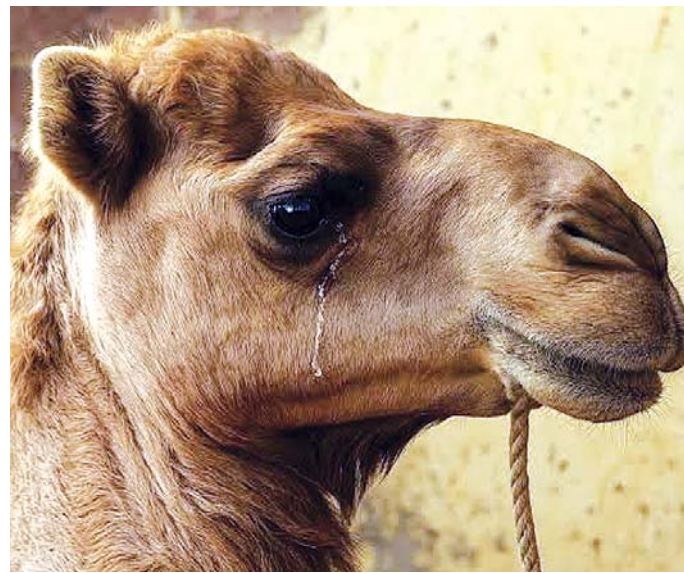


#WONDERS

Could Camel Tears Inspire the Next Generation of Antivenoms?

Camel nanobodies remain stable under high temperatures and are easier to engineer in the laboratory



Every year, snakebites claim more than 100,000 lives worldwide, particularly in tropical and developing countries where access to timely medical care and antivenom is limited. Scientists around the world are therefore searching for safer, more effective, and more accessible treatments. One of the most intriguing avenues of research involves an unlikely source, the camel.

Camels have evolved over millions of years to survive some of the harshest environments on Earth. Living across the deserts of Arabia and Africa, they have developed remarkable biological adaptations, including a unique immune system. Unlike the antibodies found in most mammals, camels produce exceptionally small antibodies, often referred to as nanobodies, which are highly stable and capable of binding tightly to a wide variety of targets.

Researchers have also identified several bioactive proteins in camels, including lactoferrin, a protein known for its antimicrobial, anti-inflammatory, and immune-regulating properties. Camel lactoferrin has attracted considerable scientific interest because it differs structurally from its counterparts in other mammals and has shown promising biological activity in laboratory studies.

Recent research has explored whether camel-derived antibodies and pro-

teins, including those present in body fluids such as blood and tears, could one day contribute to the development of improved antivenoms. Laboratory studies suggest that camel nanobodies can bind to certain venom toxins, potentially preventing them from damaging nerves, blood vessels, or tissues. These findings are encouraging, but they remain at an experimental stage and require further peer-reviewed validation before they can be translated into clinical treatments.

One of the major advantages of camel-derived antibodies is their remarkable stability. Conventional antivenoms often require continuous refrigeration and are usually designed to treat the venom of specific snake species. Camel nanobodies, by contrast, remain stable under high temperatures and are easier to engineer in the laboratory. These characteristics make them attractive candidates for developing future broad-spectrum antivenoms, particularly for remote regions where maintaining a cold chain is difficult.

Pharmaceutical researchers are now investigating ways to synthesize camel-derived proteins and antibodies using modern biotechnology. Rather than relying directly on camel tears or other body fluids, the goal is to reproduce these protective molecules in the laboratory, allowing them to be manufactured safely and consistently on a large scale.



• Kshema Jatuhkarna

Few sweets are as closely associated with Bengal as sandesh. Soft, delicate, and subtly sweet, it has become one of the defining symbols of Bengali cuisine. Yet, the story of sandesh begins not only in Bengal, but also with



the arrival of Portuguese sailors on the Indian coast and an unexpected exchange of culinary traditions.

The Portuguese Arrive in India

In 1498, the Portuguese explorer Vasco da Gama landed at Calicut (present-day Kozhikode, Kerala), opening a direct sea route between Europe and India. This voyage

transformed global trade and marked the beginning of sustained Portuguese influence on the Indian subcontinent.

Over the following decades, Portuguese merchants established trading settlements along India's coastline. Important commercial centers emerged at Chittagong and Satgaon in Bengal, while Portuguese influence steadily expanded along both the western and eastern coasts.

During the reign of the Mughal emperor Akbar, the Portuguese established a permanent settlement at Hooghly (Hugli) in Bengal. Nearby Bandel became one of their most important colonial communities, serving as a center of trade, missionary activity, and cultural exchange.

More Than Traders

The Portuguese did not merely bring spices back to Europe, they also introduced new foods to India.

Among the crops that became integral to Indian cuisine were the potato, chili pepper, and tomato, all originally native to the Americas. Today, it is difficult to imagine Indian cooking without fiery chilies or potato-based dishes, yet these ingredients arrived through Portuguese maritime trade.

They also brought European culinary traditions, especially the

#DELICACIES



N.A. Bulganin, Prime Minister of the USSR, and (right) N.S. Khrushchev, Member, Presidium of the Supreme Soviet, in New Delhi, on December 14, 1955.

arts of baking and cheesemaking. Portuguese bakers prepared breads, cakes, pastries, and cheeses unlike anything commonly found in India at the time.

The Discovery of Chhena

Traditional Indian dairy practices generally avoided curdling milk with acidic agents such as lime or vinegar. Milk was transformed into yogurt, khoa, butter, or ghee, but not into fresh cheese. Deliberately curdling milk was considered culturally inauspicious or bad luck in traditional Hindu households.

The Portuguese, however, routinely made cheese by adding an acid to hot milk. In Bandel, they curdled milk with lime juice or another acidic ingredient. The milk separated into solid curds and liquid whey. The curds were then strained through cloth to produce a fresh, crumbly cheese.

The Portuguese prepared a lightly salted version that came to be known as Bandel cheese, one of the oldest surviving cheeses in India and still produced today.

The fresh curds themselves



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naissance of the mid-19th century, along with the emergence of a growing and wealthy urban middle class in Kolkata, led to a 'golden age' for Bengali sweets and sandesh.

The story of chhena illustrates how culinary traditions evolve through encounters between cultures. Sweets shops like Bhim Nag, K.C. Das, Dwarik Ghosh and Ganguram grew around the city and became legendary institutions. The sweet shops vied with each other to make the most extravagant sandesh and the patrons indulged in 'conspicuous consumption'!

Today, sandesh is celebrated as one of Bengal's greatest culinary achievements. In its heyday, almost every sweet shop sold 100-150 variety of sandesh, and over time, sandesh started becoming more and more extravagant. Chocolates, apples, ice-cream and multi-shaped sandesh varieties were made. Imagine a sandesh toast, sandwich, cake, chops and even biscuits!

Savvy marketers often took poetic license and gave these sweetmeats catchy names, Desh gorob (glory of the nation), Manoranjan (heart's delight), Monohara (captivator of the heart), Pranahara (captivator of the soul), Abak (wonder), Noyantara (star of the eye), Bagh (tiger), and Abar Khabo (I'll have another) were just some of them! So ingenious were the names, and such



a fad that a sandesh was actually named after Lord Ripon, Viceroy of India from 1880 to 1884. The tradition continued, and even in the 1960s, a sandesh called 'Bulganiner Bishmoy' (Bulganin's wonder) was made in honour of the visiting Soviet premier!

Did You Know

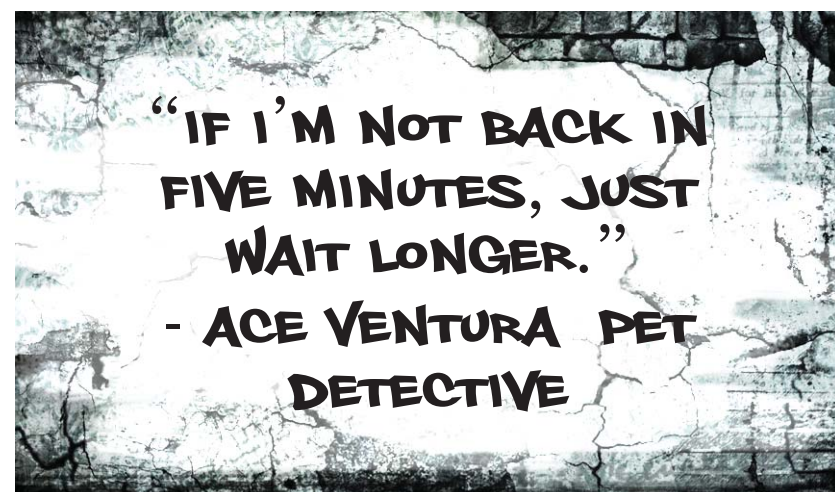
There is a story of how a barrister

ordered sandesh made in the shape of the Gothic building of Kolkata high court for his wedding! What began as a foreign method of making cheese became the foundation of one of India's most beloved sweets, proving that some of the finest culinary traditions are born not from isolation, but from the meeting of cultures.

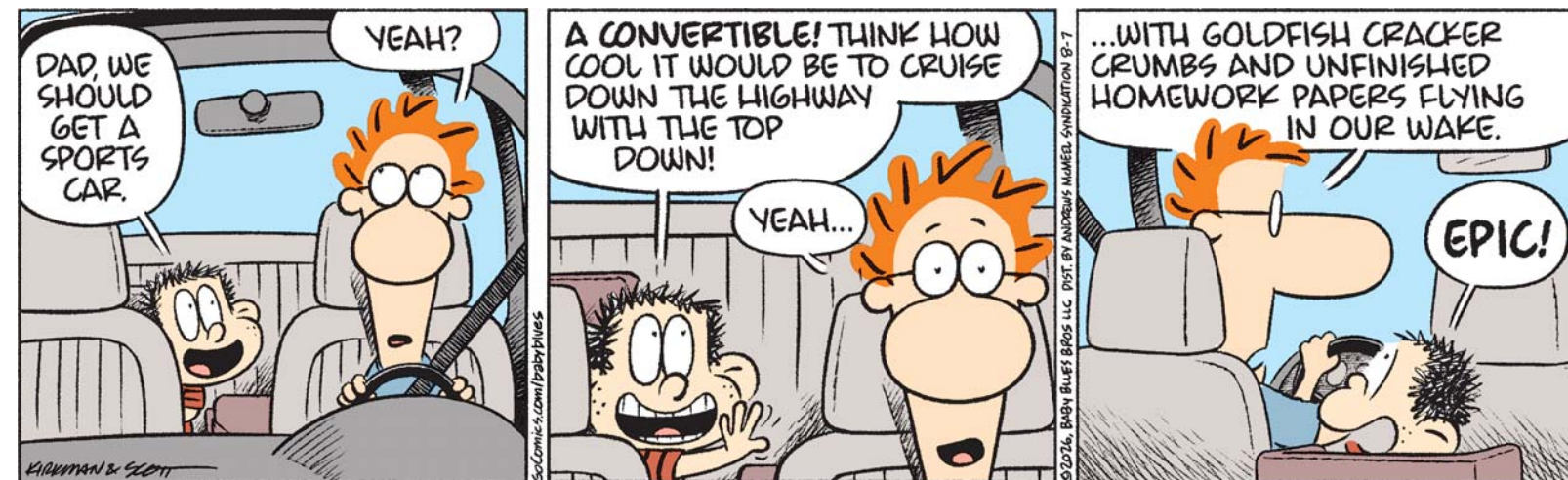
rajeshsharma1049@gmail.com



THE WALL

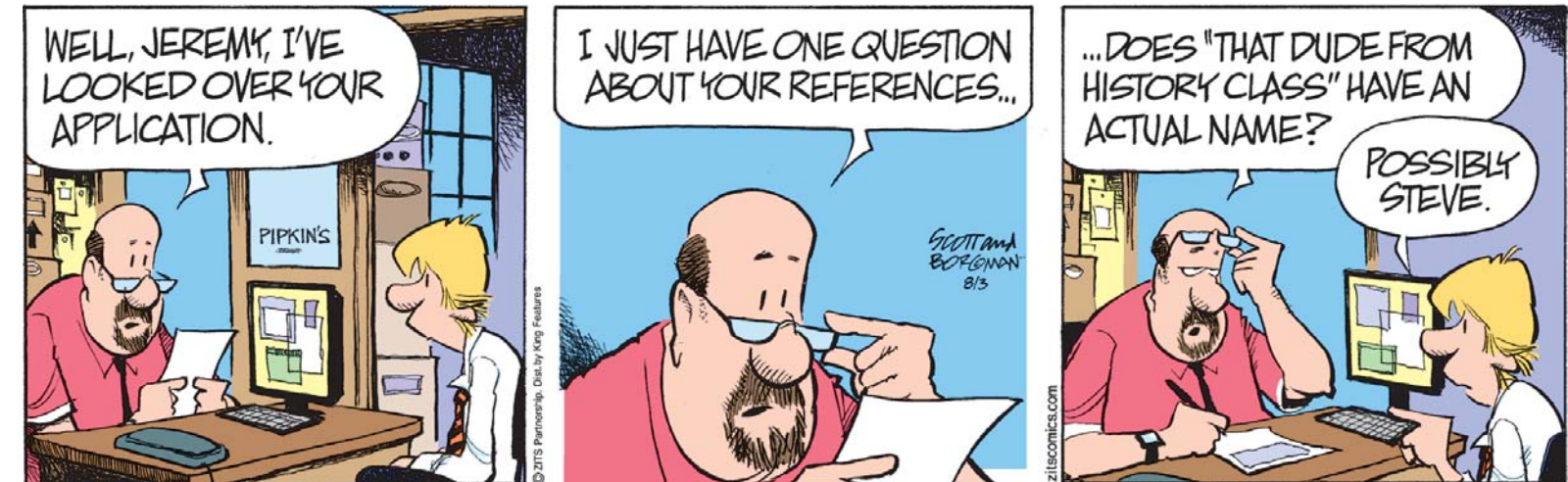


BABY BLUES



By Rick Kirkman & Jerry Scott

ZITS



By Jerry Scott & Jim Borgman

