Reading Comprehension Passage A

I received one morning a letter, written in pale ink on glassy, blue-lined note-paper, and bearing the postmark of a little Nebraska village. This communication, worn and rubbed, looking as if it had been carried for some days in a coat pocket that was none too clean, was from my uncle Howard, and informed me that his wife had been left a small legacy by a bachelor relative, and that it would be necessary for her to go to Boston to attend to the settling of the estate. He requested me to meet her at the station and render her whatever services might be necessary. On examining the date indicated as that of her arrival, I found it to be no later than tomorrow. He had characteristically delayed writing until, had I been away from home for a day, I must have missed my aunt altogether. …

Whatever shock Mrs. Springer [the landlady] experienced at my aunt's appearance, she considerately concealed. As for myself, I saw my aunt's battered figure with that feeling of awe and respect with which we behold explorers who have left their ears and fingers north of Franz-Joseph-Land,[1] or their health somewhere along the Upper Congo. My Aunt Georgiana had been a music teacher at the Boston Conservatory, somewhere back in the latter sixties [1860s]. One summer, while visiting in the little village among the Green Mountains where her ancestors had dwelt for generations, she had kindled the callow[2] fancy of my uncle, Howard Carpenter, then an idle, shiftless boy of twenty-one. When she returned to her duties in Boston, Howard followed her, and the upshot of this infatuation was that she eloped with him, eluding the reproaches of her family and the criticism of her friends by going with him to the Nebraska frontier. Carpenter, who, of course, had no money, took up a homestead in Red Willow County, fifty miles from the railroad. There they had measured off their land themselves, driving across the prairie in a wagon, to the wheel of which they had tied a red cotton handkerchief, and counting its revolutions. They built a dug-out in the red hillside, one of those cave dwellings whose inmates so often reverted to primitive conditions. Their water they got from the lagoons where the buffalo drank, and their slender stock of provisions was always at the mercy of bands of roving Indians. For thirty years my aunt had not been farther than fifty miles from the homestead.

I owed to this woman most of the good that ever came my way in my boyhood, and had a reverential[3] affection for her. During the years when I was riding herd for my uncle, my aunt, after cooking the three meals — the first of which was ready at six o'clock in the morning — and putting the six children to bed, would often stand until midnight at her ironing-board, with me at the kitchen table beside her, hearing me recite Latin declensions and conjugations, gently shaking me when my drowsy head sank down over a page of irregular verbs. It was to her, at her ironing or mending, that I read my first Shakspere, and her old text-book on mythology was the first that ever came into my empty hands. She taught me my scales and exercises on the little parlour organ which her husband had bought her after fifteen years during which she had not so much as seen a musical

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[1] Franz-Joseph-Land — Russian archipelago of 191 islands in the Arctic Ocean

[2] callow — naive

[3] reverential — with great honor and respect

instrument. She would sit beside me by the hour, darning and counting, while I struggled with the "Joyous Farmer." She seldom talked to me about music, and I understood why. Once when I had been doggedly beating out some easy passages from an old score of *Euryanthe* I had found among her music books, she came up to me and, putting her hands over my eyes, gently drew my head back upon her shoulder, saying tremulously, "Don't love it so well, Clark, or it may be taken from you."…

At two o'clock the Symphony Orchestra was to give a Wagner program, and I intended to take my aunt; though, as I conversed with her, I grew doubtful about her enjoyment of it. I suggested our visiting the Conservatory and the Common before lunch, but she seemed altogether too timid to wish to venture out. She questioned me absently about various changes in the city, but she was chiefly concerned that she had forgotten to leave instructions about feeding half-skimmed milk to a certain weakling calf, "old Maggie's calf, you know, Clark," she explained, evidently having forgotten how long I had been away. She was further troubled because she had neglected to tell her daughter about the freshly-opened kit of mackerel[4] in the cellar, which would spoil if it were not used directly. …

The first number [of the concert] was the *Tannhauser*[5] overture. When the horns drew out the first strain of the Pilgrim's chorus, Aunt Georgiana clutched my coat sleeve. Then it was I first realized that for her this broke a silence of thirty years. With the battle between the two motives,[6] with the frenzy of the Venusberg theme and its ripping of strings, there came to me an overwhelming sense of the waste and wear we are so powerless to combat; and I saw again the tall, naked house on the prairie, black and grim as a wooden fortress; the black pond where I had learned to swim, its margin pitted with sun-dried cattle tracks; the rain gullied clay banks about the naked house, the four dwarf ash seedlings where the dish-cloths were always hung to dry before the kitchen door. The world there was the flat world of the ancients; to the east, a cornfield that stretched to daybreak; to the west, a corral that reached to sunset; between, the conquests of peace, dearer-bought than those of war. …

Her lip quivered and she hastily put her handkerchief up to her mouth. From behind it she murmured, "And you have been hearing this ever since you left me, Clark?" Her question was the gentlest and saddest of reproaches. …

The deluge of sound poured on and on; I never knew what she found in the shining current of it; I never knew how far it bore her, or past what happy islands. From the trembling of her face I could well believe that before the last number she had been carried out where the myriad graves are, into the grey, nameless burying grounds of the sea; or into some world of death vaster yet, where, from the beginning of the world, hope has lain down with hope and dream with dream and, renouncing, slept. …

I spoke to my aunt. She burst into tears and sobbed pleadingly. "I don't want to go, Clark, I don't want to go!"

I understood. For her, just outside the concert hall, lay the black pond with the cattle-tracked bluffs; the tall, unpainted house, with weather-curled boards, naked as a tower; the crook-backed ash seedlings where the dish-cloths hung to dry; the gaunt, moulting turkeys picking up refuse about the kitchen door.

—Willa Cather
excerpted and adapted from "A Wagner Matinée"
Youth and the Bright Medusa, April 1920

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[4] kit of mackerel — container of fish

[5] *Tannhauser* — an opera by Richard Wagner

[6] motives — recurrent musical phrases

Reading Comprehension Passage B

Mi Historia[1]

My red pickup choked on burnt oil
as I drove down Highway 99.[2]
In wind-tattered garbage bags
I had packed my whole life:
two pairs of jeans, a few T-shirts,
and a pair of work boots.
My truck needed work, and through
the blue smoke rising from under the hood,
I saw almond orchards, plums,
the raisins spread out on paper trays,
and acres of Mendota cotton my mother picked as a child.

My mother crawled through the furrows
and plucked cotton balls that filled
the burlap sack she dragged,
shoulder-slung, through dried-up bolls,
husks, weevils, dirt clods,
and dust that filled the air with thirst.
But when she grew tired,
she slept on her mother's burlap,
stuffed thick as a mattress,
and Grandma dragged her over the land
where time was told by the setting sun.…

History cried out to me from the earth,
in the scream of starling flight,
and pounded at the hulls of seeds to be set free.
History licked the asphalt with rubber,
sighed in the windows of abandoned barns,
slumped in the wind-blasted palms,
groaned in the heat, and whispered its soft curses.
I wanted my own history—not the earth's,
nor the history of blood, nor of memory,
and not the job found for me at Galdini Sausage.
I sought my own—a new bruise to throb hard
as the asphalt that pounded the chassis of my truck.

—David Dominguez
from *Work Done Right*, 2003
The University of Arizona Press

[1] Mi Historia — Spanish for "my history"

[2] Highway 99 — the highway that runs through California's fertile Central Valley where generations of farmworkers have settled and been employed

Reading Comprehension Passage C

In 1973, a book claiming that plants were sentient[1] beings that feel emotions, prefer classical music to rock and roll, and can respond to the unspoken thoughts of humans hundreds of miles away landed on the New York *Times* best-seller list for nonfiction. "The Secret Life of Plants," by Peter Tompkins and Christopher Bird, presented a beguiling mashup of legitimate plant science, quack experiments, and mystical nature worship that captured the public imagination at a time when New Age thinking was seeping into the mainstream. The most memorable passages described the experiments of a former C.I.A. polygraph expert named Cleve Backster, who, in 1966, on a whim, hooked up a galvanometer to the leaf of a dracaena, a houseplant that he kept in his office. To his astonishment, Backster found that simply by imagining the dracaena being set on fire he could make it rouse the needle of the polygraph machine, registering a surge of electrical activity suggesting that the plant felt stress. "Could the plant have been reading his mind?" the authors ask. "Backster felt like running into the street and shouting to the world, 'Plants can think!' " …

In the ensuing years, several legitimate plant scientists tried to reproduce the "Backster effect" without success. Much of the science in "The Secret Life of Plants" has been discredited. But the book had made its mark on the culture. Americans began talking to their plants and playing Mozart for them, and no doubt many still do. This might seem harmless enough; there will probably always be a strain of romanticism running through our thinking about plants. (Luther Burbank and George Washington Carver both reputedly talked to, and listened to, the plants they did such brilliant work with.) But in the view of many plant scientists "The Secret Life of Plants" has done lasting damage to their field. According to Daniel Chamovitz, an Israeli biologist who is the author of the recent book "What a Plant Knows," Tompkins and Bird "stymied[2] important research on plant behavior as scientists became wary[3] of any studies that hinted at parallels between animal senses and plant senses." Others contend that "The Secret Life of Plants" led to "self-censorship" among researchers seeking to explore the "possible homologies[4] between neurobiology[5] and phytobiology"[6]; that is, the possibility that plants are much more intelligent and much more like us than most people think—capable of cognition,[7] communication, information processing, computation, learning and memory. …

Indeed, many of the most impressive capabilities of plants can be traced to their unique existential[8] predicament as beings rooted to the ground and therefore unable to pick up and move when they need something or when conditions turn unfavorable. The "sessile life style," as plant biologists term it, calls for an extensive and nuanced understanding of one's immediate environment, since the plant has to find everything it needs, and has to defend itself, while remaining fixed in place. A highly developed sensory apparatus is required to locate food and identify threats. Plants have evolved between fifteen and twenty distinct senses, including analogues of our five: smell and taste (they sense and respond to chemicals in the air or on their bodies); sight (they react differently to various wavelengths of light as well as to shadow); touch (a vine or a root "knows" when it encounters a solid object); and, it has been discovered, sound. In a recent experiment, Heidi Appel, a chemical ecologist at the University of Missouri, found that, when she played a recording of

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[1] sentient — conscious

[2] stymied — prevented

[3] wary — cautious

[4] homologies — similarities

[5] neurobiology — the study of the nervous system

[6] phytobiology — the study of plants

[7] cognition — understanding

[8] existential — relating to existence

a caterpillar chomping a leaf for a plant that hadn't been touched, the sound primed the plant's genetic machinery to produce defense chemicals. Another experiment, done in Mancuso's[9] lab and not yet published, found that plant roots would seek out a buried pipe through which water was flowing even if the exterior of the pipe was dry, which suggested that plants somehow "hear" the sound of flowing water. …

Scientists have since found that the tips of the plant roots, in addition to sensing gravity, moisture, light, pressure, and hardness, can also sense volume, nitrogen, phosphorus, salt, various toxins, microbes, and chemical signals from neighboring plants. Roots about to encounter an impenetrable obstacle or a toxic substance change course before they make contact with it. Roots can tell whether nearby roots are self or other and, if other, kin or stranger. Normally, plants compete for root space with strangers, but, when researchers put four closely related Great Lakes sea-rocket plants (*Cakile edentula*) in the same pot, the plants restrained their usual competitive behaviors and shared resources.

Somehow, a plant gathers and integrates all this information about its environment, and then "decides"—some scientists deploy the quotation marks, indicating metaphor at work; others drop them—in precisely what direction to deploy its roots or its leaves. Once the definition of "behavior" expands to include such things as a shift in the trajectory[10] of a root, a reallocation of resources, or the emission of a powerful chemical, plants begin to look like much more active agents, responding to environmental cues in ways more subtle or adaptive than the word "instinct" would suggest. "Plants perceive competitors and grow away from them," Rick Karban, a plant ecologist at U.C. Davis, explained, when I asked him for an example of plant decision-making. "They are more leery of actual vegetation than they are of inanimate objects, and they respond to potential competitors before actually being shaded by them." These are sophisticated behaviors, but, like most plant behaviors, to an animal they're either invisible or really, really slow.

The sessile life style also helps account for plants' extraordinary gift for biochemistry, which far exceeds that of animals and, arguably, of human chemists. (Many drugs, from aspirin to opiates, derive from compounds designed by plants.) Unable to run away, plants deploy a complex molecular vocabulary to signal distress, deter or poison enemies, and recruit animals to perform various services for them. A recent study in *Science* found that the caffeine produced by many plants may function not only as a defense chemical, as had previously been thought, but in some cases as a psychoactive drug in their nectar. The caffeine encourages bees to remember a particular plant and return to it, making them more faithful and effective pollinators.

One of the most productive areas of plant research in recent years has been plant signalling. Since the early nineteen-eighties, it has been known that when a plant's leaves are infected or chewed by insects they emit volatile chemicals that signal other leaves to mount a defense. Sometimes this warning signal contains information about the identity of the insect, gleaned from the taste of its saliva. Depending on the plant and the attacker, the defense might involve altering the leaf's flavor or texture, or producing toxins or other compounds that render the plant's flesh less digestible to herbivores. When antelopes browse acacia trees, the leaves produce tannins that make them unappetizing and difficult to digest. When food is scarce and acacias are overbrowsed, it has been reported, the trees produce sufficient amounts of toxin to kill the animals. …

All species face the same existential challenges—obtaining food, defending themselves, reproducing—but under wildly varying circumstances, and so they have evolved wildly

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[9]Mancuso — Stefano Mancuso, Italian plant physiologist

[10]trajectory — a path