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A WRIGHT STORY
MATH, SCIENCE, AND AESTHETICS

Wisconsin Academy Review

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Maginel Wright Barney

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From a series of book illustrations, circa 1913, by Maginel Wright (Enright) Barney. Courtesy Frank Lloyd Wright Foundation.

Cover: *The Harvest* (detail) by Maginel Wright Barney. Longue point embroidery. Courtesy Frank Lloyd Wright Home and Studio Foundation (1989.50.1.28).

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Editor's Notes

Throughout history there has been a tendency for gifted brothers to overshadow talented sisters. Obvious examples are Nannerl Mozart, Camille Claudel, and Fanny Mendelssohn. William Wordsworth maintained that his sister, Dorothy, was his true inspiration ("She gave me eyes . . ."). Closer to home, world-renowned photographer Edward Steichen believed his sister, Lilian, was the real genius in the family.

Frank Lloyd Wright's younger sister, Maginel, contributed significantly to the arts during her long life. She spent part of her growing-up years in Wisconsin, and her close relationship with Frank and the Lloyd Jones aunts, uncles, and cousins brought her back often to the beloved Wyoming Valley where her family has left its mark.

Maginel's art was featured on the covers of magazines for more than twenty years, and she illustrated popular versions of *Heidi* and *Hans Brinker*. She was also successful as a commercial artist and designer. Few people that I have spoken with, however, know about her or even recognize her name.

There is much to be said about Maginel's remarkable life and that of her daughter, Elizabeth Enright, who received the Newbery Award for her children's book, *Thimble Summer*. Mary Jane Hamilton has spent years studying the talents and contributions of the Wright family, and in this issue she gives us an introductory profile of Maginel. Also, we take this opportunity to salute the memory of Frank Lloyd Wright on the 125th anniversary of his birth.

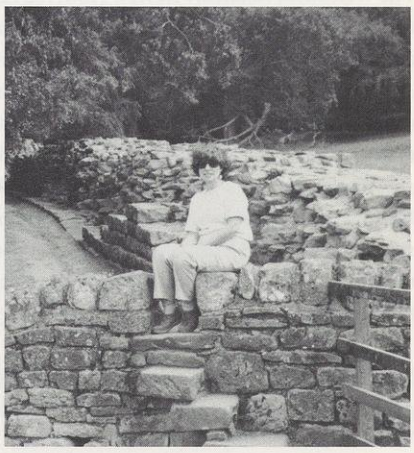
It is interesting to see responses to surveys and other suggestions come in to the Academy with regard to programs, publications, and the content of the *Review*: scientists prefer more science, poets want more poetry, most people appreciate history. In general readers are glad to see Wisconsin art given prominence. There are interesting times, however, when I speak to a scientist about possibly doing a science article for us, and the person will ask instead if we might look at some of his or her poetry. Or I will find that art we wish to use is in fact the work of a scientist. These encounters are always refreshing and seem especially appropriate for an organization such as the Academy, where "the sciences, arts and letters converge."

It is in this spirit that we offer the thoughts of a mathematician, a science historian, and a computer programmer concerning the relationships between the sciences and aesthetics. This is not an attempt to convert anyone; we are what we are and we do as we please. Leonardo moved freely between science and art; Lewis Thomas, Rachael Carson, and Loren Eiseley have crossed comfortably from science to prose and back again; Boris Pasternak abandoned a career in music for poetry, while Einstein regularly turned from his equations to the piano for relaxation. It is part of the wonderful, fluid nature of human beings to do so.

We welcome back two fine fiction writers to the *Review*, one contributing an excerpt from a new novel, the other permitting us to publish a short story. It does not always work to pluck a chapter from a larger work and present it out of context. The pace of a novel is very different from that of a short story. In this instance, however, we feel the chapter from Ellen Hunnicutt's forthcoming novel is successful on its own. For the short fiction department, Jocelyn Riley has taken a common task and developed it into an exercise in contemplation and remembrance.

In *The Failures of Criticism* (Cornell, 1967), Henri Peyre states, "George Santayana has written with greater charm than any other philosopher on individual literary artists, and some of his views on art are among the most subtle ever proposed in the English language," but then goes on to say, "He did not attempt to pass judgment on his contemporaries." Well, perhaps not formally. But he did write letters and in fact made some observations about Madison and the university in correspondence with friends. The letters still exist, and they provide the basis for an article on Santayana and Wisconsin.

In England there is a long-standing ruling with roots in an ancient civil law that says people should have free access to the countryside. It was promoted during the nineteenth century by the Commons, Open Spaces and Footpaths Preservation Society and remains strongly intact today. Among my fondest memories of England is the freedom to amble and ramble, and it was in England that I encountered my first stile. But author Bob Hillebrand remembers a time in rural Wisconsin when the stile softened the intent of fences, and he invites us all to reminisce with him.



The editor resting on a stone stile in the north of England.

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Education in the 90s: Nurturing Change

The Wisconsin Academy of Sciences, Arts, and Letters was chartered by the state legislature on March 16, 1870, as an incorporated society serving the people of Wisconsin by encouraging investigation and dissemination of knowledge in the sciences, arts, and humanities.

CONTRIBUTORS

- David Graham is an assistant professor of English at Ripon College. He has published four collections of poetry, and individual poems, essays and other prose have appeared in such publications as *American Poetry Review, Georgia Review, Ironwood, New England Review,* and *Prairie Schooner*. He is a member of the *Review* editorial committee. His recent collection, *Second Wind,* was published by Texas Tech University Press.
- Mary Jane Hamilton has pursued research on Frank Lloyd Wright and his Lloyd Jones and Wright forbears for more than twenty years. She was the curator of the Elvehjem Museum's *Frank Lloyd Wright and Madison* exhibition in 1988 and a major contributor to the related scholarly book of the same title. She has prepared three Wright exhibitions for presentation in Madison in 1992 (including one for the Wisconsin Academy in September). In addition, she has a grant from the Graham Foundation in Chicago to do research on an obscure sculptor, Albert Van den Berghen, who did some work for Wright.
- Robert Hillebrand taught English at Waukesha County Technical College for more than twenty-four years. His poems, short stories, and nonfiction have appeared in numerous publications, including *The Milwaukee Journal*. He lives in Oconomowoc, where he writes, gardens, and searches for the lost stile.
- Ellen Hunnicutt is a writer and music teacher in Big Bend. Her novel *Suite for Calliope* received the Banta Award from the Wisconsin Library Association and her short story collection, *In The Music Library,* won the Drue Heinz Literature Prize (selected by Nadine Gordimer) in 1987. The chapter presented in this issue of the *Review* is from her forthcoming novel, *The Clearing*.
- Steven Vincent Johnson is a computer programmer/analyst for the Wisconsin Department of Revenue and a free-lance artist. His illustrations have appeared in works by such authors as Arthur C. Clark and Jack Vance. In the 1980s he worked on the Wisconsin Ultraviolet Photopolarimeter Experiment, an astronomical package that recently flew in a space shuttle mission. He holds a degree in art from the University of Wisconsin-Madison.
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- Joye Moon holds a bachelor of fine arts degree from the University of Wisconsin-Oshkosh and operates Moon Graphics from a studio in her home in Oshkosh. Her work has been exhibited throughout the state, and she participated in an international watercolor exhibition in Gloucester, Massachusetts. In addition to creating representational watercolors she does abstract work in pastels.
- C. J. Muchhala is a graduate student in the University of Wisconsin-Madison School of Library and Information Studies. Her work was most recently published in *Northern Review* and the *1993 Wisconsin Poets' Calendar*. Her fiction was included in the 1991 New Voices Series at the Writers' Place in Madison and her mail art/poems in the International Shadows Project touring exhibit.
- Jocelyn Riley is an independent producer in Madison whose award-winning videos include *Winnebago Women: Songs and Stories, Pioneer Women's Diaries,* and *Zona Gale*. Riley's novels are *Only My Mouth Is Smiling* and *Crazy Quilt*, both published in hardcover by Morrow and in paperback by Bantam. Her short stories have appeared in a variety of publications.
- Terrence Savoie was born Wisconsin and now lives in Davenport, Iowa, where he directs a program for at-risk adolescents. His work has been published in more than fifty literary journals and anthologies and he received the 1990-92 *Nebraska Review* poetry award. He holds degrees from Divine Word College, Epworth, Iowa, and the University of Iowa.
- Robert Siegfried retired from the University of Wisconsin-Madison in 1987 as professor in the history of science department, from which he received its first Ph.D. in 1952. As a teacher he long emphasized the view that science is not separate from, but an essential part of, the humanistic search for understanding. He is completing a book on chemical thought in the eighteenth and early nineteenth centuries.
- Beth Simon is an editor of the *Dictionary of American Regional English* (University of Wisconsin-Madison) and a member of the English department at Edgewood College in Madison. Her work has appeared in *Wisconsin Review* and is forthcoming in *North Dakota Quarterly, Permafrost*, and *Bellingham Review*. She recently won first and second-place awards for poetry from the Madison Area Writers Association.
- Jeffrey Stumpf, Madison, holds degrees from the University of Wisconsin-Oshkosh, New York Studio of Drawing, Painting, and Sculpture, and the University of North Carolina. He has lectured in Europe, and his work has been widely shown in the United States.
- John Warner is a writer and independent person who lives in Baraboo.
- Lawrence C. Young is a University of Wisconsin-Madison emeritus professor of mathematics and former chairman of the department. He was educated at Trinity College at Cambridge and holds honorary doctorates from the University of Paris and a number of other universities in Europe. He has published extensively, lectured worldwide, and carries on the tradition of his parents, who were both distinguished mathematicians in Europe.

Maginel Wright Barney: An Artist in Her Own Right

by Mary Jane Hamilton

In Spring Green the April 21, 1966, issue of The Weekly Home News *featured front-page articles on both Maginel Wright Barney (1877-1966) and her brother, Frank Lloyd Wright (1867-1959). One article described the recent deluge of orders at the Spring Green post office for a two-cent stamp bearing the likeness of the famous architect who had died seven years earlier. The other announced the death of Maginel three days before in East Hampton, New York. It noted a few of her artistic accomplishments and reminded readers that her recently-published book,* The Valley of the God-Almighty Jones, *was available at the local Bossard Memorial Library.*

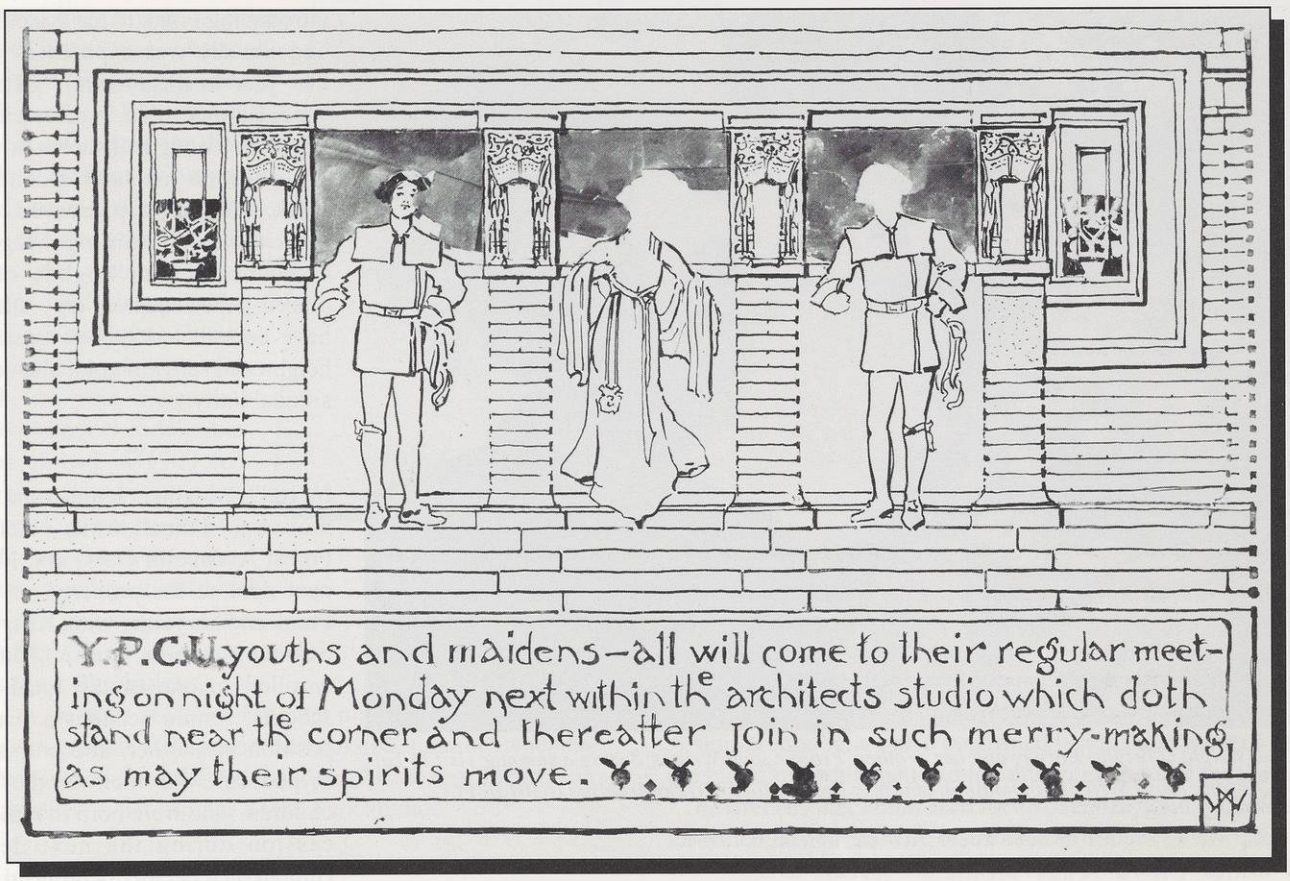
Undoubtedly many of those reading the small-town Wisconsin newspaper had known the brother and sister personally, either as adults or children, and still others could identify the Iowa County valley where their maternal aunts and uncles had purchased adjoining farms in the early 1860s. Several readers may even have attended the progressive, family-run Hillside Home School with Maginel or Frank's older children who, like Maginel's own daughter, Elizabeth, and Elizabeth's children still continued to return each summer. It was here that their Welsh forebears had once lived and built a family chapel with a small cemetery where many of them were later buried.

Articles about Frank Lloyd Wright's life and architectural world have continued to appear in that local Spring Green paper, and during the intervening years he has attracted ever greater national and international attention from authors, scholars, and architects. Maginel's considerable achievements, however, have largely been forgotten or, at best, attention has been directed to only one of many fields in which she excelled. It is time to initiate a renewed awareness of this gifted woman and her artistic accomplishments.

Maginel Wright Enright as she appeared shortly before moving to New York City. Courtesy Frank Lloyd Wright Foundation (6301.027).

Frank and Maginel (an abbreviated name derived from those of her mother's sisters, Margaret and Ellen) were the oldest and youngest children respectively of Anna Lloyd Jones Wright (1838 or 39-1923), a dedicated teacher, and William Cary Wright (1825-1904), a widower with three children, who at various periods of his life supported himself and his family as a lawyer, teacher, preacher, musician, composer, violin maker, and minor elected public official. In 1877, when Maginel was born, William was serving as minister of a Baptist church in Weymouth, Massachusetts, a small community on the outskirts of Boston. When Frank was born ten years earlier at Richland Center, Wisconsin, William was serving in a similar capacity, but at a much earlier period he had been county superintendent of schools. Their sister Jane, or Jennie, was born in 1869 at McGregor, Iowa, where William divided his time between the ministry and the operation of a small music shop. The family also included two step-brothers and a step-sister: Charles William, who had left the family during the early 1870s to seek employment when his father was serving a congregation at Pautucket, Rhode Island; and George Irving, who, like his sister Elizabeth, periodically lived with their deceased mother's relatives.

Maginel's memories of a traditional family unit were extremely brief, limited to the first seven years the Wrights lived in Madison. Soon after moving there in 1878, William



Invitation to a costume party held at Frank Lloyd Wright's Oak Park studio. Maginel's distinctive "MW" monogram at the lower right confirms her as the designer/artist. © Frank Lloyd Wright Foundation, courtesy Frank Lloyd Wright Archives (9506.017).

had established a small music conservatory across the street from the state capitol. He also traveled extensively to several rural locations, where he served small congregations as a newly-converted Unitarian minister. He left the family and Madison in November 1884 but returned the following April to finalize an uncontested divorce from Anna. William Wright's return at that time would seem to coincide with Maginel's last (and traumatic) memory of him. According to her account of the event, she was returning from school, presumably the Second Ward School (later Lincoln) located less than a block from their East Gorham Street house, when she encountered her father. William reportedly escorted her to a local shop where he bought her a pair of new shoes and a straw bonnet, both of which Anna promptly burned as soon as Maginel returned home wearing them.

But William was not the only one in the family who left. Frank, who had attended the University of Wisconsin briefly in 1886, departed early the following year for Chicago; and Jennie, who had found a teaching position in a small, nearby community, left shortly thereafter. Maginel and her mother were temporarily alone in Madison.

Instead of following the example of her sister Jennie and numerous teacher cousins, Maginel decided to pursue a career in graphic arts.

In the fall of 1887, Maginel, Jennie, and their mother joined Anna's Lloyd Jones siblings in a newly-established enterprise that provided Maginel with a sound academic and artistic foundation. Anna's two maiden sisters, Jane and Ellen, both had taught for years in larger metropolitan areas and were disturbed by the substandard education their young nieces and nephews were then receiving in their rural Wisconsin school. Consequently, when they inherited the family homestead following the death of the family's patriarch in 1885, the two sisters decided to establish an integrated, coeducational boarding and day school on the property. Maginel joined nine other Lloyd Jones cousins in the first Hillside Home School class of forty-two students, many of whom were children of members of Jenkin Lloyd Jones's church in Chicago or had learned of the school's progressive philosophy through his weekly publication, *Unity*.

Maginel Wright (Enright) Barney and her brother, Frank Lloyd Wright, during a summer visit to Taliesin. © Frank Lloyd Wright Foundation, courtesy Frank Lloyd Wright Archives (6301.071).

Other Lloyd Jones brothers played an even more direct role in the joint home/school/farm operation. Thomas, for example, taught carpentry classes; John served as the official postmaster; James was responsible for managing the farm; Enos provided transportation for students or guests arriving or departing by train from nearby Spring Green. Anna served as both a matron in one of the residential cottages and as an assistant teacher, and Jennie taught vocal and instrumental music. All of the students—not just Maginel and her cousins—were encouraged to address the Lloyd Joneses as "Aunt" or "Uncle" as a means of encouraging a home-like, non-institutional atmosphere at this most exceptional school. It was truly a prime example of how family members could cooperatively achieve a common goal.

Maginel's teacher that year was her Aunt Jane, who years earlier had taught at the Second Ward School in Madison where Frank was a pupil. In addition to being an excellent teacher, Jane Lloyd Jones had studied in St. Louis with Susan Blow, one of the country's best-known exponents of Frederich Froebel's kindergarten philosophy, and she included a preparatory course for young women hoping to pursue careers as kindergarten teachers as part of the Hillside School program. Consequently, in addition to whatever Froebel experience Maginel may already have shared with her mother—who is usually credited also with introducing Frank to the system—she undoubtedly was exposed in school that year to the Froebel "gifts" and "occupations" that Frank acknowledged as having had such a powerful influence on his later architectural work. (A small, preserved workbook/tablet containing Maginel's assignments, with brightly colored glazed paper squares, may similarly have contributed to her remarkably heightened sense of color and compositional unity.)

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In 1889, Maginel, Jennie, and Anna moved to a small white cottage on Forest Avenue in Oak Park, Illinois, next door to the property on which Frank and his young wife, Kitty, were building a new home. Maginel enrolled in one of the local grade schools, Jennie secured a teaching position in another, and both sisters helped care for their brother's six children, who were born in rapid succession during the next decade. Though on a decidedly reduced scale, the transplanted Wrights would seem to have emulated the close-knit, self-sufficient, family-oriented environment that they had experienced at Hillside.

Maginel returned to Spring Green in the fall of 1896. When she graduated from Hillside in June 1897, her valedictory address was full of such phrases as "The fruitage of duty is ever joy and peace," which brought tears to the eyes of her Welsh uncles and smiles to the faces of her teacher aunts Nell and Jane.

Then, instead of following the example of her sister Jennie and numerous teacher cousins, Maginel decided to pursue a career in graphic arts. This was a relatively new choice for women and one that seemed particularly attractive because of recent developments in printing technology and the corresponding need for individuals who could satisfy the growing demand for illustrated publications.

In September 1897 she enrolled at the School of the Art Institute of Chicago which, though known for its fine arts courses, had recently begun a new program for students who wished to specialize in illustration. One of Maginel's instructors, Fred Richardson, had studied in St. Louis and Paris and had achieved considerable recognition for his illustrations for the *Chicago Daily News* and other Chicago-based publications. Maginel

Maginel often had "two or three pencils stabbed like geisha ornaments" in her hair and "a water color brush gripped between her teeth," the latter leaving stripes of color on her face.

completed only a year, or three terms, of instruction—reportedly all that the family could afford—and in 1898 went to work for the engraving house Crosby, Barnes Company where, among other assignments, she and several former institute classmates produced drawings for Sears and other mail order catalogs. Though often unchallenging, the job nonetheless paid wages that allowed Maginel to take her mother abroad in 1903 for several months, visiting Liverpool, Venice, Paris, and Wales. (In Wales she sketched traditional tall black Welsh hats that may have been the original source of those worn by Mother Goose and other nursery rhyme characters in children's book illustrations.)

On October 26, 1904, Maginel married Walter Enright, a successful graphic artist whom she possibly first met when they were both students at the Art Institute of Chicago. The ceremony took place in her brother's Oak Park studio.

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Around this time Maginel collaborated with her brother on at least two printed pieces. Perhaps Frank (or more likely his two older sons) persuaded Maginel to produce a special invitation to a costume party which was apparently held in the architect's studio. Though Frank later signed the black and red ink piece, Maginel's distinctive "MW" monogram on the lower right corner clearly establishes it as her work. A similar monogram also confirmed her as the creator of multiple black and white pen and ink drawings and text for the poem "The Breeze" that Frank used for an oversize holiday card/booklet which he and his wife distributed in 1907.

Shared interest and mutual acquaintances may also have played a role in some of the professional work that Maginel and her brother secured around this time. For example, Frank's architectural client and one-time Auvergne Press printing partner, Chauncey L. Williams, Jr., probably helped Maginel receive commissions from Frank Baum, of *Wizard of Oz* fame, to produce covers and text illustrations for several of Baum's more obscure chil-

ABOVE: For more than twenty years Maginel's illustrations appeared on the covers of Woman's World *magazine, which ceased publication in 1940. Courtesy Frank Lloyd Wright Home and Studio Foundation. (1989.50.1.2.27)*
LEFT: Felt and velvet shoes custom-embellished with metallic braids and faux jewels for the Capezio firm. Courtesy Frank Lloyd Wright Home and Studio Foundation (1989.50.1.5.29).

Three illustrations by Maginel from Heidi *by Johanna Spyri. Copyright © 1921 by Checkerboard Press, Inc., New York. Reprinted by permission.*

dren's books published in 1906 by Reilly and Britton under the pen name Laura Bancroft.

Maginel's daughter, Elizabeth, was born in 1907, and a few years later the Enrights moved to New York City, where she and Walter hoped to advance their respective careers. Walter rented a studio in the Flatiron Building, while Maginel maintained a studio in their large, seven-room apartment overlooking the Hudson River. In an article written many years later, Elizabeth recalled peering through the glass door of her mother's studio and watching her work. She noted that Maginel often had "two or three pencils stabbed like geisha ornaments" in her hair and "a water color brush gripped between her teeth," the latter leaving stripes of color on her face. It is interesting that Elizabeth's description of her mother's habits corresponds to a similar one by Maginel of her father's behavior while composing music. Elizabeth recalled that the only instances when she was allowed access to her mother's studio were those when she was posing for one of the many book and magazine illustrations featuring children. Then, for example, as when she posed for the 1921 *Heidi* illustrations, Elizabeth was expected to remain completely still until her mother had captured an authentic pose or gesture on paper.

By 1911 Jennie and Frank had moved to the family's ancestral valley in Wisconsin and were living in new houses designed by Frank—Jennie at Tan-y-deri or Under the Oaks, Frank at Taliesin, Welsh for Shining Brow. Maginel maintained contact with them as well with other extended family members, in particular Richard Lloyd Jones. As an assistant editor for *Colliers* magazine, Richard undoubtedly played some part in securing the illustrations which Maginel produced for that and other New York publications, though she did not depend entirely on his help. In 1912, in fact, Maginel was elected to membership in the Society of Illustrators during Charles Dana Gibson's term as president of the group.

Contemporary critics praised Maginel's innovative technique, one claiming it had "the intensity of Van Gogh" and another "the divided tone of the Impressionists."

After moving to Madison to assume the editorship of the *Wisconsin State Journal*, Richard also helped his cousin Frank by publicizing his downtown Madison hotel design. The precedent of helping family members set by an earlier generation of Lloyd Joneses was being continued by a later generation, but instead of sharing food and farm chores, the cousins and siblings were helping each other in ways appropriate to their time and professional situations.

As was the case with her mother and brother before her, Maginel's marriage did not last. In 1921 she divorced Walter Enright, and in 1923 she married a prominent lawyer and international financier, Hiram Barney, who died just two years later at age forty. During this period she continued to pursue her professional career, producing covers and illustrations for such popular magazines as *Woman's Home Companion, Woman's World, The Ladies Home Journal,* and *McClure's*. She also con-

tinued to illustrate children's books. (Her books include *Hans Brinker, or the Silver Skates,* 1918, and *Songs from Mother Goose, for Voice and Piano*, 1920.)

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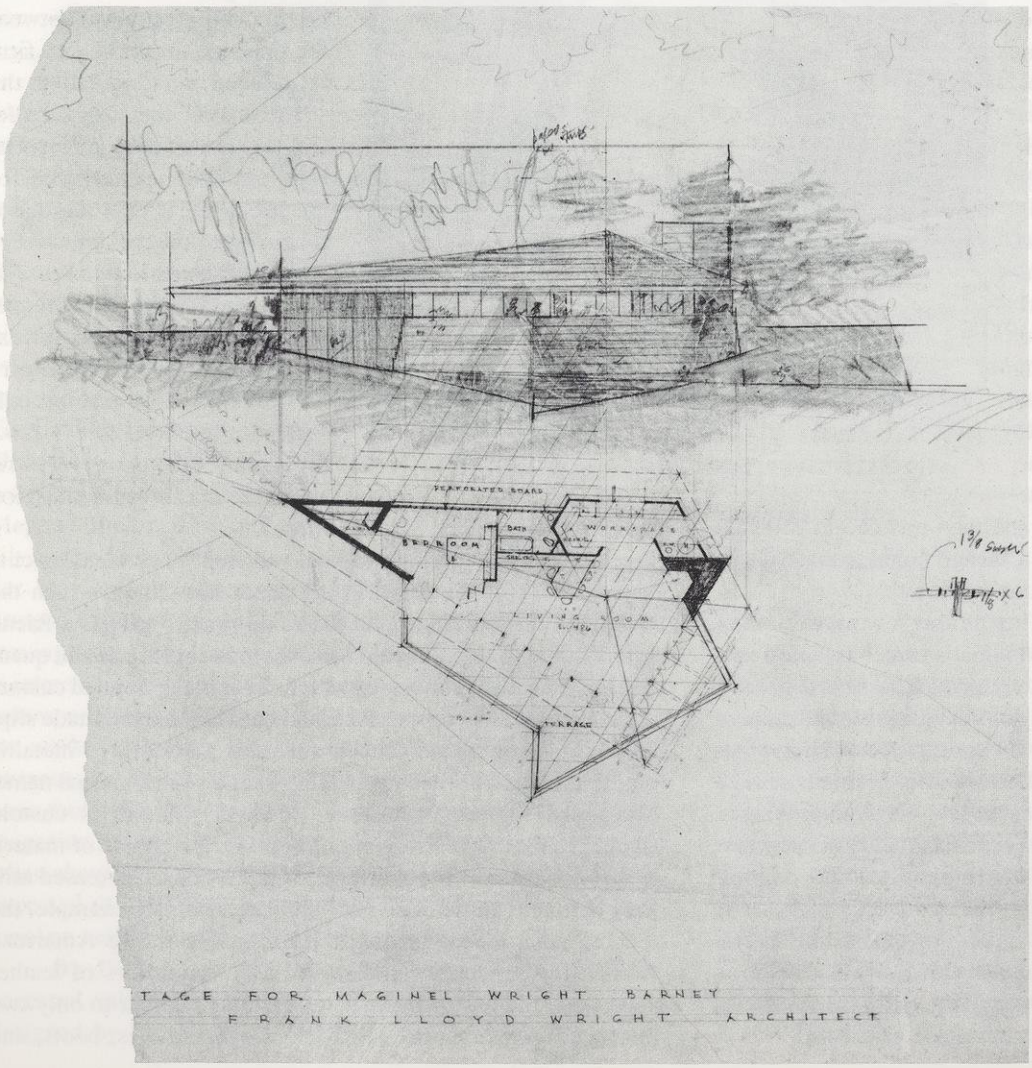
The 1930s proved to be a particularly difficult time, both professionally and financially, for both Maginel and her brother. Other than a large residence for his cousin Richard, few of Frank's designs from the late 1920s and early 1930s were actually realized. The majority were curtailed by the ever-worsening financial conditions that also limited Maginel's illustration jobs. In addition, there was negative reaction to her "wholesome" illustrations, which often featured children rather than those which she called "romantic clinches." She also was confronted with the growing use of photographs rather than illustrations for publication covers. With virtually no architectural work, Frank had turned to writing, lecturing, and preparing exhibitions of his work, one of which traveled to several cities in this country and then abroad. The Madison Art Association, which had sponsored a Madison venue of that exhibition in 1930, agreed to present one in 1932 featuring Maginel's work. The exhibition was mounted in the fourth floor gallery of the State Historical Society of Wisconsin and then traveled to Milwaukee. But plans for presenting it in Chicago failed to materialize, as did hoped-for sales of items from the show.

From the collection of Virgil and Helen J. Steele, Spring Green.

Just as public awareness of her brother's work was rekindled in the late 1930s, so too did Maginel's career assume a new direction, one that would ultimately provide a new source of income, recognition, and several solo exhibitions, this time in New York. According to an interview she gave years later, Maginel was inspired to take up needlework after seeing a peasant costume that belonged to her sister-in-law, Olgivanna Wright. After working for some time to improve the quality of her work, Maginel supposedly wore one of her brightly-colored, embroidered jackets to a party, where it was so appealing that she returned home with over twenty orders for others like it. Her high fashion items became so popular, however, that within a short time cheap imitations were being sold in department stores for a fraction of the cost of the custom-made garments.

Around 1940, changes in the world of fashion along with restrictions imposed by the current worldwide conflict combined to propel another of Maginel's creative efforts to widespread popularity. Prior to that time she had often crafted fleece-lined felt slippers, which she blanket-stitched together and trimmed with beads, sequins, and bits of yarn as gifts for women friends and relatives. For male family members, Maginel made black felt scuffs on which she embroidered images depicting Adam and Eve. (Correspondence reveals that Frank received at least two pairs as Christmas gifts.) About this time the casual women's shoes now known as "flats" or "skimmers" were introduced by the Capezio Company, which since its founding in 1887 had been known for fine quality footwear for dancers. In 1939 the firm introduced what it called the "ballet shoe," their basic ballet slipper with a more substantial sole and low heel suitable for the street rather than the dance floor. The soft and extremely comfortable leather shoes won immediate public acceptance, were featured with sportswear and casual outfits in Claire McCardell's 1941 fashion collection, merited their own *Vogue* magazine cover in 1949, and in 1952 received the fashion industry's prestigious Coty Award.

During this period Maginel was kept busy creating custom versions of the Capezio flat shoes and others which the company introduced around the same time. Through a friend who worked for the Capezio firm, she was able to acquire quantities of their basic models to which she initially applied custom decorations similar to those she had used on her handmade slippers. Later she added faux jewels and a variety of metallic braids as well as a small tag bearing her new professional name, Maganela. Instead of leather, however, Maginel's custom Capezio shoes were made of colored felt, the choice of material dictated by wartime shortages of hides due to increased military demands for leather. (In February 1943, for example, the federal government issued a restriction limiting American women to the yearly purchase of only three pairs of leather shoes, and the following year lowered the number to only two pairs.) Maginel's embellished felt slippers, mules, boots, and



beach sandals thus allowed women to have more than the allotted quantity of shoes while still abiding by government-imposed limitations on them.

Maginel had help from her niece, Frank's daughter Frances Wright Caroe (1898-1959), whom she had known as a child back in Oak Park. Frances was director of the newly-established American House, the retail outlet for members of the twenty-six craft societies that comprised the American Craftsmen's Cooperative Council, Inc. Maginel displayed her custom footwear at its Madison Avenue shop (later 57th Street) along with the handmade

TOP: Tan-y-deri, Welsh for "under the oaks," designed by Frank for his sister Jane (Jennie) Porter and her husband, Andrew, who came to Wisconsin in 1907 to manage the Hillside Home School. In 1911 Frank began construction of Taliesin nearby. © Frank Lloyd Wright Foundation, courtesy Frank Lloyd Wright Archives (0709.002).

LEFT: Elevation and plan of unrealized cottage for Maginel designed in 1948 by Frank. The design specified a prominent fireplace, floor-to-ceiling glazed doors that would have opened to a walled terrace, and a screened-off sleeping area. Had the cottage been built, it would have reunited the three Wright siblings in the same Wisconsin valley where their Welsh forebears had settled in the early 1860s. © Frank Lloyd Wright Foundation, courtesy Frank Lloyd Wright Archives (4803.01).

enamels, ceramics, fabrics, glass, rugs, hangings, and wood sculpture created by other council members. Her niece's link to the council publication, *Crafts Horizon*, may also have played a part in the frequent coverage Maginel's work received in that journal, including one 1954 article written by Elizabeth Enright devoted entirely to Maginel's custom shoes and accessories.

In addition to clothing and footwear, Maginel also applied her interest in yarn to non-wearable items through a process she called "long point" or "longue point" to suggest a common choice of material and basic method while at the same time establishing its distinction from traditional gros point or petit point needlework. Starting with color crayon pastel sketches and her own memory, Maginel established the basic areas of a composition using light color chalk on dark felt, which was temporarily pinned to a padded board (she did not like to use a wood frame because she felt it restricted access to some areas of the fabric surface, especially the corners). Then, using yarn of various hues and a needle, she proceeded to build up area after area of the surface with random stitches to produce the desired images. Unlike more traditional needlework practices, her stitches followed no set pattern, either in their length or their direction; some stitches might be minuscule while others stretched two inches or more—the choice depended on what effect she wanted to achieve. Sixteen completed pieces using this procedure (including *The Harvest*, which appears on the cover of this issue of the *Review*) were exhibited at the Marie Sterner Gallery in New York in early May 1940, and others were featured in a show at French & Company in December and January 1945-46. Contemporary critics praised Maginel's innovative technique, one claiming it had "the intensity of Van Gogh" and another "the divided tone of the Impressionists."

Though Maginel's official address remained New York City and she spent a portion of the year in Nantucket, most of her long point pieces owed their inspiration to rural Wisconsin, where she spent summer vacations visiting her brother and sister. A few pieces had floral or figural subjects, but the greatest number were landscapes including barns and houses surrounded by identifiable natural features such as the Wisconsin River or the prominent Wyoming Valley area hills her Welsh ancestors had long before christened Bryn Mawr, Bryn Canol, and Bryn Bach. One of the pieces even included the now restored Romeo and Juliet windmill that Frank designed for their teacher aunts in the 1890s.

Like her contemporaries Grant Wood and John Steuart Curry, Maginel's *The Harvest* or *Contour Farming* revealed a fascination with the dark and light patterns created by alternate rows of growing plants and tilled earth; and like these Regionalist artists, she always retained the identifiable source of such images in her work. By contrast, Frank's 1932 autobiography included a division page with a design based on a tilled farm field, but which if viewed without the benefit of accompanying text simply looks like a flat, abstract design. This is but a single example, but it would seem that although both Frank and Maginel had been exposed to early Froebel kindergarten training, the childhood experiences they shared did not result in similar expressions in their creative work as adults.

Both Maginel and her daughter, Elizabeth, were influenced by summer visits to Wisconsin. When they visited in August 1934, however, Maginel would not have found lush green fields to sketch, but rather a few dried, brown plants, acres of cracked earth, and unrelenting heat and dust. That 1934 drought —one of the worst in the state on record—nonetheless provided an authentic setting for Elizabeth's book *Thimble Summer*, for which she won the Newbery Award. While staying at Jennie's, Maginel and Elizabeth probably drove over to see the limekiln and watch Wright's young apprentices tending the fires required to turn the local slabs of limestone into lime mortar needed for building new structures and additions to Taliesin and Hillside School. Later, Elizabeth incorporated the beehive-shaped limekiln and the firing process into the story line of her book, which also contained multiple allusions to the experiences of her mother and grandmother in Wisconsin.

The precedent of helping family members set by an earlier generation of Lloyd Joneses was being continued by a later generation, but instead of sharing food and farm chores, the cousins and siblings were helping each other in ways appropriate to their time and professional situations.

In 1948 Wright designed a modest, essentially one-room cottage for Maginel that was to have been constructed somewhere between his own Taliesin and Jennie's Tan-y-deri residences, but the scheme never progressed beyond the initial design stage. If Wright, then eighty-one, intended the cottage as a "retirement" home for Maginel, then seventy-one, he was sadly mistaken. For like their farmer and preacher grandfathers and multi-talented father, neither Frank nor Maginel was about to give up a creative career. (In fact, their father continued to compose music almost to the end of the century, and his last journal article appeared in *Etude* magazine after his death in 1904.)

Several of Frank's most famous designs, including the Guggenheim Museum, were only partially completed when he died in 1959. Maginel eventually became interested in collage and incorporated fabric into her needlework pieces, several of which were commissioned for the Time-Life Building in New York. Then, in the fall of 1962, Maginel was honored with a one-person show at the Sagittarius Gallery in New York, a fitting final tribute to this remarkable and then eighty-five-year-young creative artist.❧

The Clearing

by Ellen Hunnicutt

CHAPTER IX

Dr. Otto Kessler was reading about kleptomania; it was five a.m. A half dozen journals were scattered about his desk, their pages marked by neatly-folded strips of paper. Only the newest information seemed to serve anymore—knowledge was advancing so swiftly—and he found himself dipping less and less into his books. A gooseneck lamp with a fluorescent tube, flickering and threatening to fail, curved above his page. He saw that the lamp was old fashioned, not at all like the smart lamps in shops today. How did he suddenly know this when he had not before? The passage of time puzzled him. He still woke each day with the distinct sensation that his life was about to begin.

There was often a lull between five and seven in the morning; he could not account for it. The sick and the injured, the hysterical and the hypochondriacal grew calm, as if they had exhausted all energy for complaint, even pain, and had to rest to garner strength for the next day's suffering. Often there was an envelope of free time, of peace, and if he worked during the lull there was also escape from his dreams.

Four a.m. was different. It could be a frantic time of hemorrhage, asphyxiation, fracture, contractions. Seven was also tumultuous as patients began to press him for the day's ministrations.

He dropped his gaze from the flickering bulb and tried once more to concentrate on the page. A new convenience store had opened at the edge of town, one of those chains springing up everywhere, all of them identical. The manager was a young man sent from the home office, not a local boy. He had complained to the police that Maida was shoplifting. An account of the other merchants' toleration of her petty thievery did not impress him; her circumstance and position in the community did not move him.

He was a dull man trying to make himself interesting; that was how she saw him. There was a trace of pity in her face.

The chief of police had telephoned Otto. "You may hear from him, Dr. Kessler. I told him it was a medical problem, but he wants to prosecute. He says he has evidence and he wants to set a tone while the store is still new. He doesn't want precedent."

"What can she steal?" Otto was picturing the jugs of milk, loaves of bread, a cube of well-lighted space. "How can she steal?" He had only been in the store a couple of times, but what would be small enough for Maida to hide? What would be useful to her? He thought of maps, cigarettes, magazines.

"Chocolate," said the chief of police. "Those small chocolates in the shape of stars? The bags hang on a rack."

"Tell him to move the rack to the front of the store, in plain view. In Rhine's grocery and other places they have found . . ."

"That's where it's been all along, right up by the cash register. She's not very clever about it, doctor. Maybe she's getting old. She puts the girl in front of her but they have a security camera."

"I will pay for whatever she takes. I will call him."

"I already tried to do that. He's serious, Dr. Kessler. He wants to prosecute her, put her in jail. He knows all about his legal rights. There'd be no one to look after the girl."

"She is only taking the chocolate?"

"Yes, only that."

"I will see what I can do."

❧

Late that afternoon when he had completed his office hours, he went to the convenience store and stood leafing through a magazine until there were no other customers.

"I am Dr. Otto Kessler," he began.

But the world had changed. A Viennese doctor no longer commanded special respect, no longer intimidated. The manager had stylish, carefully barbered hair held in high waves by some stiff substance Otto could not identify; he had a beard of a complicated sort, shaved away in unexpected places, shaped with bold geometric lines in others. He was working over a set of figures and putting them into a computer. He glanced at Otto briefly, then out across the room. He did not stop his work. "If an old woman gets away with it," he said, "kids will start. The news will get around."

Otto found himself oddly in sympathy with the young man. His cause was just, in a clear, fine way that was rarely seen. Still, he had to persist. "The news has already gotten around," he said. "Everyone knows about it, for years. She does no real harm." This was also true. Otto's brief moment of clarity faded.

"We have figures, doctor, we have data. We're vulnerable to begin with because we stay open late. There's a psychology to it. The home office hires psychologists to do this. You have to crack down when they make the first move."

"You will hurt yourself," Otto argued. "The town will not like it."

"I think they will. I think they'll be glad to have it out in the open. Over and done with."

"You cannot deal with her like an ordinary person," said Otto. "It is a sickness. Have you confronted her?"

"That's a problem for you and the police, not me. I don't want to touch either of them. They might charge me with assault, but I'm going to press charges." He finished his row of figures and set the machine to print.

He meant he found the bodies of the two women abhorrent. The rattle of the printer annoyed Otto. He had to pause a moment to regain his composure. This young man, after all, was not a patient, not a nurse, someone subject to his authority. "The daughter is severely handicapped. The mother carries a terrible burden. They will say you are harassing unfortunate people."

The manager continued to watch his printer. "I have the film."

❧

Kleptomania. The journal had little new to offer. Kleptomaniacs rarely needed what they took, and they stole the same things, compulsively, again and again: jewelry, lipstick, candy. Maida took only things that could be eaten. He thought of a large, hungry mouth. Who could blame her? Life had given her little enough satisfaction.

He tried another journal, a German account. Women kleptomaniacs outnumbered men, the researcher held, because women had less power, fewer resources to respond to injus-

tice—real or imagined—in more aggressive, violent ways. He found the word "violent" unsettling.

A fragmented thought was playing at the edge of his mind. *The Russians steal.* That was the danger of sitting alone in the silent dawn. He became subject to a sort of wakeful dreaming. His mind seemed to splinter; while he thought in rational discourse, he was also able to observe events and experience sensations in another dimension. In the war, he had treated injured Russian soldiers, prisoners. He remembered the distinctive fabric of their uniforms, a tough, fuzzy goods that could not easily be cut away from wounds. It carried a heavy, dank, greenish odor that persisted even in winter when blood from wounds soaked into it and froze solid. "They steal because the Communist system does not provide for their needs." The voice was cautioning him, as if a wounded prisoner swathed in bandages might suddenly rise up from his cot and steal Otto's purse. Yet it was also a voice of instruction. One needed to be on guard against this threat before going among the Russians. It was the sort of thing that might be written in a small notebook, in a list of other such cautions.

"Chocolate stars!" she cried. "I don't wonder you like them. They've always been a great favorite with Fanny and me."

The Russians he treated—he felt quite certain of it—were always officers, men to be kept alive so they could be interrogated. "Doktor . . . " But he did not think they called him that in a battlefield hospital. He was addressed by rank; he was an officer himself. The Russians steal. *Stehlen.* Then he seemed to remember the notebook, pocket size. The wounded man lying faint and breathless, white, near death, was trying to throw it away in case he was tortured. The act was very like shoplifting. In reverse. Sleight of hand. Then Otto saw his own hand groping through bloody tissues discarded in a pail on the floor, retrieving the notebook. But no, his hand was gloved, slipping into a chest wound to retrieve the ends of blood vessels. The same slick blood, the same fingers blindly searching.

Chocolate. When he had first come to Salamonie there seemed to be no good chocolate of the quality found in Europe. He had wondered if Americans did not know how to make it, or if the best goods simply failed to reach small country towns. He remembered good chocolate from boyhood, from the years before the war and its shortages. His mother had believed chocolate was good food that gave children strength. She had fed it to him earnestly, solemnly, as if it were medicine. Now there was chocolate in Salamonie from everywhere: Belgium, Switzerland, Holland, Germany itself. He recognized the names of some of the makers; they had been in the business for generations, and it seemed Americans had learned to make it as well. He liked chocolate, but the small bags that hung on racks in convenience stores would be the cheap, powdery sort. Too sweet.

When Betty came in bringing tea, just before seven, he said to her, "Go this morning and buy a box of the finest chocolates you can find." She had made his toast exactly as he liked it, not too brown. A linen napkin lay over it to hold the heat.

"For Maida?" she asked. "Do you really think you can bribe her out of stealing?"

"It is the only thing I can think to try."

"Will you talk to her? Straight out?"

"Yes, I have no choice."

"But . . ." said Betty.

"Her feelings?" he countered. "How can I consider her feelings? Do I have a choice? Tell me my choices." He heard himself falling into the repetition of phrases and seemed unable to stop. "She may not even hear me." Yet he could not imagine it happening, a face-to-face denial. The fact of her stealing had hung silently between them for years across the examining table. Now the words had to be said.

It was evening before he was free to deliver the gift.

"Dr. Kessler! Otto . . ."

She nearly filled the doorway and he recalled, ruefully, that he wanted both mother and daughter to eat less. "I need to talk with you, Maida."

"Of course."

As he entered, Fanny rose from a kitchen chair and lurched toward him.

"I will set her to playing," said Maida. "Go into the kitchen. Will you have tea?"

"Thank you, no."

Maida began a tune on the piano, playing until Fanny thrust her aside and took it over, thumping down heavily on the bench.

He sat down, placing the candy box on the table before him. "I have brought you something." The chocolates were Belgian. Belgian was still the best.

"Oh, my!" Maida was too excited to sit down. She fluttered one hand prettily, girlishly, then took the box and tore off the wrapper. "Chocolates. Fanny's favorite. How good of you." She examined the box from every angle, removed the lid and then replaced it, read all of the labeling, making the moment last.

Without preamble he said, "Maida, you must stop taking chocolate from the convenience store. I will give you as much of it as you want, as you can eat, but you must stop stealing."

She sat down suddenly, then looked across the table at him, amazed and perplexed, and utterly silent.

He recognized Fanny's tune. Something German. A farmer's song? One of the *Ländler.* No, it was going to be all of the *Ländler*, in an uninterrupted chain. Beethoven, probably.

"What's this?" Maida said at last. "What's all this?" He might have been one of her students caught in a mistake, in a bewildering net of error. No, it was worse even. He was a dull

man trying to make himself interesting; that was how she saw him. There was a trace of pity in her face.

"The new store," he pressed. "Maida, the man wants to put you in jail."

"But why should he want that?"

Was it possible she really had no knowledge of what she did? "They have a camera in the store. It's different from other stores."

"A camera, Otto?"

"It is hidden but it sees in all directions." He could not believe she didn't hear him. "There are lots of cameras, security cameras. If you stand behind Fanny, it makes no difference. The camera can take pictures from the back! From everywhere!" He was exaggerating, determined to make her understand.

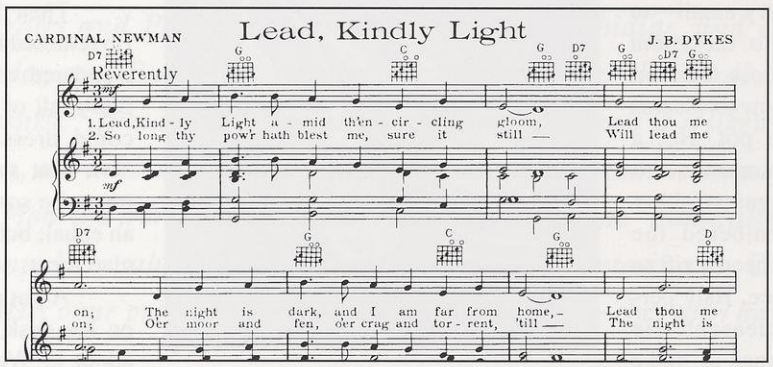
But she had opened the chocolates again and was methodically pressing and crushing each one. "Fanny can't eat the caramels, or the jellies or nuts, only the creams." When she found a cream, she carried the box to the piano and stuffed the mashed chocolate into the girl's mouth. "Isn't that lovely. Fanny? Dr. Kessler brought you candy!"

He followed her into the living room. The girl's mouth closed around the gooey mass and began to chew. A line of brown spittle appeared at the corner of her lips. She did not stop playing.

"Maida, the man has pictures of you stealing chocolate stars. He will have you arrested and put in jail. They will take Fanny away from you and put her in a home, in an insane asylum! Do you hear me?"

Standing beside the piano, she had returned to mashing the chocolates with her fingers. Now she looked up and smiled. "I hear very well, Otto! In fact, I was always known for my acute hearing. I do not think I hear as well as Fanny, nor as well as a musician friend I once had. Once . . ." She broke off abruptly. "Of course, I must offer you something." She darted into the kitchen and returned with a bowl filled with chocolate stars. The mound of candy was enormous. Otto estimated it to be at least two pounds. "Chocolate stars!" she cried. "I don't wonder you like them. They've always been a great favorite with Fanny and me."

"You must stop stealing, Maida! If you keep it up, I cannot help you. No one can help you."



Oblivious to Fanny's playing, in a mild, high voice, she began to recite the words of the old hymn.

He saw that her eyes had begun to fill with tears. Was this, finally, contrition and confession?

It was not. Still holding the bowl of candy, she picked up one piece and turned it thoughtfully in her fingers. "The star," she began, "is everywhere, isn't it? 'Estralita,' my little star. I played that in a recital when I was only six. And in church, a star led them, didn't it, Otto? Do you know that song?" Oblivious to Fanny's playing, in a mild, high voice, she began to recite the words of the old hymn. "Lead, kindly light, amid the encircling gloom. Lead Thou me on. The night is dark and I am far from home. Lead Thou me on. Keep Thou my feet. I do not ask to see the distant scene, one step enough for me. I was not ever thus, nor prayed Thou shouldst lead me on. I loved to choose and see my path, but now lead Thou me on . . ." She broke off, voice trembling, unable to continue.

He found he had taken hold of the piano to steady himself. Pain was shooting through his arthritic leg. "You must not take things from the convenience store."

"Light," said Maida.

"You must not take the chocolate. I will bring it to you, every week. I will find the little stars for you. Maida, they have a camera. You will ruin us all."

"I only go there for cream, for Fanny."

"You do understand me after all, don't you?"

"It is in a pure white box, from an out-of-town dairy. I believe it is fresher than other places."

"You do know what I am saying."

"If the cream were not fresh, the box would not be so white, would it?"

White. Purity. It came to him that at some level she was proclaiming her innocence.

❧

He drove home, then found he did not want to go into the house and confront Betty. "What now . . ." she would ask. "You must . . ." She would insist. He put the car into the garage, then, in the light of a pale half moon, walked around into his backyard. He and Betty had never been gardeners. They had spoken of it briefly when they built the house—flowers they would grow, even vegetables; it was a town where everyone grew a kitchen garden—but they were always busy with patients; the idea had slipped away. A man came to manicure the yard, trim

the trees, grow flowers. In the cool night, Otto looked at the rows of blossoms that edged his yard. He could not give them names, in either German or English, but he thought he remembered the small low plants with yellow blooms from childhood. He had been raised in a city; his family's only garden had been an inner courtyard shared with other families, formal and rather bleak because it received little sun, mostly brick paths and a few scrubby brushes. But in summer his mother had grown a pot of flowers on a windowsill that overlooked the street. There were no screens in German windows. He could remember stretching out one hand above the flowers—he would have been very small—to catch the rain slanting into the room before his mother came to close the window. He could picture yellow blossoms growing low and full in a pot. No, a planter, glazed ceramic decorated with clouds of midnight blue against shiny black. He found he remembered the planter in every detail. It had been a gift to his mother from another place, Italy perhaps. The memory was pleasant. He thought of asking the gardener to make him a pot of the flowers for his desk.

White. Purity. It came to him that at some level she was proclaiming her innocence.

The nature is the same. This had been part of his cousin Werner's description of America, of the Midwest, years ago. Otto had been amused at his cousin's innocence. "The nature is the same in America as in Germany—wheat, trees, blades of grass!" Werner had seen the desert of North Africa. Had it led him to think each new place he saw would be exotic, radically different from the last? Otto could picture him kneeling on American soil, assuring himself that a clump of clover was identical to clumps of clover in Germany. Poor Werner did not have the benefit of education; he was a simple, innocent soldier taken captive. Then Otto saw where his thoughts were leading and drew back firmly. No, there were no innocent soldiers. If you put a gun in a man's hand, he became accountable.

How had his mother, a city woman, known about growing flowers? He could no longer remember how she spent her days. There had been a girl to cook and clean. He remembered the girl carrying bowls of food to the dining room where he and his parents sat waiting. Sometimes his mother read to him or took him for walks to a park where squirrels darted. It was in the park, watching other families, that he first realized he was an only child; and with this realization had also come the knowledge that his parents considered this a good thing. There was something loose and low about having many children. He was nearly grown when the National Socialists decreed that Germans should produce large numbers of children. His mother had escaped this dictum.

He wondered if squirrels darted in his own backyard, on the property that had cost him such a large sum of money. He had no idea; he seldom looked out a window. Flowers in a pot, contained and controlled, nothing in wild profusion. He liked to think that his parents had opposed the new order, but in fact he did not know. They had been private, silent people, and he had been absorbed in his classes, away at school much of the time. "How are your studies, Otto?"

"They go well, Father."

"And are there suitable young men for companions?"

"Very nice, Mother."

Then they had been so quickly gone. He returned from the war to two graves. He wondered what they would have made of Betty, all of her cheerful practicality. She could dress wounds without flinching. Now that she had a cleaning girl of her own, she sometimes worked beside her as an equal; but that was America and he was glad for it.

A pot of flowers would go very well on his desk. He would ask the gardener about it. Was it possible to survive here without a screen in the window? He knew it was not, but in the ghostly moonlight, his feet growing cold in the damp grass, it was pleasant to remember the rain slanting in above the blooming flowers. One perfect memory intact. He thought of his scarred head, the irregular lines of tough, lifeless tissue mapping his scalp; but his hair still grew, a cunning artifice that masked all imperfection. His hair, in fact, was still thick and luxurious, gray only in streaks, and in crescents about his ears. How was it possible? Then a thought came to him—a thought that must have been with him, lying in wait, for some time. He found he was thinking of the convenience store manager, the care the man took with his hair and beard. All that artifice. He had said it was crucial to stop a thief at the first move, but in fact he had not done so. The mound of chocolate stars in Maida's bowl had been huge. The man was probably bluffing after all, a psychological attack, his own words, really. But he was so young, so quick. It was these qualities finally that Otto could not completely dismiss. He knew that his own mind, beneath the still-youthful hair, was slowing down. There could be some factor he was failing to consider, but he would tell Betty the man was bluffing, how very well things were actually going.❧

Illustration by Jeffrey Stumpf, Still Life (With Shoes on Orange Floor). *Oil on paper, 42 1/2 x 34 1/2 inches, 1990.* Photo by John Wendt.

Mathematics and Humanism: A Perspective

by Lawrence C. Young

The word "mathematics" comes to use from ancient Greece and it recalls a world long past that we love and admire, a world I learned about in my youth, with its wonderful creativity; the world of Homer, of Socrates and Plato, Demosthenes, Thucydides, Phidias, and of the great tragic playwrights Aeschylus, Sophocles, and Euripedes. I would not like to change the word! Nor would I change the Renaissance word "humanist." It may not be beautiful, but for me at least it is likewise associated with what is best and noblest in man, a wealth of ideas that I find inspiring, and that certainly includes what came to us from ancient Greece. How the world changes! In my younger days, the "humanities" meant mostly Greek and Latin. They were compulsory subjects in England for all students entering the University of Cambridge. Now even in the humanities some professors have never had any Greek—they may have had Chinese!

It must be admitted that in the English schools Latin and Greek were not learned with great enthusiasm! Compulsion, as a teaching aid, is not much better than the earlier method, of which let me just say that in Wellington's time, at what that general spoke of as the best school in England, namely Charterhouse, Greek was taught by the head himself, beginning with the verb "to thrash." Many people were no doubt glad when humanism took on a new meaning. Antiquity and even my beloved Dante are out of date. The first modern man, according to the *Encyclopaedia Britannica*, is the poet Petrarch, who tells us, "It is better to will the good than to know the truth."

Now I may be old-fashioned, but surely this is a dangerous precept. Who decides what is good when we have no truth? It is difficult to believe that Petrarch intended this line as a banner; he had not experienced, as we have, wars in which discoveries were used just to kill . . .

In any case, surely, the best intentions are of little value, without a prior search for the truth—the famous Wisconsin *sifting and winnowing*. For my part, I have never regretted the time and effort spent on ancient Greek.

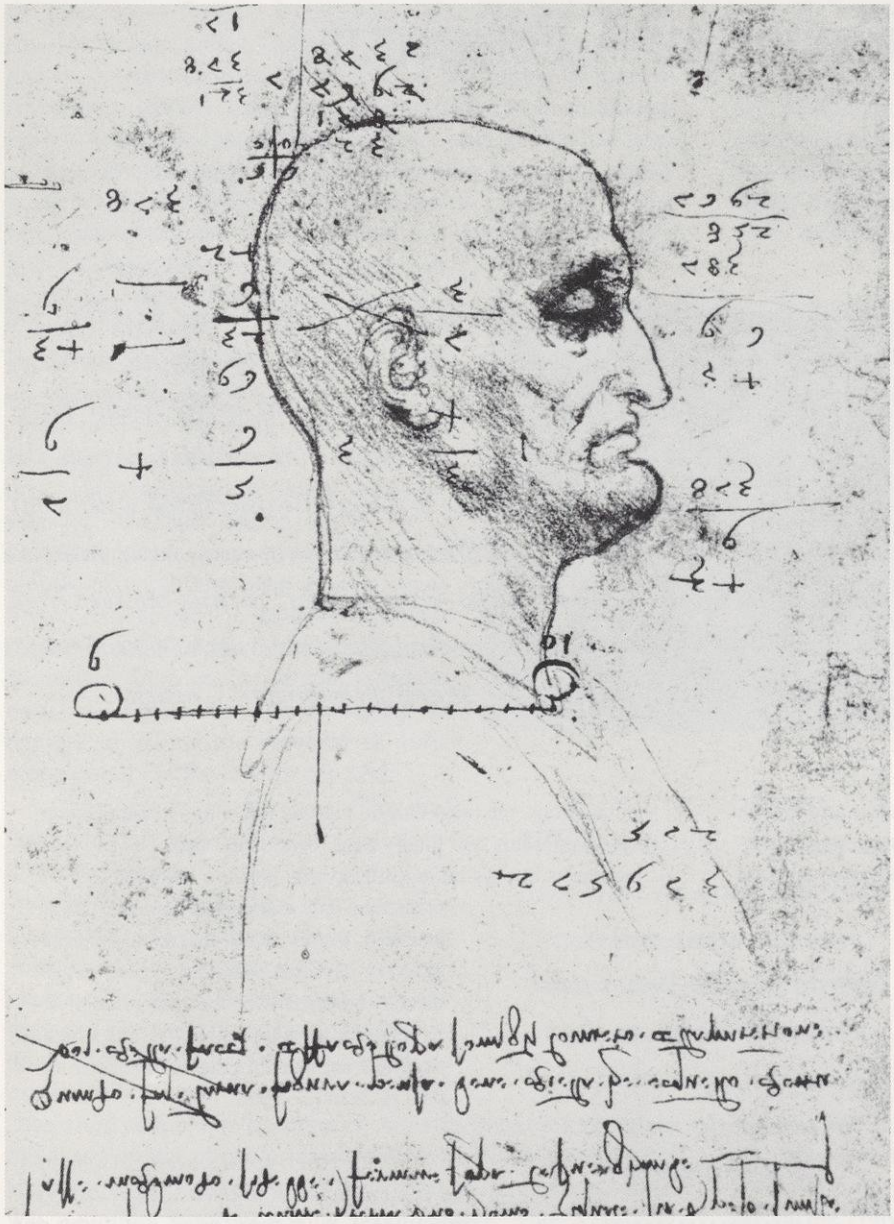
A famous passage by the French poet Victor Hugo is for me, however, characteristic of humanism:

> From the day Christianity said to Man, "Thou art double, thou art composed of two beings, one perishable, the other immortal, one carnal, the other ethereal, one chained by appetites, needs and passions, the other carried high on the wings of enthusiasm and reverie, this one finally bent towards the earth, its mother, that one is always taking off towards heaven, its home . . "—from that day drama was created. What else is it, in fact, if not that same contrast of every day, that same struggle of every instant, between two opposite principles, which are always present in life, and which fight one another for control of man from the cradle to the tomb?

Leonardo da Vinci and Pascal well knew that beauty of expression and depth of thought are mathematical.

Victor Hugo speaks here of two opposite principles. (Should we not say *different* principles?) And they need not fight one another. Both contribute to the progress of men. In a sense they cooperate. In fact, the progress of man appears to me more like the passage of a sailing ship against the wind by "tacking" in two directions in turn—except that we have to tack at every instant of time.

This is precisely a mathematical problem which I discuss in a book I have written. Suppose you are sailing a small boat on a straight river downstream from A to B, and that there is a strong wind directly against you. As you no doubt know, this opposing wind can actually help: for this you "tack," that is you sail in a zig-zag path at the optimal angle to the wind. However, the current is strongest mid-stream. To take advantage of this, and to make better time, you decide to tack twice as often, thus staying closer to the central line of the river. Clearly, you will make better time still if you tack twice as often again, and so on.



In the end you are sailing along the central line, in an infinitesimal zig-zag. This must in no way be confused with the central line itself, along which, on the contrary, the wind would stop you dead, or blow you backwards.

You see that we have solved a mathematical problem without any calculation! We have not used any of the symbols that school children find so difficult to get accustomed to! For mathematics is concerned with ideas; symbols are simply shorthand. Most of them were introduced by the Arabs or else during the Renaissance and were invented mainly to speed up the thinking process. If you look at mathematical manuscripts written in the Middle Ages, you find that what was then a long string of words has been replaced by the "=" sign. I am all in favor of shortening the time needed to solve a mathematical problem or to formulate a mathematical theory, but speed is less important than accuracy, imagination, creativity, depth, perseverance, and a certain sense of beauty—precisely what every humanist values.

❧

It is time, perhaps, to re-evaluate at all levels in our school and universities the standard ways of estimating mathematical ability and promise. If we retain the recent examination system, there certainly are cases where the results should be interpreted rather freely! Let me tell you about an instance which took place when I was a student of the philosopher Ludwig Wittgenstein.

I had just been made a fellow of Trinity when Wittgenstein announced a weekly seminar on "Foundations of Mathematics." People flocked to see him, though at the end of the year the audience was reduced to two persons, of whom I was one. It was a long time ago: I remember only that in one lecture Wittgenstein had great difficulty with the equation, "A=B."

More than once he paused for some time in the middle of a sentence and just stood there, with his mouth open, in front of the little trestle blackboard. We two, his whole audience by then, sat spellbound in his very bare and austere small living room, on primitive chairs. We were thinking hard, trying to make out what he was driving at. Then, suddenly, he would let his words race along, to make up for the time lost. To explain A, he had to explain B, and to explain B, he had to explain C, and so on! However, the gist of it all was that if A and B are equal, why not use the same symbol for both? But in that case, the equation becomes A=A, which cannot be denied and therefore is meaningless.

How a humanist would have loved this! How Socrates would have loved it! But we two in the audience were mathematicians, and we were young. We could see there must be something wrong with the argument but we couldn't pin it down. But a computer, in spite of its speed and efficiency, would not even have seen the difficulty. A computer does not distinguish what has meaning from what has not.

To dispose of Wittgenstein's difficulty depends on an idea which is totally foreign to his scheme of things: the question raised by Humpty-Dumpty in Lewis Carroll's *Through the Looking Glass*:

"When I use a word," Humpty-Dumpty said in a rather scornful tone, "it means just what I choose it to mean—neither more or less."

"The question is," said Alice, "whether you *can* make words mean so many different things."

"The question is," said Humpty-Dumpty, "which is to be master—that is all."

A fundamental idea in mathematics lies in this exchange of words.

For Wittgenstein, the = symbol has a definite meaning based solely on the general usage of the word "equality." For mathematicians this is not the case at all! It represents, on the contrary, a much vaguer relationship that we can assign more or less arbitrarily, if it satisfies common sense conditions of "likeness." For Wittgenstein the equation A=A is meaningless; for mathematicians it represents a condition to be satisfied by the = symbol, and this is not meaningless at all! As to the equation A=B, if we read it "A is like B," and we reflect that two persons are often said to be alike simply because they have the same nationality or some other common property, which is more or less at our disposal to choose, we can choose an arbitrary set "E" and agree to write A=B whenever both A and B belong to this set. To disregard differences between sufficiently like things is thus linked to "set theory," which changed mathematics so much in the last one hundred years (and more recently to the "new math" introduced in American schools).

Mathematics does not make the subtle distinctions that affect human emotions, the shades of meaning that suggest much left unsaid; that is the domain of the humanities! Humanism is in a sense richer than my own field of mathematics. Subtle distinctions can, however, be most annoying and unnecessary—we know them only too well in politics, in law, in religion!

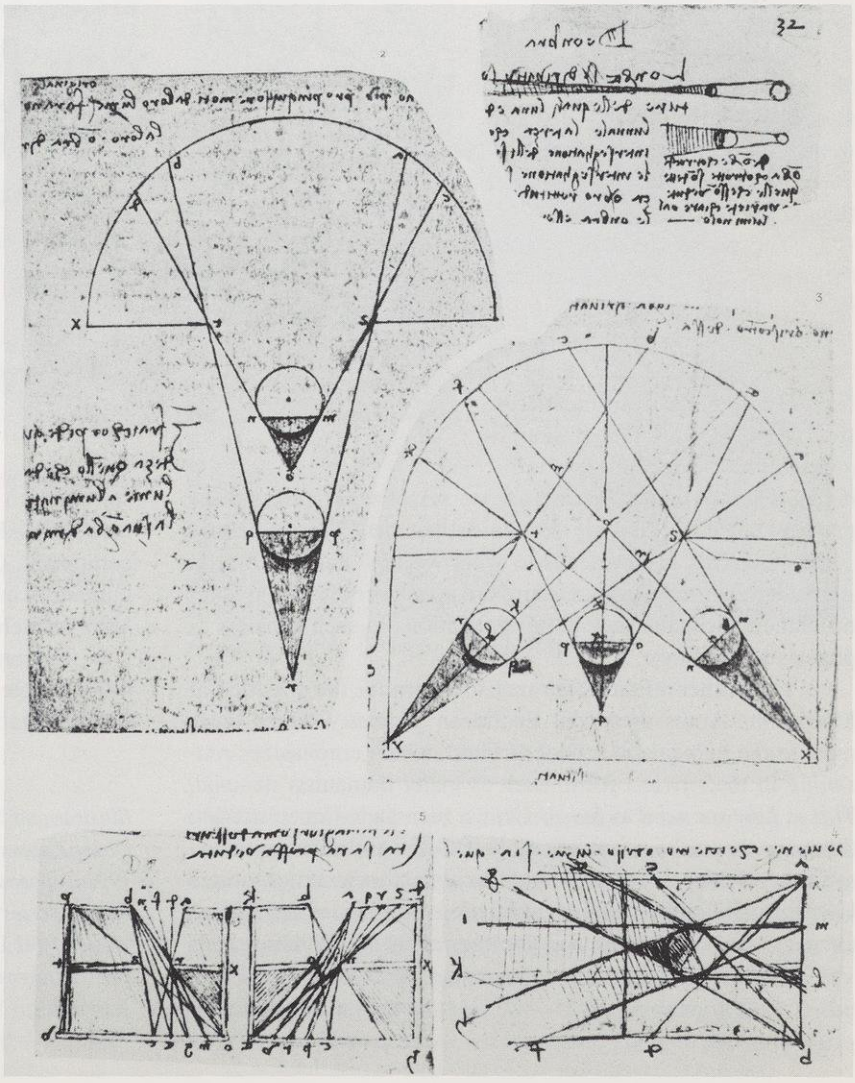
Leonardo da Vinci and Pascal well knew that beauty of expression and depth of thought are mathematical. Need I add that the succession of our musical mores is mathematical, just as rhythm is, and that music too is thus intimately connected with mathematics? Indeed the reluctance many people have to take up mathematics may be partly due to their built-up sense of rhythm, of symmetry, of beauty, that they do not wish to subject to the teaching of pedants!

What makes the world and its problems difficult to understand is that we have, in some cases, too many facts; in others, too few—sometimes none at all! I wish people would stop drawing conclusions from the absence of facts, or from inadequate information. At least when there are *too many* facts, mathematics can put some order into the mess! The whole spirit of mathematics lies in disregarding what is, for its conclusions, unimportant: this is called *abstraction.*

Lewis Carroll illustrated it in *Alice in Wonderland* by the grin of the Cheshire cat, which stays last of all as the whole cat fades away! Or we may think of a doughnut and let its image fade, leaving last of all *the hole.*

Is abstraction difficult? Or does it make things easier? All I can say is that we now realize that it is very old. Science and religion tell us that in the most distant past life existed only as a primitive dust in a chaos. Modern physics holds that this chaos is still there! We do not see it, but it really consists of a void in which tiny dots are racing about.

Why do we not see it? Why do we not hear it, or feel it, or smell it, or taste it? Because life as we know it was only made possible by ignoring the randomness and taking account only of the average regularity of our chaos. Over the millennia, we



evolved, or were created, with a proper size and with minds and senses to fit this average regularity and its apparent stability. Space and time, as we see them, are abstractions; so are chairs that we sit on, and they seem solid enough! But if we saw them as they really are, even for an instant, would we not experience the terror, the panic, that we might feel on a high mountain, when a great void opens beneath us? For my part, I prefer not to see this!

Let us then look at abstraction from the humanistic point of view, in terms of art, of beauty. Think of the beautiful rugs the Persians used to make with intricate designs depicting flowers, trees, birds, and perhaps animals and men and women. The *designs* are what the Arabs copied—they were *abstract*. The Arab religion forbids depicting living things, just as Britons who sided with Cromwell thought they were doing good by smashing the stained glass in churches and college chapels—except that the Arabs did not destroy Persian rugs! They merely copied them, omitting the living things.

The architectural designs of the Arabs take us into geometry, not so much into the rigorous geometry of Euclid, but rather into the more intuitive geometry of beautiful things, beautiful patterns, such as the bees use in their honeycombs. There we can again introduce an abstraction, when we ask ourselves what makes these patterns beautiful, and we recognize that they have a certain symmetry. This in turn leads to what we now call algebra, in particular to group theory. Groups are now a very important part of mathematics, and they have applications to such subjects as physics and biology.

For further religious reasons, to determine the direction of Mecca, the Arabs preserved Euclidean geometry which owes most to the humanistic school of Plato, which emphasizes *reasoning* in the strictest form, such as many humanists demand. *This is how we need to learn!* Grown men and women need to think for themselves, not accept half-truths and distortions. At the time of Napoleon, a mathematical textbook-writer named Lacroix could mock "the very subtleties that plagued the ancient Greeks," and every now and then some bright spark suggests that we could save time and energy if the theorems of mathematics were simply vouched for by prominent citizens. Euclid's reputed reply to a king of Egypt, who found mathematics hard, was: "There is no royal road to geometry!"

Let me, therefore, not give the impression that work in mathematics is easy! The purpose of abstraction is to enable us to tackle problems that would otherwise be far beyond our grasp. Humanity has succeeded in solving many problems that were once thought insoluble. I need only mention flying and the exploration of the moon and other celestial bodies of our solar system. All such things were only possible because of progress on mathematics, in some cases long before. It is in this context that we should look at the tremendous developments, in mathematics and in other fields, that our world has experienced in the last century or so.

In our age of air and space travel, it is not safe to rest content with slipshod standards. Accidents on the ground are bad enough; in the air, or in outer space, they can easily be terrible tragedies. In our times, if there is one lesson we should learn, both from our miraculous progress and from the barely escaped disasters that still threaten us, it is that we must learn properly, however hard it may seem. And we must think properly—we must not surrender to careless standards. What has perhaps helped as we face the challenge of mathematics is the fantastic progress of computers. One thing that computers have taught us, and that humanists insist on too, is the need for logical clarity, for precise and complete formulation, and for rigorous proofs.

Personally, as we observe the world changing, I am sorry more people are not taking ancient Greek. But I welcome them to mathematics!

❧

Illustrations from The Notebooks of Leonardo DaVinci. *New York: Dover Publications, 1970. This article is based on an address given in 1991 as part of the Edgewood College (Madison)* Living and Learning *lecture series and previously appeared in* Edgewood College Today, *Winter 1991 issue.*

Science and the Keats Connection

by Robert Siegfried

"Beauty is truth, truth beauty,"—that is all
Ye know on earth, and all ye need to know.
John Keats

We have all resonated with the message of these lines at one time or another, the sense of insight and discovery is strong upon us, and the beauty of the discovery is so clear that we resonate also with Descartes's faith that any understanding or vision that was sufficiently "clear & distinct" must come from God and therefore be true. Keats put it more beautifully, but not necessarily more truthfully. For as Peter Medawar has said, Keats's identification of truth and beauty is absurd if taken literally, leading to that never-never land of wishful thinking. Though science cannot be built on good feelings, good feelings often come from good science. Evidence of the aesthetic component of science is seen throughout all its history up to and including the present time. A recent example from cosmology illustrates the point:

Johannes Kepler. Courtesy Yerkes Observatory.

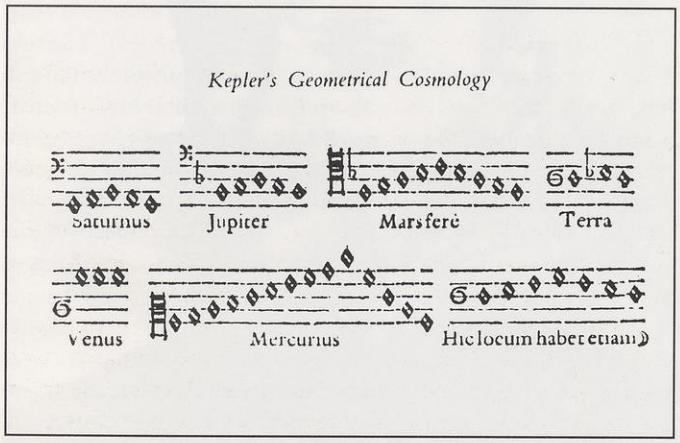
> The details of supersymmetry are dauntingly complex. Yet, at its core the supersymmetry principle has the kind of compelling, abstract beauty that leads people to believe that somehow it must be true.[1]

Among the values of science listed by Richard Feynman, the late Nobel laureate in physics, was the "fun called intellectual enjoyment which some people get from reading and learning and thinking about it, and which others get from working in it."[2] The aesthetic appeal of discovering harmony and order in nature has always been a closely related awareness of those pursuing the scientific enterprise. I want to illustrate this association through the views of two well-known scientists who expressed their intellectual enjoyment in explicit terms. In spite of the two centuries that separated their lives, both Johannes Kepler in the early seventeenth century and Humphry Davy in the early nine-

teenth expressed their intellectual enjoyment in religious terms appropriate to their respective cultural environments.

The religious garb of Kepler's expressions was sincerely donned, but it hardly conceals the ecstatic enthusiasms of the intellectual delight that forms the real source of his wonder. Davy, after two centuries of scientific advance and the increased secularization of the Western worldview, offered an unconventional cosmic morality where intellectual enjoyment became as much an obligation as a pleasure, the very instrument of personal salvation. It was offered with the ponderous seriousness of a dying man who believed it to "contain certain truths which . . . will be extremely useful both to the moral and intellectual world."[3]

Kepler's Harmonies



From Harmonices Mundi, Liber V, 1619, by Kepler.

Johannes Kepler (1571-1630) is best known for the three laws of planetary motion that bear his name. These were developed in the first decades of the seventeenth century when the debate between the earth-centered system of Ptolemy and the new sun-centered system of Copernicus was still vigorously pursued. Kepler's laws gave mathematical descriptions of the planetary motions with a precision far in advance of anything previously known. His fascination with mathematical harmonies long antedated the development of his laws. In 1597 he wrote to his former teacher Michael Maestlin,

> Man will at last measure the power of his mind on the true scale, and will realize that God, who founded everything in the world according to the norm of quantity, also has endowed man with a mind which can comprehend these norms. For as the eye is for color, the ear is for musical sounds, so is the mind of man created for the perception not of any arbitrary entities, but rather of quantities; the mind comprehends a thing the more correctly the closer the thing approaches toward pure quantity as its origins.

In another letter to the same friend in 1599, Kepler wrote,

> Those laws [which govern the material world] lie within the power of understanding of the human mind; God wanted us to perceive them when he created us in His image in order that we may take part in His own thoughts . . . Our knowledge [of numbers and quantities] is of the same kind as God's, at least insofar as we can understand something of it in this mortal life.

Kepler's life-work was a continuing witness of his own piety. While working on the *Mysterium Cosmographicum* in 1596, he wrote,

> I wanted to become a theologian; for a long time I was restless. Now, however, observe how through my effort God is being celebrated in astronomy.

In later writings he frequently refers to astronomers as "priests of the Deity in the book of nature." And again, he worships a God of nature, in nature, a God "whom in the contemplation of the universe I can grasp, as it were, with my very hands."

In his struggle to accommodate the latest observational data of planetary positions to a sun-centered geometrical model, Kepler was required to calculate the precise positions of the orbits around the sun. When he realized that the planes of the orbits intersected at one single point, he must have *known* with a certainty that can only come from internal intuitive conviction, that there was more harmony here than Copernicus could possibly have known. Geometry required that any three planes must have one point in common; all other planes at whatever angles need not intersect at that same point. But Kepler had just found that in the physically real world of the planets, the planes of all *six* orbits share a common point, occupied by the sun itself. This fusion of geometry and physics gave substance to his belief that the sun was the physical cause of planetary motion. Though Copernicus could ask with a sense of cosmic harmony and plausibility where else would one place that great light giver, the sun, but in the center, Kepler's calculations had now defined the center with a quantitative precision that Copernicus could hardly have dreamed of.

As Gerald Holton long ago pointed out, Kepler failed in his effort to create a physical astronomy; his sense of solar causation of planetary motion was quantitatively inadequate. "Despite his protestation, Kepler was not as committed to mechanical explanations of celestial phenomena as was, say, Newton. He had another route open to him." That route, of course, was largely mathematical, but with more than a modicum of physical identity as well, as we have just seen. Though he could not accurately describe *how* the sun moved the planets, its unique geometric location made its role as physical cause nonetheless inescapable. Kepler's laws were in accord with observation to a degree of precision previously unexperienced in astronomy, but they also retained the ancient aesthetic faith in a constancy in the heavenly motions, which Kepler now found in the areal velocity in elliptical orbits. It was no longer the speed of the planetary motion on a circular orbit that was con-

stant, as Plato had established, but the area of their radial sweep that is constant even while conforming precisely to the observed appearances. And the equal area law is focused on the sun which lies at its unique place in the heavens. Though his physical astronomy remained quantitatively incomplete because he had no explanation of how the sun caused the planets to move, Kepler could accept that, with the recognition that his contribution was perhaps only the latest in an on-going progression of knowledge and understanding:[4]

> I have thought it worthwhile, in passing, to tweak the ear of the higher philosophy. Let it ponder the question whether the almighty and provident Guardian of the human race permits anything useless and why, like an experienced steward, He opens the inner chambers of His building to us at this particular time. . . . Or does God the creator . . . lead mankind, like some growing youngster gradually approaching maturity, step by step from one stage of knowledge to another? (For example, there was a period when the distinction between the planets and the fixed stars was unknown; it was quite some time before Pythagoras or Parmenides perceived that the evening star and the morning star are the same body; the planets are not mentioned in Moses, Job, or the Psalms.) Let the higher philosophy reflect, I repeat, and glance backward to some extent. How far has the knowledge of nature progressed, how much is left, and what may the men of the future expect?[5]

Behind his cloak of genuine piety, one senses Kepler's delight with the realization of these harmonious mathematical relationships. By creatively manipulating the values of the angular speeds of the planets, Kepler was able to express their ratios in musical form, a true music of the spheres. Almost four centuries later his enthusiasm is still infectious.

By the end of the seventeenth century, as we all know, science had become a significant activity in western Europe with the formation of permanent scientific societies and regularly published journals. Even as the new activity was attacked for its impious investigation of God's secrets, it had generated a pattern of defense already visible in Kepler's position. Natural theology based chiefly on the argument that order in nature was a manifestation of divine design, became a major component of much scientific and theological writing. Intellectual delight became disguised as piety, whether deliberately or unconsciously. But there appears no reason to doubt that discovering nature's ways was a good-time activity.[6]

Scientific writings in the two centuries between Kepler and Davy furnish many expressions of the intellectual delight in their activity, more often than not given a pious gloss.

THOMAS HOBBES (1588-1669)
With Thomas Hobbes "glorying" becomes almost a technical term: "Joy, arising from imagination of a man's own power and ability, is that exultation of mind called glorying," he says, in *Leviathan*, and in another passage he speaks of a "perseverance of delight in the continual and indefatigable generation of knowledge."[7]

JOHN LOCKE (1632-1704)
The pursuit of truth is a duty we owe to God . . . and a duty we owe also to ourselves.[8]

RICHARD BENTLEY (1662-1742)
All bodies were formed for the sake of Intelligent Minds: As the Earth was principally designed for the Being and Service and Contemplation of Men; why may not all other Planets be created for the like uses, each for their own Inhabitants who have Life and Understanding.[9]

GEORGE SAVILLE (LORD HALIFAX) (1633-1695)
The struggle for knowledge hath a pleasure in it like that of wrestling with a fine woman.[10]

STEPHEN HALES (1677-1761)
We have here an instance, that the study of natural philosophy is not a mere trifling amusement, as some are apt to imagine: For it not only *delights the mind*, and *gives it the most agreeable entertainment*, in seeing in every thing the wisdom of the great Architect of Nature: But it is also the most likely means, to make the gift of kind Providence, this natural world, the more beneficial to us, by teaching us how, both to avoid what is hurtful, and to pursue what is most useful and beneficial to us.[11]

The searching into the works of Nature, while it *delights and inlarges the mind*, and strikes us with the strongest assurance of the wisdom and power of the divine Architect, in framing for us so beautiful and well regulated a world, it does at the same time convince us of his constant benevolence and goodness towards us.[12]

GEORG ERNST STAHL (1660-1734)
But how enormously attenuated and subtle material becomes through the movement of fire is shown by experience, which furnishes a field for thought and which *also delights us*.[13]

COLIN MacLAURIN (1698-1746)
The objects of nature . . . constitute the supreme object of the speculations of a philosopher; who, while he contemplates and admires so excellent a system, cannot but be himself excited and animated to correspond with the general harmony of nature.[14]

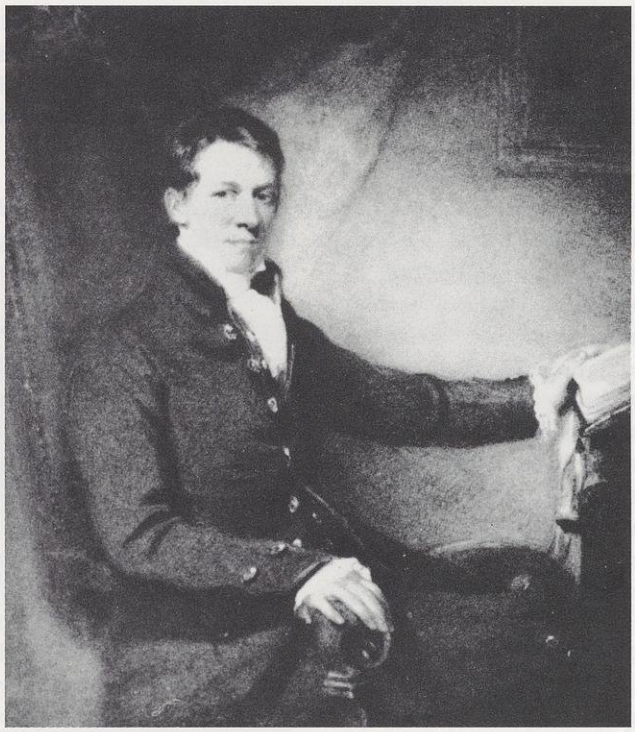
PIERRE SIMON De LaPLACE (1749-1827)
Astronomy, from the dignity of the subject, and the perfection of its theories, is the most beautiful monument of the human mind—the noblest record of its intelligence. Seduced by the illusion of the senses, and of self-love, man considered himself, for a long time, as the centre about which the celestial bodies revolved, and his pride was justly punished by the vain terrors they inspired. The labour of many ages has at length withdrawn the veil which covered the system. And man now appears, upon

a small planet, almost imperceptible in the vast extent of the solar system, itself only an insensible point in the immensity of space. The sublime results to which this discovery has led, may console him for the limited place assigned to the Earth, by showing him his proper magnitude, in the extreme smallness of the base which he made use of to measure the heavens. Let us carefully preserve, and even augment the number of these sublime discoveries, which constitute *the delight of thinking beings*.[15]

Humphry Davy's "Vision"

Humphry Davy (1778-1829) is remembered today chiefly as the discoverer of sodium and potassium, for demonstrating the simple nature of chlorine, and as the inventor of the miner's safety lamp. In his own time he was recognized as the world's outstanding chemist and much admired lecturer on science for general audiences at the Royal Institution in London. Without formal education beyond the age of sixteen, Davy was free to create a philosophy that reflected contemporary thought in a uniquely personal way. Even before he had given his first lecture there, the Royal Institution seemed to him to have "the capability of becoming a great instrument of moral and intellectual improvement." Throughout the dozen years that he lectured there, his most persistent theme was that of encouraging his largely privileged audiences to become patrons of science, their rewards would be the intellectual enjoyment that would come with their larger and brighter vision of the order and design in nature. Shortly after his arrival in 1801, he asserted in an introductory discourse to a series of chemical lectures that,

> The quantity of pleasure which we are capable of experiencing in life appears to be in a great measure connected with the number of independent sources of enjoyment in our possession. . . . In considering the relations of the pursuit of chemistry to this part of our nature, we cannot but perceive that the contemplation of the various phaenomena in the external world is eminently fitted for giving a permanent and placid enjoyment to the mind. For the relations of these phaenomena are perpetually changing; and consequently they are uniformly obliging us to alter our modes of thinking. Also the theories that represent them are only approximations to truth; and they do not fetter the mind by giving to it implicit confidence, but are rather the instruments that it employs for the purpose of gaining new ideas.[16]



Sir Humphry Davy. Portrait by John Jackson, 1823. Courtesy Penlee House Museum, Penzance.

Davy continued to express the joys of intellectual understanding throughout his public career, as well as formulating new expressions in his private notebooks:

> What is the end of our existence if it be not to investigate the wisdom of creation; to understand the works of God; to increase in intellectual power, to form the moral law upon an extended view of society, to enjoy the sublime pleasures of reason and imagination. As the eye has been made to be delighted with the forms of beauty, the ear with sweet sound; has the understanding, the peculiar attribute of man, no objects of delight, no enjoyments? Yes, it is the discovery of *truth*, the contemplation of the universe, the sublime pleasure of understanding that which others fear and of making friends even of inanimate objects.[17]

> I hardly know which we ought most to rejoice at — the progress that has been made in natural knowledge, or the progress that is to be made. If a limit could be obtained, if we could rest satisfied with what is known, how great a source of activity, profit, and pleasure, would be destroyed. And we cannot be too grateful for that wonderful constitution of the external universe, by which it is rendered an inexhaustible source of interest to the inexhaustible human mind; by which it is admirably adapted to keep awake that happy curiosity, which is a constant germ of improvement; that noble kind of ambition which continually tends to exalt the intellectual being; that flame of life, unquenchable even in the fountain of knowledge.[18]

In the book written during his final illness in 1828-1829, Davy elevated the theme of scientific progress and pleasure (treated so frequently in his public lectures) to an entire moral cosmology. It was published posthumously as a collection of dialogues titled *Consolations in Travel, or The Last Days of a Philosopher*. In "The Vision" he drew on the eighteenth-century traditions of the plurality of inhabited worlds and the great chain of being to create the frame for an ultimate conjunction of all immortal souls with God, whom he called the "infinite intel-

ligence." Life is everywhere in the universe; the spiritual essences, like the material bodies they inhabit, are infinitely varied; they are indeed "parts more or less inferior of the infinite mind." Each of these souls or monads, as he variously called them, carried with it from one material embodiment to another, "only the love of knowledge or of intellectual power, which is in its most perfect development, . . . the love of God."

> Each soul or monad is in a probationary state, its reward or punishment determined by how it has used its intellectual power in that embodiment. When its intelligence has been nobly applied toward the increase of knowledge of the world and to the application of that knowledge benevolently, and "in developing and admiring the laws of eternal intelligence," the monad will be rewarded by possessing in the next embodiment a greater capacity to receive sensory impressions, and perhaps to dwell on a more intellectually stimulating planet, such as Saturn with its rings and many moons. But if the intellectual power is used vaingloriously, or in idle curiosity, "the being is degraded, it sinks in the scale of existence. . . ." But ultimately all the life in the universe must rise through all the forms of beings "before the consummation of things."[19]

In Davy's cosmic "Vision," intellectual pleasure is both the motivation and the moral reward for the pursuit of scientific understanding. Its significance for Davy can be measured by the elaborateness of his scheme of justification.

Summary

I suggest that the fundamental motivation for doing science is simply that there is a very real intellectual enjoyment in the activity. That kind of fun surely is not unique to science and no doubt chess players get the same kind of thrill and excitement from solving problems of their game. The bounds of nature are much broader than those of the chessboard and the rewards seem a bit nobler. It seems likely that all of us have the potential for that kind of intellectual fun.

If intellectual pleasure is not unique to science, it is nonetheless a common and perhaps necessary ingredient of that activity. But science has become such serious business today, it not only drives our economy through its contribution to technology, it increasingly has been accused of ignoring its social responsibility, and we expect it to solve our social problems. If intellectual enjoyment is the chief motivation of scientific activity, can science survive under all these burdens? To justify the pursuit of science as fun now seems frivolous. In earlier times the fun had to be disguised as piety; today it has to claim social responsibility.

Let us recall the words of Richard Feynman who stated that intellectual enjoyment of science "is an important point, . . . not considered enough by those who tell us it is our social responsibility to reflect on the impact of science on society."[20] Certainly scientists must be cognizant of their social responsibility, but the social disposal of the products of science in our system is a political responsibility of the citizenry. It does not belong primarily to science. If the burden assigned becomes too heavy and science loses its sense of fun, we may be in deep trouble indeed. ❧

Notes

1. M. Mitchel Waldrop, "Supersymmetry and Supergravity." *Science*, 1983, 220: 29. April 1983, 491-493; p. 492.

2. Richard Feynman, *What Do YOU Care What Other People Think?*, p. 241.

3. *Memoirs of the Life of Sir Humphry Davy*. John Davy, 2 vols. London, 1836, II, 384-385.

4. For the information and quotations in this account of Kepler, I have relied heavily on Gerald Holton, *Am. J. Phys.* 1956, 24: 346.

5. Kepler's *Conversation with Galileo's Sidereal Messenger*. Ed Rosen, Trans., Johnson Reprint, New York, 1965; p. 40.

6. See Richard S. Westfall, *Science and Religion in 17th Century England*. Ann Arbor: University of Michigan Press, 1973.

7. Peter B. Medawar, *The Hope of Progress*, p. 130.

8. *Essay Concerning Human Understanding*. Quoted from the Introduction by Maurice Cranston, pp. 15-16.

9. Quoted by Stephen Dick, *Plurality of Worlds*, p. 149, from Bentley's eighth Boyle Lecture, 1693.

10. Quoted by Albritton, *The Abyss of Time*, p. 42.

11. Quoted by I.B. Cohen in *Newton and Franklin*, pp. 267-268. From a dedication to a paper on Hales's ventilating system for ships. Emphasis added.

12. Dedication to *Vegetable Staticks*, 1727. Oldbourne Reprint, London, 1961, p. xxiv. Emphasis added.

13. From *The Treatise on Sulphur*, 1718, found in *The Source Book in Chemistry*, p. 60. Emphasis added.

14. Quoted by Herbert H. Odom, "The Estrangement of Celestial Mechanics and Religion," *Journal of the History of Ideas*, 1966, 27: 533-548; p. 541.

15. *On the System of the World*, Dublin, 1830. II: 341-342. Emphasis added.

16. *The Collected Works of Sir Humphry Davy, Bart*, edited by his brother John Davy, 9 vols. London, 1839-40. New York: Johnson Reprint Edition, 1972. II: 324.

17. Royal Institution, Davy Mss. 15j: 105.

18. From a lecture of 1809, *Works*, VIII: 351.

19. Davy's "Vision" is the first of six dialogues in his *Consolation in Travel, or Last Days of a Philosopher*, *Works*, IX: 213-249.

20. Feynman, see note No. 2.

The Value of Modern Mythology: Art and the Universe

by Steven Vincent Johnson

I suspect most artists experience some level of bafflement when they try to answer the question frequently asked, "Where do you get your ideas?" In concrete terms, I don't have a satisfactory answer to that age-old question, but perhaps it is more accurate to speculate that there may be a kind of gestalt perceptual synthesis which artists sense and translate from time to time.

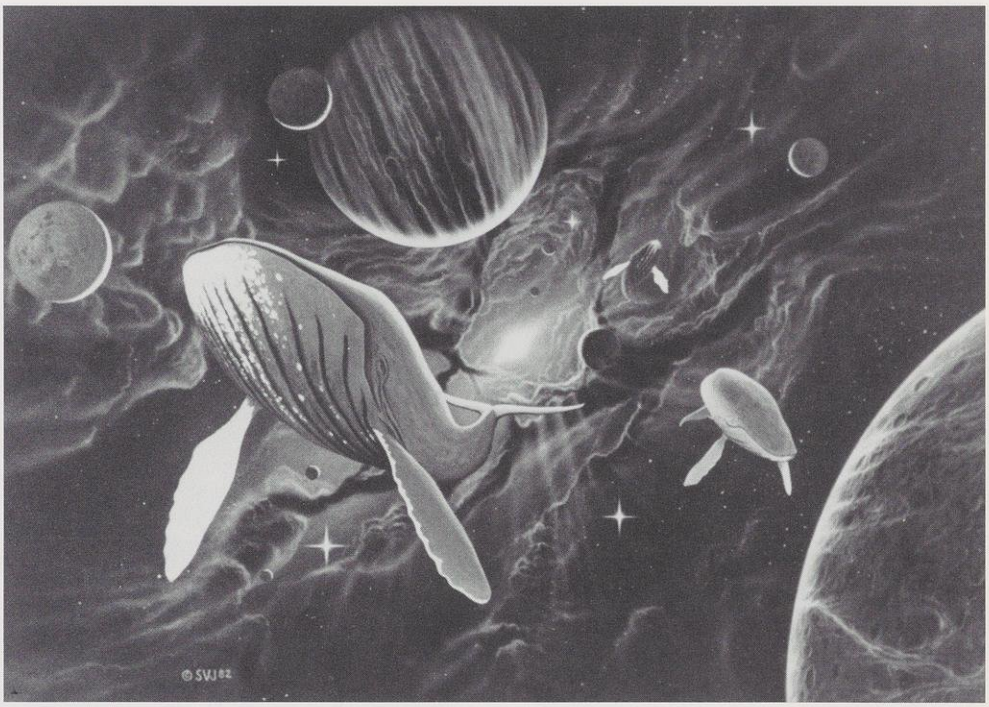
For me that synthesis may have begun when I was about five years old. I vividly remember a collection of bedtime stories my mother used to tell me. They revolved around a little boy named Robert Allan who just happened to have a rocket ship hanging around in his back yard. After breakfast little Robert would say goodbye to Mommy, climb into his rocket ship, and zoom into outer space looking for adventure.

Robert always found delightful planets worth visiting. For example, once he landed on a world inhabited by a group of friendly six-foot-tall grasshoppers. The head "hopper" invited little Robert to join their merry group in the preparation for a great festival. After listening to cricket music, Robert took out his own bag lunch (a peanut butter jelly sandwich thoughtfully prepared beforehand by Mom-

Dream Path, acrylic, 22 x 18 inches. 1986.

my) and dined while the others sampled native dishes of fresh-cut grass and flowers served on huge leaf platters. At the conclusion of the festivities little Robert thanked his hosts and promised to visit them again in the future. He rocketed back to Earth, landing in his own back yard conveniently just before supper was served. Those were the visions that lulled me to sleep. My mother helped develop and propel my imagination toward new configurations of realities where it was possible for a small child to envision an expanded multidimensional universe, one that could exist if one only had the desire to explore it.

Now, some thirty-five years later, I still feel it is essential for me to cultivate that almost childlike wonder of the surrounding universe. It is a wonder filled with the need to explore other levels of reality, to make contact. It hasn't always been easy, as our western culture often prefers to interpret reality in more objective or prosaic terms. It almost seems as if our modernistic and westernized society perceives the gifts of imagination and fantasy primarily as enjoyable but harmless experiences that have little to do with comprehending the true makeup of reality. I speak symbolically here, but it is almost as if our imaginations have been relegated to the back seat of the bus, so to speak, where they aren't allowed to interfere with what seems to me to be an obsession our society has with an objective interpretation of the universe.



Nature's Navigators, acrylic, 20 x 30 inches. 1982.

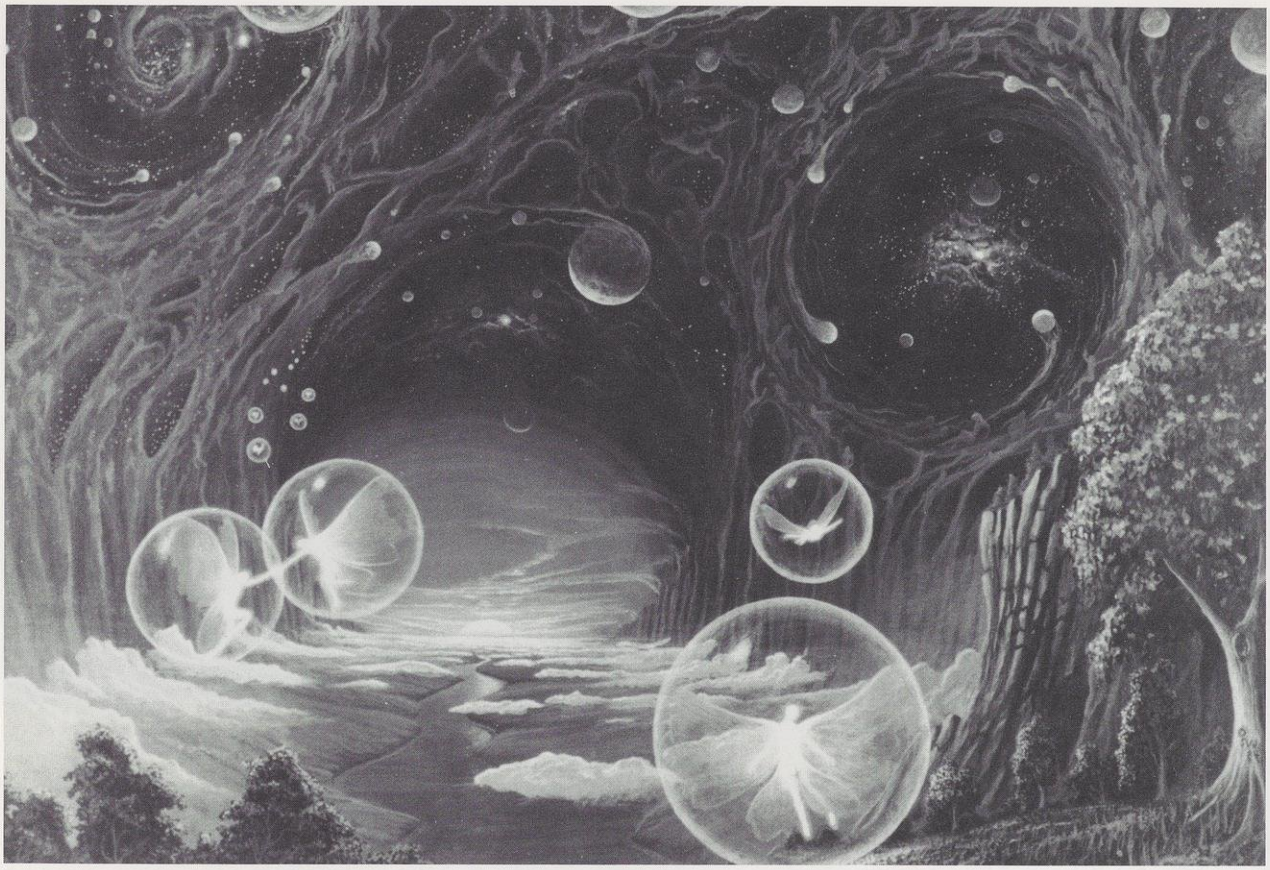
I often feel that our western society is desperately struggling to validate a subjective structure to reality similar to the way scientists have attempted to map out the objectively-perceived universe. The catch is that the laws which rule our perception of the *objective* world appear to operate very differently from those that seem to govern our perception of the *subjective* universe. Like oil and water, they don't mix easily, making it difficult for many to risk bridging the gap.

I recall what Joseph Campbell had to say on a related topic. He observed that the myths created by our ancestors no longer make sense within the context of our modern society. Campbell went even farther to warn us that a society with no contemporary myths in which it can believe is in danger of losing an essential part of its humanity. And the appreciation of modern science, by itself, cannot rescue us from this dilemma. It is in fact tragic that often our objective philosophies, backed by contemporary science, seem to imply that myths are nothing more than lies and rationalizations that were concocted in order to comfort the ignorant. In my opinion, nothing could be farther from the truth.

But how can we resolve this problem? Perhaps we have become too sophisticated to believe in the myths our forefathers used to accept as fact. We can't go back even while many wish we could, even while others attempt to force the clock back to a seemingly more innocent time.

In my own way I have attempted to resolve this conflict through my art work and writings. My visions are attempts to suggest ways in which our modern society might integrate our objective and subjective interpretations of reality. We need new myths to help us reflect on the values of our cultures, our philosophies, our sciences. For example, new myths can have the ability to incorporate both an understanding and a deep sense of respect for the power of modern science and the accompanying technologies it offers us without loosing sight of our need to touch one other.

My paintings are personal attempts to visualize a new mythological vision of the universe. My fantasies often depict other realities, other worlds where fantastic technologies are integrated into the structure of society as well as the living physics of the planet itself. The planets I paint are often visualized as legitimate, living creatures in their own right following their own evolutionary paths. I try to show that all life-forms cohabiting within a planet's biosphere participate in a special relationship in the same sense that bacteria live symbiotically within our digestive systems. Some of my paintings draw heavily on symbolic imagery by attempting to visualize an organic perception of a universe pulsating with life-energy. For example, I sometimes visualize this energy as channeled through a symbolic nervous system that connects and integrates the uni-



Dance of the Planet Tenders (detail), 24 x 30 inches. 1984.

Double Sunset, acrylic, 20 x 30 inches. 1980.

verse as if it were a vast self-conscious, multidimensional organism.

I don't know where my mother got her ideas for little Robert and his interplanetary adventures, and I'm not sure where my own ideas come from, but I try to translate as clearly as possible my personal feelings and impressions. I hope to convey a sense of balance to all who observe my art. I hope my interpretations assist each observer in his or her own quest for a unique relationship with the universe.

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The artist's work is available on cards.

George Santayana and Wisconsin

by Michael Longrie

Those who cannot learn from the past are condemned to repeat it.
Santayana

*George Santayana, one of the foremost thinkers of his time, today largely has been reduced to this famous footnote, for, as John McCormick observes, "now his name is attached only to an epigram about history become a journalists' cliche" (McCormick, xiii). At the turn of the century, however, Santayana was counted among the most profound philosophers, along with William James and Josiah Royce, his colleagues at Harvard University. He wrote extensively over a long career, and included in his writings are tracts of naturalist philosophy (*The Realm of the Senses*), aesthetics (*The Sense of Beauty*), literary criticism (*Three Philosophical Poets*), and autobiographical reflection (*Persons and Places*). His detachment made him a keen critic of American culture, and his* The Genteel Tradition at Bay *was a watershed in American intellectual history. Yet, for all his writing and influence, we no longer know Santayana.*

Santayana visited the University of Wisconsin twice, in April 1910 to present a series of lectures on Lucretius, Dante, and Goethe, and again in June 1911 to receive an honorary doctor of letters degree. He recorded his impressions of the university in a collection of private letters to his sister, Susana Sturgis de Sastre in Avila, Spain, and to Horace Kallen, his former student at Harvard and professor of philosophy at Wisconsin. These letters reveal a dissatisfaction with the eastern American academy and a bemused paternalism towards the "Western" universities. Beneath the bemusement, however, Santayana applauded (without exactly admiring) the efforts of universities such as the University of Wisconsin in their efforts to move away from an elitism which he thought infected their sectarian eastern counterparts. These were pivotal years in Santayana's life, for he would leave teaching—and America altogether—within two years of his first visit to Wisconsin.

Before his first visit he betrays privately his notion of what a journey to the Middle West will be like. Writing from the Colonial Club, Cambridge, March 1, 1910, he intimates to his sister that on the way to Madison he will stop in Chicago. He reveals his ironic view of the lecture circuit, writing that in the great middlewestern metropolis he expected to "see some amusing things, as the people who are to have me in tow seem to be semi-Bohemian, semi-rich, and semi-literary" (Cory, 95). After his arrival in Madison, he pens another letter to his sister, this time from his room in the University Club on State Street. He begins with a description of the area's natural features, comparing Madison to Boston. He calls the city of 30,000 "picturesque at a distance," then notes:

> The University has some good buildings, and lawns, but is of course only half-finished, and full of architectural incongruities—one building brick and Gothic, the next stone and classical, the next a wooden shed, or a concrete storehouse (Cory, 96).

He continues, evaluating the people he has met at the university. His sense of measured patronage chills the reader despite the probable truth of his observations.

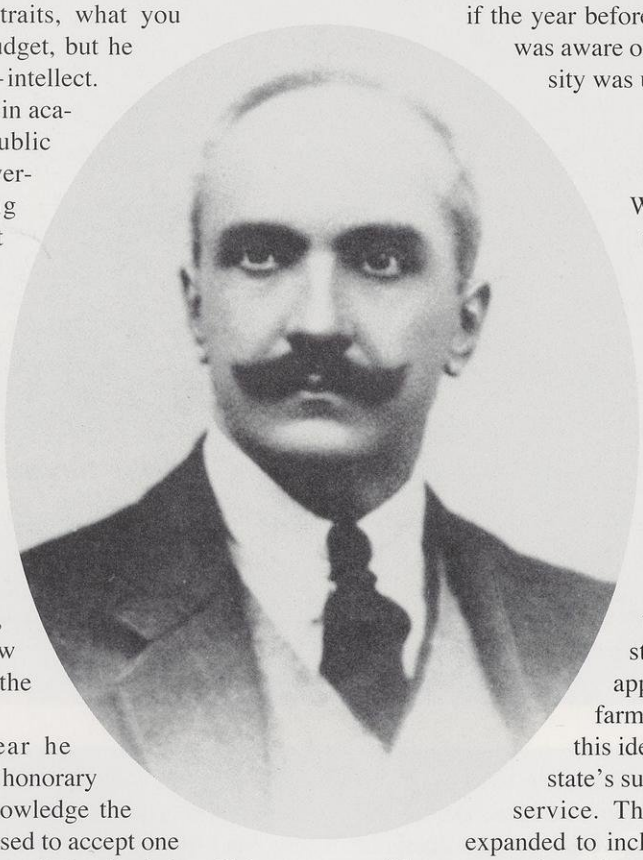
> The professors are very presentable, their wives more provincial than themselves, for they marry too young, and they by their studies and contact with the world, outgrow the class they belonged to in their youth, and to which their wives belong. The students seem good fellows, not essentially different from those at Harvard, except that the extremes of fashion and poverty are wanting here. My lectures are not such a success as they were in New York, because my ultra-modern, "superior person" point of view is not familiar here, as it is in that very cosmopolitan and ventilated place—New York (Cory, 96).

This letter is vintage Santayana. As McCormick notes, it is an "anthropological report, not that of a fellow laborer in the academic grove" (McCormick, 201-202). Despite the tone of "a report from the academic hinterland" in the letter, he does poke fun at himself, and certainly at New York. Santayana was an odd combination of personality traits, what you might call an unpretentious fussbudget, but he was a superior—and independent—intellect. He was also a sought-after speaker in academic circles. Concerning his public lectures, *The Daily Cardinal* advertised that "his style of writing English is considered to be the most literary and eloquent probably of all English writing philosophers" (*Daily Cardinal* April 12, 1910). In a polite summing up of the series the following week, the paper reported: "It has been said that Professor Santayana is one of the best living writers of philosophical prose and the lectures he has given here verify that statement" (*Daily Cardinal* April 19, 1910). Despite the praise, however, these notices were skimpy, a few short paragraphs, and buried in the center sections.

In June the following year he returned to Madison to receive an honorary doctor of letters degree, to my knowledge the only one he ever accepted. (He refused to accept one from Harvard.) From Madison he traveled to Berkeley, California, to teach a summer session and present a new series of lectures. On July 1, 1911, he wrote a warm letter to Kallen, who had recently been appointed to the philosophy department faculty at Wisconsin (no doubt through Santayana's influence). The tone of the letter confirms McCormick's observation that Santayana "had sorted out Wisconsin as he had not done the year before" (McCormick, 205). The letter opens with congratulations and good words about Wisconsin:

> I hope and believe that you will like the place. It has a great deal of character. As I have been there a second time, and talked with many people, from the President down, I think I can speak for it with some confidence. The great idea there is that of *civic progress*. They don't care how heterodox one's ideas may be; but they want one's heart to be set on the life and the necessities of the community—especially the state of Wisconsin for which they care a great deal specifically (McCormick, 205).

In this letter Santayana paternalistically praises the midwestern state university, but "his skepticism of the possibility of a democratic education colors his analysis in every clause" (McCormick, 206). The timing of this letter is important. In July 1911 he had decided to leave university teaching; and with his mother's death the following spring, Santayana left America for Europe, never to return. It is unclear if the year before, on his first visit to Wisconsin, he was aware of the academic crisis that the university was undergoing.



George Santayana. Courtesy Alfred Knopf Publishers.

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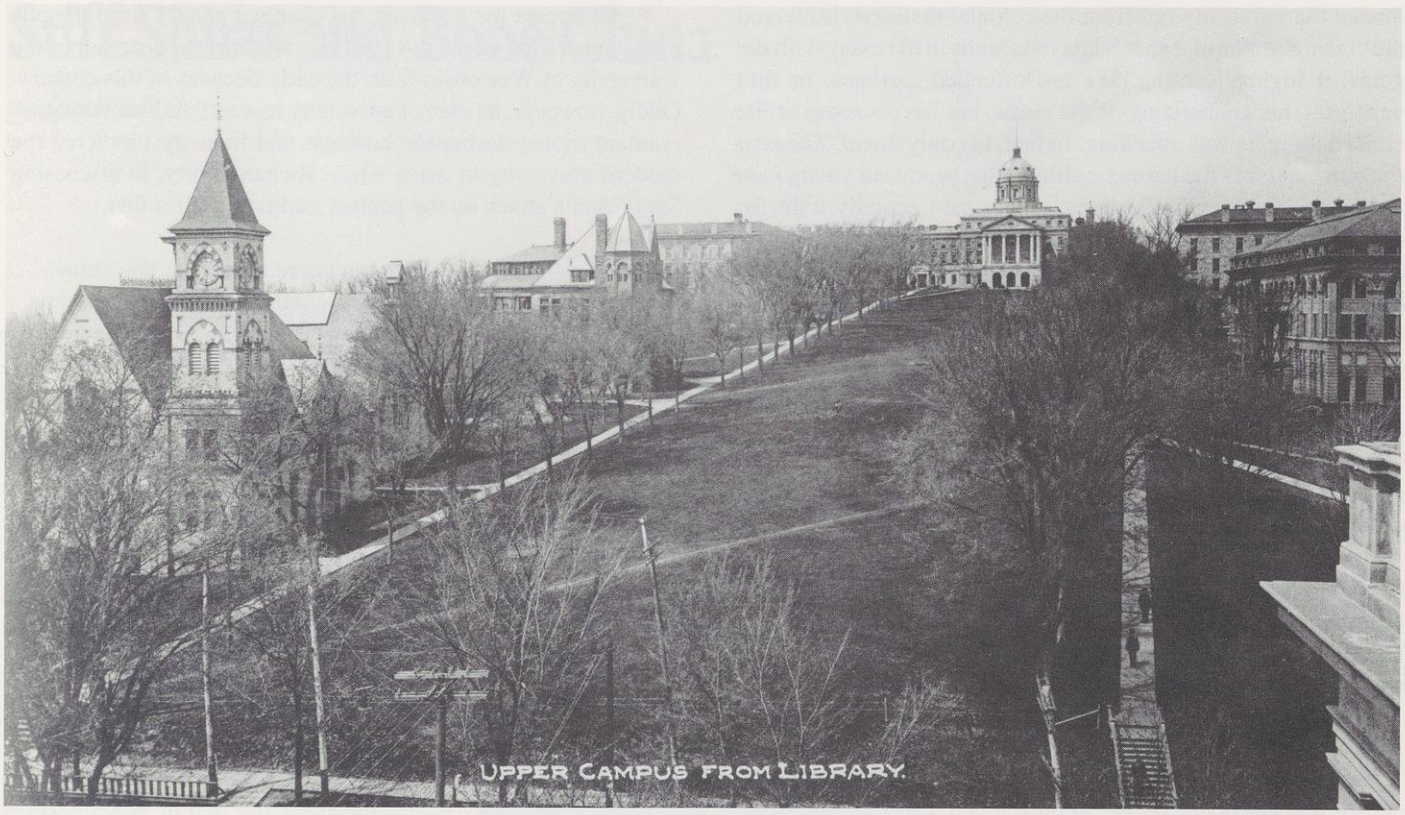
By the first decade of the century Wisconsin was renowned internationally for what was called the Wisconsin Idea, an evolving set of tenets about education clarified in the presidency and the mind of John Bascom in the 1880s. Though nowhere formally stated, the idea differentiated the state university from the sectarian schools. The basic formula had the university faculty provide their services as experts in their fields to promote the well-being of the people of the state. Their expert status was important, for the early application of the idea was practical—farming, engineering, etc. Corollary to this idea was that the student recognize the state's support and repay it with disinterested service. The implications of the idea were expanded to include what Merle Curti describes as "the co-operation of experts in framing and administering legislation for the regulation of corporate wealth" (Curti, II:3); Frederick C. Howe called it "an experiment station in politics, in social and industrial legislation, in the democratization of science and higher education" (Curti, II:3). This democratic ideal, besides opening knowledge to all, required the university to commit itself to advance knowledge—and research became an integral part of the Wisconsin Idea. For these reasons Wisconsin became very famous.

These formulations also fit the progressive movement of the 1890s and early twentieth century perfectly, and the campus became a focus of national attention. As such, they were destined to enrage the Stalwart faction of the Republican Party. Conservative segments were suspicious of such a role of education. The campus and state house were tensely at odds. The Stalwarts still harbored doubts about the professoriate, doubts that had climaxed in 1892 in the famous Ely case and the fight over academic freedom. This issue, never too deeply buried, resurfaced in the years 1907-10. With a visit to campus in January 1910 by Emma Goldman, the feared but resolute spokeswoman of American anarchist thought,



University of Wisconsin campus in Madison (circa 1900). Looking toward Bascom Hill from the roof of the State Historical Society of Wisconsin building. Courtesy State Historical Society of Wisconsin.

old voices of conservative protest were heard. Goldman's lectures scraped scabbed resentments that the university lay in the hands of radical thinking. (Curti tells us that posters advertising her talks were torn down by "a Madison lady" [Curti, II:63].) Much pressure was exerted on the administration to root out any anarchists from the faculty. The danger seemed imminent enough to warrant a reconnoitering visit by Lincoln Steffens to investigate if indeed academic freedom were imperiled. Wisconsin was looked upon by progressive intellectuals as the bellwether of a new democratic idea for higher education.

This was the scene when Santayana lectured in the Music Hall on Bascom Hill in April 1910. I have no evidence for thinking that these issues interested Santayana, but his letter of July 1911 suggests that he had learned something about the mission of the university as the people here envisioned it. No doubt the earnestness of the democratic idea amused him—his was naturally an aristocratic temperament—but its attitude toward education contrasted with the one he was raised in, one which he grew to despise. In a letter to Kallen he assumes their superior tradition while at the same time mocking it, advising the young fellow-Harvardian that he must adjust his teaching for "the great well-washed that flock to the University" and that he must forego any "haughty display . . . as might wound and perplex them" (McCormick, 205). He closes with a sarcastic, if muted, warning:

> It is not their faith that you must be considerate of, but their innocence and their desire to work together and improve themselves in the process. And you must be prepared to find the female element predominant in the academic department (McCormick, 205).

Seven weeks later he would give his talk that became the famous essay, "The Genteel Tradition in American Philosophy," where he excoriates the academic professoriate. The gist of his analysis argued that the genteel tradition (a term he invented) was the product of calvinist guilt and metaphysical egoism. He claimed that it pervaded the American academy and contrasted it with "America's ruling passion, the love of business—joy in business itself and its further operation, in making it greater and better organized and a mightier engine in the general life" (quoted in Rorty, 60). Always with an eye for architecture, he dichotomizes these two in metaphors of the house: the American will inhabits the skyscraper and the American intellect the colonial mansion. "The one is the sphere of the American man; the other, at least predominantly, of the American woman. The one is all aggressive emphasis; the other is all genteel tradition" (Rorty, 40).

Whether or not we would characterize the Wisconsin Idea—or for that matter its mode of education—as "aggressive emphasis," nonetheless, Wisconsin's democratic ideal certainly

moved the university out from the colonial mansion. It merged the "manly" enterprise that Santayana lauds in the essay with the goals of higher learning. We are offended, perhaps, or find unhelpful, his genderizing of the terms, but have a sense of the elitist culture he was attacking. In fact, his only novel, *The Last Puritan*, analyzes the hermetic culture that produced young men unable to live meaningful lives, young men actually unfit for modernity. The novel was germinated, he claims in the preface to the 1938 edition of the novel, by the untimely deaths or debilitations of half dozen and more gifted even brilliant young men at Harvard in the 1890s. He believed that the genteelism of the university system mirrored the genteelism of puritan culture and that this system, as he put it, begat men who "petered out."

This thinking is conveyed in a letter to Kallen from Madrid in April 1913. He responds to Kallen's unrest and his unhappiness with his position at Wisconsin. Santayana reassures him:

> What you say about yourself in Madison is intelligible, but I think you overrate the superiority of the spirit you might find in other places. The whole world is very western now, and clerical, industrial, or political preoccupations are dominant everywhere. . . . [T]he admirable civic qualities and incalculable future of those Western communities will appeal warmly to your imagination and make you accept the limitations of the times and the persons you have fallen among. I like Wisconsin so much that I want you to like it (Kallen, American Jewish Archives).

This is unusual warmth and praise by the stoical philosopher. True, he is trying to lift the spirits of young Kallen, but the analysis concerning the university is acute and the affection for Wisconsin directly presented. He rejects Kallen's grass-is-greener longings, arguing instead that Wisconsin is a leader in a new idea of higher education.

Another intelligent critic of American culture, Kenneth Lynn, observes that Santayana refused to see the difficulty in America as "a Manichean struggle between the forces of evil [the business community] and the forces of righteousness [the intellectuals]" (Lynn, 84) as did most American political and social historians. Lynn points out that Santayana envisioned that America's greatness lay in her national vigor and advised her to enjoy its hour of dominance on the world stage. More to our point, Santayana emphasized that Wisconsin and other western universities were more in line with history.

Emma Goldman, circa 1919. Courtesy State Historical Society of Wisconsin.

Of course the academy has changed greatly from the one Santayana railed against in 1911; so, too, has the program of the University of Wisconsin from the early decades of this century. Oddly, however, its idea of university research funded with government money to benefit business and industry predicted the modern university in many ways. Richard Rorty, in discussing Santayana's attack on the genteel tradition, writes that,

> We can afford to smile at [his distinction between the American will and the American intellect], . . . as we look about at the manly, aggressive and businesslike academics of our own time. The American academic mind has long since discovered the joy of making its own special enterprise 'greater and better organized and a mightier engine in the general life.' The well-funded professor, jetting home after advising men of power, is the envy of the provincial tycoon in the adjacent seat. If there is still something like a genteel tradition in American life, it cannot be identified with 'the academic mind.' Most academics now teach in skyscrapers (Rorty, 61).

One wonders what Santayana would have thought about the merging of the mansion and the skyscraper in the American mind.❧

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Stiff Shirts and Bone China

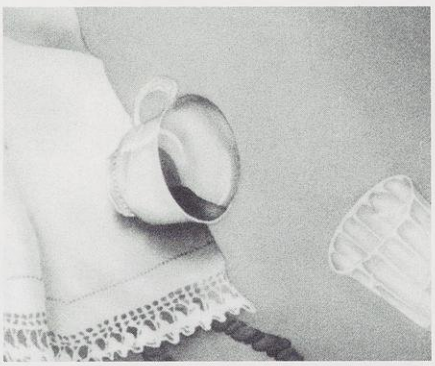
by Jocelyn Riley

Tuesday afternoons I iron white uniforms for work for the week. It's too much to expect that I could work all night, sleep a little in the day, and then iron a fresh uniform every afternoon. The only way I can make myself do it is to iron all at once, a whole afternoon's worth of ironing, all the week's uniforms, a tablecloth for Sunday, cloth napkins. If I left the tablecloth for Sunday morning I'd never be able to do it; if I left the uniform unpressed until just before I left for work it would be too much to face. But there's a certain satisfaction in spending all afternoon ironing on Tuesdays: I feel as though I've done something constructive with my day. It's the way I used to feel when I had ironed Larry's shirts for the week and had them hung up on the back of the closet door, eight in a row, bright white and starched and gleaming, ready for a new week.

I used to keep the ironing board behind the bedroom door in that tiny apartment Larry and I had. Now I have a broom closet big enough for an ironing board and I keep it there. This ironing board isn't as heavy and awkward as that old wooden one I used to hate to lug out. I can set this lightweight one up in a jiffy, but I still do all my ironing at once, not in small batches. Habit, I guess.

I'll set the dial for "Cotton"; it should be all right. This uniform has some rayon in it, but I think the "Cotton" setting will be all right. I wish I dared use the steam iron, but last time I used it, it spat brown water all over my clean white uniform. I don't know where those brown stains came from, but they were in for good. It couldn't be rust, not from a brand-new iron, so it must be some sort of junk in the water.

If I don't use the steam iron, though, I've got to sprinkle each uniform and roll it in a ball to sit and be wet while I iron them one by one. I remember my mama doing that, too, her huge wicker laundry basket piled with shirts and tablecloths and dresses. She would sprinkle a batch at a time and roll them up to wait for her tough treatment with the flat iron. She had to rotate the irons so the extra two could be heating up while she was ironing with the third. She was always juggling everything; the story of her life.



I get confused and think that if we hadn't gotten divorced or had gotten back together again, I'd still be in our last apartment, ironing white shirts on Tuesday afternoons, and he wouldn't be dead.

I can remember Mama licking a forefinger and then touching it quickly to the flat-iron to see if it was hot enough. Sometimes she would burn herself on those clumsy old things. I've burned myself on electric irons often enough, too, though, so I guess some things never change. This iron seems hot enough now to start ironing.

The collar of this uniform is just like the collar of a white shirt. I could be ironing a big white shirt for Larry or anyone else, for all the difference there is. The collar is just the same, and so are the sleeves and cuffs. The top has all sorts of darts, though, and then there's the waist-seam and the skirt below. The skirt is easy, just straight material, but the kick-pleat in the back is tricky.

I could be ironing white shirts right now, a big pile of white shirts, like I used to do. Collar first and then cuffs, then the back, then the two fronts. Always collar and cuffs first because they're the hardest and smallest. If you iron the sides and back first, they'll wrinkle while you're ironing the cuffs and collar.

All this useless information. I don't iron men's shirts at all any more, after all those years of ironing shirts for Larry. He used to wear white shirts to work every day. There would be six or eight to wash each week—wash and then iron. The week Rosie was born I was too tired to iron. But

wouldn't you know, Larry wouldn't leave for the hospital until I ironed a shirt for him. It was the middle of the night; I was in labor; and I had to heat up an iron and stand over an ironing board. But he said he wouldn't leave the house in a dirty shirt. I don't know where my spine was that night—and yet what was I supposed to do, go to the hospital without him? I didn't even know how to drive.

I could still be ironing Larry's shirts. Forty years I could have ironed his shirts instead of only ten if I'd only . . . Oh, God damn it. I'll never get this dress ironed at this rate. What the hell am I thinking about all this for? There are wrinkles to smooth in the cloth, not my mind. Larry died eight years ago. He would have died no matter who was married to him. At least, I think he would have; maybe not. I get confused and think that if we hadn't gotten divorced or had gotten back together again, I'd still be in our last apartment, ironing white shirts on Tuesday afternoons, and he wouldn't be dead.

Well, now I iron white uniforms on Tuesday afternoons. That's not so bad, is it? At least I wear them myself, not just iron them week after week for someone else to wear.

It's just wishful thinking to believe he wouldn't have died. Everyone dies. He had to go sooner or later. But he was so young when he died, only fifty-two. Sooner or later, young or old, we all go, and it's no use crying over spilt milk. No use at all. No use crying over the widow's pension I don't have or the china his mother didn't leave to me, or the white shirts I don't iron any more.

I wonder whatever happened to his mother's china. It should have gone to Rosie, really, but it didn't go to anyone that I know of. I can see now why Larry's mother didn't leave it to me, though I've never understood why she didn't leave it to Rosie instead.

I wonder what happened to all that beautiful Sevres china his mother promised to leave me. She had no daughters, just the two sons, and Larry's brother never married. After Rosie was born Grandma Anna said to me, "I'm going to leave you my French china, Irene, dear. I want you and Larry to have it, and your beautiful baby daughter after you, for when she grows up."

And she took the china out of her old-fashioned china closet; she said she'd leave us that, too. Piece after piece of eggshell china she took out and showed to me.

"See, Irene, these are the little dessert plates. And here are the soup bowls. See how the pattern changes yet it all goes together. My mother brought this whole set home from France. She went to France on her honeymoon and she brought all of this back with her, on the ship and then on the train. There wasn't much French china in Wisconsin in those days, my dear," she laughed, "or in Minnesota, either."

"Look here at all the gold," she said. "See how the little leaves are gold, and the vines winding all around? And these little flowers everywhere? And now, here are the cups, Irene." She handed me one. "See how delicate it is. You can hardly dare to touch one. And look, if you hold it up to the light, you can see right through." She took me out of the dark cool dining room and into the bright hot sun. "Look," she said,

and held the cup up to the sun. Sure enough, that china was so delicate you could see the sun shine through. "The plates are even more translucent," she said.

I remember that world; I strained to make it out. We never had any translucent china in my mama's house, that's for sure.

"The plates are not quite as thin," Grandma Anna said. "You'd think it would be easier to make thin flat plates, like rolling out pie dough. But to make cups for hot coffee that have bottoms so thin you can see the sun behind . . . well, I still can't get over it."

When we went back into the dining room, Rosie was still lying in her baby carriage, gurgling to herself next to the china closet. Larry and his dad were off somewhere together while Anna and I watched the baby and talked.

"Look at Rosie study the china," I said. "Look at those big brown eyes follow us around."

"Those eyes don't miss much," Grandma Anna said. And she tickled Rosie until the baby crinkled up her baby eyes and laughed. "Just look at her with her big brown eyes like Larry's." She picked up the big china soup tureen. "You'd never guess this china was almost fifty years old now, would you? Not a chip or a crack. Although I did break one of the cups once."

She told me she was going to give us the china as soon as we bought a house. She wanted me to be thinking about the china when I picked out tablecloths. "A good tablecloth lasts forever, dear," I can hear her saying, plain as day. She didn't call me dear later, that's for sure, when I brought the children to see her once a year. She'd barely even said hello to me then. But before that she used to call me dear. "A good tablecloth lasts forever, dear."

That's for damn sure. A good tablecloth lasts forever. You can spend a lifetime ironing a good tablecloth and it will never wear out. It will just be there to iron some more. Forty years I've ironed some of my tablecloths and they're still useable. They've still got years of ironing left in them.

Like this pink damask tablecloth I bought after Anna told me about the china. Pale pink damask to set off all those flowers and that pink-gold. This has lasted—how long? Rosie wasn't even a year old yet; well, thirty-five years this cloth has lasted, and I still don't have any French china to put on it. I only use it three or four times a year, but still, that's a lot of years.

She told me she was going to give us the china as soon as we bought a house. She wanted me to be thinking about the china when I picked out tablecloths.

Oh, the hours that I've spent ironing this tablecloth. And not just ironing it, either. Soaking it and scrubbing out the stains by hand. Every time I put it on the table, somebody spills something on it. They never spill mashed potatoes or milk, either. It's always cranberries or a big glass of grape juice, always something red or purple so I have to scrub and soak for hours to get it out. It's a good thing it's this pale pink to start with and not a true white or I'd never have any luck getting the stains to come out.

But I never did get special china to put on this tablecloth. The house we were going to buy got left by the wayside, along with everything else in the Depression. We lost the money we'd saved for a down payment when the banks failed, so we had to start all over again, saving a little here, a little there, never enough to buy a house with, but just enough so that we always had to scrimp. Some of our friends had mortgages on houses already, so all they had to do was meet the payments, just like rent, but we had nothing to show for our savings—nothing at all. We had to start right back at the beginning and pay rent while we saved. And we never did save enough for a house to put all that French china in.

Well, at least I still have the tablecloth I bought to go with it. This damask has stood up well. To think of all the Christmas dinners we've eaten off it. And all the parties we've used it for. Rosie will probably end up with it someday. I haven't got any bone china to leave her, but she'll get my well-ironed tablecloths, anyway. And some silver teaspoons my mother left me.

Rosie's other grandmother never left Rosie or me anything at all. After Larry and I were divorced I guess she changed her mind. I always thought she would leave the French china to Rosie in her will. I never though she'd just die and let it all be sold. All that beautiful china and the buffet her father made to put it in. They sold it all when they sold the house. As though there wasn't any family left any more to leave it to.

All that's left of that time is this damned pink tablecloth I'll never finish ironing, and the feeling that Tuesday is the day to iron it, along with all those uniforms I'm ironing instead of white shirts.

Illustration by Joye Moon. Gone With the Wind, *watercolor, 30 x 22 inches, 1984.*

Bring Back the Stile

by Robert Hillebrand

I don't dare to hope that you've been with me in my thoughts recently. I've been reflecting upon the passing of the stile, a set of steps for climbing over a fence; and I know from asking that it hasn't been the topic of the moment. About half of those I've talked to don't know what a stile is, or was, and about half of those who knew had never encountered one. Still, the vanishing of this friendly contraption has implications for anyone who believes this land is his land, or hers, and especially for those who care about inland lakes and life along the shore. I began remembering stiles I have known after listening to complaints about the inaccessibility of the shoreline around many lakes in our state.

A stile looks like a stumpy ladder, with two or three steps on either side, permanently installed next to a post. When a fence was raised to keep cows in, for example, the stile invited people to pass over the fence and to cross the enclosed land without feeling like trespassers. You could also rest on them, for the construction was similar to that of a snug little bench. The right of passage was indicated by those up-over-and-down steps, and you understood that you were welcome to use them. Cows weren't necessary. I've tripped up and down stiles in places far from any livestock, but not, that I can recall, in the last twenty years.

Back in the thirties and forties a favorite pastime for those who could summon up the gumption was Walking Around the Lake. In Jefferson County the best lake for hiking was Rock Lake in Lake Mills, my home town; souls from distant territories drove in to make the circuit. An important part of the lore, known by visitors and locals alike, was that if you couldn't stay close to the water, you might as well stay home. An amenity that made it possible to hug the shore of Rock Lake was the stile. A big chunk of the western strand was a fenced-in pasture; four spans of barbed wire stretched between posts extended to the edge of the lake (into it when the water was high). But the owner acknowledged our right to promenade and had installed a pair of stiles, one at the north end and another at the southern boundary. Instead of detouring around the property or getting snagged trying to crawl under the wire, you stepped up, stepped down, and mingled with the cows. The farmer was rarely about, but one time he paced along with me for a quarter-mile and asked about my parents; next time we spoke, two years later, he said, "Well, I'm very pleased to meet you again." Then he asked if my father was still a welder. He made me feel welcome in the world, and it was a good feeling.

If you were heading south from the pasture you soon faced the prospect of crossing the railroad bridge—a jolly terror for children, who imagined slipping halfway through one of the gaps between ties and being stuck there when the three-twenty roared by; or, worse, sliding clean through, bonking their heads on the trestle before splashing into the muddy marsh water below and, maybe, being eaten alive by a snapping turtle. The tracks marked the southern limit of Rock Lake, but a channel under the bridge flowed into Mud Lake, a boggy-shored kettle hole covered with a lid of waterlilies. Once, leaving my father at the top, I scrambled down the far bank and sloshed into a thick patch of cattails twice as tall as I was. When I broke out I saw the biggest bird I'd ever seen in my life! It gawked like a clown in a dream, and, as I edged out farther, our eyes slammed together—its left, my right—and the line over which they met pulled tight as a wire. I almost cried out like a kid for my father, out of sight on the bridge. Then the Great Blue Heron snapped the string, took one long stumbling step, unfurled impossible wings, batted the still air, and in two broad, futile-seeming strokes blustered free and flew.

If you crossed over the north stile and left the pasture, you climbed the first of a series of close-set hills that formed a humpy ridge, bristling with trees; and the path ran like a roller coaster for the remainder of the northwest shore, alternately carrying you down to the water's edge, then up to a summit with a view of a whole new western horizon. No beaches had formed along the mostly swampy shore, but one secluded cove after another provided a strip of picnic sites and shelters for those lucky enough to have someone to practice kissing with, or where you could be alone.

A frontage road cut across the north end of the lake where most of the shore land was part of the town park full of wooden things: two outhouses that could be used as changing rooms if you wanted to swim off the pier, a big gazebo with a wood shingled roof, tables and benches for eating or cardplaying, and a two-way set of steps that *looked* like a stile but *wasn't* because

it didn't extend over anything except the ground it stood on. Its purpose was to get little people high enough to reach the handle of the creaky pump that splashed out cool well water if you coaxed it long enough. The long parking lot, the boat launch, and the lake were free and open to anyone who used them sensibly. That was the style in those days. An apple orchard and a dairy farm were set back from the road. The orchard's proprietors conducted tours during blossom time; in fall there were apples and cider to sample. Behind the dairy barn stood a fenced-in stable occupied by two old horses, no longer in service; and there was a stile, with four steps going up and three leading down, that a hiker could use if he wanted to deliver a handful of greenery.

Stile in Yorkshire, near Great Boughton.

The town side of the lake was the eastern shoreline. A footpath led you out of the north-end park, then curved south and threaded through a gauntlet of fences: two with modern stiles, others with latched gates, a few with open gateways, and some that stopped short of the actual shore. Occasionally you encountered a padlocked gate or a fence enclosing an unfriendly dog or a hostile flatlander (our name for out-of-towners who bought land, waved in the bulldozers, and built elegant summer houses on their leveled properties).

You asserted your rights by climbing over the top of the locked gate, ignoring the scowl, or risking the dog bite. Once my rambling friend Dave, urging me to lead the way through a gate guarded by a snarling dog, assured me that if the beast bit me the owner would be sorry. I was afraid I might wind up sorrier, so we backed off as we sometimes did from obstacles meant to intimidate. In those long-gone days we felt that the lakes and shores—just like highways, rivers, and sidewalks—belonged to all of us and that no one could buy them out from under our feet. From informants of various ages—hikers, swimmers, hunters, fishermen, and trappers—I heard that access rights were part of our heritage. Maybe they were only kidding us, or themselves; perhaps they were talking about some natural law governing what *should* be and *could* be if people worked things out.

A mediator could sometimes mend matters temporarily, and my father, who served a term as alderman, managed to get the guard dog leashed during walking hours. Once a flatlander erected a towering picket fence without gates that was climbed and rearranged so often that he complained to the town council; then, at my father's suggestion, he gave in and opened the fence, no gates at all, where the footpath crossed his lawn. But by the time I reached high school, the eastern shore was too inhospitable for enjoyment, and I usually walked the last mile into town on the blacktop road running behind the lake houses. Only glimpses of water showed from there, and for scenery there were garage doors and garbage cans.

It was a preview. Much of Rock Lake was soon hemmed in by houses, double rows of them in some stretches. In Waukesha County, where I live now, there are bodies of water I can't reach without violating an ordinance. I've approached their shores on foot, by bicycle, and by car, trying every promising route; but many lakes remain inaccessible to anyone with circumambulation in mind. When my son Zach and I go walking, time and again we run up against fences (no gates, no stiles) that drive us back out of sight of the water. If I wax nostalgic and gush on about discovering black raspberries, wild asparagus, and hickory nuts on walks around other lakes, Zach only looks bemused, as if I were speaking of prehistoric days when hairy mammoths used ponds for drinking troughs.

My son is not concerned about the passing of the stile because, so far, everything in his world is interesting. Still, some things, like waterfowl and turtles, waves, rocks, and sand, reward our attention more than others. There are no words for the sadness I feel when he slips off to the video arcade on a day when we might be hugging the shore together. I don't foresee a rewrite of the statutes; I don't really want to traverse the front yard of anyone who can't bear the sight of a passerby. I'd like to change a few minds, but when I have a free afternoon I prefer a pleasant stroll, along the railroad tracks if need be, to a series of confrontations that would continue, I suppose, even if the law were changed. All I really want is a chance to feel the sand under my shoes and to introduce another generation to what I once enjoyed. I believe the shoreline in front of a lake home is comparable to the sidewalk in front of my house. I don't dispute the right of passage along the walk that I pay for and shovel. A world with no one passing by is too cold a place for me.

The photo was taken by Sharland Huffaker of Delafield and processed from a color negative by Tony Drehfal of Nashotah.

Did Shakespeare Ever Brew a Stew?

I play crookback Richard (severed heads
roll into steaming pots) or that old crone
(over juices in ferment) cackling
Macbeth's doom sweet
Ophelia (with thyme
sweet basil) strewing
Hamlet's path
Lady Macbeth scrubbing
scrubbing (stains
on guilty palms)

Oh we strut
and fret
the hour
but more than cracked bones
are sacrificed
in our kitchens

C. J. Muchhala

Atropa Belladonna

Beautiful woman, cruel fate,
wielder of the horrible scissors
that will slice my spine, my tongue
when you want, when you want—

Cousin of the blunt potato,
you widen our eyes with your
lethal gleam, single berry
entire famine in the mouth—

When Locusta poisoned the Emperor
how you delivered peace,
dried the shout in his throat,
then erased your own memory—

Rancorous weed, deathflower
nodding yes and no to life,
your fated task is mine,
bitterness soothing bitterness—

Deadly nightshade, author
of the twilight sleep, you
quicken my heart and ease
the very rolling of the sea

when you want, when you want.

David Graham

HAIKU

1
Children have secrets
There is no hiding as men
The worst is all true

2
The flaming sunrise
I have seen from Rockhill Road
Blazing painted scene

3
The barking of fox
The sighting of cougar
Never forgotten

4
White lady slipper
Rarer than the trillium
Shames the cultured rose

5
Man has ventured out
To the dark side of the moon
But knows not himself

6
I am a mirror
I reflect good or bad both
I myself am not

7
The red fox treads light
Quicker than the eye can see
Gets the witless mouse

8
Where the river meets the sea
Spoonbills try to live at peace
Midst oil towers

John Warner

Smoke and Ash

My hairdresser smokes.
They all do, waiting.
Every six weeks, mango shampoo
in the wet smell of filters,
he gives fastmoving haircuts
half inch and a blow dry,
says his boy's dyslexic,
he's been straight for three weeks,
weekends don't count.

Govind cuts hair in Bombay.
Chain smoking, chanting
Beauty, be hindu,
he taps me with almond oil,
white fire curls from his thumbs,
dead vine, burnt wood, rock;
his breath is mimosa
his lips are shy insects saying
Marry me marry me take me to Tucson.

His room is clogged, fat gods in dirt.
My hairdresser's waist is acrid and sweet
a lotus in my hands, and I long to try it
but I hate heat, mirage, desert sand.

Beth Simon

Balance, Then Rise

Rowan Creek Sanctuary
abuts a shooting range.
Easter Sunday, the air is full
ping ping ping BOOM
grackles pump skyward and blossom
drawing blue bitter smoke.

We fan out beneath endless clouds,
edging the pond between red oak and fir,
down to earth where skunk cabbage,
blood secret, crowns moss.

Above us like glaciers,
thunderheads shift west
and in that breath between pistol and pistol
shining like teardrops
a phoebe lights, a heron,
a sharp-tailed sparrow.
Then rifles beat the rush of wings
back into dark pine.

Yet even as the grey feather drifts
to dust the pool,
the newborn darner taps froth,
the mica-shot feldspar breaks clearing water,
the marsh hen flies.

Beth Simon

He

strips to the waist,
his white welder's
back bent & boiling
in the noonday sun,
a quarter-size carbuncle
festering at the base
of his neck where five
cotton workshirts rubbed
it raw all week long.
It's Saturday in
the summer of '53.
I sit on top
of a mason block
retaining wall that
borders the rhubarb
patch & look down
on my father
who's hoeing up
mounds of dirt
to hide his tomatoes
from another August
drought. I have,
it seems, reached the
age of reason, the age
of lists of venial sins
that sit like sores
on my young soul.
I'm sorry, I pray,
& imagine how wonder-
fully miraculous
it would be to be
a priest, to forgive
my father's sins,
to forgive America's
sins, all of them,
as far as my mind can reach.
I reach down to pull up
two broad fans of Victoria
rhubarb & place each
across my lap.
At my side
a tin salt shaker stands
at attention, saluting
right-handed, like
a good tin soldier.

Terrence Savoie

Onion Bed

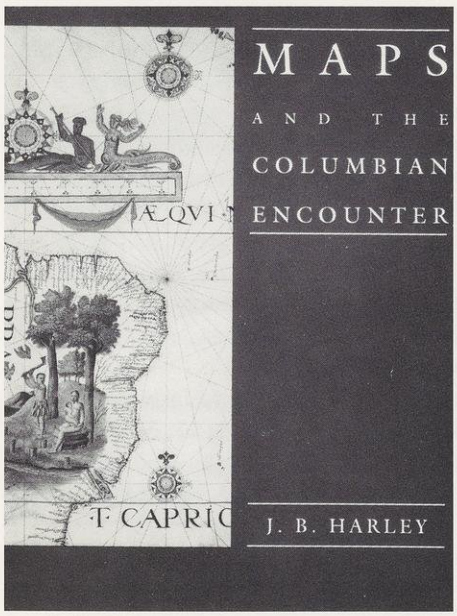
One mud-colored crow above April's
muck, godforsaken, ploughs the filthy
sky, flying this way, that way,
beneath dirty, twisting sheets of
clouds, cuts down and by us
once more, landing with a scream
over several smiling half-turned ears
of scavanger corn. Because my scalp
has caught fire, I take off
the knitted stocking cap and give
a wave to the farmhand tractoring home
his white bombshell of ammonia
along Mud Creek's northernmost bank.
Only last spring my son wanted to
become that man, wanted nothing
more than to ride up high
in that cab, the throne
of a toy-green John Deere tractor.
Today he has nothing to say
about the future, neither looking
up nor waving. Instead he broods
over the backs of small dirt-clods
my spade scatters, breaking up each
as though he were a little tyrant,
vengeful, in the tiniest of kingdoms.
Together, we work up what will
become this summer's onion bed.
He looks up to ask me
whether my back is sore,
and I hear a question hidden
beneath his question.
When he stops to rest, he leans
forward on his small shovel, imitating
me, and the two of us watch a sleepy-
eyed toad who's grandly waking,
stretching, belly-up and festive,
unscathed by my spade's tines.

Terrence Savoie

Maps and the Columbian Encounter: An Interpretive Guide to the Travelling Exhibition

by J.B. Harley, assisted by Ellen Hanlon and Mark Warhus. Milwaukee: The Golda Meir Library, University of Wisconsin, 1990. 160 pp. $12.95.

by Margarita Zamora



The late Brian Harley, professor of geography at the University of Wisconsin-Milwaukee, left an indelible mark on the study of maps. This interpretive guide and the exhibition for which it serves as commentary together with the multivolume *History of Cartography* he edited with David Woodward, professor of geography at the University of Wisconsin-Madison, are the crowning achievements of an illustrious career. Although I did not know Professor Harley personally, his work helped me learn a new way of reading—through cartography—which he called "the handwriting of space." Harley's great insight was to look at cartography as a form of discourse; that is, as a way not just of inscribing physical space but of *creating* places, of making geographical spaces meaningful within a given worldview. Such a process, he argued, was hardly innocent and disinterested science. Maps are inscriptions of political power, he insisted. Nowhere was this more evident than in the cartography associated with the discovery, conquest, and colonization of the so-called New World.

Maps and the Columbian Encounter sets itself no less ambitious a task than showing how cartography expressed the ideology of European overseas expansion. That expansion, Harley reminds us, was at its midpoint, not its beginning, in 1492. Explorations of the Canaries, the Azores, the Madeiras, and the Cape Verdes islands in the eastern Atlantic were dress rehearsals by Portugal and Spain for the "Enterprise of the Indies." So was the Portuguese exploration and colonization of the northwestern coast of Africa in search of an eastern sea route to the gold and spices of India. The book is organized, therefore, in roughly chronological order, and it traces a history-through-maps of the antecedents and consequences of European expansion in the Americas.

The *Guide* is comprised of a "General Introduction"; four sections entitled "The World Before Columbus," "The Way to the Indies," "Searching for an American Identity," and "Colonial Cartographies"; a bibliography; and 119 black and white illustrations. The text is so rich in photographs and diagrams, in fact, that if one missed seeing the exhibition itself, not to worry, because the *Guide* easily stands on its own as an excellent introduction to the cartography of the encounter. Its only shortcoming in this respect is the absence of any color plates (many of the original maps are illuminated), no doubt a necessary concession to controlling publication costs.

In "The World Before Columbus" Harley compares medieval cartography and Native American representations of space in a fascinating examination of their differences and similarities. It includes images and commentary of two gems of European medieval cartography—the Pizzigano Chart of 1424 and the Ebstorf Mappamundi, circa 1240, as well as two Mexican pre-conquest maps: the Féjerváry and Nuttall screenfolds. The section entitled "The Way to the Indies" attempts a reconstruction of Columbus's mental "atlas"; that is, it focuses on the maps and cartographic paradigms Columbus was or could have been familiar with as he developed his project and carried out his transoceanic navigation.

"Searching for an American Identity" deals with construction of the New World as a place different and separate from the Old. In this section, Harley traces through maps the intellectual process of "creating" America first studied by the Mexican Edmundo O'Gorman using written texts. O'Gorman's brilliant book-length essay, originally published in Spanish in 1958, is available in an English translation, *The Invention of America*, and makes an excellent companion piece to Harley's analysis of the cartographic texts.

The final section, "Colonial Cartographies," once again compares post-conquest maps which reflect Native American ways of conceptualizing space and European maps which serve to name, describe, and classify geographical space as it fell under European domination. Here is perhaps the most lucid assessment by Harley of how maps functioned as tools of imperialism "as much as guns or warships." He weaves a masterful cartographic narrative which tells the story of the fall of the Native empires, the ambitions of the competing European powers, their struggles to control new empires, and the inexorable expansion of European civilization. The section concludes with a commentary of Felipe Guamán Poma de Ayala's "Mapa Mundi," or world map. Guamán Poma, a Peruvian Indian, drew the map and included it in an illustrated "letter" addressed to King Phillip III of Spain in 1615. The text and the map can be read as a protest of the Spanish invasion of Guamán Poma's homeland, blending both European and Native ways of expression.

Brian Harley's *Maps and the Columbian Encounter* is *must* reading for anyone interested in the exploration, conquest,

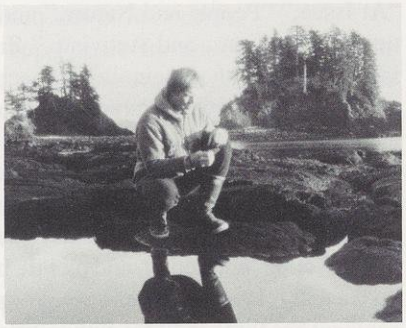
and colonization of the Americas. With the guidance of Professor Harley's insightful gaze even the most reluctant navigators will begin to look at the maps of the encounter in a new way.

Margarita Zamora, a professor of Spanish and Latin American and Iberian studies at the University of Wisconsin-Madison, is author of Reading Columbus, *University of California Press, 1993.*

The Island Within

by Richard Nelson. New York: Vintage Books, 1991. 284 pp. $11.00.

by Curt Meine



Richard Nelson

The focus of *The Island Within* is an uninhabited island off the Pacific Northwest coast. In his account of his excursions among the forests, bays, and beaches of the island, Richard Nelson records what he was able to learn, not only of the island's special inhabitants and atmosphere, but more generally of the changing ways in which we perceive, live within, and draw upon our environs. Winner of the 1991 John Burroughs Medal for natural history writing, *The Island Within* is thus more than a vivid description of a place; it is an *exploration* of place, and of the ties that bind.

The island provides enduring moments: bays and coastlines turned turquoise by the eggs and milt of herring; a timber slug's mucus trail, "like a ribbon of wet cellophane laid over plumes of moss"; a dead sperm whale on the beach, its carcass marked "in neat rows of four" by the clawings of bears; the "dreadful, hypnotic beauty" of an expired salmon run; the eyes of a marten, "like droplets of obsidian . . . still burning with the volcanic heat that fused them into their sockets."

Nelson, who grew up in Wisconsin, has a style that fits well the forests and coastlines he describes. His prose is rich, cool, intense but subdued, dense but not ponderous, and intricate beneath its prevailing shades of deep blue, green, and grey. Walking the moist forest, he writes that "the sense of life in this temperate jungle is as pervasive and palpable as its wetness. Even the air seems organic—rich and pungent like the moss itself. I breathe life into my lungs, feel life against my skin, move through the thick, primordial ooze of life, like a Paleozoic lungfish paddling up to gasp mouthfuls of air."

For Nelson, the island is a place both of confrontation—with self, with nature, with modernity—and reconciliation. In a digression midway through his narrative, Nelson recalls how, as a young student with an interest in natural history, he felt frustrated by the methodological approaches that had come to dominate most modern sciences. He found refuge in anthropology, with its strong emphasis on descriptive methods. His studies of Native American life (in particular, the Koyukon Athabascan people) "revealed traditions of natural history that seemed richer than anything accessible in Western science . . . I gradually realized there are many paths to a meaningful sense of the natural world."

This tension between Western and Native American worldviews pervades Nelson's descriptions and reflections. Like the whales he encounters, it is a constant presence, looming beneath the surface, breaching regularly into insight. It is, in the end, a creative and even restorative tension. Nelson's perspective is especially salutary in this the quincentenary of the Columbian "encounter": "Perhaps certain things about the world are best discovered by engaging the senses completely and leaving the analytical mind at rest."

In finding his way to and through the island he loves, Nelson alludes often to his extensive experience among the Koyukon people, who no doubt face the same challenges as all late twentieth-century cultures (indigenous or otherwise) in maintaining equilibrium amidst rapid transformation. It is for this reason, perhaps, that the reader occasionally wishes for further information on the Koyukon people themselves and how they are faring in the face of the same social, economic, and environmental pressures that Nelson identifies and faces in his island context. This, however, detracts not at all from Nelson's evocative explorations. Especially for those who know the waters and diverse forests of the Pacific Northwest only through media accounts of threatened salmon runs, spotted owls, and old growth remnants, Nelson provides a compelling survey and a fuller appreciation.

Curt Meine works for the Natural Resources Council Academy of Science in Washington, D.C., and is the author of Aldo Leopold: His Life and Work, *University of Wisconsin Press, 1988.*

Out Harmsen's Way

by Gianfranco Pagnucci. Madison: Fireweed Press, 1991.

by Joan Johannes

Out Harmsen's Way is a comfortable visit to places and with characters that the poet knows well. These rural people are lovingly portrayed and delightfully understated, and the reader shares in the life/death experience of modern, rural America though such simple and beautiful lines as, "the cows already miss him," "The cold is outside for awhile anyway," and

> an empty house is like a swallow
> bank in fall. After the birds are gone
> the dark holes are the dead
> rooms of my father's house.

This refreshing subtlety allows the reader to experience a wide range of feelings from anger towards a young neighbor boy caught stoning a garter snake to the tender sensuality of Viola "brush[ing] his shoulder/as she cleared the last things/off the table," while "he remembered/how the boys were at a ball game."

There is the crispness of truth in the poems in this book; Pagnucci has literally hit nails on the heads, making rough labor into lyric and strongly visual art without softening the edges or removing the calluses. There is beauty in his landscapes and in the animals that inhabit them: the "barn owl with her heart on her face" and "Maple saplings show[ing] off their buds, a snowshoe hare/turn[ing] gray and black again."

There is also humor in these poems, the pleasant kind where the reader laughs with, not at, as in the several versions of "The Ad" for a wife which a farmer writes even though

> It was costing him $50,
> and mother thought it should say
> about attending church regular,
> but he left that out and slept badly.

These poems do not intrude; they share themselves with the reader, and for this reason each can be read individually. However, the book has been effectively divided into five sections: "Words and the Greens of Leaves," "Country Neighbors," "Great Flocks of Blackbirds," "Winter," and "Something Afoot"; and it is evident that care has been taken when selecting the poems and organizing each section. Therefore, when read as a whole, the reader sees each poem as not just a separate unit but as parts of a place "Out Harmsen's Way," a place which is pleasurable and enriching to visit.

Joan Johannes of Port Edwards is a teacher and writer whose work has appeared in a number of literary journals, including the Review.

E for Environment: An Annotated Bibliography of Children's Books with Environmental Themes

by Patti K. Sinclair. New Providence, New Jersey: R. R. Bowker, 1992. 292 pp. $39.95.

by Gary G. Lake

Madison author Patti Sinclair displays her knowledge of children's literature in her first book, *E for Environment: An Annotated Bibliography of Children's Books with Environmental Themes*. At a time when we are all aware of the importance and fragility of the environment, this volume has a rightful place on the shelf of any public or school library.

The book is valuable because teachers and librarians often feel uncomfortable teaching science, yet many feel they are experts in children's literature. By providing them with 517 relevant titles and outlines, Sinclair is making a valuable contribution to scientific literacy, environmental awareness, and environmental action. *E for Environment* also has value to parents, grandparents, and others who wish to buy books that will enrich the lives of their youngsters by contributing to their understanding and appreciation of environmental conservation. Although the price tag of $39.95 may not be considered unusually high for a reference book these days, many readers may opt for borrowing a library copy rather than buying their own.

The book is divided into five major categories: "Planting the Seeds of Environmental Awareness," " The Web of Life," "At Issue," "People and Nature," and "It's Your Turn: Activities, Explorations, and Activism." Sinclair provides a general introduction at the beginning of each category, which is then subdivided into several more specific areas. Within each specific category, books are listed alphabetically according to author. Each annotation is approximately one-third of a page and describes, in an interesting way, the contents and value of the book. Quotations are even included in some entries.

Fiction, nonfiction, and picture books are mixed, as are the books that relate to different age groups. As a result, *E for Environment* has three indices: author, title, and subject. The subject index is as specific as "Chernobyl Nuclear Accident" and as general as "Ecology." For more general subject areas, more specific subject titles are also provided. The appendix, which includes a list of books designated as environmental classics, is valuable. A useful addition to the book might have been a chapter on adult books on the subject of how to teach environmental science. Such a chapter may have provided teachers and parents with additional ideas about hands-on, process-oriented activities that the children could do in conjunction with reading these books with environmental themes.

At a time when environmental issues seem to have finally become mainstream, and at a time when American society has great concerns over the scientific literacy of its citizens, Sinclair's annotated bibliography, *E for Environment*, deserves an E for Excellent.

Gary G. Lake is a program director at the Wisconsin Academy and is coordinating two National Science Foundation projects.

Lorine Niedecker: Solitary Plover

by Phyllis Walsh. La Crosse: Juniper Press. 47 pp. $10.00.

by Faith B. Miracle

A new publication about Lorine Niedecker is cause for celebration. Though no new ground is broken in *Lorine Niedecker: Solitary Plover*, it is nonetheless a welcome addition to the growing collection of works about this poet. Little by little, more than twenty years after her death, the significance of her contribution is being acknowledged.

Phyllis Walsh grew up in Fort Atkinson where Niedecker spent all but a few years of her life. Despite the fact that the two women did not know each other, Walsh's book represents a highly personal reaction to Niedecker's writing. Walsh quotes generously from the poems themselves as well as from Niedecker's published correspondence, and she capably links the quotations with brief statements and interpretations of her own. Her commentary serves as do spacers in a string of pearls, although Niedecker probably would not appreciate having her words compared with pearls; agates, perhaps, from the shores of Lake Superior, tumbled and polished by the tides even as she reworked and condensed each line of her poems.

This small book is appropriate for anyone meeting the poet for the first time. The text complements articles published by the Wisconsin Academy both in *Transactions* (1983 Part 2) and in the *Wisconsin Academy Review* (June 1986). An excellent article appeared in the *Wisconsin* magazine of *The Milwaukee Journal* (December 30, 1990) which *did* shed new light on Niedecker the person, resulting in a deeper understanding of her life and work.

Niedecker's complete works are available as well as edited editions of her letters, and a major biography is in process along with other critical analyses of her work. Clearly what will be needed soon is a comprehensive, annotated bibliography of works by and about Niedecker.

During her life she hoped for appreciation but did not energetically seek fame. She may well be accorded both before we observe the twenty-fifth anniversary of her death. Walsh's book is one more well-placed step in the right direction.

Painters of a New Century: The Eight and American Art

by Elizabeth Milroy and Gwendolyn Owens. Milwaukee Art Museum, 1991. 200 pp., 53 color, 51 black and white plates. $29.95.

A Haitian Celebration

by Ute Stebich. Milwaukee Art Museum, 1992. 151 pp., 30 color, 90 black and white plates. $24.95.

by Faith B. Miracle

These two recent offerings affirm the consistently high quality of Milwaukee Art Museum publications. Rich color and crisp black and white reproductions, elegant paper, tasteful design, and enlightening text lift these books beyond the category of catalog, though that indeed is part of their function.

Painters of a New Century covers the work of The Eight, a group of progressive artists who cooperated in an independent event in New York in 1908 which "transformed the art exhibition into political statement . . . and forever shifted the relationship between the American artist and the American public."

Fine reproductions, many of them full-page, include the dream-like *Unicorns (Legend-Sea Calm)* by Arthur Davies, the taunting Salome by Robert Henri, the festive *May Day, Central Park* by William Glackens, and the muted *Independence Square, Philadelphia* by John Sloan. The well-researched and accessible text includes biographies and photographs of The Eight as well as critical essays.

A Haitian Celebration presents three major themes as a basis for better understanding this small, troubled country: "Haitian History and Art," "Daily Life," and "Religion." The museum's Flagg collection of Haitian art was the nucleus for this exhibition, which was augmented by works from seventeen other United States and European collections.

Haiti is the second oldest independent republic in the Western hemisphere and as such shares a long history with the United States. It is a country of contrasts, and the paintings in this book—often pastoral, spiritual, and sensuous in nature—lend some balance to the images of violence, poverty, and tragedy so often before us in the news. Landscapes, market places, harbors; people-filled processions, festivals, playgrounds; exotic tropical still lifes and scenes with mythological themes are depicted by such artists as Hector Hyppolite, Castera Brazile, and Philome Obin.

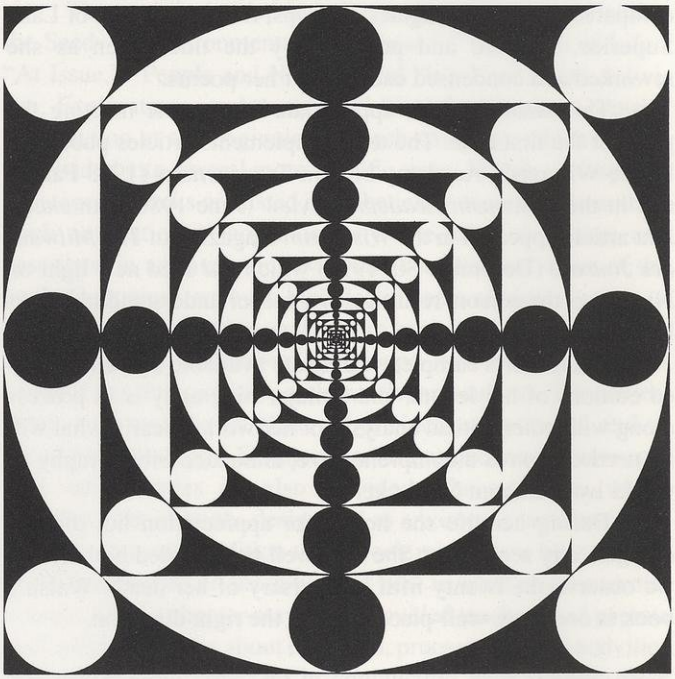
If you missed the two exhibitions, these books offer an opportunity to not only experience the art, but have the advantage of scholarly texts by the guest curators which enhance understanding of the art and provide historical and social commentary as well.

Faith B. Miracle is editorial director of Academy publications and editor of the Review.

When is a Kaleidoscope a Newsletter?

by Jenny Goble

Looking into a kaleidoscope you rarely, if ever, see the same pattern twice. A kaleidoscope is full of images, colors, and shapes that come together, separate, shift, and combine again to form a new pattern, a new insight. Kaleidoscope, *the science newsletter published by the Wisconsin Academy, charms children's five senses and their creativity in much the same way.*



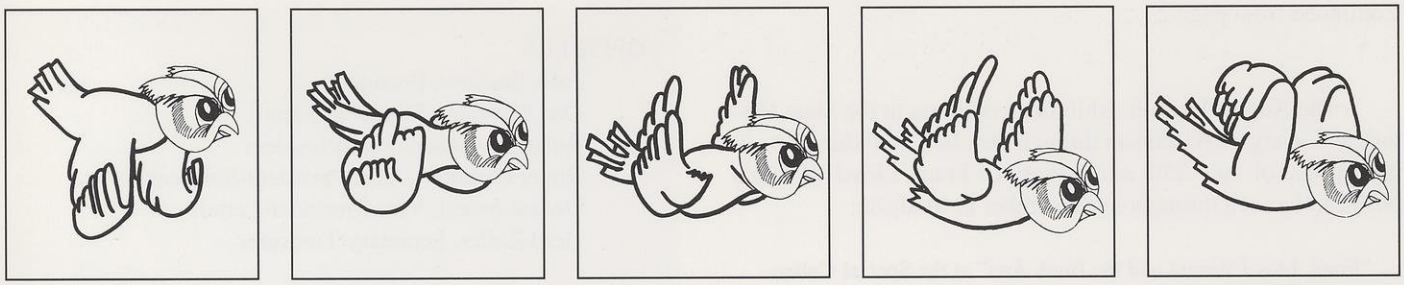
Founded in 1986 by Nancy Booth, an elementary school teacher in the Madison area, *Kaleidoscope* is intended for elementary education teachers and parents of children ages five through eight. *Kaleidoscope* was born after Booth attended a workshop on using children's literature to teach science. Thinking that this would benefit students by giving them a more varied school day, she also realized that it would make the teacher's tough job of coming up with creative, educational, and fun projects a little easier.

In fact, *Kaleidoscope* does just that. Besides giving teachers ideas for integrating science into their curricula, it also provides teachers with creative ways of combining many other areas of learning. A typical issue of *Kaleidoscope* may include activities related to social studies, math, creative writing, and drama. One example is the very timely recycling issue which used Dr. Seuss's *The Cat in the Hat Comes Back* as a basis for discussion. *Kaleidoscope* suggested having children investigate problems with recycling policies (social studies), write letters to the President asking for a nationwide recycling program (language arts), invent a conversation with one of the Dr. Seuss characters (creative writing), and determine the weight of leaves and grass clippings for compost (math).

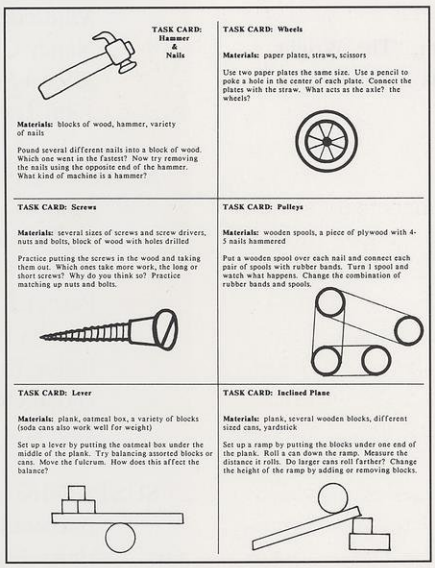
Each issue of *Kaleidoscope* focuses on a single scientific theme, which then corresponds to a work of children's literature. Topics range from rain forests, recycling, sound waves, and nearly every child's favorite, chocolate. The publication then provides teachers with bibliographies, project ideas, scientific background information, learning games, and a host of other useful resources. *Kaleidoscope* works by first presenting a simple science concept and then connecting it to a specific problem. For example, the recycling issue presented this science concept: "Solid waste takes up space." Using *The Cat in the Hat Comes Back* as a reference, students are then asked about a specific incidence from the story (in this case, "the pink ring in the bathtub") and how effective the Cat's methods for disposing of it would be in real life. This type of strategy works well because young students can easily relate to the science concept while at the same time develop their listening and analytic skills as they consider the stories from a different perspective. (Teachers appreciate the linkage of children's literature to science almost as much as students.) With increasing reports of waning science and math education in America's schools, *Kaleidoscope* offers teachers and parents a refreshing alternative.

In addition to all this, there is a "Reading Up" section that lists children's books relating to the chosen topic, as well as a "Resources" section that offers background material for adults, such as suggested readings or films. A "Bulletin Board" section is also included, which may suggest having the children create art work or write stories that relate to the topic at hand. A "Challenges" section encourages such diverse and interesting projects for students as making rain gauges to measure monthly rainfall, constructing an eight-note musical scale from soda pop bottles, or writing to corporations about their environmental policies.

Kaleidoscope also contains activity sheets with playful activities for students. In past issues these have included pic-



tures to color, word games to play, instructions on how to make musical instruments out of household items, and even recipes that the children can prepare at home or school. The focus is on helping the children to be independent in a non-intimidating way, while getting them to learn by active participation. *Kaleidoscope* further provides a number of scientific facts which correspond to specific topics, anything from the number of raindrops held in a thundercloud to what kinds of grocery items are obtained from rain forests. These facts reinforce what has already been discussed and help the children connect what they have learned to the world around them.

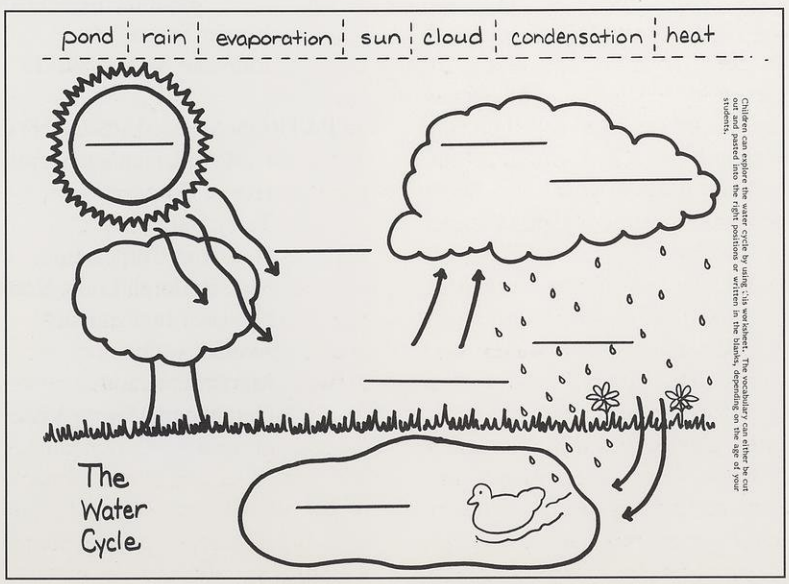


Initially, the editor took charge of most of the writing responsibilities for *Kaleidoscope*. In the publications short history, additional writers have been brought in from across the state. Every summer the editor and the writers put their heads together during a one-week writers' workshop to discuss future projects. During this process the writers collaborate on the original and diverse ideas that have come to characterize *Kaleidoscope*. However, the publication maintains an open-door policy for ideas, as readers often contribute project ideas that have worked for them.

Kaleidoscope editorship has also changed hands. Since 1990, Linda Pils, a teacher at Northside School in the Middleton/Cross Plains area, has served as editor. This year, Pils says *Kaleidoscope* has undergone some changes. Instead of publishing eight issues separately, the Wisconsin Academy now publishes a single volume in the summer. That one volume includes newsletters for the entire school year, giving teachers ample time to plan their lessons.

One of the editor's responsibilities is choosing topics for the publication, a task that can be enjoyable but also challenging. Pils says that she "tries to integrate the various areas of science: earth, biology, and physical science." Since selecting topics relies not only on a commitment to science but also on available children's literature, this is not an easy job. Despite these difficulties, *Kaleidoscope* reflects a wide spectrum of quality children's literature. Besides the tried and true favorite, Dr. Seuss, selections range from Roald Dahl's delightful fantasy *Charlie and the Chocolate Factory* to E. B. White's classic tale, *Charlotte's Web*. When linked to a children's favorite, it is easy to see why students might find science concepts more accessible.

The range of ideas fluctuates with each topic, and students as well as teachers are challenged to continue their classroom discoveries in the outside world. The reverse is also true, as this educational aid is tailor-made for the rapidly changing world in which we hope to educate children. *Kaleidoscope* writers seem determined to turn children's natural curiosity into creative learning.



Jenny Goble served as a University of Wisconsin-Madison intern at the Wisconsin Academy during the spring 1992 semester..

Continued from page 2

The August Derleth exhibition continues at the State Historical Society of Wisconsin through October 30. Exhibitions in observance of the 125th anniversary of Frank Lloyd Wright's birth can be seen throughout September in Madison:

"Frank Lloyd Wright and the Book Arts" at the Special Collections Gallery of the University of Wisconsin-Madison Memorial Library.

"The Artistry of Maginel Wright (Enright) Barney" at the Wisconsin Academy Gallery.

"Two Wright Women: Maginel Wright (Enright) Barney and Elizabeth Enright" at the Cooperative Children's Book Center.

The exhibition at the Milwaukee Art Museum, "The Wright State: Frank Lloyd Wright in Wisconsin," runs September 11 through November 8.

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