

# Systematic Decimation of India's Strengths Through Science

While the British used science to subjugate India in every area — from agriculture, textile and metallurgy to its natural resources and self-esteem, Indian scientists re-infused the country with national pride and contributed to the freedom struggle



■ Jayant Sahasrabudhe

The legendary astrophysicist Dr S Chandrasekhar (1910-1995), a co-recipient of the 1983 Nobel Prize for Physics, was once asked: 'Why was there a sudden surge of modern scientists of international repute in the first three decades of 20th century in India?' He replied: 'There was a need for national self-expression — to show the West that, in all realms including science, Indians were equals.'

The first three decades of the 20th century will forever remain an important chapter in India's history as that is when the ancient civilisation of Bharat asserted itself to eventually reclaim its rightful place on the international stage. The citizens of Bharat became alive to their glorious identity as inheritors of an unparalleled civilisation. The process of awareness had become much earlier but found its firm footing in the 20th century, affecting men and women in all walks of life, all age groups, all professions, all classes, all ideologies.

Much has been written about the contributions made by political and social leaders of the country who forged a new path for Bharat to drive out the British in 1947. Truly, it would



never be enough to sing their paeans as they not only won Swatantrata for Bharat but also inspired colonised nationalities across Asia and Africa to follow Bharat's example.

Yet, it is unfortunate that in this saga of freedom struggle, our scientists have largely remained unsung, and almost unknown to the common Indians. Moreover, even though they fought against heavy odds and waged a battle as important as those of Indian political leaders, we as a society are yet to acknowledge and perceive scientists as warriors of the struggle for Swatantrata.

In fact, there is enough historical information about how 'science' was utilised as a potent tool to establish and consolidate exploitative British rule in India; how the oppressive and discriminatory measures were exercised by colonial rulers against

Indians in the scientific domain; and most importantly, there are inspirational accounts of the struggle as to how those repressive measures were challenged and how the counterattack emerged in an intelligent manner.

Now, the time is ripe to make earnest efforts to explore the struggle that was carried out in the domain of science and awaken the people by telling hitherto untold stories of audacious scientific ventures that could create impulse in the hearts of fellow Indians to achieve Swatantrata.

## USE OF SCIENCE FOR SUBJUGATION

Several essays and critiques of British rule — right from Indians to Britishers themselves, and even before Bharat's Swatantrata — have established that the 'higher' aim of the British rule was to obliterate Indian identity and replace that with British ideas and ide-

als. This was an attack on the very identity, i.e., 'swa' of the nation. The most effective tool to achieve this 'higher' goal, obviously, was 'science'.

Renowned scholar Ashish Nandy has exposed the foul play of colonisers based on 'science'. He writes, 'The reader may remember popular anecdotes about colonial adventurers, or scientifically-minded explorers who sometimes scared off or impressed the natives of Asia and Africa with new forms of black magic based on the discoveries of modern science. The civilizing mission of colonialism thrived on this folklore of encounter between western science and savage superstitions. But in each such instance, it was science that was put to the use of the colonial state; the state was not put to the use of science.'

It was a serious attempt of British rulers to conquer the 'swa' of India by using 'science'. This was a life-threatening attack. Indians were shaken to

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the core. It was an existential crisis, indeed, and all geared up to take on this unprecedented challenge.

Science was used to subjugate India in an all-encompassing manner. Even before the East India Company's political hegemony was firmly established, the company had set up the Survey of India in 1767 to explore and map the rich natural resources of Bharatvarsha in a scientific manner. Thus was set in motion the systematic exploitative annihilation of India's agriculture, mineral wealth and village industries, and the need to construct the Railways to be able to transport the country's wealth from inland to port cities and thence to Britain.

Of special note is the heart-rending tale of how the country that supplied food grains to the world since ancient times, was reduced to a state of famine, occurring successively since the late 18th century right up to 1943. It is shocking that these were man-made famines. The food shortage for Indians was created by the mindless policies of the British. The farmers were forced to give up cultivation of cereals for cash crops such as indigo, cotton, tea, coffee, jute, as these powered Britain's global trade. The profits of this trade were used to strengthen the British economy and no benefits ever reached Indians in terms of revenue and food grains. In his 'Drain of Wealth' theory, Dadabhai Naoroji estimated that half of India's revenue and more than a third of its savings were drained to Britain.

Not a single aspect of life in Bharat was left untouched by the diabolical British rule. Its administrators declared Indians to be an inferior race, with no knowledge of science whatsoever, no tradition of higher learning and even no capacity to learn anything 'modern', which they interpreted as 'western'. In one fell swoop, centuries of India's achievements in science — from metallurgy to mathematics, from agriculture to Ayurveda and astronomy — were belittled, disregarded and dishonoured fundamentally and so powerfully that many Indians started believing in their own inferiority.

Science was thus administered for the first time to plunder India's wealth. It has been estimated today that Britain stole around \$45 trillion from India during its rule of 190 years.

To add insult to injury, the British blatantly and shamelessly stole some of the finest specimens of our heritage that can now be found in their museums.

#### **SCIENCE FOR SWATANTRATA**

It was the domain of science from where the conch was blown to challenge the British intellectual hege-

mony. Dr Mahendralal Sircar, a successful medical practitioner having experienced the bitter hegemonic attitude of the adherents of western science, rose against injustice and pledged to establish a Swadeshi scientific institution. With the help of munificent fellow Indians, he established an Indian Association for the Cultivation of Science (IACS) in 1876, which was 'solely native and purely national'. He had a conviction that 'science' is the instrument for national reconstruction and envisioned a glorious India through indigenously developed science.

Along with Dr Sircar, Acharya JC Bose and Acharya PC Ray, the leading lights of Indian science initiated a vigorous and creative struggle in the domain of science to achieve Swatantrata. Many others followed them. It is extremely difficult to estimate their awesome contributions. The sheer immensity of their offerings suggests that by all means, they will be remembered as the epoch-makers in Swatantra Bharat, as they laid the foundation for the development and progress of science to be utilised for the national resurrection and reconstruction.

In the 75th year of Swatantrata, paying tributes to these science warriors will be truly meaningful if we could imbibe their spirit and understand their dream about Swatantra Bharat, and take the pledge to make ourselves worthy to walk that spirit and strive hard to realise their dream.

I would also like to take this opportunity to extend best wishes to all the readers of Science India on the festival of Ganesh Chaturthi, which itself has its roots in India's struggle to assert its 'swa'. As we all know, it was started by Lokmanya Bal Gangadhar Tilak in 1893 in the public domain, to create a platform from where nationalist ideas could be preached and spread to the masses.

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