1943 to 1951. Several actors portrayed him, of whom Sydney Greenstreet was the best. Rex Stout did not write any of the episodes but only collected a royalty cheque. The episodes are worth listening to once. They are available as free mp3s from [www.otrrlibrary.org](http://www.otrrlibrary.org).

Rex Stout turned up his nose at the radio version of his detective, although he did approve of Sydney Greenstreet. Stout sneered at the radio scripts, but he was one to talk considering how illogical some of his novels and short stories were. The difference was that he knew how to write characterization and dialogue to make up for his other faults. Many of the radio writers just wrote cliches or wild surmise. Greenstreet was able to carry the episodes he was in but other actors who played Wolfe were not as good.

In the corpus, Goodwin always answered the telephone in a professional manner, but in many radio episodes he just grabbed the phone and said 'Hello' without identifying himself or saying that it was Wolfe's office.

Some of the script writers were used to the tradition of old-time radio whereby the occupants of the house never answered the door but just raised their voice slightly and said "*Come in.*" The visitors had the hearing of a cat and would then open the door and enter the room instantly. No one had a porch or front hallway in old-time radio. In the real world, you have to shout at the top of your lungs for a visitor to hear you. In any event, you almost certainly would walk over to the door yourself and open it.

Another bit of sloppy writing in the radio pastiches was the matter of the front hallway. Wolfe's office was at the back of his brownstone. In the corpus and the better radio episodes, if someone rang the doorbell, Goodwin walked down the hallway and admitted the visitor. Some of the episodes, however, had Wolfe following old-time radio procedure while seated behind his desk, and the visitor would step directly into his office.

"The Careless Cleaner" was a 1950 episode written by Cheryl Hendricks (sp.?). The woman of the title was a beautiful blond who had been reduced to a cleaning lady because of her alcoholism. She worked at an exclusive gentleman's club where she met her demise. No one could figure out why she was murdered.

Goodwin was pestering Wolfe to take on a case because the bank account had been emptied by purchasing too many orchids. Just in time, Wolfe was hired for \$500 to investigate a matter by a man named Saunders. Even as they discussed the problem, Inspector Cramer telephoned Wolfe to say that Saunders was wanted on account of the cleaning woman having been stabbed in his suite at the club.



Wolfe asked Cramer if Saunders was a suspect and got the reply: “*I think everybody did it until I know otherwise.*” Goodwin and Saunders went over to the club. There was no blood in the knife wound and the woman’s eyes were fully dilated, which Cramer was oblivious about, although the listener will catch the implications immediately.

Saunders had a friend Clay Michaelson staying with him, a drunk who had just left his wife. He showed up at the crime scene looking for his flask. No one could find it. The alarms and excursions moved to Wolfe’s brownstone, with the police in pursuit. Michaelson wouldn’t give his wife a divorce, so it might have been possible she murdered the maid in her husband’s bedroom.

The flask came and went as if it were a prize in a scavenger hunt. It had contained poisoned alcohol intended for Michaelson but the cleaning lady couldn’t resist and became an inadvertent victim. She was subsequently stabbed by the murderer so the police would not suspect poison and to shift the blame elsewhere.

The killer’s plan didn’t work. As he usually did, Wolfe solved the case without leaving his desk. Saunders tripped over one little detail and was exposed. The Michaelsons reconciled and Goodwin celebrated because the \$500 fee meant he got his weekly paycheck. An average episode worth listening to once.

“The Vanishing Shells” was a 1951 episode written by the producer J. Donald Wilson. A telephone call came in from Broadway actress Doris Moray, who had been getting threatening letters telling her not to apply for a starring role in a new play by Emil Stoner. She hired Wolfe and Goodwin for a \$500 retainer to find the source of the letters, which were not mentioned again until the close.

Goodwin headed to the hotel where Moray was staying. As he was en route, she met Stoner in her room, who told her she didn’t get the part in his play. She was very angry and tossed him out of the room. The lead actress was going to be Paula Kenyon, who was staying in a room just down the hallway from Moray.

After the initial meeting with Moray by Goodwin, he escorted her back to her hotel room where they found Stoner’s body, sitting in a chair with two bullet holes in him. There were no holes in the chair or the wall where the bullets would have lodged after passing through his body, so the conclusion was that Stoner’s corpse had been moved after death. Other clues were so blatant as to be ridiculous.

Goodwin told Moray: “*I can believe anything about anybody. I learned that the hard way. In my book, everybody is guilty until proved otherwise.*” Walking down the hallway to Kenyon’s room, they found her out but went in and determined that it was there that Stoner had been shot with an automatic pistol. Goodwin found the bullets embedded in the wall and chair, but what bothered him was that he couldn’t find the shells anywhere.

Skipping ahead to the J’accuse! meeting at Wolfe’s office, all and sundry plus Inspector Cramer met to hear Wolfe solve the case. After a rapid-fire sequence of questions, Wolfe deduced that Moray had killed Stoner after being told she was passed over for the play. Goodwin quickly grabbed her purse. There was a hole at one end where a gun inside had been fired through the fabric. The purse also held the missing ejected shells.

Before the wrap-up, the writer must have suddenly remembered a loose end, the threatening notes. Kenyon’s boyfriend admitted typing them in an effort to scare Moray out of the play. By then, the letters were a moot point, so they were dropped from the plot. Cue the music and the closing credits.

“The Lost Heir” was a 1951 episode, written by Mindret Lord. Horace Kraile wanted Wolfe to verify if a young woman was his missing daughter Magda, who, thirteen years ago at the age of six, vanished in an airplane with her mother. Neither of them were seen again.

Kraile was blind and had no way of verifying the woman was his long-lost daughter. He thought she was an imposter after his estate and that his life was in danger. Supporting characters were Kraile’s private secretary Hugh Gaines and his stepson Anthony. Kraile suddenly departed this world, the victim of murder.

The matter was settled in Wolfe’s office at one of his traditional J’accuse! meeting, with Inspector Cramer as a guest. The baby Magda had a birthmark on her back. So did the imposter, but hers was tattooed. Goodwin arranged to have it photographed. The slide show at the meeting exposed the tattoo.

It turned into a gunfight when Wolfe deduced that the imposter had been put up to it by Gaines as a way of getting the wealth. One doesn’t pull a gun when a policeman is present, as Gaines learned the hard way.



“The Party For Death” was a 1951 episode, written by Mandred Lloyd. Socialite Jane Collins invited Wolfe to a party but he didn’t like to leave his house, so he delegated Goodwin. Wolfe expected a murder to be done there. Who the victim was, he couldn’t say.

The party was tedious. Goodwin was kept busy sorting out the romantic jealousies and entanglements, leavened with adultery and business fraud. The murder occurred as scheduled, only off target when Jane’s husband Albert finished off her drink and died from poison.

Wolfe deduced that Jane had put the poison inside an ice cube, added it to her drink, and then sipped it until the ice started to melt. She deliberately left the unfinished drink where her intended target, an alcoholic, would grab it, but hubby was faster.

For the J’accuse! meeting, Wolfe asked Jane to bring a bucket of ice cubes on the flimsy pretext that his freezer had broken. She saw what was likely to happen, so brought along one of her poison ice cubes in the mix. Wolfe deftly switched it for another.

When she was exposed, she attempted suicide but only had a harmless ice cube. It might have saved the State of New York an expensive trial had Wolfe let her do the job herself instead of Old Sparky up the river at Sing Sing.

**WE'LL ALL GO TOGETHER WHEN WE GO: PART 11**

by Dale Speirs

[Parts 1 to 10 appeared in OPUNTIA's #249, 276, 283, 301, 312, 327, 343, 365, 417, and 431.]

**Bolides.**

Black holes are occasionally used for end-of-the-world scenarios. “The Blue Afternoon That Lasted Forever” is a short story by Daniel H. Wilson in his 2018 collection GUARDIAN ANGELS AND OTHER MONSTERS. It is narrated by a physicist on the day a black hole ripped through Earth’s upper atmosphere on a tangential course. Its gravitational force generated tsunamis, perturbed all spacecraft in orbit, and left a trail of red-shifted light.

The narrator recognized that this type of mini-black hole traveled in clusters. Soon reports came in that Mars had been shattered. No happy ending, as a subsequent and bigger black hole sucked up everyone and everything, including the atmosphere as it passed by Earth.

**Surviving The Impact.**

FINAL STRIKE (2018) is a novel by William S. Cohen, who had been Secretary of Defense during the Clinton administration. The basic premise was that an extinction-level asteroid was inbound for Earth. The novel, however, was mostly about espionage and dirty politics between Russia and the USA.

The asteroid was claimed by SpaceMine, a corporation of ill repute. Notwithstanding its influence and political powers, founded mainly by wholesale bribery, SpaceMine had become a pawn to be fought over by the Russian and American governments.

Life was no easier for it on the business side. Contrary to popular belief among the ANALOG crowd, the economics of mining asteroids are doubtful. The costs of grabbing an asteroid, steering it into Earth orbit, and mining the ore would be far higher than any mine on Earth. Further, any flood of minerals from the asteroid, even platinum or gold, would depress prices significantly. That depressed share prices of SpaceMine, reducing its ability to raise capital.

After about 300 pages of politicking and action-adventure sub-plots, the novel finally got near the resolution. It was the old standby so familiar to Big Ugly Rock stories. Nuke it. Not quite that simple though. The first attempt split the asteroid in two large pieces and a plethora of city-smasher fragments, and increased their velocity. Death by shotgun instead of rifle.

At least it wasn’t the end of the world. Millions died from tsunamis when big pieces splashed into the far western Pacific Ocean. Since they were Asians, that didn’t bother the Puppies in the American government. Sad to say, one chunk took out Rock Springs, Wyoming, population 23,000.

Surprisingly the traditional targets of Big Ugly Rocks were not hit. Manhattan, Los Angeles, and the District of Columbia were not afflicted. Jerusalem was taken out by a hammer of God. Siberia took the biggest piece, similar to the Tunguska event of 1908, but the Russians hardly noticed. And so to bed.



“Ring Wave” by Tom Jolly (2019 Jan/Feb, ANALOG) is a clever story about surviving an extinction-level asteroid impact event that destroyed Earth. Mars and near space had been colonized. An inventor publicized the idea of building metal capsules with air supplies, food, and solar panels, mounted in clusters away from the impact site. The capsules had no engines.

The idea was that the impact would throw them out into Earth or lunar orbit, where at least a few out of millions would have a chance of survival. A very original concept for bolide stories, the first new idea I’ve seen in this type of story in decades.

THE CALCULATING STARS (2018) by Mary Robinette Kowal is a novel in the Lady Astronaut series. The series is set in an alternative history where Dewey really did defeat Truman. As a result, the Americans were launching their first satellites by 1952.

The other major divergence was that on March 3, 1952, an asteroid smacked the Atlantic coast of the USA, obliterating the District of Columbia with a 100-mile-diameter crater extending into the ocean and wiping out the Eastern Seaboard out to the Appalachians.

The impact lifted huge quantities of debris into the upper atmosphere. That set off a climate change that appeared to be an extinction level event, and a frantic rush to get into space in a serious way.

Once the world recovered from the initial impact and tsunamis, the focus turned to the struggles of Elma York to be accepted as an astronaut, initially unsuccessful at first. She and her husband Nathaniel were scientists and engineers, and soon became involved in the space project.

This was 1952. Refugee camps were kept segregated. Women could not aspire much further than nurses or computers. Today the latter word means a machine, but even in our timeline until the 1950s, a computer was someone who solved complicated mathematical problems with slide rule, pencil, and paper. Early rocket programmes relied on them, mostly women, to calculate ballistics and orbits. The Apollo spacecraft went to the Moon on slide rules.

Elma was shunted to the sidelines by the government, but she was able to prepare a report demonstrating that the dust and steam lofted into the atmosphere by the impact was an extinction-level event.

The dust would initially cause crop failures from global cooling. After it settled out a few years later, the water vapour floating high in the atmosphere would then cause a runaway greenhouse effect. Humans had about fifty years before the oceans were heated to boiling levels, worse than the Permian extinction that killed 97% of all life 251 megayears ago. Famines became widespread.

A jump ahead to 1956, when the Americans launched the first human into space. The new capital of the USA was Kansas City, and Elma was working at Mission Control as a computer. There seemed to be another divergence in this timeline, as mechanical or vacuum tube computers did not exist.

Elma wanted to go into space as an astronaut, but no women were initially chosen. It didn’t help that she blubbered and fell apart from anxiety attacks whenever she had a job interview or presentation at a committee hearing. She wasn’t someone to inspire confidence.

That brought the novel to its main theme, developed further in each chapter as women struggled to be taken seriously. What really required a major suspension of disbelief was how fast the space programme developed. Within a year, a modular space station was in orbit, then Moon landings attempted. Way too fast for any space programme, especially after a world-shaking disaster.

International pressure eventually resulted in a list of women astronauts. The novel concluded with Elma’s struggles to get through astronaut training. She made it and went to the Moon as the novel concluded. To be continued.





# COZY MYSTERIES: PART 9

by Dale Speirs

[Parts 1 to 8 appeared in OPUNTIA's #361, 379, 395, 398, 400, 420, 423, and 443.]

Cozy mysteries have evolved into a standard format from their distant origin in the Miss Marple series. The book titles usually are puns. The main protagonist is an amateur sleuth who busily snoops about contaminating evidence, indirectly obstructing police, and getting into the line of fire from the murderer.

Cozy mysteries have developed a number of subgenres. There are several series involving cats, dogs, or birds. Food is popular, whether a restaurant or bakery. If there is a Website for a particular hobby or interest group, then there is probably a cozy mystery series for it.

## Hobbies: Scrapbooking.

Scrapbookers are mostly middle-aged housewives who make scrapbooks of photos and paper memorabilia, often on a thematic basis, to preserve family memories. The next generation will throw them out because they have no room to store them. Scrapbooking is sometimes known by its aficionados as cropping.

A psychological motivation of scrapbookers is a desire to impose order in their lives. Small children, husbands, and life in general are chaotic. A scrapbook is orderly and done to a design. I've noticed that scrapbooking cozies tend to be grimmer than most cozies.

SCRAPBOOK OF SECRETS (2012) by Mollie Cox Bryan was the first novel in a cozy series about the scrapbookers of Cumberland Creek, Virginia. The protagonist was Annie Chamovitz, who had just moved to the village with her husband Mike and their two young sons.

They were Jewish and having trouble fitting in, so she joined the Cumberland Creek Scrapbook Crop to make new friends. Chamovitz was an investigative reporter in the big city before life as a stay-at-home mom, which explained how she became the village Miss Marple.

The novel began with Beatrice Matthews, an 80-year-old widow, stabbed in the neck, not fatally. About the same time, Maggie Rae Dasher, a young mother,

was dead, possibly suicide or maybe murder. She had been a solitary scrapbooker, not a club member. After her death, her husband cleaned out the house and put boxes of her scrapbooks out on the curb, so club members salvaged them and looked for clues.

The motives were mostly narrated rather than exposed by Chamovitz's sleuthing. There were a lot of back stories about abusive stepfathers and husbands, and how the troubles of one generation were handed down to the next. Dasher's murderer was a relative who took out her anger on others. A rougher story than most cozies.

The second go-round was SCRAPPED (2013). The scrapbookers had welcomed into their ranks Cookie Crandell, a self-proclaimed witch. The novel opened with the body of a red-haired woman dragged out of the creek. Runes were carved into the body and foul play was suspected. A few chapters later, another body was found, again a red-haired woman with runes carved into her. Crandell was arrested as the obvious suspect, she being a witch and all.

Chamovitz's reportorial instincts came to the fore, although she was briefly sidelined by emergency surgery for an ectopic pregnancy. The scrapbookers took up the sleuthing. The police? What about them? Searching Crandell's house (break-and-enter? burglary? what of it?) the club members found a strange sort of scrapbook that might have clues to her past.

Back in the hollows of the Virginia hills, there was a cult whose leader was also running a drug ring. His greatest success was to disguise the drug lab by plating it with birefringent calcite, a natural mineral prism that refracts lights and makes anything behind it invisible. Indeed. The police only find it when a trooper walked into it. I wouldn't believe that in a superhero fantasy, much less a cozy.

Crandell was released and promptly disappeared from the village, not that anyone could blame her. She left behind her strange scrapbooks for the club to ponder. Lots of loose threads were left dangling.

DEATH OF AN IRISH DIVA (2014) opened with the body of Emily McGlashen, strangled with her shoelaces. Chamovitz and the police viewed the scene, she acting as a stringer for a big-city newspaper. McGlashen recently came to the village and opened a studio to teach Irish dancing. Yes, the usual cozy economics, where women operate businesses in rural villages that would struggle in large cities.



Vera Matthews, a member of the scrapbook club, was a suspect because her stolen purse had been found nearby. For the local Deppity Dawg, that was proof enough she did it. His convincer was that Matthews operated a dance studio and resented the competition.

Chamovitz and her fellow scrapbookers once more leaped into the affray. They churned up all sorts of clues. McGlashen said she had Irish descent but was an adopted Jew from California. Her parents came to Cumberland Creek to claim the body and talk to Chamovitz about their daughter's rejection of her heritage.

That theme became more prominent later in the novel when it was revealed there was an adoption ring operating in the area that a distantly related McGlashen was connected with.

The breaking point was the discovery of an old scrapbook put together by a long-dead McGlashen. It revealed miscegenation way back on the family tree. From that clue, the scrapbookers deduced there must have been some of it still going on today. Not quite, but close enough. A local man had decided that the only pure folk worth propagating were Irish, and by infiltrating a sperm bank and adoption agency, produced more. A complicated mess of DNA.

PAPER SCISSORS DEATH (2008) by Joanna Campbell Slan was the debut novel in a cozy series about Kiki Lowenstein of Saint Louis, Missouri. Her husband George died in a hotel room under mysterious and embarrassing circumstances, leaving her a single mother. An ardent scrapbooker, she now had a host of problems in surviving widowhood.

With no income, the house had to be sold. Her mother-in-law Sheila wanted custody of her daughter Anya. Someone was harassing her, spreading lies and breaking into her house. Kiki had bills to meet and struggled to find a job. Scrapbooking was her only release from her troubles. Every chapter or so was prefaced with scrapbooking tips.

Kiki tried to find out the details behind George's death, becoming a Miss Marple in the process. The mess was eventually sorted out but not completely, as the last page set up someone who would come after her for revenge in a future novel.

A grim cozy that detailed the ugly side of Saint Louis. What was incongruous was the appendix, a contest for a "Dream Weekend In Saint Louis". The

deadline was November 15, 2008, so alas, you'll have to visit on your own dime. Don't forget your pepper spray.

CUT, CROP AND DIE (2009) was the sequel. Kiki Lowenstein was working in a scrapbook shop at minimum wage and hosting crop parties. Some of the scrapbookers could teach science fiction SJWs about bad manners and vindictive behaviours. One of them, Yvonne Gaynor, ate a pastry that had been spiked with an allergen. It happened at a Lowenstein party, as you knew it would.

Gaynor was not a popular woman, particularly for stealing other croppers' design ideas. Someone in the scrapbook community must have done it. Lowenstein had to deal with that plus a bratty daughter, a battleaxe mother-in-law, and poverty.

The case was resolved in the usual cozy manner, the final confrontation with the murderer. Lowenstein won the struggle by blasting the killer in the face with Scrapbook Protectant Spray. Once again, the ending was left open, with a fresh batch of enemies vowing revenge.

PHOTO SNAP SHOT (2010) was the third installment in the saga of Kiki Lowenstein and daughter Anya. Acorns don't fall far from the tree, it is said, and Anya proved the rule when she found the first body at her school.

Teacher Sissy Gilchrist was the victim. She was a loose woman and a poor teacher, with other sins too numerous to mention. Kiki feared that because Anya might have seen the murderer, she should investigate. The drama was doubled, both the teachers and the students, so Kiki had lots to uncover.

After a pause for advice on how to construct a family tree in a scrapbook, Kiki continued. She not only dug out personal melodramas but some Saint Louis history that many citizens today would prefer be forgotten, such as the Veiled Prophet parade. Not to mention she had to earn a living at the scrapbook store.

Assorted alarums and excursions occurred, including traditional activities such as running Miss Marple's car off the road. Things fell apart. The centre would not hold after Dodie Goldfader, the scrapbook store owner, was diagnosed with terminal cancer, Gilchrist was revealed to have been pregnant at her death, and a black male teacher who apparently knew her in the biblical sense was shot dead.

The equally traditional held-at-gunpoint ending revealed the murderer as a socialite who couldn't bear the thought of the lower classes at the school doing what they did. The major changes set up the next few novels.

MAKE TAKE MURDER (2011) began with Kiki Lowenstein finding a woman's leg in the dumpster behind the scrapbook store. It was subsequently identified as that of a regular customer, Cindy Gambrowski. The victim's husband Ross had been abusive to her and subsequently to Kiki.

Hanukkah was underway, so Kiki was busy with the holidays, her daughter Anya, running the store, and the murder investigation, both hers and the police. Kiki helped the police go through Cindy's scrapbooks for clues. The store began receiving threatening voice mail messages. Eventually suspicion centred on Ross.

After some twists and turns, and strangely a recipe for rugelach (it was Hanukkah), Ross was sent up for murder. Later on, in the epilogue, Kiki went on a Caribbean cruise. At one of the island stops, Kiki spotted Cindy in a crowd but lost her. One question remained: whose leg was that in the dumpster?

READY, SCRAP, SHOOT (2012) carried on the perils of Kiki Lowenstein, still working for a scrapbook store. She struggled to get by in a low-paying job while dealing with a senile mother and domineering ex-mother-in-law. The man who murdered her husband was roaming free and uttering threats. (Remember the ending of the first novel?)

The novel got off to a bloody start, detailed more graphically than is common in cozies. Lowenstein and family were attending a May Day recital when a sniper opened fire on the crowd, killing wealthy dowager Edwina Fitzgerald. Since by this time Lowenstein was known to police, and because of her back story, they wondered if she was the intended target.

Lowenstein was upset almost as much over the loss of a scrapbook she had prepared for the May Day ceremony, lost in the trampling of the panicked crowd. Afterwards, she was asked to prepare a memorial scrapbook for Fitzgerald, even before the funeral. Priorities, you know. A further entanglement was a new partner buying into the scrapbook store.

The novel ended as it began, in gunfire. The plot was a downer, not to be read on a rainy Sunday afternoon when you are feeling depressed. Kiki did,

however, have some brightness in her life, having begun dating a police detective named Chad Detweiler.

PICTURE PERFECT CORPSE (2013) began with Kiki getting preggers by Detweiler. His estranged wife Brenda was shot dead, and the ballistics matched his gun. Kiki's boss at the scrapbook store, Dodie Goldfader, was visited by a young woman who said she killed Dodie's son. Dodie's brain tumour was affecting her behaviour as she reached the final stage of her life. And how was your day?

Kiki tried to relax from the stress by creating another scrapbook but with little success. All manner of melodramas emerged from the past histories of those involved. After a brief stop in the middle of the book on how to make sympathy cards, certainly useful advice here, the novel rolled on.

The load of dirt on the characters would need a manure spreader running in compound low gear to haul. I forgot to mention, an evil banker held the mortgage on the Detweiler family farm and was going to foreclose.

The ending was a wild one and defies an easy summary. The killer admitted his crime to Kiki, then blew his brains out in front of her. Detweiler managed to solve his problems and be vindicated, then casually mentioned his first wife, not Brenda but a different woman, had been killed in a car accident, leaving him to care for his son. This wasn't a cozy series, it was a television soap opera.

KEEPSAKE CRIMES (2003) by Laura Childs (pseudonym of Gerry Schmitt), is the first novel in a long-running cozy series about Carmela Bertrand, who owned a scrapbooking shop called Memory Mine in New Orleans. Her ex-husband Shamus was suspected in the Mardi Gras murder of Jimmy Earl Clayton. She didn't particularly like Shamus, which is why he was an ex, but didn't think he was guilty.

Because of its high water table and the fact that it is below sea level, New Orleans graveyards have aboveground tombs, otherwise the dead wouldn't stay put but float up to the surface.

Bertrand was commissioned to make a scrapbook for the Saint Cyril's Cemetery Preservation Society, showing the history of the graveyard with photos and actual documents. It was where Clayton was entombed, giving Bertrand a good excuse to snoop around.



She was busy at the store. The city folk really seem to be into it, given the number of customers who paraded through her shop, taking lessons in scrapbooking or buying supplies such as vellum squares or gold ribbon.

While preparing the Saint Cyril scrapbook, Bertrand came across a photo of a contestant for Queen of a krewe, none other than Clayton’s daughter. The plot complicated further. The dead man was mixed up with mortgage fraud, and there was a romantic entanglement that became violent.

The denouement was a detailed explanation of who did what to whom, always a sign of over-plotting. Bertrand lived to scrapbook another day, as we knew she would.

PHOTO FINISHED (2003) was the sequel. Carmela Bertrand was hosting a late-night “Crop Til You Drop” event at the Memory Mine. The owner of an antiques shop next door, Bartholomew Hayward, came over to complain about the ruckus.

Moments after he left, he was found dead in the back alley with a pair of scissors in his neck. The NOPD didn’t have far to look for suspects because the scissors were a special brand used for scrapbooking.

Bertrand was having her own problems. Her husband Shamus, having deserted her and left her to the mercies of his family, came back for an insincere reconciliation. She still had to earn her living, not only selling scrapbook supplies and teaching classes, but contracting for party decorations and art gallery shows.

Nonetheless, she was still able to get in some Marpleing. She learned Hayward was a sharp-practice man who sold fake antiques mingled in with the genuine items. He was a cranky old coot up to no good.

After all the scrapbookers were placed under suspicion, the denouement revealed the murderer was a member of an antiques forgery ring who killed Hayward as a result of a professional disagreement. The moral of the story seemed to be that you should never buy antique furniture in New Orleans.

SKELETON LETTERS (2011) opened with Bertrand witnessing a murder in Saint Tristan’s Church in the French Quarter. The victim was a member of the scrapbooking club. Certainly an excuse for sleuthing and gossip, not to mention

putting together memorial scrapbooks. Bertrand and friends snooped around the church for clues, as if the police hadn’t already been there and done that. They paused only for calligraphy classes and to unpack boxes of rubber stamps.

After a side trip to a local bayou, more to add colour to the novel and prove it wasn’t set in a Maine seacoast village, the scrapbookers decided on Brother Paul as the culprit. They went to confront him and discovered he had become the second murder victim.

At this point in the novel, and in the series, one wonders why the NOPD don’t give up and just hire the scrapbookers as a citizen auxiliary to the Homicide Squad. One of the police detectives had commented earlier in the book that with 175 murders per year, they were stretched. It would make sense.

After assorted alarums and excursions hither and yon, Bertrand had the final confrontation with the killer. The guilty one was a mystery writer who wasn’t getting anywhere with her novels, so she decided to write true crime books. All the good crimes were taken by other authors, so she decided to create her own true crimes. It made sense.

The ending was bloodier than usual, with a gun battle between Bertrand and the killer. Normally the Miss Marple was the one held at gunpoint, but in this case Bertrand was packing heat. A rooftop exchange of fire ended with her as the victor.

CREPE FACTOR (2016) by Laura Childs (this time a pseudonym of Gerry Schmitt with Terrie Farley Moran), began at the Winter Festival in the French Quarter. Restaurant critic Martin Lash and restaurant owner Quigg Brevard had a public screaming match at the Festival. A moment later, someone in the crowd stuck a serving fork in Lash’s throat. Carmela Bertrand saw both the argument and the death. To further entangle her in the case, she had once dated Brevard.

In between selling scrapbook supplies in her store, Bertrand did her investigating into Lash’s life and death. Besides sniping at New Orleans restaurants on his Glutton For Punishment Website, Lash was active in a local environmentalist group. They spent most of their time picketing businesses in the hopes of television air time, when not infighting and struggling for control of the group. Mixed in were real estate developers, a Website editor who hated Lash, and a few personal soap operas.

Victim #2 was a real estate developer named Trent Trueblood. Really. His true blood was all over the place after someone stabbed him. The body, still bleeding, was found by, surprise!, Bertrand.

After a time-out at the scrapbook store to calm down, Bertrand shifted her investigation to the bayous. Caviar smugglers were at work, and the two dead men had been on their trail. That was a last-minute twist in the plot, used to put a different class of characters on the stage. A stretch. Drugs, probably, but caviar?

**Hobbies: Miscellaneous.**

MURDER MOST CRAFTY (2005) is an anthology of 15 cozy short stories edited by Maggie Bruce. A variety of Miss Marples, who relax with knitting, dyeing things with indigo, wreath making, and more than one story about candles. A couple of story reviews herewith.

“The Collage To Kill For” by Susan Wittig Albert has China Bayles, a herbal shop owner, investigating the death of Mattie Long. The defunct’s hobby was papermaking and collages. When she was murdered, Bayles began investigating, as neither she nor anyone else in the village of Pecan Springs, Texas, had any faith in the local Deppity Dawgs.

Long had been living well, much better than her position would pay. The cause of her death soon became evident. She was blackmailing a gynecologist who had gotten one of his patients pregnant, then murdered her.

Long’s evidence was carefully pasted over several collages she had made and then hidden. The doctor grew tired of her stringing him along, and killed her without finding the collages. Once Miss Marple found them, they were enough to send him up the river with no parole.

“How To Make A Killing Online” by Victoria Houston is about a craft one doesn’t ordinarily associate with cozies, that of tying fishing flies. Martha Estabrook tied them and sold them online. She was making good money but was gullible when it came to Internet predators.

Not a Miss Marple story. One can see how she was duped into giving away information that allowed a hacker to take over her bank account. She wound up dead and the killer moved on to the next Martha Estabrook. A cautionary tale.

**THESE ARE NOT THE FANS YOU ARE LOOKING FOR**  
by Dale Speirs

It was a hot and sunny day in Cowtown, so I stopped at a fast food outlet for a cold drink. Apparently there must be a different type of fandom out there.





SEEN IN THE LITERATURE

Petroff, E., et al (2019) **Fast radio bursts.** ASTRONOMY AND ASTROPHYSICS REVIEW 27:doi.org/10.1007/s00159-019-0116-6

Authors’ abstract: *The discovery of radio pulsars over a half century ago was a seminal moment in astronomy. It demonstrated the existence of neutron stars, gave a powerful observational tool to study them, and has allowed us to probe strong gravity, dense matter, and the interstellar medium.*

*More recently, pulsar surveys have led to the serendipitous discovery of fast radio bursts (FRBs). While FRBs appear similar to the individual pulses from pulsars, their large dispersive delays suggest that they originate from far outside the Milky Way and hence are many orders-of-magnitude more luminous.*

*While most FRBs appear to be one-off, perhaps cataclysmic events, two sources are now known to repeat and thus clearly have a longer lived central engine. Beyond understanding how they are created, there is also the prospect of using FRBs, as with pulsars, to probe the extremes of the Universe as well as the otherwise invisible intervening medium.*

*Such studies will be aided by the high-implied all-sky event rate: there is a detectable FRB roughly once every minute occurring somewhere on the sky. The fact that less than a hundred FRB sources have been discovered in the last decade is largely due to the small fields-of-view of current radio telescopes.*

*A new generation of wide-field instruments is now coming online, however, and these will be capable of detecting multiple FRBs per day. We are thus on the brink of further breakthroughs in the short-duration radio transient phase space, which will be critical for differentiating between the many proposed theories for the origin of FRBs.*

Forgan, D.H. (2019) **Exoplanet transits as the foundation of an interstellar communications network.** INTERNATIONAL JOURNAL OF ASTROBIOLOGY 18:189-198

Author’s abstract: *Two fundamental problems for extraterrestrial intelligences (ETIs) attempting to establish interstellar communication are timing and energy*

*consumption. Humanity's study of exoplanets via their transit across the host star highlights a means of solving both problems.*

*An ETI ‘A’ can communicate with ETI ‘B’ if B is observing transiting planets in A's star system, either by building structures to produce artificial transits observable by B, or by emitting signals at B during transit, at significantly lower energy consumption than typical electromagnetic transmission schemes. This can produce a network of interconnected civilizations, establishing contact via observing each other's transits.*

*Assuming that civilizations reside in a Galactic Habitable Zone (GHZ), I conduct Monte Carlo Realization simulations of the establishment and growth of this network, and analyse its properties in the context of graph theory. I find that at any instant, only a few civilizations are correctly aligned to communicate via transits. However, we should expect the true network to be cumulative, where a ‘handshake’ connection at any time guarantees connection in the future via e.g. electromagnetic signals.*

*In all our simulations, the cumulative network connects all civilizations together in a complete network. If civilizations share knowledge of their network connections, the network can be fully complete on timescales of order a hundred thousand years. Once established, this network can connect any two civilizations either directly, or via intermediate civilizations, with a path much less than the dimensions of the GHZ.*

Li, C., et al (2019) **Chang’E-4 initial spectroscopic identification of lunar far-side mantle-derived materials.** NATURE 569:378-382

Authors’ abstract: *Over 60 years of spacecraft exploration has revealed that the Earth’s Moon is characterized by a lunar crust dominated by the mineral plagioclase, overlying a more mafic (richer in iron and magnesium) mantle of uncertain composition. Both crust and mantle formed during the earliest stages of lunar evolution when late-stage accretional energy caused a molten rock (magma) ocean, flotation of the light plagioclase, sinking of the denser iron-rich minerals, such as olivine and pyroxene, and eventually solidification.*

*Very large impact craters can potentially penetrate through the crust and sample the lunar mantle. The largest of these craters is the approximately 2,500-kilometre-diameter South Pole-Aitken (SPA) basin on the lunar far side.*

*Evidence obtained from orbiting spacecraft shows that the floor of the SPA basin is rich in mafic minerals, but their mantle origin is controversial and their in situ geologic settings are poorly known.*

*China's Chang'E-4 lunar far-side lander recently touched down in the Von Kármán crater to explore the floor of the huge SPA basin and deployed its rover, Yutu-2. Here we report on the initial spectral observations of the Visible and Near Infrared Spectrometer (VNIS) onboard Yutu-2, which we interpret to represent the presence of low-calcium (ortho)pyroxene and olivine, materials that may originate from the lunar mantle. Geological context suggests that these materials were excavated from below the SPA floor by the nearby 72-km-diameter Finsen impact crater event, and transported to the landing site.*

Robbins, S.J. (2019) **A new global database of lunar impact craters >1 to 2 km: 1. Crater locations and sizes, comparisons with published databases, and global analysis.** JOURNAL OF GEOPHYSICAL RESEARCH: PLANETS 124:doi.org/10.1029/2018JE005592

Author's abstract: *This paper presents a new, global database of lunar impact craters, estimated to be a complete census of all craters with diameters larger than 1 to 2 km.*

*The database contains over 2 million craters, making it larger in number than any previously published lunar effort by more than a factor of 10. Of those craters, 1.3 million have diameters greater than or equal to 1 km, approximately 83,000 are greater than or equal to 5 km, and 6,972 craters are greater than or equal to 20 km.*

*An ellipticity analysis is conducted, illustrating there is no dominant direction for elliptical crater orientation based on location, diameter range, or ellipticity amount, consistent with randomness for craters greater than or equal to 10 km.*

*A spatial density analysis is described, comparing the spatial density of small versus large craters, and numerous observations about the nonuniformity of the size distributions of craters across the Moon are made. The spatial density is also used in a discussion about kilometer-scale secondary impact craters and clearly shows that they dominate the crater population in some areas of the lunar surface.*

Madiedo, J.M., et al (2019) **Multiwavelength observations of a bright impact flash during the 2019 January total lunar eclipse.** MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY 486:3380-3387

Authors' abstract: *We discuss here a lunar impact flash recorded during the total lunar eclipse that occurred on 2019 January 21, at 4 h 41 m  $38.09 \pm 0.01$  s UT. This is the first time ever that an impact flash is unambiguously recorded during a lunar eclipse and discussed in the scientific literature, and the first time that lunar impact flash observations in more than two wavelengths are reported.*

*The impact event was observed by different instruments in the framework of the MIDAS survey. It was also spotted by casual observers that were taking images of the eclipse. The flash lasted 0.28 s and its peak luminosity in visible band was equivalent to the brightness of a magnitude 4.2 star. The projectile hit the Moon at the coordinates  $29.2 \pm 0.3$  °S,  $67.5 \pm 0.4$  °W.*

*In this work we have investigated the most likely source of the projectile, and the diameter of the new crater generated by the collision has been calculated. In addition, the temperature of the lunar impact flash is derived from the multiwavelength observations. These indicate that the blackbody temperature of this flash was of about 5700 K. According to our analysis, the most likely scenario with a probability of 99 per cent is that the impactor that generated this flash was a sporadic meteoroid.*

Sobolev, S.V., and M. Brown (2019) **Surface erosion events controlled the evolution of plate tectonics on Earth.** NATURE 570:52-57

[Subduction is when one tectonic plate burrows under another after they collide. As an example, the India tectonic plate is burrowing under the Asian plate, causing the rise of the Himalayas.]

Authors' abstract: *Plate tectonics is among the most important geological processes on Earth, but its emergence and evolution remain unclear. Here we extrapolate models of present-day plate tectonics to the past and propose that since about three billion years ago the rise of continents and the accumulation of sediments at continental edges and in trenches has provided lubrication for the stabilization of subduction and has been crucial in the development of plate tectonics on Earth.*



*We conclude that the two largest surface erosion and subduction lubrication events occurred after the Palaeoproterozoic Huronian global glaciations (2.45 to 2.2 billion years ago), leading to the formation of the Columbia supercontinent, and after the Neoproterozoic ‘snowball’ Earth glaciations (0.75 to 0.63 billion years ago).*

*The snowball Earth event followed the ‘boring billion’, a period of reduced plate tectonic activity about 1.75 to 0.75 billion years ago that was probably caused by a shortfall of sediments in trenches, and it kick-started the modern episode of active plate tectonics.*

Grill, G., et al (2019) **Mapping the world’s free-flowing rivers.** NATURE 569:215-221

Authors’ abstract: *Free-flowing rivers (FFRs) support diverse, complex and dynamic ecosystems globally, providing important societal and economic services. Infrastructure development threatens the ecosystem processes, biodiversity and services that these rivers support.*

*Here we assess the connectivity status of 12 million kilometres of rivers globally and identify those that remain free flowing in their entire length. Only 37 per cent of rivers longer than 1,000 kilometres remain free-flowing over their entire length and 23 per cent flow uninterrupted to the ocean. Very long FFRs are largely restricted to remote regions of the Arctic and of the Amazon and Congo basins. In densely populated areas only few very long rivers remain free-flowing, such as the Irrawaddy and Salween.*

*Dams and reservoirs and their up- and downstream propagation of fragmentation and flow regulation are the leading contributors to the loss of river connectivity. By applying a new method to quantify riverine connectivity and map FFRs, we provide a foundation for concerted global and national strategies to maintain or restore them.*

Finnegan, S., et al (2019) **Unusually variable paleocommunity composition in the oldest metazoan fossil assemblages.** PALEOBIOLOGY 45:235-245

[The Ediacaran period 600 to 542 megayears ago was at the dawn of life when algae were the dominant species.]

Authors’ abstract: *Recent excavations of Ediacaran assemblages have revealed striking bed-to-bed variation in diversity-abundance structure, offering potential insight into the ecology and taphonomy of these poorly understood early Metazoan ecosystems. Here we compare faunal variability in Ediacaran assemblages to that of younger benthic assemblages, both fossil and modern.*

*We decompose the diversity of local assemblages into within-collection (alpha) and among-collection (beta) components and show that beta diversity in Ediacaran assemblages is unusually high relative to younger assemblages.*

*Average between-bed ecological dissimilarities in the Phanerozoic fossil record are comparable to within-habitat dissimilarities typically observed over meter to kilometer scales in modern benthic marine habitats, but dissimilarities in Ediacaran assemblages are comparable to those typically observed over 10 to 100 km scales in modern habitats.*

*We suggest that the unusually variable diversity-abundance structure of Ediacaran assemblages is due both to their preservation as near snapshots of benthic communities and to original ecological differences, in particular the paucity of motile taxa and the near lack of predation and infaunalization.*

Schwimmer, D.R., and W.M. Montante (2019) **A Cambrian meraspid cluster: Evidence of trilobite egg deposition in a nest site.** PALAIOS 34:254-260

[Oviparous animals are egg layers.]

Authors’ abstract: *Recent evidence confirms that trilobites were oviparous; however, their subsequent embryonic development has not been determined. A ~6 cm<sup>2</sup> clast specimen from the upper Cambrian (Paibian) Conasauga Formation in western Georgia contains a cluster of >100 meraspid trilobites, many complete with librigenae.*

*The juvenile trilobites, identified as Aphelaspis sp., are mostly 1.5 to 2.0 mm total length and co-occur in multiple axial orientations on a single bedding plane. This observation, together with the attached free cheeks, indicates that the association is not a result of current sorting. The majority of juveniles with determinable thoracic segment counts are of meraspid degree 5, suggesting that they hatched penecontemporaneously following a single egg deposition event.*

Additionally, they are tightly assembled, with a few strays, suggesting that the larvae either remained on the egg deposition site or selectively reassembled as affiliative, feeding, or protective behavior. Gregarious behavior by trilobites (“trilobite clusters”) has been reported frequently, but previously encompassed only holaspide adults or mixed-age assemblages.

This is the first report of juvenile trilobite clustering and one of the few reported clusters involving Cambrian trilobites. Numerous explanations for trilobite clustering behavior have been posited; here it is proposed that larval clustering follows egg deposition at a nest site, and that larval aggregation may be a homing response to their nest.

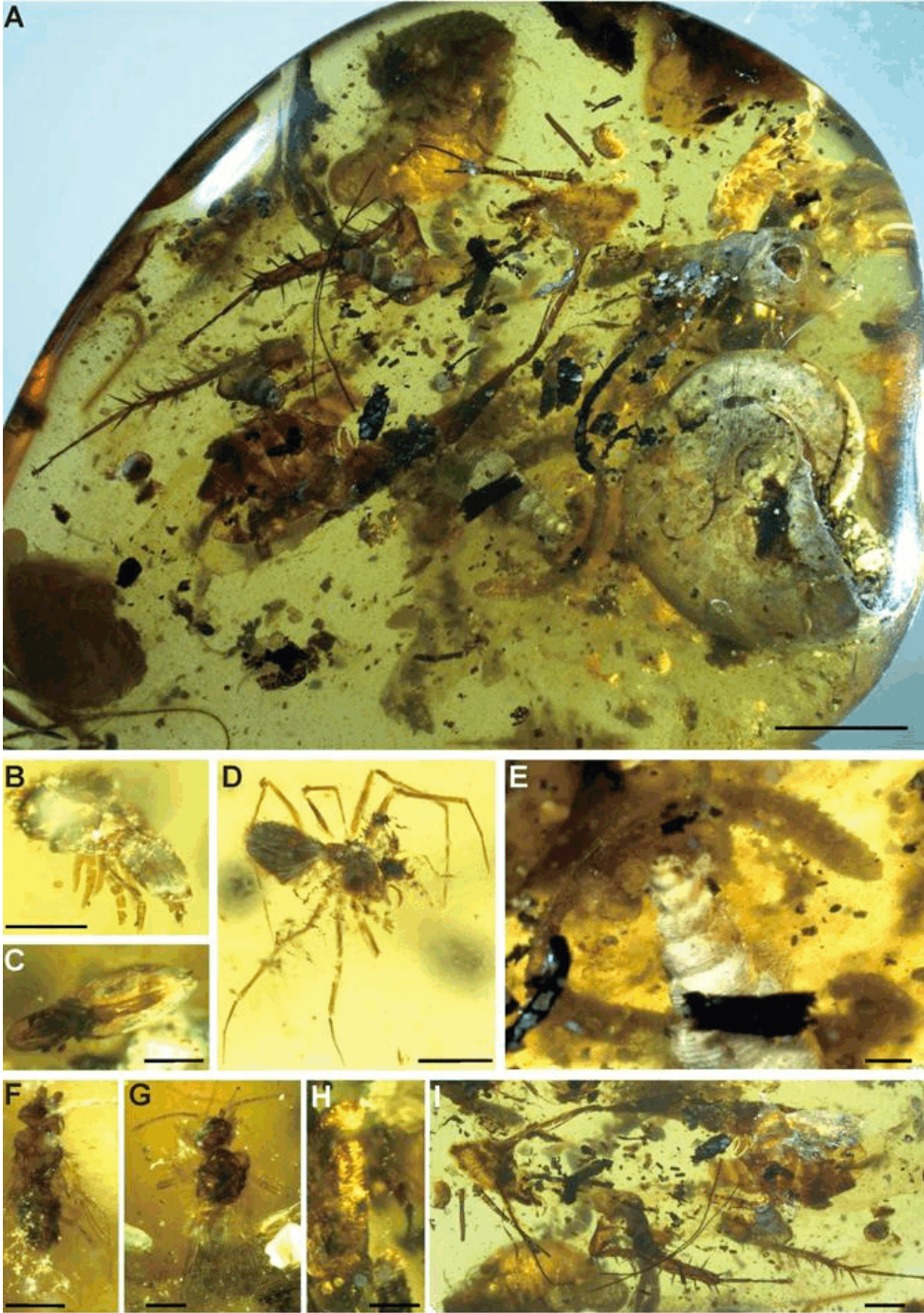
Yu, T., et al (2019) **An ammonite trapped in Burmese amber.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 116:11345-11350

Authors’ abstract: *Amber is fossilized tree resin, and inclusions usually comprise terrestrial and, rarely, aquatic organisms. Marine fossils are extremely rare in Cretaceous and Cenozoic ambers. Here, we report a record of an ammonite with marine gastropods, intertidal isopods, and diverse terrestrial arthropods as syninclusions in mid-Cretaceous Burmese amber.*

*We used X-ray-microcomputed tomography (CT) to obtain high-resolution 3D images of the ammonite, including its sutures, which are diagnostically important for ammonites. The ammonite is a juvenile Puzosia (Bhimaites) and provides supporting evidence for a Late Albian-Early Cenomanian age of the amber. There is a diverse assemblage (at least 40 individuals) of arthropods in this amber sample from both terrestrial and marine habitats, including Isopoda, Acari (mites), Araneae (spiders), Diplopoda (millipedes), and representatives of the insect orders Blattodea (cockroaches), Coleoptera (beetles), Diptera (true flies), and Hymenoptera (wasps).*

*The incomplete preservation and lack of soft body of the ammonite and marine gastropods suggest that they were dead and underwent abrasion on the seashore before entombment. It is most likely that the resin fell to the beach from coastal trees, picking up terrestrial arthropods and beach shells and, exceptionally, surviving the high-energy beach environment to be preserved as amber.*

Our discovery indicates that the Burmese amber forest was living near a dynamic and shifting coastal environment. The ammonite also provides supporting evidence for the age of the amber, which is still debated, and represents a rare example of dating using fossils present inside the amber.







*We describe the most complete skeleton of a predatory dinosaur from this gap, which belongs to a new tyrannosauroid theropod from the Middle Turonian (~92 Ma) of southern Laramidia (western North America). This taxon, *Suskityrannus hazelae* gen. et sp. nov., is a small-bodied species phylogenetically intermediate between the oldest, smallest tyrannosauroids and the gigantic, last-surviving tyrannosaurids.*

*The species already possesses many key features of the tyrannosaurid bauplan, including the phylogenetically earliest record of an arctometatarsalian foot in tyrannosauroids, indicating that the group developed enhanced cursorial abilities at a small body size.*

*Suskityrannus is part of a transitional Moreno Hill (that is, Zuni) dinosaur assemblage that includes dinosaur groups that became rare or were completely absent in North America around the final 15 Myr of the North American Cretaceous before the end-Cretaceous mass extinction, as well as small-bodied forebears of the large-bodied clades that dominated at this time.*

Nie, Y., et al (2019) **Giant pandas are macronutritional carnivores.** CURRENT BIOLOGY 29:doi.org/10.1016/j.cub.2019.03.067

*Authors' abstract: Giant pandas show seasonal foraging migration associated with bamboo phenology. The macronutrient energy ratios of pandas' diets are similar to those of carnivores. The absorbed macronutrient ratios of pandas are similar to those of the ingested foods. The diet specialization of giant pandas might be less abrupt than it might appear.*

*Giant pandas are unusual in belonging to a primarily carnivorous clade and yet being extremely specialized herbivores that feed almost exclusively on highly fibrous bamboo. Paradoxically, they appear inconsistently adapted to their plant diet, bearing a mix of herbivore and carnivore traits.*

*Herbivore traits include a skull, jaw musculature, and dentition that are adapted for fibrous diets and a specialized pseudo-thumb used for handling bamboo. They have lost functional versions of the T1R1 gene codes for umami taste receptors, which are often associated with meat eating.*

*They also have an herbivore-like subcellular distribution of the metabolic enzyme alanine: glyoxylate aminotransferase. But meanwhile, giant pandas*

Nesbitt, S.J., et al (2019) **A mid-Cretaceous tyrannosauroid and the origin of North American end-Cretaceous dinosaur assemblages.** NATURE ECOLOGY AND EVOLUTION 3:892-899

*Authors' abstract: Late Cretaceous dinosaur assemblages of North America, characterized by gigantic tyrannosaurid predators, and large-bodied herbivorous ceratopsids and hadrosaurids, were highly successful from around 80 million years ago (Ma) until the end of the 'Age of Dinosaurs' 66 Ma. However, the origin of these iconic faunas remains poorly understood because of a large, global sampling gap in the mid-Cretaceous, associated with an extreme sea-level rise.*

*have a digestive tract, digestive enzymes, and a gut microbiota composition that resemble those of carnivores and not of herbivores.*

*We show that the pandas' diet clustered in a macronutrient space among carnivores and was distinct from that of herbivores. The similarity with carnivore diets applied not only to the ingested diet but also to the absorbed diet, with the absorbed macronutrient ratios similar to those of the ingested foods. Comparison of the macronutrient composition of pandas' milk with those of other species shows that the carnivore-like dietary macronutrient composition extends across the life cycle.*

*These results cast new light on the seemingly incongruous constellation of dietary adaptations in pandas, suggesting that the transition from carnivorous and omnivorous ancestry to specialized herbivory might be less abrupt than it might otherwise appear.*

Melott, A.L., and B.C. Thomas (2019) **From cosmic explosions to terrestrial fires?** JOURNAL OF GEOLOGY 127:doi.org/10.1086/703418

Authors' abstract: *Multiple lines of evidence point to one or more moderately nearby supernovae, with the strongest signal at ~2.6 Ma. We build on previous work to argue for the likelihood of cosmic ray ionization of the atmosphere and electron cascades leading to more frequent lightning and therefore an increase in nitrate deposition and wildfires.*

*The potential exists for a large increase in the prehuman nitrate flux onto the surface, which has previously been argued to lead to CO<sub>2</sub> drawdown and cooling of the climate. Evidence for increased wildfires exists in an increase in soot and carbon deposits over the relevant period. The wildfires would have contributed to the transition from forest to savanna in northeast Africa, long argued to have been a factor in the evolution of hominin bipedalism*

Chen, F., et al (2019) **A late Middle Pleistocene Denisovan mandible from the Tibetan Plateau.** NATURE 569:409-412

Authors' abstract: *Denisovans are members of a hominin group who are currently only known directly from fragmentary fossils, the genomes of which have been studied from a single site, Denisova Cave in Siberia. They are also*

*known indirectly from their genetic legacy through gene flow into several low-altitude East Asian populations and high-altitude modern Tibetans.*

*The lack of morphologically informative Denisovan fossils hinders our ability to connect geographically and temporally dispersed fossil hominins from Asia and to understand in a coherent manner their relation to recent Asian populations. This includes understanding the genetic adaptation of humans to the high-altitude Tibetan Plateau, which was inherited from the Denisovans.*

*Here we report a Denisovan mandible, identified by ancient protein analysis, found on the Tibetan Plateau in Baishiya Karst Cave, Xiahe, Gansu, China. We determine the mandible to be at least 160 thousand years old through U-series dating of an adhering carbonate matrix.*

*The Xiahe specimen provides direct evidence of the Denisovans outside the Altai Mountains and its analysis unique insights into Denisovan mandibular and dental morphology. Our results indicate that archaic hominins occupied the Tibetan Plateau in the Middle Pleistocene epoch and successfully adapted to high-altitude hypoxic environments long before the regional arrival of modern Homo sapiens.*

Parins-Fukuchi, C., et al (2019) **Phylogeny, ancestors, and anagenesis in the hominin fossil record.** PALEOBIOLOGY 45:378-393

Authors' abstract: *In this study, we describe a simple likelihoodist approach that combines probabilistic models of morphological evolution and fossil preservation to reconstruct both cladogenetic and anagenetic relationships.*

*By applying this approach to a data set of fossil hominins, we demonstrate the capability of existing models to unveil evidence for anagenesis presented by morphological and temporal data. This evidence was previously recognized by qualitative assessments, but largely ignored by quantitative phylogenetic analyses.*

*For example, we find support for directly ancestral relationships in multiple lineages: Sahelanthropus is ancestral to later hominins; Australopithecus anamensis is ancestral to Australopithecus afarensis; Australopithecus garhi is ancestral to Homo; Homo antecessor is ancestral to Homo heidelbergensis, which in turn is ancestral to both Homo sapiens and Homo neanderthalensis.*



Lacruz, R.S., et al (2019) **The evolutionary history of the human face.** NATURE ECOLOGY AND EVOLUTION 3:726-736

Authors' abstract: *The face is the most distinctive feature used to identify others. Modern humans have a short, retracted face beneath a large globular braincase that is distinctively different from that of our closest living relatives. The face is a skeletal complex formed by 14 individual bones that houses parts of the digestive, respiratory, visual and olfactory systems.*

*A key to understanding the origin and evolution of the human face is analysis of the faces of extinct taxa in the hominin clade over the last 6 million years. Yet, as new fossils are recovered and the number of hominin species grows, the question of how and when the modern human face originated remains unclear.*

*By examining key features of the facial skeleton, here we evaluate the evolutionary history of the modern human face in the context of its development, morphology and function, and suggest that its appearance is the result of a combination of biomechanical, physiological and social influences.*

Thurber, C., et al (2019) **Extreme events reveal an alimentary limit on sustained maximal human energy expenditure.** SCIENCE ADVANCES 5:eaaw0341

Authors' abstract: *The limits on maximum sustained energy expenditure are unclear but are of interest because they constrain reproduction, thermoregulation, and physical activity. Here, we show that sustained expenditure in humans, measured as maximum sustained metabolic scope (SusMS), is a function of event duration. We compiled measurements of total energy expenditure (TEE) and basal metabolic rate (BMR) from human endurance events and added new data from adults running ~250 km/week for 20 weeks in a transcontinental race.*

*For events lasting 0.5 to 250+ days, SusMS decreases curvilinearly with event duration, plateauing below  $3 \times$  BMR. This relationship differs from that of shorter events (e.g., marathons). Incorporating data from overfeeding studies, we find evidence for an alimentary energy supply limit in humans of  $\sim 2.5 \times$  BMR; greater expenditure requires drawing down the body's energy stores. Transcontinental race data suggest that humans can partially reduce TEE during long events to extend endurance.*

Martens, P., et al (2019) **The ecological paw print of companion dogs and cats.** BIOSCIENCE 69:467-474

Authors' abstract: *Humans are at the origin of numerous pollutant activities on Earth and are the primary drivers of climate change. However, very little research has been conducted on the environmental impacts of animals, especially companion animals.*

*Often regarded as friends or family members by their owners, companion animals need significant amounts of food in order to sustain their daily energy requirement. The ecological paw print (EPP) could therefore serve as a useful indicator for assessing the impacts of companion animals on the environment.*

*Companion animals are part of human societies around the world. Pets provide a host of benefits to people including companionship, improved mental and physical health, expanded social networks, and even benefitting child and teenage development.*

*Statistics describing companion animal numbers worldwide are scarce, and they fluctuate, but according to the data from Vetnosis and the European Pet Food Industry Federation, there were 223 million registered companion dogs and 220 million registered companion cats in the world in 2014.*

*Dogs and cats are often regarded as family members, and most owners show great concern for their pet's well-being, including the food and water requirements of their pet, their living spaces, their health conditions, and even their pet's emotions and feelings.*

*Providing complete nutrition during all stages of their lives is a common and effective way for owners to have caring and loving relationships with their animals. Many owners feed their animals more nutrients than minimum recommendations or give them ingredients that are suitable for human consumption. Given the sheer numbers of companion dogs and cats globally and their potentially nutrient-rich diets, we have ample reason to suspect that resource consumption by companion animals is more serious than has been heretofore imagined.*