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PASSAGE I

The Triangular Snowflake

[1]

Snowflakes form from tiny water droplets, (1) following a specific process of chemical bonding as they freeze, which results in a six-sided figure. The rare "triangular" snowflake, similarly, (2) confounded scientists for years because it apparently defied the basic laws of chemistry. [A] The seemingly triangular shape of those snowflakes suggests that forming (3) through a different process of chemical bonding. [B] By re-creating snowflake formation, a discovery has revealed to scientists Kenneth Libbrecht and Hannah Arnold the cause of this apparent variation. (4)

[2]

Snowflakes begin to form when water in the atmosphere freezes it causes (5) the water molecules to bond into a hexagonal shape. During the flake's descent from Earth's upper atmosphere, other water vapor molecules bumps (6) into the hexagonal structure. Bypassing the liquid water phase, (7) those molecules condense directly onto the established hexagonal pattern. As a result, the flake grows outward into bigger and more complex hexagonal arrangements surrounding the original hexagonal shape at the center of the flake. [C]

[3]

In 2009, Libbrecht and Arnold's experiments revealed that triangular snowflakes begin with the same process of chemical bonding and forms (8) a hexagonal shape. The triangular shape is an illusion resulting from one significant addition to the process (9) dust.

[4]

Triangular snowflakes begin to form when a tiny dust particle or other such impurity collides with the flake as it falls, thereby pushing one edge upward. [D] The downward edge of the snowflake encounters more wind resistance than the rest of the flake. The greater the pressure from the wind, (10) causes bonds to form quick (11) at this edge than in the rest of the snowflake.

[5]

The resulting snowflake has three long sides and three sides that are so short they are difficult to detect. Although these snowflakes appear to have a triangular shape—(12) they actually have a hexagonal pattern. Such snowflakes offer evidence that even when impurities interfere, the basic laws of chemistry still apply. (13)

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PASSAGE II

Climbing Mt. Fuji

[1]

Bundled up in wool sweaters and thick coats, and we watched [16] the sun setting on Mt. Fuji in Japan. It was August and our clothes were stifling, but we would have needed [17] the warmth from our bodies sealed around us as we hiked into the high altitudes. Three friends and I stepped away from the crowd of other hikers and spoke our intention: "Sunset at the base, sunrise at the top." [A]

[2]

As we hiked, a patchwork of clouds swept across the darkening sky, hiding all traces of our surroundings outside our flashlights' beams. The trail gradually changed from compact dirt to a jumble of volcanic rocks. [B] We tried to steady ourselves with our walking sticks but slipped and stumbled because of the jumbled rocks we were slipping on. [18]

[3]

Every thousand feet, we came to a small station constructed of tin and cement, barely able to block the wind. At each one, we noted the roof piled high on [19] fallen rocks and felt both unsettled and reassured by this evidence of the station's protective ability. We rested uneasily for a moment as a clerk burned the station brand into our walking sticks which it was proof of [20] our progress through the darkness.

[4]

As we neared the summit, the whole group of hikers—thinly spread across the mountain for most [21] of the route—condensed, forming [22] an illuminated line along the trail. [C] Our pace slowed. Progressing along the trail, [23] we reached the summit just five minutes before dawn. [D] In the half-light of the rising sun: [24] we began to make out the dark lines of the cliffs' at the crater's [25] edge. We crouched down on jutting pieces of rock and waited for the shifting clouds to clear. We waited for the sun. [26]

[5]

Generally, [27] a sudden gap in the clouds left us blinking as the sunlight squelched out [28] the severe landscape of gray volcanic rock. We leaned against each other, spent. Perhaps there is truth in the old Japanese saying: A wise man climbs Mt. Fuji, but only a fool climbs it twice.

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PASSAGE III

The Pottery of Mata Ortiz

In the early 1950s, a twelve-year-old boy named, Juan Quezada, [31] gathered firewood in the mountains near the village of Mata Ortiz in Chihuahua, Mexico. Though he dreamed of becoming an artist, Quezada spent all of his free time selling firewood to help support his family.

In the mountains, Quezada found shards of pots, and an occasional complete pot, [32] painted with intricate red and black designs. These were artifacts from his ancestors, the Paquimé (or Casas Grandes) Indians, who lived in the area from about AD 1000 to AD 1400. Fascinated by the geometric designs, Quezada wondered, if he could make pots like these? [33]

[34] He dug the clay, soaked it, and tried to shape it into a pot. In time, he figured out how his ancestors had mixed the clay with volcanic ash to keep it from cracking and had used minerals found nearby to create paints. When it was time to paint his pots, Quezada designed his own complex geometric patterns.

As an adult, Quezada found a job with the railroad, but he always made time for his art. By 1976 he was selling pots to travelers and had taught [35] several members of his family how to make pots. Three of Quezada's pots were discovered in a junk shop in New Mexico by anthropologist Spencer MacCallum, who at first thought they were prehistoric. [36]

His search for their creator led him [37] to Mata Ortiz and an eventual [38] partnership with Quezada. MacCallum showed Quezada's pots to art dealers in the United States, the places in which [39] art galleries were soon offering Quezada thousands of dollars for them.

[1] Quezada helped his village with the money he earned selling pottery, but he wanted to do more so. [40] [2] So he taught people from Mata Ortiz to make pots. [3] Today there are more than four hundred potters around, [41] all of which [42] make their pots by hand, following the traditions of the Paquimé Indians. [4] The village is thriving, and many museums proudly display the pottery of Mata Ortiz. [5] Each artist brought something unique to they're [43] creations. [44]

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PASSAGE IV

Beaux Arts Architecture in the Spotlight

On West 45th Street in New York City, wedged between buildings more than twice it's (46) height, stands the Lyceum Theatre. Tourists and New Yorkers alike regularly filling (47) this theater to its 900-seat capacity. Most are there to attend a performance; a few, for example, (48) are likely to be architecture buffs they come to (49) admire the stunning building itself. Built in 1903, the theater exemplifies the Beaux Arts architectural style, which fuses elements of classical Greek and Roman design with Renaissance and Baroque details.

The Beaux Arts revival of classical Greek and Roman architecture is apparent on first view of the theater. The Lyceum's facade—the exterior front, or "face," of the building—features half a dozen Corinthian columns. Above the columns extends a horizontal stone band called a frieze; carved into it are (50) the classical theatrical masks that represent comedy and tragedy. [51]

Demonstrating the Beaux Arts infusion of Renaissance and Baroque details, tall, arched French windows, symmetrically placed between the columns, lighten the imposing gray limestone structure. [A] Above the windows and frieze, an exterior balcony spans the width of the gray (52) building. [B] The balcony is fenced with a balustrade, (53) a stone railing supported by a row of waist-high, vase-shaped pillars. [C] The ornate interior of the building is consistent with its elaborate exterior. [D] Not just one but two marble-finished grand staircases lead from the foyer to the midlevel seating area, called the mezzanine. Inside the theater itself, elegant chandeliers illuminate (54) rose-colored walls that have gold accents. (55) In keeping with sumptuous Beaux Arts style, curved rows of plush purple chairs embrace the stage. [56] [57]

Patrons (58) credit the handsome Beaux Arts aesthetic with adding enhancement to (59) their theatergoing experience. Though smaller and more cramped than many newer theaters—audience members often note that legroom is limited—the Lyceum's distinctive atmosphere continues to delight theater fans as well as architecture enthusiasts.

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PASSAGE V

Mother Jones: True to the Spirit of Her Cause

The autobiography by Mary Harris Jones is riddled with factual inaccurate. [61] Jones even fudges her date of birth, she falsely lists [62] May 1, International Workers' Day, and ages herself by nearly a decade. These untruths—whether deliberate exaggerations or slips of the memory—ultimately matters [63] very little, for [64] the autobiography isn't about the life of Mary Harris Jones. Jones became famous for her work. [65]

When Mary Harris Jones got involved in labor politics in the 1860s, it was rare for a woman to attend, let alone address, union meetings. Jones, however, became one of the movement's most powerful and controversial advocate's. [66] She traveled the United States, from the coal mines of Appalachia to the railroad yards of the West, rallying workers to join unions and fight for better working conditions. Specifically, Jones helped organize efforts to ensure that employers complied with laws governing workday hours and child labor.

The moniker "Mother Jones" was conferred on Jones by members of the American Railway Union. She herself, [67] adopted the name and, subsequently, a corresponding public persona. Her audiences came to expect "Mother Jones." [68] By 1900, the white-haired, calico-frocked figure was no longer known as Mary Harris Jones, [69] the media, union leaders and workers, and even U.S. presidents referred to her as Mother Jones.

Embracing the very role used to confine women to the domestic sphere, Jones subversively redefined the boundaries of home and family. "My address is like my shoes," she said. "It travels with me wherever I go." [70] She was the matriarch who staunchly protected workers. [71]

And protect them she did: [72] When workers went on strike, Jones secured food donations and temporary living arrangements. Where companies prevented the formation of unions, she fought for workers' right to organize. Instead of [73] these tireless efforts on there behalf, [74] workers trusted Mother Jones and, by extension, the labor unions she represented.