Southern Exposure

A garden is like the self. It has so many layers and winding paths, real or imagined, that it can never be known, completely, even by the most intimate of friends.

— Deep in the Green, Anne Raver

The eight-hundred-year-old pages rustle as you leaf through the Bible. They are made of vellum, more fine-textured than parchment because it is made from the stretched skin of young animals — calf, lamb, or kid — rather than from cow, sheep, or goat skin. The Bible’s pages are dark at the edges, translucent when held to the light. They are smooth and almost white on what was the flesh side, suedelike on the reverse. The distinction is subtle but definite; the hair side tickles your fingers when you run a hand over it.

Like all twelfth-century books, this one is handwritten, in tiny, rounded calligraphy. The scribe began by making pinholes along the side of the page, then using graphite to delineate his margins and draw his lines. He began each page with red and blue filigree to highlight the first few letters of the first word. Corrections appear in the margins; like a teacher’s markings on a child’s composition book, they are outlined in red.

When the scribe finished his work, he would sign off with a colophon, a distinctive signature that might include a prayer of thanksgiving — or an expression of huge relief. Many medieval
manuscripts ended with the scribe's complaints about the length of the book and a prayer for either eternal life, a jug of good wine, or the company of a pretty girl.

St. Augustine loved books like these. "If you pray," he once wrote, "you are talking to God; if you read, God is talking to you." Later, such books were required to be collected in the monasteries run by the order established in his name. Augustinian monasteries eventually became among the most significant repositories, after universities, of the knowledge contained in the written word.

The monks of Altbrunn took this mandate seriously. Their collection numbered 20,000 books, and they made sure the library was the most gorgeous room in the monastery. As St. Augustine had hoped, the library's very existence was a source of great comfort to men like Gregor Mendel, men who loved nothing more than to open a book and lose themselves in the cadences of great scholars, philosophers, and men of science. Here some of the monks, the ones with an intellectual rather than a devotional bent, were best able to hear God talking.

When Mendel came to the library, he would be dressed in his ordinary monastic attire: an ankle-length black soutane belted at the waist, with long, wide sleeves and a circular overgarment that fell, biblike, in a huge arc hanging to his belt, both front and back. The overgarment, an irksome extra bit of cloth, flapped up into Mendel's face at the slightest breeze. But the rest of the vestments were comfortable and kept the monks as warm as was possible in the drafty halls of their medieval living quarters.

Entering from the hallway, Mendel would pause at the steps leading up to the library to take off his black shoes, which more than likely were caked with mud trampled in from the garden. He reached into one of the cubbyholes stuffed with woolen slippers and put on a pair, as everyone was asked to do to protect the polished parquet library floors. Unlike the wide gray stones that paved
the corridors or the tiny tiles in the refectory, the library’s floor was a luscious wood that matched the elegance of the room. Hardwood bookshelves, their backs painted a vibrant blue, lined three sides of the enormous space. The fourth wall was composed entirely of five tall arched windows overlooking the courtyard, including views of the orchard, the glasshouse, and the brewery across the way.

This elegant room was not where Mendel and his fellow monks read their books. It was not even where most of the books were stored. All the books in this section of the library — and there were hundreds, maybe thousands — were for show, as was the room itself. Receptions were held here, and small dances, a grand piano in one corner of the room always available for musical counterpoint. But reading, study, contemplation? Straining to hear the very voice of God? Never.

To get to the true heart of the library, Mendel went to the southeast corner of the main room, to a bookcase with the same finely worked marquetry as all the others but with two shelves that were, curiously, empty. The half-empty bookcase rested on hinges, as did the cabinet below, and both swung out into the room to reveal a small doorway and five rough wooden steps. Mendel ducked his head — he did not have far to duck, for he was not a tall man — and walked down the steps. This put him in the first of four study rooms on the other side of the wall.

Here were the standing desks where Mendel and his more scholarly brethren did much of their work; over there, the old pine bookcases that held the less ornate reader’s copies of the books in the collection. Catalogues helped the monks find what they needed; easy chairs were scattered about for them to occupy on languid, literate afternoons. The wall of windows continued in this secret sanctuary, running the full length of the library wing almost to the southern boundary of the monastery grounds.

There is a story, circulated long after Mendel died, that the monks at work in the library used to lean out the window and call
to Mendel as he moved up and down his rows of experimental plants. Before the existence of this secret sanctuary became widely known, the assumption had been that the story referred to the windows in the formal reception room. But that was at the north end of the library wing. From the study rooms, where at least twice as many windows overlooked the courtyard to its southernmost tip, the monks would have been calling out toward a different spot altogether.

“What will it be for dinner tonight, Gregor?” they might have shouted down to Mendel, weeding between rows of carrots and cucumbers in the kitchen garden. “No peas tonight,” he might have yelled back with a smile. “I’m saving them for something much more important than eating.” His fellow brethren might have been surprised to hear Mendel admit that there was something more important to him than eating.

Why would it matter which windows they called from? Because the location of the windows helps us determine the location of the garden itself. And knowing where his garden was helps us know better how to judge the quiet monk. The solution to this old, and only recently solved, mystery has helped us discern the real Mendel from the Mendel trapped in myth. The solution resolved an apparent inconsistency in the monk’s careful numbers that for many years made him seem less like an unappreciated genius than a liar.

Here is how the puzzle unfolded. If the monks were calling from the windows of the formal library, Mendel’s garden would have been just below, in a narrow, fenced-in plot running along the library wing and separated from the more public sections of the courtyard by a long path, a fence, and a hedge. This is the garden shown in photographs, the garden that was analyzed and reanalyzed by generations of botanists, geneticists, and historians trying to figure out how Mendel could have done what he said he
did in such a constrained space. This is also the garden that officials at the Mendel Museum, housed in the former refectory, still label as the site of Mendel’s research.

But this plot was never big enough or sunny enough to have accommodated all of Mendel’s experiments. It would have been too shady for peas; the strip of land was darkened by the shadow cast by the library wing itself during most of the morning hours. And it was so small and oddly shaped — sixty paces long by only twelve wide — that it is hard to imagine how, even when he had the added space of a greenhouse, Mendel could possibly have grown all the plants he said he grew.

Another part of the courtyard served nicely, however — a larger, sunnier, more versatile plot on the southern side near the service entrance gate. With its southern exposure, this plot was not in the shadow of any building until late in the afternoon. And its location fits better with the story of the brethren calling to Mendel from the library windows. They spent their time in the study rooms, not in the formal library, so they easily could have hailed their friend from there. And in order to hear them, he had to be working near the courtyard gate and not far from the greenhouse that was soon to be built.

The conventional wisdom about the location of Mendel’s garden provided fuel for second-guessing his experiments through much of the late twentieth century. Because the garden near the monastery wall was too small for experiments on the scale he described, did he lie about how much crossbreeding he really did? And, if so, what else did he lie about? Because of the innuendo about whether the quiet priest fudged his data — rumors that persist, still without foundation, to this day — it was important to establish the exact location of his garden. The current thinking is that this bigger, brighter spot near the greenhouse, and not the one in all the photographs, was Mendel’s plot — a location that allowed
him to grow his peas for years and years, unconstrained by space limitations or by the early disappearance of the sun.

The smaller garden alongside the monastery, though it might not be where he grew his peas, nonetheless held a special meaning for Mendel. Here he whiled away many hours during his first years at the monastery with Matouš Klácel (pronounced klah-tzell), a friar fourteen years his senior who would remain Mendel’s closest friend for the rest of their lives. Klácel was a well-known philosopher and student of natural science. He had been in charge of the monastery’s experimental garden since 1843 — the year Mendel arrived and the year the garden’s previous custodian, Aurelius Thaler (last seen stumbling home drunk into Abbot Napp’s an-
gry arms), unexpectedly died. During the 1840s and 1850s Klácel grew alpine plants in this narrow strip of earth. He had transplanted them from the mountains of Moravia to the Brünn lowlands to test whether changes in the environment led to permanent changes in the plants themselves. He observed no changes. With this demonstration, Klácel helped repudiate the belief, common among biologists at the time, that plants and animals can metamorphose and pass on their new traits to their offspring in response to changes in living conditions.

Klácel was no doubt a radicalizing influence on his impressionable young friend. By the time Mendel met him in 1843, Klácel was in many ways a beaten man. Within a few years he would be relieved of his teaching duties as a philosophy professor in Brünn because of his writings in defense of Naturphilosophie, a German philosophy that combined evolutionary thought, a belief in purposeful activity in nature, and a view that the material world was a projection of a deeper spiritual reality. Among the most prominent German adherents of Naturphilosophie, which originated with the thinkers F. W. J. von Schelling and Lorenz Oken, were the poet Johann Wolfgang von Goethe and the philosopher G. W. F. Hegel.

Klácel’s dismissal, in 1847, marked a low point in his confrontations with Church and government officials, who continually harassed him for his antimaterialist philosophy. That year Klácel wrote a three-part essay called “The Philosophy of Rational Good,” which he submitted to the censors in Vienna, as required, before trying to publish it. But the censors, accountable as they were to the German-speaking Prince Metternich, concluded that the essay contained “harmful sentences”—no doubt the ones conveying Klácel’s arguments in favor of Czech nationalism. He had used the Naturphilosophie view of evolution as an analogy to social evolution, applying a gardening image with his comment that “every age has much that is transient, which the dialectic sifts and polishes, until its kernel is revealed.” In this way, Klácel implied, the “kernel”
of the small Czech nation was likely to emerge from within the husk of German domination, and democracy was likely to emerge from feudalism—as long as Czech language and culture could germinate by being taught in the schools. These ideas were tantamount to revolution in the Hapsburg Empire, where the German-speaking minority was afraid of losing its grip on its feudal subjects.

A year later, in March 1848—a year when revolutionary fervor was percolating through much of Europe, including Austria—Prince Metternich’s government was indeed driven out. Klácel then took his ideas a step further, with such zeal that his friend Mendel went along with him, despite having few apparent political convictions of his own. Klácel drafted a radical petition stating that the priests of Moravia, isolated in their monastic lives, had been stripped of their civil rights and forced to live under conditions “representing the nadir of degradation.” Chief among the petition’s demands was the return to the priests of the full rights and privileges of citizenship, including the right to teach in the public forum. Seven priests altogether—including Klácel and Mendel—signed the petition, only to see it ignored and forgotten a few months later, when the emerging democracy’s fledgling parliament was disbanded.

As political unrest roiled the continent, Mendel’s life was undergoing a transformation, too. But in the end his sea change had nothing to do with the petition he signed, nor with political struggles at all. This was a purely personal, and humiliating, turning point for Mendel. As had happened many times before and would happen yet again, he arrived at this crossroads almost by accident, having traveled awhile in a particular direction mostly because a mentor had urged him to. And, as with the other crossroads, this one led him straight into a roadblock.

This time the roadblock concerned Mendel’s inability to do the
most basic work that priests were required to do. After five happy years at St. Thomas, Mendel was ordained and, too late, showed himself to be just about as unsuited for pastoral work as he had been for farming. In August 1848 he came down with a grave and mysterious illness. Its origin proved to be both surprising and, for Mendel, enormously embarrassing.

Mendel had been rushed through the steps of novice, subdeacon, deacon, and priest more rapidly than was customary — not necessarily because he showed any special talent for the job, although he might have, but because the monastery was running low on priests. Three young monks had died in 1847 alone, falling victim to whatever infectious diseases were killing the patients at St. Anne’s Hospital, a short walk uphill along the winding Bäckergasse, where the monks had been asked to administer last rites.

So Mendel was ordained on August 6, 1847, just fifteen days after he turned twenty-five, the minimum age for a priest. He spent the next year completing his theological studies, and in August 1848 assumed some of the chores of a parish priest, ministering to the sick, the dying, the impoverished, the infirm. By early the following year, it had all proved too much for him. Mendel took to his bed once again — and did not rise for more than a month. Unlike his fellow priests, however, he had not caught one of the infections of his parishioners. No, his disease was emotional — though it was as real as if he had contracted tuberculosis or typhoid fever.

Lying in bed in the first weeks of 1849, suffering both physically and spiritually, Mendel was rescued once again, this time by his ever-indulgent abbot. Napp could plainly see that Mendel would make a terrible priest. Perhaps, he thought, the young man should try teaching instead.

“He is very diligent in the study of the sciences,” the abbot wrote in mid-1849 to Bishop Schaffgotsch, but “much less fitted for work as a parish priest, the reason being that he is seized by an uncon-
querable timidity when he has to visit a sick-bed or to see any one ill or in pain. Indeed, this infirmity of his has made him dangerously ill."

Schaffgotsch was not especially inclined to do Mendel any favors. Even though this was years before their confrontation over Mendel’s experimental mice, the bishop found the younger man’s waggish sense of humor not the least bit funny. During his novitiate days, Mendel had muttered to a fellow monk in what he thought was a whisper that the closed-minded bishop was obviously possessed of “more fat than understanding.” Schaffgotsch never forgot the sting of overhearing that comment — especially coming from a rotund fellow like Mendel.

But Napp insisted that the young priest be given dispensation to teach, for this was the only way to guarantee Mendel a life he could tolerate. The timing was propitious: there was, after all, an edict from the Austrian authorities requiring local clerics to give something back to the communities in which they lived, and teaching in the secular schools was considered one of the best ways to do this. So Schaffgotsch finally relented, agreeing to send young Mendel to the ancient town of Znaim (called Znojmo in Czech) in southern Moravia to try his hand at teaching in the Gymnasium.

In the fall term of 1849 the twenty-seven-year-old Mendel taught elementary mathematics and Greek to the boys in the third and fourth forms. He was judged by his fellow teachers to have “a vivid and lucid method of teaching,” employing “zeal and tenacity,” despite his inexperience and lack of formal training. And according to the police reports that monitored just about everyone’s comings and goings in those revolutionary days, Mendel comported himself in a manner entirely appropriate to a man of the cloth. Yes, he went to the theater six times during his year in Znaim, “but always in the society of one of his colleagues.”

In a closely controlled police state where everyone was accountable to the authorities, Mendel still managed to study and teach the
natural sciences, propelled by sincere and innocent curiosity and by a love of both knowledge and the natural world. But natural scientists, if they are intellectually honest, often find themselves taking heretical positions on matters of creation and procreation, positions that challenge the very underpinnings of the Catholic Church. The issues that concerned Mendel, such as reproduction, heredity, and the continuity and discontinuity of all forms of life, would prove to be the fulcrum for the most impassioned debate of the nineteenth century: the debate over evolution. In the middle of the century, before Charles Darwin’s revolutionary book was published, the controversy tended to focus on the one issue that represented the two competing halves of Mendel’s own existence: the inevitable animosity between science and God.