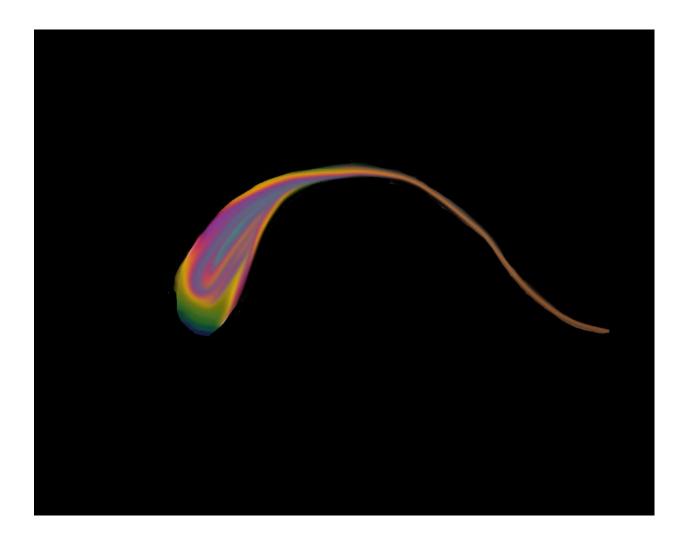


Written and illustrated by Olivia Banerjee

I am a Glassmaker

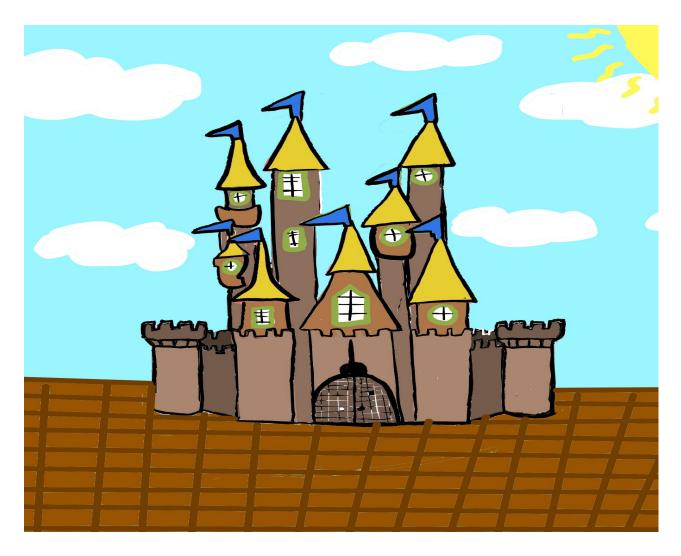
I sat near my window, admiring the view of rain showering the glass. I observed, little teardrop shapes. Suddenly, my candle shot flames to my bottle of ink. The glass started to melt and replicate the teardrop shapes. More thoughts rushed around as I grabbed my blowtorch, some glass beakers, and a jug of cold water. The phenomenon of compression, refraction and dispersion, resulted in a multicoloured drop.



I grasped its tail, but it shattered instantly. Next, I picked up the drop from its head, but the drop was intact.



In fact, the drop's head was so strong that it could even cause bullets to shatter. With such an amazing discovery, I wanted to show His Majesty. So, I set foot into the castle.



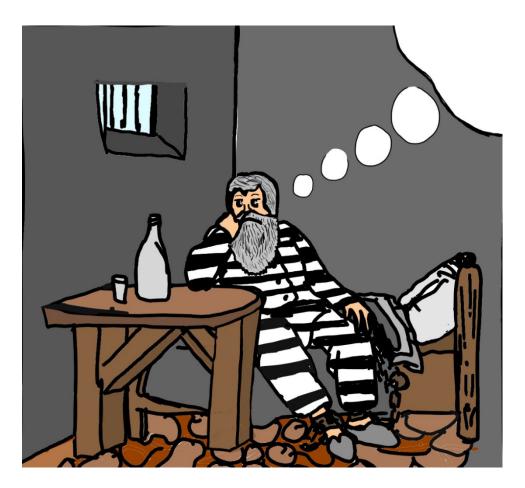
His majesty bragged about my invention to the kingdom, but among those people, some got sceptical.

As I was in my cave making more drops, they came out of nowhere and jabbed me.

"Stop making those imbecilic drops. We don't want your country to be more dominant. Your time in this world has come to an end."

"Lock him up. We'll send him to the guillotine early tomorrow" the other snapped.

Soon, I was in a cell which was dark. The only source of light was coming from a barred window in the corner.



"You've got one wish to ask for Mr Maker."

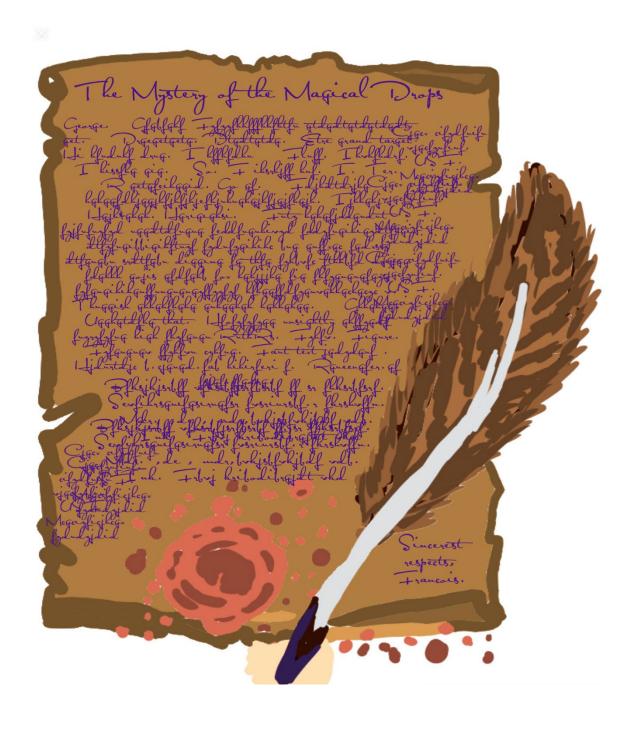
I wrote about my invention journey and shoved it in a glass bottle. I squeezed it through the bars, so that it lands in the ocean. And, off I go to the guillotine.

[&]quot;Some paper and ink would be nice?"



-----400 years later-----

What's this?" a boy said on the beach. He curiously watched the bottle and started to read the note."



"The Mystery of the Magical Drops..."

Appendices

– All about the shapes of the drops –

The drops come in many different sizes, but the overall shape must be a teardrop like structure. The drop has a tadpole sized head with a long thin tail. The tail is very delicate while the head is strong. The drop is known to have little bubbles that are inside the head. These are from all the compressive forces working together, which makes the head stronger than almost anything.

– How to make the drops –

The drops are made by three things: glass, a fire torch (or a gas torch), and cold water. The first step to make a drop is that you turn on the fire torch and start melting the glass to construct little teardrop shapes. Then, you melt the drop enough so that it drops into the cold water to cool off. The moment it touches the water, you need to listen for a disturbing popping noise because that is the sign of a successful drop.

Multi-coloured drops –

Dispersion is a phenomenon when light spreads it into its base colours. In the case of these drops, they act like a prism and when white light passes through the drop, the light splits and expands into a spectrum of colours. Colours such as red, orange, yellow, green, blue, indigo, and violet. And that is why you can see colours in the drop.

-The shattering mystery of the drops-

The drops have been known to have a mystery of shattering whenever you nick the tail. And that is because the head of the drop has tiny bubbles which give stability and strength. But the tail is so slim that no bubbles are to be seen. The tail can even sometimes just burst on its own without any disturbance to it at all. When the tail shatters into a powder of glass dust, the head goes after it, and it also shatters. That's because the compression in the head snaps itself and it

results in a large amount of glass powder. That glass powder can travel up to 1 meter in distance.

- Breaking Bullets-

When you're melting the molten glass and making it drop into the water, the outside of the drop will immediately solidify and cool down faster than the inside. What that means is that the inner strengths will work together to not break the head. But the inside doesn't stay molten glass, the pressure inside it will squeeze as much as it can and then in that position it will cool down. The drops will be able to even break bullets when shot through a gun. The drop's breaking point would be the non-flexible and ragged edges. There, the drop will shatter from force.

Bibliography

References:

Draycott, J. (2013). Prince Rupert's Drop (2nd ed.). Carcanet Press.

"Prince Rupert of the Rhine," Wikimedia Foundation, 4 July, 2022, 08:29, https://en.wikipedia.org/wiki/Prince Rupert of the Rhine

Purdue University. (2017, May 10). Research solves centuries-old riddle of Prince Rupert's drops.

https://www.purdue.edu/newsroom/releases/2017/Q2/research-solves-centuries-old-riddle-of-prince-ruperts-drops.html

SmarterEveryDay. (2013, Mar23). Mystery of Prince Rupert's Drop at 130,000 fps - Smarter Every Day 86(video. YouTube. Mystery of Prince Rupert's Drop at 130,000 fps - Smarter Every Day 86

SmarterEveryDay. (2016, Dec30). Bullet vs Prince Rupert's Drop at 150,000 fps - SmarterEveryDay 165(video). YouTube.

https://www.youtube.com/watch?v=24q80ReMyq0&t=41s&ab_channel=Smart erEveryDay

TKOR. (2018, Nov26). [Solved] Making Prince Rupert's Drops(video). YouTube.

https://www.youtube.com/watch?v=VJRX3qoE6NM&t=196s&ab_channel=TK OR

Manocha Academy. (2018, Sept18). Dispersion of Light(video). YouTube. https://www.youtube.com/watch?v=ASEdGwpyn58&ab_channel=ManochaAcademy

Acknowledgements:

I would like to thank my teachers Ms. Henry, Ms. Warner, and Ms. Sidaway for reviewing my final copy and for giving meaningful feedback.

Thanks, should also go to my parents for being an absolute help in teaching me the structures and ways to writing specific content in this story. I would also like to thank them for giving applicable feedback during the process of writing and drawing.

Word count: 299 words