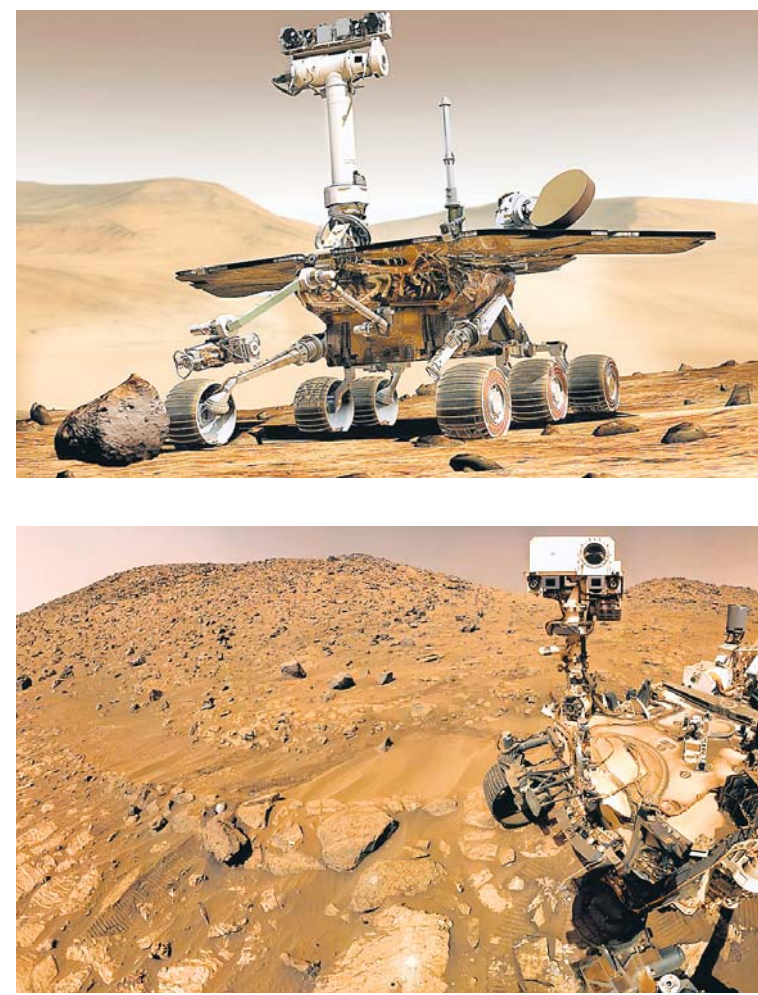


#SCIENCE

Nasa Rover discovery hints at ancient microbial life on Mars

A 3ft by 2ft rock, marked with off-white spots, may offer fossilised record of microbes, dating back billions of years.



Spotty vein-filled rock found by a Nasa rover on Mars contains features that suggest that it may have hosted microbial life billions of years ago. The arrow-head-shaped rock, named Cheyava Falls, was discovered by Nasa's Perseverance rover on 21 July, as it trundled along the northern edge of Neretva Vallis, an ancient river valley, carved by water flowing into the red planet's Jezero crater.

Analysis of the 3ft by 2ft rock revealed signs of organic material, intriguing surface spots similar to those associated with fossilised microbes on Earth and evidence that water once passed through the rock, the agency said.

Ken Farley, the Project Scientist on the mission at the California Institute of Technology, said that Cheyava Falls was "the most puzzling, complex and potentially important rock yet investigated by Perseverance," though the team make clear that non-biological processes may have given rise to the features.

"On one hand, we have our first compelling detection of organic material, distinctive colourful spots indicative of chemical reactions, that microbial life could use as an energy source, and clear evidence that water, necessary for life, once passed through the rock," Farley said.

"On the other hand, we have been unable to determine exactly how the rock formed and to what extent nearby rocks may have heated Cheyava Falls and contributed to these features."

In the ancient past, Mars was a warmer, wetter planet. If life ever existed there, researchers believe that traces should remain within its rocks, in the form of organic material and potentially fossilised remnants.

Scans of the Cheyava Falls rock by Perseverance's Sherlock instrument suggest that it contains organic compounds. Such carbon-based molecules are regarded as the building blocks of life, but can also be produced by non-biological processes. Large white veins of calcium phosphate run along the rock. Between them are bands of reddish material, likely haematite, one of the iron oxide compounds that gives Mars its rusty colour. Closer inspection of the bands revealed dozens of little leopard spot-like features. Each of the off-white spots is surrounded by a black ring containing iron and phosphate.

David Flannery, an Astrobiologist at Queensland University of Technology in Australia and a member of the mission, called the spots 'a big surprise,' because on Earth, similar features "are often associated with the fossilised record of microbes."

White spots can form on rocks through chemical reactions involving haematite, producing iron and phosphate, as well as energy that microbes could live on. While the features are intriguing, nothing seen yet appears to be an actual fossilised microbe. Researchers are desperate to get their hands on samples for more thorough investigation, but Nasa's plans to return the Mars rocks to Earth have run into difficulties.



Manu Bhaker and Sarabjot Singh secured India's second medal at the Paris Olympics on Tuesday, earning a bronze in the 10 m Air Pistol mixed team event at the Chateauroux Shooting Centre. This marks India's second shooting medal of the ongoing Paris Games, following Manu's bronze in the women's 10 m air pistol event. India led 4-2 after the third series and extended their lead to 8-2 after the fifth

She Said They'll Do It Again... God Willing...



Anjali Sharma
Senior Journalist & Wildlife Enthusiast

With a saint's humility, she had said to Prime Minister Modi ji, "God willing, we'll do it again." She reads *Gita* for resolving things, which most other things can't, at least not easily. She has addressed depression, and lost faith in herself and good luck. What she has gained out of this catharsis in life is what humans struggle to get all their lives, and few do.

The Indian pair of Manu Bhaker and Sarabjot Singh won the bronze medal in the 10 m Air Pistol mixed team event at the Chateauroux Shooting Centre. This is India's second shooting medal of Paris 2024. Manu Bhaker and Sarabjot Singh secured India's second medal at the Paris Olympics on Tuesday, earning a bronze in the 10 m Air Pistol mixed team event at the Chateauroux Shooting Centre. This marks India's second shooting medal of the ongoing Paris Games, following Manu's bronze in the women's 10 m air pistol event. India



#OLYMPICS

led 4-2 after the third series and extended their lead to 8-2 after the fifth. Although, South Korea narrowed the gap to 10-6 after the eighth series, the Indian duo maintained their composure to secure a comfortable victory.

The Bhaker-Sarabjot duo defeated the South Korean duo 16-10, winning a total of eight rounds of shots during the clash. It was a thrilling

encounter between two of the best teams at the event, but India maintained the lead right from the start, despite falling behind 0-2 after the first round. Bhaker was at her best with her top effort coming in the second round, shooting 10/7.

Her lowest score was 8.3 in the 8th round but she was consistent in most of the shots, targeting 10.5 or more, six times in 13 shots. As for

Sarabjot, he didn't start well but managed to stay above, consistently providing immense support to his partner, Manu, as the Indian duo created history beating South Korea. Meanwhile, the Serbian duo of Arunovic Zorana and Mikec Damir won the gold medal match against Turkey's Tarhan Seval Ilyada and Dikec Yusuf by a 14-16 margin. It was a nail-biting encounter as the Serbian duo secured the gold medal while Turkey had to settle for silver. Meanwhile, India is now at the 27th position in the medal tally after winning the second bronze medal while Japan is on top with six gold, two silver and four bronze medals. Indian shooter Sarabjot Singh has also won a second bronze medal for India. He won the bronze medal with Indian shooter, Manu Bhaker, in 10 m air pistol mixed team event at the Paris 2024 Olympics. In 2023, he secured an Olympic quota for India by winning a bronze medal at the 15th Asian Shooting Championship in South Korea. The 23-year-old also claimed a gold medal in the 10 m air pistol event at the ISSF World Cup in Bhopal, that same year.



Who is Sarabjot Singh?

Hailing from a farmer's family in Anbala, Punjab, Sarabjot Singh is known for his maturity and grounded nature, despite his achievements in the sport. His self-confidence had led many experts to believe that he could secure a podium finish at the Olympics. Sarabjot's promising career began with a gold medal at the 2019 Junior World Championship. He continued to impress with a team gold at the 2022 Asian Games in Hangzhou and an individual bronze at the 2023 Asian Championship.

"I don't feel any pressure. I am giving my best, don't feel low, don't feel anything related to the Olympics," Sarabjot Singh said, a few weeks back, when he was undergoing training in Luxembourg along with other Olympic-bound Indian shooters.

Hailing from Haryana, Sarabjot is an individual and mixed team World junior champion in 2021. He has won three World Cup gold medals in 2023 and 2024 (including one in Munich in June), apart from two Asian Games medals last year. He also won a bronze medal in 2023 Changwon Asian Shooting Championship and sealed a Paris Olympics quota place for India in men's 10 m air pistol. He was the winner of the men's 10 m air pistol team gold and mixed team silver at the Hangzhou Asian Games.

We have a history with Shooting



Prakash Bhandari
The writer is a senior journalist

#SHOOTING

at shooting was an essential to the personality of a true royal. This was one of the reasons why some of the leading shooters of India belonged to the erstwhile royal families. Now, with a shooting range in Jaipur and numerous other shooting joints, which have mushroomed, the state is showing good results. Two shooters, Anant Naruka and Maheshwari Chauthan, are representing the country in Paris.

In the last Olympic at Tokyo, two shooters, Apoorvi Chandela and Divyansh Panwar, had taken part.

The names of Dr. Karni Singh, a former ruler of Bikaner and five time member of Lok Sabha, was also a silver medalist in the World championship in Cairo in 1962, and a 17-time national champion in clay pigeon and skeet, five-time

Olympian Randhir Singh, a scion of the Patiala royal family and Keshav Sen, the *Thakur* of Kharwa, who was the national champion and was a member of the Indian shooting team to 1960 Olympics in Rome, and Maharao Bhim Singh, who at the age of 67, took part in the skeet Olympic of 1976 Montreal Olympics. Karni Singh holds a record of the sort having donned the country's colours in five Olympics from Tokyo to Moscow.

Not just the *Maharajas* and *Rajkumars* (Princes), even the *Rajkumaris* (Princesses) took to the sport seriously. Karni Singh's daughter, Rajyashree Kumari, and Bhim Singh's daughter, Bhuwaneswari Kumari represented India, along with their fathers in a number of international shooting events.

There is a unique record in the history of Indian sports. *Arjuna award* is the highest award given to a sportsperson, and both Karni Singh and Bhim Singh received it for their excellence in shooting. Their daughters, Rajyashree Kumari and Bhuwaneswari Kumari, also received the Arjuna award. Such is our fascinating history of shooting as a sport.

Kharwa in Ajmer district is a *thikana* with its own history. Kharwa enjoyed an independent status under the British rule in Ajmer. The *thikana* was known as *Tajimi Istimriad* and one of its ruler, Rao Gopal Singh Kharwa, was among the first to revolt against the British. He was imprisoned for four years.

The Kharwa family excelled in sports and loved shooting. They have been a shooting sport family and ace hunters or *shikaris*. Rao Ganapati Singh, the *thakur* of

Kharwa, a polished person with rich taste, had a good collection of guns. Rao Ganpati Singh imported trap equipment from London and got it set up on his farm to practice shooting. His shooting range is the oldest in the state and the Bikaner's Lalgarh Range came into being much later. Ganpati Singh would enjoy shooting in his exclusive range along with his sons and daughters. But Kunwar Keshav Sen, the eldest son was the best among the Kharwa shooters. He started taking part in the national level competitions and in the first-ever northern India championship, that was held in Delhi, took part and finished second in the clay pigeon championship.

In the team event, father Rao Ganpati Singh, Kunwar Keshav Sen and sister, Jaya Kumari, won. In this championship, Prime Minister Jawahar Lal Nehru was the Chief Guest and they received prizes from him.

Keshav Singh could fire all kinds of guns and pistols and in the first ever nationals in 1953, he bagged second and third positions in full bore rifle and revolver team event, he excelled in big-bore free rifles and big-bore standard rifles. Later, he went on to excel in clay pigeon trap and skeets.

Kharwa form more than 100 guns of various forms and values. Keshav has left behind 1800 used cartridges. These cartridges are of 34 grammes. Nowadays, lighter cartridges are used which are of 24 grammes. Firing a 34-gramme cartridge would end up in shoulder pains.

The non-availability of cartridges and other reasons forced Keshav Sen to give up shooting. However, his son, Chandra Sen and now his grandson, Yadunath Sen are carrying on the family tradition.

Maharao Bhim Singh also had a Skeet Range in his vast palace in



Jawahar Lal Nehru presenting Keshav Sen for winning individual honours in national championship in Delhi.

Kota and he, along with Apji Kalyan Singh and a few *thakurs*, pursued their interest in shooting. Apji Kalyan Singh was also an international shooter and he later became an international judge. *Maharajas*



Kharwa threesome, Jaya Kumari, Rao Ganpati Singh and Keshav Sen.

Avani Lekhara, the Golden Girl

Avani Lekhara, who is 23 now, made Rajasthan and the country proud, by winning gold medal in the 10 m air rifle standing and a bronze medal in the 50 m rifle three positions at 2020 Summer Paralympics. She is among the ranked shooter in Women's 10 m Air Rifle standing SH1. She is also the first Indian woman to win multiple medals in a single Paralympic Games. She has been given out of turn appointment as Assistant Conservator of Forest (ACF) by the Government of Rajasthan.

Lekhara won India's first gold medal at the 2020 Summer Paralympics. With a score of 249.6 points in the final event, the young shooter set a Paralympic record and tied the world record. She began shooting in 2015,

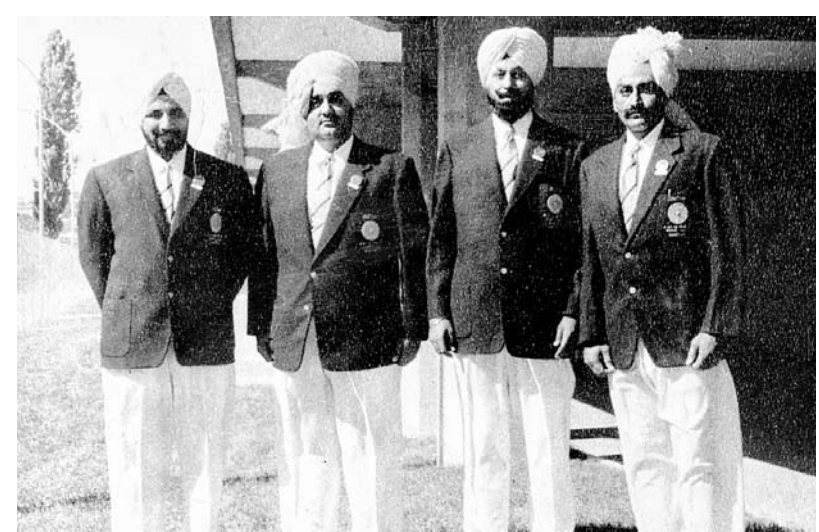


inspired by former Olympic champion, Abhinav Bindra, and has since won several national and international titles. A car accident in 2012, at the age of 11,

left her with complete paraplegia. Her father encouraged her to join sports, training in archery but she moved to shooting, in which she found her true passion.

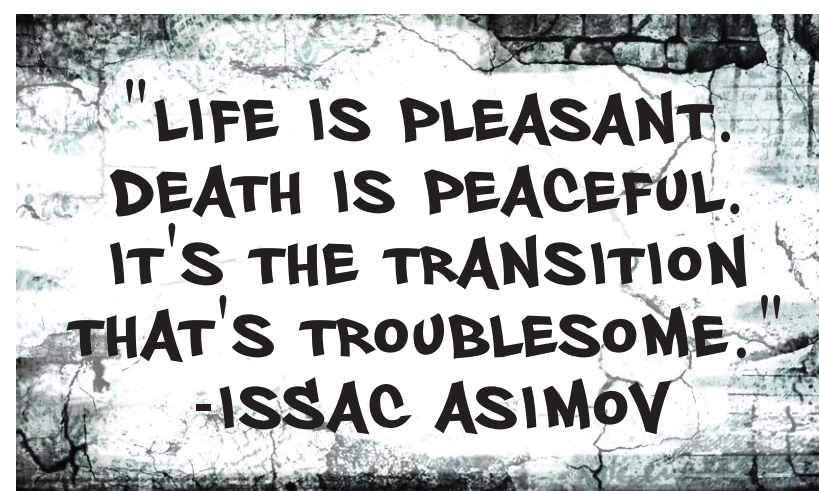
Awards

- 2021 *Khel Ratna Award*, highest sporting honour of India.
- 2021 *Young Indian of the Year - GQ India*
- 2021 *Vogue Women of the Year - Vogue Magazine*
- 2021 *Best Female Debut Paralympic Awards - International Paralympic Committee*
- 2022 *Padma Shri*
- 2022 *FICCI FLO Award for Excellence in Sports*
- 2022 *She Age Award by Hindustan Times*
- 2022 *Para Athlete of the Year (Female) - Sportstar*
- 2022 *BBC India Change Maker Of The Year 2021*
- 2022 *BRICS CCI WE - Trailblazer 2022*

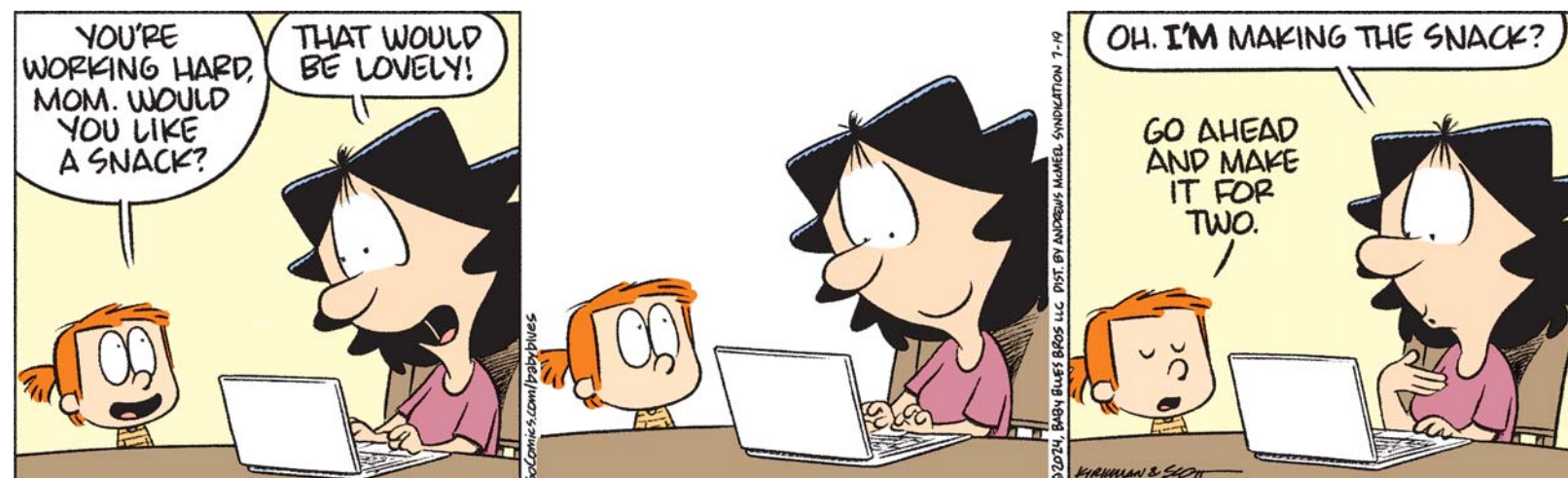


Keshav Sen (extreme right) with Dr Karni Singh, P S Cheema and manager, Daya Singh, in Rome Olympics 1960.

THE WALL



BABY BLUES



By Rick Kirkman & Jerry Scott

ZITS



By Jerry Scott & Jim Borgman

