

Research highlights

PREHISTORIC TRIPS: CAVE REMAINS SHOW HALLUCINOGEN USE

Hair collected in a cave on a Mediterranean island provides rare direct evidence that people in prehistoric Europe consumed hallucinogenic plants.

The strands of hair, which were probably cut from dead individuals as part of a funerary ritual, were found inside a wooden container hidden in a small subterranean chamber on the Spanish island of Menorca. The chamber was sealed from around 800 BC to 1995, when it was discovered.

Elisa Guerra-Doce at the University of Valladolid in Spain and her colleagues found three mind-altering substances in the hair: the hallucinogens atropine and scopolamine, and the stimulant ephedrine. The substances are found in plants native to Menorca, such as thorn apple (*Datura stramonium*), henbane (*Hyoscyamus albus*), mandrake (*Mandragora autumnalis*) and joint pine (*Ephedra fragilis*). The individuals could have consumed these plants up to one year before their death.

Remains of psychoactive plants and artistic depictions of drug plants offer hints that ancient Europeans used drugs, but the hair locks provide rare direct evidence of this practice.

Sci. Rep. **13**, 4782 (2023)



'NEW CAR' SMELL HAS A WHIFF OF HEALTH HAZARDS

Over a lifetime, a driver faces a high cancer risk from the chemicals responsible for the distinctive new-car smell.

Materials used in car seats, carpets and dashboards release fumes of chemicals such as benzene and formaldehyde. These compounds have been linked to headaches, nausea and dizziness. Some are carcinogens.

Haimei Wang at the Beijing Institute of Technology and colleagues continuously measured the levels of 20 chemicals emitted from materials in a new car parked outside over 12 consecutive summer days. They also measured cabin air flow and temperature, and the temperature of various cabin surfaces. They found that formaldehyde and acetaldehyde concentrations surpassed allowed levels in China.

Previous studies on vehicle cabin emissions had focused on air temperature, but the authors found that the temperatures of materials' surfaces matter more. Their estimates showed a high lifetime cancer risk for drivers and passengers from inhaling or ingesting these chemicals.

These findings could help vehicle designers to select materials that meet environmental standards and improve cabin air quality.

Cell Rep. Phys. Sci. <https://doi.org/j5wp> (2023)

WARMING CAUSED CATASTROPHIC GLACIER COLLAPSE

As temperatures rise with climate change, a melting glacier in the Italian Alps triggered a devastating avalanche.

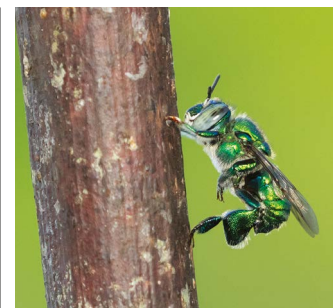
On 3 July 2022, around 64,000 tonnes of water, ice and rock broke away from the Marmolada Glacier (pictured) in northeastern Italy. The collapse led to a massive ice avalanche that charged more than 2 kilometres down the steep northern slope, killing 11 mountaineers.

To tease apart the root cause of the disaster, Aldino Bondesan at the University of Padua in Italy and Roberto Francese at the University of Parma in Italy analysed satellite and aerial images of the Marmolada Glacier that had been captured before and after the event.

During the late spring and early summer months of 2022, temperatures in the region were 3.5 °C higher, on average, than they had been during the previous three decades. The temperature spike resulted in the accumulation of huge volumes of melt water in deep cracks in the glacier, leading it to break apart and collapse.

Next-generation monitoring should be developed to deliver early warnings to tourists in glaciated areas, the authors say.

Geomorphology **431**, 108687 (2023)



SMELLING BEE: MALES MIX PERFUMES TO ATTRACT MATES

For some animals, mating begins with a fragrance: male orchid bees make and wear 'perfume' to attract potential partners, researchers report.

Scientists knew that male orchid bees (*Euglossini*) gather a mix of fragrant chemicals from flowers and other natural sources and store their harvest in specialized hind-leg pockets. But the reason for this complex behaviour has been unclear.

Jonas Henske at Ruhr University Bochum in Germany and his colleagues collected perfume from wild-caught green orchid bees (*Euglossa dilemma*, pictured) and doused trapped males of the same species with it before observing their interactions with females.

Although the perfume had little effect on the males' courtship rituals, scented individuals mated with more females than did unscented ones, the researchers found. Males that wore perfume also produced more offspring than did their scentless counterparts.

The findings provide the first direct evidence that male orchid bees concoct and release perfume blends to lure females for mating, the authors say.

Curr. Biol. <https://doi.org/j5wq> (2023)