

Educating the Mass Strike: Cosmic Radiation beats Green Fascism

Pierre and Madame Curie

By Gabrielle Peut Part 1 of 4

Shakespeare Sonnet 55

*Not marble, nor the gilded monuments
Of princes, shall outlive this powerful rhyme;
But you shall shine more bright in these contents
Than unswept stone, besmeared with sluttish time.
When wasteful war shall statues overturn,
And broils root out the work of masonry,
Nor Mars his sword nor war's quick fire shall burn
The living record of your memory.
'Gainst death and all-oblivious enmity
Shall you pace forth; your praise shall still find room
Even in the eyes of all posterity
That wear this world out to the ending doom.
So, till the judgement that yourself arise,
You live in this, and dwell in lovers' eyes.*

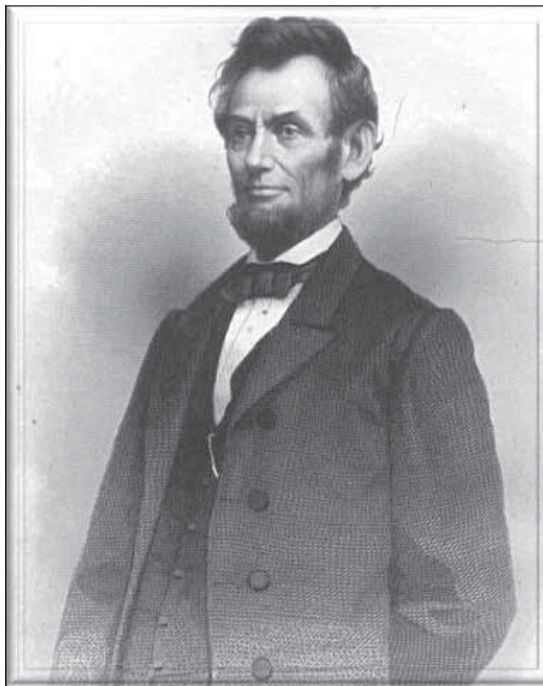
"I now leave, not knowing when, or whether ever, I may return, with a task before me much greater than that which rested upon [George] Washington. Without the assistance of that Divine Being, who ever attended him, I cannot succeed. With that assistance I cannot fail. Trusting in Him, who can go with me, and remain with you, and be everywhere for good, let us confidently hope that all will be yet well."

Those were the words of President-elect Abraham Lincoln's farewell address, as he left Springfield, Illinois, on February 11, 1861 to travel to Washington, DC for his inauguration as President of the United States. The American Union was on the brink of total destruction, and Abraham Lincoln knew it. The southern states had already seceded, beginning in January. Lincoln knew that fullscale Civil War was imminent; by April of that year, with the Confederate attack on Fort Sumter, the American Civil War was under way. Massive British aid flowed to the slave-based Confederacy, aiming to balkanize and destroy that perfect union, the United States of America. Once again, America was face-to-face against humanity's mortal enemy, the

British Empire.

In accordance with Shakespeare's idea, that "war's quick fire" shall not burn the living record of *Lincoln's* memory, it's extremely important to situate in our minds the political geometry of that time 150 years ago, and *that* eventual victory of the Civil War, under Lincoln's leadership, which in turn unleashed the greatest industrialization in history, all across the world.

It is by only grasping and understanding *this* United States of America, that you can fully appreciate that, without those heroic actions, we would not have the privilege today of setting out to re-live in our minds the scientific upsurge of the late 19th century. The scientific discoveries in physical chemistry in the late 1800s were the greatest scientific explosion since the 15th century Renaissance in Europe. They were a sort of mini-renaissance, which was only about to bloom, thanks to this victory of the Americans against the British Empire. Louis Pasteur, Pierre and Marie Curie, Max Planck, Albert Einstein, and Vladimir Vernadsky established a new platform for the world's advancement, and that is



Abraham Lincoln February 12th 1809 – April 15th, 1865

Pierre and Madame Curie

what we must now master if we are to survive.

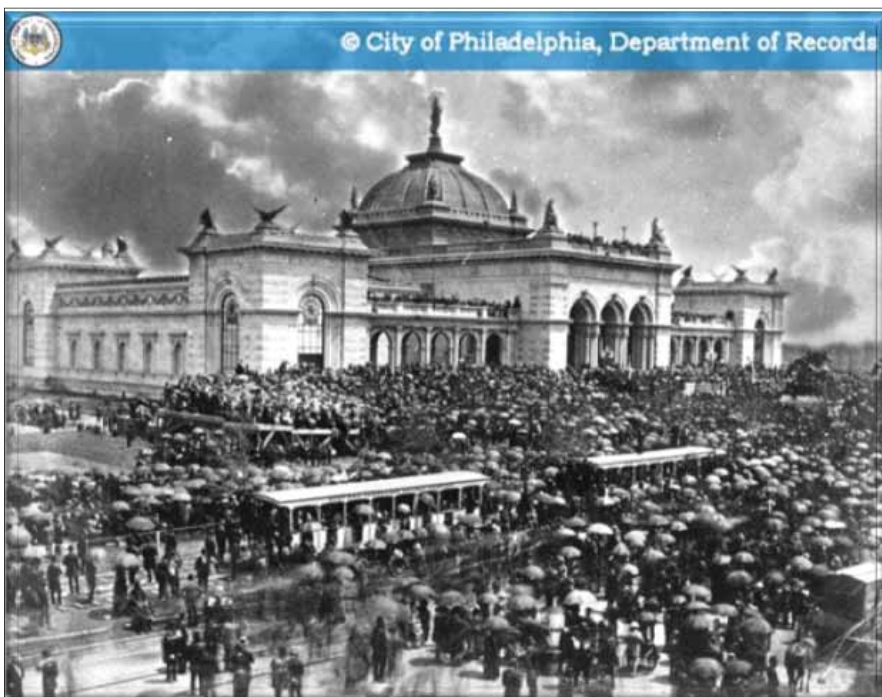
Lincoln was assassinated at the close of the war, but the industrial policy of the Union spread worldwide. In 1876, on the 100th anniversary of the American Declaration of Independence, an event took place that influenced the world tremendously: this was the Philadelphia Centennial Exhibition. It was a celebration both of the 100th anniversary of the War of Independence that defeated the British Empire, and of the more recent Union victory in the American Civil War. Scientists, political figures, and pioneers of industry from nations all over the world arrived to celebrate, study, and emulate the achievements of the United States, such as national banking, protective tariffs, and industrialization through continental railroad construction.

The sheer scale of the Exhibition was breathtaking. It was housed in 249 buildings constructed for the occasion, the largest of which, the Main Exhibition Building, was the tallest structure ever built in America and the largest in the world, enclosing 21 and a half acres. It housed three categories of international exhibits: Mining and Metallurgy; Manufacturing; and Education and Science. Thirty-seven nations officially participated in the Centennial, along with nineteen colonies of the British Empire, including New South Wales, Queensland, South Australia, Victoria, and New Zealand. One thousand nine hundred exhibits were displayed.

Those who attended the Philadelphia event returned to their home countries energized with ideas, on the basis of which those nations were then industrialized virtually overnight. With the aid of American advisors, many nations applied the methods of what became known as the American System of economics, as opposed to the British system of free trade and imperialism.

The leader of the worldwide push for the American System was an American economist, whom British free traders have attempted to black out of history: Henry C. Carey.

More than any other single individual, Henry Carey is the person who kept the American System alive. His background was rooted in republicanism, with his father Mathew Carey being an Irish republican revolutionary who was kicked out



Philadelphia Centennial May 10 to November 10, 1876.

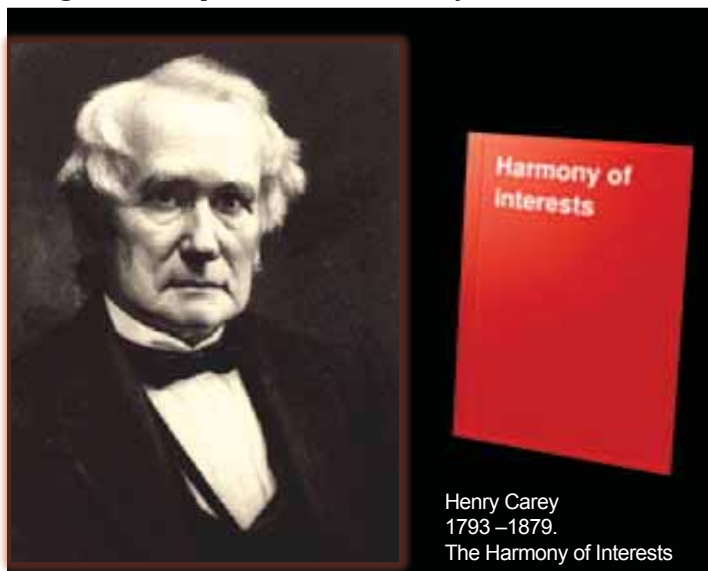
Officially named the International Exhibition of Arts, Manufactures, and Products of the Soil and Mine of Ireland for "defaming the British." Mathew Carey came to the United States and became a collaborator of Benjamin Franklin and an ardent supporter of Alexander Hamilton, the father of national banking in the United States, and of the American System generally.

Henry Carey captured this republican legacy in his book *The Harmony of Interests*, first published in 1851. It echoed the great reports of Hamilton, namely, the Reports on the Public Credit, On a National Bank, and On Manufactures, dating from the early 1790s. Its full title was *The Harmony of Interests: Agriculture, Manufacturing, and Commercial*. Carey emphasized that the knowledge and skills of the labor force, and of the entire population, must always be advanced, and that that required raising their standard of living. By the time of the Civil War, Carey was the chief economic advisor to Lincoln. The application of American System principles in industry was crucial for securing the Civil War victory. The international promotion of those principles by Carey and his circles, after the war, transformed not only the United States, but many other nations as well, including Germany, Japan, Russia, and Australia.

But Carey also understood who the enemy was. Alongside the principles of industrial development, his reports contained a devastating attack on the imperial free trade system of Adam Smith, and, in particular, the views of Malthus, the two pillars of that British Imperial system. In *The Harmony of Interests*, Carey proclaimed that Malthusianism had been invented to justify the British System:

"The impoverishing effects of the system were early obvious, and to the endeavour to account for the increasing difficulty of obtaining food where the whole action of the laws tended to increase the number of consumers of food, and to diminish the number of producers, was due the invention of the Malthusian theory of population, now half a century old."

Toward the end of the book, Carey wrote: *"To substitute true Christianity for the detestable system known as the Malthusian, it is needed that we prove to the world that it is population that makes the food come from the rich soils, and food tends to increase more rapidly than population, thus*



Henry Carey
1793 – 1879.
The Harmony of Interests

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vindicating the policy of God to man."

By 1865, the year of the war's end and Lincoln's assassination, Carey reflected on how the economic programs instituted during the war had brought an explosion of iron and steel production under a protectionist policy, and that *"notwithstanding all our vast expenditures, the productive power of the loyal States is greater at this moment than was that of the whole Union on the day on which, less than four years since, President Lincoln assumed the reins of government."*

After he catalogued the vast expansion of iron and steel production as the indicator of this productive power, Carey warned, *"When the present war shall have been closed there will be another to be fought, and that one will be with England. By many it is desired that it may be a war of cannon balls; but it is not now with such machinery that she chiefly seeks to fight us",* but with free trade, with an *"increase of men engaged in the creation of financial water-spouts, and of permanent maintenance of a premium on the precious metals",* i.e., a monetary system as opposed to a credit system. Carey called monetarist speculation *"the windbag system".*

As a crucial flank in their plans to "outdo England without fighting her", Carey and his associates organized the 1876 Centennial Exhibition in Philadelphia. Officially named by the U.S. Congress the *International Exhibition of Arts, Manufactures, and Products of the Soil and Mine*, the Centennial Exhibition presented the most dramatic show of science, technology and industry in history until that time.

But the single most stunning American System accomplishment in this period was the command of railroads. The Transcontinental Railroad, which Lincoln had initiated in 1862 while the nation was still in the throes of the Civil War, had been completed in 1869, the first of five transcontinental railways that would soon cross the country. Steam engines and railroads dominated the Philadelphia Exhibition. The Reading Railroad and the Pennsylvania Railroad bordered the Exhibition grounds on two sides, and carried 7,500,000 passengers without incident in 22,917 trains comprised of 127,080 cars. At the center of the 13-acre Machinery Hall was a single steam engine, the Corliss Duplex Engine, powering all the exhibits in that hall. Built expressly for the Centennial, this was the largest engine ever made. It weighed 700 tons and had been shipped from its site of manufacture in the state

of Rhode Island on 65 railroad cars. All the latest locomotive engines were on display, notably those of the Baldwin Locomotive Company of Philadelphia, which had revolutionized locomotive construction by manufacturing self-assembly kits, so that a locomotive could be shipped anywhere in the world and assembled on site. Baldwin engines eventually operated in Japan, Russia, Brazil, Mexico, and Australia, among other countries.

The *Times of London* wrote in alarm that, even though the Exhibition had been held on America's home territory, *"the products of the industry of the United States surpassed our own oftener than can be explained by this circumstance – they revealed the application of more brains than we have at our command",* and that *"The American invents as the Greek sculptured and the Italian painted: it is genius."* By the official count, 9,789,392 visitors from all over the U.S.A. and the world attended the exhibition.

Henry Carey, in his 1876 pamphlet titled *Commerce, Christianity and Civilization Versus British Free Trade: Letters in Reply to the London Times*, presented his vision of the American System and a global development program. He nailed free trade for the anti-human, genocidal doctrine it was, in particular for the fact that it rested on a worldwide empire of dope-pushing: *"Early in the free-trade crusade it was announced in Parliament that the smuggler was to be regarded as 'the greater reformer of the age.'"*

He attacked the British East India Company's opium smuggling into China as being based upon *"bribery, fraud, perjury and violence,"* and charged that the British had bombed Canton *"with great destruction of property and life,"* setting the stage for *"a treaty by which the poor Chinese were required to ... pay \$21,000,000 for having been so long compelled to submit to the humiliation of being plundered by the 'great reformer'; and further, to cede Hong Kong, at the mouth of the Canton River, to the end that it might be used as a smuggling depot throughout the future."* When the British Crown had renewed the East India Company's charter in 1833, wrote Carey, it was with the *"express understanding ... that opium-smuggling should not in any manner be interfered with".*

Bam! This would have knocked the Brits' socks off.

Most worrying to the British was the impact of American System economics upon Germany. Friedrich List, an



The American System and the Transcontinental Railroad

economist who was a close associate of Mathew Carey and had worked on railroad development in Pennsylvania, went back to Germany in the 1830s and created the famous *Zollverein*, or customs union, which began to bring Germany together as a nation-state.

Equally important for unifying the patchwork of small German principalities was List's launching of construction of a national railway grid. In the period after the formal unification of Germany in 1871, in addition to List's own activities, Henry Carey himself maintained extensive industrial and political contacts there during the government of the pro-American Chancellor Otto von Bismarck. Carey helped organize the protective tariff of 1879, reversing the long-standing commitment to free trade that had dominated in Prussia, which was now the largest of the unified German states.

American System ideas were implemented in industry by Emil Rathenau, who had attended the 1876 Philadelphia Centennial Exhibition. As a result of his efforts, the German electrical industry grew from a state of infancy when it had only 26,000 employees in 1895, to a position of controlling one-half of all international trade in electrical goods less than two decades later, by 1913.

In farming, only 20,000 harvesting machines were in use in Germany in 1882, but there were 300,000 of them by 1907, just 25 years later. Between 1870 and 1914, Germany, which had been a net exporter of population in the early 19th century, saw its population rise by almost 75%, from 40,000,000 to over 67,000,000. By 1909, Germany's merchant marine and navy posed a serious challenge to the world-ruling British navy. Beginning in 1889, German industrialists began to build a railroad from Berlin down through the Balkans, across Turkey, and all the way to modern Kuwait.

In Russia, the ideas of the protectionist American System were well known via extensive collaboration with the Americans, dating back to Russia's chairmanship of the League of Armed Neutrality, which protected third-country shipping and supply lines during the American Revolution. Hamilton's *Report on Manufactures* had been published in Russian in 1807, and the U.S. Army Corps of Engineers helped build the first Russian railways in the 1830s. Russia allied with Lincoln in the U.S. Civil War, sending Russian warships to the New York and San Francisco harbors against potential British attack. Besides the back-to-back emancipation of the serfs in Russia by Czar Alexander II and the slaves by Lincoln in the USA, there were numerous pro-American System explorers, industrialists, and diplomats from the Carey networks, in and out of Russia in the period from the 1850s up into the 1890s.

An extension of this collaboration was the fact that the brilliant chemist Dmitri Mendeleev, originator of the Periodic Table, and major influence on Marie Curie, attended the 1876 Philadelphia Exhibition. He returned to Russia with enhanced intelligence on American agriculture, the fledgling oil industry, and transcontinental railroad construction. Mendeleev was the director of the Bureau of Weights and Standards, which was important for the Russian development of their iron industry, obviously crucial for building such a railroad in Russia.

Finance Minister Count Sergei Witte drafted Russia's 1891 tariff law, with his ally Mendeleev writing the introduction to the document – a scathing attack on British



Sergei Witte 1849–1915. Insert: Russian Press celebrating the arrival of U.S. Baldwin Locomotives.

free trade. Witte, around this time, produced a Russian translation of List's *National System of Political Economy*. Russian industrial production grew rapidly under Witte's guidance. The 5,800-mile Trans-Siberian railroad from St Petersburg on the Baltic Sea to Vladivostok on the Pacific was completed in 1903. Railroads became the single largest industry in the country, employing 400,000 people in 1900. The population was also being transformed, as Witte wrote in one of his reports,

"The railroad is like a leaven, which creates a cultural fermentation among the population. Even if it passed through an absolutely wild people along its way, it would raise them in a short time to the level requisite for its operation."

Strategically, the establishment of unbroken rail networks from France all the way across Europe to Asia would open "a new path and new horizons not only for Russia but for world trade", wrote Witte. It would rank "as one of those world events that usher in new epochs in the history of nations and not infrequently bring about the radical upheaval of established economic relations between states". In other words, this Russian statesman was talking about the potential end of the British maritime empire. In particular, transcontinental rail would provide the opportunity for "more direct relations with the North American States", strengthening the longstanding "solidarity of political interests" between Russia and the U.S.

FIGURE 1
Route of the Trans-Siberian Railway and the Chinese Eastern Railway

