OPUNTIA 471


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April 3, 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.

About The Cover: I photographed this licence plate last December and knew exactly when I would use the photo in this zine. I'm guessing April 3 was the driver's birth date or wedding anniversary.

THE VIRUS: PART 3
photos by Dale Speirs

As I strolled down 20 Street SW on March 30 for some exercise, I took a few photos. The view below was looking south down the street from a ridge that separates the Marda Loop neighbourhood from the central city, which is behind the camera. On the far horizon are the Porcupine Hills, foothills of the Rockies.

Despite the reassuring sign on this improvised LFL on the east side of 20 Street SW, one doubts that people will trust it. Since the COVID-19 coronavirus incubates without symptoms, no one can believe that any house is virus free.

At left: A friendly neighbour on 20 Street SW.

Below: Most houses east of 20 Street SW face the avenue, not the street, so this photo is just around the corner on 48 Avenue SW. You can certainly tell who was willing to spend money on artificial turf to save the bother of mowing the lawn.

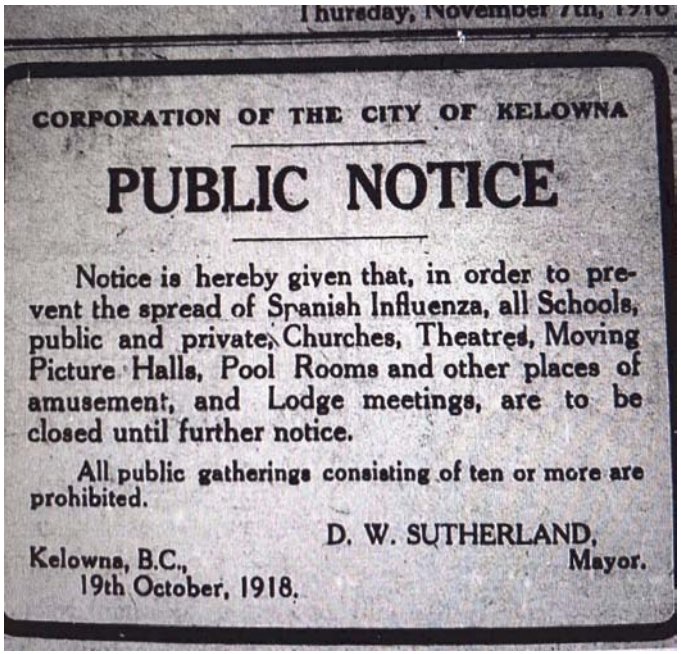
20 Street SW goes through the Bankview district north of Marda Loop. The boundary is 26 Avenue, where over at 16 Street SW was this apartment building with an unusual mural. The tyrannosaurid chasing bison across the prairie made the mural an interesting piece of alternative history.

The telecoms were having difficulty keeping up with the tsunami of voice and video traffic as millions of Canadians began working from home and millions more students changed over to online education. My service provider went down several times and the others were no better.

Canada has four major telecoms: Telus, Bell, Rogers, and Shaw. There are dozens of smaller telecoms but they all rent capacity from the big four. With all non-essential businesses shut down, all those countless face-to-face and board meetings are now held via videoconferencing. School and university classes are now online. One doesn't have to be a techie to realize the demand for broadband.

The coronavirus will pass, eventually to become the stuff of legend handed down to grandchildren and retold as after-dinner stories to the generation not yet born. Many businesses will not survive and others will be re-arranged because companies are discovering that they can get along without bricks and mortar. The pandemic will speed up automation in the workplace.

It will also make people appreciate the value of socializing in person. All those conventions and gatherings have made us realize that the phrase "social media" is an oxymoron. We need face-to-face socializing more than we thought we did. I am actively involved in philatelic clubs and shows, and it seems unlikely they will reconvene anytime before June at the most optimistic. With self-isolation the new normal, one realizes the importance of social contact.



Thursday, November 7th, 1918

CORPORATION OF THE CITY OF KELOWNA

PUBLIC NOTICE

Notice is hereby given that, in order to prevent the spread of Spanish Influenza, all Schools, public and private, Churches, Theatres, Moving Picture Halls, Pool Rooms and other places of amusement, and Lodge meetings, are to be closed until further notice.

All public gatherings consisting of ten or more are prohibited.

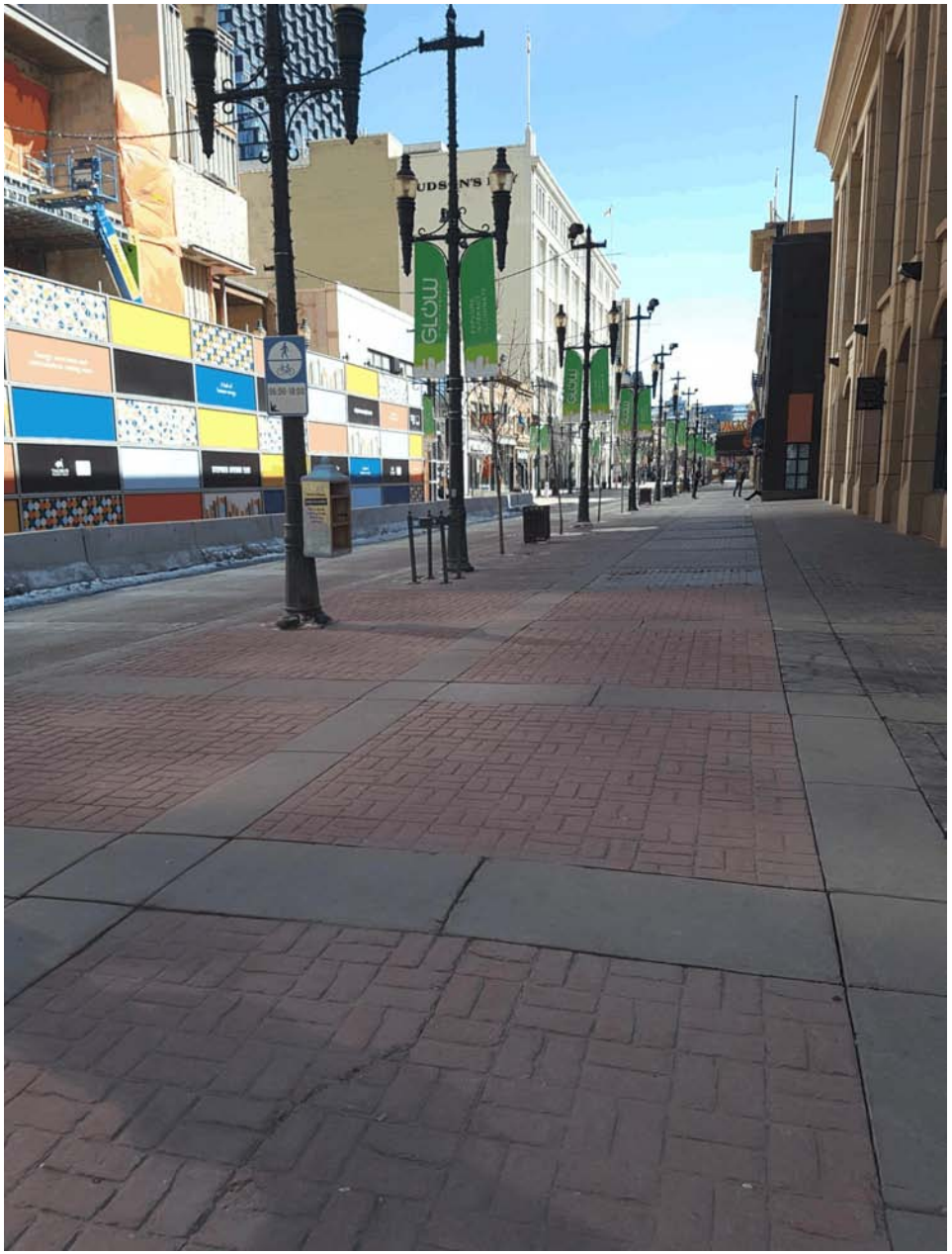
D. W. SUTHERLAND,
Mayor.

Kelowna, B.C.,
19th October, 1918.

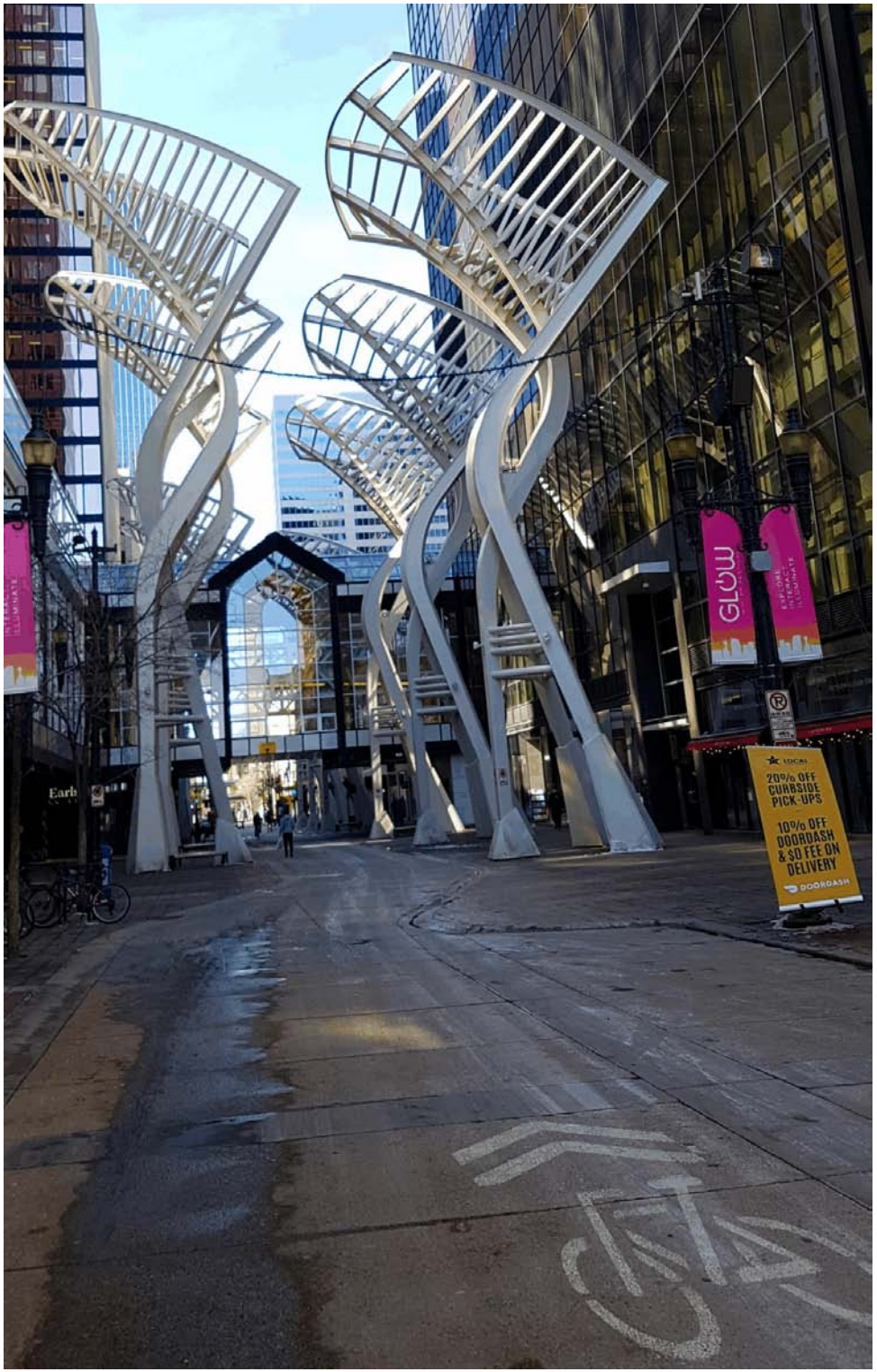
Ecclesiastes 1:9

Below: Unlike some cities, there was no formal closure of Calgary's downtown core. There didn't have to be. The photo below was taken on March 26 on the Stephen Avenue pedestrian mall during the noon hour on a regular weekday.

About 300,000 people work downtown. Normally there would be a thick crowd on the mall during their lunch break. Squint closely and you can see one man at the far end of the block.



This view was looking the opposite direction from the same spot on the mall.



Many desperate people in Canada. During the last week of March, more than a million people applied for unemployment benefits. The previous week, 500,000 applied. The normal average was about 25,000 per week. Canada has 38 million people. The new figures smash all records, even the Great Depression.

Parliament voted $82 billion in emergency assistance for the unemployed. One month ago, Prime Minister Justin Trudeau was criticized for running up a $20 billion annual deficit for all government spending last year. This year's deficit is anticipated to be $130 billion all told.

The best comment about human society's ability to cope with pandemics was made by Joe Scalzi on March 22 on Twitter. I don't subscribe to Twitter but his remark was distributed on several other Websites.

People freaking out about a week of at-home quarantine is why generation ships to the stars aren't the slam dunk some people think they are.

Well said, that man.

An enlargement of the sign on the mall. Stop and think about it. One month ago, takeout food service meant walking into a restaurant and picking up food at a counter near the front door. Now it means waiting at the curb outside and phoning the restaurant that you're out there.

I vary my route on each day's stroll to avoid boredom and depending on the weather. If there is a cold wind, I only go once around the block. I'm not that Canadian when it comes to cold weather. However, April 1st was a mild day, only -10°C, so I ventured far down 19 Street SW.

I bought my house in 1982 but there are streets only a few blocks away that I have never traversed in all that time because I had no reason to do so. Now was the time to explore.

These signs on 19 Street SW at 43 and 44 Avenues were well meant but the child who did the Free Hugs sign obviously didn't understand the virus.

I didn't understand what this SUV owner meant, but there probably was a reason. Seen on 19 Street SW, where apparently the coarser type of people live.

COWTOWN MAGPIES
photos by Dale Speirs

Magpies nest in late winter about March, and as I strolled about Calgary I saw them hard at work building nests. They construct a covered nest, which from a distance looks like a clump of mistletoe. The roof keeps them dry since they lay eggs during the moister times, whether snow or rain.

The view at left was just around the corner from 20 Street SW.

Heading west from the Stephen Avenue mall, at 4 Street SW where it reverts to a normal avenue, I noticed a magpie fluttering up against a building. I saw twigs protruding from the facade. The magpie was nesting inside the curtain wall. Close-ups on the next page.

Smartphones don't have proper telephoto lenses like single-lens reflex cameras, so the zoom enlargements are blurry.

ALL THAT GLISTERS: PART 3
by Dale Speirs

[Parts 1 to 2 appeared in OPUNTIAs #324 and 362.]

Do It Yourself Gold.

Transmutation of base metals into gold or variations thereof have long been popular in fiction.

"A Million Dollar Cinder" by Will N. Harben (1901 May, THE BLACK CAT, available as a free pdf from www.archive.org) was about an inventor who demonstrated conclusively to a group of investors that he could really transmute base elements into gold. There was no possibility of fraud as he let them supply the materials.

On closing the deal, just as the inventor was about to hand over the only copy of his formula, he suffered a fatal heart attack. The paper slipped from his grasp into the experimental crucible and with a flash was carbonized. The investors managed to save the sheet but it was unreadable. They tried everything. X-rays, this, that, and the other, but to no avail. Their would-have-been fortune was gone.

"The Gold Goose Scientist" by Harry Irving Greene (1903 June, THE BLACK CAT) was told in Southern dialect about a supposedly dumb country boy named Pete Norton, who convinced his compatriots that he had geese that could excrete gold pebbles after he applied an electrical device to the birds. He demonstrated the machine to skeptics, who couldn't figure out how it was done.

The answer was that just beforehand, he starved the goose three days, then fed it a small cob of corn. The famished goose would not miss a single kernel of corn. Norton had implanted tiny pellets of gold inside about ten of the kernels. By the time the gold made the trip through the goose, the kernels had dissolved away, leaving the gold.

Once enough people were convinced, he sold the machine for $2,000, say about $200,000 in our depreciated currency today, and disappeared. The sucker couldn't get the machine to work, which was not surprising since it had been for show only and did nothing.

"Jeremiah Jones, Alchemist" by P. Schuyler Miller (1933 May, AMAZING STORIES, available as a free pdf from www.archive.org) was about a more traditional sort of alchemist, the faker. Jones did produce genuine gold by irradiating mercury with alpha particles, and showed off what he had done to potential investors.

They leaped at the chance and he was happy to supply them with ingots of gold that were as heavy and certainly matched the properties of real gold. The ingots were instead a new and ingenious alloy. The fact was not discovered until someone melted a bar for an assay test and saw it gave off green flames during the process. For those of you who have forgotten your high school chemistry this is what copper does when it melts out of an alloy.

Jones had truly made some gold with his radiation process. As he later admitted, the process was so expensive that a pea-sized glob of artificial gold would cost as much as several kilos of gold was worth. (Nothing to do with this story, but every so often someone predicts the mass production of gold by electrolysis from seawater. Technically feasible but the cost of electricity far outweighs any financial return.)

American President Franklin Roosevelt had issued an order in April 1933 expropriating privately owned gold. His intent was to replace it with currency that could be inflated and thereby increase the velocity of money to get the USA out of the Great Depression.

The Miller story would have been in the editorial pipeline before this order was issued. In the 1934 January issue of AMAZING STORIES was a similar story by Isaac Nathanson titled "Gold". It was about an inventor named Lewis Walling who invented a process to convert mercury into gold at a profit.

He was naive to the point of stupidity. He began selling undocumented gold to jewelers and smelters. At first he did it in small amounts, beneath the notice of the authorities. He recycled the profits into bigger production machines and began selling more and more gold.

Eventually the U.S. Treasury noticed, as did the mining companies and banks, none of whom wanted to see a flood of gold swamping the market. Walling didn't care and didn't think through the consequences. He did it because he could, and as a result brought himself to ruin. It was no surprise that his secrets wound up the property of the American government.

Heisting Gold.

"The Golden Vapor" by E.H. Johnson (1928 Winter, AMAZING STORIES QUARTERLY, available as a free pdf from www.archive.org) was about a mad scientist who invented a matter transporter beam able to act at a distance. He was also acting out but got away with it.

His device withdrew gold from a sealed box while it was in transit and substituted iron, much to the dismay of the bankers at the receiving end. Most of the story is a lengthy infodump on the theory and practice of matter transmission. One wonders if Gene Roddenberry read it when he was a boy. It was a perfect crime.

"The Radio Robbery" by S.P. Meek (1930 February, AMAZING STORIES) was another scientifiction gold heist. A bank received a shipment of gold bars from the Golconda mine. The next morning a clerk went into the vault to audit the shipment and was killed by a massive explosion as he opened the door.

Worse yet, at least from the bank's point of view, the gold bars had been replaced by copper bars. There was no way the substitution could have been done in the night since the vault was locked and it would have taken an enormous gang of strong men to make the substitution. Nor were any traces of conventional explosives found.

The investigators brought in scientific experts who waved gadgets about and went looking for the perpetrator with a radio detection van. As ultimately explained on the last page, the villain had created a method of synthesizing gold from copper. His problem was that the gold was unstable, decomposing back into copper plus releasing leftover protons in the form of hydrogen gas.

The heist was not done at the bank. The real gold had been switched en route for the synthetic gold. Once in the vault, it decayed back to copper. When the clerk opened the vault the next morning, the hydrogen gas detonated. It was all done with radio beams. Don't forget to ventilate your laboratory when turning copper wire into gold.

"The Whisper Of Death" by Harl Vincent (pseudonym of Harold Vincent Schoepflin) (1933 November, AMAZING STORIES) was a story that requires explaining to the average reader of today. Before reviewing this story, I must of necessity pause for an infodump.

Once upon a time, and indeed within living memory, the world's economic system operated on the gold standard. What that meant was that anyone could take paper currency issued by a country to its treasury and be guaranteed the right to exchange it for the equivalent in physical gold at a fixed price of US$35 per Troy ounce or whatever the equivalent price was in other currencies.

Politicians and bankers hated gold because it imposed fiscal discipline. In 1971, the American government was trying to pay the cost of both the Vietnam War and the social programmes introduced by Pres. Lyndon Johnson.

It did so by printing more currency than was backed by gold. French President Charles De Gaulle was the first to realize this and began redeeming the American dollars for gold as fast as possible at the official $35 price.

Richard Nixon had inherited the mess when he took office and had no way out other than to declare that the USA would no longer redeem banknotes for gold. This forced all the other countries to go off the gold standard as well, otherwise their stocks of gold would be depleted by outsiders rushing to get rid of paper currency. People could still buy gold with paper currency from non-government sources but at a higher price, causing gold to rise far above US$35.

All currencies today are known as fiat currencies and are not backed by anything. The only reason they are accepted is because governments require taxes and fees to be paid in them.

The disadvantage is that because the governments and their central banks print so much of it (electronic these days), inflation sets in. That is why you can't buy a 50-cent hamburger anymore, and $15 per hour is considered minimum wage.

And now, back to Vincent's story. It began with gold disappearing from bank vaults and government depositories, vanished into thin air. Eventually it was discovered that the villain was using a matter transmitter to heist the gold and take it to the Soviets. Once the public found out, the paper currency rapidly depreciated, causing inflation and shortages, and thereafter rioting in the streets.

After assorted alarums and excursions, the villain was eventually stymied, as we knew the hero would. The story makes no sense today, when for every dollar's worth of gold there are a billion dollars worth of fiat currency in circulation.

The Flood.

6,000 TONS OF GOLD (1894) by H.R. Chamberlain is a novel available as a free download from www.gutenberg.org. The book is an interesting read because what at first glance appeared to be an action-adventure went on to consider the reality of economics, something that fiction seldom does.

Robert Brent was a young adventurer who went down to the wilds of Patagonia. The novel set up how he came to learn of an immense gold deposit, which would produce a staggering amount of gold. Many authors would have and did write such adventures, where the struggle for gold was or was not successful. The natives were restless, the terrain was difficult, and there were many vicissitudes along the way.

In this novel, that was prologue, albeit quite a few chapters. Brent succeeded beyond the dreams of avarice, and was able to move 6,000 tons of gold to America. A lesser author would have made this another adventure, with pirates hijacking the gold, etcetera, but the gold arrived safely.

Since gold was currency in those days, there was no duty and it did not have to be declared to Customs upon entry. Brent secured his gold with a broker and arranged to have it fed steadily to the U.S. Mint for coining. In those days, the USA and Canada had free coinage laws. One could take gold or silver to their mints as bars and have it coined, less a service charge paid in coins known as seigniorage, or sell it outright for currency.

Brent was selling so much gold that people noticed. I won't mention the prices current in 1894, but 6,000 tons of gold today would be worth about $385 billion give or take. It would be fabulous to have that amount but what would you do with it? This is the point that the rest of the novel considered.

You, lucky reader, have $385 billion in cash. What are you going to do with it? If you buy stocks or bonds, you have to do so slowly. You can't just tell your broker to buy that amount on the stock exchange in a few days.

Firstly, you want to buy good stocks that pay dividends or bonds that can be trusted to mature. Then and now, they are not so thick on the ground. Secondly, doing so attracts attention to you, since the stocks are registered in your name or your company's name. Buying real estate attracts the same amount of attention.

Brent bought stocks slowly, but even so, the market began to climb and climb. Many people were interested in where the money was coming from. The Wall Street bankers had a meeting, for they didn't like anyone getting too much of a good thing who wasn't one of them.

Eventually Brent was exposed and had to negotiate an agreement to stay out of jail. He was a dangerous man to the bankers. Had he not done so, they would have found a way to dispose of him and seize his fortune. Philanthropy was another use for Brent's money, but it could only soak up some of the money.

More worrying was the war clouds hanging over Europe, as they always do. Money in circulation tends to enrich the wrong nations. Back then, the fear was of a general war starting in the Balkans and spreading elsewhere. There were brushfire wars between the Balkaners, which as we know eventually did indeed drag other nations ten years after this novel was published.

The ending was a bit forced. However, the second half of the novel was well thought out. The real world does not operate in a financial vacuum. This is what has always annoyed me about superhero movies. Supervillains and superheroes build enormous laboratories inside active volcanoes or in remote mountains.

Such projects would cost tens of billions, and take thousands of contractors to construct. There is no way the Batcave, with its nuclear reactor, could be built and kept secret in the real world. Some tradesman would blab down at the tavern about the crazy project he was involved with. If you had 6,000 tons of gold, you could become a superhero or a supervillain, depending on your inclination, but it would not be easy.

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. Even if, and especially if, the COVID-19 coronavirus pandemic isn't over, you can celebrate at home.

VON NEUMANN MACHINES: PART 2

by Dale Speirs

[Part 1 appeared in OPUNTIA #323.]

Von Neumann machines are self replicating machines. The obvious threat is that they would convert entire planets into replicants, and eventually swarm the galaxy.

Aliens.

"Robotum Delenda Est" by Jack Sharkey (1962 March, FANTASTIC) is about a robot that suddenly appeared on Earth just after a tiff with the Venusians and was suspected to be one of their devices. It made its way across the American countryside and was immune to all weaponry thrown at it.

On arrival in Washington, D.C., it began chewing up the scenery, not just figuratively, and using the rocks and metals to build more versions of itself. Each replicant was formed within seconds, and began immediately to create more robots, working as high-speed Von Neumann machines.

That also explained why the original robot could not be stopped. It actually was being destroyed by the weaponry but immediately reformed itself, using the shell casings to replace material blown away.

The Von Neumann machines were finally defeated by bombarding them with organic material, ie, food scraps and other garbage. The machines incorporated the organics into their structures, which caused them to fall apart because they substituted organics into inappropriate places of the robots. The story didn't work that well because too much handwaving was needed to explain the robots' vulnerability to organics.

"Turing's Apples" by Stephen Baxter (2008, published in ECLIPSE TWO, edited by Jonathan Strahan) began as a First Contact story. A signal was picked up from the inner arm of our galaxy, just beyond the Eagle Nebula 6,500 light years away, so the aliens were called Eaglets. Decoding the signals revealed messages. Deeper decoding revealed programmable code.

One scientist arranged to have the code downloaded to a laboratory on the far side of the Moon. It turned out to be code for self-assembling machines, which

soon replicated at exponential speed, converting the Moon into a giant memory bank. The Eaglets thought in patterns, to what happened after they were gone, and other galaxies had receded beyond the observation horizon. In this case, the Von Neumann machines were destined to carry information into the far future.

"Earthfall" by John Farris (from the 2010 anthology MORE STORIES FROM THE TWILIGHT ZONE, edited by Carol Serling) began with an apparent drug overdose victim. It wasn't drugs though, but nanomachines, overseen by the alien who had created them and had let them loose on Earth. They will do the same thing they did on the alien's planet; digest it down to asteroid size and then drift out into space. They will slowly but surely turn the galaxy into a swarm of microscopic dust. Von Neumann machines don't have to be Berserker size.

Earthlings.

"A Response From EST17" by Tom Purdom (2011 May-June, ASIMOV'S) considered what would happen if two different Von Neumann space probes from Earth arrived simultaneously at a planet whose civilization had dealt with previous machines. Each side in the three-cornered conflict assumed it was the superior one.

The two machines engaged in a subtle war of tactics while trying to hide themselves from the planet's inhabitants, who were watching them with great interest. The situation broke open when one of the inhabitants chose a side. The Von Neumann machines began replicating fighting units and the war came out into the open.

The planet had defended itself from previous Von Neumann machines by transmitting The Message, a summary of all known knowledge about the abolition of diseases and death, and how to create technological wonders.

Any society receiving such knowledge then suffered The Turbulence as it tried to integrate the information and technology without disrupting itself. Think what would have happened in 1940 if smartphones and the means to build them suddenly became available. On those two levels, the three-sided war was fought. Life and civilization continued to spread across the galaxy, but at a cost.

7TH SIGMA (2011) was a novel by Steven Gould that began five decades after Von Neumann machines landed on Earth. They were tiny self-replicators, powered by solar energy and eating anything made of metal. The good news was that they avoided water, and were therefore confined to very dry deserts, leaving most of Earth untouched. Even in the desert, humans could co-exist with them as long as they didn't have anything metal. Wood, ceramics, and plastics were okay.

Most of the novel was a standard post-apocalypse story, with some action-adventure characters brought in. The Von Neumann bugs appeared whenever it was necessary to stir up the plot. In the final pages a more ominous note was sounded.

Von Neumann machines in theory are not much different that biological organisms. In particular, they were starting to evolve into bigger animals. The micromachines were combining into multicellular devices. Sapient intelligence would be the next step, but that way lies a sequel.

"Utopia, LOL?" by Jamie Wahls (*in* THE NEW VOICES OF SCIENCE FICTION (2019), edited by Hannu Rajaniemi and Jacob Weisman) began as a parody of utopia stories. Every utopia has a tour guide to explain things to the awakened sleeper and the reader. In this case the tour guide was a blithering idiot with attention deficit disorder who knew little about the society in which the guide lived.

Allocator was the central computer that controlled the Solar System, most of which was converted into a Dyson sphere. Countless billions of humans had downloaded their minds into data banks, which required energy and resources to maintain. The Allocator was running out of both. Its solution was to download surplus minds into Von Neumann machines and fling them out into deep space.

Bwah-Ha!-Ha! Etcetera.

"The Metal Giants" by Edmond Hamilton (1926 December, WEIRD TALES) was an early example of giving machines too much liberty. Professor Detmold had been researching artificial brains made of metal, for which he was ridiculed and driven out of his university.

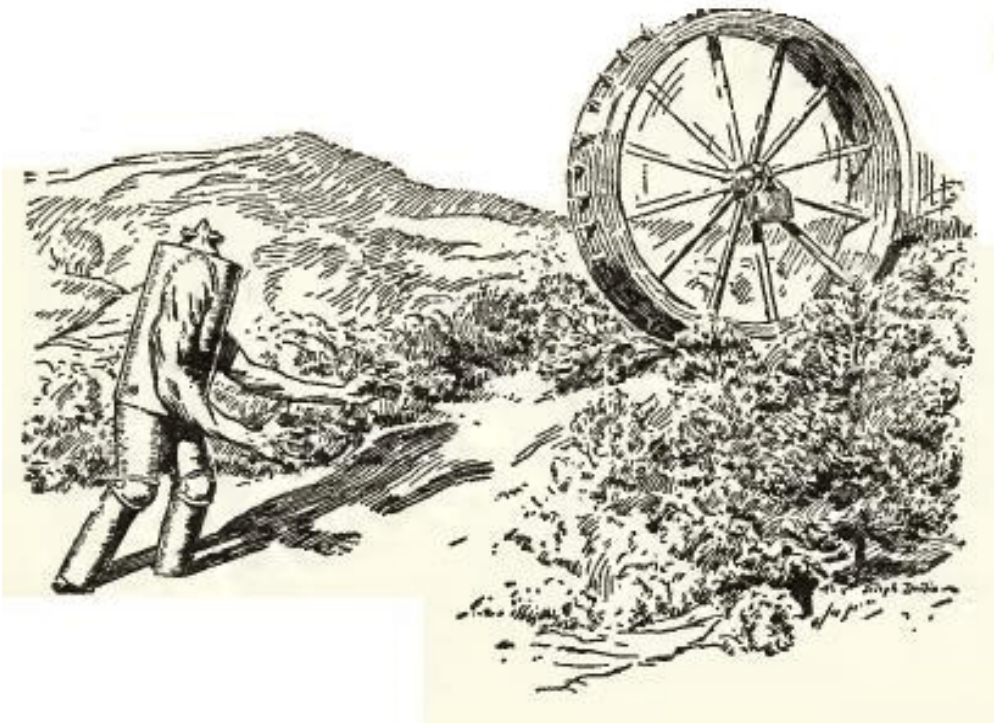
Vowing revenge, he disappeared into the hills of West Virginia and set up a private laboratory. After years of work he perfected an artificial brain, one at genius level. While visiting the local village to stock up on supplies, his poor health caught up with him and he was hospitalized.

Prior to his absence, he had given the metal brain some arms with which to work on laboratory experiments. The brain developed further in his absence and created small machines to build bigger machines that would build larger machines. They began reproducing until topping out at the size of multistory buildings, then began marching out as to war.

The giant robots trampled their way thru rural West Virginia into the cities, cleaning up with poison gas. The rest of the plot was standard monster movie fare. Detmold finally got out of hospital and created a new laboratory. In it, he built a gigantic unicycle with a control compartment in the hub, then used it against the robots. All was well.

What I always want to know in these types of stories is how did the mad scientist pay for everything. Detmold built a unicycle ten stories tall judging from the illustration, to crush robots about six stories tall. This would have been a major construction project for any international megaproject contractor. The amount of metal needed might possibly be supplied as raw material, but casting or forging it, then welding it together would not be a rush job. Six-story robots I can believe, but not the logistics of ten-story unicycles.

[Illustration from the story]



Noticed In The Literature.

I'll put this scientific paper in this column rather than with my regular citations.

Forgan, D.H. (2019) **Predator-prey behaviour in self-replicating interstellar probes.** INTERNATIONAL JOURNAL OF ASTROBIOLOGY 18:552-561

Author's abstract: *The concept of a rapid spread of self-replicating interstellar probes (SRPs) throughout the Milky Way adds considerable strength to Fermi's Paradox. A single civilization creating a single SRP is sufficient for a fleet of SRPs to grow and explore the entire Galaxy on timescales much shorter than the age of the Earth, so why do we see no signs of such probes?*

One solution to this Paradox suggests that self-replicating probes eventually undergo replication errors and evolve into predator-prey populations, reducing the total number of probes and removing them from our view. I apply Lotka-Volterra models of predator-prey competition to interstellar probes navigating a network of stars in the Galactic Habitable Zone to investigate this scenario.

I find that depending on the local growth mode of both populations and the flow of predators/prey between stars, there are many stable solutions with relatively large numbers of prey probes inhabiting the Milky Way.

The solutions can exhibit the classic oscillatory pattern of Lotka-Volterra systems, but this depends sensitively on the input parameters. Typically, local and global equilibria are established with prey sometimes outnumbering the predators. Accordingly, we find this solution to Fermi's Paradox does not reduce the probe population sufficiently to be viable.

VIOLATING THE SQUARE-CUBE LAW: PART 3
by Dale Speirs

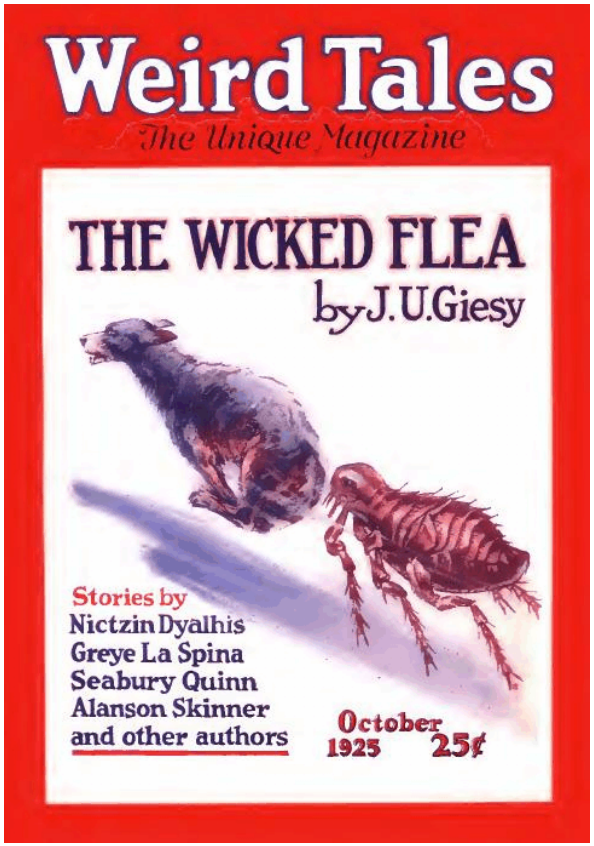
[Parts 1 to 2 appeared in OPUNTIAs #254 and 328.]

Supersized animals were always popular in science fiction, notwithstanding a few nitpicking details such as how giant ants support themselves on skinny legs or Godzilla's internal organs keep from collapsing due to the force of gravity.

If you are looking for old pulp magazines, go to www.archive.org or www.gutenberg.org. Thousands of issues are posted as free pdfs, a lifetime supply. I've been downloading issues and skimming through them for stories.

Small Critters Made Big Critters.

On the other hand, many of those stories could stay buried with no loss to humanity. Take for example, the short story "The Wicked Flea" by J.U. Giesy, which made the front cover of the 1925 October issue of WEIRD TALES. One hardly has to turn to the interior pages to know the story.



Mad scientist experimented on making things grow beyond their normal size. Used fleas as experimental subjects and grew them to jellybean size.

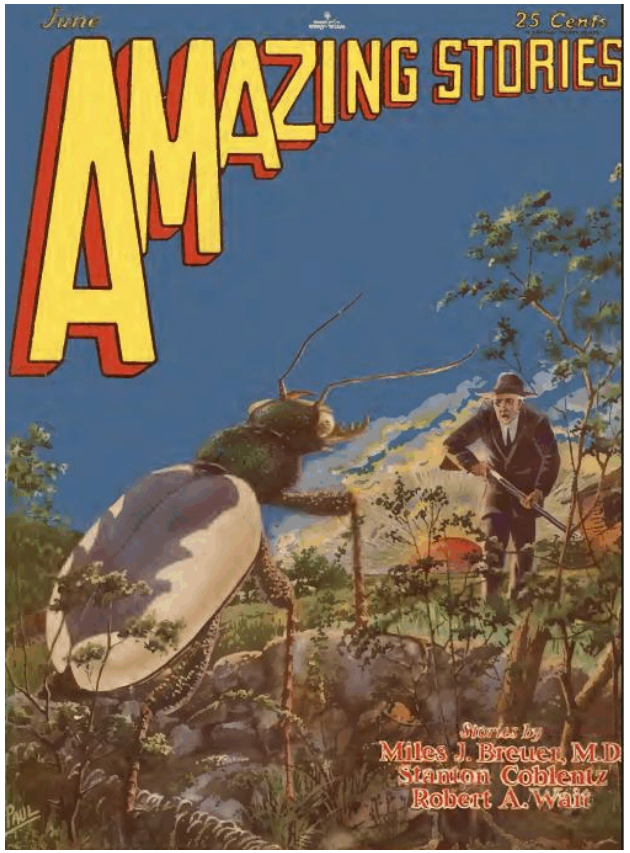
Except that one kept growing, ate its cage mates, busted loose, went after dogs, then humans. Brave hero finally dropped it with gunfire. There are some things we were not meant to know, etcetera.

"Fly Island" by B. Wallis (1927 August, WEIRD TALES) began in the South Pacific with shipwrecked survivors landing on an island. Giant flies a foot long attack them, and you already know the rest of the story. One change though; there was no mad scientist, or if there was they never met him.

The flies did their work and only one man survived. A hurricane came through and blew the flies to the other side of the island, allowing the remaining survivor time to find a small boat and make his escape. A space-filler story.

The 1929 June issue of AMAZING STORIES carried "The Beetle Experiment" by Russell Hays, which was another version of insects gone humongous. The mad scientist in question was Asa Stephens, busily dousing tiger beetle glands with growth substances. He got one grub up to the point where he had to buy sides of beef to keep it fed. Its pupation lasted a year, but finally the adult beetle emerged.

The critter got loose and began terrorizing the village. Tell the old, old story. Five villagers died horribly, including a child, eaten by the beetle. That nagged on his conscience considerably.



The professor kept quiet about his responsibility but got out his shotgun and went hunting. Four shells later he succeeded, and buried the dead creature where no one would find it.

There are some things we were not meant to know, etcetera.

Giant critters were a staple at AMAZING. From the 1930 January issue was "The Hungry Guinea Pig" by Miles J. Breuer. The author ignored the square-cube law, as indeed he had to, but did consider one aspect of giant animals, that of metabolism. The guinea pig in question had its glands souped up by a scientist who did it because he could.

It escaped, for no laboratory had a cage that could hold an animal the size of a house. It did a lot of damage and caused many casualties as it desperately searched for food. Trees and shrubbery were the only foods available that it could nibble on. The poor animal was not malicious but desperately and always hungry for food to keep its metabolism going. The guinea pig was finally stopped by bombers and put out of its misery.

Going back to AMAZING STORIES, the 1934 June issue carried "Peace Weapons" by Abner J. Gelula. Continental Europe had just erupted into another world war, five years ahead of schedule, but not an untoward prediction. The League of Nations was impotent and the American representative Milton Hardy could only watch and despair.

A few pages further on, he was introduced to Prof. Milton Kingsley, a mad scientist with the requisite beautiful daughter. They were breeding big bugs: *"I can enlarge the insect", he added, "many times, hundreds of times! An ant as big as a dog! A beetle as big as a horse! A wasp like an airplane! A spider that spreads its hairy legs across a boulevard! I have done it. Hardy, and you are the first, except for my daughter, who has aided me in my experiments, to know about it!"*

Hardy was invited out to Kingsley's country place where the usual sort of alarums took place. The problem with giant insects is they don't know their proper place. As when Hardy looked out the window the next morning and saw an ant the size of a bull, placidly cropping the shrubbery.

Professor Kingsley, realizing more clearly than either of the two men the terrible danger of allowing the giant insect to be at large, fairly leaped into his trousers and shoes, and hurried down the stairs. "This is liable to be dangerous," he warned Hardy and Blake as he handed each a long, heavy iron bar. "But we must kill it at any cost!"

No kidding. Hardy had a plan though. He convinced the Professor to use the giant insects and arachnids to provide a common enemy for humans to fight against instead of each other. A noble plan that soon would gang aft agley. Ants, spiders, bees, wasps, you name it. The plan certainly united the world's armies, but getting rid of the critters wasn't as easy as thought. As the man said in one of those Jurassic Park movies: "*Then the screaming starts.*"

AMAZING STORIES returned to the subject in its 1938 February issue with "Spawn Of The Ray" by Maurice Duclos. The mad scientist, or rather mad graduate student, chose flagellate algae to put in the beam of his superscience machine. Flagellates are microbes that propel themselves with long appendages like whips.

Grown up to the size of a calf, they were troublesome. Then they began evolving mouths, legs, and appetites. Not long after, they busted loose from the laboratory and began spreading. Proliferating throughout southern California, they initially caused panic.

Then someone discovered they were incredibly tasty when grilled. Suddenly attitudes changed, and another gold rush was on as freelance trappers supplied the packing plants. From there, flagellate ranches were established. Certainly a different type of big critter story.

"The Next Big Thing" by Brent Nichols was from the 2018 anthology ENIGMA FRONT: ONWARD, edited by Chris Patrick Carolan. It was about an exploration ship in the centre of Hudson's Bay which stumbled onto a fog-bound island that had once been a NORAD station.

The research projects went off track, and then the budget was cut. All that was left was the caretaker and a bunch of giant animals roaming the island. Snowshoe hares the size of cattle. That sort of thing.

The story did give a nod to the problems of the square-cube law, as the giant animals either had limited mobility or distorted, much thicker legs to support their weight. The hares, for example, could only move slowly, not hop at full speed.

The ship's crew decided this was a money-making opportunity. They captured some of the giant beasts with the idea of putting them on display at the Calgary Stampede. What could possibly go wrong?

Blobs.

A neat twist on giant critters was published as "Danger" by Irvin Lester and Fletcher Pratt (1929 July, AMAZING STORIES, available as a free pdf from www.archive.org). Easter Island, once verdant and thickly populated, is today a desert island. This story postulated the real reason, a giant amoeba several metres in diameter that slurped up everything but the stone figures. Not all in one day, but steadily enough that the primitive humans could not escape.

The brave explorers who rediscovered the creature also fell afoul of it. The question raised in the final page was how long before it could find a way to reach a continent, where it would have unlimited potential.

Like other square-cube critters, this one fails on the ground of physiology. If the creature flattened it self out on the ground, then it might be able to get enough oxygen by diffusion. It operated as a big ball, and one doubts it could survive because its interior would die from anoxia. The proof is that there are no giant amoeba today. If they could have gone big, they would have.

A variation on the theme was "The Menace From Andromeda" by Nat Schachner and Arthur L. Zagat (1931 April, AMAZING STORIES). This time it was a meteorite that was actually a spore from space. It splashed into the Atlantic Ocean and germinated into a baby blob. It took time to grow, absorbing the small stuff, then eventually big enough to envelop passing ships.

As per standard disaster story plot, at first humans were unaware that anything was wrong. Ships have been disappearing at sea for centuries. As the number of ships increased, so did the concerns. Eventually someone noticed a gelatinous sheet of protoplasm floating on the ocean.

It got bigger and hungrier. The blob came ashore for more food, so at that point the denial ended and the panics began. Coastal cities were dissolved in goo as the blobs rolled up onto the beaches. The end was nigh, for it was obvious that soon the blobs would cover the entire planet.

There was a man with a plan. Artillery and superscience gadgets didn't work. He had cancer cell cultures, which were injected into the protoplasm. They took a while to work but eventually the blobs were killed off by cancer. Seemed logical enough. It would make a good disaster movie even today.

Still at it in the pages of AMAZING STORIES was "Cupid Of The Laboratory" by William Lemkin (1937 August). This blob began small, as they always do, on a laboratory bench. Dr Spencer and his trusty lab assistant Burt Jordan had been shooting electricity through chemical solutions. Because they could, apparently.

They set aside their latest chemical solution and retired for the night. The next morning they found a blob crawling with pseudopods. It found a beaker of copper salts and poked a siphon into it, draining the beaker dry. Soon the men realized the blob used copper solutions as its food source.

Creating artificial life should be good for a Nobel Prize and tenure, so the men encouraged the blob with a steady supply of copper solutions. It didn't matter what kind, whether chloride or sulphate. It grew into a big blob and developed sentience.

The blob avoided anything of iron. After it reached the size of Gabriel Iglesias, it fissioned and produced a second blob. Junior was a quick learner. Spencer and Jordan began to realize they had lost control when the blobs kept them from leaving the laboratory.

The only way to stop the blobs was to throw iron at them. Inside the protoplasm, the iron caused the copper to precipitate. Enough iron eventually shrank the blobs to nothing and left behind a pile of copper-plated scrap iron. A close call, and a wonderful application of electrochemistry.

Blobs go way back. "The Conradi Affair" by August Derleth and Carl Ganzlin (1928 October, WEIRD TALES, available as a free pdf from www.archive.org) was a short-short about a biologist of that name. Dr Conradi had isolated a bacterium into a large glass vat, then began feeding it nutrients to make it grow into a football-sized blob.

From there he discovered that the blob would speedily digest chunks of raw meat and bone. When it began exhibiting mobility and sentience, trying to climb out of the vat, Conradi's response was not to clamp a lid on the vat and starve the creature back down in size.

No, he fed it more and more, because he could. The end result was no surprise. The blob got out of the vat fast enough to grab him, digest him, and then head out to who knows where to begin its reign of terror.

The story was a standard blob plot but was amusing because of Conradi's idiocy. The word 'blithering' will come to the reader's mind as Conradi cheerfully documented his impending fate without the slightest awareness of the chance he was taking.

"The Life Masters" by Edmond Hamilton (1930 January, WEIRD TALES) was another mad scientist variation on giant blobs. Dr Munson had his lair on an island off Maine where he created a giant protoplasmic blob using cosmic ray vibrations, whatever those are.

The advent of the blob followed standard monster plots. First the ominous forebodings, when a grey slime coated the beaches of the world. Then the dawning horror as the blob, now spanning the globe, lifted itself up out of the water and ate New York City and all the other seaports of the world. It continued inexorably, immune to bombs, and digesting all it flowed over.

Humanity ran for the mountains but the hero went flying long-range patrol to find the source. He did, was taken captive by Munson on the island, and had to listen to the bwah-ha!-ha!-ing. Eventually he was freed with a single bound, and turned off the cosmic ray vibrator. The blob turned to grey powder, and surviving humanity began its cleanup task.

WEIRD TALES readers really liked the blob trope, for the 1930 March issue had another variation on the theme, "The Flowing Death" by Arlton Eadie. The professor in question was studying immortality in amoebas out in the English countryside in his manor house.

The narrator, a blithering idiot if ever there was one, dropped the glass jar containing the culture on the laboratory floor and the critters were free, free at last! The rest of the plot can be guessed. The amusing part, and realistic, was the hero's struggle to convince the London bureaucrats there was an emergency.

First of all I called at Scotland Yard and told my story; but all they did was to read me a long lecture on the by-law which deals with straying farm stock. ...

Though I fared no better at the Home Office, the clerk there was more tactful in his incredulity. At any rate he condescended to take my name and address before dismissing me with what was evidently his stock phrase. "Your communication will be attended to in due course," he assured me blandly. "Good-morning."

As a last desperate resort I tried the newspaper offices and narrowly escaped being arrested as a wandering lunatic.

Eventually the government took it seriously when a metre-high sheet of amoebas flowed into the city. Poison gas was useless. The citizenry panicked and the blob flowed across London as if it were lava. On to the Thames River and across to Croydon.

The professor telephoned the hero but instead of providing the solution to control the blob, he kept going on at length about how the blob was breaking down the laboratory doors. The narrator screamed at him for a direct answer but the professor was overrun before giving the method because he insisted on giving the background first.

Pause for digression. I was a supervisor for most of my career and occasionally had people who never gave a straight answer but always went into a long story. I quickly learned how to cut them off but I also made sure they never got promoted. Management had enough problems without people who couldn't give a direct answer to a direct question.

Meanwhile, back at the blob, the ending was unbelievable. It was only a dream. The author obviously had run out of ideas. I'm surprised the editor let that one see print. Boo, hiss.

Turning to old-time radio, episodes of which are available as free mp3s from www.otrrlibrary.org or www.archive.org, let us consider THE HERMIT'S CAVE, an anthology series of weird and fantasy fiction.

"Mr Randall's Discovery" was a 1944 episode, no writer credited.. Edgar Randall, bank teller by day, worked incessantly in his basement laboratory. He brushed off his teenaged son's interest in his work and his wife's nagging to get out of the basement and do something useful, like household chores.

His latest, and as it turned out, final experiment was to grow microbes to visible size. He got an amoeba to grow to bathtub size, although he was perturbed when it also developed eyes. As giant creatures so often do, the amoeba escaped. It suffocated the son, then the wife, then disappeared. The episode concluded with Randall's trial before a jury, which didn't believe his fantastic story, especially since there was no proof that a giant amoeba existed. He was therefore sent to Death Row.

CRIME AND PUBLISHMENT: PART 4
by Dale Speirs

[Parts 1 to 3 appeared in OPUNTIAs #61.1, 391, and 422.]

Ah, to be an author running a perpetual Red Queen's Race to stay on the bestseller list, and getting ulcers from editors and publishers. Ah, to be an editor and make authors grovel but get ulcers from publishers. Ah, to be a publisher and make editors and authors grovel but get ulcers from the distributors. There's something to be said for living a quiet life as a convenience store clerk.

If You Can't Trust Your Agent, Who Can You Trust?

DEATH BY VANILLA LATTE (2017) by Alex Erickson (pseudonym of Eric S. Moore) was a novel in a food cozy series about a coffee shop. Since this book involved literary thuggery more than running a coffee shop, I'll include it in this column. Krissy Hancock was the Miss Marple of the series, who had settled into the formerly peaceful village of Pine Hills, Ohio, and began hiking up its murder rate.

She had some romantic problems, past and present, but what started the plot rolling was the arrival of her widowed father James, a mystery novelist, and his agent Rick Wiseman, who did not live up to his surname. There was trouble at the coffee shop after Wiseman hit on Krissy. Her father didn't like that and he never liked Wiseman for other reasons.

The matter was resolved not long after when Krissy found Wiseman's corpse. He had been stabbed through the eye with a pen, an appropriate murder for a literary agent. *"Every time she comes around, someone dies.*" said a villager. This was the fourth novel in the series, so people were finally noticing.

James was the obvious suspect because he had fired Wiseman a few hours before and was the last person who was with him. As a complication, James was plagued by a fan, a woman from a local writers group who wanted to possess him in a most unsettling way.

Wiseman had been a skirt chaser, which caused fatal problems for him when he accepted the wife of a wanna-be novelist but rejected his manuscripts. Thus he died.

"A Little Help From My Friend" by John F. Dobbyn (2020 Mar/Apr, ELLERY QUEEN) was about a mystery novelist, referred only to as Jackie. He had discovered his agent Alex Shawn had cheated him out of half his royalties. After he filed a complaint with police, Jackie was shot in his house.

The story opened with him struggling to come out of a coma. He began hallucinating the voice of Mickey O'Casey, the private detective in his novels. O'Casey, or rather Jackie's subconscious, discussed the shooting. As they did so, Jackie heard Shawn talking his way in to the room past the nurse.

It was obvious Shawn had come to finish the job. With O'Casey pushing him, Jackie managed to stymie Shawn by photographing him with his smartphone and then texting the District Attorney. He asked Shawn if he wanted to die for murder or just spend a couple of decades up the river for attempted murder. Shawn ran for freedom but didn't get far.

Characters Out Of Control.

A popular conceit of fiction is to have an author bothered by his characters coming to life into the real world. The idea goes back a long way. As an example, "The Fantasmal Terror" by Willis Overton (1928 April, WEIRD TALES, available as a free pdf from www.archive.org) was about Kaspar Voldune, who had been working on a novel but suddenly gave it up, for no reason that he would explain.

The villain of his novel, Gaffon, had to be dispatched but Voldune couldn't figure out how. Gaffon came to life and demanded to be kept alive. Voldune asserted his author's prerogative and refused. Gaffon could not kill his creator but threatened to drive him insane, then disappeared into thin air.

Voldune held the manuscript in his hands, wondering how to edit it. His glance strayed to the fireplace. The deed was suddenly done and the manuscript tossed into the flames before Voldune could weaken. The question for the reader was whether Gaffon had actually come to life or Voldune had cracked under the stress.

Not quite as problematic was another WEIRD TALES story two years later, "Creation Unforgivable" by David H. Keller in the 1930 April issue. The narrator was a pulp writer who lived on a farm and did his writing in a shack set a distance away from the house so he could have peace and quiet.

He was currently working on a thud and blunder epic set as the Ice Ages began and a tribe was migrating away from the encroaching glaciers. He began to obsess over the story, which became increasingly real. One night he was walking out to the shack when he came upon the heroine, beset by apemen and assorted giant mammals.

A terrific struggle ensued. He woke up the next morning battered and bruised, and the shack heavily damaged as if rammed by an angry mammoth. Tracks led to a nearby cave in the woods, but he was not going to enter it under any circumstances.

"The Author Of A Murder", no writer credited, was a 1942 episode from the old-time radio series THE HERMIT'S CAVE. This was an anthology of mystery and horror stories which aired from 1935 to 1944. (This and other OTR shows are available as free mp3s from www.otrrlibrary.org.)

The author in question was mystifying his wife because he had become reclusive and behind schedule on his new novel. She asked a friend who was a retired doctor to come out and talk to him. After some difficulty, the author was convinced to open up and tell his story.

He had killed off one of his characters in his latest mystery novel. She was now haunting him as a ghost, demanding to be restored to life. No one else could see her but near the end of the story her presence did become known when she spirited away one of the characters.

WRITTEN OFF (2016) by E.J. Copperman was the first novel in a series about Rachel Goldman of Adamstown, New Jersey. She was a mystery novelist, whose series was about Duffy Madison, a private eye who was a consultant to the county prosecutor.

Two items got the plot rolling. A man calling himself Duffy Madison asked her for help on a case. A serial killer was on the loose, going after mystery authors from the C-list. Lots of self-referential material arose from the pages.

Goldman checked with the prosecutor and learned there really was a Duffy Madison working for him. The question was if he had unconsciously been imitated by Goldman or if she had unknowingly brought a fictional character into real life.

Meanwhile, female mystery authors were murdered or disappearing. Goldman and Madison began investigating as a team. She seemed to be next on the killer's list. And so she was, kidnapped and confined by a psychotic woman who couldn't get published. A narrow escape and justice was served.

Goldman didn't stop there, since Madison was still a person of interest. She concluded that he was Damien Mosley, a man who disappeared about the same time she began publishing. The final line of the novel was: *"It's clear", Duffy said. "We need to find Damien Mosley".*

Which brings us to the sequel, EDITED OUT (2017), set six months later. Rachel Goldman was in difficulty writing her next novel. Not surprising since her lead character was out and about in the real world solving real crimes. The one case Duffy Madison wanted to solve was the whereabouts of the missing man Damien Mosley. That dragged Goldman into the matter.

Off they went into the wilds of New Jersey, where they soon confused fans of the novels. Poughkeepsie kept appearing as a locum mortem. There were lots of people who knew Mosley back when but had no further useful information.

After stirring up the locals, Goldman and Madison finally located Mosley and got into a contretemps with him. He had murdered a girlfriend and was now trying to keep the threads from unraveling. He didn't succeed and died ignominiously. This left the question of who Madison was wide open, suitable for a future novel.

THE PLOT IS MURDER (2017) by V.M. Burns was the first novel in a cozy series about Samantha Washington of North Harbor, Michigan. She was a widow starting her life over again by opening a mystery bookshop, while simultaneously writing a mystery novel set in England.

Passages from her novel alternated with her life. It quickly became evident that the heroine of her book, Lady Penelope Marsh, was a psychological projection of Washington and her wish-fulfillment fantasies. Lady Penelope was an upper-class Miss Marple in search of a handsome suitor as well as solving a murder.

Washington got her chance to be a Miss Marple when Clayton Parker, a nasty real estate agent who tried to sour her purchase of the bookstore building, was murdered.

Washington was assisted in her Marpleing by her grandmother Nana Jo who, truth be told, was a far better sleuth. In keeping with time-honoured cozy tradition, she found the body behind her shop, as all mercantile Miss Marples will do at least once in their series. The bookstore did good business from rubberneckers who came to see if any more bodies appeared.

Lady Penelope had her problems at the manor house, but doggedly continued her own snooping. The plot of that novel veered as Washington's life veered.

The bookstore opening went off with several hitches but nonetheless settled onto an even keel. One hopes Washington would be supplementing the local sales with online sales. Bookstores have enough trouble surviving in big cities, much less rural villages.

The Marpleing by both women revealed the bookstore building had stolen Nazi gold hidden in it. Several Parkers were involved in the chase, some of whom were eliminated by internecine warfare. It all turned out well for Washington.

Lady Penelope, meanwhile, also solved her murder. That narrative was used to illustrate Washington's thoughts. To ensure the reader noticed the parallelisms, the guilty culprit was Charlie Parker. There were other resemblances that were obvious projections from Washington's life.

READ HERRING HUNT (2018) was the sequel. Star quarterback Dawson Alexander, a local hero, was the main suspect after his ex-girlfriend was murdered. Samantha Washington's work as a Miss Marple was augmented by the Sleuthing Senior Book Club, so the Deppity Dawgs had their hands full dealing with the competition.

Washington also had her hands full, operating her bookstore and writing her next mystery novel. That saga involved Lady Daphne Marsh this time, investigating a murder attempt against Wallis Simpson just after the abdication. The suspects were every adult Britisher.

Back in the real world, Alexander had gone through a nasty breakup with physical violence, which was why he was the leading suspect. The story alternated with chapters of Lady Daphne's sleuthing around the royal set. Like Wallis, Alexander's ex had a past, only in this case it caught up with her when she dated a psycho. The other good news, besides catching the murderer, was that the novel was accepted by a publisher.

THE NOVEL ART OF MURDER (2018) continued to alternate between Samantha Washington's bookstore in North Harbor and her novel in progress about Lady Daphne, this time investigating murder in Winston Churchill's household between the two wars. (He wasn't yet a knight.)

The Michigan plot was about Nana Jo, who had been passed over for the lead role in the Shady Acres Senior Follies. Maria Romanov, a Russian royal pretender, got the post. Hot words were exchanged in public. When Romanov got a bullet in the head, the Deppity Dawgs didn't look far for suspects.

The police were distracted when a second murder took place, a new resident named Magnus von Braun, brother of Wernher. Yes, that Wernher, who really did have a brother Magnus. Washington could hardly avoid Marpleing. She still had her bookstore to run, and loaned out the back room to book clubs. That their members bought books from her was an added bonus.

The murderer was an elderly Jewish woman understandably upset when von Braun moved into the Shady Acres nursing home. She was not entirely without sin as Romanov had been blackmailing her for unrelated crimes. Washington and Lady Daphne both solved their cases.

Writer's Block.

Possibly the only broadcast series entirely devoted to an author with writer's block was BOX 13, which aired on old-time radio from 1948 to 1950. It was written by Russell Hughes. The series is available as free mp3s from www.otrrlibrary.org.

The show was about Dan Holiday, a newspaperman who quit his job to write great novels but then discovered he couldn't think of any plots. As a workaround, he ran an ongoing classified ad in the personals column: *Adventure wanted. Will go anywhere, do anything.* His address was Box 13 in care of the newspaper.

For the first few episodes, the newspaper clerk who dealt with him was Suzy, who soon quit that job and became Holiday's secretary. Each episode opened with the sound of a letter writer reading aloud his missive, which then segued into Holiday or Suzy reading the rest of it out loud after receiving it.

"The Great Torino" was a 1948 episode. The opening letter was from a magician's assistant named Maria, who wrote that her life was in danger. She was the target in a sharpshooting act and was worried that Torino would kill her from jealousy over her boyfriend Billy.

She was shot through the forehead as Holiday and the audience watched. Torino was subsequently knifed dead in a locked room mystery. Billy was suspected, which only intensified when it turned out that Maria was his wife and he quickly claimed a life insurance policy on her. During his investigation, Holiday was slugged unconscious as per usual for private detectives in those days in every episode.

It turned out that it was her twin sister killed in the act. Only Torino and Billy knew about the twins because they were used in a different disappearing act. Maria and Billy killed her sister as part of an insurance fraud.

Torino was killed to keep him from exposing the fraud. From there the episode jumped to the conclusion without explaining why a sister would kill her twin for what wasn't a huge amount of insurance money. An unsatisfying ending.

"Double Right Cross" was a 1948 episode written by Russell Hughes and E. Jack Neuman. The opening letter was from Johnny Capelli, a boxer who invited Dan Holiday to a middleweight match and enclosed a couple of tickets. They had served in the war at the Italian front and were friends from way back.

Capelli laid down on the fight and was booed off the ring. He had been a 10 to 1 favourite. He fled after changing in the dressing room. His girlfriend Helen and her brother Eddie had no idea where he might have gone.

Holiday tracked down Capelli who was hiding in a hotel room, nursing severe injuries. A doctor was called and said the wounds weren't too bad but the eyes were dilated from drugs. The Boxing Commission held up the purse on the fight pending investigation.

Capelli was in a state of denial. Holiday figured the drug was in the gum Helen had given him just before the fight. Someone must have bet big against Capelli. When Helen was interviewed she seemed innocent. Holiday missed the obvious questions the listener will ask. About ten minutes before the ending it was obvious Eddie was the bettor and supplier of the drugged gum.

This episode had an idiot plot, and Holiday was the main idiot. Capelli was the supporting idiot.

"Damsel In Distress" was a 1948 episode written by Russell Hughes. Constance MacLean was a wealthy teenager at a private school. She wrote to Dan Holliday that she needed protection from a blackmailer. She was afraid to contact police.

Suzy suggested Holliday be the knight irritant. He gently replied she meant knight errant. Off he rode, not on a white charger but in his car. He met MacLean and her friend Barbara Rodney at an ice cream shop.

She had received a letter saying she should cough up $1,000, which was followed up from a telephone call from the sender. Another letter was received, shoved under the door of the dorm room. MacLean didn't want anyone to know and swore Holliday to silence.

He took her and Rodney back to their rooms, where the house mistress Miss Olgilvie had him arrested. He managed bail, just in time to learn MacLean had disappeared. His investigation revealed that MacLean had been lying. Kidnappers don't ask for only $1,000, nor was it likely they would sneak a letter into a girls dormitory instead of just mailing it.

Holliday got Rodney to talk. It was a setup. Maclean was hiding in a cabin. She had been neglected by her parents and was acting up. Holliday had a talk with everyone and the finale was a group hug. He then asked MacLean to the school dance, which even at that time must have been creepy.

"The Dead Man Walks" was a 1949 episode that began with an appeal by a woman to help her father. She couldn't afford a private detective and didn't want to go to the police because her father was a paroled convict. On his first day out he was staying with her when a telephone call came in from an old cohort. The call unnerved him and he gave her a piece of paper for safekeeping.

He went out and never returned. She showed the paper to Holiday. It had an address on it for an S. Thomas, which Holiday found to be a pawn shop. He found a body and was immediately slugged unconscious. A state trooper later found him on the side of a road 70 miles away. *You were out like high-buttoned shoes.*

Holiday got back to the city and reported the body but it was gone by the time the police arrived. (Why didn't he report it to the state trooper for faster notification?) The police identified a missing ex-con Albert Winslow as the defunct. The pawn shop proprietor denied everything. Holiday noticed the shop had been rearranged. More bizarre news came, when Winslow reported to his parole officer.

The daughter gave Holiday more background information to continue the case, there still being ten minutes of air time to fill. He visited other premises which contained hooligans who objected to his presence. They worked him over trying to find out where "the plates" were. Winslow showed up at the pawn shop where the entire cast eventually assembled.

It all ended in gunshots and tears. The counterfeiting gang got what it deserved, and the plates were impounded. The explanation as to where the plates were hidden was very improbable. In the denouement, as Holiday tied up the loose ends for Suzy, she wanted to know if the counterfeiters had to declare the cabbage as income.

HOT IN CLEVELAND was a comedy series that aired on television for six seasons from 2010 until 2015. The show was about three women of a certain age, who rented a house from an elderly woman. The three were Melanie Moretti (a stay-at-home mom who had been dumped by her husband for a younger woman), Joy Scroggs (an English immigrant always unlucky in love), and Victoria Chase (flighty actress who had been through five husbands).

"We Could Be Royals" was a Season 6 episode first aired in January 2015, written by Sam Johnson and Chris Marcil. Joy's younger sister Jill arrived from England. She had been a nun for the last two decades, a mousy woman with no experience of men.

Joy took her under her wing and made her over into a glamorous woman. At the same time, Joy suffered a series of bad accidents that left her wearing an eyepatch, limping from a sprained muscle, and losing a front tooth, which made her thoroughly unattractive to men.

The other subplot was Chase duping Moretti into helping her write a children's book she had contracted for. What Chase didn't mention was that the book was two years overdue, the final deadline was in a couple of days, she had spent the advance, and she had been unable to think of a plot for the book.

Moretti couldn't think how to write the book either. They finally got around the writer's block when they realized they could just transcribe the events that Joy and Jill were going through. They made the characters into mice, two sisters who traded places, one becoming glamorous and the other turning into a dull mouse.

After that, the book wrote itself. They only had to follow Joy and Jill about, who were unaware of what was going on, and the plot followed. It all wrapped up well for both the sisters and the authors.

Write In Haste.

THE ADVENTURES OF SAM SPADE, based on the character created by Dashiell Hammett, aired from 1946 to 1951. It went off the air shortly after both Hammett and Howard Duff, the actor who played Sam Spade, were named as Communist sympathizers during the Red Scare.

The series struggled on for a few more episodes as a sustained show with no advertisers, since no corporation dared to be associated with it. The replacement actor couldn't live up to Duff's characterization but it didn't matter because as far as the advertisers were concerned, Sam Spade was a commie.

"The Critical Author Caper" was a 1948 episode, written by Robert Tallman and Gil Doud. It began with Sam Spade's secretary Effie chattering at great length about a mystery novel she was reading. She mentioned to Spade that the book was much better than what Dashiell Hammett wrote. Both actors began laughing over their next few lines but managed to struggle through and resume with straight voices.

Heiress Gabrielle Leggett had disappeared en route to her summer house after her father Edgar's funeral. Her stepmother was worried because she needed some estate papers signed. Eric Collinson the chauffeur heartily obstructed Spade as he checked out the mansion. Gabrielle's bedroom had several mystery novels by Owen FitzStevens, autographed to Edgar.

Spade was suspicious of Collinson, so he tailed him across town to a cheap rooming house where he found him and Gabrielle, who were newlyweds. It was necessary to render Collinson unconscious in order to talk to Gabielle. She said she thought her stepmother Gertrude was going to murder her as her father was murdered.

Spade let his guard down and in consequence was rendered unconscious by her. "*I dreamed I was a character in a detective story.*" Spade had nothing more to go on, so he visited FitzStevens in hopes of information about the Leggett family. FitzStevens filled in scuttlebutt about the family and mentioned that Collinson had served time in Folsom Prison. They speculated about who would be the next victim.

A telegram took Spade out to a country house overlooking the ocean. He found Gertrude's body on the beach, then had a chat with Gabrielle, who may have been insane or faking it. A twist was brought in about how Gabrielle's mother died and where FitzStevens got his plot ideas.

Still on the beach, he found FitzStevens lying in the surf, slowly dying after falling from the cliff after having pushed Gertrude over. His next novel wouldn't be finished despite a good plot idea.

Carolyn Haines has a lengthy series about Sarah Booth Delaney, who had a part-time detective agency in Zinnia, Mississippi. She and her family struggled to keep their manor going, once a plantation and now a white elephant. The village's murder rate was high enough that Delaney could earn a steady living as a private investigator.

BURIED BONES (2000) began at a dinner party hosted by Lawrence Ambrose, who had his fifteen minutes of fame as a published author years ago but yearned for more. His comeback was to be a tell-all biography which, as he announced at the dinner, would also blow the lid off the darkest secrets of Zinnia's citizenry.

Those with the guiltiest consciences were in attendance, so there was no surprise when shortly thereafter Ambrose was murdered and the manuscript stolen. The ghost writer was Brianna Rathbone. When she disappeared, Delaney became involved.

As expected, lots of old family melodramas were uncovered, especially in the Rathbone family. A second body firmed up the evidence. Brianna and her father had a mixture of motives, from protecting family honour to just plain staying out of jail.

BONES TO PICK (2006) recycled the plot, with the added fillip that the victim Quentin McGee was one day from inheriting a fortune. She had published an exposé of Zinnia, of the kind that Lawrence Ambrose never lived to see in print. One wonders what the heck was going on in the village, even allowing for the fact it was in Mississippi.

McGee had enough material to announce a second volume, which was obviously what got her killed. Sarah Delaney dredged up even more past history from an apparently bottomless pit in the village. The murderer was a crazed woman who couldn't let the past go. Lots of gunfire in the multi-stage denouement.

Not Giving Credit Where Credit Is Due.

BARRIE CRAIG, CONFIDENTIAL INVESTIGATOR was probably the only private detective series whose star had actually been a private detective in real life. William Gargan had worked in an investigator's office as a young man, and professed amusement at how script writers depicted private detectives at variance with the real ones.

This series aired on radio from 1951 to 1955. Craig narrated most of each episode. The plots often tangled up, but there were several summations during each episode so the listener wouldn't get lost. The episodes are worth listening to once, and the series grows on the listener.

"The Paper Bullets" was a 1951 episode written by John Roeburt. It began with Craig commenting it was important to stay on good terms with police in order to get one's private investigator licence renewed. They would also recommend potential clients, who were citizens preferring a discreet solution rather than having their case made a matter of public record with the police.

The case in question was a publisher named Hilary Grayson, who ran a $50,000 contest for best new novel. The manuscript "The Cry Of The Hyena" by Eric Trent went missing out of Grayson's office. There were no carbon copies because the author said he wrote it a few pages at a time over six years while traveling the world.

Craig noticed the intercom in Grayson's office had been turned on. He went searching the publisher's suite for the culprit but was knocked unconscious with a thrown inkwell. Pause for digression. A heavy glass inkwell would certainly hurt but I found it difficult to believe that it would render someone unconscious.

I am just barely old enough to remember the large holes in our school desks that inkwells could be fitted into. In the early 1960s in rural west-central Alberta where I grew up, we were taught how to use nib pens in elementary school. Adults used fountain pens. Every desk, school or business, had a thick-cut glass inkwell. Ballpoint pens were only just coming into use and were relatively expensive.

Be that as it may, Grayson found Craig, revived him, and sent him on his way. Craig was intercepted by the second-place author in the contest, Arthur Sacks, who was a sore loser. He thought that Trent had cheated.

In a buttermilk bar (I am not making that up) they got into a fight. Craig discovered Sacks was the one who hit him with the inkwell, so he returned the compliment by rendering him unconscious. This is why there are no buttermilk bars in Alberta.

From there, Craig visited Greenwich Village to talk to Trent. He met Judy Joy in the apartment, then Trent. The latter thought the manuscript theft might be a publicity stunt by Grayson. Sometime later a hoodlum Mike Kelsey who stole the manuscript offered its return for $1,000 ransom. Craig was asked to broker the deal with Kelsey's agent Macguire. The deal seemed to go off okay.

Before Craig could return the manuscript, Sacks called him for a meeting. Upon arrival, Craig discovered that Sacks had the honour of being the murder victim of the story. First calling the police, Craig carried on to the publishers, where Grayson greeted the manuscript with delight.

After inspection, Grayson realized the manuscript had been altered and was not the original. Craig had Trent summoned to the office so he could sleuth through Trent's apartment in his absence It was there that Craig found the original manuscript. He also found Joy with a gun but he had little difficulty disarming her.

The next step was Grayson, Craig, and the police comparing the two manuscripts page by page. A character Cora Lane had been deleted from the second version. Further analysis suggested that the manuscript was not written by Trent but was an autobiography stolen from someone else.

The police turned up a real Cora Lane in New York City. Her husband had left her, roamed about the South Pacific, and later died of a tropical disease. Trent, a casual acquaintance who met Lane in the islands, stole the manuscript and returned to America. As the widow of the true author, Lane was entitled to the $50,000, so all ended well.

There was a very clever twist ending about Lane, involving something mentioned in the opening and not again until the epilogue. Worth listening to just for the surprise at the end.

SEDUCTION OF THE INNOCENT (2013) by Max Allan Collins was a mystery novel written in the paperback pulp style. As the title suggested, at least to those who know a bit of publishing history, the plot revolved around the 1950s affray triggered by Dr Fredric Wertham's famous diatribe against comic books. That triggered congressional hearings and sent comic book producers into panic. "*Are you now or have you ever been a comic book publisher?*"

Pause for digression, since many readers do not know the full history. Wertham's work on comics has not survived the test of time. What is often overlooked was that he was active in civil rights and had one of the earliest clinics to treat mentally ill Negroes to the same standards as white patients. Some of his papers were cited as references in American Supreme Court cases abolishing racial segregation. In 1974 he published a book about fanzines which praised them as constructive, much to the relief of science fiction fans.

This novel had a fair number of infodumps about the state of publishing back in the Red Scare decade, a necessity to explain the background to the readers. Few people living today were adults back then. It wasn't just Hollywood screenwriters who were blacklisted. Many publishers had to toe the line or be cut off by their distributors.

The plot was about Jack Starr, who operated a newspaper features syndicate and dabbled in the newborn television industry. His stepmother Maggie, not much older than him, had been his father's third and final wife. She inherited the businesses because Starr was, by his own admission, a wastrel at the time the will was made. The two got along reasonably well.

They were among those suffering because of a controversy created by Dr Werner Frederick, an obvious roman a clef of Wertham. Their syndicate distributed comic strips to newspapers and was losing ground to Frederick. Jack and Maggie visited Frederick's apartment in an attempt to negotiate a reasonable peace.

They found him dangling from a rope, a murder staged to look like suicide. The subsequent plot veered back and forth between a cozy and a noir, finally ending with a gunfight. Jack shot the murderer dead as he was attempting to kill Maggie. The culprit had ghostwritten Frederick's famous book, and resented the lack of acknowledgment or royalties.

A readable novel all told. It is a good representation of how things were back then. Give a copy to your teenaged kids to show them what came before the Marvel Universe movies.

The Quiet Life Of An Editor.

A MURDER OF MAGPIES (2014) by Judith Flanders was about Samantha Clair, a book editor in London, England. Like most professional editors, she did very little editing. Her job was to push books past proofreaders, board meetings, and the legal department. It was not easy. The company's star novelist had turned in an unreadable novel. Another writer was Kit Lowell, who specialized in exposés, the kind that need careful reading by the legal department.

Lowell's book was the one that caused the serious trouble. It was about the fashion house of Aleman, who preferred that it not be published. Someone, identity unknown, was mentioned in the book and was trying to stop publication, mainly by stopping people with violence. Lowell went missing.

Clair went into the Marpleing business and soon found out that Aleman was into money laundering in a big way. There were a few alarums but mostly the clues and connections piled up. The denouement went on and on about who was related to whom, by blood or business association. Everyone had to scramble when Miss Marple tottered into scene.

CLAUSE AND EFFECT (2019) by Kaitlyn Dunnett (pseudonym of Kathy Lynn Emerson) was a novel in a cozy series about Mikki Lincoln, of Lenape Hollow in the Catskills of New York State. She was a freelance book editor.

The village was celebrating its 225th anniversary. Lincoln was asked to help out by updating the history of Lenape Hollow, last published in their bicentennial year. The original had been written to flatter certain families who weren't as important to the history of the village as they wanted others to believe. Lincoln had to move cautiously through an emotional minefield as she edited the manuscript.

The Historical Society building was under renovation. Human remains were found walled up in an old fireplace. That got Lincoln investigating as an historical cold case. The walling up had taken place during the bicentennial as part of previous renovations, so there was a possibility the murderer was still alive. This led the Deppity Dawg to caution Lincoln that she might become the second victim.

She almost did but since she was a continuing character, she survived the attempts on her life. Gilbert Baxter, the director of the society, was not even a recurring character, so he was murdered in the here and now. The murderer was the same man, then and now.

The victim was identified as Grace Yarrow, who had written the original manuscript. She and just about everyone around her indulged in illicit trysts, not to mention longstanding family feuds. There were a plethora of suspects.

After the usual confrontation with the killer, Miss Marple, pardon me, Lincoln, survived and the accused went off to trial. The 225th anniversary celebrations were a success. Sometimes editing is a dangerous job.

Retreating.

FATALITY BY FIRELIGHT (2017) by Lynn Cahoon was a novel in a cozy series about Cat Latimer of Aspen Hills, Colorado. She operated a bed-and-breakfast that specialized in writers' retreats. Her boyfriend Seth Howard assisted her.

The group at hand were wanna-bes, determined to write bestsellers when not skiing the nearby slopes. One of their number was Christina Powers, a prospective romance novelist. As far as the romance research went, she practiced what she preached when she took up with local ski bum Tommy Neil. He was found stabbed to death, having neglected to mention to Powers that he was to be married shortly.

That put two women on the suspects list immediately. Latimer was off and Marpleing, helped by her uncle being the Deppity Dawg. Tangling up the narrative was the theft of a rare Hemingway edition from the local library.

Many alarums and false leads later, the murderer was exposed as a psychopath who wanted Christina for himself and nobody else. The fact that she didn't

know him was no bother. The confrontation in the bed-and-breakfast was resolved with some self-defense course training. The stolen book was recovered but in a messier and less resolved ending.

CYANIDE WITH CHRISTIE (2018) by Katherine Bolger Hyde was a cozy novel set on the Oregon coast at Stony Beach. The resident Miss Marple was the widow Emily Cavanaugh, who had inherited a manor house from an aunt and converted it into the Windy Corner Writers' Retreat Center. Her boyfriend was Sheriff Luke Richards, so it was nice to have the Deppity Dawg on side.

The Center was hosting a conference, ostensibly of writers but more correctly described as The Ill Mannered Boors Society. The first guest was Prof. Oscar Lansing who wasn't so bad, but subsequent arrivals had never been taught politeness by their mothers.

Lansing mentioned in Chapter 1 that he was allergic to honey. This wasn't just an ominous foreboding, it was waving a red flag and sounding a klaxon. The rest of the guests all arrived just as an ice storm did, trapping them inside. The usual array of suspects from any Agatha Christie mystery, from the alcoholic to the sharp practice man.

One guest was Cruella Crime, her pen name of course. She kept her real name a closely guarded secret. Her behaviour matched her name, and there was little surprise when she became the murder victim, poisoned and not before time.

Cavanaugh and Richards found a mother lode of back stories. Blackmail, plagiarism, and libel were among the motives. Naturally the real reason was something else, old family scandals that Cruella had threatened to expose. Lansing's mother solved that problem with poison. He was revealed to be Cavanaugh's half-brother, so he survived to the end of the book. The honey allergy was a red herring of a bright scarlet hue.

MURDER IN THE READING ROOM (2019) by Ellery Adams was a cozy novel set in a resort hotel specializing in writers' retreats, Storyton Hall in the state of Virginia. The murder rate in SToryton being what it was, in this novel Jane Steward traveled to Biltmore Estate in North Carolina to spread the death toll around. Her boyfriend Edwin had gone missing in the area. A staff gardener foolish enough to assist her became the first murder victim. From there the alarums and excursions spread.

The MacGuffin was Ernest Hemingway's famous missing suitcase from 1922 (see OPUNTIA #422, page 12). The death toll rose and the survival rate of rare Hemingway manuscripts declined after Steward's car was torched. All ended well at a banquet of Jane Austen fans who considered Hemingway a boor.

SEEN IN THE LITERATURE

Prantzos, N. (2020) **A probabilistic analysis of the Fermi paradox in terms of the Drake formula: the role of the L factor.** MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY 493:3464-3472

Author's abstract: *In evaluating the number of technological civilizations N in the Galaxy through the Drake formula, emphasis is mostly put on the astrophysical and biotechnological factors describing the emergence of a civilization and much less on its lifetime, which is intimately related to its demise.*

It is argued here that this factor is in fact the most important regarding the practical implications of the Drake formula, because it determines the maximal extent of the 'sphere of influence' of any technological civilization.

The Fermi paradox is studied in the terms of a simplified version of the Drake formula, through Monte Carlo simulations of N civilizations expanding in the Galaxy during their space faring lifetime L. In the framework of that scheme, the probability of 'direct contact' is determined as the fraction of the Galactic volume occupied collectively by the 'spheres of influence' of N civilizations.

The results of the analysis are used to determine regions in the parameter space where the Fermi paradox holds. It is argued that in a large region of the diagram the corresponding parameters suggest rather a 'weak' Fermi paradox.

Future research may reveal whether a 'strong' paradox holds in some part of the parameter space. Finally, it is argued that the value of N is not bound by N = 1 from below, contrary to what is usually assumed, but it may have a statistical interpretation.

Damer, B., and D. Deamer (2020) **The hot spring hypothesis for an origin of life.** ASTROBIOLOGY 20:doi.org/10.1089/ast.2019.2045 (available as a free pdf)

Authors' abstract: *We present a testable hypothesis related to an origin of life on land in which fluctuating volcanic hot spring pools play a central role. The hypothesis is based on experimental evidence that lipid-encapsulated polymers can be synthesized by cycles of hydration and dehydration to form protocells.*

Drawing on metaphors from the bootstrapping of a simple computer operating system, we show how protocells cycling through wet, dry, and moist phases will subject polymers to combinatorial selection and draw structural and catalytic functions out of initially random sequences, including structural stabilization, pore formation, and primitive metabolic activity.

We propose that protocells aggregating into a hydrogel in the intermediate moist phase of wet-dry cycles represent a primitive progenote system. Progenote populations can undergo selection and distribution, construct niches in new environments, and enable a sharing network effect that can collectively evolve them into the first microbial communities.

Laboratory and field experiments testing the first steps of the scenario are summarized. The scenario is then placed in a geological setting on the early Earth to suggest a plausible pathway from life's origin in chemically optimal freshwater hot spring pools to the emergence of microbial communities tolerant to more extreme conditions in dilute lakes and salty conditions in marine environments.

A continuity is observed for biogenesis beginning with simple protocell aggregates, through the transitional form of the progenote, to robust microbial mats that leave the fossil imprints of stromatolites so representative in the rock record. A roadmap to future testing of the hypothesis is presented.

We compare the oceanic vent with land-based pool scenarios for an origin of life and explore their implications for subsequent evolution to multicellular life such as plants. We conclude by utilizing the hypothesis to posit where life might also have emerged in habitats such as Mars or Saturn's icy moon Enceladus.

Ruff, S.W., et al (2020) **The case for ancient hot springs in Gusev Crater, Mars.** ASTROBIOLOGY 20:doi.org/10.1089/ast.2019.2044 (available as a free pdf)

Authors' abstract: *The origin and age of opaline silica deposits discovered by the Spirit rover adjacent to the Home Plate feature in the Columbia Hills of Gusev crater remains debated, in part because of their proximity to sulfur-rich soils. Processes related to fumarolic activity and to hot springs and/or geysers are the leading candidates. Both processes are known to produce opaline silica on Earth, but with differences in composition, morphology, texture, and stratigraphy.*

Here, we incorporate new and existing observations of the Home Plate region with observations from field and laboratory work to address the competing hypotheses. The results, which include new evidence for a hot spring vent mound, demonstrate that a volcanic hydrothermal system manifesting both hot spring/geyser and fumarolic activity best explains the opaline silica rocks and proximal S-rich materials, respectively.

The opaline silica rocks most likely are sinter deposits derived from hot spring activity. Stratigraphic evidence indicates that their deposition occurred before the emplacement of the volcaniclastic deposits comprising Home Plate and nearby ridges. Because sinter deposits throughout geologic history on Earth preserve evidence for microbial life, they are a key target in the search for ancient life on Mars.

Xiangrong, Y., et al (2020) **Oceanic environment changes caused the Late Ordovician extinction: evidence from geochemical and Nd isotopic composition in the Yangtze area, South China.** GEOLOGICAL MAGAZINE 157:651-665

[The Ordovician-Silurian mass extinction took place 443.7 megayears ago.]

Authors' abstract: *The Ordovician-Silurian (O-S) transition was a critical interval in geological history. Multiple geochemical methods are used to explore the changes in oceanic environment. The Nd isotopic compositions in the Yangtze Sea are controlled by two sources: the continental erosion and the Panthalassa Ocean.*

High eNd(t) values during the Katian, late Hirnantian and Rhuddanian intervals are associated with the high sea level, which resulted in less terrestrial input based on the low Ti/Al and Zr/Al ratios. In contrast, low eNd(t) values during the early Hirnantian interval are related to the sea level fall; in this case, the exposure of submarine highs and the growth of Yangtze Oldlands could lead to more continental materials being transported into the Yangtze Sea based on high Ti/Al and Zr/Al ratios.

In addition, the negative eNd(t) excursion can also be attributed to the weak circulation between the Yangtze Sea and Panthalassa Ocean when sea level was low. Furthermore, the sea-level eustacy plays a significant role in the changes in redox water conditions. The redox indices, mainly UEF, Ce/Ce and Corg/PT, across the O–S transition show a predominance of anoxic ocean over the Yangtze Sea during the Katian, late Hirnantian and Rhuddanian intervals, and an oxygenated episode was briefly introduced during the early Hirnantian period because of the fall in sea level.*

The Late Ordovician biotic crisis was marked by two-phase extinction events, and the change in sea level and redox chemistry may be the important kill mechanisms.

Cloutier, R., et al (2020) **Elpistostege and the origin of the vertebrate hand.** NATURE 579:549-554

Authors' abstract: *The evolution of fishes to tetrapods (four-limbed vertebrates) was one of the most important transformations in vertebrate evolution. Hypotheses of tetrapod origins rely heavily on the anatomy of a few tetrapod-like fish fossils from the Middle and Late Devonian period (393 to 359 million years ago). These taxa, known as elpistostegalians, include Panderichthys, Elpistostege, and Tiktaalik, none of which has yet revealed the complete skeletal anatomy of the pectoral fin.*

Here we report a 1.57-metre-long articulated specimen of Elpistostege watsoni from the Upper Devonian period of Canada, which represents, to our knowledge, the most complete elpistostegalian yet found. High-energy computed tomography reveals that the skeleton of the pectoral fin has four proximodistal rows of radials (two of which include branched carpals) as well as two distal rows that are organized as digits and putative digits.

Despite this skeletal pattern (which represents the most tetrapod-like arrangement of bones found in a pectoral fin to date), the fin retains lepidotrichia (fin rays) distal to the radials.

We suggest that the vertebrate hand arose primarily from a skeletal pattern buried within the fairly typical aquatic pectoral fin of elpistostegalians. Elpistostege is potentially the sister taxon of all other tetrapods, and its appendages further blur the line between fish and land vertebrates.

Nagesan, R.S., et al (2020) **An Early Cretaceous (Berriasian) fossil bearing locality from the Rocky Mountains of Alberta, yielding the oldest dinosaur skeletal remains from western Canada.** CANADIAN JOURNAL OF EARTH SCIENCES 57:542-552

Authors' abstract: *Western North America preserves iconic dinosaur faunas from the Upper Jurassic and Upper Cretaceous, but this record is interrupted by an approximately 20 Myr gap with essentially no terrestrial vertebrate fossil localities.*

This poorly sampled interval is nonetheless important because it is thought to include a possible mass extinction, the origin of orogenic controls on dinosaur spatial distribution, and the origin of important Upper Cretaceous dinosaur taxa. Therefore, dinosaur-bearing rocks from this interval are of particular interest to vertebrate palaeontologists.

In this study, we report on one such locality from Highwood Pass, Alberta. This locality has yielded a multitaxic assemblage, with the most diagnostic material identified so far including ankylosaurian osteoderms and a turtle plastron element.

The fossil horizon lies within the upper part of the Pocaterra Creek Member of the Cadomin Formation (Blairmore Group). The fossils are assigned as Berriasian (earliest Cretaceous) in age, based on previous palynomorph analyses of the Pocaterra Creek Member and underlying and overlying strata.

The fossils lie within numerous cross-bedded sandstone beds separated by pebble lenses. These sediments are indicative of a relatively high-energy depositional environment, and the distribution of these fossils over multiple beds indicates that they accumulated over multiple events, possibly flash floods.

The fossils exhibit a range of surface weathering, having intact to heavily weathered cortices. The presence of definitive dinosaur material from near the Jurassic-Cretaceous boundary of Alberta establishes the oldest record of dinosaur body fossils in western Canada and provides a unique opportunity to study the Early Cretaceous dinosaur faunas of western North America.

Klages, J.P., et al (2020) **Temperate rainforests near the South Pole during peak Cretaceous warmth.** NATURE 580:81-86

Authors' abstract: *The mid-Cretaceous period was one of the warmest intervals of the past 140 million years, driven by atmospheric carbon dioxide levels of around 1,000 parts per million by volume. In the near absence of proximal geological records from south of the Antarctic Circle, it is disputed whether polar ice could exist under such environmental conditions.*

Here we use a sedimentary sequence recovered from the West Antarctic shelf, the southernmost Cretaceous record reported so far, and show that a temperate lowland rainforest environment existed at a palaeolatitude of about 82° S during the Turonian-Santonian age (92 to 83 million years ago). This record contains an intact 3-metre-long network of in situ fossil roots embedded in a mudstone matrix containing diverse pollen and spores.

A climate model simulation shows that the reconstructed temperate climate at this high latitude requires a combination of both atmospheric carbon dioxide concentrations of 1,120 to 1,680 parts per million by volume and a vegetated land surface without major Antarctic glaciation, highlighting the important cooling effect exerted by ice albedo under high levels of atmospheric carbon dioxide.

Rowe, A.J., et al (2020) **Late Cretaceous methane seeps as habitats for newly hatched ammonites.** PALAIOS 35:151-163

[Ammonites were shelled cephalopods which became extinct at the end of the Cretaceous alongside the dinosaurs. Their only surviving relative is *Nautilus*.]

Authors' abstract: *Cold methane seeps were common in the Late Cretaceous Western Interior Seaway of North America. They provided a habitat for a diverse array of fauna including ammonites. Recent research has demonstrated that ammonites lived at these sites. However, it is still unknown if they hatched at the seeps or only arrived there later in ontogeny.*

To answer this question, we documented the abundance and size distribution of small specimens of Baculites and Hoploscaphites at eight seep sites in the Pierre Shale of South Dakota. The specimens of Hoploscaphites range from 0.8 to 8.1 mm in shell diameter, with most of them falling between 1 and 1.5 mm.

The specimens of Baculites range from 0.7 to 19.2 mm in length, with most specimens falling between 6 and 8 mm. The small size and morphology of these specimens indicate that they are neanoconchs, that is, newly hatched individuals that lived for a short time after hatching.

We also analyzed the isotope composition ($d^{13}C$ and $d^{18}O$) of 12 small specimens of Baculites and one specimen of Hoploscaphites with excellent shell preservation from one seep deposit. The values of $d^{13}C$ and $d^{18}O$ range from -16.3 to -2.5‰ and -3.0 to -0.9‰, respectively. The values of $d^{18}O$ translate into temperatures of 19 to 28°C, which are comparable to previous estimates of the temperatures of the Western Interior Seaway.

The low values of $d^{13}C$ suggest that the tiny animals incorporated carbon derived from anaerobic oxidation of ^{12}C-enriched methane into their shells. Evidently, they must have lived in close proximity to seep fluids emerging at the sediment-water interface and the associated microbial food web. However, this may have contributed to their demise if they were exposed to elevated concentrations of H_2S derived from the anaerobic oxidation of methane.

Costa, G.C., and I. Schlupp (2020) **Placing the hybrid origin of the asexual Amazon molly (Poecilia formosa) based on historical climate data.** BIOLOGICAL JOURNAL OF THE LINNEAN SOCIETY 129:835-843

[Mollies are a popular aquarium livebearing fish related to guppies. The species known as Amazon mollies are so-called because there are no males, and the females give birth by parthenogenesis.]

Authors' abstract: *Asexual hybrids are important model organisms for addressing questions in evolution and ecology, especially for understanding the role of hybridization in speciation. They are rare in nature and several hypotheses have been suggested to explain this. We use an asexual fish, the*

Amazon molly (Poecilia formosa), to establish the area in which it was formed via hybridization 125,000 years ago.

Using species distribution models and climate models for the Last Interglacial (LIG) we found that model projections to the LIG show a similar map to the present climate model and parental species potentially overlapped in a relatively small area near Tampico, Mexico.

This makes P. formosa one of a few hybrid species for which we know the parental species, the time of hybridization, and likely the place of hybridization. Based on the small area of overlap, our data is in agreement with the idea that asexual hybrids may be rare not because they are evolutionary dead ends but are formed rarely.

Santana-Morales, O., et al (2020) **The smallest known free-living white shark *Carcharodon carcharias* (Lamniformes: Lamnidae): Ecological and management implications.** COPEIA 108:39-46

Authors' abstract: *The White Shark (Carcharodon carcharias) is a top predator cosmopolitanly distributed and heavily protected worldwide. Identification and information pertaining to White Shark nursery areas is limited yet crucial for the protection of sharks during their most vulnerable life stages.*

Here, we present morphometric, skeletal, and haplotypic characteristics of the smallest free-living White Shark reported to date (1066 mm TL). These characteristics correspond to a newborn White Shark smaller than those previously reported in an embryonic state but displaying the same number of rows of functional teeth as an adult.

The individual was caught incidentally by an artisanal fishery operating along the Pacific coast of Baja California, near the international border between Mexico and the United States (USA). We found no genetic divergence between Isla Guadalupe and central California, two aggregation sites that have been proposed as a possible source for newborn sharks in this area.

The newborn White Shark displayed the most common haplotype present among individuals at both aggregation sites. These findings provide evidence suggesting the presence of an extended nursery habitat in the Northeast Pacific, a transnational region between Mexico and USA.

Raichlen, D.A., et al (2020) **Sitting, squatting, and the evolutionary biology of human inactivity.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 117:7115-7121

Authors' abstract: *Recent work suggests human physiology is not well adapted to prolonged periods of inactivity, with time spent sitting increasing cardiovascular disease and mortality risk. Health risks from sitting are generally linked with reduced levels of muscle contractions in chair-sitting postures and associated reductions in muscle metabolism.*

These inactivity-associated health risks are somewhat paradoxical, since evolutionary pressures tend to favor energy-minimizing strategies, including rest. Here, we examined inactivity in a hunter-gatherer population (the Hadza of Tanzania) to understand how sedentary behaviors occur in a nonindustrial economic context more typical of humans' evolutionary history.

We tested the hypothesis that nonambulatory rest in hunter-gatherers involves increased muscle activity that is different from chair-sitting sedentary postures used in industrialized populations.

Using a combination of objectively measured inactivity from thigh-worn accelerometers, observational data, and electromygraphic data, we show that hunter-gatherers have high levels of total nonambulatory time (mean ± SD = 9.90 ± 2.36 h/d), similar to those found in industrialized populations.

However, nonambulatory time in Hadza adults often occurs in postures like squatting, and we show that these "active rest" postures require higher levels of lower limb muscle activity than chair sitting.

Based on our results, we introduce the Inactivity Mismatch Hypothesis and propose that human physiology is likely adapted to more consistently active muscles derived from both physical activity and from nonambulatory postures with higher levels of muscle contraction. Interventions built on this model may help reduce the negative health impacts of inactivity in industrialized populations.