

April 1, 2016 2:43 pm

‘No Need for Geniuses: Revolutionary Science in the Age of the Guillotine’, by Steve Jones

Review by Andrea Wulf

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At the time of the French Revolution, no city in Europe was so steeped in the sciences as Paris. The power of the Catholic Church had declined with the rise of the revolutionaries, and reason was the new religion. Money poured into research and many scientists became politicians. Some would lose their heads.

It was an “unlikely alliance” between the *philosophes* and *politiques*, Steve Jones writes, but one that laid the foundation of modern science. With scientists holding prominent positions in government, they pushed for scientific and technological progress and “built a new world”. Astronomers improved navigation, surveyors prepared accurate maps, and mathematicians standardised measurements. Several scientists built factories and made fortunes.

In *No Need for Geniuses*, Jones introduces us to figures from a range of fields whose discoveries and insights “had rather more effect on the future than did the bloody disturbances on the streets”. Which is not to say they were apolitical; the opposite, in fact. Take Nicolas de Condorcet, who worked on fluid dynamics and was a delegate of the National Assembly and advanced electoral systems; or astronomer and mathematician François Arago, who led the Paris observatory and abolished slavery in the French colonies when minister of marine affairs and the colonies (he even rose to head of state in 1848).

As with Arago, the action doesn’t end with Napoleon’s rise to emperor. We also see the aftermath, its impact on the scientists, and on their work. Jones seems most impressed by the chemist Antoine Lavoisier, who is often called “the father of modern chemistry”. He made the first list of “simple substances”, which is the foundation of the periodic table, and improved the quality and quantity of French gunpowder to such a degree that he claimed it was to these supplies that “North America owes its independence”.

Jones, emeritus professor of genetics at University College London and author of several popular science books, has an eye for good stories and tells them well. Joseph-Ignace Guillotin, a physician opposed to the death penalty, proposed a decapitation device that promised to kill without much

pain. “With my machine, I cut off your head in the blink of an eye, and you never feel it,” he claimed — but was dismayed when it was named after him. His family changed their surname in protest when thousands were executed by guillotine.

Unfortunately, the scientists’ stories are often obscured when the narrative diverges. An entire chapter is devoted to metabolic science, but only a slim section deals with Lavoisier’s extraordinary discoveries in the field — or 18th-century science at all; the rest jumps frenetically from 1903’s Tour de France, to today’s drug use in sport, anti-doping, Lance Armstrong, strychnine experiments in 1809, and the rise of African winners of Olympic marathons since 1990.

I would have liked more on pharmacist Antoine-Augustin Parmentier, “France’s proselytiser of the potato” in Jones’s words, and less on the history of potato cultivation from its origins in the Andes. The details we do get are fascinating. Parmentier used fabulous stunts to overcome hostility to the tuber: he guarded his potato beds by day, to insinuate their high value, but removed the guards at night, hoping locals would steal the plants for themselves; he had famous people eat potatoes in public; he hosted a banquet in which all 20 courses contained potatoes (including coffee made of spuds); he even persuaded Marie Antoinette to don a bouquet of potato flowers. Jones points out that in France numerous potato dishes bear his name: *hachis Parmentier*, *potage Parmentier*, *champignons Parmentier* . . . there is even a metro station named after him.

But how did Parmentier win over the queen to his mission? What were all these dishes served at the banquet? Did people steal his potato plants at night? These questions go unanswered.

As Jones shows, Paris in the second half of the 18th century was more than the seat of a bourgeois revolution — rather, it was the site of a whirlwind of scientific discovery, one of the most prolific periods in the history of science. Napoleon adored science: his 1798 invasion of Egypt included more than 150 scholars, in order to collect all available knowledge. Jones quotes an apocryphal remark by the emperor: “If I had not had to conquer the world, I would have become a scientist and discovered it.”

No Need for Geniuses: Revolutionary Science in the Age of the Guillotine, by Steve Jones, *Little, Brown*, RRP£25, 384 pages

Andrea Wulf is author of the Costa Prize-winning ‘The Invention of Nature: Alexander von Humboldt’s New World’ (John Murray)

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