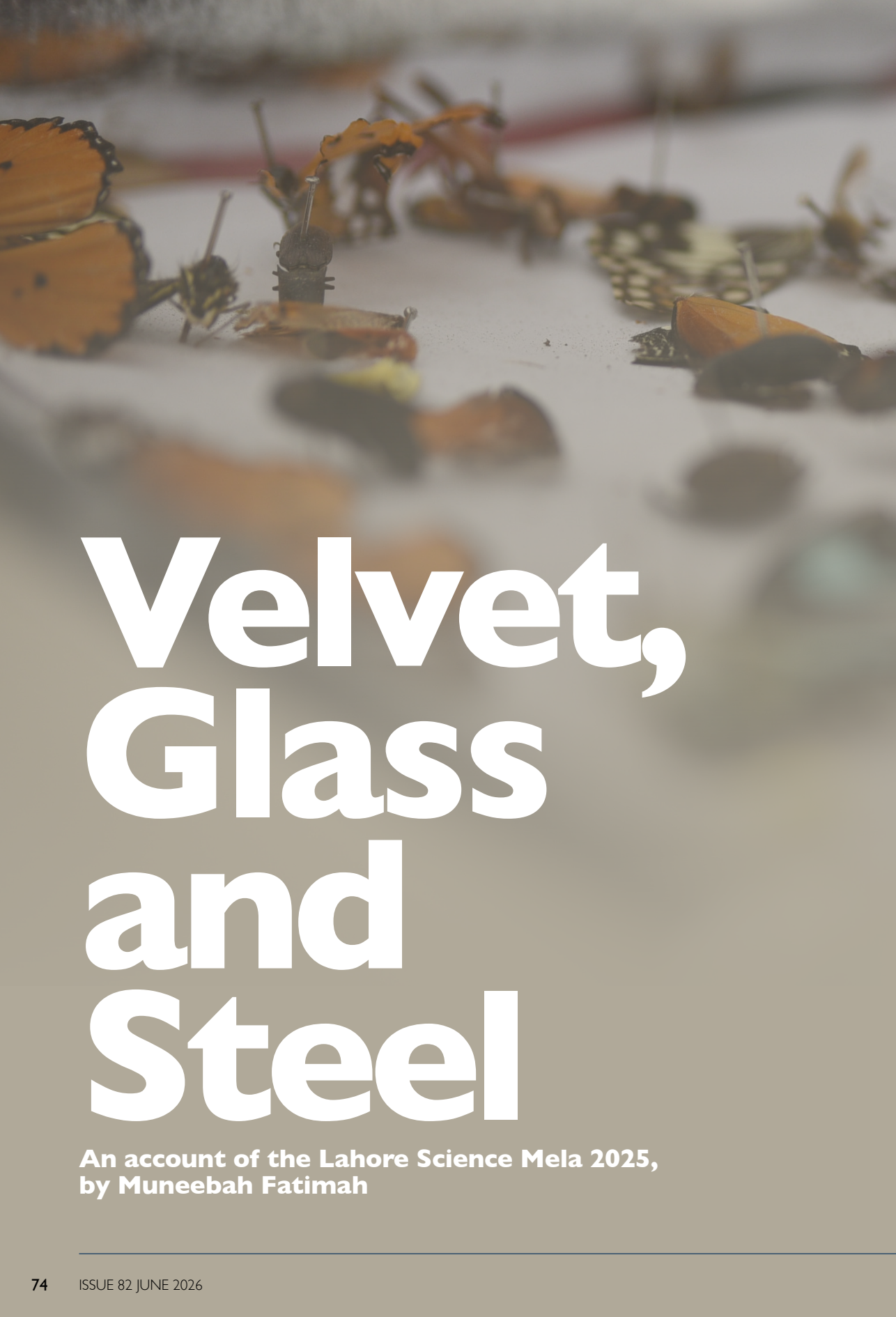




# Velvet, Glass and Steel

An account of the Lahore Science Mela 2025,  
by Muneebah Fatimah



*“Nature is full of infinite causes that have never occurred in experience.”*

- Leonardo da Vinci

Nature's mastery is evident even in the seemingly insignificant. Some insects are recluses, refusing to be divulged in the open, existing solely in the margins beneath bark and stones and who, alone, value the coolness of night. They thrive in subtlety, shielding themselves with camouflage. The butterfly can be considered an exception. With wings brushed in amber, turquoise, and sapphire, she perches where a flashing petal resides, as if aware that beauty deserves an audience. When one gets too close, she flies teasingly allowing admiration only, probably laughing at our foolishness.

In the Lahore Science Mela 2025 (LSM25), Pakistan's most active grassroots science education and awareness association, the Khwarizmi Science Society (KSS) allowed minimalists like me to indulge the public in the grandeur of the minute through the art of microscopy. The society allowed the display of both the ascetics and the inviting untouchables.

The setup consisted of three different microscopes, ranging from the portable HD LCD digital microscope to stereo microscopes. One of the microscopes was in fact donated to KSS by insect lovers at The Caterpillar Lab in New Hampshire, USA. A smaller screen was attached to the digital



and light microscope while a TV-sized LED for better vista. Once assembled, the digital microscope displays the specimen at 1-1200x magnification. In contrast to the digital microscope, the light microscope provides higher magnification, enabling

detailed observation with improved resolution. This microscope was equipped with three objective lenses (4x, 10x, 40x) and two eyepiece lenses (10x, 16x).



The practice and preparation began months before the big day. Our team of six diverse microscopists met every week, befriendng the marvellous machine, assembling slides, making flashcards, and mounting insect specimens. We familiarized ourselves with the microscopes in advance and fine-tuning magnification levels.

The first time I handled a microscope, I had no clue what I was stepping into. I pictured myself taking it home, turning the magnification to its limit, and uncovering baffling realms. While I witnessed remarkable sights, the process was far more measured. It involved minor adjustments, and post-processing, and even then, a perfectly clear view of the specimen wasn't guaranteed. However, the symphony of technicalities and dramatized story telling kindled curiosity for the unseen.

The Lahore Science Mela 2025, held on 25th and 26th October at Crescent Model Higher Secondary School, brought together more than 145 academic exhibitors and more. The event showcased live demonstrations spanning multiple disciplines, including KSS's own 80 in-house creations featured at the Surpriseum (رہگ ترکیج). Over the course of two days, approximately 150,000 visitors from diverse backgrounds attended.

At the heart of the mela stood the Khwarizmi Science Society's Surpriseum. Hundreds of people pooled their intellect and skill to pillar for what felt like Pakistan's most electrifying experimental science extravaganza. From the thudding of dominoes to the electric murmur of coils and the sigh of chemical reactions, with togetherness, the environment turned science into a megaplex. And in the busy atmosphere, was the station entitled 'Micro-World' where our mighty microscopes charmed the bypassers.

On these eventful days, children admired the venation of the Akk grasshopper and the compound eyes of a dragonfly. Others marveled at the mandibles of black digger wasps, mosaics on butterfly wings, and muted tones of carpenter bees. I felt that there is a quiet wizardry in the art of science communication, especially when displaying microscopes. Behind every slide lies a macrocosm, and the role of a communicator is to bring life to it without accidentally poking anyone with the slides.

It appeared to me that the visitors were like pilgrims, travelling through the arena, yearning for scientific enlightenment. And never were there the audience of the same age. Hence, the diversity of the questions they put forward was both puzzling



and august. The cornerstone of our demonstrations was the question, 'what if the world we see is only a fraction of what truly exists?'

The bedazzled spectators viewed one of our ardent demonstrators catching butterflies on the spot, some were hooked, while some remained sentimental once they were quelled. Meanwhile, specimens under varying magnifications inspired questions about both the technicalities and the subjects themselves. Undoubtedly, a microscope is a benison for the meticulous, and a cruel joke for anyone with shaky hands.

Science, with its discipline, grants us the power to handle nature with the fidelity it deserves. It encourages us to observe with a curious mind and a humility that acknowledges the complexity of what is perceived as divine revelation. Art speaks where analysis falls silent, and it was evident when youngsters' jaws dropped at both the architecture of the microscope and the wonders it revealed. The Micro-World booth at the Lahore Science Mela combined all these traits.

Observing under the lens reveals the spatial relationships between structures invisible to the naked eye, from the iridescent scales of a butterfly

to the intricate ommatidia of its eyes and fine setae on its exoskeleton, inspiring awe in connoisseurs. And then there is the crowning marvel: the textures themselves, a delicate interplay of velvet, glass and steel.

### Brief Biography



My name is Muneebah Fatimah and I am a school student in Lahore, Pakistan. I am a life member of the Khwarizmi Science Society which aims to enlighten people with knowledge

that covers all disciplines. I am an avid science communicator and a biology enthusiast. Furthermore, I am very fond of microscopes and insects. KSS organises an annual festival, called the Lahore Science Mela [KSS LSM](#) where tens of thousands of people come in the pursuit of scientific awareness. At the Lahore Science Mela of 2025, I participated as a science demonstrator in the microscopy station.