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RED

A GEOGRAPHY OF RED

Lara Mehling

An ancient species of beetle in the Glaphyridae family in the Eastern Mediterranean long thought to search out flowers by the smell of rotten flesh—like most other beetle pollinators—actually has photoreceptors that are sensitive to the green and red ranges of the ultraviolet spectrum and clearly prefers the color red.¹ That the *Amphicoma* beetle sees human-red (as opposed to bee-red) serves to its advantage in a landscape turned red by the abundance of red flowers. Or perhaps the flowers have adapted for their own advantage, for by a process of natural selection, several flower species known collectively as the poppy guild all bloom only red in the Negev Desert to ensure pollination.

Or both. This symbiotic relationship began 30 to 40 million years ago, first with the red poppy (*Papaver* spp.) and then the red or Persian buttercup (*Ranunculus asiaticus*) close to the time of the latter genus's first appearance in the Oligocene. In the Near East, this close plant-pollinator interaction is dated to 3.9 million years ago. The close evolutionary relationship between Glaphyridae and red flowers is confounding, even to evolutionary biologists.

The beetle felt at home in the desert's extreme environment: it was immune to its strong winds, ceaseless sun exposure, and fluctuations in temperature. Red flowers flourished in the beetle's domain, especially those with bowl-shaped blossoms that provided the beetle with a private pleasure pavilion in which to reproduce. The multiple nectarless, scentless flower species competed for the pollinator's favor, looking ever more alike: wild tulips (*Tulipa*), crowned anemones (*Adonis*), Persian buttercups (*Ranunculus*), Oriental poppies (*Papaver*), and horned poppies (*Glaucium*). A vibrant red color guaranteed visibility: the hue struck the strongest contrast to the light-colored rocky ground of the desert and the white snow fields of arid mountain slopes at high elevation—both highly reflective of ultraviolet light. Moreover, a black spot at the center—no matter the species—signalled a perfect bullseye for the beetle. In the springtime, the flowers clustered in throngs, spread out over a vast expanse to form a red desert carpet. Instead of diversifying their colors to



A Geography of Red. By juxtaposing geological, biological, and cultural layers of the western Eurasian continent, this map reveals a uniquely red landscape concentrated in modern-day Turkey, Armenia, and Iran. Where natural red soils and fields dominate, humans have long extracted the best red pigments and dyes with which to represent this landscape's beloved fruits and flowers through ceramics, frescoes, and textiles. The Anatolian and Iranian Plateaus as well as the Armenian Highlands, shaped by a series of mountain ranges that bridges the Mediterranean Basin with Central Asia, represent a remarkable concentration of red materials that has been well reflected in regional arts for millennia. Various branches of the Silk Road helped carry these red materials westward to Europe and eastward to China along with skilled gardeners, artisans, and artists.

reduce competition among look-alike blossoms, they eventually agreed to take turns, calibrating their showy display in a choreographed annual sequence: anemones first, then tulips, buttercups, and finally poppies.

By evolution or sheer miracle, this natural phenomenon of a seasonal crimson carpet repeats itself elsewhere in the Near East, from the Mediterranean Basin all the way to the Central Asian steppe and Kopet Dagh mountains. To name a few, vast fields exclusively of anemones bloom on Chios, Greece; tulips on the Mus Plain in Turkey and in the Dasht-e Lale, Iran; peonies near Usak, Turkey; roses in Firuzabad, Iran; crown imperials on the Khansar, Koohrang, and Aligoodarz plains of Iran; and poppies in the Ghazni Valley of Afghanistan and the Damavand fields of Iran. The flowers' ruddy hue is determined by the presence of anthocyanins, natural pigments that reflect a range of red to violet wavelengths depending on acidity (the lower the pH, the redder the pigment). Astonishingly, anthocyanins are associated with a higher tolerance to drought, heat, UV radiation, and even pests and soil infertility, making redder flowers more resistant to aridity and grazing, mirroring the beetle's tough skin. Specialists in weathering harsh climates where few other plant communities thrive, these red flowers are often the first to bloom, heralding spring in the desert as much as on the mountain slope when the first snow-melt waters their ground.

Persian imagery and etymology conjoin fire and flower in everyday

language. An old Persian expression, *bustân-afroz* (literally "inflaming/igniting garden"), seems to aptly describe the scene. The epithet *-afroz* hints at a dimension of time, the process of ignition, of setting the garden or field on figurative fire. Even today, in the early spring, newspaper headlines in Turkey, Iran, and Israel describe a plain as turning or being painted red with the simultaneous bloom of single-species flower meadows. Incidentally, the Persian term *âzard* means to color, paint, or dye, while *âzar* ("flame"),² is used to describe an entire range of flame-colored flowers, from an orange marigold to the bright red anemone (*âzar-gul*, or "fire-flower") and ox-eye (*âzarîn*), to a pink hollyhock and a purple amaranth. The image of a fire's flying sparks captured by the term *sirishk* also translates to a tree or shrub spotted with a flash of red berries or blossoms. Even the word *gul* or *gol*, the Persian name for rose, can be used to describe almost any beloved flower, yet it can also signify embers, the snuff of a candle, a mark made by burning, and a red color.

As another life-giver, the fire's spark is paralleled by a fountain's spraying water drops. The rose is said to have sprung from the beads of Mohammed's sweat. Apollo immortalized the young hero Hyacinthus by making a flower of his blood; Ovid describes the petals as stained with Apollo's tears. A field of tulips was born from the fallen tears of Shirin's rejected lover Ferhad; Hafiz recalls him "Dyeing the desert red with his heart's tears." Red flowers

sprang from the blood of Siyavash in Ferdowsi's epic *Shahnameh*; the crown imperial (*Fritillaria imperialis*), said to have witnessed the prince's death, bowed its head and cried, thus receiving the names *gol ashk* ("flower's tear"), *ashk-e Sivash* ("tear of Siavash"), and *gol-e begeryu* ("crying flower"). In Turkish it is similarly called *aglayan gelin* ("crying bride," likely due to the blossom's resemblance to the draped, red headscarf of traditional bridal gowns) or else *tugu sahi* (shah's tug, referring to the Central Asian spear tipped with a tuft of madder red-dyed ox or horse hair), in addition to the more common name *ters lal'e* ("reverse or inverted tulip" for its resemblance to red tulips and its weeping form). It is not difficult to imagine how the symbolism held by a single drop of moisture in the desert may be expressed by the miraculous appearance of a bright red flower. It took, both figuratively and literally, blood, sweat, and tears to make anything grow.

Nomadic tribes inhabiting Central and West Asia were quick to notice

the deserts and mountain slopes turn red. These red meadows and plains became the most popular destinations for annual hunting trips, summer pastures for horse-riding tribes, the favorite summer retreats of royalty—khans, shahs, sultans—who set up camp: cloth fence enclosures transformed these red meadows into temporary gardens, floral carpets at the foot of the domed royal tent of an equally red color. Poets likened these floral carpets to the celestial sphere, flowers to stars, a field of closed buds to one of tents.³ And it wasn't long until the semi-nomadic and more sedentary Timurids and Persians formalized these temporary garden enclosures with stone walls or else built fortified copies closer to the cities on the plains. In the carefully curated climate of suburban walled gardens, the favorite red wildflowers were collected and cultivated in the shade of evergreen trees. In more urban settings, they were planted as contained fields, resembling patches of the mountain slope transposed into palace courtyards.

This research is related to the author's dissertation tracing the migration of flowers and floral motifs from the Central Asian steppe to Northern Europe from the medieval to the early modern period. I would like to thank Grga Basic for preparing the hillshade basemap.

1 This fascinating discovery was first published in Amots Dafni, P. Bernhardt, and Avi Shmida et al. "Red Bowl-Shaped Flowers: Convergence for

Beetle Pollination in the Mediterranean Region," *Israel Journal of Botany* 39 (January 1990), 81–92.

2 *Ázar* was perhaps initially used to describe a fire temple such as the ancient *Ázar-âbâd* ("place of fire") at Tabriz.

3 The poetic inscription by the thirteenth-century Persian poet Zahir-al-Din Faryabi on the mid-sixteenth century Emperor's Carpet (Collections of the Metropolitan Museum of Art, Inv.-No. 43.121.1).