

Wisconsin Academy review. Volume 30, Number 4 September 1984

Madison, Wisconsin: Wisconsin Academy of Sciences, Arts and Letters, September 1984

https://digital.library.wisc.edu/1711.dl/M7VWMQPYN447R8P

http://rightsstatements.org/vocab/InC/1.0/

The libraries provide public access to a wide range of material, including online exhibits, digitized collections, archival finding aids, our catalog, online articles, and a growing range of materials in many media.

When possible, we provide rights information in catalog records, finding aids, and other metadata that accompanies collections or items. However, it is always the user's obligation to evaluate copyright and rights issues in light of their own use.

WISCONSIN ACADEMY REVIEW Published Quarterly by the Wisconsin Academy of Sciences, Arts and Letters. September 1984 Volume 30, Number 4

EDITORIAL

Question demands analysis

President-elect Joyce Erdman asked me a difficult question: What is the relationship between the goals I set for the *Review* and those of the Academy? The easy answer was that the primary goal of the Academy is to disseminate information about sciences, arts, and letters in Wisconsin and that the *Review* specifically takes original research and makes it available to readers outside that field, in addition to providing a forum for Wisconsin authors and artists. But Joyce meant something more specific: how do I coordinate the long-term planning of the *Review* with the plans of the Academy.

The Academy runs many programs, which we inform members about in the bi-monthly newsletter, "Inside the Academy." Foremost is the annual conference held in April. At this meeting the Academy presents citations to persons, groups, or institutions for outstanding contributions to the life, culture, and welfare of Wisconsin and the Gordon MacQuarrie award for distinguished achievement in environmental communications. The Academy also announces the elections of the Fellows of the Academy, now numbering twenty-five, Wisconsin citizens who have made outstanding contributions to the intellectual and cultural life of this country through their professions. The conference programs usually have some direct connection with the Review: last year in Beloit the exhibit of painters and printmakers featured in the March 1983 Review opened at the conference; this year the conference ran a symposium on nineteenth century material culture with speakers who had written for the March 1984 issue on that topic. The annual conference papers and speakers, too, always furnish ideas for Review articles.

The topics for special issues of the *Review* often come from the Academy Council. Another Academy program, the monthly art exhibit at the Steenbock Center Gallery, provides occasional subjects for Wisconsin Photographers' Showcase.

The question Joyce Erdman asked was useful, because it forced me to reconsider a relationship I had taken for granted, to look for new ways to coordinate *Review* articles with Academy programs.

Patricia Powell

PRESIDENT Kenneth Dowling, Madison

PRESIDENT-ELECT Joyce Erdman, Madison

IMMEDIATE PAST PRESIDENT
Martha Peterson, Madison

VICE PRESIDENTS Brock Spencer (Sciences), Beloit Warrington Colescott (Arts), Hollandale Menahem Mansoor (Letters), Madison

> SECRETARY-TREASURER Jerry Apps, Madison

> COUNCILORS-AT-LARGE TERM EXPIRES 1988 James Crow, Madison Roy Saigo, Eau Claire

TERM EXPIRES 1987 James R. Johnson, River Falls Daniel O. Trainer, Stevens Point

TERM EXPIRES 1986 Margaret Fish Rahill, Milwaukee Gerald Viste, Wausau

TERM EXPIRES 1985 Nancy Noeske, Milwaukee F. Chandler Young, Madison

COUNCILOR-AT-LARGE EMERITUS

John Thomson, Madison

EXECUTIVE DIRECTOR LeRoy R. Lee

LIBRARIAN Jack A. Clarke, Madison

EDITORS

Kay and Philip Whitford, Transactions
Patricia Powell, Review

Typeset by Impressions, Inc.

Printed by American Printing, Madison Second class postage paid at Madison.

MEMBERSHIP INFORMATION

REGULAR	\$25 annual dues
ASSOCIATE	\$10 annual dues (students only)
LIFE	\$300-500 in one lifetime payment
LIBRARY	\$20 annual dues

Your membership will encourage research, discussion, and publication in the sciences, arts, and letters of Wisconsin. Please send dues payment along with name and address to Wisconsin Academy of Sciences, Arts and Letters, 1922 University Avenue, Madison, WI 53705. Academy members receive the annual TRANSACTIONS, the quarterly REVIEW, and occasional monographs or special reports.

The Wisconsin Academy of Sciences, Arts and Letters is affiliated with the American Association for the Advancement of Science, the Association of Academies of Science, and the Education Association Press of America.

SUBSCRIPTION INFORMATION

The REVIEW is published quarterly by the Wisconsin Academy of Sciences, Arts and Letters, 1922 University Avenue, Madison, WI 53705. Distributed to members as part of their dues. Available by subscription at \$15 per year. Individual copies \$4 00 post-paid.

Statements made by the contributors to the WISCONSIN ACADEMY REVIEW do not necessarily reflect the views or the official policy of the Wisconsin Academy of Sciences, Arts and Letters.

Letters to the editor, poetry, fiction, line art, photographs, and article proposals are welcome. All correspondence related to the RE-VIEW or other Academy publications (change of address, single copy orders, undelivered copies, Academy membership) should be sent to the Wisconsin Academy of Sciences, Arts and Letters office.

Copyright © 1984 by the Wisconsin Academy of Sciences, Arts, and Letters.

ISSN 0512-1175

REVIEW STAFF

PUBLISHER LeRoy Lee

EDITOR Patricia Powell

CIRCULATION MANAGER
Sue Davis

EDITORIAL BOARD Warren Moon, Madison Peter Muto, River Falls Ray Peuchner, Milwaukee

POETRY CONSULTANTS Barbara Fowler, Madison Arthur Hove, Madison Mary Shumway, Plover

WISCONSIN ACADEMY REVIEW

Published Quarterly by the Wisconsin Academy of Sciences, Arts, and Letters

September 1984 Volume 30, Number 4

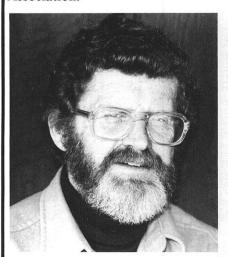
CONTENTS

Horticulture Pioneer Wisconsin Gardens Sharon Crawford Nature Writing: A Definition Letters Dennis Ribbens 12 Winter's Breath (poem) Inga Brynildson History of civilization 13 Sicily-Crossroads of Civilizations Christopher Kleinhenz History of civilization 18 Carthage-The Phoenix of North Africa Fannie LeMoine Scientific memoirs 24 Only Drinking Milk (Chapter from Birding with a Purpose) Frances Hamerstrom 26 Midwest Cinderella (poem) Susan Faust Casper Photography 27 Wisconsin Photographers' Showcase Dennis Church Wisconsin history 30 Wisconsin in the American Civil War John K. Driscoll Wisconsin history 36 The Role of the Military Road in James Doty's Land Speculations Richard D. Durbin 41 Getting Past the Gatekeeper Science research Robert L. Youngs Letters 45 The Strange World of Foreign Language and Literature Teachers Peter Schofer 48 H. L. Mencken and Wisconsin "Americana" Communication Benjamin D. Rhodes 51 Windfalls: Waffles Arthur Hove Book reviews 53 Bookmarks/Wisconsin

Authors and Artists

Sharon Crawford received an M.A. degree in landscape architecture at UW-Madison in 1983. She continues to pursue her thesis topic, the development of gardening in Wisconsin, and has been involved in the restoration of several nineteenth century gardens in the state. She is currently engaged in an architectural/historical survey of the Lake Geneva region under the auspices of the Historic Preservation Division of the State Historical Society of Wisconsin.

Dennis Ribbens received a Ph.D. in English and an M.A. in library science from UW-Madison. He taught English at Indiana University before becoming director of the library at Lawrence University. A past Wisconsin Academy vice president for letters, Dennis is currently president of the Wisconsin Library Association.



Dennis Ribbens

Inga Brynildson is a Madison native. She gained inspiration for her poem by observing water vapor rise off Lake Monona on her way to work at the Department of Natural Resources. Since 1978 she has served as communications coordinator for the Bureau of Endangered Resources. She wishes to thank her "scientific grandfather," Dr. Arthur Hasler, who taught her a thing or two about how lakes breathe.

Christopher Kleinhenz received his Ph.D. in Italian at Indiana University. He teaches in the Department of French and Italian at UW-Madison and has been chair of the medieval studies program. His special interests are medieval and early Renaissance Italian literature, especially Dante, Petrarch, and Boccaccio.

Fannie LeMoine received her Ph.D. in Latin at Bryn Mawr College. She teaches in the departments of classics and comparative literature at UW-Madison and has served as chair of the University Committee. Her special interests are the late ancient and early medieval periods and the Latin authors of Roman North Africa.

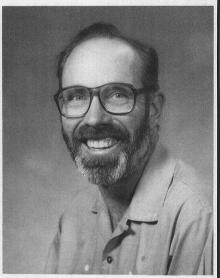
Frances Hamerstrom, a game biologist, was elected Fellow of the Academy in 1984. With husband Frederick she has received numerous awards including the National Wildlife Federation Award for Distinguished Service to Conservaton. The Hamerstroms studied game conservation at Iowa State University and did advanced work with Aldo Leopold at UW-Madison. Their research on prairie chickens, internationally recognized, is important to the preservation of that species. Fran wrote an account of those years in Strictly for the Chickens published in 1981 by the Iowa State University Press.

Frances Hamerstrom



Dennis Church, a Madison freelance photographer, received a B.S. in sociology from Iowa State University. He was an intern in the Apeiron Workshop's photographic survey of Long Island and in the production of publications. He received grants from the Madison Cultural Affairs Committee for a photodocumentary of downtown Madison and from the Dane County Cultural Affairs Commission for a photodocumentation of contemporary rural life which resulted in exhibits at the Madison Art Center and the State Historical Society. He had an exhibit of photographs in June at the Steenbock Center Gallery in June 1984.

Richard D. Durbin



Richard D. Durbin is a research plant pathologist with the U.S. Department of Agriculture and a professor with the Department of Plant Pathology at the UW-Madison. He and his wife Betty have long had an interest in the early history of the state. They recently formed a team with Rick doing the research and Betty serving as editor. The present article is an outgrowth of a comprehensive, soon-to-be-published study they wrote on the genesis and construction of the military road.

continued on page 56

Native grasses and forbs made a pleasant front yard before pioneer families had time for ornamental gardens. From a stereo view by Andrew Dahl (ca. 1873-79).



Pioneer Wisconsin Gardens

By Sharon Crawford

n examination of the diaries, letters, and memoirs of Wisconsin pioneers and of nineteenth-century drawings and photographs reveals that despite their varied backgrounds and ethnic origins, Wisconsin pioneer gardens had many characteristics in common. As the early settlers moved from crude frontier cabins to more refined permanent dwellings, they made corresponding refinements in their gardens. I will briefly discuss the sources of garden information and materials that were available during the pioneer era and describe the characteristics of frontier and postfrontier gardens. Finally, I will show that folk tradition in gardens persisted well past the frontier era, even though published garden information and advice was readily available.

Sources of garden information

Much of the agricultural development of Wisconsin, like that of other states, began with folk traditions brought from elsewhere. Settlers from the New England and Middle Atlantic states carried with them traditions that had originated in Britain and evolved through generations of American experience. Likewise, the folkways and methods of later European immigrants were incorporated into a new set of traditions that became the standard agricultural techniques for the frontier.

From the time of settlement in Wisconsin published garden information was available. Between the 1830s and the 1870s there were between thirty and fifty American agricultural periodicals in circulation at any given time, and numerous books were published on agricultural and horticultural topics. The establishment of regional agricultural organizations and journals aided in the distribution of locally relevant information. Wisconsin's first agricultural journal, The Wisconsin Farmer and Northwest Cultivator, began publication in 1849. The Wisconsin State Agricultural Society was also established in 1849 and published its *Transactions* annually from 1851. Many counties in southeastern Wisconsin established agricultural and horticultural societies during the 1850s. I have consulted these sources extensively in the development of this account.

The growth and spread of agricultural organizations and the increased circulation of agricultural iournals indicate that innovations may have gradually gained acceptance, but even local organizations and publications directly affected only a small proportion of the population. During the early years, the only people with any interest in gardening beyond basic food production seem to have been those who already had some professional experience with horticulture or seed production. Most pioneers were not inclined to experiment with new plant varieties or agricultural techniques that they had merely read about but preferred to learn directly from others or rely on their own experience. It does seem likely, however, that innovations from printed sources slowly diffused across the state as people adopted the examples set by their more adventurous neighbors and local nurserymen. Then, as now, neighborhood pride and the apparent desire to "keep up with the Joneses" stimulated improvements.

Frontier sources for seeds and plants

Long before European settlement in Wisconsin, the Indians raised corn, potatoes, beans, pumpkins, melons, squash, and turnips. The French voyageurs who turned to farming added oats, wheat, barley, peas, cabbage, and onions to the agricultural repertoire. Early settlers followed the established agricultural practice of saving seed from one season to the next for their crops and gardens. In addition to the necessities, some pioneers carried along the seeds of favorite food plants or flowers to help make their new settlement more like home. Others wrote to relatives requesting special seeds and sent, in exchange, such New World novelties as the

tomato. In the frontier tradition, those who had an abundance of seeds or plants shared with their neighbors who were not able to bring them.

The period during which it was necessary for settlers to be entirely self-sufficient was relatively brief, and soon after settlement there were opportunities to purchase seeds and plants. Even before general stores and nurseries had been established. itinerant peddlers distributed trees for orchards and windbreaks. Seeds and nursery stock also could be ordered from eastern companies through their mail order catalogs. The unreliability of frontier mail service, however, combined with the chronic shortage of cash, limited the use of mail orders among the earliest settlers. Most people were content to grow a few familiar vegetables and herbs in the traditional manner until local nurseries had become sufficiently established to provide a greater variety of plants. They did not have long to wait, for there were at least nine nurseries established in southern Wisconsin between 1839 and 1850. and over thirty more before 1860.

House and garden development from settlement to the Civil War

The settlers came with a wide range of backgrounds, interests, and economic means, and their responses and additions to the landscape reflected those differences. Despite the differences, domestic gardens in Wisconsin shared certain characteristics which correlated with the stages of development in housing. As the original crude, temporary cabin was replaced by a permanent house, interest in enhancing the grounds kept pace with the availability of the requisite time and funds for such improvements.

The frontier era (1835–1850)

Early settlers were pragmatic in siting and constructing their first houses. On the frontier the overriding necessity to provide shelter

This family posing in front of their tiny log house has no garden apparent. They have laid a plank to serve as an entrance walk. Black River Falls (ca. 1895–1910). Photographer C. R. Monroe or N. L. Ellis.





for the family and attain self-sufficiency superceded any aesthetic concerns. Ornamentation would have been largely wasted in any case, since the first dwelling, frequently referred to as a hut or shanty, was seldom inhabited for more than a few years.

The letters and recollections of pioneers indicate that most of them planted vegetables as soon as possible. Many families did not have a separate vegetable garden at first, but simply retained a portion of their corn, wheat, and potato crops for their own use. In addition, pumpkins, squash, or beans might be planted Indian-style among hills of corn in a field proximate to the house. The vegetables most commonly mentioned were corn, potatoes, onions, pumpkins, squash, cabbage, carrots, beets, turnips, cucumbers, and beans. Herbs, if grown, were included in the vegetable garden. Some, such as mustard, hyssop, bergamot, boneset, and mint, had medicinal uses.

Others, such as chives, parsley, sage, and sweet marjoram, were used to add flavor to foods.

For fruits and nuts the pioneers relied on what they could find in the wild. Usually they simply went into the woods and gathered the native fruits in season, but they soon learned that the young native plum and crabapple trees could easily be dug during their dormant period and transplanted to a more convenient location. Native grapes were also transplanted near the cabin, often serving a double function as an ornamental plant by being trained up a makeshift trellis attached to the house. Although crudely constructed of poles or string, these trellises, which can be seen in many photographs, give evidence of an interest in enhancing the dwelling, even though means were limited. Other vining and climbing plants mentioned in written accounts included Virginia creeper, climbing honeysuckle, and morning glory.

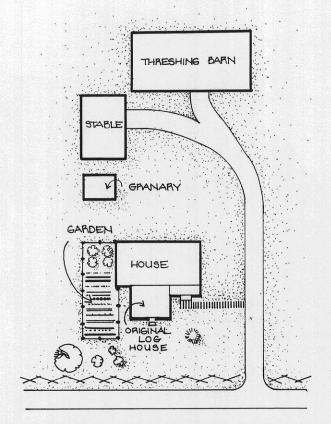
The climbing vines soften the rough construction of the porch and trellis on a clapboard house. Black River Falls (ca. 1895–1910). Photographer C. R. Monroe or N. L. Ellis.

Other than the vines on trellises, transplanted fruits, and flowering herbs, little ornamental gardening was attempted during the early vears. Most photographs and drawings show the cabin surrounded by bare dirt or unmowed prairie grasses and forbs. Some photographs show one or more mature trees which apparently had been left at the time the cabin was built. The absence of a flower garden does not imply a lack of aesthetic sensitivity, however, but more likely, a shortage of money and time. A few settlers brought and planted shrubs, bulbs, or flower seeds, but diary entries lamenting the death of these first plants indicate that there was little time to coddle tender young plants. The predominance of lilacs, honeysuckle, daylilies, lilies of the valley, morning glory, and hollyhocks around farmsteads may have been due as much to the hardiness and ease of propagating these plants as to their nostalgic value.

The postfrontier period (1850–1865)

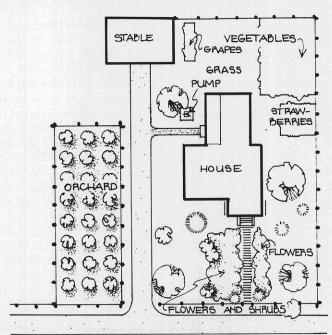
Significant efforts at ornamental gardening began only after the dwelling had acquired some degree of refinement, usually after the original cabin had been replaced by a new, larger house. Within ten years after settlement, many pioneers were enjoying the success of the wheat boom and were financially able to build a permanent house. This second house could be built of hewn logs, brick, stone or half-timber, but the method most often used was the new "balloon frame" construction whereby a light wooden frame was covered with clapboards. If the cabin was not replaced, it was usually enlarged and modernized with clapboard siding. Although simple in plan and vernacular in style, the new house was frequently pleasing in proportion and details, demonstrating skillful carpentry. The woodworker's skill was also displayed in attached and freestanding trellises and arbors as well as in the picket or decorative board fence surrounding the house.

The orchard and vegetable garden were sited in a location selected



This drawing depicts the frontier farm several years after settlement. The house has been enlarged from the original one-room log cabin. The garden includes fruit trees and herbs as well as vegetables. (By Jean Reince)

This drawing depicts the traditional garden of an established farm with a simple frame house about ten to twenty years after settlement. Board fences surround the farm. A pair of evergreen trees flanks the front gate. Flowers and shrubs are randomly grouped on both sides of the board walk. (By Jean Reince)

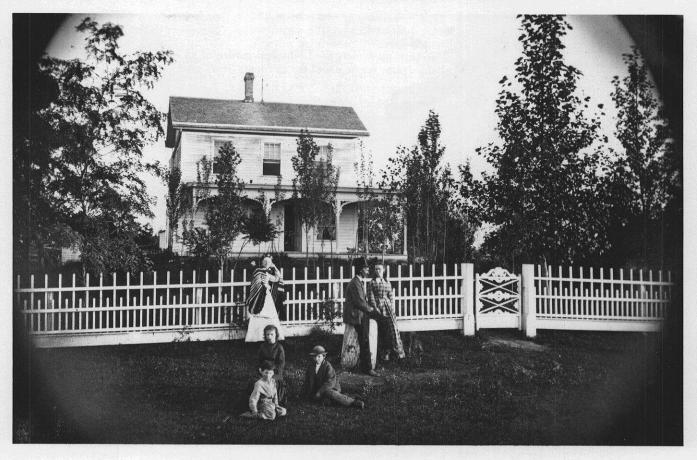


for convenience and advantageous growing conditions, and it was not unusual for them to be placed between the house and the road. When compared to the previous period, a greater variety of vegetables was produced in kitchen gardens, including cauliflower, lettuce, tomatoes, spinach, eggplant, peas, and peppers. Perennial food plants such as asparagus, rhubarb, strawberries, raspberries, gooseberries, and currants were also grown in many kitchen gardens or orchards. The trees most commonly distributed by itinerant peddlers were apples and other fruits, Lombardy populars, Norway spruce, European larch, and several varieties of pine. Rows of poplars or evergreens planted on the northwestern side of the farmstead served as windbreaks. Occasionally, trees were also planted in rows perpendicular to the front of the house. These were probably commemorative plantings, a traditional way of celebrating the births of children or other special family events.

Lawns of imported grasses frequently replaced the bare dirt or prairie grass around the new house. The grass was cut several times during the summer with a scythe, or livestock and domestic animals were periodically allowed to graze there. A common characteristic of front gardens during this period was a straight front walk, constructed of wooden boards, gravel, or firmly tamped dirt, that led from the gate to the front door of the house. Pairs of trees or shrubs were often positioned at the end of the walk flanking the front gate, but the symmetrical effect was rarely carried all the way to the house.

Flowers and shrubs were incorporated into the front yard in several ways. A common method was to cut a flower bed bordering both sides of the central walk, sometimes extending it along the front fence as well. Another method was to eliminate grass altogether and fill the entire front yard with flowers and shrubs in an apparently random arrangement. Sometimes these

The carpenter's skill is displayed in the porch brackets, picket fence, and fancy board gate. A variety of trees has been planted in the front yard. Madison (ca. 1873–79). Andrew Dahl, photographer.



front gardens were divided into several sections with paths or stepping stones. The flower beds were frequently defined by a neat edging of stones or boards. The most popular flowers were phlox, larkspur, asters, pinks, gladiolus, hyacinths, petunias, mignonette, zinnias, dahlias, calendula, iris, peonies, and several types of lilies. Shrubs included lilacs, honeysuckle, viburnum, hydrangeas, and roses.

This latter garden style appears to have been a frontier adaptation of an ancient gardening tradition. The most recent cultural source was the New England dooryard gardens that many of Wisconsin's settlers had known in their youth. Of course, those New England gardens originally had been patterned after English cottage gardens. The fact that this garden style was used by European immigrants as well as Yankees and persons of English background is not surprising in the light of the similarity between European peasant gardens and English cottage gardens.

A few authors in the 1840s and 1850s acknowledged the old-fashioned dooryard garden as a valid style, but many published garden guides were critical of the mixed plantings, stating that too much variety in the garden produced a confusing, even weedy, appearance, es-

pecially during the seasons when flowers were not at their peak of bloom. Most garden writers emphatically preferred a well-manicured green carpet of lawn with separate small flower beds, each filled with roses or a single variety of annual such as verbena, petunia, phlox drummondi, or portulaca.

Thus it appears that although published information advocating a different, "modern" style of gardening was readily available, most Wisconsin settlers continued to cling to memory and folk knowledge in the arrangement of their gardens. Situated in a totally new environment and at a great distance from the former home they might never see again, they quite understandably created gardens of nostalgia. Wisconsin gardeners would not be influenced to turn from folk traditions to a display of contemporary garden fashions until the post-Civil War period.

NOTE: All manuscript and photographic materials used in this study are from the State Historical Society of Wisconsin, Archives Division. For specific references see: Sharon Crawford, "The Development and Evolution of Domestic Gardens in Southern Wisconsin During the Nineteenth Century" (Master of Arts Thesis in Landscape Architecture, University of Wisconsin-Madison, 1983).

Suggested Reading

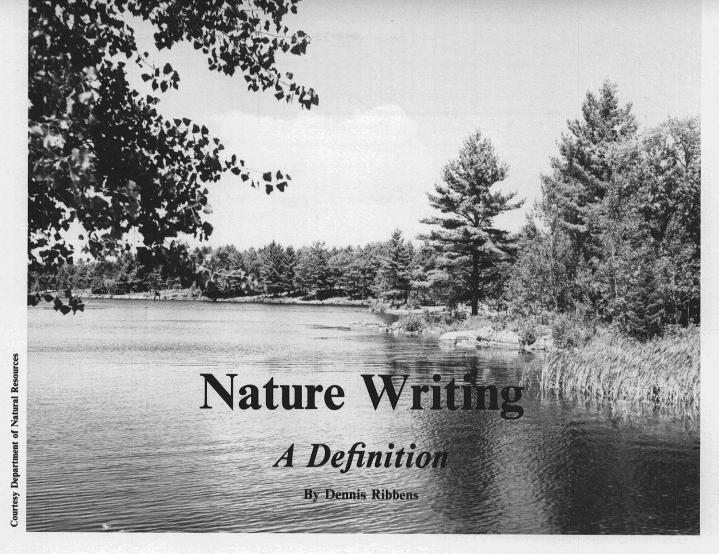
Danhof, Clarence H. Change in Agriculture: The Northern United States, 1820–1870. Cambridge, MA: Harvard University Press, 1969. Hedrick, U. P. A History of Horticulture in America to 1860. London: Oxford University Press, 1950. Kern, G. M. Practical Landscape Gardening. Cincinnati: Moore, Wilstach, Keys and Co., 1855. Schafer, Joseph. A History of Agriculture in Wisconsin. Madison: State Historical Society of Wisconsin, 1922.

Stilgoe, John R. Common Landscape of America, 1580–1845. New Haven: Yale University Press, 1982.

This front graden is entirely filled with flowers, including a pole covered with morning glory at the far left. Madison area (ca. 1873–79). Andrew Dahl, photographer.



8/Wisconsin Academy Review/September 1984



ldo Leopold spoke about a lady in Madison banded by Phi Beta Kappa who was unaware of migrating geese flying overhead. A Boston wit is reported to have remarked to an acquaintance leaving for a walk in the woods, "Well, kick a tree for me." In contrast to the uncommon antipathy of the Bostonian and in contrast to the more common apathy of the Madisonian stands the interest of millions of human beings who respond to nature at one level or another. Some write about nature. Many more of us read those books and essays. Although nature writing is a term used and understood by readers, critics, and writers alike, little attention has been given to clarifying just what nature writing is. What are the distinguishing characteristics of nature writing? Is it a separate genre? Wisconsin in particular has produced a large number of nature writers, some of them unusually fine. But how are

we to understand them and their work without a definition of nature writing, without a theoretical base against which the wide variety of nature books can be measured and discussed? This essay is an attempt to uncover the shared characteristics of nature writing and to give particular attention to the distinguishing features of those nature books which are commonly accepted as the best. This essay grows out of a wide reading of nature writers, especially of those from Wisconsin.

Exactly when a book ceases to be nature writing and becomes instead essay, autobiography, scientific treatise, field guide, poetry, fiction, or something else may not always be easy to determine. But once that happens, one will know; nature writing is identifiably different from them all. What distinguishes nature writing seems to be a matter of substance more than of style, though certain stylistic patterns do emerge as well. At heart nature books por-

tray nature experienced. Nature writing depends first of all on what is written about, on how the author sees it, and on what the author thinks about it. In nature writing the object of attention is always nonhuman nature. The responses are those of the individual writer/ observer. Typically, even normatively, nature writing grows out of an experiential knowledge of nature, narratively reported. Good nature writing is organized around the natural events portrayed, not around the ideas of the human observer. Most typically the solar day or year, or possibly the life cycle of a Canada goose, snowshoe hare, or nitrogen atom-such matters control structure and form in nature books. Both structure and events tend to be cyclical not linear. Nature writers always face the problem of where to begin and where to end. But in any case the focus on nature experienced as it influences both the substance and the structure of nature writing, though most

Nature writing invites the reader to know through fact and experience, and to love.

obviously leaning toward the essay and autobiographical forms, cannot out-of-hand exclude fiction, poetry, or other literary forms. In this essay I will attempt to explicate more fully the distinguishing substantive characteristics of nature writing.

The central elements of nature writing are the perceived and the perceiver—nature and the author land and man. This mix of these two elements determines whether or not a work can be called nature writing, and what its place in the genre is. Thoreau said in his Journal, "The question is not what you look at, but what you see." Likewise the critical element in nature writing is less the natural fact observed than the eyes, mind, and values of the observer. For nature is, after all, present in one way or another in many books. For example, remarkable descriptions of Wisconsin landscape are to be found in Glenway Wescott's Goodbye Wisconsin. But those descriptions are backdrops for the human events recorded in the essays and short stories. The same can be said for Hamlin Garland and dozens more. Neither Wescott nor Garland had in mind a discussion of nature qua nature, much less a reflection on man as a natural entity. But nature writing does have those matters as its focus. For that reason nature-as-backdrop has no place in this essay.

At the very least nature writing concentrates on describing natural fact (oak tree, toad, man, etc.). But what separates nature writing from field guide and scientific report? Both kinds of writing depend on an accurate knowledge of nature. Scientific writing seeks to report empirically verifiable fact only; it seeks objectivity. On the other hand nature writing seeks to be both objective and subjective. Besides reporting natural facts, it reports

emotional and aesthetic response. Nature writing demonstrates not only knowledge of fact, but also wonder and love and joy over fact. It combines scientist and poet. As a literary form it is more like a personal essay than a scientific report. Such writing may be done by scientists who write well (Leopold, Muir, Olson) or by writers who know nature (North, Derleth, Ellis).

Nature writing at its best demonstrates a knowlege of nature which is more than theoretical; it is experiential. Commonly the author is consciously present. Natural fact becomes the author's experience. The descriptive essay gives way to narrative autobiography. As shall become clearer later in this essay, the most typical and almost normative form of nature writing is the narrative, usually the personal narrative. The author must demonstrate a firsthand knowledge of what he describes. His facts must be accurate. The best experiences are usually to be had in a relatively restricted location over a fairly long period of time; close and continuous observation lead to precise understanding. In such narrative accounts at worst a reader will discover a tour guide with scientific interests. Autobiographical information in those cases merely provides the continuity for endless atomistic description of plants and animals. But in the best nature books the poet persists alongside the scientist. The narrative provides the reader with an aesthetic as well as cognitive experience. As in Walden and A Sand County Almanac, the personal narrative may take on some of the aspects of confessional writing while retaining the precision one expects from scientific observation. The author's purpose in most cases is to "entice" (that was the word Muir used) other persons to share directly if possible, vicariously if not, the author's personal experience.

The world of the nature writer is usually three-fold: (1) external natural fact, (2) personal fact and value extension, and (3) the reader. All three are to some extent part of the author's consciousness. Primary attention, is, of course, given to nature itself. It is not uncommon in nature writing for the narrated experience which introduces the natural facts to recede in favor of extended descriptions of those external natural facts. At these times the author does not impose his experiences or values. The reader may not be addressed overtly. Muir, for example, sustains narrative control of the long lists of wildlife in The Story of My Boyhood and Youth (1) by beginning and ending them with autobiographical narrative, and (2) by giving his natural facts whenever possible in anecdotal form, i.e., via personal experience.

Although nature writers are narratively present in the world about which they write, the best among them do not put themselves forward. They do not obtrude. The worst among them move conspicuously, heavy-handedly exhorting the reader, and thereby harming the purpose of nature writing which is to bring nature's experience to the reader. Muir exemplifies what a narrator should be-a very present guide to the reader, teaching, reassuring, full of wonder and enthusiasm, never autocratic, always gracious.

The purpose of narrative/descriptive nature writing at its most elementary level is aesthetic. Appreciation and respect for nature are the author's goals for himself and his readers. Nature writing invites the reader to know through fact and experience, and to love. Such an aesthetic response may be romantic (landscape as picturesque) or realistic (the earth in all its parts just as it is). Such writing may be atomistic, focusing on one or a few natural facts at a time, or it may be

Good nature writing leads its readers to consider the matter of right man/land relations.

holistic, focusing on the interplay of the parts in a given ecosystem.

Nature writing in its highest and most complete form adds one more element, a conscious consideration of man's place in nature, of man himself as natural fact. Such writing combines conceptualization with description and experience. In such writing the facts of nature become values to the sensitive and thoughtful author and reader. The "is" becomes the "ought" (or the "ought not"). What is the case for A becomes the model for B. Natural fact becomes metaphor for right human living. The reader encounters not only fact and joy but exhortation on how to live. The narrative of experience in nature is punctuated with implicit or explicit hortative comment. Analysis is added to observation. The narrator consciously guides readers not only to natural facts, but to natural/human values as well. And this not in the medieval sense that every natural event is intended to reflect some divine truth, but in the intrinsic essential sense that every natural event has something to say about itself and about every other natural event with which it is ultimately connected, including finally man himself who is, after all, a natural fact though complex in his make-up and impact. Good nature writing leads its readers to consider the matter of right man/land relations. Aesthetic considerations give way to ethical ones. Love for a hickory tree leads to respect for the entire ecosystem. Knowledge of the succession of forest plants leads to a search for man's right place in the ecosystem. In nature writing philosophic exposition and didactic purpose may be implied or overt. Effective narrative descriptions often contain implied values. Leopold's draba teaches—gently, quietly. Overt instructions tend to stand separate from narrative descriptions—a few prescriptions among the descriptions, a rhetorical question or two, or a separate essay designed to argue an ecological point.

Nature writing is out-of-door stuff. But it is also philosophical stuff. It is fact and value. It portrays and defends and prescribes. It weds science and poetry, knowledge and love, field experience and contemplation, aesthetics and ethics, atomism and holism. It paradoxically imposes man's mind and mood upon nature in order to draw from it its aesthetic and ethical harvest. But it also defers to nature's facts and is taught values by them. No one reflects this dual relationship i.e. man's knowledge controlling natural facts vs. man's knowledge submitting to nature as teacher better than John Muir, though some might argue Aldo Leopold does so equally well. Submitting to nature as teacher (a response which is itself active and multifaceted) is central to all nature writing. Humility is essential if the nature writer is properly to be knower, learner, teacher.

Good nature writing requires an author who knows and loves nature, who has learned something about his own place on this planet, and who above all desires to be taught by nature. The nature writer seeks less to impose his own values on nature than to modify them on the basis of nature's fact-taught values. As Joseph Wood Krutch said in the "Prologue" to Great American Nature Writing, (New York: Sloane, 1950, p. 66) "The way to profit from the existence of fish, for example, was not to catch him like a sportsman; not to pickle him like a laboratory scientist; not to paint him like the artist; not even to moon over him like the Romantics. It must be to find, as (Thoreau) did, 'a little fishy friend' in Walden Pond." If you must have a brief definition of nature writing, let it be

that writing which speaks of little fishy friends.

The most significant nature writers search to know themselves from nature's fact-taught values. In nature they seek to find their own place in the ecosystem and to discover norms for being. But as the principles of balance and harmony become standards for human participation in the ecosystem (human and nonhuman), being consciously begins to include becoming. Being a part grows into becoming a part in harmony. Being turns from atomism to holism. Though for some writers pristine wilderness unaffected by man (a possibility in concept, though not in fact) serves as norm for being, others learn nature's lessons of harmony, balance, and unending circles wherever they are to be learned—in backyard, roadside, or remote ravine. All that are part of our planet, of our universe are identified as part of the whole of nature. Thinking man as well as copulating dragonflies, smokestacks no less than snail darters, Main Street and forest trail are recognized as natural facts. Man's being grows more and more into his essential being/becoming a natural fact in harmony. Being acquires a dynamic and ecosystematic meaning.

If nature writing can be categorized by the various mixes of the two elements of perceived and perceiver, and if the finest nature writing combines (1) nature described via experience narrated and (2) considerations of what man learns about his place in the ecosystem from nature as teacher, then what can be said about writing in which natural experience is limited or absent, in which description is punctuation and value statement is text? What about writing in which nature serves as example in a larger environmental argument? What about

Nature writing weds science and poetry, field experience and contemplation, atomism and holism.

writing in which value does not flow organically from natural fact, but in which value operates as hypothesis and fact as proof? Discussions of conservationist or ecological issues as abstractions aside from personal experience are not nature writing. Call such writing conservation writing if you will. Its focus is a human construct, not a natural fact. Its purpose is to argue a human concept, not to portray nature. In it the logician displaces scientist, poet, and narrator. Related and important though such writing is, conservation writing is not nature writing. Take A Sand County Almanac as an example. Throughout the book Leopold's purpose through depiction or exhortation is to reflect right man/land relations. No mere passive observer, Leopold learns and teaches. In Part I ecol-

ogical values grow intrinsically out of the experiences narrated. The experiential, fact-oriented almanac of events leads implicitly to values. It is complete in itself. But it also lays the groundwork for the conceptual approach of Part III. Part I of A Sand County Almanac is nature writing. Strictly speaking, Part III is not. In it logic and argument replace observation. Important as the essay "The Land Ethic" is, important as are all essays which attack progress, the growth myth, unrestrained technology, and which preach the desperate need for man to live in harmony with the other residents of this planet—important as these discussions are, they are not nature writing. They are philosophical arguments just as surely as Leopold's Game Management is a scientific/technical work.

So much then for this essay's attempt to uncover the distinguishing characteristics of nature writing. What remains is to take these characteristics, this definition of nature writing back to the works which gave rise to it, to analyze those works by it, and to see how well the definition holds up, that is, how well it serves as a useful tool to describe and differentiate those works. Does this definition contribute to our understanding of Wisconsin writers Mel Ellis, August Derleth, Sterling North, Justin Isherwood, Jerry Apps, Edward Harris Heth, Ray Stannard Baker, Clay Schoenfeld, Dion Henderson, Fran Hamerstrom, Roy Lukes, Sigurd Olson, Wallace Grange, John Muir, Aldo Leopold, and numerous others? The answer to that question is for another essay to provide.



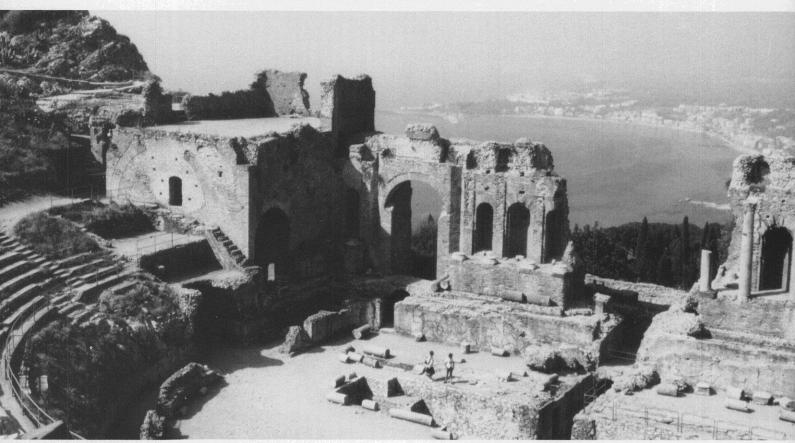
Winter's Breath

Autumn morning's dance of the lake clouds, Water body exhales summer breath With misty gusts like ghosts of restless sails Blown to infinity. Winter beds my memories beneath icy sheets; A sleep Only spring's tepid breath will arouse.

Inga Brynildson

Sicily—Crossroads of Civilizations

Text and photographs by Christopher Kleinhenz



Since 1979 Fannie LeMoine and Christopher Kleinhenz have led several successful study tours to Italy under the general auspices of the International Seminars program of the University of Wisconsin-Extension. In all of these travels they have concentrated on Roman civilization and its influence on subsequent ages. In the summer of 1983 they focused their attention on part of Roman North Africa and Sicily. The articles below attempt to give a glimpse of the fascinating history of these two areas.



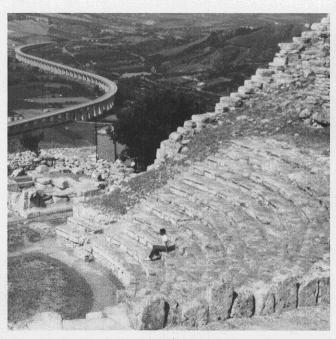
Agrigento: Temple of Concord. On a high ridge together with other temples this is one of the best-preserved and most aesthetically pleasing examples of Doric architecture outside of Greece. While the name "Concord" was erroneously given to it because of a Latin inscription found nearby, there is a local custom for a bride and groom to visit the temple on their wedding day, thus ensuring happiness and prosperity. The Greek city of Akragas (Roman Agrigentum) was renowned in antiquity for its wealth and power.

On page 13 Taormina: Greco-Roman Theater. Situated high (600 feet) above the Ionian Sea, this second largest of classical theaters in Sicily was constructed in the third century B.C. and almost completely rebuilt by the Romans in the second century A.D. Unlike the dramatic productions staged during the Hellenistic age, the theater was used for gladiatorial combats and beast hunts in the Roman era. The spectacular view of the sea and Mt. Etna and the tranquillity of the site help explain the attraction of Taormina for tourists.

icily—the mere mention of the name conjures in the imagination a host of visions: peasants working in the fields; shepherds tending flocks; the gaiety of local festivals complete with colorful costumes and rituals; majestic Doric temples standing watch over silent meadows filled with flowers; the rich splendor of mosaics in a myriad of chapels; the vital energy and rhythm of the modern city; the stark devastation wrought by earthquakes and drought. The tragic and the comic. The sublime and the mundane. The beautiful and the ugly. The alternate masks of the ancient theater are eminently suited to the many faces of contemporary Sicily.

Resembling the intricate mosaics on mythological and hunting motifs in the Roman villa at Piazza Armerina, Sicily is also a sort of mosaic, a patchwork quilt of many colors and hues, each one distinct yet part of a larger entity. Where else but on this island of contrasts could one encounter figures as diverse as the internationally acclaimed grassroots social reformer, Danilo Dolci, and the self-styled, ruthless chieftains of the "Onorata Società"? Where else but in the exotic capital of Palermo could architectural designs so seemingly incongruous as the red oriental domes of St. John of the Hermits and the ornamen-





Segesta: View from the Theater. Perched near the summit of Mt. Barbaro (1200 feet) is the theater of the ancient city of Segesta, originally founded in the twelfth century B.C. by the Elymni. Some six miles to the north across the valley, which is now transversed by a modern highway, is Castellammare del Golfo, the site of the ancient seaport of Segesta.

tal baroque of San Domenico live in relative harmony? Where else but in Trinacria (so-called because of the island's triangular shape) could the traveler see in the space of a single day a Greek theater (Segesta), a Roman amphitheater (Syracuse), an octagonal German fortified tower (Enna), a Norman cathedral (Cefalù) and numerous reminders of other, early inhabitants of this fabled island?

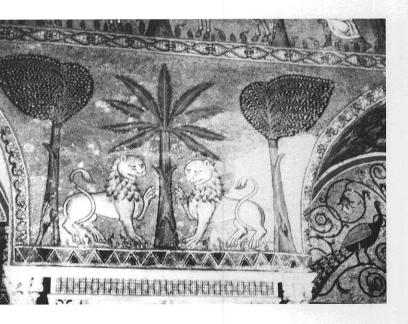
For centuries Sicily has been a crossroads of civilizations; indeed, close to a dozen have left their mark on the island over the past three millenia: from the earliest Phoenicians, Greeks, and Romans through the Byzantines, Arabs, Normans, and Swabians, to the French, Spanish, and Austrians.

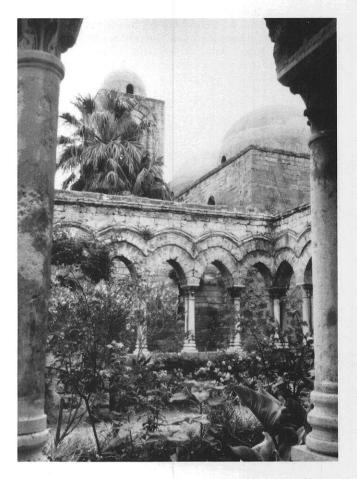
Of all the early inhabitants, the Greeks left an extensive and indelible patrimony. Two cities—Syracuse and Agrigento—boast some of the finest and best preserved Greek monuments of the ancient world. Syracuse is, of course, remembered as the wealthy and cultured city that counted Dionysius the Tyrant and Archimedes the mathematician and scientist among her citizens. Among the more recent native sons of Agrigento we find Luigi Pirandello, the Nobel Prize winning author (1934), whose plays (such as Six Characters in Search of an Author) are still among the favorites of the modern repertoire.

Selinunte: Temple E. This Doric temple, dedicated to Hera, dates from the fifth century B.C. In its present, partially reconstructed form, it stands in sharp contrast to the rest of this once flourishing Greek city which was destroyed by Carthage in 409 B.C. and completely leveled by an earthquake in the Byzantine period. Named for the wild celery (Greek *selinon*) that still grows in the area, Selinunte was the westernmost Greek colony in Sicily.



September 1984/Wisconsin Academy Review/15





Palermo: St. John of the Hermits, View of the Cloister and Domes. Constructed by King Roger II in 1132, this (now deconsecrated) church is a stunning example of the blending of eastern and western architectural styles that characterizes Norman Sicily.

Palermo: Norman Palace, Sala di Re Ruggero. "King Roger's Room" (1140) is exquisitely decorated with mosaics depicting hunting scenes and real and fantastic beasts. Among the favorite animal subjects are griffins, peacocks, eagles, and, in particular, these two lions which serve as emblems of the Norman dynasty.

In the Middle Ages under Norman and Swabian rule Palermo became the cosmopolitan capital of a large and flourishing kingdom. Under the leadership of the Emperor Frederick II, the imperial court at Palermo became the crossroads, the hub of the Mediterranean world. There in that unique court individuals representing virtually all professions, nationalities, tongues, and religious persuasions gathered: pilgrims and crusaders, merchants and traders, doctors and scientists, itinerant minstrels, notaries, scholars, and teachers. Life in the imperial court until Frederick's death in 1250 was characterized primarily by its open, cosmopolitan nature and its vibrant air of intellectual curiosity and activity. In this regard, Frederick (who was the grandson of Frederick I "Barbarossa" and was referred to by his contemporaries as Stupor Mundi, "Wonder of the World") essentially followed the cultural example set by his Norman predecessors (especially Roger II). Among the personalities present at the court were the astrologer Michael Scot (whose translations introduced Arabo-Aristotelian philosophy to the West), the philosopher Theodore of Antioch, the noted mathematician Leonardo of Pisa, numerous notaries and jurists who had received their training in law, grammar, and rhetoric at the University of Bologna, and many other men of learning from all points in the Mediterranean world. In addition to his intellectual imprint, Frederick II left his imperial mark on Sicily and the whole of southern Italy through his bureaucratically oriented central government and his promulgation of a royal law code, the Liber Augustalis (or Constitutions of Melfi, 1231). The diversity and liberal character of the Sicilian court may also be observed in the emperor's own interests: in his scientific treatise on falconry (De arte venandi cum avibus), in his establishment of the University of Naples (1224), and in his continued patronage of the arts and learning. In fact, Italian lyric poetry was born at this court, and this auspicious event signaled the beginning of the Italian literary tradition.

Even today Palermo remains the administrative center of Sicilian government, and the parliament of this autonomous region holds its legislative sessions in the 800-year old Norman palace. Visitors to the capital can pay hommage to the political and cultural vision of these great figures of the past by visiting their tombs in the cathedral.

Strolling down the streets lined with baroque palaces or taking a carriage ride through the parks, one is constantly aware of the mass of humanity, the multitudes who, as in most Mediterranean societies, seem to live in the street and *piazze*. There is an expansiveness about the people, an openness, a vivacity and exuberance that defies description and encourages emulation.

Nevertheless, there is a grim side to life in modern Sicily. Illiteracy and poverty still pose problems, especially in the underdeveloped interior of the island. Political corruption is also widespread, and at times erupts into violence, as the recent tragic assassination of General Dalla Chiesa shows. Aside from

Cefalù: General View of the City. The magnificent Norman cathedral, begun by Roger II in 1131, and the remainder of the medieval town are dwarfed by the huge rock which, in the general shape of a head, gave the town its name, *Cephaloedium*, from the Greek word for 'head.' The mosaic decoration in the apse of the Cathedral shows a gigantic figure of Christ Pantocrator, common in Norman churches in Sicily (e.g., the Palatine Chapel in the Norman palace in Palermo and the cathedral at Monreale). The mosaics produced in the twelfth century in Sicily are marvelous for their high quality and their incorporation of Islamic geometric designs and motifs.

the sensationalism associated with headlines and front-page stories, these political intrigues have provided the foundation and substance of many novels by the critically acclaimed contemporary Sicilian writer, Leonardo Sciascia. Unemployment and emigration are perhaps the two major, interrelated problems in the island's more recent past, and herein lies one of the great ironies of history. Sicily, which Giuseppe di Lampedusa described as "that America of antiquity" in The Leopard, thrived on the influx of numerous peoples, who were drawn to that magnet of the ancient (and medieval) world. However, over the past century Sicily has lost tens of thousands of its inhabitants, who have emigrated in search of employment to that other America (both North and South) across the sea.

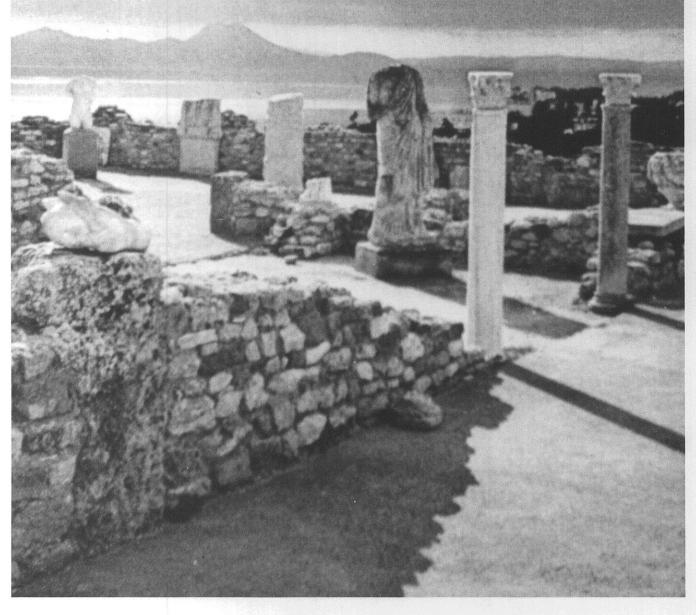
Sicily (and the Sicilian character for that matter) is a study in contrasts and cannot be summarized in a few words or even described in broad generalizations. Indeed, for its great diversity this crossroads of civilizations remains one of the most fascinating lands that one could ever hope to visit.



September 1984/Wisconsin Academy Review/17

Carthage—The Phoenix of North Africa

By Fannie LeMoine Photographs by Christopher Kleinhenz



18/Wisconsin Academy Review/September 1984

Clockwise from top. The mosaic representing Virgil seated between two muses is one of the most famous in the rich collection at the Bardo Museum in Tunis. This mosaic from Sousse shows Virgil with Clio, the muse of history on the left, and Melpomene, the muse of tragedy on the right.

This mosaic of an uncertain Aeneas pursued by Dido, illustrating Virgil's hunt scene, is now in the British Museum.

The amphitheater of El Djem is the most impressive single monument of the Roman period still standing. Probably begun by the Emperor Gordian I when he was proconsul of Africa (238 A.D.), it could seat 30,000 spectators, 6,000 fewer than the great amphitheater at Carthage. Although the Carthage amphitheater is not as strikingly well preserved, it is more celebrated because of the famous Christian martyrdoms associated with it. Vibia Perpetua, a well-educated twenty-two year old mother of a nursing child, has left us a vivid and moving account of her trial, imprisonment, and visions before martyrdom in Carthage. She and other Christian catechumens were killed on March 7, 203 A.D. by beasts at games held for Emperor Septimius Severus' son Geta.

photo by Derwood Staeben









Dougga: Theater. Dougga is one of the most impressive archaeological sites in Tunisia. Important in the Punic period, it increased in size and prosperity as a Roman city and has especially striking monuments from the later second and third centuries A.D. Among these is the theater, which was built in A.D. 166–169, and seats more than 3,500. The theater has excellent acoustics and is the site of an annual festival in June.

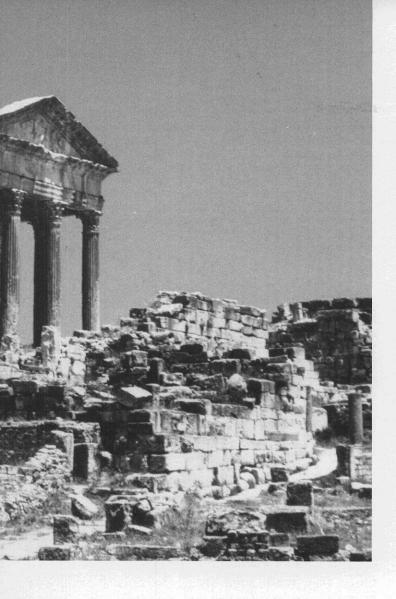


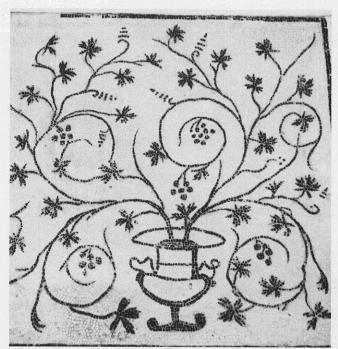
Dougga: Capitol. The Capitol at Dougga is one of the best preserved Roman monuments in North Africa. It was built in 166 or 167 A.D. and is dedicated to the Capitoline triad of Jupiter, Juno, and Minerva.

or students of Roman history, Carthage will always be a city of both seductive and sinister associations. The romantic figure of Virgil's tragic queen Dido is intimately linked to the image of the city in our imagination, and, indeed, Dido, the legendary founder of the city, is not merely a figment of literary imagination but a historical person, niece of the infamous Jezebel. As the legend runs, Dido was a daughter of the king of Tyre in Phoenicia. Her cruel brother Pygmalion murdered her husband and caused her to flee to the African coast where a native chief named Iarbas allowed her to purchase as much land as a bull's hide could cover. Cleverly she cut the hide into long, thin strips with which she encircled a large section

of land as the site of her new colony, destined to grow far beyond its original, hide boundaries. Her cleverness, however, was not matched by good fortune. According to one version she was forced to commit suicide to avoid the amorous overtures of Iarbas. The better known version is told by Virgil in the *Aeneid*. When Aeneas rejects her and her love in order to found Rome, Dido kills herself and promises undying enmity between her people and the Roman race.

Although the traditional date for the founding of Carthage is 814 B.C., the earliest archaeological evidence comes from the early or middle eighth century B.C. That earliest evidence also brings us into direct contact with the Punic religious practices of



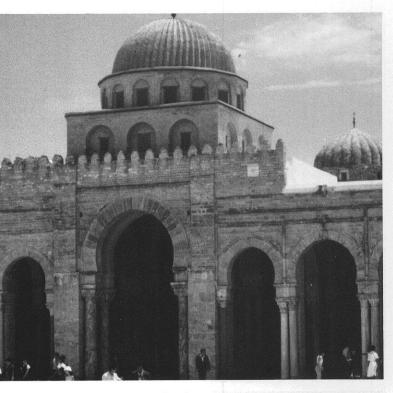


Sousse: Mosaic. Although the richest collection of Roman mosaics is in the Bardo, charming and intriguing works produced by the prolific African mosaicists may be found in many places in the country, for example, at Thurburbo Majus, or, as this picture shows, in the impressive small museum at Sousse.

infant and child sacrifice that contributed to their sinister reputation in antiquity and helped to make Punic a name synonymous with treachery and cruelty for a Roman. In the tophet (place of human sacrifice) of Salammbô thousands of children from infants to twelve years old were burned to the Phoenician high god Ba'al and later, to the Mothergoddess Tanit. During the fourth and third centuries B.C. child sacrifice was widespread in Carthage and its territories. The practice declines during the second century B.C. and ceases altogether in the Roman period.

Dido's city prospered from commerce and the maritime expansion of trading fleets. It became the major sea power in the western Mediterranean and controlled settlements all along the northwestern coast of Africa, of Spain, and western Sicily. Challenged by the Romans, the city was defeated in the First (264–241 B.C.) and the Second (219–201 B.C.) Punic Wars and completely destroyed in the Third (149–146 B.C.). The city was torched and razed to the ground; the population, scattered and sold into slavery; the site, cursed and sown with salt to prevent any rebirth.

As early as 122 B.C. the Roman tribune Gaius Sempronius Gracchus had attempted to establish a new colony on the site of Carthage. The surveyors' stakes that had been used to mark the allotments of land to the six thousand colonists were systematically extracted by so-called "wolves," who almost





Kairouan: Great Mosque. Kairouan was founded by the Muslim conquerors led by Oqba ibn Nafi in 671 A.D. It lay on important caravan routes and in the ninth century became the flourishing capital of the Aghlabites. It is famed not only for its carpets but also for its Great Mosque. This venerable sanctuary is the most ancient place of prayer in the western Islamic world. It has undergone destructions, rebuildings, and numerous additions. The imposing facade of the prayer-room has a large and beautifully variegated forest of columns and capitals of Roman, Byzantine, Aghlabite, and even more modern origin.

certainly accomplished their night's work in human form. Although the Gracchan colony failed, in less than a hundred years, Carthage, like the legendary Phoenix, was reborn as a Roman colony that would remain one of the great cities of the Roman Empire and major centers of Christianity until overrun by the Vandals in 439 A.D. Although reconquered by Justinian, it passed under Moslem control in 697 A.D. In 698 A.D. it was completely annihilated a second time by the Arabs who were retaliating for an attack against the Arab garrison stationed in the city.

Carthage no doubt evokes the sort of romantic associations that shroud all the great losers of the past, whether General Robert E. Lee or Hannibal. Even in antiquity stories about hidden Punic wealth circulated at the court of Nero. And today there is a strong fascination with unearthing the treasures of a city that has been destroyed and rebuilt so many times. There is also some urgency to complete the archaeological investigation and to visit the site soon, for ancient Carthage is again threatened by new dangers. Modern villas and new buildings are rapidly turning the site of the old city into a fashionable suburb of the metropolis of Tunis. In 1972 the director general of the United Nations Educational, Scientific and Cultural Organization initiated an extraordinary international project in rescue archaeology. Archaeologists from Tunisia and nine other countries of Europe and America, including the United States and Canada, have been involved in the rediscovery and salvation of what remains on this famous site. The Antonine Baths are the major monuments visible at the site, but the National Museum of Carthage also contains extraordinarily interesting Punic masks and other treasures from the Hellenistic period.

Tunis: Medina and Palais d'Orient. Intricate geometric patterns and painted tile decoration may be found in many parts of Tunisia. This picture, taken from the roof of a building in the Medina in Tunis, shows the Palais d'Orient.

The Museum at Carthage offers a nice complement to the great museum in Tunis, the Bardo. The Bardo itself includes the entire complex of palace, garrisons and forts built by successive beys who ruled in Tunis until the nineteenth century. It houses one of the most spectacular collections of Roman mosaics anywhere in the world. These mosaics have been gathered from all over Tunisia and give some indication of the wealth of ancient sites in the country. The amphitheater of El Djem and the capitol of Dougga are only two examples of these cities and monuments in the African sand.

Tunisia is also a country of minarets and famous mosques, landmarks of the richness of the Islamic tradition that still permeates Tunisian life. Indeed, modern Tunisia provides an exotic and amazing blend of the contemporary and the historic. Disgruntled camels riding in trucks and modern goods in ancient bazaars give only a hint of the flavor. Tunisia is a marvelous place to visit—even in the midst of summer.

Tunisia: Camels. This picture captures some of the contrasts evident in modern life in Tunisia, where the ancient and the modern, the traditional and the new are juxtaposed and, happily for these contented camels, utilized. (Photograph by Derwood Staeben.)



September 1984/Wisconsin Academy Review/23

Excerpted from Birding With a Purpose

By Frances Hamerstrom © 1984

Only Drinking Milk

ird banders-almost without exception-are convinced that they are noble beings. Banding is not an end in itself; it helps solve the riddle of migration, makes possible the study of individual birds, and can help monitor environmental contaminants.

Bird watchers quite often feel noble too. Some of them are making first-rate contributions to ornithology (by conducting breeding bird censuses, for example). Others pursue rarities—sometimes to the point of harassment of endangered species—in their competitive eagerness to add just one more bird to their list. Aldo Leopold used to call running up a big list bird golf, and he viewed this undertaking with gentle tolerance. But that was long ago, before certain overly aggressive listers took bird golf too seriously.

The nonbirdy public tends to lump banders and birders in an innocuous category: nondangerous nuts. But if properly introduced to our occupations, they tend to buy bird books and even to think us quite wonderful.

The trouble with bird banding is that opportunities arise so swiftly that the few moments needed for a proper introduction to our work often are not there. But let me start with an outstandingly successful introduction. A snowy owl was perched on the roof of a split-level house in a Milwaukee suburb. It was close to the chimney, but up on the ridge pole, and looked ready to hunt. Two small children rode tricycles on the sidewalk making various motor sounds like grrr grr grrr.

We put two bal-chatris baited with pigeons on the front lawn. Then I rang the doorbell. A pleasant young woman in curlers came to the door. "Would you like to see something interesting?"

I wiped some of the mud off my boots and led her to her own picture window and pointed to the traps. "There's an owl on your roof and we're trying to catch it to band

"We've seen that owl. It chases

cats. Are you going to let it go?"
"Yes," I added, "but those kids on tricycles are apt to scare it away."

My hostess was quick to act. "Why don't you invite the rest of your group in?"

She brought us steaming hot coffee and cookies and disappeared to telephone. The children pushed their tricycles into the garage next door and disappeared too. The lady in curlers then telephoned all the neighbors to tell them to stay indoors and look out of their picture windows.

The snowy came off the roof in one swift glide. Our hostess gasped. It walked around the trap bobbing its head, and then it jumped up on the trap, tried to fly, and was caught.

We rushed out of the house. Roughly thirty-five people rushed out of nearby houses to converge on our catch. We took the owl inside the bus to process it, and the windows were so darkened by the mass of humanity that I had trouble reading the scales.

Not all encounters with the public turn out so well. In a nearby suburb a snowy hunted over an abandoned field staked out for real-estate development (such areas are often a boon to wildlife until growing cities spread and swallow them up).

We got our traps out in sight of the owl and retreated to the edge of the highway to await developments. The owl sat atop a TV antenna; a pigeon reposed peacefully inside one trap, and a starling ran back and forth in another, and small skiffs of snow scudded across the weedy field.

The owl left its perch, banged into the starling trap, tumbled with the force of the impact, and started circling the trap, now and again jumping to its top in her attempts to reach the starling.

A man walked out of the back door of his house with a mediumsized dog. He was nearer to the owl than we were. Helmut muttered hopefully, "Just walking his dog."

But the man got closer and closer to the trap! The owl flew back to the antenna, and we took off running hoping to head the man off.

We yelled, "Go away! It's ours! Leave it alone!"

The wind whisked our voices to nothingness until we were upon him, and the starling whizzed off into space. The whole end of our bal-chatri had been cut out with wire cutters.

"What," demanded Helmut, "do you think you are doing?"

Not one of us was prepared for his answer.

"I saw the big bird trying to help the little bird out of the cage, so I thought I'd help too."

Our problems with the public are incredibly varied. Not a few people have tried to run over hawks caught on traps. We had one redtail

shot on a trap, and a Cooper's clubbed to death by a trout fisherman. During the early years we were sharply criticized for letting the hawks go instead of killing them. One town chairman got so irate on this subject that he threatened to pull every black hair out of Dan Berger's beard.

Some people smash traps, but many more steal them. Even nice people seem to do this. I cannot understand it. If you find a purse, or a wallet, or binoculars, you know they belong to somebody, but traps with live lure birds in them seem to fall into a special category: finders keepers

ers, keepers.

We tried using signs by our permanents, but to do any good they had to be conspicuous—and they attracted the public. These pickers-up of traps never seem to look for a tag; they just take them home for the kids, I suppose. We learned to hide our sets well, but not always well enough.

One lovely day in May with a medium wind from the northwest, the trap I'd put near the ant hill was gone. I got on my hands and knees to see if I could tell in which direction the hawk had dragged it. I looked for tell-tale feathers or disturbed vegetation.

It would be a horrid thing to suspect that a caught hawk had dragged the trap to some secluded spot where it would go to its death if we couldn't find it. I worked over about half an acre and came home late for lunch, which I was supposed to have cooked. The crew was hungry. Right after a quick lunch we all looked for the lost hawk, hour after hour.

We argued. I said, "We ought to tie the traps to trees or bushes."

Frank insisted, "If we tie the trap, the hawk is apt to hurt herself, or she'll bust the nooses and get away."

Raymond declared, "I never lost a hawk yet. They can't drag 'em so far that I can't find 'em." Two days later another trap had disappeared. Frank searched the area thoroughly. Then, instead of calling for help, he walked back along the sandy trail examining tire marks. He came in tired and late for lunch. "Somebody—none of our cars—drove in to the fallen oak set. That trap's got to have been pinched."

A few days later another trap, not far from a trail, was wantonly run over—smashed on purpose. These goings on were right on our farm, so when Dan Berger and I saw a car parked within sight of a fairly well-concealed set for a goshawk, Berger floored the accelerator of his VW bus, swung in front of the parked car, and stopped. The Muellers, in another VW bus, cut off the chap's retreat from behind so there was no way the driver could get away. Four of us descended on him.

"What are you doing?"

A scared-looking man, in worn work clothes looked at us with dazed watery eyes. He didn't seem to be able to find an answer.

"Where are you from?" demanded.

"That farm up the road," he murmured almost inaudibly. "I'm the new hired man."

"Just what are you doing here?" Helmut roared.

The chap looked hopelessly to the front and to the back. There was no way he could escape. His jaw trembled and he slumped lower in the seat. "I'm . . ."

We all leaned forward to hear his explanation. This rattled him into silence.

At last he tried again. "I'm drinking milk. I have ulcers and I just stopped to drink milk."

And sure enough, he was clutching a quart carton of milk in both his trembling hands.

(We never did find the trap thief.)

Reprinted from Birding with a Purpose by permission from Fran Hamerstrom © 1984. Published by Iowa State University Press, 2121 S. State Ave., Ames, Iowa 50010.

Midwest Cinderella

I told him you loved languages, art, Russian history especially Russian queens (czarinas you would say)

and wished your name were Catherine Alexandra, that you laughed at the dumb Englishwomen who married Henry VIII thinking

they'd avoid the Tower. I said you loved the smell of vanilla and the iris that grew in spring. Then you, hair

still shower damp, eyelashes stuck together, you interrupt about Yount's home run, Oglivie's war

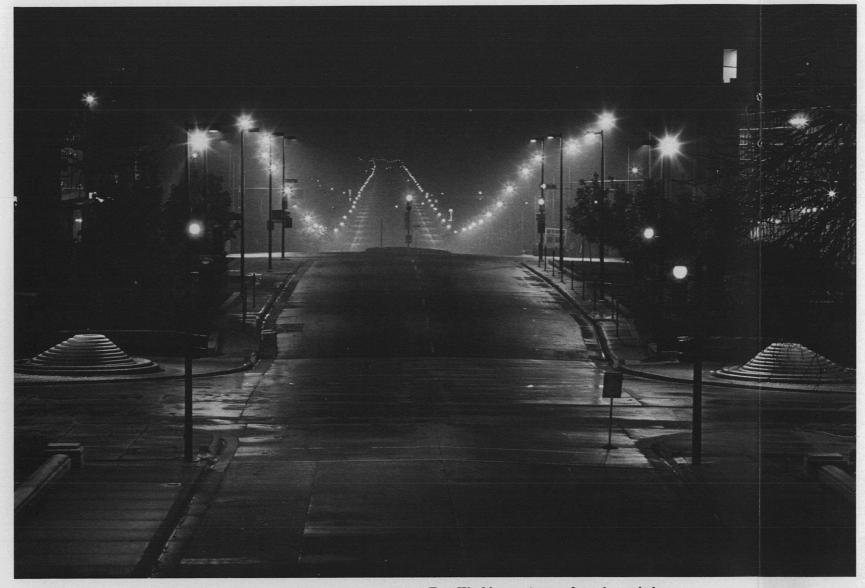
with the Baltimore short fence, Charlie Moore's escape into the dugout. You stand on one

foot, scratch the back of your leg with the other, faded sweatshirt pulled over green shorts. And as you separate brown

M&Ms from the colored ones, I can see your feet growing larger and larger.

Susan Faust Casper





East Washington Avenue from the capitol steps

This project, a visual survey of the physical and social environment of downtown Madison, was undertaken with a grant from the Madison Cultural Affairs Committee in collaboration with George Talbot, curator of visual and sound archives for the State Historical Society of Wisconsin. Before beginning the photography, Dennis researched the Society's iconography archives on Madison to determine which views were needed. Church

completed the photography just after the construction of the State Street mall and exhibited about seventy photographs at the Madison Art Center from July through September 1981.

"After being in the East for a while," says Church, "I wanted to come back to Madison and document what the place *really* looked like."

Dennis Church



On the square, Mifflin Street, 1980

Wisconsin Photographers' Showcase

Dennis Church

State street store window



September 1984/Wisconsin Academy Review/29

Wisconsin in the American Civil War

By John K. Driscoll



Camp Randall, as seen in this lithograph that is focused from Bascom Hill. University Avenue is in the foreground. Randall Avenue runs from front center to the left. Hospital buildings are to the right, barracks in the near and distant center. More than 70,000 men of Wisconsin trained at Camp Randall in the Civil War.

n the eve of the American Civil War, Wisconsin was a young state, only thirteen years out of territory status.

The people of Wisconsin, as the decade of the 1860s opened, were, for the most part, immigrants who had left distant homes in the states to the east or in Europe and had come seeking land, freedom, and the good life. Once settled, they organized themselves into societies. They built, they farmed, they developed what had been a forest and a prairie into a state. The men became farmers or farm hands, clerks or lawyers, draymen or brewers or merchants or day laborers. They were an enterprising, hard-working, self-sufficient people. If they were not successful at the moment. they were sure of prosperity to come.

The people of Wisconsin, as the decade of the 1860s opened, were a people intent on the future who invested their labors, their wealth, and their hopes into the new community of Wisconsin that held or promised so much of what they had come seeking.

They were not a people who had anything to gain by leaving hearth and homestead to march off to a distant war. Yet, march they did when the tragedy of the American Civil War swept across their nation.

On April 12, 1861, the decade of tension and hostility and fear that had begun the separation of North and South culminated when southern batteries fired on a Federal fort in the harbor at Charleston, South Carolina. President Abraham Lincoln, in office only five weeks, declared that an insurrection existed in the seceeded states of the South and called on the governors of the loyal states of the North for troops with which to put down the rebellion.

In Wisconsin, Governor Alexander Randall called on the men of the state to volunteer to furnish the state's quota of one regiment of infantry. The response to Governor Randall's call was a surge of organizing and enlisting, which forced him to accept volunteer regiments into state service well ahead of his authorization from the War Department in Washington. With the continuing calls for troops over the four years of the war, Wisconsin would furnish men and units far beyond its proportion in size or position among the states of the North. From a population of 776,000, one person in ten would wear the blue uniform of the Federal army between 1861 and 1865. Some would serve the full four years; some would serve for a hundred days or less. Of the 91,000 men of Wisconsin who would be enrolled, some more than once, one in thirteen would die in the American Civil War. A third of these would be killed in battle or would die of battle wounds. The other two thirds would die of disease or of injury.

Wisconsin would lose, in the American Civil War, in actual numbers, almost as many men as it would lose in all the other wars that men of Wisconsin would fight, combined: The Spanish American War (134), World War I (3,932), World War II (7,980), Korea (800), and Viet Nam (1,189). In all, 12,206 men of Wisconsin would die in the American Civil War. To put these numbers into perspective, they can be compared to the present-day population of Wisconsin's capital city. In 1980, Madison had a population of 171,000. If Civil War service and cost were placed against that population base, more than 20,000 citizens of Madison would serve in the Federal armies in the Civil War. Of that 20,000, 2600 would die.

Eventually, Wisconsin would furnish to the Federal armies four regiments of cavalry, twenty-five batteries of artillery, one company of United States Sharpshooters, and fifty-three regiments of infantry.

In the Federal armies in the American Civil War there were about two thousand enumerated regiments. Of these, only two hundred were considered fighting regiments, those that fought the major battles and those that took the highest losses. Of these two hundred fighting regiments, twenty were Wisconsin regiments. With 3.5 percent of the population of the loyal states, Wisconsin furnished 10 percent of the fighting regiments in the war.

The cost to Wisconsin was high. In numbers of men killed or mortally wounded in battle, the Seventh Wisconsin Infantry lost 281 officers and men. There were only six other regiments in the Federal armies with higher actual losses. The three Wisconsin regiments of the famous Iron Brigade of the Federal Army of the Potomac, the Second Wisconsin, the Sixth Wisconsin, and the Seventh Wisconsin lost 763 officers and men in battle from an original muster strength of 3,238. Twenty-three of every hundred men who originally volunteered in these three fighting regiments died in, or of, battle. These numbers do not include losses to disease or injury.

Wisconsin's notable fighting regiments

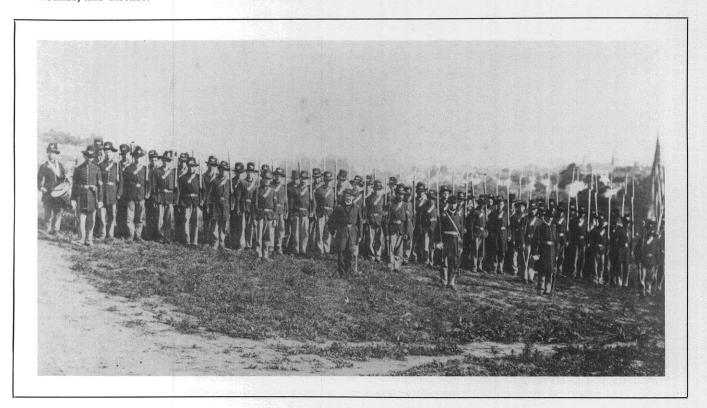
The First Wisconsin went into action at Falling Waters, Virginia, on June 2, 1861, and the first two men from Wisconsin who would die in battle fell to Confederate musketry in action there.

In July of that year, the Second Wisconsin took one hundred and fifty casualties at the First Bull Run, near Manassas. The Fourth Wisconsin was in on the capture of the largest city of the Confederacy, New Orleans. The Fifth Wisconsin won praise from General McClellan in front of Yorktown, Virginia. At Corinth, Mississippi the Eighth, the Fourteenth, and the Sixteenth Wisconsin regiments were cited for courage and ability. The Eighth



The color guard of the Eighth Wisconsin, shown here with the regiment's mascot, "Old Abe," the eagle. One of the "fighting regiments" of the Federal Army, the Eighth Wisconsin served from September, 1861 to the end of the war. "Old Abe" is featured on the Cyclorama at Atlanta, Georgia. After he died, he was preserved in the state capitol at Madison but was lost when that building burned early in the twentieth century.

Company I, Seventh Wisconsin Infantry. Originally enlisted as The Northwestern Tigers from Dodge and Waushara counties, they formed part of the regiment that took the highest battle losses of any Wisconsin regiment in the Civil War. Here, they wear the black felt hat that was the badge of the Iron Brigade. They would lose half their original strength to battle death, wounds, and disease.



Sergeant John W. Fonda, of Prairie du Chien, Wisconsin. An early volunteer, Fonda wears the gray uniform of the Wisconsin Active Militia, trimmed at collar and cuff in dark blue. The first eight regiments out of Wisconsin wore this gray uniform. Eventually, all Federal forces adopted the dark blue uniform since the Confederates had chosen gray as their official uniform color.

Wisconsin was already well known for its flying mascot, "Old Abe," the eagle. The Eleventh Wisconsin fought and took heavy losses at Jackson, Mississippi, and then participated in the siege and capture of Vicksburg. The Fourteenth, the Sixteenth, and the Eighteenth Wisconsin fought the battle of Shiloh. Shiloh also took the life of Wisconsin's new governor, Lewis P. Harvey, who had gone to the battlefield to oversee the care of Wisconsin's wounded and who slipped from a plank while crossing between two steamboats and drowned in the Tennessee River. The Fifteenth Wisconsin, led by Colonel Hans Christian Heg who had been warden at the state prison at Waupun, were Scandinavians to the man. Heg died leading his men at Chickamauga Creek. The Twentyfourth Wisconsin took 40 percent losses at Stones River and, later, following its boy colonel, Arthur MacArthur, fought its way up the impossible rise of Missionary Ridge at Chattanooga.

Men of Wisconsin fought in every major campaign of the American Civil War. Men of Wisconsin died in every major campaign of the American Civil War.

Camp Randall

The state's capitol city, Madison, was the center of Civil War activity in the state. When Governor Randall called for volunteers in response to the president's levy in 1861, Madison had a population of 7,000. The second week in May, 1861, the Second Wisconsin Regiment was ordered to muster at Madison. Ten companies, of a hundred men each, descended on the quiet hamlet. The men and boys came from Dodge, La Crosse, Grant, Rock, Winnebago, Racine, Columbia, Dane, Iowa, and Milwaukee counties, and they were a rowdy, randy thousand.

Governor Randall searched for a place to put them. He found an ideal location about a mile west of the outskirts of the city, at the foot of the hill that held the few buildings of the state university. The place was the State Agricultural Fair Grounds, a plot of thirty acres with buildings and sheds to house the men and an eight feet high board fence that would serve to keep them in camp and away from the population of the city.

For more than a week, the men wore their civilian traveling clothes. The state's adjutant general was still advertising for tailors to sew uniforms. There were no weapons with which the men could drill. An order for blankets from as far away as New York was delayed, requiring Governor Randall to appeal to the housewives of Madison for quilts to bide the men through the coldest and wettest spring on record. Governor Randall named the state's attorney general to be the colonel of the new regiment. In return, the colonel named the fair ground facility Camp Randall, in honor of the governor.

The thousand volunteers at Camp Randall waited and tried to keep warm. They tried to learn the complicated infantry drill from officers who were as unfamiliar with it as themselves. They tried to keep from being bored. Camp life became dull. The lights of Madison, across the board fence, beckoned. A soldier needed a scarce pass to get out one of the two gates, but the boards of the fence worked loose quickly. Some of the volunteers who went out through the fence attended religious services with congregations in Madison. Some of them sought relief from camp food in the restuarants of the city. Some of them were arrested for serenading a house of ill fame in the city's Third Ward.



Wisconsin furnished three times its quota of fighting regiments in the war.

The first time Wisconsin troops came under fire, in fact, was not in the South in action against the forces of the Confederacy. It was at the corner of State and Gorham Streets in Madison where the staff of a brewery had to use revolver fire to drive off a party of volunteers from Camp Randall who were intent on stealing a barrel of beer.

Camp Randall became the principle training camp for Wisconsin troops in the Civil War. Over 70,000 of the 91,000 men of the state who served in the war were trained at Camp Randall. A general hospital was operated there for sick and wounded soldiers of the state who could be brought back from the fighting fronts. For three months in 1862, 1200 Confederate prisoners of war were held there. Appropriately, after the war, Wisconsin regiments returned to Camp Randall to be mustered out of service and sent home.

The Wisconsin soldier in the Civil War never became a true soldier. He fought with remarkable courage and ability on fields that stretched from the Red River to the Atlantic coast, but he really never joined the army. He went to war as a farmer or a field hand, as a merchant, or a drayman. He fought as a farmer or a field hand, as a merchant, or a drayman. He believed in what he did. He did it his way. He gave the army way short notice.

Profile of the soldier

From his letters home, from his diaries, from what he wrote after

the war, he can be profiled. He was, literally, a soldier boy, eighteen to twenty-one when he went into the army. He volunteered: 93 percent of the men from Wisconsin enlisted, as opposed to being drafted. He was German-born or of German lineage. He signed on for three years or for the duration of the war. whichever came first. He was unmarried, but he had a lady back in Wisconsin that he wrote letters to. He did not smoke but he did take a drink. He wore a beard. He was a protestant. He had been a farmer or a farm hand before going into the army. He would be sick two times a year during his service, and he would be wounded twice, if he was in a fighting regiment, if he wasn't killed. He was an infantryman, and he walked every place the army sent him, several thousand miles in the average soldier's enlistment. He lived out-of-doors for three years except when he was in winter quarters when he lived in a log and mud hut. He cooked his own food which was usually a debilitating and boring combination of bacon or beef, flour or bread, and coffee.

He hated, in sequence, officers, the army, and his food. He liked, in sequence, letters and packages from home, the men of his company, being warm and dry, and, surprisingly, the Johnny Rebs across the line when he wasn't trying to kill them or they, him.

He admitted in his letters and diaries that he wasn't brave. He showed an earthy sense of humor toward politicians and generals. He More men from Wisconsin died in the American Civil War than in all other wars combined.



Lucius Fairchild, shown here as a lieutenant colonel of the Second Wisconsin Infantry. Part of the famous Iron Brigade of the Army of the Potomac, the Second Wisconsin would fight in battles from Bull Run to Appomattox. Fairchild would lose his arm at Gettysburg. He went on to become Governor of Wisconsin and to be instrumental in the purchase of Camp Randall as an athletic field for the University of Wisconsin.



Arthur MacArthur, the boy colonel of the Twenty-fourth Wisconsin. He would lead his men up the slopes of Missionary Ridge at Chattanooga. His son, General of the Armies Douglas MacArthur, would lead men of Wisconsin in battles from World War I to Korea.

was determined to stick the thing out, to the point of being bull-headed about it. His principle political focus was the preservation of the Union. He knew little of slavery and cared little about it, except that he was against it. He was in the army, and he was determined to see his time through.

After a year in the army, he was dirty. He had lice. He swore. He did things his own way and figured to hell with the graduates of West Point.

After a year in the army, he consisted of himself, a suit of red flannel underwear, a flannel shirt, and a pair of light blue trousers, shoes and stockings, a dark blue infantry jacket. He hated the little Frenchstyled kepi cap and opted for a black, wide-brimmed farmer's hat. He carried all he owned tucked into the ends of a rolled woolen blanket that he wore over his right shoulder, along with a canvas haversack for his food and a tin canteen for his water. He wore a leather cartridge box on his right hip with forty cartridges in it and another forty in his trousers pocket when he went in to battle. He carried a .58 caliber Springfield rifled musket and a bayonet that he lugged along for three years and used in action, at the most, for twenty-three hours.

After that first year in service, the volunteer from Wisconsin had quickly become a walking, swearing, drinking, lice-infested battle veteran who was determined to see out his time but who wished the politicians and the generals would get the damned thing over with so he could go home.

Motivation of the soldier

Why did he enlist? Once in the army, why did he fight so hard? Why did he die so willingly? Why, after three years of war, did so many of his friends reenlist?

Initially, he went for the adventure. Life on a farm in Wisconsin, in a shop, in a class room, was stifling. He saw the chance for adventure, for travel, for escape. He may have enlisted for the money; a farm hand in Wisconsin earned less than the eventual \$13 a month with food and clothing that the army offered. He may have enlisted to avoid being drafted.

Once in the army, he stayed because his friends were there with him. Companies were generally enlisted by counties, so he served with friends, relatives, neighbors.

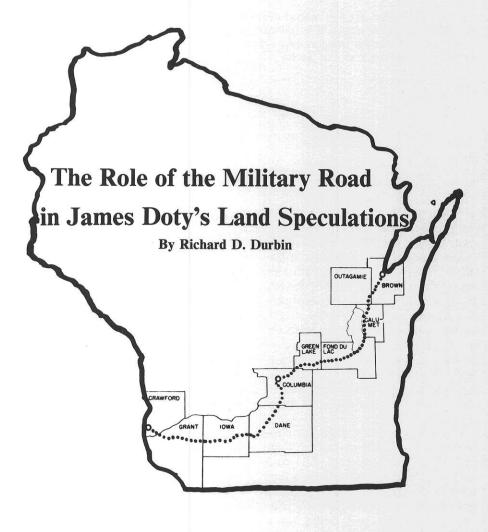
He believed in his soul that the Union had to be preserved, and he was determined to see that assured. He did not fear being killed, although he fought in battles where friends and neighbors were killed. He believed that he would come through the war alive. Most of the men of Wisconsin who served in the American Civil War did come home alive and whole.

He was a simple person with strong beliefs and sound values. He and sixty-five thousand other veterans came back to Wisconsin after the war with the fighting and the bloodshed behind them and a new set of values before them.

As the decade of the 1860s closed, the people of Wisconsin were a different people than they had been when the decade opened.

Photographs courtesy of the State Historical Society of Wisconsin, Iconographic Collection.

Fig. 1. Route of the military road across Wisconsin.



n September 1, 1832, the U.S. Army appointed James Duane Doty a commissioner to help lay out Wisconsin's first major road, the military road. Connecting Fort Crawford at Prairie du Chien with Fort Howard at Green Bay via Fort Winnebago at the Fox-Wisconsin portage, this road would pass through rich farm lands and link the nationally important lead mining district in the southwest with the port city of the north (Fig. 1). Of great benefit to the territory, it would not only underlie a military capability, but greatly advance the march to statehood.

Doty, moreover, visualized the road in personal terms. He believed it could lead to great wealth by providing the linchpin for his first major series of land developments.

What he could not foresee was that financial and political events enmeshing these land developments would eventually ruin him.

Doty came to Wisconsin in 1823 when it was part of the Michigan Territory. President Monroe had just appointed him additional judge for the district west of Detroit. He and his wife spent the winter at Prairie du Chien and in the spring moved to Green Bay where he bought a homesite for \$200.

Twenty-three years old and destined to become a force as a politician, businessman, and statesman, Doty possessed boundless vitality and ambition, brains, and a consummate sense of how to manipulate men and events (Fig. 2). Among his many activities was land promotion. Doty had learned in Detroit that frontier land, if well

chosen and developed, could quickly increase in value. Nor was it lost on him that successful land dealings could also lead to political influence, bringing more business opportunities his way. However the opportunities were then few, for almost all the land in the territory was in Indian hands. Doty knew this would change. In the meantime, he tried several strategems to obtain land in advance of public sale: legitimizing squatter's rights along the Fox River, validating Jonathan Carver's 1767 land grant in western Wisconsin, and obtaining the floating land rights of early settlers. All these efforts failed.

In 1831 Doty learned to his dismay that President Jackson would not renew his judgeship, and he began to look for another position. He even considered moving back east. In a letter to Louis Cass, Secretary of War, he hoped that "your good nature and more extensive knowledge of affairs will suggest some employment." Doty undoubtedly brought up his out-of-work status when he visited Cass at Washington that winter.

The details of how it came about are unknown, but the following summer Cass appointed Doty a commissioner to assist the army in planning the military road, for which congress had already appropriated \$7,000. The project, albeit in a much less ambitious form, had in fact been proposed back in 1829 by Doty and Henry Brevoort, the Indian agent at Green Bay. It was therefore fitting that Doty should be called on to oversee the project's implementation. Also, few if any men of that time had a knowledge of the country to compare with his.

Even before he first proposed the project, Doty had visualized what roads would mean for territorial advancement and his own fortune.

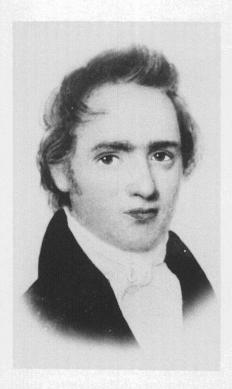


Fig. 2. James Duane Doty as he appeared in 1822 at age 23 (courtesy Neville Museum).

During his travels in the region through which the road would pass, Doty noted every potential opportunity with a profit-honed gaze. In the fall of 1831 he accompanied Col. Samuel Stambaugh on a canoe trip up the Fox River and around Lake Winnebago. Enroute they ascended the Cliff, a high escarpment at the lake's northeastern corner, and explored the area around it. Shortly afterwards Doty wrote,

The main roads leading from Chicago, to the Wiskonsin Portage, and the Lead Mines and to Galena will, it is presumed, pass this point, and it is on this account a very desirable site.

Undoubtedly Doty welcomed his commissionership as an opportunity to develop a grand plan of land acquisition. His thorough knowledge of the region and the route would give him the information necessary to purchase and develop promising parcels along its length. By 1833 the Indians had been moved off their lands south of the Fox-Wisconsin waterway, except for the New York Indian reservations on Lake Winnebago. Surveyors were busy laying out township lines so the land could be sold. In Doty's mind the military road, with potential links to other roads and canals, would form the network central to his plan, and provide the third important prerequisite for land settlement-an internal transportation system.

Doty worked with army-appointed Lt. Alexander Center, then stationed at Fort Winnebago, who did the actual surveying. He and Center made reconnaissances in the fall of 1832, particularly between Green Bay and Fort Winnebago, and one the following spring. During this time he also spent several months in the Blue Mounds area and very likely visited the Four Lakes Region just to the east where he would soon develop his most successful townsite, Madison.

With a mixed work party of army men and hired hands, Center and Doty started the survey at Prairie du Chien in July of 1833 and finished it two and a half months later at Green Bay. The army had hoped to start construction soon thereafter, but a lack of manpower delayed them until 1835. Meanwhile Doty repeatedly urged the army, by petitions and visitations, to begin work, "according to the intention of Congress." Fortunately the delay did not sidetrack his plans. The land could not be sold until the township surveyors had completed their task and proclamations issued for public land sales. These requirements were not met until the fall of 1835 when property in the Green Bay land district first came onto the market.

What did threaten Doty's enterprise was lack of capital. So while the time for land sales ripened, he developed several means for obtaining some. He offered to act as land agent, with power of attorney, for investors—chiefly easterners. As his fee he requested either part title or money to invest in more land. To raise additional funds he and his wife formed a land company and sold stock for around \$100 a share.

His first major land development was not something he foresaw as part of his grand plan, but it decidedly enhanced it. In the early spring of 1835 the millionaire owner of the American Fur Company, John Jacob Astor, asked Doty to lay out a town at Green Bay. By foreclosing on mortgages, Astor and his two junior partners had come into possession of about 2,800 acres just south of Navarino, then the principal town. The lands in question were part of those claims granted to squatters in the 1820s. In return for his services, Astor promised Doty an eventual quarter ownership in the town and a portion of the land sales. Doty accepted eagerly, and a month later the four signed the articles of agreement.

Doty drew up his plan for the town and named it Astor. John Jacob approved. In return, he suggested that Doty name something after himself. In present-day Green Bay, Doty Street marks the dividing line between the old towns of Astor and Navarino. Doty named the cross streets for contemporary men and the streets parallel to the river for presidents. The military road, which followed the river, became Washington Street, a name retained today.

When Cass chose Doty to help the army lay out a second road, this time between Green Bay and Chicago, Doty cleverly arranged for it to intersect with the military road in Astor. By so doing, he got the army to finance the building of the town's bridge over the Manitou (East) River. In a letter to Astor, he wrote, "The point of intersection of these roads in the town is considered an important point."

While soldiers slashed the military road through the forests and across the prairies between 1835 and 1837, Doty was accumulating enough capital to purchase promising land parcels on his own. He chose blocks of property along the road, platted them, and sold lots or held them in the hope future canals would add to their value.

He not only sold property, he became an active developer—all in the name of personal profit, of course. Doty realized all too well that services enhanced a development and raised prices. He commonly offered free lots to churches as an inducement to build. He participated in the establishment of hotels, town halls, newspapers, mills, and warehouses. In one case Doty strove to divert lead shipments from the Mississippi to the military road, writing Astor,

I hope in the course of the next season to see our town occupy the same position in the lead trade as has heretofore been held by St. Louis.

He also became deeply involved in the operation of the two major banks in the territory. The Bank of Wisconsin at Astor incorporated early in 1835 with Doty as one of its nine directors and his cousin, Morgan L. Martin, as president. About two years later Doty bought a large block of stock in the Bank of Mineral Point and became its president.

In the winter of 1835 Doty started buying land for between \$1.25 and \$3.00 an acre at the head of Lake Winnebago near the inlet of the Fond du Lac River. It was here on his 1831 trip with Stambaugh that he had written.

A road from the mouth of this stream to Galena would be a very great advantage to the Mines, and is therefore an object worthy of the attention of Congress. If a careful examination of the country is made a very direct route may be obtained, and at a trifling expense.

In all he bought some 3,300 acres

and put 1,760 of them under the aegis of his own Fond du Lac Company, formed, in Doty's words, "for the purpose of purchasing lands at the Head of Winnebago Lake and laying off a town." Early the next year Doty took in master carpenter George McWilliams and made him manager. Under McWilliams' name Doty patented an additional 3,200 acres to complement his own purchases. McWilliams conveyed 1,865 of these acres to the company. As a result, Doty soon controlled much of the property in what was to become downtown Fond du Lac, as well as nearby land along the lakeshore and the military road (Fig. 3). His control was further ensured when some of his investors and other members of the Fond du Lac Company purchased small parcels in the area. It seemed that his grand plan was succeeding beyond his fondest dreams.

But that autumn Doty made a portentous trip from Green Bay to the territory's first legislative assembly at Belmont to urge establishment of the capitol at Madison. It turned out to be the beginning of the end. The ensuing political maelstrom ultimately caused his financial ruin.

At the time land promotions loomed paramount among the many reasons he had for going to Belmont. Besides pushing a site for the capital, Doty planned while enroute to lay out townsites along the military road, where he felt future development would occur, and he took along John Suydam to survey them.

First they stopped at the Cliff where Doty had reconnoitered with Stambaugh and, as he wrote Robert Stuart, one of his clients in February 1836,

We have laid out a town [Clifton] at the Cliff, on Winnebago Lake, including the 80 acres owned by us which is attracting considerable attention. It is the point, I think at which a canal to this place [Astor] and the Manitoowac [sic] River must leave that Lake.

Doty, as usual, had that possibility covered too. He told another of his investors he had already purchased a "small interest at each end of the Icanall route."

As they spurred their horses south along the military road, Doty and Suydam were forced to use the old Indian trail for the thirteen miles before Fond du Lac. The troops had not yet finished building that portion nor the bridge over the river at Fond du Lac, which required more experience than they possessed. Later Doty, through his Fond du Lac Company, obtained an army contract to build the bridge, and he put McWilliams in charge. They completed the bridge the following fall for \$250.

Farther along Doty and Suydam stopped about ten miles south of Fort Winnebago to lay out Kentucky City, now Dekorra (Fig. 4). Situated at the mouth of Doty Creek on the Wisconsin River, Kentucky City possessed a potentially good harbor. Doty envisioned connecting it by canal to another of his townsites on Fourth Lake (Lake Mendota) bought several months earlier. With his cousin Martin and speculator, William another Slaughter, Doty had sited this town, called City of the Four Lakes, on the northwest corner of present Lake Mendota just east of Pheasant Branch. Their idea then had been to promote it for the territorial capital. The plat featured a "Capital Square" connected to the lake by a short street named Dodge, clearly an attempt on Doty's part to gain favor with the new governor of the territory. He had propitiously named other streets for territorial officers.

From Kentucky City, Doty and Suydam rode south to a junction where, rather than following the military road southwesterly, they continued south on the Indian trail going to Fourth Lake (Lake Mendota). They stopped at the area's first permanent dwelling, the cabin of French fur trader Michael St. Cyr, built on Doty's townsite. The next day they rode to the isthmus between Fourth and Third lakes to lay

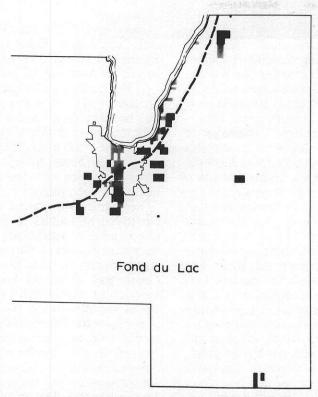
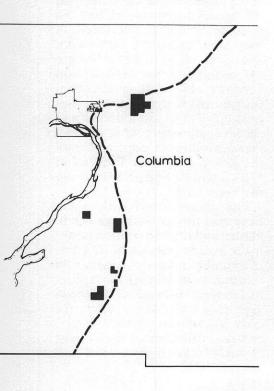


Fig. 3. A Section of Fond du Lac County showing the land holdings of Doty (solid) and McWilliams (dotted) as of 1837. The holding to the east of Fond du Lac in Forest Township was named Dotyville, a name it still retains. The route of the military road is indicated by the dashed line.

Fig. 4. A section of Columbia County showing Doty's land holdings as of 1837.



out a townsite Doty called Madison City. Doty's land holdings here had been accumulated during previous months as the result of both individual purchases and a complex series of legal manipulations. With partners, including Gov. Steven T. Mason of Michigan, he organized a company called Four Lakes which controlled large blocks of land on what is now Madison's downtown. near east, and west sides. When they finished platting Madison, Doty and Suydam turned their mounts toward Belmont, rejoining the military road just west of Madison. It had been about two weeks since they left Green Bay.

The story of Doty's subsequent machinations at Belmont on behalf

of his Madison plat are too complex to recount here. (For full explanation the reader should explore the definitive biography of Doty by Alice E. Smith.) Had the Madison proposal failed, any one of Doty's "fall back" sites—Fond du Lac, Astor, or the City of the Four Lakes—if chosen, would have greatly benefited him.

Belmont fairly swarmed with speculators, each eloquently praising his site's advantages. As Moses Strong wrote in his history,

The great and paramount question of the session was the location of the seat of government. To this all others were subordinate and made subservient.

Doty used every imaginable ploy to get Madison, his first choice, accepted. One of the delegates noted later, "While others were planning, Judge Doty was acting." The legislators debated the issue for days. Initially, Madison was nominated for the honor, then another delegate moved to substitute Fond du Lac; this kept on until eighteen substitute sites had been voted down. Finally on November 28, the legislature established the seat of government "at the town of Madison, between the third and fourth of the four lakes. . . . '

As for the City of the Four Lakes, the agent who was hired to speak for it failed to show up. Accordingly, it received little support, losing by a vote of six to seventeen. Still Doty and the others involved hoped in the next session to establish it as the site for the territory's university. But that prize went also to Madison when the bill established the university "at or near the seat of government." Having missed out twice, the townsite soon fell by the wayside, distinguished only as the location of Doty's hunting cabin.

With the legislators' approval of Madison, Doty began to reap the harvest he had so hopefully sowed. In the ensuing weeks he sold thousands of dollars worth of Madison property. In the first twelve days alone, sales amounted to \$35,510.

Carpenters, including St. Cyr, soon completed a steam-powered saw mill, a public house, stores, saloons, a post office, hotels, and cabins. In a show of confidence, the legislature elected Doty one of three commissioners to oversee construction of the capitol. He became the treasurer with responsibility for the \$20,000 appropriated by congress. Work went forward quickly and on July 4, 1837, a ceremony marked the laying of the capitol cornerstone.

His next venture in pursuit of his grand plan concerned a site on Swan Lake several miles to the east of Fort Winnebago. Although his name is not listed as a proprietor, Doty had a hand in its development. In January 1837 two army officers at the fort registered the plat for a village there called Wisconsinapolis.

The town featured several public squares and small ponds, twentyone east-west streets, and eleven north-south streets. The following month Doty, flush with Madison land sale money, bought about 1,200 acres, including the northern portion of the village through which the military road passed. He paid less than fifty cents an acre. Possibly, Doty was able to make such a favorable purchase because of the scarcity of hard currency preceding the Panic of 1837. Like many other small speculators at that time, the two army officers may have been willing to sell at a loss in exchange for hard currency. No town was ever built at Wisconsinapolis, even though the location had many advantages.

By spring Doty and two other proprietors filed a plot for a townsite about twenty miles north of Madison. They named it Pauquette after the famous Winnebago-French strongman who lived nearby. However, through an unfortunate typographical error the town officially became Poynette. Doty owned 120 acres, ideally located by the junction of the military road and the trail to Fourth Lake. Had a canal been built between Kentucky City and Fourth Lake, as he envisioned, it would have passed just to the

west.

Doty had strategically chosen his townsites along the military road so they would fit into a transportation network of canals and roads, a prominant feature of his grand plan. To this end he petitioned the legislature to charter companies to raise money and carry out the necessary construction. He also got the army to make a number of riverimprovement and canal surveys. What he failed to foresee was that railroads would supplant both roads and canals.

He proposed grandiose schemes for canals linking the Rock and Milwaukee rivers to Fond du Lac, the Manitowoc River to Clifton, Clifton to the lower Fox, Kentucky City to the upper Fox, and the Catfish (Yahara) River through the Four Lakes to the city by that name, and then due north to Kentucky City. In support of this latter proposal, Gov. Dodge had noted, "Indians have frequently descended in canoes, in high waters, from the fourth lake to the Wisconsin River."

Of all these schemes only two came to fruition and then only later: the canal at the Fox-Wisconsin portage and the lower Fox improvement. Still, Doty was influential in obtaining funds for several federal roads. Kentucky City was linked with Sauk Harbor (Manitowoc) by a road through Fox Lake, Green Bay with Chicago, Madison with Milwaukee, and Fond du Lac with Fort Winnebago via Fox Lake.

But the Panic of 1837 brought Doty more than a chance to buy cheap land and plan water and land highways. Because it triggered a depression, property sales plummeted, and his wheelings and dealings soon began to unravel. The banks at Mineral Point and Astor failed. Then allegations began that Doty had misused the capitol construction funds. Political enemies, of which he had many, also began to question the legalities of his title to the land on which Madison and the new capitol were being built. To add to his woes, heirs of one of the original owners started suit to contest the title to Astor.

Doty fended off most of these attacks, but it took all his resources. By the fall of 1840, he was forced to sell or mortgage all his properties. His grand plan had failed, not because it had been ill-conceived, but because his political enemies had moved in on him at a time when he was financially overextended. Whether he had actually acted illegally in any of his dealings has never been proven.

Yet while Doty failed, most of the towns he had so shrewdly located and developed along the military road prospered. Navarino and Astor united in 1838 to become Green Bay. Fond du Lac had a spectacular rise in the 1850s and 1860s and then, when the pineries of north central Wisconsin gave out, settled down to a modest but steady rate of growth. Madison's development must have given him deep satisfaction—as well as bitter pain. Less successful, Dekorra, without the canal to Fourth Lake, never developed to the extent Doty had hoped for. Only Clifton and Wisconsinapolis failed entirely.

Because he had continued to acquire holdings elsewhere, Doty eventually was able to recoup some of his losses, but he never reached the financial pinnacle he had aspired to. Politically, however, in spite of his enemies, he achieved a great deal. He went on to become the second governor of Wisconsin Territory (1841-44), a territorial delegate and representative to congress (1847-53), and a tireless and effective proponent of statehood. President Lincoln appointed him the governor of Utah Territory in 1863, a post he held until his death two years later.

The military road with which Doty had linked his hopes for financial security and political power never became significant as a line of communication for the army. By the time it was finished, the frontier had moved westward. It did, however, play a significant part in the civil development of the territory, and many sections of it still exist as parts of major highways and back roads in Wisconsin.

Lignin biodegradation is a key to much natural wood destruction, with a cost of millions annually. Understanding the biochemistry may make it possible to inhibit or stop wood decay.

Getting Past The Gatekeeper

By Robert L. Youngs

ne of the fascinating research stories that has been gradually unfolding at the Forest Products Laboratory (FPL) and at a few other laboratories around the world is the story of lignin. It has been unwound piece by piece over several decades, with scientists concentrating first on trying to understand the chemical nature of lignin and more recently on biotechnological approaches to lignin decomposition.

Why the concern over lignin and its decomposition? Primarily because lignin is a principal "gatekeeper," both in the processing of wood to form chemicals and paper and in the biological decomposition of wood. Lignin is the crucial structural component that governs both of these processes. To understand the significance of this, it is necessary to deal briefly with the chemical makeup of wood. Wood contains two major chemical components: lignin (18 to 35 percent) and carbohydrates (65 to 75 percent) in the form of cellulose and hemicellulose. Also present in wood are minor amounts of extraneous materials (4 to 10 percent), mostly in the form of organic extractives and inorganic minerals such as ash. Like cellulose and hemicellulose, lignin has a macro-molecular chemical structure, but its three dimensional network is far more complex and has been known only since the late 1960s.

The exact relationship between lignin and cellulose and hemicel-

lulose is not well understood. We do know that cellulose is a poly-saccharide that forms the principal structure of wood. It occurs in wood in the form of microfibrils that are coated by hemicelluloses, which in turn are sheathed by lignin. The lignin is chemically bonded to, and intermixed with, the hemicelluloses. Whatever the exact relationship, the lignin physically prevents chemicals or enzymes from attacking and breaking down the cellulose and hemicellulose.

At FPL, lignin research is following two broad paths. One is a series of studies to clarify the chemical nature of lignin and its role in chemical and fiber production, primarily from a chemical point of view. The other is a biotechnological approach—understanding the biodegradation of lignin as it relates to the function and physiology of the microorganisms that can degrade it. I will follow each of these paths because they are taking some unique directions and offer unique benefits even though they both focus on understanding the chemistry and the breakdown of lignin. Let us start with the chemical approach.

The chemistry of lignin

Inderstanding the chemistry of lignin is important because of the major role it plays in pulping and papermaking. Lignin is a phenolic substance consisting of variously bonded phenyl-propane units. Research has indicated that three alcohols are the precursors of lignin biosynthesis and that these

alcohols are linked in lignin by ether and carbon-carbon bonds. It is at these linkage points that the lignin molecule is broken apart in chemical pulping.

In the United States, 85 percent of fiber production involves full or partial chemical treatment of wood. The kraft process is the major source of chemical woodpulp and has been available for a century. It involves cooking wood in sodium hydroxide and sodium sulfide to break down the lignin and release the cellulosic fiber components. This process is efficient in terms of chemical recovery and energy selfsufficiency, but it does have some disadvantages. It is extremely capital intensive—new mills cost about one-half billion dollars—and it produces a low yield of pulp, only about 45 percent of the weight of the wood put into the process.

Yield and properties of fibers for papermaking are directly related to the form and amount of lignin remaining on the fiber. As pulp yields are increased through increased retention of hemicelluloses or lignin, the properties of the pulp and their suitability for various products change. We know in general that increased lignin content means a stiffer fiber and increased hemicellulose means a more easily beaten, better bonding fiber. If lignin is to be retained within the fiber, as in the case of high-yield chemimechnical pulps, we must have methods of decreasing the stiffness to improve bonding and conformability for grades such as printing papers.

Underlying all chemical or partially chemical methods of producing fibers from wood is the fundamental chemistry of lignin. It is important that we know more about its nature—its chemical reactivity and its association with other wood polymers to permit the optimal design of efficient, selective pulping systems.

Recent research at FPL has challenged traditional concepts and hypotheses about the kraft pulping process. For example, it is generally considered that cellulose forms the structural backbone of wood fibers. and thus its molecular integrity governs ultimate fiber strength. Our research has shown that cellulose integrity is only affected under very harsh pulping conditions. Therefore, for a majority of chemical and semichemical pulps, properties are determined by the structure, location, and distribution of other wood polymers—namely the lignin and the hemicelluloses.

Other research is directed toward understanding the physical and physico-chemical aspects of pulping, including diffusion, pore size changes, and fiber wall swelling. We are investigating new reactions, especially those employing innocuous chemicals and those that lead to lignin modification with minimal treatment or simple recovery or recycling. New information about the types, quantities, and accessibilities of chemical bonds in lignin will allow pulp and paper manufacturers to remove or modify lignin to give desired properties for a given product with optimum use of the wood resource.

Another major related area of research is aimed at determining the relationship between the structure and distribution of wood fiber polymers and fiber strength.

Bench-scale decolorizer showing dark colored waste effluent in bottom of reactor. White-rot fungi are grown on the discs which rotate through the effluent and decolorize it.

Many questions remain unanswered. We need to know if the bonding pattern varies with the origin of lignin. We need to know more about the molecular weight distribution of lignin. The nature and frequency of the bonding to carbohydrates needs further study. The distribution of lignin throughout the cell wall is known in general, but not in detail. In hardwoods, is there more than one type of lignin? Does the nature and reactivity of lignin change with its morphological location in wood? Obviously with such basic questions unanswered, we are a long way from being able to predict, control, or modify chemical methods of wood pulping to give us the best yields

and properties for a given application with the least environmental impact. All of these questions seem straightforward, but the complexity of lignin and wood makes them difficult to answer.

Biotechnology of wood

Now let us move to the second approach to understanding lignin, the approach of biotechnology. Simply stated, biotechnology is the technological use of biological agents. For the wood products industry, it is replacing chemicals with microorganisms in pulping and bleaching; it is treating manufacturing wastes with fungi rather than toxic chemicals; it is converting scrub oaks and wood residues



to high-value food; and it is understanding and manipulating enzymes to inhibit or stop wood decay.

Biotechnology has the potential to change many aspects of the wood products industry. It offers new approaches to using trees that are marginal for pulp or lumber production and for using wood residues from harvesting and manufacturing.

Because wood and other lignocellulosic materials are natural products, they are substrates for microbial enzymes, and biotechnological approaches to their utilization are possible. In general, such processes have several advantages over conventional chemical processes, such as: (1) lower energy requirements, (2) higher specificity, (3) absence of noxious reagents, (4) fewer and more readily treated byproducts, (5) higher yields, and (6) the opportunity for transformations that are not feasible chemically.

A major objective of this research is to develop further knowledge about the chemistry, biochemistry, and physiology of lignin degradation so that biotechnology can be used to solve industrial problems.

As we have already pointed out, lignin surrounds the cellulose and prevents enzymatic hydrolysis of it. Lignin is also the major byproduct of chemical pulping and of projected wood hydrolysis operations. Because it is resistant to bacterial degradation, lignin-derived wastes present severe problems in current waste treatment processes. Lignin is degraded by the enzyme systems of certain fungi, primarily white-rot wood decay fungi, under optimized conditions, and such bioligninolytic systems have exciting potential for biotechnological applications.

Biopulping and biobleaching

Past research at FPL has optimized lignin degradation in cultures of selected fungi, making it possible to examine certain applications such as biopulping. Although only limited work has been done in this

area, research has shown that removing even a small amount of lignin from wood or mechanical pulp with these fungi lowers the energy required for mechanical refining. The time required for pretreatment with these fungi is on the order of days and may be reduced to hours by optimizing the fungal strain and the treatment conditions.

Another possible application of microbial technology in pulp manufacture is biobleaching of pulps. This idea came from studies with a synthetic kraft lignin which was decomposed by white-rot fungi at a faster rate than was the original lignin.

Like biopulping, research in biobleaching is just beginning. With biobleaching, however, it may be feasible to use isolated enzymes rather than entire organisms. Progress in both areas depends on a better understanding of the biochemistry of lignin degradation.

Treating manufacturing wastes

Another example of the potential of biotechnology is in decolorizing the effluent of kraft bleacheries. The brown color that exists in the effluent is due to the lignin which is resistant to the microorganisms in current waste treatment facilities. Also, alternative chemical technologies for decolorizing the effluent are both capital and energy intensive. Our laboratory, in cooperation with North Carolina State University, recently investigated the use of white-rot fungi to decolorize the highly colored effluent. In addition to the undesirable brown color, the effluent has become chlorinated during the bleach process. Not only does the white-rot fungus remove the brown color, it also converts some of the chlorinated bleach products to nonchlorinated ones.

Related research has been conducted at the University of Tokyo and at the Pulp and Paper Research Institute of Canada. Results of all these studies have been promising, indicating the scale-up and further development are warranted. These findings make this one of the most

immediate and attractive potential applications for bioligninolytic systems.

Converting wood to food

Wood can also be directly converted to a food source biologically. The white-rot fungus, Lentinus edodes, more commonly known as the Shiitake (she-ee-ta-kay) mushroom, can be grown on scrub oaks, other poor pulpwood trees, and harvesting and manufacturing residues. Shiitake mushrooms are the world's second most important commerical mushroom. They are Japan's largest agricultural export, but are only beginning to be cultivated in the west.

Shiitake cultivation began in Japan centuries ago when samurai warlords living near the forest where Shiitake grew found it fruiting on fallen trees during the spring and fall. It was eventually discovered that when logs found bearing Shiitake in the forest were hauled into courtyards, they would continue to fruit for several more years.

Through the centuries, further technological advances in Shiitake cultivation were slowly introduced. Today FPL research is optimizing new methods that convert whole tree chips and other agricultural residues, such as corn cobs, to Shiitake mushrooms. Optimizing the growth of L. edodes and the subsequent removal of lignin may also lead to biopulping, since in both cases lignin biodegradation is a key element of the process.

To date over 200 people have started Shiitake cultivation in Wisconsin alone and at least two companies in the Midwest are looking into commerical production.

Controlling wood-destroying organisms

Three biological mechanisms overcome the lignin barrier: (1) insects and marine borers physically disrupt the barrier by grinding the wood very finely, (2) some microorganisms, primarily higher fungi, decompose lignin and thus expose the polysaccharide or carbohydrate components, and (3) certain other



Lentinus edodes, more commonly known as Shiitake mushrooms, growing on northern red oak chips in an FPL laboratory.

higher fungi apparently secrete nonenzymatic cellulose depolymerizing agents that are small enough to penetrate the lignin sheath.

Lignin biodegradation is a key to much of the natural destruction of wood in use. It costs several millions of dollars each year to replace decayed structures. With a clearer understanding of the biochemistry of lignin biodegradation, it may be possible to manipulate lignin's enzymes to inhibit or stop wood decay.

Continued Research Needed

Improvements in these and related applications can be made empirically through physiological and genetic approaches. Realization of the full potential of bioligninolytic systems, however, depends on a thorough understanding of the chemistry, biochemistry, and physiology of lignin degradation.

Last year at our laboratory, we moved closer to this understanding when researchers discovered an enzyme which, in the presence of hydrogen perioxide, can break down lignin. This is the first lignin-degrading enzyme to be discovered, and it was found only after years of basic research. The enzyme, isolated from cultures of the white-rot fungus *Phanerochaete chrysosporium*, will no doubt come to play an important role in the biopulping and biobleaching processes I've already mentioned.

The time-frame for many of the applications of biotechnology in the wood products industry can only be surmised. The unexpected successes and failures that characterize all research soon make any estimate obsolete. Although our un-

derstanding of lignin, its biodegradation, and the potentials for biotechnology is increasing more rapidly now than ever before, advances in lignin chemistry have been relatively slow. This is because of lignin's complexity and the relatively small national effort in lignin research.

Research at FPL and other laboratories in a few places in the world continues to untangle the biochemical mechanisms of lignin degradation, to determine how cleavage of the lignin molecule takes place in biological systems, to identify the chemical structures resulting from degradation reactions, to characterize enzyme activity associated with the process, and to indicate new potentials for the practical payoffs that are already beginning to emerge.

Sustained basic research programs directed at eventual application are essential if we are to realize the potential of biotechnology in the wood products industry and unravel the mysteries of lignin.

The Strange World of

Foreign Language and Literature Teachers

By Peter Schofer

merican teachers of foreign languages and literatures find themselves in a curious state of affairs. In a country where most of their ancestors spoke a language other than English, Americans have gone out of their way to downplay the value of foreign languages, as though they wished to erase the linguistic marks of their past. This lack of interest for languages is evident throughout society, from school systems that offer no foreign languages to major universities which require none for entry, to international businesses which staff foreign offices with lawyers specializing in international law but which have no one at all on the staff knowledgeable in the language, culture, and literature of the host country. The American belief that English is spoken everywhere is seen most dramatically at the highest levels of government. In recent memory only one American president had a rudimentary knowledge of another language, whereas presidents of other major countries are conversant in at least one other foreign language. On the business and diplomatic levels, this ignorance has led to humorous and near tragic moments. One might recall President Carter's interpreter who mistranslated an innocuous greeting to the Polish nation into an obscenity. Less publicity has been given to poorly trained soliders in Vietnam who had a mechanical knowledge of the language, but who had almost no knowledge of Vietnamese culture and customs. As a result, Americans seldom acquired correct information from their Vietnamese counterparts, because they did not know that they should take into account the Vietnamese habit of understatement and the polite desire to help the Americans save face. Closer to home, a major Wisconsin firm which established a plant in

France could not understand why French workers objected to the usual thirty minute lunch break. If the plant manager had had the most elementary inkling of French customs, he would have known that a two-hour lunch is customary.

It is a well-documented fact that the United States, the richest and most powerful country in the world, is the poorest and least equipped to deal with other languages and cultures among all the major countries. The populations of supposedly insular countries such as Britain and France, as well as the peoples of Eastern Europe, are far more proficient in foreign languages and far more knowledgeable of other cultures than are Americans.

The above portrait should not lead one to conclude that foreign language and literature teachers find themselves in a hopeless and deplorable quagmire. It is all the more a curious situation, because every few years there is a national awakening; crash programs are organized to promote foreign languages. These efforts have largely been motivated by military and security needs, as during World War II. The programs which are probably the freshest in our memories came about in the wake of the Sputnik uproar under the umbrella of the National Defense Educational Act. Area studies programs in critical languages were started, summer institutes were organized to retrain high school language teachers, and university graduate programs were generously funded to provide fellowships to promising students, to

invite distinguished lecturers to campus, and to furnish luxuries such as travel money to attend conferences on semiotics and literature. If the NDEA funds did not always have a direct impact on national security, they did give a temporary boost to foreign languages before funding dried up. However, there was no dramatic shift in the nation's attitude towards foreign languages. As Congressman Paul Simon notes in The Tongue-Tied American, there are still more English teachers in Russia than there are Americans who can speak Russian.

However, it would appear that there is a new wave of interest in foreign languages and a new concern with our linguistic ineptness. It would also appear that unlike past waves, this one is not motivated by national security fears. Although there is no unified movement sweeping the country, there are perceptible signs that attitudes might be changing. For example, major universities across the country are witnessing marked increases in foreign language enrollment. For popular languages such as French, increases have been as high as a spectacular ten to fifteen percent per year over the last five years. The state of North Carolina has embarked on an ambitious program with the aim of teaching within the next ten years foreign languages in all their school districts and in all grades. In the business world, the Exxon Foundation is a dramatic illustration of a corporation which has supported workshops and programs to improve foreign language

Americans are getting beaten on the commercial battlefields because they don't know the languages and customs of their allies and competitors.

The richest and most powerful country in the world is the poorest and least equipped major country to deal with other languages and cultures.

instruction. Once again congress is considering some serious legislation to encourage citizens to become more language proficient. Paul Simon's book is perhaps the best illustration of the interest and concern. In his book, Simon describes the disgraceful monolingualism of Amricans in graphic detail while also suggesting why there is the hint of renewed interest in serious educational reforms. Unlike the previous movements, the present one seems propelled by commercial necessity. Americans are getting beaten on the commercial fields of battle because they don't know the language and customs of their allies and competitors. Knowledge of the other country's language does bring power and riches. The state of North Carolina, Simon loves to point out, has been emphasizing foreign languages for almost ten years: it is now the American leader in foreign trade and exports. If other states were to recognize the need of foreign languages for successful international competition, there could be a veritable renaissance in foreign language study and in foreign exports.

One might imagine that in fifteen years American businessmen and women, politicians, and government officials would be fluent in at least one other language. America would be an Eldorado of internationalism, a country strong in its balance of payments, rich in its knowledge of other countries, respected for its ability to resolve international disputes. There is but one problem with this dream of the multi-tongued American: it smacks into the face of several cruel realities. These realities can be summarized as the Practicality Principle and the Ivory Tower Complex. The principle and the complex can often go their separate ways, but when they clash, they have the potential of exposing some of the deepseated tensions in American society.

First, let us look at the Practicality Principle. It would not be an oversimplification to state that one part of the American mind seeks a practical and direct solution to any problem at hand. And the sooner the problem is solved, the better. Such was the case during World War II when thousands of soldiers were given crash courses in foreign languages. Now when the problem is commercial, the same reaction appears. As reasonable and enlightened as Congressman Simon's book is, at times it too falls prey to the Practicality Principle. For example, Simon cites courses in "Airline Stewardess's German," "Career Spanish," and "Spanish for Pharmacists" as models of "more applicable language instruction." (The Tongue-Tied American, p. 104) This view of language as small capsules designed for precise situations or problems is not prevalant in Simon's book, but it does illustrate the misconception that language is a mere skill or tool, with little value within itself as a discipline. As with garden tools, language 'tool-courses" could be made available according to the need. But such tools would not be a language. They would be a pathetic list of specialized terms, a few common phrases, and a few verbs. Although the airline stewardess might be able to survive with a specialized vocabulary, she would not be speaking German unless she had also learned the basic structures of the language. Thus the Practicality Principle runs the risk of destroying language and producing nothing more than tools of very limited value.

At the other end of the spectrum one finds the Ivory Tower Complex. The title of this article and the introductory remarks link language

and literature. It is not accidental that most of the discussion has centered almost exclusively on language. In fact, in almost all colleges and universities the departments are structured around language and literature; among faculty members, the teaching of literature is generally preferred to language teaching. In the case of UW-Madison, language teaching is normally done by junior faculty, graduate assistants, and language specialists, who are a small minority on the staff. A division or hierarchy oftens grows up between areas which used to be united and which used to be considered part of humanistic studies. Now, of course, the study of literature is part of the humanities, but language study is not. This division was not always so fixed. Forty years ago one of the most innovative and successful first-year French books ever published in the United States, Basic Conversational French, was written by two Madison professors, Julian Harris, a medievalist, and André Lévêque, a specialist in seventeenth-century literature. Until specialization and pressure to publish forced professors to declare themselves either in literature or language, it was not uncommon to see them working harmoniously in both areas. For years the faculty at Yale contributed regularly to a reader used in language classes.

As anyone who has taken Latin or Greek recalls, language used to be taught through reading great literary texts because the literature gave the very best example of excellent language. Today almost no first-year language books contain any literary passages, and second-year texts pay only lip service to literature. Instead, students read flat, unimaginative dialogues or passages filled with factual material or "relevant" topics. In other words, students seldom come into contact with excellent prose and po-

Learning a foreign language and reading the literature is part of a larger humanistic endeavor to teach students to think critically and imaginatively.

etry. One of the most popular notions circulated among language teachers might change this sterile situation. S. D. Krachen has discovered that students of all ages have a tremendous capacity for passive learning and that their passive knowledge of a language is much vaster than their active knowledge. They can naturally understand and read much more than they speak or write. If they are asked to spend much more time listening and reading, what are they going to listen to and read? Airline instructions? Popular magazines? Lists of medical terms? Perhaps they will read literary works and listen to poetry and theater.

However, Congressman Simon is somewhat justified in printing Robert B. Mullane's complaint that "the stranglehold that tenured literary PhD's now hold on colleges ... The veto power that the literary Mafia holds over college reform must be eliminated." (The Tongue-Tied American, p. 136) These strong words underline the fact that overspecialization can lead to various forms of warfare. They might also be taken to mean that teachers of literature have become murderously irresponsible and have retreated into the proverbial Ivory Tower to carry out their war. But the vision of petty academic infighting ignores the more important issue of the curious situation of language and literature instruction within the humanities and within American society. Maynard Mack has asserted that literary scholars

are narrowing, not enlarging our horizons. We are shucking, not assuming, our responsibilities. And we communicate with fewer and fewer because it is easier to jabber in a jargon than to explain a complicated matter in the real language of men. (ACLS Newsletter, Winter-Spring, 1983, pp. 9–10)

If Mack is correct, it is also abundantly clear that society at large is far more interested in computers, video games, and television than in reading literature, whether foreign or American. But a glance at any airport newsstand suggests that Americans continue to read and that books are published in record numbers. Even if more people wanted to read serious literature, they would have difficulty getting their hands on it. Federal tax laws and the profit motive discourage publishers from printing books which will not be instant successes and big money earners in a short time. Because of the Practicality Principle which demands large profits in a short time, foreign books are scarce and translations of great works are even more rare. The curious situation of foreign literature teachers is not just a conflict between practicality and elitism; it is a far more complicated problem involving economic, cultural, educational, and political forces where immediate gratification of needs dictates many decisions.

Although the situation for literature teachers at times appears desperate, it will only become so if language and literature are separated, and language instruction becomes a mechanical tool adapted to the computer era while literature is looked down upon as a luxurious frivolity. Literature cannot become more "relevant," more modern, and more atuned to computer programs and to video mind sets without losing the very qualities which society desperately needs today. Nearly all thoughtful individuals recognize that Americans are losing the ability to read, write, think, and imagine. Just as literature is really the study of language, so too should language study teach eloquent expression. Until early in the twentieth century Latin and Greek were cornerstones of education in Amer-

ica and Europe. It would be naive to believe that classical languages will once again dominate humanistic studies, but poetics and rhetoric, major components of the classical syllabus, were very successful in teaching students to appreciate great works of literature, to write clearly and persuasively, and to think logically and imaginatively. Poetics and rhetoric also unite language and literature as arts of writing and persuasion. The advocacy of a return to poetics and rhetoric is not a reactionary fantasy based on empty hopes. Literary research and criticism, at times apparently "jabbering jargon," has over the past thirty years reshaped and redefined the ancient rhetoric to show us that the distance between a Ronsard sonnet and an advertisement for an article of clothing is not at all as far as one might think, since the ad borrows most of its devices and techniques from literature. Metaphors and similes, which are almost never taught in language courses, permeate our everyday life in conversational speech, television, sports, and political discourses. The rhetoric and poetics of everyday life take on a new meaning when they are studied in relation to the great works of literature, the storehouses of monumental poetics and rhetoric. In order for foreign language and literature teachers to renew themselves and to transcend the insipid and flat language of instructional books while also bringing literature closer to everyday reality, they need only keep in mind that their work is part of a larger humanistic endeavor to teach students to think critically and imaginatively. If we are to teach more than "survival" French or airline stewardess German, we have no choice but to look to literature for guidance. A failure to do so will result not in educated Americans but thoughtless robots plugged into language programs.

H. L. Mencken

and Wisconsin "Americana"

By Benjamin D. Rhodes

uring the twenties a favorite pastime of urban sophisticates was to sneer at midwestern provincialism. And the Wisconsin variety was a frequent target of the sarcastic, mischievous wit of the Baltimore editor H. L. Mencken. As coeditor with George Jean Nathan of the American Mercury, Mencken emerged as one of the foremost critics of the new business era established under presidents Warren Harding, Calvin Coolidge, and Herbert Hoover. The American Mercury primarily appealed to those who were distressed by the commercial values of the decade, by the excesses of "one hundred percent Americanism," and by the prevalence of small-town provincialism in an age of growing urbanization. A self-styled student of "boobology," Mencken set the tone of the publication and specialized in raking his opponents with colorful, if juvenile, volleys of prose. A prominent feature of each issue was the section entitled "Americana" which consisted of ridiculous verbatim quotations from newspapers and periodicals arranged alphabetically by state. The cynical Mencken saw it as "an agreeable duty to track down some of the worst nonsense prevailing and to do execution upon it-not indignantly, of course, but nevertheless with a sufficient play of malice to give the business a Christian and philanthropic air." (American Mercury, January, 1924) Consequently, Mencken's selections of "Americana" poured jocular ridicule upon the credulous and pompous, upon superpatriots, bigots, frauds, fundamentalists, civic boosters, prudes, and prohibitionists. Humor was a major purpose of the "Americana" exercises, but an equally important objective, maintained Mencken,

was "to make the enlightened minority of Americans familiar, by documentary evidence, with what is going on in the minds of the masses—the great herd of undifferentiated, goose-stepping, superstitious, sentimental, credulous, striving, romantic American people." (American Mercury, June, 1926)

Correspondents from all parts of the state kept Mencken supplied with copious amounts of material. Especially popular were items concerning the University of Wisconsin, an institution which was in transition from a regional state university to a major center of learning. No doubt Mencken was able to show that Wisconsin had its share of frauds and ignoramuses, although Wisconsin actually compared rather favorably with the ludicrous manifestations of "Americana" attributed to such states as Alabama, Texas, and California. In an era of superpatriotism, materialism, and conformity, Mencken's snideness often seemed unique and refreshing. With the collapse of prosperity, Mencken's conception of "Americana" was merely tiresome and out of step with the realities. Some typical examples of Wisconsin "Americana," preceeded by Mencken's supercilious commentary follow:

"Intellectual activities among the rural Badgers, as reported by the Oregon (Wis.) *Observer*":

A very interesting program was given Monday evening at the High School by the Parent-Teachers' Association. A debate on the subject, Resolved, That a sewing machine is more beneficial to a family than a cow, was handled by Mrs. Park Ames and

Mrs. L. E. Pennewell for the affirmative, and George Rasmussen and Dean Smith for the negative. The decision was unanimous for the sewing machine. (American Mercury, May, 1924)

"Profound deliberations of the apostles of Service in the town of Waukesha":

A much heated discussion by way of debate is to come up at a joint meeting of the Waukesha Kiwanis Club and the Waukesha Rotary Club on Thursday night. The question is, "Resolved, That the use of the old-fashioned night shirt is more beneficial to the health of the community than are pajamas." The Rotary Club will uphold the pajama while the Kiwanis will defend the night shirt. (American Mercury, August, 1926)

"The Hon. Albert R. Curtis, star poet of Milwaukee, discourses on his art in the *Journal*":

My poems now come just like water out of a faucet. I merely put down the first line and the rest comes right along. I write on any subject, humorous or pathetic, with equal ease. Some of my verses are being widely published. One of the best, I think, was "Be Kind to My Pal, the Dog," which the Wisconsin Humane Society immediately took up and printed in its bulletins. That poem is being read in public schools all over the State and I think it will do a lot of good. (American Mercury, August,

"The Higher Learning at the University of Wisconsin, as glimpsed in the news columns of the eminent Wisconsin State Journal":

Mencken ridiculed superpatriotism, materialism, and conformity.

Wearing his famous green vest, Prof. Carl Russell Fish was introduced as Wisconsin's outstanding tradition to 250 freshmen attending the annual freshman banquet at the University Y.M.C.A. Wednesday night. Professor Fish and his vest were loudly cheered by the new students. (American Mercury, December, 1924)

"From the Commencement Register and Programme of the State University":

Instructions To Graduates

When the Governor steps forward to extend greetings from the State, members of the class should rise and sing "On Wisconsin" as a salutation. When the President comes forward to give his charge to the Class, the members should rise and sing the Varsity Toast. Give the "locomotive" also, and then be seated.

It is good University tradition to give a "skyrocket" after the conferring of each honorary degree—i.e., immediately after the hood has been placed on the recipient. There are only seven candidates for honorary degrees. Do not give the "skyrocket" for the Doctors of Medicine or Philosophy. There are too many of them.

But put pep and more pep into your "skyrockets!" It will please your parents and astonish the honorary degree men. (American Mercury, September, 1928)

"High honor paid to the new Governor of this illustrious Commonwealth by his business associates, as revealed by the Wisconsin State Journal, published at Madison":

son": A unique floral piece, an accurate three-quarter size model of a Kohler enameled lavatory, was presented Gov. Walter J. Kohler upon his inauguration, and attracted considerable attention during the reception which followed the ceremonies. Between 400 and 500 white carnations, favorite flower of Wiscon-

sin's new Governor, were used in fashioning the unusual decoration, which bore the card. "Greetings To Our New Governor From the Peps and Superiors." The Peps and Superiors is a social bowling club made up of thirty-four veteran members of the Kohler Company organization, including Governor Kohler, president of the company. The floral lavatory stands about two feet high and measures about eighteen inches in width at the top. It is an exact reproduction of the Kohler Columbia lavatory, the basin being supported by a square pedestal. The fittings are gilded. (American Mercury, March, 1929)

"Aesthetic marvel heralded through the streets and alleys of the great city of La Crosse":

At the beautiful corner window of Doerflinger's Department Store in the center of La Crosse crowds for the next two weeks will gather to see oil paintings rapidly grow from under the brushes of two artists extraordinary. They are Prof. Geo. H. Kay and Alfred Merrill Brown, artists whose supremacy in quick painting over others is soon determined by the public at sight, and not by lectures. These masters of this line will finish a canvas in a few minutes that others spend hours to make. Yet they are oil paintings that will last a lifetime, can be cleaned with soap and water and will be sold at prices all can afford to pay.

Prof. Kay is a student of the noted artist, Henry Viaden, director of a Milwaukee school. His schoolmates, whose names rank high in the art world, are Frank Enders, Carl Marr, Robert Koehler and Robert Schade. In 1895 Prof. Kay became an instructor at the Chicago Art Institute after studying four years at the institution. He has been painting forty-two years.

Alfred Merrill Brown graduated from his first art school in

1914 and later studied at a Minneapolis school under Prof. Ferguson, American artist of recognized merit.

Mr. Brown has the reputation of being the fastest artist in the United States working with oil. He has painted in vaudeville, and has made hundreds of paintings by using two brushes and both hands at the same time until advised by physicians to abandon this

Your home deserves an oil painting and you can have one made from your favorite kodak print if necessary. (American Mercury, April, 1927)

"From Flour & Feed, a celebrated trade paper published in Milwaukee":

J. A. McLean, of the Quaker Oats Company, Chicago, while attending a district conference of dealers and salesman at Eau Claire, Wis., faithful Kiwanian that he is, attended the meeting of the Eau Claire Kiwanis Club ... He told them this: "Next to Christ, Moses was the greatest of all salesmen. He sold a line of goods that he could not show to his customers, and sold himself for thirty-eight years on a line he had never seen himself." He believed in the manufacturer. (American Mercury, November, 1929)

"The Hon. Walter Gabryszek, as reported by the Stevens Point *Daily Journal*":

Birth control brings the curse of God on the people, catastrophes of every description, tornadoes, hurricanes, large hail, tidal waves, drought, famine, pestilence and sickness in all forms. (American Mercury, May, 1929)

"Advertisement in the Milwaukee telephone directory":

JOHN W. RADKE
Incorporated
Distinctive Funeral Service
COMFORTING

When the Angel of Death deals a blow, / It is a comfort to know you can go / To a place where quieting environment and superb appointments, / Combined with a service / That leaves no disappointment, / Gives the departed a laying to rest / At a moderate cost, yet by far the best

Burial of the Poor Free
Exclusive Service Features:
Slumber Rooms,
Private Family Rooms,
Chapel,
Licensed Lady Attendants,
Pipe Organ Service
Telephones:
Kilbourn 916 and 197
Corner Sherman Blvd.,
Lloyd & Lisbon Aves.
Opposite Washington Park
(American Mercury, Jan., 1929)

"Scientific handbill circulated throughout this celebrated State":

AFTER THE DOCTOR HAS GIVEN A PATIENT UP TO DIE

With Pneumonia and Hemorrhage of the Lungs and hope has left but ere one spark ALBERT JONES'

Redeemer / Will Cut the Hard Phlegm and Clear Out the Tubes / Or Air Passages Inside of Thirty Minutes

Then the patient is out of danger. Redeemer's equal and speed is not known to the medical world. This recipe was handed down from Grandmother to Mother and from Mother to Myself. I have had it registered in U.S. Patent Office and it is now for sale at the Jones Hotel, 1309 Banks Avenue, Superior, Wis. \$50 per bottle or money back, provided there is no other complication of disease, such as heart disease. It will be further understood that even after the patient has gone through convulsions and the eyes have turned in their sockets, when the jaws will have to be pried open and the patient choked until you hear the swallow, it is not too late, so long as the pulse is still beating. Redeemer will triumph today, as well as it did one hundred years ago. REDEEMER means to RESCUE; REDEEMER means to SAVE all persons between infancy and forty.

Albert Jones 1309 Banks Ave., Superior, Wis. Agent

(American Mercury, Jan., 1928)

"Sermon-subject at a Methodist tabernacle in Beaver Dam": ARE CHRISTIANS CRAZY? (American Mercury, Jan., 1926)

"The Rev. Dr. James M. Johnson, vicar of St. John's parish, Wisonsin Rapids, as reported by the Cape Girardeau, Mo., Southeast Missourian":

Ministers are high-powered realtors, selling subdivisions in Heaven. (American Mercury, February, 1928)

"Ecclesiastical news from the Milwaukee Journal":

The novelty of preaching from a casket has worn off after two attempts, and the Rev. H. W. Thomas, who is conducting a revival at the Riverside Mission, 33 East Juneau Avenue, has announced that he will stand on his head Tuesday night while delivering his gospel message. Two members of his flock will be called out to hold the pastor in his inverted position while he preaches. The Rev. Mr. Thomas preached from a casket at the mission Saturday night, speaking on "The Journey We All Must Take," and emphasizing the inevitability of death. (American Mercury, September, 1928)

"Workings of the Holy Spirit in the faubourgs of Fond du Lac, as disclosed in a United Press dispatch from that fair city":

The little village of St. Nazianz is in a turmoil of excitement over a seemingly superhuman occurrence reported to the parish priest by a dozen relatives and the nurse who were watching at the death bed of Mrs. William Brocket. According to the story, at the mo-

ment of the woman's death the whole house was enveloped in a blinding light and watchers say they heard a faint noise resembling the fluttering of wings. (American Mercury, July, 1925)

"Public manifesto in the Fort Atkinson *Union*":

The undersigned note with alarm the increase in divorces since the Nineteenth Amendment-the woman-suffrage law. We believe the mannish ways put on by women are due in large measure to that law. We note many more women wearing breeches than before. We can stand for that, but this new fadslab-sided dresses-flat in frontshowing women in the fashion pictures as flat-chested as a man, we regard with jealous eyes as an infringement-a usurpation of masculine rights—a condemnation.

We declare that any woman who wears a tight band so as to cut off the circulation and shrink her breasts is undeserving of the name of woman—a name that has been honored and revered by men since the dawn of history.

In the name of High Heaven, what are these poor women to do when the *robust* style comes back, as it surely must? Will bee-hive springs come in fashion?

We ask that the Congress of the United States do its utmost to break down these rotting brassieres as an evil that menaces the future well-being of society.

Zeke Hartman J. F. Schreiner J. Poole B. B. Beede F. A. Stearns H. F. Seavert A. J. Bickner T. Higgins H. Hartmann F. L. Cole Glenn Bullis P. H. Steinke B. E. Chadwick F. D. Kelly John Oettmeyer H. F. Medbury William Klement Henry H. Lalk A. Klement Peter Miller Wm. Reap L. C. McMillen A. Lalk E. C. Brandel Buck (Alvin) Wandschneider Pat (Russell) Chapman

(American Mercury, September, 1926)

E. C. Wandschneider

WINDFALLS

Waffles-in the Kitchen and Beyond

By Arthur Hove



istory is filled with intriguing but incidental tales that too seldom command our interest or attention. The rise and fall of empires and nations is duly recorded in chronicles and annals, preserved in archives. The names and lives of famous people are appropriately folded into these same documents and supplemented here and there by personal memoirs. Meanwhile, the things of everyday life creep into existence without special notice. Such is the case with that crenelated batter cake, the waffle.

The waffle's culinary origin is medieval. The New Larousse Gastronomique explains that the word comes the French gaufre. (The eighteenth century English, as a result, sometimes called them gofers, or goofers.) Larousse further notes that "Waffles are mentioned in the poems of the end of the twelfth century when they were made and sold

in the streets. On great religious feast days the waffle-sellers would set up their stalls at the doors of the churches and bake their waffles, which were eaten piping hot. The best waffles were called *metiers*."

Since medieval times, the word waffle has gradually taken on connotations and denotations that extend substantially beyond a noun describing batter with gridlock. Still, there is the semantical problem of capturing the basic element itself. How do you find words to convey satisfactorily what a waffle is to a person who might never have seen one? The usual approach has been to describe the shape they take once they are baked. As a result, you get such words as "indented," "embossed," "notched," "studded," "fluted," "crimped," or "gridlike." Perhaps the most universally recognizable reference is the one which compares a waffle to a honeycomb.

For some of us, the ritual of waffle making is a vivid memory from childhood. We wistfully recall our mothers or grandmothers industriously whipping up waffle batter with a wooden spoon in a large earthenware bowl that was colored light gray with two thin blue stripes around the upper edge. The bowl was cradled against the body with one arm while the opposite arm mixed the batter with a dramatic turning motion. When the batter had reached the right consistency, it would be spooned onto the waffle iron in dollops that would quickly rush to occupy the negative spaces in the mold.

The waffle iron, of course, was the crucial instrument. You can't make waffles without one. These implements originally were hinged metal plates with the mold that gives the waffle its distinctive pattern. The irons had to be heated over a stove. Achieving the proper temperature became a crucial aspect of successful waffle baking. Irons had to be hot enough to cook the batter through, but not so hot that they burned the finished cake, or so cool that the batter stuck to the mold.

Water was used to test for the proper temperature. A few drops were sprinkled across the plates. If the drops just lay there and did nothing in particular, the iron was too cold. If the drops were immediately transformed into steam, the iron was too hot. The proper action was for the drops to sizzle slightly or form white balls which would then dance across the surface of the mold like hot-footed dervishes.

The margin for error in achieving the proper cooking temperature was reduced considerably with the introduction of a waffle iron that used electricity to regulate the heat. Recently, chance has been further eliminated with the appearance of frozen waffles which are already prepared and only require heating in a toaster. This represents a kind of coming full circle, however, as it is perfectly possible to burn waffles in the toaster, or to undercook them so they come out crisp on the outside but sodden on the inside. But technology marches on. If you put frozen waffles in a microwave oven, you can usually heat them to a satisfactory degree with little possibility of spoiling the product.

Like most things in life, too much of a good thing tends to induce boredom, or a sense of detachment. A steady diet of plain waffles becomes unappetizing and insipid. James Beard has noted that "Waffles are delicious when properly served and a bore when served too often." Something is needed to break the monotony.

The initial response was to pour tasty concoctions over the waffle: syrup, butter, strawberry jam, creamed chicken, or ham. Experimentation continued as various ingredients were folded into the waffle batter. Here the only limitation became the extent of one's imagination and taste. More common ingredients include corn meal, sour cream, buttermilk, and whole wheat. And then there are such exotica as blueberries, dates, figs, raisins, ginger, bacon, orange, coconut, apple, and cheese.

The waffle genus can be ex-

panded to include other names which represent a variation on a basic theme: wafers, pancakes, flapjacks, griddle cakes, flannel cakes, grilled Danish, and the familiar conical variation on a theme—the ice cream cone.

Besides cooking, use of the waffle pattern expands to reflect the extensiveness of human ingenuity. Waffle patterns show up on the bottoms of shoes used for hiking, climbing, and running. They also appear on manhole covers as well as grates and similar coverings. Bricks placed in a special way form waffle patterns to break up the flat expanse on the windowless sides of buildings. Hard rubber waffles are used to create noiseless, shockless means for cars to cross over railroad tracks bisecting streets. Waffle weaves provide an insulating effect in winter underwear.

There is no legitimate reason why waffles made from something other than dough could not be used for such things as shingles or even the cover of a book. They could also serve as an implement for sport and entertainment if the round ones are thrown like a frisbee or a cow chip. Further replications of the waffle pattern await the appropriate moment of opportunity. Certainly there are dreamers among us who will be struck by a lightning bolt of inspiration that will stimulate yet another use.

Meanwhile, waffles have migrated from the cookbook to the behaviorists's journal. Like so many other nouns, waffle has been transformed into a verb. Lexicographers Harold Wentworth and Stuart Berg Flexner trace the change to 1964 when New Yorker correspondent Richard Rovere observed that Republican presidential candidate Barry Goldwater was likely to "back away from or waffle around" a particular political position. Another semantic search places the tendency at a much earlier time, going back to waff, a Scottish/British expression which means waving or fluttering.

To waffle in the contemporary sense has become a distinctive art.

It involves procrastination, delay, and, sometimes, deception. Waffling maneuvers are often executed with the grace and precision of an aerobatics pilot doing Immelmann turns or chandelles. Sometimes, however, the maneuvers are performed with the clumsiness of a drunk falling down stairs.

Waffling is primarily a defensive maneuver which has several variations and purposes. There are those who waffle sideways, scuttling crablike because they don't want to be pinned down or make a decision. They keeping moving away from whatever it is that might force them into doing something against their will.

Some people waffle because they simply don't know what the answer is, or because they don't know what to do when confronted with a particular problem. Others waffle because they're not aware of what the problem is in the first place. More devious types waffle because they know it will give them an advantage. Keep others wondering what you're going to do; it gives you a certain amount of leverage.

And then there's the kind of waffling that comes when things aren't quite ready, and it would be premature to do something anyway. If you waffle now, things will ultimately take care of themselves. This eliminates the need to expend precious thought and energy on things you can't control, anyway.

The more successful wafflers know exactly what they're doing and relish in the practice of their skill. Politicians, bureaucrats, and weather forecasters are accomplished wafflers. Waffling for them is an essential occupational trait. Their actions sometimes drive those on the opposite end of the waffling to distraction, confusion, and frustration.

The mistake too many nonwafflers make is to assume that life is as precise and absolute as the depressions and ridges in a waffle. What they forget is that waffle batter readily assumes the form into which it is cast.



BOOK MARKS/WISCONSIN

ANCIENT GREEK ART AND ICONOGRAPHY edited by Warren G. Moon. Madison: The University of Wisconsin Press, 1983. 346 pp. \$50.00.

By Jane C. Waldbaum

Ancient Greek Art and Iconography is the publication of the papers given at a symposium on the same topic at UW-Madison in April, 1981, and sponsored primarily by the University of Wisconsin Institute for Research in the Humanities. The volume, edited by Warren G. Moon, professor of art history and classics at UW-Madison, contains eighteen contributions by nationally and internationally recognized scholars of ancient Greek art.

Chronologically, the articles cover everything from the Bronze Age "Ship Fresco" from Thera (Ellen Davis, "The Iconography of the Ship Fresco from Thera") to a study of the relationship between early Christian and Greek iconography (Karl Schefold, "Some Aspects of the Gospel in the Light of Greek Iconography"). In subject, most of the essays in the volume are studies of the artists, subject matter, and styles of Greek vase painting (e.g. those by John Boardman, Andrew Stewart, Evelyn Bell, H. A. Shapiro, Warren Moon, William Biers, Gloria Pinney, Jiří Frel, and Konrad Schauenburg). A few deal exclusively with other media, e.g. coins (N. G. L. Hammond) and wall painting (E. Davis).

Some papers concentrate on the relationships among various arts and crafts. D. A. Amyx, for example ("Archaic Vase-Painting visà-vis 'Free' Painting at Corinth"), considers the question of whether Corinthian vases decorated with complex, multi-figured scenes were dependent on mural painting for their visual sources and concludes that archaic Corinthian vase painting was essentially an independent art form sharing a common narrative repertoire and certain modes of representation with monumental painting. Barbara Fowler ("The Centaur's Smile: Pindar and the Archaic Aesthetic") presents a wellwritten comparison between literary and artistic techniques in late archaic times showing that certain shared qualities such as the juxtaposition of unexpected elements. symbolism, selectivity, and decorativeness may be found in Pindar's poetry, vase painting, and late archaic sculpture. Beth Cohen ("Paragone: Sculpture versus Painting, Kaineus and the Kleophrades Painter") uses the theme of Kaines and the Centauromachy to contrast the approaches of wall painting, vase painting, and sculpture in the fifth century B.C. Brunilde Ridgway ("Painterly and Pictorial in Greek Relief Sculpture") explores a body of relief sculpture from the archaic through the Hellenistic showing its relationship to the art of painting through the use of both "painterly" techniquesthe addition of certain details in

paint-and "pictorial" or illusion-

istic effects of spatial depth and perspective.

Some of the studies also provide glimpses into aspects of Greek life beyond the arts. Eva Keuls, for instance, presents a lively iconographic and social study of "women's work" in ancient Greece. concentrating on such tasks as the fetching of water and textile working ("Attic Vase-Painting and the Home Textile Industry") and showing how the representation of these activities on vases was intended to titilate a primarily male clientele. Lily Kahil ("Mythological Repertoire of Brauron") examines the cult of Artemis at Brauron and other Attic sanctuaries and the iconography of the artifacts found in excavations at these sites. In doing so she sheds light on the natures of the goddess Artemis as well as on the rituals that took place in her honor, many of which involved little girls.

This brief summary barely scratches the surface of what the essays in this book have to offer. While the topics of most of the articles may seem limited in scope to the lay reader, many of them raise issues or explore problems that have implications beyond their immediate subjects. Although the book is intended primarily for scholars, it contains a number of features that make it somewhat more accessible to nonspecialists. The end of the volume includes a glossary of technical terms, a selected (but quite extensive) bibliography arranged topically into such categories as Greek gods (listed by name and grouped by association); Dionysos and theater; legendary and mythological heroes: Homer and Homeric heroes; mythological battles; animals and fabulous beasts; life, sport, death, and burial; and warfare and seamanship. There is also an index of ancient artists, an index of museum collections for works discussed in the text, and a general index. The footnotes and copious illustrations are printed with each article instead of at the end of the volume, making each essay a selfcontained, easily consulted unit. The format of the book is attractive and the text remarkably free of errors, though there are occasional lapses in consistency of the spelling of transliterated words, as for example the alternation of Halae/Halai in Kahil's article. These, however, are very minor flaws in a generally very handsomely produced work.

Jane C. Waldbaum, professor of art history at UW-Milwaukee, is a specialist in the field of ancient art and archaeology.

BIRD CONSERVATION edited by Stanley A. Temple. Madison: The University of Wisconsin Press, 1983. 148 pp. Hardcover \$17.95, paperback \$12.95.

By Peter Muto

The editor, a member of the Department of Wildlife Ecology at UW-Madison, has selected four major articles and fourteen brief reports for this collection. Professor Temple, who prepared this work for the International Council for Bird Preservation (ICBP)-U.S. Section, reports that ICBP is the world's oldest conservation organization. The U.S. Section of ICBP, a federation of nineteen conservation organizations in America, plans to publish an annual report on the developments in the preservation of the endangered or threatened species of birds. This book represents the initial annual volume.

Professor Temple has organized three sections in this volume: 1) a set of major research reports, 2) a set of fourteen brief reports on recent developments in bird conservation, and 3) a set of one-hundred and sixty citations of the bird conservation literature of which about fifty are annotated.

The major articles deal with the raptors exclusively. The first article tells of efforts to restore the peregrine falcon to its former range in eastern United States. The authors report on a seven-year project of releasing young falcons into areas from which their species was extirpated had a twenty-five percent per year mortality. This scholarly article is very technical. One of the other three articles related to the bald eagle, the other two to the California condor. The amateur conservationist should find these four stories very interesting.

The second section is entitled "Bird Conservation News and Updates." One of these articles is an extensive report on the whooping crane written by George Archibald of the International Crane Foundation near Baraboo. A report on the dusky seaside sparrow was very interesting also. A population of several thousand pairs once thrived in a vast marsh in Brevard County, Florida, but a highway project in the marsh changed the hydrologic system; the dusky sparrow lost its habitat. Only five captive birds are left in the world and all are males. Conservationists are breeding these with females of the Scott's seaside sparrow. Three offspring have been born already. As offspring mature, females will be mated with the unrelated remaining males. After five generations it may be possible to have stock that is over 90 percent dusky sparrow in ancestry. The efforts of U.S. Fish and Wildlife Service to help the dusky came too little, too late.

The final section contains an annual review of the literature. Many of the references seem to be to non-technical periodicals.

The book is appropriate for

professional conservationists and for bird lovers. Although most of the articles lend themselves to pleasure reading by the layman, this book is highly recommended for a special group, bird lovers.

Peter Muto teaches chemistry at UW-River Falls and is an amateur conservationist.

CHEMICAL DEMONSTRATIONS: A HANDBOOK FOR TEACHERS OF CHEMISTRY, Volume 1 by Bassam Z. Shakhashiri. Madison: The University of Wisconsin Press, 1983. 343 pp. \$25.00.

By David Singstock

This book is written for chemistry teachers at all educational levels with detailed instructions for use in classrooms and public lectures. This first volume in the series covers thermochemistry, chemiluminescence, polymers, and metal ion precipitates and complexes. The demonstrations are grouped by type and preceded by a short background essay. Each demonstration is divided into materials required, procedure (often with drawings or alternate procedures), hazards, disposal, discussion, and references to pertinent literature. The background on the reactions which are occurring is most informative.

There is an excellent variety of interesting demonstrations, although some appear to be unquestionably dangerous, such as combustion of peroxyacetone. Professor Shakhashiri does warn the reader of dangerous chemicals and indicates when to use great caution, but he does not provide enough information about antidotes or follow-up procedures if accidents occur or the reaction "gets away" from the experimenter.

A number of times I came across the disposal method of washing the chemical down the drain with plenty of water. If university chemists feel comfortable disposing of their chemical wastes in this manner, it is easier (not any more palatable) to understand why some industrial chemists appear apathetic toward chemical waste and environmental toxicity.

David Singstock teaches chemistry at Madison West High School.

DAILY LIFE IN JOHNSON'S LONDON by Richard B. Schwartz. Madison: The University of Wisconsin Press, 1983. 196 pp. \$25.00 (cloth), \$9.95 (paper).

By Bertrand A. Goldgar

In this attractive and useful book Richard Schwartz, professor of English at Georgetown, recreates in a highly readable fashion all the richness of ordinary life in the eighteenth century. Aimed at the general reader rather than the specialist, his volume is unusually successful in making a mass of detailed information accessible to a general audience without the sacrifice of accurate, responsible scholarship. Though it is not intended for scholars, very few specialists in the eighteenth century could read his book without learning something. And for the student of the history or literature of the period—as well as for the occasional reader of Swift. Fielding, Smollett, or Johnson—Mr. Schwartz admirably meets his goal of bringing alive "those details of life which often go unmentioned or unnoticed." A ten-page bibliography provides hints for further reading as well as indicating his primary sources, many of them accounts by foreign travelers in England.

A few of the chapter titles will suggest something of the range of the topics covered: Sights, Sounds, and Smells; Work and Money; Pastimes and Pleasures; Health and Hygiene; the Law and its Enforcement. Through all these Mr. Schwartz moves easily and fluently, evoking images of sewage in the Thames, of children blinded to improve their skill as beggars, of filthy brothels and beautiful pleasure gardens, of lurching coaches jamming the streets and tainted meat hanging in Butcher Row, of peers hanged

with silken ropes, and rotten oranges thrown in the theater. The verbal images are supplemented by over seventy illustrations from contemporary sources, providing the reader with vivid pictures of everything from a frost fair on the Thames to the title page of a list of Covent Garden whores.

As guides through this maze of specific facts Mr. Schwartz returns frequently to several consistent themes. One is the towering figure of Samuel Johnson, whose life in London is related to the various topics under discussion and whose thought the author hopes his study will clarify. There is an irony in this theme which Mr. Schwartz does not point out, for Johnson's own public writing was often lacking in precisely those circumstantial details of the contemporary scene which this work provides; Catherine Talbot, an admirer of Johnson, complained in 1752 of his Rambler essays, "But why then does he not write now and then on the living manners of the times? ... London swarms with what would afford as amusing subjects as any in the Spectator." Miss Talbot would have been pleased with Mr. Schwartz's book. A second recurring theme is the eighteenth century as an age not of compromise and balance but of contrasts and extremes—extreme poverty and extreme wealth, elegant civility and degrading brutality. Many of the details here-of disease, mobs, and vermin-make for grim reading, but as Mr. Schwartz rightly points out they are necessary to "counterbalance" the image of clubs, coffee and chocolate houses, of snuff, perukes, tea, and clay pipes" (p. xvi). Regrettably, however, the limited scope of his book requires Mr. Schwartz to minimize the social forces working to change many of the evils he depicts; one hears nothing, for example, of the great philanthropic movements of the day or of charitable institutions like the Foundling Hospital or Magdalen House for Penitent Prostitutes.

There are a few problems here and there of a type almost inevi-

table in a work of this sort. The use of Johnson as a unifying thread causes Mr. Schwartz sometimes to assume a knowledge of Johnson that a general audience will not possess, and there are other references that only specialists will understand (e. g. to the booksellers Mott, Lintot, and Curll). There are times, too, when the need to cover so many aspects of life under one heading results in a lack of focus (especially in the first and final chapters) and in creaky transitions ("The types of shops which one might encounter would be many" [p. 35]).

But these are minor matters, and it is perhaps churlish to raise them about a work for which one is generally grateful. It is difficult to think of any other book serving this purpose so well or in such short compass. The University of Wisconsin Press is also to be congratulated, on both the handsomeness of its production and the wisdom of its choice.

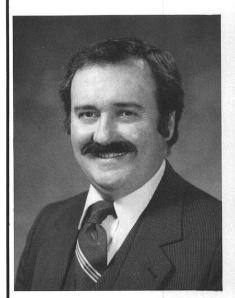
Bertrand A. Goldgar, professor of English at Lawrence University, is the author of Walpole and the Wits and other works on eighteenth-century English literature.

Book reviewers needed. We are updating our files of book reviewers. Persons interested in contributing book reviews should send name, address, professional qualifications and experience, with subjects you are interested in reviewing to Editor, *Wisconsin Academy Review*, 1922 University Avenue, Madison, WI 53705. Payment is book to be reviewed and two copies of the journal in which the review appears.

Because we believe the book reviews are an important source of information about the intellectual and cultural life in Wisconsin, we try to find a reviewer who is able to assess accurately each book reviewed. We give serious consideration to reviewers and are most grateful for the valuable service they perform for the Academy and for our readers.

continued from page 2

John K. Driscoll was working in northern Virginia during the centennial of the American Civil War. In a two hundred mile arc, from Richmond on the south to Gettysburg on the north, every major battlefield and campaign area in the East was within a day's drive from his house. He has been an active student of this period of American history ever since. A native of Ohio, Driscoll attended Youngstown College and served in the United States Marine Corps. He joined the Wisconsin Department of Administration in 1977 as director of the State Bureau of Procurement. He has published articles on Wisconsin's role in the American Civil War and has written an historical novel about the men of Wisconsin who served in the Iron Brigade.



John K. Driscoll

Robert L. Youngs, an internationally recognized researcher and research administrator, is currently director of the Forest Products Laboratory, Forest Service, U.S. Department of Agriculture in Madison. He has received the U.S.D.A. Distinguished Service Award, is on the executive board of the International Union of Forestry Research Organizations, and is a Fellow of the International Academy of Wood Science. He received his Ph.D. in 1957 from Yale University in wood science and is a member of numerous national and international professional organizations. He has been director of the Laboratory and a member of the Wisconsin Academy since 1975.

Peter Schofer teaches French language, literature, and film at UW-Madison. He is coauthor of an introduction to French literature as well as *Rhetorical Poetics*. Articles include topics on teaching literature, nineteenth century French poetry, and film.

Benjamin D. Rhodes, professor of history at UW-Whitewater, received undergraduate and graduate degrees from the University of Colorado. His main research interest is in American diplomatic history between the two world wars, particularly Anglo-American relations.

Susan Faust Casper lives in Wisconsin Rapids and has previously published poetry in the *Review*.

Dear Editor:

Certainly when Walter and I put together—or perhaps I should say "patched together"—the first issue of the Wisconsin Academy Review in winter 1954, we did not anticipate that it would evolve into the lovely publication which you now edit. For ten years our den was its nursery, and were he here to express it, I know Walter would add his congratulations to the Academy which nurtured development of the quarterly to its adult status.

Trudi Scott Madison

Coming up in the Wisconsin Academy Review

December 1984: A critical look at medical education and practice in Wisconsin, with articles on changes in medical schools, the economics of medical practice, changing health care including HMOs, and close looks at particular health care facilities and problems in the state.

arch 1985: A glimpse into the state's three-dimensional art world with art by and critical reviews of leading sculptors, glass blowers, metal workers, ceramic artists. Companion to the March 1983 Wisconsin Painters and Printmakers special issue.

Wisconsin Academy of Sciences, Arts and Letters Corporate Members

Consolidated Papers, Inc., Wisconsin Rapids
Evjue Foundation, Inc.
Exxon Corporation
Johnson Controls, Inc.
Kohler Foundation
Marshall Erdman and Associates
Norman Bassett Foundation
Oscar Mayer Foods, Inc.
Wausau Insurance Companies
Webcrafters-Frautschi Foundation
Wisconsin Electric Power
Wisconsin Power & Light Company

WISCONSIN ACADEMY REVIEW

1922 UNIVERSITY AVENUE MADISON, WISCONSIN 53705

Address Correction Requested

Second-class Postage Paid at Madison, WI