

OPUNTIA

70.1B

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THE ERIC KORN COLLECTION OF H.G. WELLS

The University of Calgary Library has acquired an outstanding collection of H.G. Wells material. The Korn Collection includes first editions, translations, special publications, play and radio script adaptations, ephemera and pulp magazine treatments of H.G. Wells. Particular prizes include an audio recording of the famous 1938 WAR OF THE WORLDS radio broadcast which caused widespread panic by listeners who did not realize it was a work of fiction. The producer of the broadcast, Orson Welles, autographed this copy.

All aspects of Wells' career are represented, including his later more controversial writings that focus on social and political issues. A teacher at heart, Wells is often considered the inventor of the first tabletop war game. The Korn collection includes the first and following editions of the game LITTLE WARS. The collection also includes commentary and parodies of his writing.

The University is already home to the Bob Gibson Collection of Speculative Fiction, one of the largest collections of its kind in any university. Gibson's collection spanned the 20th Century with a great many works from the early days of British speculative writing. The Wells collection is an amazing complement, and together these collections will promote study and understanding of the emergence of modern society.

WAY UP NORTH

by Dale Speirs

Initus Non Abeat.

THE WORLD IN 2050 by Laurence C. Smith (2010, hardcover) takes a look at the future of the far north, defined by the author as those portions of the USA, Canada, Iceland, Greenland, Norway, Sweden, Finland, and Russia which are roughly north of 45°N. Smith is a UCLA climatologist who studied climate change before it was fashionable, and uses this book to predict what to expect in the coming decades. He states his premises for his predictions up front. There will be no silver bullets such as cold fusion or cheap alternative fuels. There will be no World War Three, although low-level conflicts such as in the Middle East will continue. He excludes out-of-the-blue factors such as high-mortality pandemics and asteroid impacts. He uses the basic models of climate change to calculate his predictions, recognizing that they cannot be calculated to extremes and they may need adjustment in the details.

I debated buying this book for the simple reason that I will be dead in 2050. (I was born in 1955 and none of the men in my family reached 80.) But the change that is coming has already started and will gradually intensify over the remainder of my life. I don't expect this book to be 100% accurate. No set of

predictions is, but it can be a useful guide on what to expect and how to prepare. For the Boomer generation such as myself, it can help provide a more comfortable old age, and for you younger readers or who are concerned about your children, it can mean the difference between barely scraping by or having a pleasant life. Unfortunately the mass of people are oblivious to the warning signs ahead. They are too busy watching reality shows on television to notice the reality around them.

Smith considers four major forces shaping the future. The first is demography. 12,000 years ago, as humans were inventing agriculture, there were about one million of them in the world. It took about 12 millennia for the human population to reach one billion people, circa 1800 AD. It only took 130 years to add the next billion by 1930, as the Great Depression got underway and the Nazis rose to power. Thirty years later, by 1960, we had added the third billion, as humans launched the first satellites and computers became popular among businesses who could afford a room-sized electronic monster. The fourth billion had arrived by 1975, as manned space programmes abandoned the Moon and stayed close to Earth in low orbit. The 5 billion mark was reached in 1987, when computers became small enough to be carried by one man. In 1999, we reached 6 billion people as the word Internet became common, and in 2011 the 7th billion cohort will have arrived. By 2050, at the present rate, there will be 9.2 billion people on Earth.

This brings us to the second major force, that of consumption. All those people consume natural resources, reduce the biological diversity of the planet, and pollute their environment. If the standard of living for most of the planet was raised to match North Americans, the consumption would be equivalent to 72 billion people. Since there are no resources for that many people, something has to give, and it won't be pleasant for the unprepared.

The third force is globalization, the interconnection of economic supply chains around the world such that Swedes design furniture, have it built in China, and then shipped across the planet to North America so that Filipino immigrant cashiers in IKEA stores can sell it cheaper than local carpenters could build it. This depends on cheap oil and cheap resources, both of which are declining fast.

The fourth force that will shape our future is climate change. Regardless of the details, whether it is due to natural or anthropogenic causes or both, it is happening and will intertwine with the other three forces. The debate about its causes is irrelevant, like debating on the deck of the Titanic about whether the iceberg came from Greenland or Baffin Island.

A Bug In Search Of A Windshield.

In 2008, for the first time in history, more humans lived in cities than in rural areas. By 2050, the three largest economies in the

world will be China, USA, and India, changing from today's USA, Japan, and Germany. The prosperity of Chinese and Indian people will have increased on average, but they will still be a long way from the Americans.

“Archaeologists have never dug up the prehistoric remains of anyone over 50.” writes Smith, but 2050 will have the highest proportion of grey hairs in human history. Societies may become slighter wiser and calmer, but all those seniors need more health care, which puts a burden on younger workers worldwide. Immigration will be viewed in a new light in xenophobic countries, and places where women are not allowed to work or be independent will be forced to change just to get the extra employees. The countries with the greatest number of young workers will be in Africa and the Middle East, and the countries with the highest proportion of old people will need them. That will lead to some culture clashes, as is already starting to show up in Europe, sometimes styled Eurabia. The old American adage “Worship in the church of your choice” will become “Worship in the mosque of your choice”.

Coming up by 2050 will be not only Peak Oil, but Peak Almost Everything. It is not a matter of reserves running out, but rather the cost of extracting the remaining supplies, which will be offshore oil and low-grade ore bodies.

The easy oil and minerals are mostly gone already, and the rest is tough to get out. Not all minerals will be scarce, but even for the common ones it will be costly to get them out, process them, and ship them. If you have money, you will not want for them, but you will pay dearly for it.

Miracles are not coming on-stream. Electric cars need advanced manufacturing methods and scarce metals, and the electricity is generated by power plants out of sight and mind but not necessarily less polluting than piston engines. Ethanol made from sugar cane is economical but if made from corn requires eight barrels of oil for every ten barrels of ethanol produced. Biofuels and continuing urbanization will displace farmland used to produce food, causing high prices at the supermarket. Hydrogen cars are a non-starter. There are no deposits of pure hydrogen on Earth, so it must be produced by electrolysis of water. That makes hydrogen a negative energy source; it gives back less useful energy than was needed to create it.

Energy sources in 2050 will be pretty much what they are today, save a slightly higher proportion of solar and wind energy. The main problem is energy storage and distribution. The manufacture of solar panels requires materials that are already becoming scarce. Distribution networks can and will be built but the era of cheap electricity will fade with them.

Coal-fired generators currently provide 40% of the world's electricity, and that amount will increase despite being the dirtiest fuel in use. A drawback is the volume of carbon dioxide and other gases produced. Carbon capture and storage (CCS) has been proposed, whereby the gases would be pumped underground into old oil fields or saltwater aquifers, but this will require major pipeline infrastructure development. Again, this will increase the cost of electricity.

Nor Any Drop To Drink.

Technically, fresh water cannot be in Peak Water because it is constantly recycled by rain and snow. Practically speaking though, there are far too many people living in dry lands while most of the water is elsewhere. California and Arizona import water from distant mountains, while Russia and Canada have so many creeks and lakes that most have never been named. Saudi Arabia has no natural watercourses but a population of 30 million, the same as Canada.

Several water sources are shared between enemies, such as the River Jordan (Israel and the surrounding Arab states) or the Indus River (India and Pakistan). Many doomsayers have predicted water wars in the future but Smith points out that even today enemy states manage to share. Israel and its neighbours have fought several wars but not over water.

India and Pakistan are rattling their nuclear sabers at each other, but still settle water disputes at the negotiation table. Smith does not believe that water wars will be fought with guns, because arid countries have already settled their differences. The real water wars will be between cities and irrigated farms. California is a test case; farmers are already losing water rights to San Diego and Los Angeles. Smith notes that more water rights have been sold from the Colorado River than there is actual water because the initial distribution was made during an abnormally wet period.

There is one type of Peak Water, that of underground aquifers that supply most irrigated farms around the world. They are only very slowly recharged by rain and are running dry. Around the world, groundwater extraction is causing land to sink and farms revert back to desert. This will only increase by 2050, and reduce agricultural production.

Water is essential for industry, particularly energy producers. Power plants need it to cool down the turbines, so drivers patting themselves on the back because they drive electric cars are reducing one problem (emissions) but increasing another (water use). And no, recharging at night won't re-balance the load, not if a large number of electric cars are built.

Glacier retreat is a serious matter in many places because they depend on meltwater. Southern Alberta, including Calgary, gets

almost all of its water from the Rocky Mountain glaciers. Smith mentions this as a crisis for the next generation in western North America. Reservoirs can't possibly make up the difference. Not enough of them can be built, and they are enormously wasteful of water due to evaporation and seepage.

It will also be a crisis for shore dwellers, as sea levels gradually creep up as the ice melts. The increase may not seem much, only a couple of metres as a worst case by 2050, but that depends where you live. We'll be bone dry in Calgary (a kilometre above sea level), but Miami will have to build levees. More seriously, even if the sea level only creeps up a little, it will erode away the wide beaches and barrier islands that currently absorb storm surges.

Approcher Avec Prudence.

Smith then looks at climate change, both the long-term fundamental changes and the short-term variations. He makes the point that climate change is like the stock market. Both have long-term trends but both have daily fluctuations, short-term corrections, and anomalies. Stockbrokers have an old saying that nothing moves in a straight line, and meteorologists have an equally old saying that you shouldn't confuse weather with climate. Daily or monthly variations create a lot of noise on the line, which is why

in either stocks or climate change it is better to look at multi-year charts to see what is happening overall. Unfortunately a lot of pundits and talking heads don't or can't see this point, and use an uptick in hurricanes (2005 season) as proof the world is coming to an end, or a series of blizzards as proof that the planet isn't warming up, depending on their political stance.

Smith shows a variety of climate change maps produced by different computer models. The details and timelines vary but all of them show similar anomalies. The planet will warm up by several degrees on a worldwide average, but just as you can drown crossing a river with an average depth of 10 cm, so it is that some places will actually become colder and wetter. The North Atlantic and the circum-Antarctica currents stay stubbornly cool. Arctic and boreal Canada and Russia will warm up in summers but they will also have wetter and snowier winters, so the supply of fresh water there will actually increase, even as the Canadian prairies and American Great Plains dry out. The southern hemisphere will heat up and dry out on average, but the major change will be in the northern hemisphere. Sell that timeshare in Spain now, buy a cottage in Yukon, and beat the rush.

Agricultural belts are also shifting. The tropics will have to adapt to growing drought-resistant crops, and North American farming will figuratively take two steps north and one step west. There will not be amber fields of grain in the tundra, but more wheat will

be grown in the boreal forest of northern Alberta and Saskatchewan. Potatoes are already being grown as field crops, not just garden patches, in Greenland. It will be the tropical countries that take the brunt, as they become hotter and more drought susceptible. Russia, Alaska, and Canada will continue to be net food exporters, albeit in new ways and from further north.

Smith was on a Canadian icebreaker ship when the Russians planted their flag on the seabed at the North Pole, touching off an international uproar. He notes that despite hysterical talk of wars in the Arctic, the circumpolar nations are settling claims through the international Law of the Sea. Once mapping of underwater continental shelves has been completed, this will establish who gets what. Russia actually appears to be in the right, as much of the Arctic Ocean is underlain by a flooded shelf of Siberia, and the North Pole may well be Russian territory once the cartographers are done. Any talk of exploiting oil or minerals on the Arctic seabed is premature because no one has the working technology to do it.

Nor will the Arctic Ocean become a major shipping route, because although it is opening up in the summer, it is still freezing over in winter, and always will. All the climate models agree on that. Shipping companies want reliable year-round routes, not stop-and-go traffic. Further, even in summer there will be lots of

icebergs floating about, requiring ships to slow down and be escorted by icebreakers. Smith believes that the likelihood of container ships crisscrossing the North Pole in 2050 between Europe and Asia is near nil, but there will be lots of traffic going into the Arctic during the summer for mining and petroleum, and supplying Arctic communities. The Arctic Ocean will not be a thoroughfare but it will be a collection of village High Streets.

One of the biggest problems the Arctic communities will face is the thawing of the permafrost, making it difficult to construct buildings in areas where the bedrock is too deep for pilings. Shorter freeze-ups in winter will also pose a problem because most interior Arctic communities are supplied only in winter via ice roads. This is particularly critical for mines, which can only bring in heavy equipment and ship out ore concentrates during a brief winter season when the ground is frozen.

Notwithstanding climate change, human populations will expand in the Arctic over the next four decades as we become increasingly desperate for new sources of oil. Alternative energy sources will have only made a small dent in the demand. Further south, in the boreal forest of northern Alberta are the Athabasca Tar Sands (which many people mistakenly believe are Arctic) which will be developed no matter what Greenpeace may say. 30% of oil imported by the USA comes from there, and the only practical alternative sources are Islamic dictatorships. One minor

nitpick I noticed: Smith refers to the Canadian government as leasing the oilsands, but it is actually the Alberta government, since provinces have authority over natural resources.

Smith gushes over all the natural gas up north but given the suicidal economics of shale gas and liquified natural gas for the near future, it is unlikely that even in 2050 there will be much development. Ultimately, the gas reserves will be exploited, following the typical pattern of squandering resources when they are cheap, like \$2/barrel oil, and then desperately hunting for more at higher prices after the easy sources have been drained. Natural gas is currently in the \$3 to \$4 per gigajoule range, which is cheap and discourages any attempt at conservation. The flood of NG will be used to over-heat houses or generate electricity to run air conditioners that keep houses at refrigerator temperatures.

People On The Move.

As the tropical countries dry out, their inhabitants will seek greener pastures, and not just figuratively. Of all the Arctic nations, only Russia is facing a declining population. The other countries are friendlier to immigrants. Canada's top-rated television programme "Hockey Night In Canada" now has Punjabi-language commentators. Immigration will continue to be a hot-button issue in the USA and the Scandinavian countries for the next few decades, but trying to

bar the door won't work. They're coming no matter what.

Smith has spent considerable time in Alaska, Nunavut, and Greenland, and points out that the inhabitants of the Arctic are not primitive tribesmen helpless against climate change. They like the idea of no more -50°C winters, just as us southern Canadians won't miss -40°C winters. The Arctic tribes realize their way of life is changing, but as the old ways vanish, new ones arise. Polar bears may be threatened, but grizzly bears are now extending their range north into places where the Inuit have never seen them before. The caribou have changed their migratory routes but hunters are not so tradition-bound that they can't follow the new ones. Arctic char is dwindling but salmon are now moving into the coastal areas. Smith points out that the native tribes resent being cast as victims and they take pride in being adaptable in a land that has always easily killed the careless. There are major ecosystem changes underway, but the new fauna and flora is something the tribes can deal with.

Aboriginal land claims have also taken a dramatic turn. In North America, unlike tribes in the south who were over-run by European settlers 150 years ago and marginalized onto tiny reserves, the Arctic tribes were pretty much left alone until the 1970s because few settlers went there. By the time resource development began, the white folk had developed a semblance of guilt, and negotiated better terms for the natives, including

mineral rights. The best deal was obtained by the Inuit, -8- whose homeland of Nunavut is bigger than Europe. Smith noticed in his interviews with natives around the North American Arctic that they were tired of repeating the same stories to camera crews showing up and determined to portray them as helpless victims. Their traditional way of life is being disrupted but they are charting their own courses.

The story is different in the Nordic countries and Russia. The Sami, as Laplanders call themselves, are split between four countries, none of which are overly sympathetic to nomads who don't respect political borders. Russia does not acknowledge the right of aboriginals to mineral rights or traditional fishing or hunting. It seems likely that by 2050, these tribes will only exist as vestigial populations. Russia has an aggressive policy of colonizing the Arctic and building cities evenly across it, primarily during the Soviet era. There is nothing comparable in Canada or Alaska, where there are no large cities in the Arctic, just scattered mining towns and fishing villages.

Things To Come.

Smith concludes his book by looking at certain scenarios. The first is the possibility of sudden cold snaps lasting a couple of centuries or millennia before the climate abruptly returns back to today's conditions. These abrupt changes are an eye blink in

geological time, but would mean severe disaster for human civilization. The fossil record shows that throughout the Earth's history the major climate changes were not smooth and slow but were demarcated by sudden reversals, what Smith calls the flickering lights effect. When the most recent ice age ended, the glaciers impounded huge volumes of fresh water in the centre of North America and Asia. As the ice melted, eventually the barriers collapsed and gigantic floods swept into the oceans. This changed the salinity, heat flows, and currents of the oceanic waters. The northern hemisphere experienced mini-ice ages and tropical areas became deserts. The probability of re-occurrence is low, however, because there are no glacial lakes left that are big enough to change the world's climate.

The Arctic ice cap meltdown will not affect sea levels because most of it is floating on the ocean. Floating ice displaces its own weight in water so nothing changes if it melts. What is worrying the scientists are huge amounts of land ice held up above sea level in Greenland and Antarctica. They are surrounded by a fringe of sea ice which currently slows or stops the flow of land ice into the sea. Those collars of sea ice are now melting away, and the flow of land ice is starting to speed up. The meltwater from the land ice is what is causing sea levels to rise. No one has yet been able to come up with any confident computer models to predict how fast the land ice will melt and how much.

Another worry is the fact that about half of the world's total soil carbon is stored in permafrost. Dead plants decay very little in the Arctic, and over the past millennia since the Ice Age ended, huge quantities of peat have built up and been frozen into the permafrost. No one can predict what will happen when the permafrost thaws out. It may be that the carbon will stay underground as microbes decay it and it is recycled into roots by plants. It could be that it will end up reaching the atmosphere. If the meltwater from the permafrost quickly drains away, then the microbes will release carbon dioxide. If the meltwater stagnates in place, the microbes will switch to methane generation, which is far worse for atmospheric change. Current studies are superficial and contradictory, and no positive predictions can be safely made.

A political wild card cited by Smith is what will happen to the resource riches of eastern Siberia. Despite settlement schemes for the past century, the ethnic Russian population there is falling. Until the late 1800s, eastern Siberia was in the Chinese sphere of domination. Americans get hysterical about illegal Mexican immigrants, and modern Russians fear a tide of Chinese swamping Siberia. Smith does not believe there will be any wars but, just as the second language in southwestern USA is now Spanish, so it will be that Mandarin will become widespread in Siberia by 2050.

The Russians and Chinese are steadily improving relations today, and the latter will avoid war by the simple expedient of over-running Siberia with immigrants, just as Mexico will not start a war to take back California or Texas but will make them Hispanic states. There was a joke during Khrushchev's time that he ordered a supercomputer built to predict the future. On completion, he asked the computer to predict what Russia would be like a century hence, but he couldn't read the answer because it was in Chinese.

Matthew 24:6

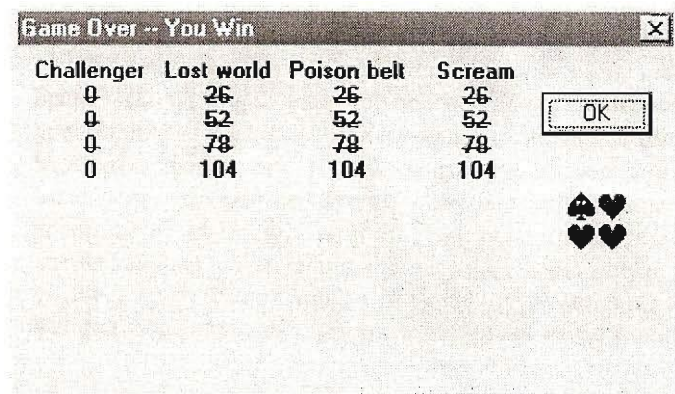
Smith concludes with a summary that emphasizes that the end times are not yet here for the human race. By 2050, there will be major ecosystem shifts underway, but these shifts have happened constantly since humans evolved. We do not attempt to re-water the arid plains of eastern Africa back into jungle, nor is anyone upset that the Gulf of Arabia was once fertile land but is now flooded. A century ago, no one could doubt that the British Empire would always prevail, and fifty years ago the Soviet Union seemed it would go on forever. Climate change will produce winners and losers. Those of you still young enough to be alive in 2050 have the opportunity to begin planning now for a brighter future. Move north, live in higher altitudes, get jobs in the coming industries and commodities production, and plan for severe financial panics and inflation. You do not have to be passive victims as will happen with most people.

CHALLENGER AT LARGE

by Dale Speirs

Introduction.

Sir Arthur Conan Doyle is best remembered for his Sherlock Holmes stories, but he had another fictional character who has also lived on through the years, albeit not as prominently as Holmes and Watson. Professor George Edward Challenger was a loudmouth boor with a full beard, an even fuller ego, and a willingness to back up his scientific research with fists and libel actions. He considered science to be a full contact sport. He first appeared in THE LOST WORLD, a novel that has been filmed a number of times, and then in a batch of follow-up stories.



I have a recent compilation of these stories, **CHALLENGER AND COMPANY** (2007, trade paperback). It leads off with **THE LOST WORLD**, which I reviewed in **OPUNTIA #67.1B**, so I'll skip that one and start off with the next story in line, "The Poison Belt".

Once More Unto The Breach.

"The Poison Belt" is a sequel to the first Challenger story, and features the same gang of characters three years after their return from South America. Astronomers have noticed there is a blurring of the Fraunhofer lines in the spectra of all the planets and stars. Reports are coming in about unusual events in Asia, with whole countries getting sick and ships running aground. Even Englishmen are behaving strangely, if such a thing can be imagined. Newspaper reporter Malone, the narrator of this story, has an appointment with Prof. Challenger, who sent him a note to bring oxygen.

The party of explorers and scientists meet at Challenger's house, where he advises them the Earth is just entering a poisonous zone of space that will sterilize it. He proposes to make a room in his house airtight and use the oxygen as long as possible, in the hopes they can survive the passage. Some potted shrubs will be makeshift air filters to reduce carbon dioxide. Challenger's house is on a hilltop, and the gas seems to be heavier than air, as it flows first along the bottomlands and then works its way into the higher

elevations. It also spreads from the equator out to the poles. Challenger's group watch from their haven as the gas flows through their neighbourhood and asphyxiates the local populace. They lament the dead, and watch the glow of burning cities on the horizon, as accidental fires fan out unchecked. After a night of watching and philosophizing, they discover the next morning that the poisonous ether has moved on and the air is fresh again. They take a car out and go motoring through the dead world, with human bodies everywhere and no sound of birds. Much to their surprise, life starts reviving again, and it turns out the poison ether merely put the world into a 28-hour coma, excepting of course those who died in the fires. The human race picks itself up, dusts itself off, and begins anew in the wreckage.

The story would read better had it not been telegraphed in the opening paragraphs that this was a zero-reset story. The physics of the ether's spread is also questionable but we can let that pass with a bit of hand-waving.

Terra Nebulosa.

"The Land Of The Mist" starts off with the death of Challenger's wife, and the sudden introduction of a grown daughter Enid. The story also shifts from a first-person narrative by Malone, as done in the first two Challenger stories, into a third-person narrative.

This can be jarring if read immediately after the first two stories. Enid and Malone are both reporters, and are doing a series for the newspaper on the different types of churches in London. This night they are visiting the Spiritualist Church, which affords Challenger the opportunity to get in some digs at psychical research. (Doyle desperately wanted to believe in such things, but had a propensity of falling for hoaxes such as fairy photos.) There are seances interspersed with hymns, as it is a church after all. One of the mediums tells Enid that she is one as well. And so to home. After another bout with the skeptical Challenger, Enid and Malone later attend another seance, with various spirits in communication and much philosophizing. From there it is one round of seancing and ectoplasm materializing after another every evening.

At this point, the reason for the change to third-person narrative becomes evident, as the story shifts to the life and troubles of a London medium named Tom Linden. Doyle, being a believer, sets Linden up as a genuine medium who actually can commune with the spirits. The poor fellow is plagued by con men who want him to teach them the tricks of the trade, and by undercover police agents seeking to put him away for fraud. Linden is hauled before an unsympathetic magistrate and given two months hard labour. Doyle writes up the trial as one of a martyr, with Linden a victim of a gross miscarriage of justice.

The story then drifts off into the repetition of more ghosts and materializations, as Doyle becomes positively preachy. These interminable anecdotes can be safely skimmed at high speed by the reader. Challenger gets drawn into the debate and is set up to lose. Malone becomes a believer and is martyred by being fired from his job, although as a consolation prize he gets Enid. In summary, the story doesn't work. Doyle was preaching, not entertaining, and worse yet, was a boring preacher. Not up to his usual standards.

Deux Ex Challenger.

“The Disintegration Machine” returns to a first-person narration by Malone. He and Challenger investigate a Latvian named Theodore Nemor, who claims to have invented a machine that can disintegrate objects and then restore them. The claim is true, and the two men receive personal demonstrations. Nemor told them he had sold the secret to the Russians, and it was obvious what it would be used for. Challenger, for all his histrionics, can be cold and calculated when he wants to be. He tricks Nemor into standing inside the machine and disintegrates him permanently to preserve the world peace.

“When The World Screamed” nicely illustrates Challenger at his most arrogant. The story is narrated by Mr. Peerless Jones, a specialist in artesian well drilling who is hired by Challenger.

The Professor's latest project is based on the premise that the Earth is a living being, and the crust is simply an accretion over its skin, like a sea urchin secretes a layer of carbonate over itself. He means to get the planet's attention by poking it with a needle, that is, drilling below the crust and puncturing the skin. Consequences are not thought of, for he is doing it because he can. The experiment succeeds, and the consequences are notable. A good story to show the character of Challenger.

LETTERS TO THE EDITOR

[Editor's remarks in square brackets.]

FROM: Lloyd Penney 2010-10-03
1706 - 24 Eva Road
Etobicoke, Ontario M9C 2B2

Journeys beneath the Earth's core, and the popularity of the movies depicting that theme, show that we miss the era of discovery. We've explored the width of the world, and our view of science is fairly complete. Yet we'd all like to find a completely unknown field of science, and any time there's been a newly-discovered tribe in the jungles of a far-off land, it makes the news. I think it's in our nature. We need to discover and find;

it's part of the sense of wonder our group is always looking for. If we can't find anything new on the surface, it's a great adventure for finds beneath the surface.

FROM: Franz Zrilich 2010-09-03
4004 Granger Road
Medina, Ohio 44256-8602

I have been reading a facsimile reprint of the 1895 Montgomery Ward catalogue. Their most expensive men's clothing was for outdoor work and was made of horsehide lined with corduroy. The cost was high. A cheap three-piece suit was \$3, and a corduroy suit was \$12 to \$15. \$23 would get you the corduroy-lined horsehide suit. Inflation since then seems to have been twenty to one hundred-fold.

[Historically one ounce of gold would buy a top-quality suit, leather belt, and pair of shoes (or equivalent ensemble for women). Gold was US\$20.67 in 1895, so the catalogue fits in. As I type this, gold is now US\$1,450 for physical bullion, so this relationship still seems to hold. The \$20 that bought an entire suit and shoes a century ago now only buys the leather belt. This is something most people don't understand about inflation. Gold is not really increasing in price; it is the currency that is declining against it.]

FROM: Stuart Stratu

2010-09-01

-14-

Box 93

Paddington, New South Wales 2021, Australia

FROM: Christopher Carson

2010-08-25

Box 1035

Fort Worth, Texas 76101

[Re: the disappearance of writing systems and invented languages]

About revelatory scripts invented by illiterates who received them in dreams or visions. In the context mentioned, these were invented by colonized tribes in order to gain power they saw used in writing by the superior colonists. This also reminds me of naive artists and Art Brut, which included cases of mental patients who kept extensive journals filled with their own invented languages. Not only mental patients, but outsiders too, people who would be described as eccentrics or madmen.

In regard to your remarks on space colonization (OPUNTIA #69.1E), let me say that "*Not in our lifetimes*" is a cop-out, and "*By means unknown now*" is another. Few or none of us will live to see the full flowering of Solar System civilization, nor can any of us envision the form it will take, but that does not relieve us of the obligation to work for it. If we do not make a start of it now with the means we have, nobody will be able to continue it by other means in the fulness of time.

I noted the section about ethnic groups being able to recall detailed genealogies accurate to 500 years in the past, and how this may explain such ongoing ethnic feuds as those in the Balkans.

[I agree with lunar colonization and wish it could be done out of selfless scientific interest but it won't be done by anything other than greed or national interest. Petitions, space societies, and well-meaning advocates have had little effect. The Americans went to the Moon because they were afraid the Soviets would get there first, and will not return to the Moon unless China announces it will start mining the Moon. Trillions for Wall Street but not one penny for space.]

[In my family, we grew up knowing our mother's side in Finland back 250 years, and for 200 years on the paternal side to lowland Scotland. However, the descendants living in Canada do not obsess over Russia stealing Karelia from Finland or the perfidious Sassenachs annexing Scotland. The problem is when memory is retained by those living in the original homelands, such as Serbs still angry about a battle fought in Kosovo 500 years ago.]

FROM: Joseph Nicholas
15 Jansons Road
Tottenham, London N15 4JU, England

2010-11-24

SEEN IN THE LITERATURE

noticed by Dale Speirs

I have always found that space enthusiasts are uncomfortable with an argument that the era of European cultural domination will not be replicated indefinitely into the future, perhaps because, by the very nature of its European origins, SF cannot conceive of a future in which that does not happen.

There is a hitherto overlooked limit to space colonization: its effect on muscle tone and bone density, which even on short missions weakens humans to such an extent that they are unable to stand up for extended periods when they return to Earth.

[Which is why I don't think much of the International Tin Can because it is a zero-G station. We need that space station from 2001: A SPACE ODYSSEY, wheeling about the Earth.]

I Also Heard From: Henry Welch, Catherine Groves, John Held Jr, Brant Kresovich, Vittore Baroni

Jablonski, N.G., and G. Chaplin (2010) **Human skin pigmentation as an adaptation to UV radiation.** PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA 107:8962-8968

"Human skin pigmentation is the product of two clines produced by natural selection to adjust levels of constitutive pigmentation to levels of UV radiation (UVR). One cline was generated by high UVR near the equator and led to the evolution of dark, photoprotective, eumelanin-rich pigmentation. The other was produced by the requirement for UVB photons to sustain cutaneous photosynthesis of vitamin D3 in low-UVB environments, and resulted in the evolution of depigmented skin. As hominins dispersed outside of the tropics, they experienced different intensities and seasonal mixtures of UVA and UVB. Extreme UVA throughout the year and two equinoctial peaks of UVB prevail within the tropics. Under these conditions, the primary selective pressure was to protect folate by maintaining dark pigmentation. Photolysis of folate and its main serum form of 5-methylhydrofolate is caused by UVR and by reactive oxygen species generated by UVA. Competition for folate between the needs for cell division, DNA repair, and melanogenesis is severe under stressful, high-UVR conditions and

is exacerbated by dietary insufficiency. Outside of tropical latitudes, UVB levels are generally low and peak only once during the year. The populations exhibiting maximally depigmented skin are those inhabiting environments with the lowest annual and summer peak levels of UVB. Development of facultative pigmentation (tanning) was important to populations settling between roughly 23° and 46° , where levels of UVB varied strongly according to season. Depigmented and tannable skin evolved numerous times in hominin evolution via independent genetic pathways under positive selection."

Storms, E. (2010) **Status of cold fusion (2010).**
NATURWISSENSCHAFTEN 97:861–881

"The phenomenon called cold fusion has been studied for the last 21 years since its discovery by Profs. Fleischmann and Pons in 1989. The discovery was met with considerable skepticism, but supporting evidence has accumulated, plausible theories have been suggested, and research is continuing in at least eight countries. The evidence supports the claim that a nuclear reaction between deuterons to produce helium can occur in special materials without application of high energy. This reaction is found to produce clean energy at potentially useful levels without the harmful byproducts normally associated with a nuclear process.

The field of study, now called condensed matter nuclear science (CMNS), has expanded beyond the knowledge obtained 21 years ago on which most popular opinions are based. The unique process is proposed to involve a reaction between deuterons, resulting in 4He and small amounts of occasional tritium and neutrons without significant harmful radiation. In addition, reactions can apparently occur between deuterons or protons and various target elements to produce changes in elemental and isotopic compositions, which are called transmutation. All of these reactions are thought to occur on or near the surface of certain special materials containing hydrogen isotopes. In contrast to hot fusion, the process requires very little energy beyond that supplied by the normal environment, although some benefit results from additional energy being applied in various forms."

Speirs: As someone remarked about cold fusion back when, the last thing we need is a source of lukewarm energy. The success of cold fusion, or CMNS as it now is, will only come when the experimentalists can consistently replicate a source of high-energy from a small cell. Unfortunately Fleischmann and Pons ruined it for legitimate researchers when they went public prematurely with results that no one else could replicate. Now few take it seriously, especially the bureaucrats who hand out research grants.