

OPUNTIA 475



Early June 2020

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.

AROUND COWTOWN

photos by Dale Speirs

Calgary has always been a great city for festivals and other outdoor events. Normally I can use them for a few introductory pages in each issue but the coronavirus pandemic stopped that. Every weekend of the summer there were street and ethnic festivals, excepting that during the first two weeks of July the Stampede rodeo reigned supreme.

Traditionally the first summer event was the Lilac Festival, a street fair held on the first Sunday in June as the lilacs begin to bloom. 50,000 people jammed into 13 blocks along 4 Street SW in the Mission district of central Calgary. See OPUNTIA's #343, 380, 415, and 444 for photos of past Lilac Festivals. Alas, all gone and the Stampede too. In lieu of the festival, the cover of this issue shows the lilacs in my back yard coming into bloom.

At right is a view of the Stephen Avenue pedestrian mall taken on a warm Saturday afternoon on May 30. Those tall white things are wind breakers. They had to be installed several decades ago because the skyscrapers on either side turned the street into a wind tunnel by funneling down winds from above.

On such a beautiful weekend, the mall would normally be shoulder-to-shoulder with citizenry. Now we have social distancing, although everyone's definition of 2 metres seems pretty flexible lately. People are realizing that the vast majority of deaths from COVID-19 were in nursing homes, and questioning why the re-start of the economy is not going faster.

Statistics Canada said that economic activity declined 18% in April, an unprecedented fall that even the Great Depression didn't match. The official unemployment rate is 13%, having doubled in six weeks, and youth unemployment is 40%. These figures are low because they don't include self-employed, who are not eligible for the pogeys, and those who gave up looking for work because there is none.



CURRENT EVENTS: PART 2

by Dale Speirs

[Part 1 appeared in OPUNTIA #474.]

The Way The Future Will Be.

I'm not a Trekkie but I do have the Season 1 boxed DVD sets of the Original. Next Generation, Deep Space Nine, Voyager, and Enterprise series. I've never bothered with subsequent seasons because my observation was that Paramount Studios quickly ran out of ideas and subsequent years were mostly jumping the shark. What with the coronavirus pandemic, I've been doing lots of walking, reading, and going through my bookshelf of DVDs.

Which brings me to a Season 1 episode of the Deep Space Nine series, the fifth episode "Babel", which first aired in 1993. The story took place early in the series when the Cardassian space station Deep Space Nine had been surrendered to the Federation after the Bajoran War ended.

Federation Commander Sisko was placed in charge. He needed his diplomatic talents to keep the peace with the planet Bajor, around which DS9 orbited, and a variety of alien species inhabiting the civilian sectors of the space station. When the Cardassians were forced to evacuate DS9, they left it in a mess.

Chief Engineer Miles O'Brien had his hands full trying to keep the station operating. He was faced with a constant series of technical crises, as machines and computers broke down as fast as they were repaired. Anyone who owns their own house will understand.

Along the way, the food replicator units malfunctioned. In repairing them, O'Brien inadvertently activated a Bajoran terrorist device implanted in the station during the war. It was intended to affect the Cardassians but the terrorists, after successfully planting it, were killed before they could activate it. For 18 years the device stayed hidden in the replicator circuits.

Once it was tripped and began operating, it created a virus that was written into any food being replicated. The virus initially caused aphasia, then later a high fever to kill its victims. The aphasia, an inability to speak coherently or understand language while leaving the rest of the intellect unimpaired, quickly spread through the station.

As the virus spread through the space station, services and operations collapsed with no one who could do their jobs. Sisko imposed a quarantine and prohibited any space ship from leaving DS9. One alien freighter captain had a valuable cargo of perishable goods and tried to leave, creating not a few alarms. There was the usual last-second countdown to the destruction of DS9 but since the series was to run for many years, the crisis was solved.

It was observed centuries ago that a pandemic created panic, which in turn caused almost as much harm as the actual disease. With no way to use social distancing inside a space station, the effects were magnified.

One of the DS9 officers, a Bajoran named Major Kira, eventually located a medic who had helped in the creation of the device. He found a cure for the virus and all was well by the closing credits.

The Way The Past Was.

From Project Gutenberg (www.gutenberg.org) is another history of a pandemic, available as a free download in a variety of formats. AN ACCOUNT OF THE PLAGUE WHICH RAGED AT MOSCOW, IN 1771 by Charles de Mertens was published in 1799.

The translator noted that the book, originally published in French, would be useful should the plague return to Britain. At that time, the British and other northern Europeans were adventuring in the Middle East. The translator noted in his foreword: *No nation was ever long engaged in a war with the Turks, without taking the plague. In this respect they are as much to be dreaded by their friends as their foes.* Remember that the 1918 influenza which killed millions came to North America via returning soldiers.

de Mertens began by noting that the bubonic plague was imported into Russia during its 1769 war against Turkey. It spread slowly across Romania, then into Poland and Ukraine, and by the summer of 1770 had reached Moscow. Hospital workers were the first to be afflicted. Quarantines were established. The government tried to keep the public calm.

We wished that what had passed on this subject should not transpire; but the rumour of the plague having broke out at Kiow, some months before, had produced such an effect upon the minds of the public, that the precautions which were adopted, with regard to the military-hospital, threw the whole city

into the greatest alarm. All attempts to dissipate the fears of the inhabitants were fruitless.

After some days, however, when it was known that only seven persons in the hospital itself were ill of the disorder, and that the rest remained free from infection, the public fell into the opposite extreme, and thinking themselves in perfect security, the grandees, nobles, merchants, common people, in a word, all the inhabitants, except the governor and a few others, ceased to give themselves any further trouble about the means of prevention.

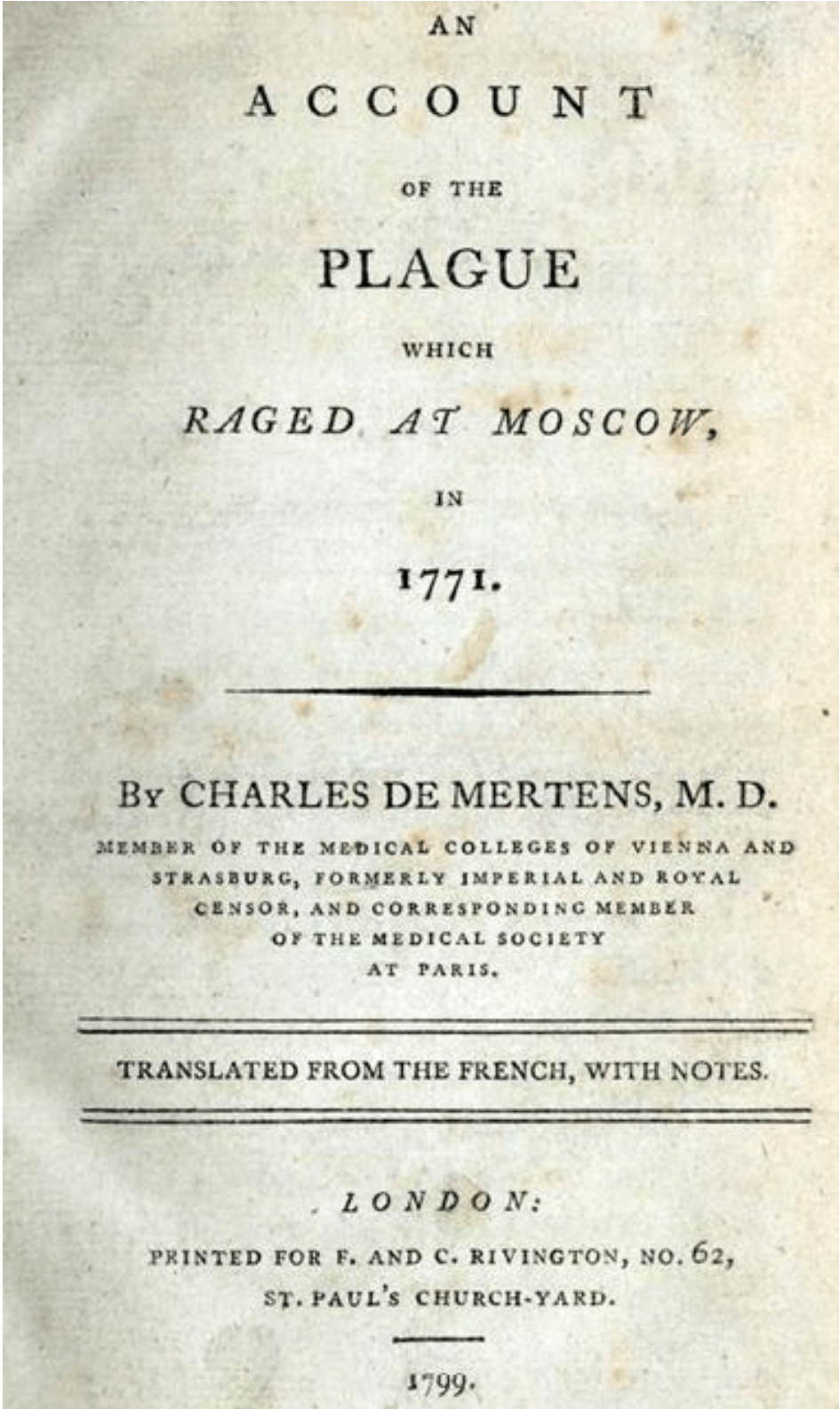
It wasn't until the number of funerals increased exponentially in 1771 that the general public began to take alarm. A few deaths from plague could be overlooked, but when traffic jams formed up at cemeteries, the panic set in. Most doctors agreed the cause was bubonic plague but there were always one or two physicians who insisted it was just some sort of fever and nothing to be alarmed about. Denial is nothing new.

Houses were quarantined and occupants required to self-isolate for 11 days. If a case occurred, everyone in the house or apartment was quarantined whether or not they exhibited the disease. After a couple of months the plague abated and everyone relaxed their guard. This led to a second wave of deaths.

Religious services spread death quite rapidly, as those convinced that prayer would make God protect them found out the hard way that pathogens do not respect churches. The priests and deacons died off en masse.

Those who fled Moscow quickly spread the disease across the Russian Empire. The refusal to obey health regulations, despite them having proven to work, resulted in 80,000 deaths in Moscow, which at that time had a population of 300,000. Another 20,000 died in the surrounding countryside.

By the spring of 1772, the plague had passed. The careless and ignorant were deleted from the gene pool, while the ones who followed clean sanitation and avoided physical contact survived. The poor died in great numbers because of crowding, poor diet, and no access to health care.



LEAVING A MARK IN THE WORLD: PART 2

photos by Dale Speirs

[Part 1 appeared in OPUNTIA #399. Additional photos were in issue #431.]

From somewhere in the Sherlock Holmes canon is his remark that people see but do not observe. In my walks around Calgary, I notice things such as manhole covers and sidewalk markings which few pedestrians do. Yet such items, however prosaic they may seem, can provide a fascinating look into urban history. It costs nothing to walk about looking at them and the exercise is always good for you.

I’ve been accumulating smartphone photographs of sidewalk markings with year stamps. This installment records Calgary canines plus a few humanoids who left their mark in concrete for posterity.

Calgary was founded in 1875 but was only a hamlet until the transcontinental railroad came through in 1883. It wasn’t until after the turn of the century that the city began pouring concrete sidewalks. Most of the earliest sidewalks have long since been replaced multiple times, so old marks are rare.

This is the oldest known sidewalk stamp in Calgary, which also preserves pawprints. It is on 2 Street SW near 15 Avenue in the Beltline district of central Calgary.



From the Britannia district on the right bank of the Elbow River is this set of tracks on Riverdale Avenue SW. I couldn’t get it into the same photo but further down the sidewalk was a 1930 date stamp.



In Altadore on 20A Street SW in the 4900 block. The date stamp is 2015.

At left: Lakeview district on 58 Avenue SW in the 2300 block, from 2012.

Below: Altadore on the 4600 block of 17 Street SW, dated 2018. It doesn't show well but the tracks go all the way to the top of the photo. This is the longest sequence of pawprints I have seen.



Bipeds quite often leave unauthorized marks. I don't bother photographing the graffiti but have photographed a few handprints.

Below: These handprints are in Marda Loop on the 2100 block of 35 Avenue SW, from 1998.

Top right: These handprints are on 3 Street SE behind the Municipal Building. A date stamp nearby was 2018.

Bottom: Footprints of a lesser hominid who couldn't read the nearby sign "Fresh Oil". In Lakeview on 54 Avenue SW at Crowchild Trail, from 2019.



Below: Seen in the Mount Royal district of central Calgary on the 800 block of Durham Avenue SW, where the rich folk live (see OPUNTIA #474). This sidewalk leads to an old-money mansion. I couldn't find anything about C.S. Dingle via Google but undoubtedly he was an early millionaire. No date stamp but it would be prior to World War One.

At right: Why are there metal footprints on ventilation grids? Because women wear spike heel shoes. True fact.



POLICE PROCEDURALS

by Dale Speirs

Oddballs.

MR MONK ON THE COUCH (2011) by Lee Goldberg is a novel based on the television series by Andy Breckman. Adrian Monk was an obsessive-compulsive detective in San Francisco, who worked as a consultant to the SFPD. He was at the far end of the Asperger scale and needed an assistant, Natalie Teeger, to help him function in the real world.

How obsessive was Monk? Once a week he disinfected his cleaning supplies, spraying Lysol on his bottle of Lysol, and washing his broom. He was terrified of germs and easily distracted by disorderly rooms. When Teeger parked the car, Monk measured the distance to the curb to ensure it was evenly parallel.

The SFPD frequently hired Monk to help out in bizarre cases, with Capt. Stottlemeyer as the Homicide liaison. Monk had the knack of seeing apparently unrelated clues and tying them and several different cases together into a coherent solution.

In this novel, several strings of cases were dealt with. Three unrelated murders were connected together by an old couch that held contraband diamonds, hidden without the knowledge of its suddenly deceased owners. In turn, another series of murders is related to a crime scene cleanup crew who found the diamonds but didn't get a chance to sell them.

Monk not only connected these deaths together but also that of a complete stranger who liked snooping on neighbours with a telescope. Everything fit together logically in hindsight, but the police would have missed the clues without Monk. The novels are quite amusing and keep the reader trying to guess which seemingly irrelevant data will be important. Well worth reading.

THE INVISIBLE CODE (2013) by Christopher Fowler is part of a humourous series about Arthur Bryant and John May, two police detectives assigned to the Peculiar Crimes Unit. In the novel at hand, they were investigating the strange behaviour of Sabira Kasavian, wife of the head of Home Office security. They found it tied in with an apparently unrelated death of a young woman who was poisoned in a church.

The stories were not told in a vacuum. There were oneupmanship contests going on between the Metropolitan Police and the Home Office. No love was lost between those agencies and they spent as much time in jurisdictional battles as they did in investigating crimes.

At the beginning of the novel there was a memo from Bryant and May's boss, complaining about the way the staff maintain the kitchen and the plumbing. A brief extract: *"There's a funny smell in the kitchen. It might be a gas leak. Our builders, the two Daves, are coming back to rip everything out. If I find one of you dropped a kebab behind the units, you'll be on unpaid overtime for a month."*

"Finally, I was under the impression that Crippen, our staff cat, was a neutered tom, but this appears not to be the case as she is clearly pregnant. Can someone please take care of this? I DO NOT want anyone unexpectedly giving birth in this unit."

Another murder stirred up more trouble. Kasavian slashed her wrists on hearing the news. There were conspiracies left, right, and centre, as assorted groups tried to hide their involvement with a biochemwarfare project gone wrong. Not an end-of-the-world scenario, just that millions of pounds were wasted and someone's promotional opportunities would suffer if word got out.

The conspirators's wives were not from Stepford but were pulling strings from behind the scenes to protect their husbands, who were their sources of money and prestige. The final line in the novel was: *Back inside the pub, Crippen gave birth to nine kittens.*

Inspector Maigret.

George Simenon had a good run with Inspector Maigret of the Paris Sureté. His story "A Battle Of Nerves" was adapted into the 1949 movie THE MAN ON THE EIFFEL TOWER, with screenplay by Harry Brown. My copy is on the Mill Creek DVD 50 Mystery Classics box set. The movie was in colour but the copy used for transfer to DVD had faded and frequently turned to sepia. Nonetheless the movie was watchable.

It began with a parasitic dandy named Bill Kirby regretting out loud in a bar that his stingy aunt was hanging on too long and he wished her dead so that he could inherit her fortune. He was overheard by a psychopath named Johann

Radek, who volunteered to do the job for a million francs and was accepted. The deed was done, and eventually Maigret identified the culprit after a few detours. The problem was that he didn't have evidence to convict Radek and Kirby. He had to track Radek continuously and find the people he associated with, then make them talk.

The case developed into psychological warfare on both sides. Radek knew Maigret was following him and professed to be unconcerned. He slowly cracked nonetheless. The end was precipitated when Radek wrote blackmail letters to Kirby, Kirby's wife, and his mistress. Those backfired on him and Maigret moved in for the arrest.

The big finale was a chase up the Eiffel Tower where Radek decided to commit suicide in front of Maigret. The detective realized Radek intended to go out in a blaze of glory and therefore returned back down, depriving him of an audience. Radek gave up, surrendered, was convicted, and took the final walk to the guillotine.

The movie started off slow but the pace built up to the final climactic chase up the tower, filmed on location. Maigret seemed a bumbling fool at times but there was method in his madness. He slowly ground down his opponent. Worth viewing for fans of police procedurals.

Old-Time Radio.

BROADWAY IS MY BEAT was an old-time radio series that aired from 1949 to 1954. The protagonist was NYPD Detective Danny Clover who worked the Times Square and Broadway districts. The episodes were written by Morton Fine and David Friedkin. The series is available from www.archive.org.

“The Henry Baker Case” was a 1949 episode about the man of that name who had liquidated his estate for \$50,000 and was now giving it away as \$10 bills out on the street. Bigger money in those days than it seems now, which is why he came to the attention of the police because of the crowd he attracted.

Clover befriended Henry Baker, who was doing nothing illegal. Baker said he was worried his brother George might kill him before he gave away all the cash. Someone did kill him, sticking a knife in his back from the crowd. Tracking back, Clover identified two additional suspects besides the brother. Henry had been seeing a female psychologist who told Clover the cash had been promised

to her. His landlord at his rooming house also seemed to have designs on the money.

Henry kept the money in a suitcase under his bed. Someone stole it after his death. Clover tracked it down to the psychologist in her apartment. While they were discussing the matter in unfriendly voices, George arrived and tried to assert his claim to the cash with a handgun. It all worked out about as you would expect. Since George couldn't inherit because he murdered his brother, the probate must have been interesting.

The episode had a weird tinge to it, difficult to put into words but certainly not the plodding style of most police procedurals. One got the impression that the writers were scripting a private eye show but putting a badge on him.

“Nick Norman And Santa Claus” was aired on Christmas Eve Day in 1949. An ex-con of that name was playing Santa Claus for a youth club, and Clover was keeping a close eye on him. Norman was a safecracker who had just completed a 15-year stretch up the river. He had been caught doing a job while wearing a Santa suit.

There was a subplot about the youth club's landlord demanding rent with menaces, but he only appeared at the beginning and the end of the episode. The big excitement was Norman being kidnapped by heavies driving a big black limousine. While that investigation was ongoing, a replacement Santa was needed. The police solved the problem by putting out an APB for anyone dressed like Santa Claus.

The investigation led to the Domino Club, where Clover was beaten up by thugs. He did manage to recover Nick Norman qua Santa Claus. The landlord got what he deserved. And to all a Merry Christmas.

Another weird episode. It appeared to be intended as humour but that was very mild and hardly raised a chuckle. Beating up a police officer should have triggered a major response but instead Clover let it go and nothing further was said.

Uphold The Law.

Fort Calgary was founded by the North West Mounted Police in 1875. They later became the Royal Canadian Mounted Police. Contrary to popular belief,

the motto of the Mounties is not “We always get our man” but “Maintiens le droit”, which translates into English as “Uphold the law”. Nor do they wear scarlet dress on routine patrol. That is dress uniform only worn for ceremonial duties. Those two misconceptions both came from Hollywood.

Their mystique among the public began early and not surprisingly old-time radio made use of them. BLAIR OF THE MOUNTIES aired in 1938 as 15-minute episodes, written by Col. Rhys Davies. The series is available from www.archive.org. This series was based on the Mounties before World War One, when they were the Royal North West Mounted Police.

“Robbery At The Canada Western Bank” was a two-part episode. Half the characters had Scottish accents thick enough to cut with a knife. Now it was indeed true that a majority of the early Mounties were Scots, which is why southern Alberta has so many Scottish place names, including Calgary. Since the radio plays were entirely dialogue of characters discussing the case, this got to be annoying.

That is indeed what they did, discuss the case. Basically the dialogue was a recitation of the plot outline, followed by a recitation of the plot outline in greater detail, and finally a minute examination of the details of the plot outline. Very little action. The opening sequence of each episode was the sound of three gunshots, presumably to ensure the listener would stay awake for the recitations.

The bank was robbed, the wrong man was arrested, but justice was done and the law upheld. They got their man. Och aye, mon, dinna fash yerself.

SOMETHING FISHY (2013) by Hilary MacLeod was a novel in a series about RCMP Constable Jane Jamieson. She and another constable had been posted to a settlement, not really a village, called The Shores, on a small island off the coast of Prince Edward Island. The Mounties had been assigned there because the murder rate had skyrocketed, the author’s in-joke about Miss Marple series.

The novel began with the arrival of Anton Paradis, who set up a high-class restaurant specializing in dangerous dining, such as puffer fish. No locals were expected among the clientele, as the restaurant was aimed at wealthy people who would helicopter in for the experience.

The locals weren’t happy about Paradis and the feelings were mutual. He couldn’t do anything about the widow next door who brought in an old mobile

home and converted it to the Fudge Palace. It wasn’t just a two-way battle. The war spread when another neighbour Newton Fanshaw set up a wind turbine, uniting all the other combatants against him.

The connections were often times bizarre, from old family feuds to present-day monomania. Someone was hoping for an inheritance and spiked a woman’s food with saffron, a poison in excess. A second death tangled the connections even more. Jamieson was in the middle, trying to make sense of it. Police work is not a matter of Miss Marple snooping. It is plodding work and drawing lines on a chart to enmesh the guilty in a spider’s web.

The wind turbine crashed down and almost all of the novel seemed like a zero-reset story, save for the dead and distressed. A bizarre mystery outside the routines of cozies and police procedurals.

Dick Tracy.

I have the DVD box set “50 Movies Mystery Classics” from Mill Creek Entertainment which contains several Dick Tracy movies based on the cartoon series by Chester Gould. The movie version of Tracy didn’t have any television wrist watches or other gadgets. He was just a conventional police detective, although his girlfriend Tess Trueheart made it into film.

The first movie in the series was simply titled DICK TRACY, produced in 1946 with screenplay by Eric Taylor. A serial killer was slashing victims at random on darkened city streets. Beyond that, the police had nothing to go on. Nor did Tess Trueheart, who was frustrated that her workaholic boyfriend wouldn’t make time for her.

The killer, signing himself Split Face, left notes demanding cash. What was peculiar was that in one note he demanded \$500, in another \$1,000, and another for \$10,000. (Add an extra zero to convert into our depreciated currency today.) The mayor was irate and demanded action.

A plethora of clues and suspects were unearthed, with lots of interconnections but no real progress. Several characters were highlighted as the killer, but that suspense was ruined when halfway through the movie Split Face was shown to the camera. He had a deep knife scar running across his face, so instantly all the other possibilities were eliminated. Among other alarms, Split Face almost succeeded in stabbing Trueheart. He fled and Dick Tracy pursued. The car

chase was interesting, as even by 1946 the traditional clichés were included, such as a delivery truck pulling out of an alley and blocking Tracy’s car.

The murders in the case continued. Eventually it gave the break in the case, when it was realized that the only thing the victims all had in common was they had served on a jury years ago and convicted a man who had slashed his girlfriend. He had since been paroled and that immediately identified Split Face’s real identity.

After the all-points bulletin was broadcast, the climax soon came. A few more alarums, and then an excursion to a balcony knife fight between Split Face and Tracy. The winner was obvious. The movie moved reasonably well. It owed little to its comic strip origins. There were no fancy gadgets. The script could have been any detective movie by just changing a few character names. Judged as an action-adventure, it was worth watching once.

Much the same could be said for DICK TRACY VS CUEBALL (1946), written by a committee. The villain was a completely bald man, the obvious source of his nickname. He was involved in a diamond heist but was easily miffed, so much so that he began killing his accomplices one by one in fits of temper. Today he would be ordered to take an anger management course.

Cueball’s initial killing was a diamond courier carrying \$300,000 in uncut stones. Cueball knew when and where to go to take out the courier, which Dick Tracy realized meant an inside source in the diamond buyer’s office had helped him. Suspicion was strewn about like rock salt on an icy road. The movie got off to a quick start, with steady action.

Much of the action took place in and around a tavern called The Dripping Dagger. Characters on both sides of the law criss-crossed through the place, looking to deal in the diamonds. The death toll rose as Cueball tried to liquidate the diamonds and became very annoyed when others balked on the deal. His leather hatband doubled as a garrote and he made frequent use of it.

Tracy developed a plan to bring in Cueball. It was an elaborate scheme the viewer instantly knew was guaranteed to make Trueheart a damsel in distress. Following on was a car chase, but fortunately there were no delivery trucks in the way. That converted into a foot chase in the railway yards where a passing freight train ended Cueball’s reign of terror. Again, a standard detective movie but for all that it was worth watching once.

FOOD COZIES: PART 19
by Dale Speirs

[Parts 1 to 18 appeared in OPUNTIA’s #432 to 434, 436, 438, 441, 442, 444, 447, 450, 454, 456 to 458, 460 to 462, and 465.]

Food cozies are Miss Marple style novels, very popular. Most are worth reading once if you like mysteries, although it is doubtful any of them will stand the test of time. Recipes are generally included, if not at the back of the book, then in between chapters or sometimes integrated into the text.

Don’t read these books if you have an appetite. I have learned from experience to read these novels on a full stomach. These reviews were written before the coronavirus pandemic. It will be interesting to see how post-virus food cozies are written.

Honey For Nothing And The Stings For Free.

THE MURDER OF A QUEEN BEE (2016) by Meera Lester was a novel in a cozy series about Abigail Mackenzie, an ex-cop who decided to take up the simple life of beekeeping near Las Flores, California. Little did the village know its fate when a Miss Marple arrived.

Mackenzie invited for lunch a friend, Fiona Mary Sullivan, who operated the Ancient Wisdom Botanicals herbal farm. She never arrived, and a few hours later her charred body was discovered in a burning car. Mackenzie decided to investigate the murder, after first pausing at the end of Chapter 1 for a recipe of Rose Scented Sugar.

There was a suspicious commune up the road, shots were fired, Sullivan’s personal life was messy, and there were suspects galore. Also in galore were assorted herbal and/or honey recipes in between the chapters, not to mention tips on growing herbs and raising bees.

The Honey Lavender Ice Cream (Chapter 7) looked good. I’m a teetotaler so I won’t try the Celtic Barn Burner in Chapter 15. This was a mix of Baileys Irish Cream, Jameson Irish Whiskey, and Guinness Stout. If you drink that one, you probably won’t be able to finish the novel.

The finale ended in flames as the murderer died in a fiery crash, the same kind of death he meted out to Sullivan. After all that, what better way to calm down and cool off than with the final recipe, Lemon Ice Cream With Strawberries.

A HIVE OF HOMICIDES (2017) was the next novel in the series. Abigail Mackenzie was busy peddling lavender honey. Apparently the villagers couldn't get enough of the stuff. A beekeeper's work is never done but Mackenzie had time to attend a wedding vows renewal ceremony.

The couple were Jake and Paola Varela, who were a vintner and truffle maker respectively. The ceremony raised eyebrows in the village because Jake was a well-known philanderer. After the event, Jake was shot dead, leaving behind plenty of suspects. He never had a chance to sample the Jicama And Persimmon Salad recipe which followed immediately after Mackenzie made the 911 call.

The social melodramas then alternated with tips to good beekeeping and herbal tea recipes. A second murder occurred just paragraphs after the Sugar Cookies recipe. Shots were fired and vehicles were burned again, but for variety Mackenzie had her house torched as well. There was indeed a hot time in the old apiary tonight.

The denouement required a full chapter to explain the motives and chronology of who did what. There were two different murderers, with revenge and blackmail at the heart of it all. Everyone had a chance to assuage their grief with the Rustic Ginger Pear Galette recipe.

Bloody Acres.

Cricket McRae wrote a cozy series about Sophie Mae Ambrose (nee Reynolds) of Cadyville, Washington State, who seemed to have a different job each book.

HEAVEN PRESERVE US (2008) began with Sophie Mae Reynolds, as she then was, making preserves during the day and volunteering at a help referral crisis centre at night where she answered the telephone. Her boyfriend, soon to be husband in a later book, was police detective Barr Ambrose.

Reynolds ran afoul of a nutcase but her boss Philip Heaven cut him off for making threats. A few days later Heaven was cut off from this life by botulism. Hopefully he made it to his namesake place.

The next victim was Ambrose himself but since he was a continuing character he survived, albeit he spent most of the novel in hospital. Reynolds was the idiot in the idiot plot and could be relied to do the stupidest thing given a choice of options. She found out the hard way that the murderer was a psychotic who didn't like the crisis centre. He found some improperly canned preserves which he then gifted a jar at a time to his enemies.

The finale had Reynolds trapped with the killer but she managed to render him unconscious with a jar of either preserved asparagus or pickles. There was a continuity error that the editor missed (pages 269 and 270, trade paperback). Reynolds lifted up a jar of asparagus and a second later smashed a jar of pickles down on the murderer's head. The recipes appendix was for jellies and pickles. Hard to trust them after reading the novel.

DEADLY ROW TO HOE (2012) began with Sophie Mae Ambrose, as she now was, volunteering at a local organic farm when a corpse was discovered in the compost heap. Her husband was one of the Deppity Dawgs, which made her life as a Miss Marple much easier.

The identity of the dead woman was unknown, so Ambrose and her friends went into action. The farm was shaky financially, and a prolonged police investigation would hurt its fruit and vegetable sales. People don't like to buy carrots or potatoes grown in compost fertilized with human blood. Nor corn, as a farmhand was the next victim, buried in a corn crib. Ambrose was collecting cobs for the farm's roadside stand when she found his body.

The murderer had problems stemming from earlier in life. She cleaned two of them out but Ambrose stopped her in time from making a clean slate. By and by the harvest and the labor ended, both in crime and vegetable picking. An appendix had two recipes, one for Pickled Dilly Beans and the other for Kale Chips. I'll skip both and go out for a hamburger.

Bake, Batter, And Rolls.

KNEADED TO DEATH (2017) by Winnie Archer was the first novel in a food cozy series about Ivy Culpepper of Santa Sofia, California. Her mother had been killed in a supposed traffic accident, so Culpepper fled to Santa Sofia to start a new life. At what she didn't know, until she took a bread-making class at Yeast Of Eden, a bakery run by Olaya Solis.

One of her classmates was murdered and Solis was a suspect. Culpepper therefore found her calling as a Miss Marple, at least when not baking conchas. The murder was tied into revenge and anger over an illegitimate child decades before, which also tied into the death of Culpepper's mother.

The final confrontation was a lengthy fingerprinting debate and genealogical dissertation, but eventually the culprit was identified. The survivors sat down to a tray of Pan Dulce. Immediately following was a recipe for Gruyere And Black Pepper Popovers, best served warm.

GLAZED MURDER (2010) by Jessica Beck was a novel in a cozy series set in April Springs, North Carolina, where Suzanne Hart operated the Donut Hearts coffee shop. On the side, she solved murders.

It is a truism in rural villages that murderers will drop off corpses at Miss Marple's place of business. This novel was no exception. The defunct lying on the doorstep of the doughnut shop was Patrick Blaine. He had been a regular customer, but alas, no more. It didn't seem to frighten away the others, and business remained steady.

After pausing for a doughnut recipe, one of many sprinkled throughout the book, Hart began sleuthing. Like other bakers, she had to rise early, and closed her shop at noon, in bed by 20h00. This gave her time to investigate in the afternoon.

To be honest, the doughnut recipes were often more interesting than the narrative. Baked Cinnamon Apple, Spiced Buttermilk, and Orange Spice were almost enough to make me rush out to a Jelly or Tim Horton doughnut shop. Fortunately I had just eaten and so was able to restrain myself.

The murderer was a corrupt Deppity Dawg who was in fear of being exposed by Blaine. Hart had her moment with him in the kitchen of the shop. She got free by splashing him in the face with hot cooking oil. And so to a heaping helping of doughnuts.

JEALOUSY FILLED DONUTS (2019) by Ginger Bolton (pseudonym of Janet Bolin) was a novel in a food cozy series about the Deputy Donut Café of Fallingbrook, Wisconsin. It was operated by Emily Westhill, widow of a police detective, and her father-in-law Tom, a retired police chief.



Pre-coronavirus doughnuts I ate from the Jelly shop in downtown Calgary. I wonder if the store will survive the pandemic.

*Top left: eggnog
Top right: mandarin orange
Bottom left: strawberry cheesecake*

The Fourth of July celebration was underway. The Queen of the Festival was an ill-mannered woman who got hers when someone stuffed a seriously big firecracker into a stack of doughnuts. Its detonation at close range as she stood next to it killed her as surely as a hand grenade.

The deceased was a prima dona who was not well liked. However the murderer was just plain psycho, who took rebuffs from women the hard way and was possessive of women who didn't want to be possessed. He didn't like Westhill either, and tried to ruin her business. The denouement took place on a cliff's edge with the usual last-minute save.

The recipes appendix began with Maple Cheddar-Filled Donuts, which the author assured us tasted much better than they sounded. For the more conventional, the other recipe was for Jelly-Filled Donuts.

LIVE AND LET PIE (2019) by Ellie Alexander (pseudonym of Kate Dyer-Seeley) was a novel in a food cozy series about Juliet Capshaw of Ashland, Oregon. She had previously been a cruise ship chef but came home to help out in the family bakery Torte. Her estranged husband Carlos still sailed the seas, causing her anguish. Building renovations and staff hiring added to the mix.

Nonetheless, and bearing in mind this was the ninth novel of the series, Capshaw had her duties as Miss Marple to fulfill. She did that by finding a human skull during a lakeside picnic. It was possibly connected to a missing persons case from 1960, that of George Mill.

The plot was freshened up by the present-day murder of Capshaw’s landlord Edgar Hannagan, who knew Mill back when. Her snooping revealed some shady real estate deals, then and now, which were connected. The murderer of Mill knew that Hannagan knew and therefore tied off that loose thread. A 1960 murder was not merely an academic case, for there is no statute of limitations for murder.

The ending had a fuzzy resolution, followed by a baking spree in the final chapter. The recipes appendix began with Cherry Almond Pie, then Fluffernutter Sandwiches (bacon and Nutella on French toast). There followed Chicken Cacciatore, Raspberry Bars, and, to wash it all down, Minestrone Vegetable Soup.

Bake-Offs And Television Shows.

THE QUICHE OF DEATH (1992) by M.C. Beaton was the debut novel in a lengthy series about Agatha Raisin, the resident Miss Marple in the English village of Carsely. She had returned to the village but found life lonely and boring. For want of anything better to do, she signed up for the village fete baking competition, specifically the quiche category.

She began by attempting to butter up the judge, Major Reginald Cummings-Browne. That didn’t work. From there, the next step was a quick trip into London to buy a spinach quiche from a high-end bakery. She entered it into the contest as her own. The fix was in though, as Cummings-Browne awarded the prize to his mistress Mrs Ellen Cartwright.

Raisin stormed out of the contest after the result was announced, leaving the quiche behind for whomever wanted it. Which was Cummings-Browne. Late

that evening, he had a few slices, then not much later died in agony from poisoning. It was very embarrassing for Raisin to admit to the police she hadn’t baked it. The bakery wasn’t blamed either. Somehow a bit of cowbane had been mixed into the ingredients. The verdict was accidental poisoning.

Complications were introduced. The baker had actually gotten his quiches from another shop and passed them off as his own. The villagers were angry at Raisin, not because of the death but because she was a city slicker who cheated. The widow was angry because Raisin kept snooping instead of leaving well enough alone.

Having poisoned one person, it was not a long step for the widow to poison Raisin’s tea. She survived since she had the entire book series ahead of her. The novel was humourous in a sardonic way and it was easy to see why the series has been successful. I bought some ready-made quiche on my next visit to the supermarket. Triple meat, not spinach.

TRIMMED TO DEATH (2018) by Nancy J. Cohen was a cozy novel set in Broward County, Florida. The resident Miss Marple was Marla Vail, hairstylist by trade. She was competing in a bake-off for a \$10,000 prize. Her entry was a coconut fudge pie (recipe in the appendix).

The contest was held at a market garden where, to get the plot moving, she found a body in a strawberry field. The defunct was Francine Dodger, who had been a food magazine publisher before someone edited her out of this life.

The suspects were a motley collection of ne’er-do-wells, including a television show chef, a food critic, an olive oil importer, a food truck operator, a pastry chef, and a cookbook author. Basically one of everything. There was no love lost between the bake-off contestants. The suspects were happy to tear each other down as Vail interviewed them.

As usual in cozies, the real motive was something that happened years before, which the murderer, now a chef, tried to cover up. Vail confronted her in her kitchen, forgetting that every kitchen has knives in it.

She managed to survive, and so to the recipes appendix. I’ll skip the Mushroom Pie and the Eggplant Rollatini, but there were a variety of other recipes such as Chicken Cacciatore, Peach Cobbler, and Vegetable Gumbo.

TOUGH COOKIE (2000) by Diane Mott Davidson was a novel in a cozy series about Goldy Schulz of Aspen Meadow, Colorado. Her catering business had temporarily closed because of plumbing failure, so she got a job taping a cooking show for PBS television. The episodes were filmed in Colorado at the Killdeer Ski Resort.

Schulz had her problems. The Chesapeake Crab Cakes and the Ice-Capped Gingersnaps didn't turn out well. Recipes were inserted into the text at intervals, and usually forewarned a turn in the plot. After the first batch, the two recipes just mentioned, the first murder victim checked out in a supposed skiing accident.

Doug Portman was an ex-boyfriend of Schulz, a military memorabilia dealer who was negotiating with Schulz's husband to buy some antique skis signed by Eisenhower. Portman had not been popular because of his sharp practice. After his death, evidence was uncovered that he had been just about to scarper to Mexico to avoid his creditors.

Schulz was cooking and sleuthing by turns, taping episodes and then racing off to sleuth. After the final episode was filmed and the last two recipes printed (Swiss Cereal and Five-Grain Bread), the final confrontation took place.

It was a ski race between the murderer and Schulz down the mountain. He went out of bounds and died in an avalanche, which saved the State of Colorado the cost of a trial. Certainly different than the usual held-at-gunpoint finales that Miss Marples normally experience.

Spicy Murder Stories.

CHAI ANOTHER DAY (2019) by Leslie Budewitz was a novel in a cozy series about Pepper Reece, who owned the Seattle Spice Shop in the Pike Place Market of that city. Despite her name, her life wasn't all spice blends and iced teas, what with employee problems, mother problems, and romantic problems. Those were nothing compared to her friend Aimee McGillvray's problem, when murder was done in the antiques shop she operated next door to the spice shop.

One of McGillvray's employees, Joelle Chapman, was stabbed to death. As usual, Reece beat the police to the scene. She was hampered because, unlike the police, she couldn't devote her full attention to the case. However we all know who would solve it regardless.



Since it will be a while before food cozy reviews resume, I might as well jam the cupcake photos in here as a memory of when you could walk into a store as you pleased.

At left: Peanut butter cupcake from IGA supermarket, pre-virus.



At right: Icing hamburger on vanilla from Safeway, May 31. The mustard, ketchup, and relish were icing sugar dyed with food colouring. The bun was very dilute butterscotch and the meat was chocolate.

Reece had to operate the spice shop and mix up blends. Her customers couldn't get enough of the Herbes de Provence. She had to plan ahead for the winter season blends, which surprised me because I didn't know spices had seasons, other than barbecue perhaps.

The entanglements and motives of the suspects made for difficulty in guessing who did it. The spotlight shifted from one troubled suspect to another. There was doubt as to who the intended target had been, Chapman or McGillvray. The problem was finally sorted out. Money and family feuds caused the death.

The recipes appendix started off with Spiced Chai to wash down the Glazed Chai Spice Coffee Cake and the Agave Lime Chili Shrimp. For a hot day, assuming Seattle ever had one, there were Grape Prosciutto Mozzarella Skewers, with Pumpkin Chai Spice Snickerdoodles for dessert.

Food Critics.

AN APPETITE FOR MURDER (2012) by Lucy Burdette (pseudonym of Roberta Isleib) was the first novel in a food cozy series about Hayley Snow of Key West, Florida. She had begun a new life as the food critic for a glossy magazine. Her boss was Kristen Faulkner, the woman who stole her boyfriend. When Faulkner was murdered, the local police chose Snow as the obvious suspect.

Poisoned key lime pie did Faulkner in, but she might not have been the intended target. Snow was a busy woman, reviewing restaurants, dealing with the police, and confronting the murderer. In the absence of admissible evidence, the case was solved by having the killer blab all. She had indeed intended the pie for someone else, a man who had cost her life savings in a bad business deal.

The recipes index was most uninspiring. The Leaning Tower Of Eggplant was one recipe we can all live without. The Molasses Sugar Cookies were routine, although the Crumb Cake seemed a slightly better choice.

Puttering Around The Kitchen.

LEAVE IT TO CLEAVER (2017) by Victoria Hamilton (pseudonym of Donna Lea Simpson) was a novel in a cozy series about Jaymie Leighton, of Queensville, Michigan. She was a dealer in vintage kitchenware and cookbooks. An elderly neighbour had died of natural causes. Jaymie and her sister Rebecca were given the task of cleaning out the house.

Jaymie was hoping to find old kitchenware but had to settle for the body of a teenage girl with a cleaver in her skull. A few days later, a second body was found in the river, also a teenage girl. The stories behind them stretched back to the Leighton sisters’ high school days. The novel alternated between the present day and 1984 when most of the characters were teenagers.

Jaymie’s sleuthing disturbed the murderer, which made life too exciting for her, including a chocolate cake sabotaged with laxative. The revelation in the

denouement was a complex tangle of illegitimate children, jealousies, family feuds, and two murderers.

The novel did end on a happy note with a wedding. Nothing was said about who got the antique cleavers. The recipes appendix had one item, Salmon Loaf. Apparently it was popular during the Great Depression as a source of cheap protein.

Chocolate.

BEHIND CHOCOLATE BARS (2016) by Kathy Aarons (pseudonym of Kathy Krevat) was a novel in a food cozy series set in West Riverdale, Maryland. The protagonists were Michelle Serrans and Erica Russell, who operated a chocolate shop when not Marpleing.

They were preparing for the Halloween Festival, where they had a booth and high hopes for their new line of zombie chocolates. Other specialties included Booberry Whites (shaped like a ghost with berry eyes), Screaming Orange Milks (go ahead, guess), and Mummy Wraps (strips of chocolate in the shape of a mummy).

The plot was prepared when the body of Faith Monette was found on the outskirts of the village. She had been a fortune hunter and fraudster, so there was a long list of suspects. As usual, the Deppity Dawgs arrested the wrong man, so Serrano began digging up the dirt on fellow citizens. Like many Miss Marples and Jessica Fletchers, she was run off the road by the murderer and suffered the regular travails of amateur sleuths.

Monette had done her man wrong and paid the extreme price. Eventually he was exposed and peace descended on the village, at least until the next novel in the series. The chocolate shop did booming business the day after Halloween, not so much from the post-holiday sale on zombie chocolates but from curious townfolk who wanted to get the gossip.

Sit-Down Restaurants.

STAKE AND EGGS (2012) by Laura Childs (pseudonym of Gerry Schmitt) was a novel in a cozy series about three 40ish women who operated the Cackleberry Club breakfast café in the village of Kindred. Suzanne Dietz was the head Marple, assisted by her business partners Toni and Petra.

It is a federal law, at least I think it is, that every cozy series must have at least one murder behind the store operated by Miss Marple, or alternatively a corpse dumped at the front door. In this case it was local and unpopular banker Ben Busacker, who was snowmobiling when someone stretched a wire across his favourite trail and decapitated him.

There was no lack of suspects given his propensity for calling in loans and foreclosing on mortgages. Notwithstanding that, the café carried on. The special of the day was Confetti Fried Eggs (no recipe in the appendix so I have no idea what that is).

Business kept going, as did the winter festival, but the three women were able to get in some amateur sleuthing. The banker was not mourned. They never are. After dredging up all the muck, Dietz staged a J'accuse! meeting. And the name of the murderer is (point finger at this moment) caused the guilty man to flee.

The posse leaped onto their snowmobiles and gave chase. Certainly a refreshing change from the usual kind of chases in novels and films. He didn't have a chance against all the other snowmobilers.

BWAH HA! HA!: PART 13
by Dale Speirs

[Parts 1 to 12 appeared in OPUNTIA's #371, 372, 378, 388, 391, 393, 397, 409, 422, 427, 434, and 451.]

The Distaff Side.

Not too many female mad scientists are seen in science fiction, excluding the ones who were wives or daughters of a mad scientist and followed on in the trade. This is probably because the bwah-ha!-ha! genes are sex-linked. Mad scientists don't have sons, only beautiful daughters by absent wives.

THE WASP WOMAN (1959) was a movie based on a story by Kinta Zertuche with screenplay by Leo Gordon. My copy is on a 50-movie collection "Mad Scientist Theatre" from Mill Creek Entertainment.

The protagonist was Janice Starlin, owner of a cosmetics company whose sales were declining because she was not aging well. She hired Dr Eric Zinthrop to develop a serum from enzymes extracted from royal jelly of bees, with herself as the first human test subject.

It worked and she lost 20 years of wrinkles in a weekend. Pause for digression. Royal jelly comes from honey bees, but halfway through the movie Zinthrop was working with wasps. Hollywood never worried about scientific veracity.

Starlin badgered Zinthrop to get the exclusive supply of serum. She used it all on herself. The movie clearly showed the royal jelly was harvested from bees but the serum turned her into a wasp. Starlin was obsessed with maintaining her beauty and events went from there.

She didn't grow a stinger when she turned into a human-sized wasp. Her head and hands went waspish with rubber appliances. Instead of stinging, she chocked her opponents with her claws. Zinthrop drove her out a high-rise window and so to the end credits.

INVASION OF THE BEE GIRLS (1973) was a movie written by Nicholas Meyer, a name Sherlockians will recognize. He later tried unsuccessfully to have his name taken off the credits. My copy is on a 50-movie collection "Mad Scientist Theatre" from Mill Creek Entertainment.

Scientists with a private research company were dying, found dead in bed after apparent heart attacks while having sex with unknown women. The company did a lot of top-secret research projects, so the feds sent agent Neil Agar to investigate.

The women were the products of mad scientist Dr Susan Harris, who was running a covert project inside the company. Her plan was to mutate nubile women into humanoids with compound eyes and eventually take over the world. Agar uncovered the plot but no one believed him. The grand finale was in Harris's laboratory. Agar stymied the plot by destroying the superscience machine. A standard plot, although enlivened by plenty of scantily clad or nude women.

Some of it was comedy, such as a group of bee women attending the funeral of a man they had killed. They were all wearing dark glasses to hide their compound eyes, while in black dresses with braless cleavages that left little to

the imagination. Hardly the sort of thing to wear to a funeral, and certainly enough to make the widow and mourners wonder about her late husband.

The end credits played over a close-up of bees pollinating flowers, while an orchestra played “Also Sprach Zarathustra”. Herr Strauss would have been amused.

“The Woman Who Shattered The Moon” (2012) is a short story by Jay Lake in his posthumous collection LAST PLANE TO HEAVEN. Set in the era of European colonialism, it is about a woman who invented a gravitational gun. She destroyed the Moon with it because she could, wanting to be remembered in history. The story is a character study. After decades of imprisonment for her crime, she was released but has no place to go.

Earth now had a ring orbiting it, but there were more serious consequences. With no lunar tides, the nutrients of the ocean didn’t mix in the water. Fishing seasons and localities varied randomly. Many plant and animal species timed their blooming or spawning to phases of the moon. The nights were now always pitch black. Earth’s ecology was in decline, and in the long run so would humans.

THE STRANGE CASE OF THE ALCHEMIST’S DAUGHTER (2017) by Theodora Gross is a mashup novel of 1800s fiction. Not necessarily Victorian, as the Frankenstein story predates Queen Victoria.

The protagonist is Mary Jekyll, daughter of you-know-who. She needed money and since there was a reward for the apprehension of the murderer Edward Hyde, she decided to find him. That set off a long chain of events that veered into other matters. She did find his daughter Diana, and from there to others.

Those others were Beatrice Rappaccini (from an 1844 story by Nathaniel Hawthorne), Catherine Moreau, and Justine Frankenstein. The five women encountered the Société des Alchimistes, a group of mad scientists out to rule the world. Sherlock Holmes and Dr Watson assisted in the investigation as supporting characters. The women formed the Athena Club as a counterweight to the Société des Alchimistes.

Unfortunately, a failing of this novel was that throughout the book the characters kept stepping back out of the story and making comments from outside the text. This interrupted the smooth flow of the narrative and jarred the reader.

The book is episodic, telling each woman’s story in turn. Beatrice was poisonous, and not just figuratively. She was imbued with toxins and could kill any living creature with her breath or touch. Catherine passed for human but was a catwoman, created from a puma by Dr Moreau on his infamous island. Justine was a nursemaid for the Frankenstein family. After she was falsely accused of murder and hanged, Victor revived her corpse in a secret laboratory in the Orkneys.

The novel ended abruptly with a letter from Lucinda Van Helsing of Austria, who begged for help. The book spent 400 pages setting up the characters and background, then crashed into a brick wall. It was obviously the first volume in a projected series. It did read well, other than the annoying sidebar comments, which could have been deleted without loss.

Downsizing The Insane Way.

“The Jungle Monsters” by Paul S. Powers (1926 March, WEIRD TALES, available as a free pdf from www.archive.org) was set in an unnamed jungle where the protagonist ran afoul of the local witch doctor who doused him with herbs and spices not found in any organic foods store today.

He woke up in a patch of grassland and found himself the size of an insect. Suddenly those ants didn’t seem to be a minor nuisance anymore. In point of fact, the narrator was hard-pressed to survive encounters with insects as big or bigger than him. Eventually the herbs wore off and he struggled back to civilization, where his fellow white men promptly put him in an insane asylum.

The ending was ambiguous as to whether he had actually been micro-miniaturized or had suffered delusions from hallucinogenic herbs. He did, however, now have an extreme fear of spiders and ants.

“The Jelly-Fish” by David H. Keller (1929 January, WEIRD TALES) was a professor who decided to show off his ability to miniaturize himself by descending into a hanging drop of water in a microscope while his students and colleagues watched.

There was a tiny jellyfish in the droplet and the professor decided to show off. As the reader will anticipate, he found that he was not as powerful as the jellyfish and was digested. Hubris, all agreed it was.

“The Beam” by Milton Kaletsky (1934 September, AMAZING STORIES, available as a free pdf from www.archive.org) was about a mad scientist named Gayle who got his comeuppance the hard way. He invented a beam on such a ridiculous premise that I won’t even mention it, a beam with which to rule the world, bwah ha!-ha!. A scientist should never use a new untested device on himself but herein lies the story.

Pause for digression. In almost every story about miniaturization, the question was never addressed as to where the missing mass went. In this story, Gayle’s beam miniaturized people but addressed the missing mass by creating two half-sized individuals, each with half the original mass. Staying in the beam then doubled the number of replicants, each with one-quarter of the mass.

Gayle hadn’t thought that through. He stepped into the beam and became two half-sized Gayles, then four, then eight, then sixteen, and so forth. He couldn’t reach the off switch. He and all his replicants were too small to flee the area and were soon reduced to dust motes. Poetic justice, and a lesson never to bwah ha!-ha! until you’re certain your gadget works properly.

A slower method was used in “The Myriad” by Harold S. Sykes (1937 December, AMAZING STORIES). Dr Gernack began breeding foundlings from an orphanage for small size. In addition to selection on the basis of genetics, he doused them with elixirs to stunt their growth. Over the decades he bred them down to 10 mm height.

The tiny people were short-lived but learned quickly and were highly intelligent. After Gernack died, his work was forgotten and the tiny humans disappeared, presumed dead. They were not, however. Now calling themselves The Myriad and spreading at exponential rates, they developed their own technology, including biowarfare.

The Myriad began spreading sleeping sickness in the USA. They made demands, some of which were acceded to in order to keep the peace. Assorted alarums developed, and a search launched for the hiding places of The Myriad. The troubles ended in a draw and uneasy truce. On that note, the story petered out with no resolution.

“The Jimson Island Giant” (1946 Winter, STARTLING STORIES, available as a free pdf from www.archive.org) was set in contemporary times as the war ended. On an island in the South Pacific, all that was left was meteorologist

Ernest Dupleix, who dabbled in mad science. It had once been a military base, a stepping stone on the path to Japan, but was now a backwater.

Dupleix stayed behind because he was developing, on his own time, an elixir that would miniaturize living things. Because he could, that’s why. There were a few native helpers on the island. The vegetation could barely support life, so the American military flew in occasional supplies to Dupleix in exchange for the weather reports.

Just before a hurricane struck, Dupleix took a rickety old plane up to spray the island with his miniaturizing fluid. It worked on everything, natives and vegetation alike. Coconut trees were ankle high, and fruit shrubs like moss. The difficulty that Dupleix overlooked was that he no longer had a food supply.

The military forgot about him after the officer-in-charge was in a bad crash elsewhere. When someone finally remembered, they returned to check on him, but found only his bones. He starved to death.

FANTASTIC VOYAGE (1966) was a science fiction movie with very good effects for its time, many of which stand up even today against modern CGI. The screenplay was by Harry Kleiner, based on a story by Otto Klement and Jerome Bixby.

Isaac Asimov was hired to do the novelization of the movie. Annoyed by the plot holes, he fixed them up in the novel as best he could with rewrites that resolved the errors. Due to production delays of the movie, the novel was released six months before the movie. As a result, many people thought the movie was adapted from Asimov’s book, instead of the other way round.

Set at the height of the Cold War, the plot began with a defecting scientist Dr Jan Benes suffering a brain injury in a car accident. He had vital information but conventional surgery could not reach the clot in his vein.

The military had developed a miniaturization procedure that could shrink humans down to microscopic size. They assembled a medical team who would be put in a minisub, shrunk down, injected into Benes’ artery and make their way to the blood clot.

The clot was to be cut away with a laser, which in 1964 was definitely still a superscience gadget. There were various alarums and excursions along the way.

Instead of taking the direct route to the brain, the minisub crew had to make constant detours. They went through the heart, lungs, lymphatic system, inner ear, and had assorted adventures along the way.

There was a saboteur on board, evidently a Soviet spy, who wanted to ensure the mission was a failure. He didn't succeed, dying in the final moments and the ship being crushed. The surviving crew made it out through a tear duct before they automatically re-enlarged to normal size.

It was not explained in the movie why the dead spy and crushed minisub, still inside Benes' brain did not enlarge either. Through a bizarre circumstance, the matter was explained by Isaac Asimov.

The special effects and medical explanations were well done. It was obvious that great pains were taken to get the anatomy and physiology correct. I'm sure audiences back then learned more about the human circulatory system than anything they might have been taught in high school biology.

The movie is well worth viewing, and is available on DVD from the usual sources. Recommended.

Golden Atoms.

The Rutherford model of an atom as a nucleus with electrons orbiting around it triggered a flurry of stories about life on a world that was an electron to us, or, conversely, Earth and the other planets were electrons to a bigger universe. The girl in the golden atom stories mostly died out by the late 1930s as scientists accepted that atoms were not miniaturized stellar systems.

The most famous of these was the story that started it all, "The Girl In The Golden Atom" by Ray Cummings (1919), imitated or elaborated by many other writers thereafter. Most of them used the idea as an excuse to transplant lost world stories or jungle action-adventures into science fiction. See OPUNTIA #372 and 388 for some previous reviews of this type of story.

"A Runaway World" by Clare Winger Harris (1926 July, WEIRD TALES) began with a set of indigestible infodumps that any modern editor would have cut, then finally got to the point. Mars was being drawn out of its orbit and pulled out of the Solar System.

Scientists determined that some god-like being in the next universe up the scale was doing chemical experiments that yanked electrons hither and yon. Taking the Sun as a proton in the upsized universe, this would imply it was a hydrogen atom with eight or nine electrons (depending on what you count as planets) instead of a single electron, which would make it one heck of an ionized particle.

This being an SF story, there was passing mention of families owning television (without the 'n') sets, with which to view the departure of Mars. Then Earth followed, setting off the mobs racing to get enough food and warm clothing when they realized what was about to happen.

The trials and tribulations of living on a frozen planet did not last forever. Earth and Mars found themselves orbiting a new sun, as the electrons they were jumped to a different atom. The chemical experiment was over.

A similar rehash of that story was "The Tale Of The Atom" by Philip Dennis Chamberlin (1935 January, AMAZING STORIES, available as a free pdf from www.archive.org). It began with a civilization noticing that a nearby star had exploded for no apparent reason. Then their star suddenly began to go out of control.

In desperation, they invented superscience devices to move their planet to another star where it would be safe. Alternating with this was a subplot about a scientist using an atomic microscope to study fission in individual atoms. After detonating a few and analyzing the results, he was surprised to observe one electron suddenly jump from its detonating atom to another one nearby. He would never know the connection.

A much better take on golden atoms was "The Atomic Conquerors" by Edmond Hamilton (1927 February, WEIRD TALES). The prologue to the story was that back in Neolithic Scotland, the inhabitants in an atom of a grain of sand enlarged themselves up to Earth size and conquered Britain. They built a series of forts, the main one of which was to guard the grain of sand so they could get back whence they came.

The atomic conquerors got bored ruling a damp cold land inhabited by barbarians, so they decided that since the Sun was an atom, they would enlarge themselves up to the next universe and conquer it.

They over-reached themselves, for the civilization in the next universe was far more advanced and powerful. That civilization not only drove them back to Earth but further back into the grain of sand.

To ensure no further trouble, the uber-civilization set a perpetual radiation lock on the grain so that there would be no further excursions, then set a slab of rock with a warning message on top. Millennia later, along came a mad scientist who had been given early retirement from the University of Cambridge for good reason. He got a friend to decipher the message, then found the lock on the grain and released it.

Once again history repeated itself. The grain of sand released its hordes of invaders, who trashed London and other cities. The uber-civilization must have had a tripwire alarm on the device, as they soon shrank down to Earth size and once again took care of the troublemakers. This time, they really, really sealed the grain of sand.

“He Who Shrank” by Henry Hasse (1936 August, AMAZING STORIES) revisited this popular trope. The mad scientist, identified only as the Professor, had invented a fluid called Shrink.

The narrator was a young man who worked as the laboratory assistant. Needless to say he got an involuntary dose of Shrink and was sent on his way on an endless voyage downward. The Professor had a device that could transmit the sounds and vision the victim experienced but there was no return.

Shrink also manufactured oxygen in the bloodstream, so the narrator would not suffocate as he passed down through the empty spaces between atoms. That was, by the way, the first time I saw this problem addressed in golden atom stories.

Down, down, down. Adventures along the way, of course. He fell into the spaces between galaxies, which became stars and planets, which then dissolved into the next layer of atoms and repeated the cycle ever downward. An endless array of planets and civilizations passed him by, each on an electron inside an electron inside an electron ad infinitum.

A late entry was “Nemesis From Lilliput” by Raymond Z. Gallun (1940 May, STARTLING STORIES, available as a freed pdf from www.archive.org). The beings of an atom were bombarded by subatomic particles from a mad

scientist’s experiment here on Earth. They took over the mind of a small girl who lived next door. She got Daddy’s gun and went next door to stop the scientist. Daddy was mixed up inextricably in the plot.

The concept here was slightly different. Various electron-planet civilizations were in contact with each other, and as they observed others being destroyed by the subatomic particles, they were advanced enough to take direct action.

Bearing in mind that they could communicate with each other at subatomic level, this implied that the speed of light was not a limit at their level. One could say that quantum mechanics, which are basically hand-waving magic, took precedence. Einstein never liked the boys in the quantum laboratory for that reason.

Miscellaneous Inventions.

Numerous science fiction pulp magazines have been and are being scanned as free downloads from www.gutenberg.org and www.archive.org. No longer do you have to spend a fortune and countless hours trying to track down old and brittle magazines. Even now there is a lifetime of reading at those two Websites. Well worth browsing, either by title or theme on the site search engines.

“Absolute Zero” by Harold Moorhouse Colter (1929 January, AMAZING STORIES, available as a free pdf from www.archive.org) was about an amateur scientist obsessed with reaching absolute zero (-273°C) in his makeshift home laboratory. That turned out to be a moot point, as en route he discovered neutronium.

It actually exists and was making news in physics at the time. It is, however, incredibly dense and heavy. A tissue paper thickness of it crushed its discoverer into tissue paper. Hint to mad scientists: don’t stand directly under your equipment when making new discoveries.

“Hidden In Glass” by Paul Ernst (1931 April, AMAZING STORIES) was a locked room mystery committed by Professor Brainard, a mad scientist who then disappeared from sight inside a clear glass box. The fatal disputation was over scientific jealousies that are familiar to anyone who has worked in a laboratory with unstable geniuses.

In the room was a large glass box, made of very thick curved glass, about 15 cm at the thickest parts. The lid was so heavy it could not be shifted.

The police detective investigating noticed that while the glass seemed crystal clear, it was actually prismatic, bending images so that the inside could not be seen. The light was refracted around whatever was inside the box, thus making it appear empty. It was against a blank wall so the refraction was not immediately obvious.

The trick was discovered when the police, looking for some hidden passageway Brainard might have used to escape, dragged the box out to the middle of the room so they could check the walls. That put it into direct sunlight coming through the window, and quickly began heating its interior to the combustion point.

The interior of the box suddenly began to fill with smoke. A moment later, Brainard threw aside the lid and emerged, scorched by the magnified rays of the sun. He was hustled away by the police to the insane asylum, hoist on his own petard.

Diamonds were not forever, as made clear in “The Vanishing Diamonds” by Charles R. Tanner (1938 June, AMAZING STORIES). Professor Isaac Stillwell had invented a method of producing flawless artificial diamonds. He had been working on a solvent for carbon molecules and stumbled across a formula that crystalized the carbon as it evaporated.

In a word, diamonds. He was at first going to publish his discovery, well aware that the result would be to crash the price of diamonds to nearly nothing. The narrator convinced him to feed a few into the market at a time and make big money to fund his laboratory work. The professor saw reason and the pact was made.

It wasn't long until the less desirable elements of society, such as gangsters and tax auditors, took an interest. The problem was that the diamonds were disappearing. How they were stolen was unknown until the professor finally realized the artificial diamonds were unstable. The carbon of the diamonds was sublimating into gas. It was profitable while it lasted.

“Polar Doom” by John Coleridge (1940 Summer, SCIENCE FICTION QUARTERLY, available as a free pdf from www.archive.org) was a typical

“because I can” story. The mad scientist in question was Dr John Manning, who set up research laboratories at the magnetic North and South Poles, which were and still are not at the geographical poles.

The laboratories were testing how to control Earth's magnetic shield. They succeeded but learned that as the magnetic poles were manipulated, the weather went berserk around the world. This inspired Manning to dreams of glory and dictatorship.

Stopping him brought out the old reverse the polarity trick, where the South Pole laboratory, controlled by the good guys, lashed out sufficient power to turn the North Pole laboratory, with Manning inside, into a smouldering crater. The only problem was that the magnetic poles were permanently reversed.

METAMORPHOSIS (1990) was a movie written and produced by G.L. Eastman. My copy was on a 50-movie collection “Mad Scientist Theatre” from Mill Creek Entertainment.

The protagonist was Dr Peter Houseman, who worked for a private university. He was having trouble with accountants and needed to justify his budget, so he took one short cut too many.

Houseman was developing a serum to stop human aging and tried it on himself. The results and the plot were predictable. The story was slow in developing, with lots of characters talking as a substitute for action.

Nonetheless, the research slowly progressed and Houseman took a chance. The serum injection that was to make him immortal was injected through the eye into the brain, a procedure sufficient to produce an Eeeeew! moment from the viewer.

The serum effects developed, beginning with violent outbursts of temper and all-around bad manners. Houseman began regressing physically, with lots of latex masks of overgrown foreheads and reptilian stares. It had to do with the recombinant DNA he had used in the serum. Instead of immortality, his body began going down the evolutionary scale.

The chase was on, blood was spilled, and gore was splattered about. There were numerous alarums and as many excursions back and forth between the laboratory and the characters' residences.

The ending was outright silly. Houseman turned into a human-sized tyrannosaurid. His rubber suit was not invulnerable to sustained point-blank shotgun fire from the police. There are some things man was not meant to know, etcetera.

Beam Us Up, Gene.

The transporter beam was not invented by Gene Roddenberry but had a long history. “Beam Transmission” by George H. Scheer Jr (1934 July, AMAZING STORIES) was about a group of graduate students who invented such a device. They had troubles with it at first, as a silver dollar arrived at the other end looking like a miniature bird nest, and a watch became a small pile of scrap metal.

They got that problem sorted out, then tried living creatures such as laboratory rats. Initial trials killed the animals but eventually the problem was solved, so on to the next step, transmitting a human. Before they could try that next step, something began transmitting objects to them. An alien civilization had detected the beam and was trying to communicate by sending little statues of its species and others.

The professor supervising the students made the first trip and found himself in a glass cage. Obviously the aliens were worried about pathogens. (As the denizens of Star Trek never did when they beamed down to a new planet.) From there, the whole gang made the trip, spending time in the alien world and having the usual sort of action-adventures alarms and excursions.

They could never establish where the alien world was. One of them wondered if they had visited an electron planet a la Girl in the Golden Atom. That point was left ambiguous at the end of the story.

“Life Inside A Wall” by Harl Vincent (1940 Summer, SCIENCE FICTION QUARTERLY) was about an inventor who discovered a matter transmitter and decided to test it out on a human. It had worked on small animals, so he wanted to try something more practical.

The test subject was Tony Pizzaro, dumb enough to agree and healthy enough to survive. The transmitter sent him off in fine style, but he never showed up at the other terminal. He had been trapped inside the intervening plaster wall. There was no drywall back then, and interior walls were plaster on chicken wire

frames. The problem was determined to be the chicken wire on both sides of the wall acting as capacitors and trapping the transmission between them. The wall was essentially a giant condenser.

The inventor figured out a way to short the wires and get the transmission to its terminal. Pizzaro was eventually returned to materiality but the plaster walls suffered. So did the inventor when the landlady found out about it.

A Dish Best Served Cold.

Mad scientists are not entirely without feelings. Since they invariably have beautiful daughters, it stands to reason they must have had wives, and romance entered their lives.

“The Glen Echo Mystery” by Walter Wellman (1898 December, THE BLACK CAT, available as a free pdf from www.archive.org) is about Prof. Edwin Stone’s elimination of romantic rival Sylvester Baldwin in the chase for the hand of the beautiful Irene Davidge. The professor had a rooftop laboratory in his house.

One night when numerous guests were staying over, including Baldwin, he lured the man upstairs without anyone else noticing. Stone had prefabricated a gas balloon sufficient to carry a man up to a great height. He chloroformed Baldwin, tied him to the balloon, attached a timed release mechanism, and sent him away to drift.

Baldwin’s body was discovered the next day several hundred miles away, far from any railway, having fallen unconscious from the balloon and killed on impact. No one knew what had happened; they only saw a battered body with no indication of how he came to be there. Stone was free to marry Davidge and raise beautiful daughters.

Using Other People’s Brains.

Perhaps not in our lifetime, but medical technology is advancing to the point where brain transplants aren’t such a ridiculous idea as once thought. They were a staple of pulp magazines and 1950s B-movies.

“Dr Pichgru’s Discovery” by Carl F. Keppler (1929 July, WEIRD TALES, available as a free pdf from www.archive.org) was a standard brain transplant

story. Pichegru started off slow, first transplanting the brain of a snake into a chicken and vice versa. He got a chicken that would strike a deadly peck and a snake that ruffled its scales.

His next step was to drug the narrator unconscious and then switch his brain with a gorilla. The narrator was enraged and choked Pichegru to death before realizing there was no way to switch back without him. Further, he had no human voice, since gorillas can't make speech with their larynxes. He was trapped.

“Horror’s Head” by John Pease (1938 October, AMAZING STORIES) took place in the Soviet Union, where Dr Nicholas Grodski preserved the head of a political prisoner named Peshkin. With an air tube to power his larynx and allow him to speak, and other tubes to supply oxygen and nutrients to the brain, Peshkin found himself helpless on a laboratory bench. He hated Grodski beyond measure for keeping him alive like that.

The miraculous procedure came to the attention of Comrade Stalin, who paid a visit to the laboratory. Grodski bragged of all he had done, but Peshkin realized his chance by playing dead. Eyes closed, no visible response to words, he looked like a wax image.

Stalin was enraged and ordered Grodski’s immediate internment in the gulag for perpetuating a fraud. As her father was hauled away, Grodski’s daughter angrily ripped out the tubes and Peshkin died smiling at his revenge.

THE ATOMIC BRAIN (1963), written by a committee of three writers who knew little about science, was on a 50-movie collection “Sci-Fi Classics” from Mill Creek Entertainment.

The protagonist was a wealthy elderly woman Mrs March, who wanted to be young again. There being no royal jelly extracts in her medicine cabinet, she hired a mad scientist Dr Frank to remedy the situation. The movie began with a narrator pretentiously explaining that the experiments were using atomic fission to revitalize brain cells. In reality, the cells would have been deep fried.

Frank began by robbing a grave of a freshly buried young woman, but her brain cells had already deteriorated beyond resuscitation. March hired three foreign women as domestics. They had no family to enquire after them if they went missing.

They were beautiful young women, for March didn’t see the point of being revived inside a frumpy middle-aged body.

The film was mostly narrated, evidently having been made on a budget that precluded using a sound crew for more than a day or two. It jumped occasionally to a cemetery where Frank collected his cadavers. His laboratory was in March’s mansion. A wolfman was constantly lurking in the shrubbery at both the cemetery and the mansion. He contributed nothing to the plot, so why he was added was a mystery.

The movie was slow paced. The real action began when Frank stepped inside his atomic reactor chamber to adjust something. A pet cat, listed in the end credits as Xerxes, jumped up on the control panel outside, locked Frank inside, and turned on the radiation. Think “Kitten On The Keys” with atomic energy. A bit random, but believable to anyone who owns a cat.

From there, fires, explosions, death, and destruction. Xerxes survived but March and Frank didn’t. One of the domestics made it out of the burning mansion. The wrangler who taught Xerxes how to operate the control panel should have had an Academy Award.

WORLD WIDE PARTY ON JUNE 21

Founded by Benoit Girard (Quebec) and Franz Miklis (Austria) in 1994, the World Wide Party is held on June 21st every year. 2020 will be the 27th year of the WWP. Mark your calendars now!

At 21h00 local time, everyone is invited to raise a glass and toast fellow members of zinedom around the world. It is important to have it exactly at 21h00 your time. The idea is to get a wave of fellowship circling the planet. Rescheduling it to a club meeting or more convenient time negates the idea of a wave of celebration by SF fans and zinesters circling the globe.

At 21h00, face to the east and salute those who have already celebrated. Then face north, then south, and toast those in your time zone who are celebrating as you do. Finally, face west and raise a glass to those who will celebrate WWP in the next hour.

SEEN IN THE LITERATURE

Sullivan, M.J.P., et al (2020) **Long-term thermal sensitivity of Earth’s tropical forests.** SCIENCE 368:869-874

[You will have noticed that most of the papers I list here have one author name and then ‘et al’, which means “and others”. This is because most scientific papers these days have multiple authors, usually no more than a dozen or so, and I don’t want to take up space listing them all when it is the paper, not the authors, that is of interest. It is not uncommon for some papers to have 100 or so authors.]

[This was one of them, and just to show you what ‘et al’ means, I took a screenshot of the full authorship of this paper. I didn’t count how many names there were. If you’re bored in your coronavirus lockdown, I invite you to do a count and let me know.]

Authors’ abstract: *The sensitivity of tropical forest carbon to climate is a key uncertainty in predicting global climate change. Although short-term drying and warming are known to affect forests, it is unknown if such effects translate into long-term responses.*

Here, we analyze 590 permanent plots measured across the tropics to derive the equilibrium climate controls on forest carbon. Maximum temperature is the most important predictor of aboveground biomass (-9.1 megagrams of carbon per hectare per degree Celsius), primarily by reducing woody productivity, and has a greater impact per °C in the hottest forests (>32.2°C). Our results nevertheless reveal greater thermal resilience than observations of short-term variation imply.

This synthesis of plot networks across climatic and biogeographic gradients shows that forest thermal sensitivity is dominated by high daytime higher under moderate climate change if they are protected from direct impacts such as clearance, logging, or fires.

By Martin J. P. Sullivan, Simon L. Lewis, Kofi Affum-Baffoe, Carolina Castilho, Flávia Costa, Aida Cuni Sanchez, Corneille E. N. Ewango, Wannes Hubau, Beatriz Marimon, Abel Monteagudo-Mendoza, Lan Qie, Bonaventure Sonké, Rodolfo Vasequez Martinez, Timothy R. Baker, Roel J. W. Brienen, Ted R. Feldpausch, David Galbraith, Manuel Gloor, Yadvinder Malhi, Shin-Ichiro Aiba, Miguel N. Alexiades, Everton C. Almeida, Edmar Almeida de Oliveira, Esteban Álvarez Dávila, Patricia Alvarez Loayza, Ana Andrade, Simone Aparecida Vieira, Luiz E. O. C. Aragão, Alejandro Araujo-Murakami, Eric J. M. M. Arets, Luzmila Arroyo, Peter Ashton, Gerardo Aymard C., Fabrício B. Baccaro, Lindsay F. Banin, Christopher Baraloto, Plínio Barbosa Camargo, Jos Barlow, Jorcely Barroso, Jean-François Bastin, Sarah A. Batterman, Hans Breeckman, Serge K. Begne, Amy C. Bennett, Erika Berenguer, Nicholas Berry, Lilian Blanc, Pascal Boeckx, Jan Bogaert, Damien Bonal, Frans Bongers, Matt Bradford, Francis Q. Brearley, Terry Brncic, Foster Brown, Benoit Burban, José Luis Camargo, Wendeson Castro, Carlos Céron, Sabina Cerruto Ribeiro, Victor Chama Moscoso, Jérôme Chave, Eric Chezeaux, Connie J. Clark, Fernanda Coelho de Souza, Murray Collins, James A. Comiskey, Fernando Cornejo Valverde, Massiel Corrales Medina, Lola da Costa, Martin Dančák, Greta C. Dargie, Stuart Davies, Nallaret Davila Cardozo, Thales de Haulleville, Marcelo Brilhante de Medeiros, Jhon del Aguila Pasquel, Géraldine Derroire, Anthony Di Fiore, Jean-Louis Doucet, Aurélie Dourdain, Vincent Droissant, Luisa Fernanda Duque, Romeo Ekoungoulou, Fernando Elias, Terry Erwin, Adriane Esquivel-Muelbert, Sophie Fauset, Joice Ferreira, Gerardo Flores Llampazo, Ernest Foli, Andrew Ford, Martin Gilpin, Jefferson S. Hall, Keith C. Hamer, Alan C. Hamilton, David J. Harris, Terese B. Hart, Radim Hédli, Bruno Hérault, Rafael Herrera, Niro Higuchi, Annette Hladik, Eurídice Honorio Coronado, Isau Huamantupa-Chuquimaco, Walter Huaraca Huasco, Kathryn J. Jeffery, Eliana Jimenez-Rojas, Michelle Kalamandeen, Marie Noël Kamdem Djuikouo, Elizabeth Kearsley, Ricardo Keichi Umetsu, Lip Khoon Kho, Timothy Killeen, Kanehiro Kitayama, Bente Klitgaard, Alexander Koch, Nicolas Labrière, William Laurance, Susan Laurance, Miguel E. Leal, Aurora Levesley, Adriano J. N. Lima, Janvier Lisingo, Aline P. Lopes, Gabriela Lopez-Gonzalez, Tom Lovejoy, Jon C. Lovett, Richard Lowe, William E. Magnusson, Jagoba Malumbres-Olarte, Ângelo Gilberto Manzatto, Ben Hur Marimon Jr., Andrew R. Marshall, Toby Marthews, Simone Matias de Almeida Reis, Colin Maycock, Karina Melgao, Casimiro Mendoza, Faizah Metali, Vianet Mihindou, William Milliken, Edward T. A. Mitchard, Paulo S. Morandi, Hannah L. Mossman, Laszlo Nagy, Henrique Nascimento, David Neill, Reuben Nilus, Percy Núñez Vargas, Walter Palacios, Nadir Pallqui Camacho, Julie Peacock, Colin Pendry, Maria Cristina Peñuela Mora, Georgia C. Pickavance, John Pipoly, Nigel Pitman, Maureen Playfair, Lourens Poorter, John R. Poulsen, Axel Dalberg Poulsen, Richard Preziosi, Adriana Prieto, Richard B. Primack, Hirma Ramirez-Angulo, Jan Reitsma, Maxime Réjou-Méchain, Zorayda Restrepo Correa, Thaiane Rodrigues de Sousa, Lily Rodriguez Bayona, Anand Roopsind, Agustín Rudas, Ervan Rutishauser, Kamariah Abu Salim, Rafael P. Salomão, Juliana Schiethi, Douglas Sheil, Richardly C. Silva, Javier Silva Espejo, Camila Silva Valeria, Marcos Silveira, Murielle Simo-Droissart, Marcelo Fragomeni Simon, James Singh, Yahn Carlos Soto Shareva, Clement Stahl, Juliana Stropp, Rahayu Sukri, Terry Sunderland, Martin Svátek, Michael D. Swaine, Varun Swamy, Hermann Taedoumg, Joey Talbot, James Taplin, David Taylor, Hans ter Steege, John Terborgh, Raquel Thomas, Sean C. Thomas, Armando Torres-Lezama, Peter Umuay, Luis Valenzuela Gamarra, Geertje van der Heijden, Peter van der Hout, Peter van der Meer, Mark van Nieuwstadt, Hans Verbeeck, Ronald Vernimmen, Alberto Vicentini, Ima Célia Guimarães Vieira, Emilio Vilanova Torre, Jason Vleminckx, Vincent Vos, Ophelia Wang, Lee J. T. White, Simon Willcock, John T. Woods, Verginia Wortel, Kenneth Young, Roderick Zagt, Lise Zemagho, Pieter A. Zuidema, Joeri A. Zwerts, Oliver L. Phillips

Neeleman, M., et al (2020) **A cold, massive, rotating disk galaxy 1.5 billion years after the Big Bang.** NATURE 581:269-272

[The greater the redshift of a star or galaxy, the further away and older it is.]

Authors' abstract: *Massive disk galaxies like the Milky Way are expected to form at late times in traditional models of galaxy formation, but recent numerical simulations suggest that such galaxies could form as early as a billion years after the Big Bang through the accretion of cold material and mergers. Observationally, it has been difficult to identify disk galaxies in emission at high redshift in order to discern between competing models of galaxy formation.*

Here we report imaging, with a resolution of about 1.3 kiloparsecs, of the 158-micrometre emission line from singly ionized carbon, the far-infrared dust continuum and the near-ultraviolet continuum emission from a galaxy at a redshift of 4.2603, identified by detecting its absorption of quasar light.

These observations show that the emission arises from gas inside a cold, dusty, rotating disk with a rotational velocity of about 272 kilometres per second. The detection of emission from carbon monoxide in the galaxy yields a molecular mass that is consistent with the estimate from the ionized carbon emission of about 72 billion solar masses.

The existence of such a massive, rotationally supported, cold disk galaxy when the Universe was only 1.5 billion years old favours formation through either cold-mode accretion or mergers, although its large rotational velocity and large content of cold gas remain challenging to reproduce with most numerical simulations.

Sofue, Y. (2020) **Focusing magnetohydrodynamic waves as a trigger of star formation.** PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN 72:doi.org/10.1093/pasj/psz143

Author's abstract: *Propagation of fast-mode magnetohydrodynamic (MHD) waves in interstellar space is simulated, and a focusing MHD wave model is proposed for triggered star formation. Waves from an star formation region are trapped by nearby molecular clouds and converge onto their focal points, causing implosive compression.*

Even an isolated cloud suffers from long-distance invasion of waves from remote sources. Echoing star formation occurs inside a cloud as well as between clouds. Repetitive refocusing in a filamentary cloud suggests spatial periodicity in star formation sites along the filament.

The model is applied to the star formation regions M16 and M17, where MHD waves produced by M16 are shown to converge onto the focal point of the nearby giant molecular cloud and trigger the star formation in M17.

Lee, E.J., and P.F Hopkins (2020) **Most stars (and planets?) are born in intense radiation fields.** MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY: LETTERS 495:doi.org/10.1093/mnrasl/slaa050

Authors' abstract: *Protostars and young stars are strongly spatially 'clustered' or 'correlated' within their natal giant molecular clouds. We demonstrate that such clustering leads to the conclusion that the incident bolometric radiative flux upon a random young star/disc is enhanced (relative to volume-averaged fluxes) by a factor that increases with the total stellar mass of the complex.*

Because the Galactic cloud mass function is top-heavy, the typical star in our Galaxy experienced a much stronger radiative environment than those forming in well-observed nearby (but relatively small) clouds, exceeding fluxes in the Orion Nebular Cluster by factors of ~ 30 .

Heating of the circumstellar disc around a median young star is dominated by this external radiation beyond ~ 50 AU [Astronomical Units. 1 AU is the distance between Earth and the Sun.] And if discs are not well shielded by ambient dust, external ultraviolet irradiation can dominate over the host star down to sub-AU scales.

Another consequence of stellar clustering is an extremely broad Galaxy-wide distribution of incident flux (spanning > 10 decades), with half the Galactic star formation in a substantial 'tail' towards even more intense background radiation. We also show that the strength of external irradiation is amplified superlinearly in high-density environments such as the Galactic Centre, starbursts, or high-redshift galaxies.

Lingam, M., and A. Loeb (2020) **Photosynthesis on exoplanets and exomoons from reflected light.** INTERNATIONAL JOURNAL OF ASTROBIOLOGY 19:210-219

Authors’ abstract: *Photosynthesis offers a convenient means of sustaining biospheres. We quantify the constraints for photosynthesis to be functional on the permanent nightside of tidally locked rocky exoplanets via reflected light from their exomoons.*

We show that the exomoons must be at least half the size of Earth's moon in order for conventional oxygenic photosynthesis to operate. This scenario of photosynthesis is unlikely for exoplanets around late-type M-dwarfs due to the low likelihood of large exomoons and their orbital instability over long timescales.

Subsequently, we investigate the prospects for photosynthesis on habitable exomoons via reflected light from the giant planets that they orbit. Our analysis indicates that such photosynthetic biospheres are potentially sustainable on these moons except those around late-type M-dwarfs. We conclude our analysis by delineating certain physiological and biochemical features of photosynthesis and other carbon fixation pathways, and the likelihood of their evolution on habitable planets and moons.

Lara, P., et al (2020) **The reliability of the Titius-Bode relation and its implications for the search for exoplanets.** PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN 72:doi.org/10.1093/pasj/psz146

[Roughly speaking, the Titius-Bode relation says that each planet is twice as far from its star as the next innermost planet. It is not an invariant rule and has its detractors.]

Authors’ abstract: *The major semiaxes of the planets in our solar system obey a simple geometric progression known as the Titius-Bode relation, whose physical origin remains disputed. It has been shown that the exoplanetary systems follow a similar (but not identical) progression of the form $a_n = a_0 e^{bn}$, where a_0 and b are constants to be determined for each system.*

Since its formulation, the Titius-Bode relation has proved to be highly predictive in our solar system. Using data from 27 exoplanetary systems with five or more

planets and applying a proposed method, we conclude that reliable Titius-Bode-like fits can be obtained for systems with at least four planets and that the precision of the Titius-Bode relation is 78%.

By means of a statistical test we show that the periods of planets in real exoplanetary systems are not consistent with a random distribution. Rather, they show signs that their configuration is shaped by their mutual interactions.

Chen, C., et al (2020) **Polar planets around highly eccentric binaries are the most stable.** MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY 494:4645-4655

Authors’ abstract: *We study the orbital stability of a non-zero mass, close-in circular orbit planet around an eccentric orbit binary for various initial values of the binary eccentricity, binary mass fraction, planet mass, planet semimajor axis, and planet inclination by means of numerical simulations that cover 5×10^4 binary orbits.*

For small binary eccentricity, the stable orbits that extend closest to the binary (most stable orbits) are nearly retrograde and circulating. For high binary eccentricity, the most stable orbits are highly inclined and librate near the so-called generalized polar orbit which is a stationary orbit that is fixed in the frame of the binary orbit.

For more extreme mass ratio binaries, there is a greater variation in the size of the stability region (defined by initial orbital radius and inclination) with planet mass and initial inclination, especially for low binary eccentricity.

For low binary eccentricity, inclined planet orbits may be unstable even at large orbital radii (separation $> 5a_b$). The escape time for an unstable planet is generally shorter around an equal mass binary compared with an unequal mass binary. Our results have implications for circumbinary planet formation and evolution and will be helpful for understanding future circumbinary planet observations.

Authors’ abstract: *The search for spectroscopic biosignatures with the next generation of space telescopes could provide observational constraints on the abundance of exoplanets with signs of life. An extension of this spectroscopic characterization of exoplanets is the search for observational evidence of technology, known as technosignatures.*

Current mission concepts that would observe biosignatures from ultraviolet to near-infrared wavelengths could place upper limits on the fraction of planets in the Galaxy that host life, although such missions tend to have relatively limited capabilities of constraining the prevalence of technosignatures at mid-infrared wavelengths. Yet searching for technosignatures alongside biosignatures would provide important knowledge about the future of our civilization.

If planets with technosignatures are abundant, then we can increase our confidence that the hardest step in planetary evolution, the Great Filter, is probably in our past. But if we find that life is commonplace while technosignatures are absent, then this would increase the likelihood that the Great Filter awaits to challenge us in the future.

Way, M.J., and A.D. Del Genio (2020) **Venusian habitable climate scenarios: Modeling Venus through time and applications to slowly rotating Venus-like exoplanets.** JGR PLANETS 125:doi.org/10.1029/2019JE006276

Authors’ abstract: *One popular view of Venus’ climate history describes a world that has spent much of its life with surface liquid water, plate tectonics, and a stable temperate climate. Part of the basis for this optimistic scenario is the high deuterium to hydrogen ratio from the Pioneer Venus mission that was interpreted to imply Venus had a shallow ocean's worth of water throughout much of its history.*

Another view is that Venus had a long-lived (~100 million years) primordial magma ocean with a CO₂ and steam atmosphere. Venus’ long-lived steam atmosphere would sufficient time to dissociate most of the water vapor, allow significant hydrogen escape, and oxidize the magma ocean.

A third scenario is that Venus had surface water and habitable conditions early in its history for a short period of time (<1 Gyr), but that a moist/runaway greenhouse took effect because of a gradually warming Sun, leaving the planet desiccated ever since.

Using a general circulation model, we demonstrate the viability of the first scenario using the few observational constraints available. We further speculate that large igneous provinces and the global resurfacing hundreds of millions of years ago played key roles in ending the clement period in its history and presenting the Venus we see today.

The results have implications for what astronomers term “the habitable zone,” and if Venus-like exoplanets exist with clement conditions akin to modern Earth, we propose to place them in what we term the “optimistic Venus zone.”

We have little data on our neighbor Venus to help us understand its climate history. Yet Earth and Venus are sister worlds. They initially formed close to one another and have nearly the same mass and radius.

Despite the differences in their current atmospheres and surface temperatures, they likely have similar bulk compositions, making comparison between them extremely valuable for illuminating their distinct climate histories.

We analyze our present data on Venus alongside knowledge about Earth’s climate history to make a number of exciting claims. Evaluating several snapshots in time over the past 4+ billion years, we show that Venus could have sustained liquid water and moderate temperatures for most of this period. Cloud feedbacks from a slowly rotating world with surface liquid water reservoirs were the keys to keeping the planet clement.

Contrast this with its current surface temperature of 450° and an atmosphere dominated by carbon dioxide and nitrogen. Our results demonstrate that it was not the gradual warming of the Sun over the eons that contributed to Venus present hothouse state.

Rather, we speculate that large igneous provinces and the global resurfacing hundreds of millions of years ago played key roles in ending the clement period in its history.

Amir Siraj, A., and A. Loeb (2020) **Exporting terrestrial life out of the Solar System with gravitational slingshots of Earth-grazing bodies.** INTERNATIONAL JOURNAL OF ASTROBIOLOGY 19:260-263

Authors’ abstract: *Exporting terrestrial life out of the Solar System requires a process that both embeds microbes in boulders and ejects those boulders out of the Solar System. We explore the possibility that Earthgrazing long-period comets (LPCs) and interstellar objects (ISOs) could export life from Earth by collecting microbes from the atmosphere and receiving a gravitational slingshot effect from the Earth.*

We estimate the total number of exportation events over the lifetime of the Earth to be ~1–10 for LPCs and ~1–50 for ISOs. If life existed above an altitude of 100 km, then the number is dramatically increased up to ~105 exportation events over Earth's lifetime.

Speirs: Panspermia in reverse.

Marshall, J.E.A., et al (2020) **UV-B radiation was the Devonian-Carboniferous boundary terrestrial extinction kill mechanism.** SCIENCE ADVANCES 6:doi.org/10.1126/sciadv.aba0768 (available as a free pdf)

Authors’ abstract: *There is an unexplained terrestrial mass extinction at the Devonian-Carboniferous boundary (359 million years ago). The discovery in east Greenland of malformed land plant spores demonstrates that the extinction was coincident with elevated UV-B radiation demonstrating ozone layer reduction. Mercury data through the extinction level prove that, unlike other mass extinctions, there were no planetary scale volcanic eruptions.*

Importantly, the Devonian-Carboniferous boundary terrestrial mass extinction was coincident with a major climatic warming that ended the intense final glacial cycle of the latest Devonian ice age. A mechanism for ozone layer reduction during rapid warming is increased convective transport of ClO. Hence, ozone loss during rapid warming is an inherent Earth system process with the unavoidable conclusion that we should be alert for such an eventuality in the future warming world.

Hernández-Hernández, T., and J.J. Wiens (2020) **Why are there so many flowering plants? A multiscale analysis of plant diversification.** AMERICAN NATURALIST 195:948-963

Authors’ abstract: *The causes of the rapid diversification and extraordinary richness of flowering plants (angiosperms) relative to other plant clades is a long-standing mystery. Angiosperms are only one among 10 major land plant clades (phyla) but include ~90% of land plant species. However, most studies that have tried to identify which traits might explain the remarkable diversification of angiosperms have focused only on richness patterns within angiosperms and tested only one or a few traits at a single hierarchical scale.*

Here, we assemble a database of 31 diverse traits among 678 families and analyze relationships between traits and diversification rates across all land plants at three hierarchical levels (phylum, order, and family) using phylogenetic multiple regression. We find that most variation (~85%) in diversification rates among major clades (phyla) is explained by biotically mediated fertilization (e.g., insect pollination) and clade-level geographic range size.

Different sets of traits explain diversification at different hierarchical levels, with geographic range size dominating among families. Surprisingly, we find that traits related to local-scale species interactions (i.e., biotic fertilization) are particularly important for explaining diversification patterns at the deepest timescales, whereas large-scale geographic factors (i.e., clade-level range size) are more important at shallower timescales. This dichotomy might apply broadly across organisms.

de Manuel, M., et al (2020) **The evolutionary history of extinct and living lions.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 117:10927-10934 (available as a free pdf)

Authors’ abstract: *Lions were once the most globally widespread mammal species, with distinct populations in Africa, Eurasia, and America. Lions are one of the world’s most iconic megafauna, yet little is known about their temporal and spatial demographic history and population differentiation.*

We analyzed a genomic dataset of 20 specimens: two ca. 30,000-y-old cave lions (Panthera leo spelaea), 12 historic lions (Panthera leo leo/Panthera leo

melanochaita) that lived between the 15th and 20th centuries outside the current geographic distribution of lions, and 6 present-day lions from Africa and India.

We found that cave and modern lions shared an ancestor ca. 500,000 years ago and that the two lineages likely did not hybridize following their divergence. Within modern lions, we found two main lineages that diverged ca. 70,000 y ago, with clear evidence of subsequent gene flow. Our data also reveal a nearly complete absence of genetic diversity within Indian lions, probably due to well-documented extremely low effective population sizes in the recent past.

Lombardo, U., et al (2020) **Early Holocene crop cultivation and landscape modification in Amazonia.** NATURE 581:190-193

Authors' abstract: The onset of plant cultivation is one of the most important cultural transitions in human history. Southwestern Amazonia has previously been proposed as an early centre of plant domestication, on the basis of molecular markers that show genetic similarities between domesticated plants and wild relatives.

*However, the nature of the early human occupation of southwestern Amazonia, and the history of plant cultivation in this region, are poorly understood. Here we document the cultivation of squash (*Cucurbita* sp.) at about 10,250 calibrated years before present (cal. yr BP), manioc (*Manihot* sp.) at about 10,350 cal. yr BP and maize (*Zea mays*) at about 6,850 cal. yr BP, in the Llanos de Moxos (Bolivia).*

We show that, starting at around 10,850 cal. yr BP, inhabitants of this region began to create a landscape that ultimately comprised approximately 4,700 artificial forest islands within a treeless, seasonally flooded savannah.

Our results confirm that the Llanos de Moxos is a hotspot for early plant cultivation and demonstrate that ever since their arrival in Amazonia humans have markedly altered the landscape, with lasting repercussions for habitat heterogeneity and species conservation.

Rivera, D., et al (2020) **Modelling ancient areas for date palms (Phoenix species: Arecaceae): Bayesian analysis of biological and cultural evidence.** BOTANICAL JOURNAL OF THE LINNEAN SOCIETY 193:228-262

Authors' abstract: Our aim in this study is to build a model for the expansion of date palms (Phoenix spp., Arecaceae) that can be linked to domestication processes. Palaeontological and archaeobotanical evidence concerning date palm is extremely diversified around the Mediterranean Basin and in West Asia, mainly consisting of date fruit remains, but also including leaf fragments and other plant remains.

This biological evidence is further compared with cultural evidence (coins, pottery, ancient texts) and the present distribution of Phoenix spp. in the area. Bayesian methods working with likelihood and conditional probabilities are successfully applied to generate a model for displaying in maps the ancient distribution of palm groves in terms of probabilities.

The model suggests that the domestication of Phoenix dactylifera occurred mainly east of 30°E, probably in the Jordan Valley area, starting before 7 kiloyears ago and, in a westward shift, that this was gradually superposed onto pre-existing local western populations of the same genus, especially in the Nile valley.

It appears that this mainly affected the P. dactylifera western cluster (P. excelsior, P. atlantica, P. iberica). However, other taxa persisted as independent species (P. theophrasti, P. canariensis).

Bercovitch, F.B. (2020) **Giraffe taxonomy, geographic distribution and conservation.** AFRICAN JOURNAL OF ECOLOGY 58:doi.org/10.1111/aje.12741 (available as a free pdf)

Author's abstract: Evidence has been presented that giraffes ought to be classified into anywhere from one to nine species, and that their continent-wide ranging area has compressed by about 6%.

A systematic, comprehensive, and critical evaluation of the literature supports the suggestion that the conventional taxonomy of giraffes is due for an overhaul, but serious doubts exist regarding the inference that their geographic range in Africa has altered in the last few years.

Sharing competing viewpoints about taxonomy and geographic ranges in the academic literature can be productive, but becomes counter-productive, and detrimental to conservation management plans and programmes, when scientists prematurely proclaim and promote questionable ‘new’ findings.

Lost in the debate is the biological fact that new giraffe species are not appearing or being discovered, but that scientists are simply shuffling around the groupings of giraffes. Population trends among giraffes in Africa are independent of their Latin nomenclature and their numbers are declining.

Gagnon, R, et al (2020) **Distribution and density of oxpeckers on giraffes in Hwange National Park, Zimbabwe.** AFRICAN JOURNAL OF ECOLOGY 58:doi.org/10.1111/aje.12729

Authors’ abstract: Oxpeckers (Buphagus sp.) are two bird species closely associated to large mammals, including giraffes (Giraffa camelopardalis). We tested whether oxpeckers distributed themselves at random across individuals or aggregated on individual giraffes, and whether birds select the host's body parts with the expected greatest amount of ticks.

By counting oxpeckers on giraffe's body from photographs, we quantified the distribution of birds per hosts and over predefined zones on the giraffe body. Oxpeckers displayed a strong aggregation behaviour with few hosts carrying many birds while many carried a limited number or no bird, a pattern that was most exaggerated for males.

Oxpeckers were disproportionately found on the mane and back, where the density of ticks is presumably the highest. This high aggregation level of birds is typical of parasitic species and could suggest that oxpecker distribution may mirror the distribution of ticks, their primary food resource, on giraffes.

Abundance of ticks appears as a major driver of the oxpecker foraging behaviour, and the oxpecker-large herbivores system proves to be highly relevant for the study of host-parasite dynamics.

Nguyen, C.N., and I. Noy (2020) **Measuring the impact of insurance on urban earthquake recovery using nightlights.** JOURNAL OF ECONOMIC GEOGRAPHY 20:857-877

Authors’ abstract: We measure the longer-term effect of a major earthquake on the local economy, using night-time light intensity, and focus on the role of insurance payments for damaged residential property in the recovery process. The destructive Canterbury Earthquake Sequence (2010-2011) in New Zealand is our case study.

Uniquely, for this event, >95% of residential housing units were covered by insurance and almost all incurred some damage. However, insurance payments were staggered over 5 years, enabling us to identify their local impact on recovery.

We find that night-time luminosity can capture the process of recovery; and that insurance payments contributed significantly to the process of local economic recovery after the earthquake. Cash settlement of claims was no more effective than insurance-managed repairs in generating local recovery.

Notably, delayed payments were less affective in assisting recovery; this suggests an important role for the regulator in making sure insurance payments are made promptly after disaster events.

Kissler, S.M., et al (2020) **Projecting the transmission dynamics of SARS-CoV-2 through the post-pandemic period.** SCIENCE 368:860-868 (available as a free pdf)

Authors’ abstract: It is urgent to understand the future of severe acute respiratory syndrome-coronavirus 2 (SARS-CoV-2) transmission. We used estimates of seasonality, immunity, and cross-immunity for human coronavirus OC43 (HCoV-OC43) and HCoV-HKU1 using time-series data from the United States to inform a model of SARS-CoV-2 transmission.

We projected that recurrent wintertime outbreaks of SARS-CoV-2 will probably occur after the initial, most severe pandemic wave. Absent other interventions, a key metric for the success of social distancing is whether critical care capacities are exceeded.

To avoid this, prolonged or intermittent social distancing may be necessary into 2022. Additional interventions, including expanded critical care capacity and an effective therapeutic, would improve the success of intermittent distancing and hasten the acquisition of herd immunity.

Longitudinal serological studies are urgently needed to determine the extent and duration of immunity to SARS-CoV-2. Even in the event of apparent elimination, SARS-CoV-2 surveillance should be maintained because a resurgence in contagion could be possible as late as 2024.

Le Quéré, C., et al (2020) **Temporary reduction in daily global CO₂ emissions during the COVID-19 forced confinement.** NATURE CLIMATE CHANGE doi.org/10.1038/s41558-020-0797-x (available as a free pdf)

Authors’ abstract: Government policies during the COVID-19 pandemic have drastically altered patterns of energy demand around the world. Many international borders were closed and populations were confined to their homes, which reduced transport and changed consumption patterns.

Here we compile government policies and activity data to estimate the decrease in CO₂ emissions during forced confinements. Daily global CO₂ emissions decreased by −17% (−11 to −25% for ±1s) by early April 2020 compared with the mean 2019 levels, just under half from changes in surface transport. At their peak, emissions in individual countries decreased by −26% on average.

The impact on 2020 annual emissions depends on the duration of the confinement, with a low estimate of −4% (−2 to −7%) if pre-pandemic conditions return by mid-June, and a high estimate of −7% (−3 to −13%) if some restrictions remain worldwide until the end of 2020. Government actions and economic incentives post-crisis will likely influence the global CO₂ emissions path for decades.

Snyder-Mackler, N., et al (2020) **Social determinants of health and survival in humans and other animals.** SCIENCE 368:doi.org/10.1126/science.aax9553

Authors’ abstract: The social environment, both in early life and adulthood, is one of the strongest predictors of morbidity and mortality risk in humans.

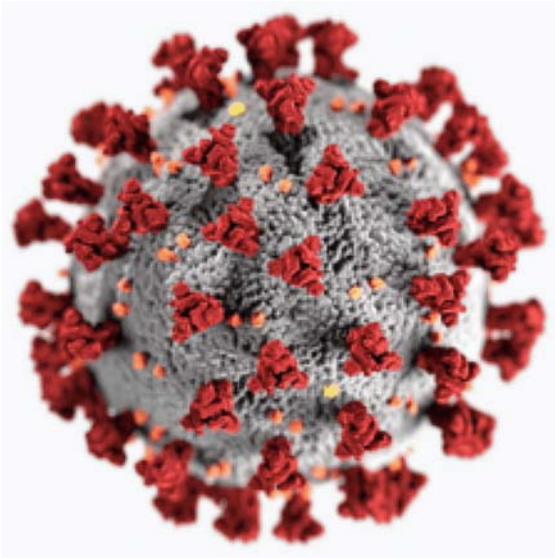
Evidence from long-term studies of other social mammals indicates that this relationship is similar across many species.

In addition, experimental studies show that social interactions can causally alter animal physiology, disease risk, and life span itself. These findings highlight the importance of the social environment to health and mortality as well as Darwinian fitness, outcomes of interest to social scientists and biologists alike. They thus emphasize the utility of cross-species analysis for understanding the predictors of, and mechanisms underlying, social gradients in health.

Much research over the past decade or so has revealed that health and lifespan in humans, highly social animals, are reduced with social adversity. We humans are not the only animals that are social, however, and similar research has shown that other social mammals are similarly influenced by isolation and adversity.

Studies in laboratory animals indicate that socially induced stress has direct effects on immune function, disease susceptibility, and life span. Animal models have revealed pervasive changes in the response to social adversity that are detectable at the molecular level.

Recent work in mice has also shown that socially induced stress shortens natural life spans owing to multiple causes, including atherosclerosis. This result echoes those in humans, in which social adversity predicts increased mortality risk from almost all major causes of death.



Nurisso, G.C., and E.S. Prescott (2020) **Origins of too-big-to-fail policy in the United States.** FINANCIAL HISTORY REVIEW 27:1-15

Authors’ abstract: *This article traces the origin of too-big-to-fail policy in modern US banking to the bailout of the \$1.2b Bank of the Commonwealth in 1972. It describes this bailout and those of subsequent banks through that of Continental Illinois in 1984. During this period, market concentration due to interstate banking restrictions is a factor in most of the bailouts and systemic risk concerns were raised to justify the bailouts of surprisingly small banks.*

Finally, most of the bailouts in this period relied on the Federal Deposit Insurance Corporation's use of the Essentiality Doctrine and Federal Reserve lending. A discussion of this doctrine is used to illustrate how legal constraints on regulators may become less constraining over time.

Speirs: The Canadian banking system is different, which is why the last bank failure was in 1928. The USA has thousands of small banks, as well as thousands of individual credit unions. Canada has a dozen national banks, of which five have 80% of the business. There are hundreds of credit unions which belong to two national federations, an anglophone and a francophone. During the Panic of 2008, no Canadian financial institutions failed.

The coronavirus pandemic has crippled the housing market, so the banks and credit unions have to set aside additional amounts to cover bad debts. Non-mortgage debt is minor compared to those who overpaid for their houses in the last few years, particularly in Greater Toronto and the Vancouver Lower Mainland.

In any event the Canada Mortgage and Housing Corporation, which insures most mortgages, would get unlimited funds from the Bank of Canada if needed. A year ago, the Liberal government was criticized for running a \$20 billion deficit. No one knows how much the 2020 deficit will be but it is agreed by all that it will be at least \$300 billion, with more to come in 2021.

Real estate sales crashed 70% in April but the big hit is expected in September when the emergency law allowing rent and mortgage deferrals expires. All deferrals then become due and payable. The deferrals only applied to residential properties. In particular, AirBnb landlords who went into debt buying condo units were never protected and are already flooding the market.

Ganesan, S.M., et al (2020) **Adverse effects of electronic cigarettes on the disease-naïve oral microbiome.** SCIENCE ADVANCES 6:doi.org/10.1126/sciadv.aaz0108 (available as a free pdf)

Authors’ abstract: *Six percent of Americans, including 3 million high schoolers, use e-cigarettes, which contain potentially toxic substances, volatile organic compounds, and metals. We present the first human study on the effects of e-cigarette exposure in the oral cavity.*

By interrogating both immunoinflammatory responses and microbial functional dynamics, we discovered pathogen overrepresentation, higher virulence signatures, and a brisk proinflammatory signal in clinically healthy e-cigarette users, equivalent to patients with severe periodontitis.

Using RNA sequencing and confocal and electron microscopy to validate these findings, we demonstrate that the carbon-rich glycol/ glycerol vehicle is an important catalyst in transforming biofilm architecture within 24 hours of exposure.

Last, a machine-learning classifier trained on the metagenomic signatures of e-cigarettes identified as e-cigarette users both those individuals who used e-cigarettes to quit smoking, and those who use both e-cigarettes and cigarettes. The present study questions the safety of e-cigarettes and the harm reduction narrative promoted by advertising campaigns.

SIGNS, SIGNS, EVERYWHERE A SIGN
photos by Dale Speirs

Below: The deli counter at a Safeway supermarket on May 18.

At right: The year-over-year real estates sales change in Canada for April 2020 was -70%. When the statistics for the rest of the year are published, the change will not be good.

