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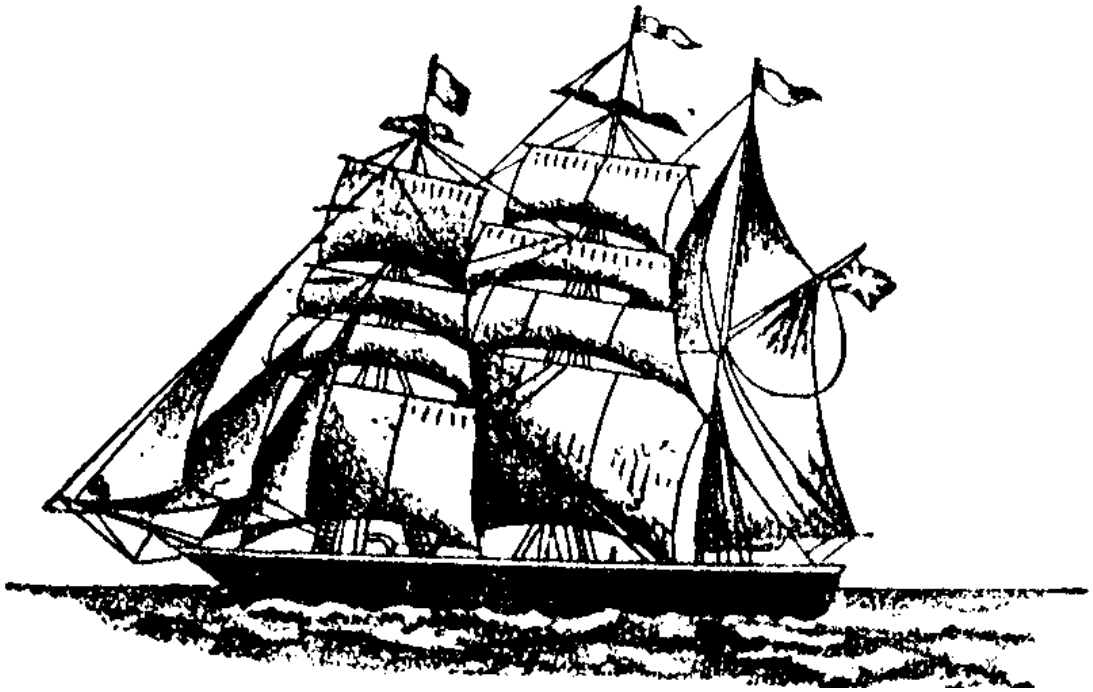

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ADAM SMITH.

"A civil government in so far as it is instituted, it is instituted in the defense of the rich against the poor or those who have property against those who have none." Adam Smith- Book II of "The Wealth of Nations."

Faith in "The Market" is so strong with monetarist and conventional economists in general that they ignore the nature of our society and the human beings that make up that society. When the market does not operate according to textbook fashion, people in society are blamed for stopping the beneficial forces of "the market" from operating. Wilf Rosenberg. (1986)

CULTURE AND RUTHERFORD.

The two cultures was the subject of the March 1959 Rede Lecture in Cambridge given by C P Snow. Snow occupied both the literary and the scientific sphere. It was made into a small book "*The Two Cultures and the Scientific revolution.*" later in the year. He contrasted having read a work of Shakespear with knowing the second law of thermodynamics. He had noticed that there was not enough understanding of the essentials in the other culture.

Snow noticed that there was an unwillingness to engage with people in another culture and quoted a case where mathematicians at a university tended to be ignored. Rutherford was often used as an example in his essay. When Snow wrote, the USA and Russia were thought to be ahead of the UK in education especially in going further for the non-elite. Nowadays the UK is sending too many to University so there an ordinary degree has limitations as a qualification. Snow claimed that on a population basis, Russia trained more than twice the number of engineers and in Russia one third studying engineering were women.

The satirists Flanders and Swann used the concepts of thermodynamics as the basis for their short monologue and song, "First and Second Law".

There may be a distinct literary (intellectual) culture and a distinct scientific culture but nowadays in addition there are an anti-intellectual and an anti-scientific culture and they are making a lot of noise.

Snow was an observer of Ernest Rutherford and wrote about him as an admirer in the book "*The World Treasury of Physics, Astronomy, and Mathematics*". They were both Lords and must have met in the House of Lords as well as in Cambridge at the Hi Table where fellows at Cambridge dine together. In his little book he quotes Rutherford as saying "Lucky fellow, Rutherford, always on the crest of the wave. Well, I made the wave, didn't I." The time when Rutherford entered Cambridge until he died was a great period of scientific progress in nuclear science. Rutherford is noted for the number of Nobel Prize winners he encouraged and worked with.

Snow had to be interviewed by Rutherford at Cambridge for a studentship on offer. When his turn came at the interview, he saw Rutherford on the right hand of the Master. "While the Master was talking through my career. Rutherford drew on his pipe, not displaying any excessive interest in the proceedings. The Master came to the end of the proceedings and said 'Professor Rutherford?'. Rutherford took out his pipe and turned on me with an

eye which was blue, cold, and bored." Then "What was my present piece of work? What could spectroscopy tell us anyway? Wasn't it just putting things in boxes?' Snow had to respond and "... as cheerfully as I could manage, I asked if he couldn't put up with a few of us not doing nuclear physics. I went on, putting a case for my kind of subject." The other candidate got the Stokes Studentship and Snow accepted that he deserved it. Snow was able to be cheered up a day or two later "... when I heard that Rutherford was trumpeting that I was a young man of spirit." Later Rutherford backed Snow for another studentship anyway.

Snow said of Rutherford; "His insight was direct, his intuition, with one curious exception infallible. No scientist has made fewer mistakes." His one mistake was over exploiting nuclear energy. Snow turned to writing. He wrote a novel "*The Search*." with the background of scientific research. Rutherford met him in Kings Parade (Cambridge). He vociferously asked now "What have you been doing to us, young man?" Rutherford explained he had read it. Rutherford praised it which pleased Snow but he didn't like the erotic bits and admitted that they belonged to different generations.

Rutherford did not like being patronised. Snow wrote that Archbishop Lang supposed to him that as a famous scientist he had no time for reading. Rutherford then produced a list of his months reading. Rutherford then asked "And what have you been reading, your Grice?" Out of his depth, he had to say "I am afraid, that a man in my position really doesn't have the leisure ..." Rutherford replied "Ah yes, your Grice. It must be a dogs life!". This was presumably in the Upper House of Parliament.

See Institute No 21 November 2013 for an item on Snow's novels. He introduced the phrase "Corridors of Power." with a novel.

ZIONISM.

In 1895, Theodor Herzl, the founder of the Zionist movement, asserted: "We shall try to spirit the penniless population across the border by procuring employment for it in the transit countries, while denying it any employment in our own country … expropriation and the removal of the poor must be carried out discreetly and circumspectly." At that time 1897 Palestine was 1 million people with 5% Jewish amongst some Christians and mostly Islam. Peaceful co-existence was normal.

There is the claim that Zionists went to the UK war office in 1916 when calling off the war was considered and got the UK to continue while the Zionist (and their influence in US media) to change the US isolation and get them into the war. The Balfour Declaration completed the deal. See the Institute Review No 27 August 2015.

The military Hamas captured hostages and used them for bargaining. They must have learnt this from the Zionists. Use of hostages as a means of putting pressure on a government: First used by the Zionists against the British in Tel Aviv on 18th June 1946. Beating of hostages: First used by the Zionists against the British in Tel Aviv, Netanya

and Rishon on 29th December 1946. Murder of hostages as a reprisal for government actions: First used by the Zionists against the British in the Netanya area on 29th July 1947.

The Zionists were the first to: Hijack airliners, use delayed mines in crowed places, assassinate diplomats, blow up government offices, booby trap suitcases, booby trap motor cars, send letter bombs, send parcel bombs, massacre whole villages.

Jews suffered 3 or 4 million victims in the holocaust but justice is not served by being even more evil. The take over of Palestine by terrorism and the stealing of land is an an injustice that ought to be corrected. The Arabs and the Arabic language are semitic! Every country has some shameful past (even peaceful Bhutan) but civilised people must work towards acceptance of other people and cultures especially as we all face increased damages and loss as climate over heating wreaks havoc. The Zionists have their people in powerful places all over the world to exert their influence in politics.

TEENAGE MATHEMATICIAN.

Hannah Cairo was born (2007) in Nassau, Bahamas where her father was working. She became a 17 yr old maths wizard. Home schooled with her two younger brothers, she studied mathematics via on line courses. She had finished calculus by the age of 11 years. Two maths professors did tutor her remotely and she still did her own thing and devoured graduate level textbooks.

"Eventually," Cairo recalled, one of the professors "said something like, he feels uncomfortable being paid, because he feels like he's not really teaching me. Because mostly I would read the book and try to prove the theorems." "Mathematics was another world I could explore. A world that was not confining, a world I could access at any point just by thinking about it," she said. "That's how I grew up, thinking about mathematics as this world of ideas that I can explore on my own. That sort of process helped me see math differently than a lot of people."

At the age of 14 she became stranded in her Chicago grandparents house when confined by the Covid pandemic. Her world began to widen, even as it was narrowing for so many others. While they were there, she joined the Berkeley Math Circles (BMC) of Chicago, where teachers and students gather to solve difficult problems together.

In 2023, after a second summer with the Math Circle, Cairo wondered what her next step should be. She had already applied to several universities, and while most schools rejected her (she hadn't finished high school yet) she was accepted by the University of California,

Davis, where her older brother studied. She was able to take a graduate-level math courses from leading researchers at Berkeley 60 miles away from Davis.

One class in particular caught her eye, a graduate course in Fourier restriction theory, a branch of harmonic analysis. “It was one of the most advanced analysis classes being offered that semester, so I thought, I’ll just go take it,” she said. Within a few weeks, while working on a problem set, she came across a problem that she couldn’t stop thinking about. The assignment also included an optional extension, inviting them to consider whether the proof they’d found for the simplified case could be extended to more complicated formulations of the problem. The Mizohata-Takeuchi conjecture is a problem in harmonic analysis current for 40 years, a field that studies how functions are assembled from wavelike components.

Eventually, she found a way to construct a strange, complicated function out of waves whose frequencies all lay on a curved surface of the type of surface the conjecture required. Usually, when you add these kinds of waves together, they interfere, cancelling each other out in some places and reinforcing each other elsewhere. She realized she could replace her complicated construction with a much simpler one and achieve the same result and she managed to convince her professor that the result was right.

Her findings were published in the preprint titled "A Counterexample to the Mizohata–Takeuchi Conjecture" on February 10, 2025. Later that year, she presented her work at the 12th International Congress on Harmonic Analysis and Partial Differential Equations in El Escorial, Spain. Media described her as one of the youngest mathematicians to resolve a major open problem. Hannah Cairo is transgender.

NUMERACY.
Politicians like to complain about educational problems with numeracy and maths. It is not helped by parents who boast of not being good at maths themselves hinting that their children do not have to work at arithmetic even. Several politicians lack numeracy skills themselves. They obviously do not fully understand exponential growth and are not happy with using logarithms. They promote a mistake in advocating growth as an economic essential. They should be tested and provided with some educational help. A problem that politicians find hard to grasp is over the case where a resource is established that would last for 200 years at the current rate of exploitation and still be a problem. Allowing that their love of growth will diminish the resource quickly. If the rate of growth is 2% per year for this 200 year resource would only last about 80 years depending on wether the rate is applied monthly or yearly.

There is about a thousand languages that do not go beyond one, two, three. Babies can understand these quantities early on. Some birds can count a bit. Today, the Pirahã in Brazil are “the only known tribe/people whose language and culture appear not to have progressed beyond an analog notion of magnitude, similar to that of higher animals,” an applied mathematician wrote in 2023 in his review of prehistoric mathematics origins. The cultural reason suggested for this is that the Pirahã “reject the value of future

planning and are completely non-materialistic." There about 700 of them are living in a small tributary of the Amazon River. A researcher who has 30 years of experience speaking the Pirahã language, spent months in one village, and at the request of the Pirahã, taught them basic arithmetic. To do this, she invented words for numbers 4 through 10, based on their existing word for **hand**. After becoming familiar with the new number words, the research review stated that the Pirahã demonstrated "heightened performance on the one-to-one matching task."

MARS TRIP FANTASY.

Science fiction had led people astray thinking of colonies on the Planet Mars. Very rich people not having the sense of ordinary people have been spending significant amounts of their money on rocketry. The period of people spending time in space stations orbiting the earth should be over. It not good for a person's health to be spending much time in zero gravity. Significant time must be spent on exercise apparatus to slow their health decline. Robots are doing scientific work more efficiently.

The figure of $1.2 million has been quoted as the cost of taking one kg to Mars. At this rate a single person with personal needs going to Mars would cost something like a quarter of a billion dollars. We can wonder if the cost for a return trip would be similar. Consider what safe accommodation, food, and water needed might weigh and cost. A SpaceX module weighs 12,500 kg so sending that to Mars would theoretically cost another $15 trillion. If several modules have to sent then the theoretical costs increase beyond the point where we would run out of billionaires.

The trip there would take months. Pretesting of people who could manage the lonely confinement would be essential. Experience with people wintering over in Antarctica for months gives a guide. Rescues of people from Antarctica can be done but not from a trip to Mars. The exposure to dangerous radiation would be something of concern. The idea that this is necessary to do to keep humans from extinction is a fantasy. Biologists seem to be sure that human embryos, and foetuses will not allow reproduction normally in space. The risks are so certain that any experiment would be unethical. Like other species, humans will go extinct sooner or later. The idea that life forms similar to humans might visit us is also ridiculous when we consider how distant we are from any potential source.

THE POVERTY DIVIDE.

The poor seem to have been always with us, or was there a time when there were egalitarian societies? With the growth of cities where the numbers of the population meant that a person could not know everybody else. Once exchanges took place informally and later an obligation was satisfied by something in return. Now cities feature areas of poor people and areas of wealthy elites.

A book, "*The Divide.*" (A Brief Guide to Global Inequality and its Solution.) published in 2017 covers this in detail. The author is Professor Jason Hickel. He is an anthropologist who grew up in Swaziland. He has become the poster man for ideas of 'de-growth' seen by some groups as necessary for a civilised life. The excessive consumption of the very rich cannot be supported when the limits to growth on nature and resources strike home.

The economist Kate Hayworth in support of this book said "There is no understanding global inequality without understanding its history". In his preface he notes that TB, malaria, malnutrition, typhoid, bilharzia, and kwashiorkor had treatments in rich countries but denied the poor. Hickel explains how colonialisation worked economically to extract wealth from undeveloped countries. Tarriffs and subsidies worked to advantage the colonialists. These are rejected for the poor to enable their own development.

Hickel's research and writing focuses on economic anthropology and development, and is particularly opposed to capitalism, neocolonialism, as well as economic growth as a measure of human development. The lot of poor countries has been to be encouraged to take on 'development loans' some which have exaggerated benefits for the poor country. They are not permitted to reject payment as odious debts but end up under control of the IMF fund with 'structural adjustment' with further exploitation, privatisation, austerity, denial of public services and support.

Hickel has a whole chapter on the US use of coups and wars to maintain the third world in poverty and serve US needs and not allow development the way the poor need. The US has a long catalogue of countries it has damaged by interference. He explains how colonialism is an economic device that exploits people that have not already developed an industrial economy.

He has a new book, "*Less is More*", (How de-growth will save the World) published 2020 as a "groundbreaking exploration of the best possible solution to the climate crisis: a new economic model, and a new way of viewing our relationship with the natural world."

In New Zealand, 'the economy' is a failure because there are people who are not able to

have even the necessities of life and the number is increasing. Inequality is everywhere and is unjust everywhere.

Nelson Institute Officers.
President: Nigel Costley costleymarr@xtra.co.nz
Review: Paul Bieleski Ph 548-6803.
Your Review contributions, or requests for old Reviews, contact: ael@tasman.net
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