

#HERO

Devil's Apple

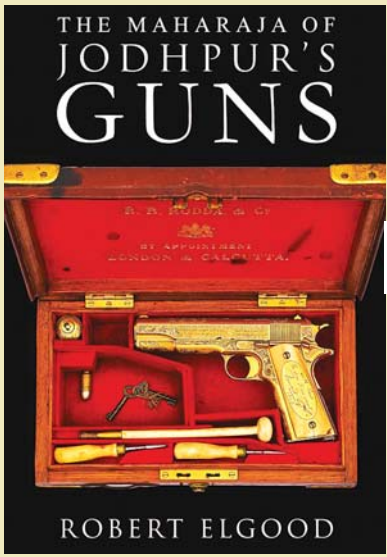
Potatoes, From the Prison Cell to Europe's Salvation!



Long before it became a household staple, the potato was viewed with deep suspicion across Europe. When it first arrived from the Americas in the 16th century, its underground growth and strange appearance made it seem unnatural, almost sinister. Its relation to toxic nightshades like belladonna only deepened fears. Rumors spread that it caused leprosy, madness, or moral corruption. In religious circles, some even dubbed it the 'Devil's Apple,' believing no godly food could thrive buried in the dark. For



centuries, the humble tuber was rejected by farmers, shunned by nobles, and feared by the common folk alike.



The British, at that time, thought the bow was archaic but Indians took a different view and it was commonly included among the weapons in the howdah of princes out hunting until very late in the nineteenth century, for use as well as the **PART:3** symbol of a gentleman. James Tod, who knew the people well, wrote in 1830: "The Rajput who still curses those vile guns which render of comparative little value the lance of many a gallant soldier, and he still prefers falling with dignity from his steed to descending to an equality with his mercenary antagonists."



Akbar shot Jaimal at the siege of Chittor.

The nineteenth-century writer Irvine Gorge, a Vedic concept, changes its meaning over the centuries and cannot be expressed in a single word but 'order,' 'model,' 'custom,' 'duty' and 'law' have been used concerning it. Hinduism personifies dharma as a deified Rishi (enlightened person) personifying goodness and duty. His son is Yudhishthira, 'firm in battle.' Dharma expresses the obligation of correct behaviour in all aspects of daily life integrated with religious duties so that individual responsibilities and cosmic order can har-

The Rising: Potato's Breakthrough in Europe

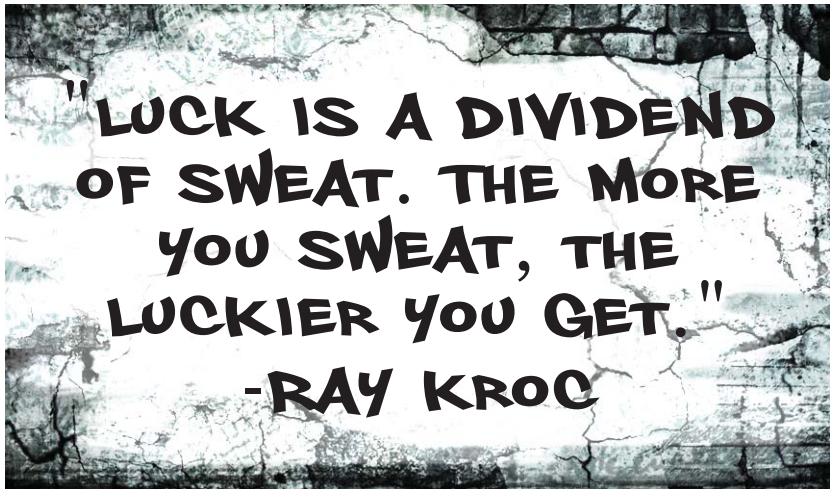
Europe in the 18th century was no stranger to hunger. Famines were frequent, France alone suffered forty nationwide famines between 1500 and 1800, and England faced seventeen major ones between 1523 and 1623. Parmentier's advocacy proved pivotal. He convinced the Paris Faculty of Medicine that potatoes were safe to eat as early as 1772. He hosted lavish dinners centering on pota-

toes, persuaded royalty like Louis XVI and Marie Antoinette to wear potato blossoms in public, and even staged potato fields just outside Paris, so that inviting that hungry citizens would steal the crop, thereby spreading its cultivation. It wasn't only France. Prussia, under Frederick the Great, had earlier mandated potato planting during famine to provide food security.

The Rathores deliberately sought death in battle as a sacrifice to the Goddess and Bhishma was gloriously pierced by so many arrows in battle that he fell from his chariot. His dying body was held off the ground by the arrow shafts protruding from his body. Lying on this couch of arrows, he managed to delay his death for fifty-eight days until the



THE WALL



The impact was seismic. Farmers could plant potatoes on otherwise fallow land, doubling available calories per acre compared to grain. This innovation dramatically bolstered food security across Europe. By the late 18th century, the potato had become a dietary staple in countries

from Ireland to Russia, helping blunt the worst effects of famine, and ultimately preventing repeated mass starvation. Economists like Adam Smith recognized the potato's power to increase population: a staple crop capable of feeding more people per acre enabled Europe's demographic boom.

European diet, agriculture, and even demography. His efforts turned the 'Devil's Apple' into the backbone of famine relief, reshaping Europe's food landscape.

Conclusion

The journey of the potato, from a feared, 'devilish' root to a celebrated famine fighter, embodies transformation. Through Parmentier's determination, a rejected tuber

gained respect and became a cornerstone in European survival and progress. What began in the darkness of a prison cell sprouted hope across a continent.



#THE INDIAN MATCHLOCK



sun started its northern course because Rajputs believed that the passage to warrior heaven is easier during this period.

In Hinduism, dharma, a Vedic concept, changes its meaning over the centuries and cannot be expressed in a single word but 'order,' 'model,' 'custom,' 'duty' and 'law' have been used concerning it. Hinduism personifies dharma as a deified Rishi (enlightened person) personifying goodness and duty. His son is Yudhishthira, 'firm in battle.' Dharma expresses the obligation of correct behaviour in all aspects of daily life integrated with religious duties so that individual responsibilities and cosmic order can har-

The Rajput view on this would probably admit the use of guns as a necessary evil but favour the bow until the mid-eighteenth century. The Rajputs are conservative people and the bow won approval because it was used by familiar heroes in classic literature. Bhishma, 'Terrible,' a prominent warrior in the Mahabharata, displays Rajput virtues as a man of courage, honour, loyalty...

moniously align. Rajput dharma adds to this philosophical concept a unique social and religious code of its own that is the core of group identity and behaviour patterns.

Individual Rajputs acknowledge rigidly shared sanctified rules, proclaimed by court poets (Charans) and enforced by group pressure that gloried in and maintained tradition. Rajput dharma created an exclusive, tightly united, conservative group that was unsympathetic to the use of guns.

The Rajputs were taught that the bow was a part of Rajput dharma and that warriors should practise with it every day, either hunting, or shooting at a baked earth target. It took years of practice to become a good archer. The bow in question was not the great self bows used by the indigenous peoples, that are depicted in the hands of many of India's warrior gods. It was the kaman turki, chahar kham (four curved) recurved bow, used in Central Asia from the third millennium BC that came to India at the time of the Scythian invasions. Made of horn, sinew and wood, painted and lacquered to make the

bow waterproof and attractive, such bows, the work of skilled craftsmen, were vulnerable to the climate and often had to be replaced. For Rajputs and Muslims, the bow was a status symbol.

New Indian dynasties, seeking to burnish their kshatriya credentials, noted this and sometimes used the bow and quiver in their accession ceremonies. Guru Har Gobind, the sixth Sikh Guru, put on a quiver and held a bow in his ceremony in 1606. The same recurved bow was used by Indian Muslims. The Prophet, himself an archer, had urged the faithful to practise with the bow, so, for Muslims archery was a spiritual exercise. For these reasons, the bow remained popular. Irvine heard stories of British troops killed with arrows in the Mutiny. The British, at that time, thought the bow was archaic but Indians took a different view and it was commonly included among the weapons in the howdah of princes out hunting until very late in the nineteenth century, for use as well as the symbol of a gentleman. James Tod, who knew the people well, wrote in 1830: "The Rajput who still curses those vile guns which render of comparative little value the lance of many a gallant soldier, and he still prefers falling with dignity from his steed to descending to an equality with his mercenary antagonists."

The transition from matchlock to flintlock in the eighteenth century was gradual and largely due to European military commanders appointed by Indian rulers. The eighteenth-century European wars between the British and French were also fought in India where defeat resulted in disbanded French soldiers seeking employment, training and equipping local armies in the European manner. The Maratha sardar's "regular" infantry were increasingly armed with flintlocks,

but they also recruited Kolis and Bhils armed with matchlocks as auxiliary troops.

A Scottish mercenary, Colonel George Sangers, was employed by the mercenary General de Boigne to create an arsenal at Agra in 1790. 'Sangster, who had trained as a gun-founder and manufacturer before coming to India, cast excellent cannon and made muskets as good as the European models for ten rupees each.' It was customary for European mercenaries to equip their troops with arms and ammunition. De Boigne's camp included Najibs, Pathans, Rohillas and high-caste Hindus and these gave up their matchlocks and were equipped

The matchlock had few moving parts, was cheap to produce, easy to maintain and repair and used as a locally grown match. Gun flint is not found in India and had to be imported from Europe. Agates, used as a substitute, were extremely hard and damaged the frizzen. A variety of sizes was required and these needed reversing in the jaw of the cock.

with Sangster's flintlocks. He eventually created five arsenals run by daroghas, Delhi, Gwalior, Kalpi and Gohad. Indian troops used their flintlocks in idiosyncratic ways as Fitzclarence noted in 1817:

"As we approached... I was thrown upon the qui vive by the flash of a gun or pistol in that direction; but, from no report reaching me, I was convinced it had originated in that most unsoldierly trick so common among the native cavalry of India, of flashing in the pan of their pistols to light their pipe."

In 1796, a European observer noted that the matchlocks of the irregular infantry at Oudh carried further and infinitely truer than the firelocks (flintlocks) of those days.' Fitzclarence in 1818 wrote that: "...the matchlock is the weapon of this country" and "the flintlock... is far from being general, and I may even say is never employed by the natives, though the Terlinga, armed and disciplined after our manner, in the service of Scindiah and Holkar, make use of it. Some good flintlocks are, however, made at Lahore." However, in the early nineteenth

century, Lahore also continued making matchlocks, popular in Rajasthan and, 'like the locally produced examples, they are often highly finished and inlaid with mother-of-pearl and gold, those of Bundi are the best.' Tod noted that matchlocks, swords and other arms were manufactured at Pali and Jodhpur. Egerton, an experienced arms collector in India from 1858, reports that Kotah and Bundi made famous matchlocks. This probably reflects the arms market created by Kotah's prime minister, Zalim Singh, who in the latter part of the eighteenth century, hired large numbers of mercenaries to defend the state against the Marathas. These troops included two brigades led by Firangis, who had become Indian in all but name, brigades of Dadhu Panthi Naga ascetics, individual Marathas and a great many Pathans. In the late eighteenth century, many Pathans were in Rohilla service in the Rampur region, but after the British helped the Nawab of Oudh to defeat the Rohillas in 1774, there was a general reshaping of north Indian military employment and the Pathans moved west of the Ganges and found employment in Kotah, Jodhpur, and indeed, all the Rajput



A Mughal Infantryman.

states. These troops brought their arms with them but needed the support bazaar gave them until Zalim Khan, probably acting with the advice of French officers, introduced central control on all aspects including equipment, towards the end of the eighteenth century.

The Pushkun Amir Khan, deeply involved in Rajput affairs, ended as



#FROM STING TO CURE

Honeybee Venom Defeats Breast Cancer

Melittin's ability to destroy aggressive cancer cells selectively means it could be developed into a powerful new treatment

In a groundbreaking development, scientists have discovered that honeybee venom, specifically a powerful compound called melittin, can destroy aggressive breast cancer cells in laboratory tests. This fascinating finding opens up new avenues for cancer research and potential therapies targeting one of the most challenging forms of breast cancer.



What is Melittin?



Melittin is the main active component of honeybee venom, making up about 50% of its dry weight. It is a small peptide known for its potent anti-inflammatory, antibacterial, and anti-

vi-ral properties. Traditionally, melittin has been studied for its role in treating arthritis and other inflammatory conditions, but recent research has revealed its ability to attack cancer cells.

The Science Behind the Discovery

Researchers conducted laboratory experiments exposing aggressive triple-negative breast cancer cells (TNBC), a subtype known for its resistance to many conventional treatments, to melittin. The results were promising. Melittin was able to penetrate the cancer cells' membranes and disrupt their integrity. It induced cell death

(apoptosis) by interfering with the cancer cells' ability to reproduce. The compound specifically targeted aggressive cancer cells, leaving healthy cells mostly unharmed. This specificity is crucial because one of the biggest challenges in cancer treatment is destroying tumor cells without damaging healthy tissue.

Why is This Important?

Triple-negative breast cancer is among the most difficult breast cancers to treat. It lacks the three receptors (estrogen, progesterone, and HER2) that many common breast cancer therapies target, making standard hormone treatments ineffective.

Finding new ways to attack TNBC cells is a top priority in oncology. Melittin's ability to destroy these cells selectively means it could be developed into a powerful new treatment, potentially improving survival rates for patients with aggressive breast cancer.



Challenges and Future Directions

While the laboratory results are exciting, translating them into practical treatments faces challenges.

Toxicity: Honeybee venom is toxic and can cause severe allergic reactions. Scientists need to develop delivery methods that harness melittin's cancer-killing power without harming patients.

Targeted Delivery: Researchers are working on nanoparticles and other vehicles to deliver melittin directly to tumor sites, minimizing side effects.

Clinical Trials: Extensive testing in animals and humans is necessary to confirm safety and effectiveness.

Despite these hurdles, the discovery marks an important step forward in cancer research.



Nature's Medicine Chest

This discovery underscores the incredible potential of natural compounds in medicine. Honeybees, often celebrated for their role in pollination and honey production, might also hold keys to future cancer therapies. As researchers continue to explore bioactive substances from nature, melittin stands out as a promising candidate for next-generation cancer treatments.

The ability of honeybee venom, and specifically melittin, to destroy aggressive breast cancer cells in the lab offers hope for developing new, targeted cancer therapies. While further research is required before it becomes a mainstream treatment, this natural compound could revolutionize the way we approach difficult cancers like triple-negative breast cancer.

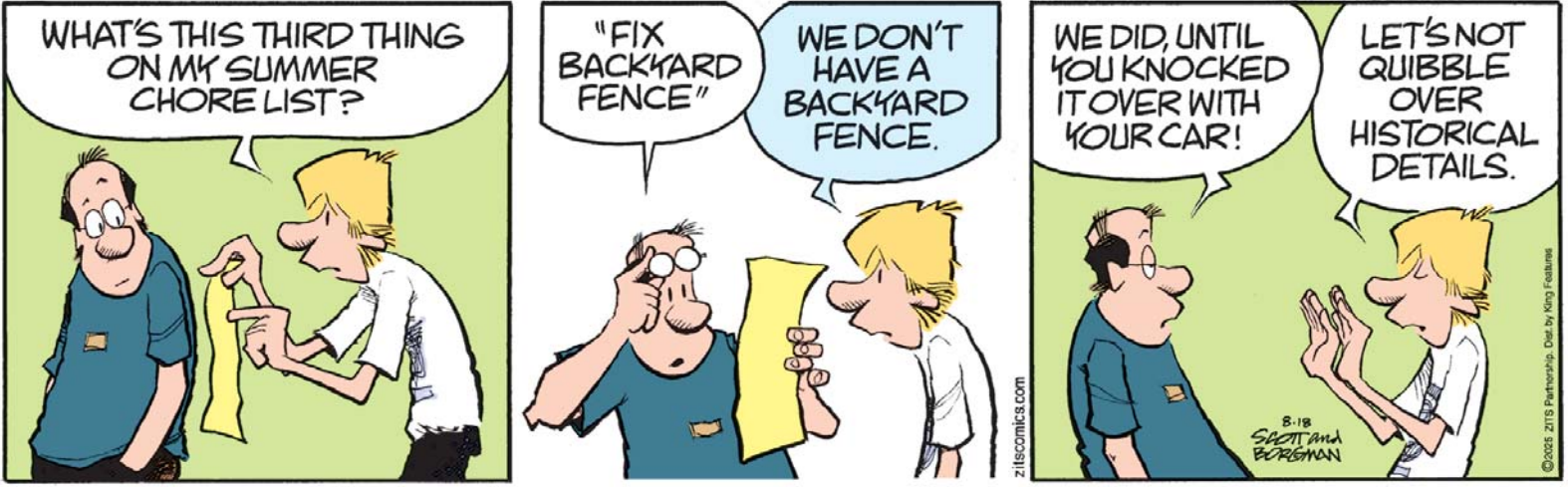
In the quest to defeat cancer, sometimes, the smallest creatures provide the biggest breakthroughs.

By Rick Kirkman & Jerry Scott

BABY BLUES



ZITS



By Jerry Scott & Jim Borgman