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WISCONSIN ACADEMY REVIEW

Volume 34, Number 1
December 1987

Aldo Leopold Centennial 1887–1987

WISCONSIN ACADEMY REVIEW

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Volume 34, Number 1
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CONTENTS

Editorial

The Wisconsin Academy joins with many other organizations in celebrating the centennial of the birth of Aldo Leopold, a pioneer ecologist and sometimes proclaimed creator of the environmental ethic. Born in Burlington, Iowa, January 11, 1887, Leopold was educated there, at Lawrenceville Prep School in New Jersey, and at Yale University. Upon receiving his M.S. in forestry from Yale in 1909, he joined the U.S. Forest Service and worked in the Southwest until 1924 when he came to Wisconsin as assistant director of the U.S. Forest Products Laboratory in Madison. In 1933 he published *Game Management* (reviewed in this issue's Bookmarks/Wisconsin) and became the chairman of the University of Wisconsin Department of Game Management, the country's first such department. In 1935 he purchased the worn-out farmland near Baraboo which became widely known through the publication of *A Sand County Almanac*, published in 1949. Aldo Leopold died of a heart attack in April 1948 while helping fight a grass fire that threatened his sand county farm.

For this issue we have asked several people who knew and worked with Leopold to discuss his influence on conservation in this country. In many cases the influence was on an individual student who went on to become important in the profession. One former student, Robert McCabe, organized a symposium held April 23 and 24 in Madison: "Aldo Leopold's Living Legacy—Recollections of his Former Students." Seventeen out of the twenty-one former graduate students of Leopold—now themselves leaders in the profession—came together to talk about how their teacher affected their personal and professional development. We offer here articles by McCabe, Frances Hamerstrom, and James Zimmerman who studied with Leopold at the University of Wisconsin. We also offer articles by Gretchen Holstein Schoff and Curt Meine, who were touched in other ways by Leopold. And we have a special section by Charles Bradley, who with his wife Nina Leopold Bradley operates the Leopold Memorial Reserve. By using photographs which were taken in the early days of the sand county farm and providing current equivalent shots, Bradley gives us an astonishing view of the practical application of Leopold's ideas of conservation.

We might mention here the reminiscences published in the December 1979 *Wisconsin Academy Review* by three of Leopold's children— Nina, A. Starker, and Carl—and Charles Bradley. (Although that volume is now out of print, we can supply photocopies if you send $1.00 plus a self addressed envelope with two first-class stamps.) Admirers of *A Sand County Almanac* may also be interested in reading Dennis Ribbens's article, "Making of a Title: *A Sand County Almanac*" (*Wisconsin Academy Review*, Vol. 28, No. 4, September 1982), which traces the conceptual and structural evolution of that collection.

For more articles on Leopold check the bibliography in this issue. It was compiled for the Leopold issue of *EE News* (February 1987), which is available from the DNR Bureau of Information and Education, P.O. Box 7921, Madison 53707, (608) 267–5239.

Review preview: Our March 1988 issue, (Volume 34, No. 2) will look at wildlife art and artists in Wisconsin, with illustrations of some work of thirty-five prominent practitioners of the art and essays on the appeal of wildlife art to collectors, naturalists, sportsmen, and the general public.

Patricia Powell, Editor

Authors

Charles C. Bradley, a retired geologist, is a codirector of the Leopold Memorial Reserve with his wife Nina Leopold Bradley.

Victoria Ford is currently seeking a publisher for a first book of poems, *Apple and Grasshoppers.*

Anne Hallowell is editor of *EE News* for the DNR. **Dee Ferver** is coordinating the Aldo Leopold year activities for the DNR Bureau of Information and Education. **Gary Laibe** teaches biology and conservation at Poynette High School.

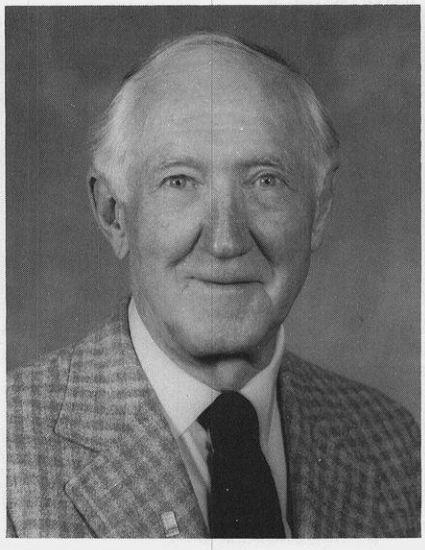
Frances Hamerstrom

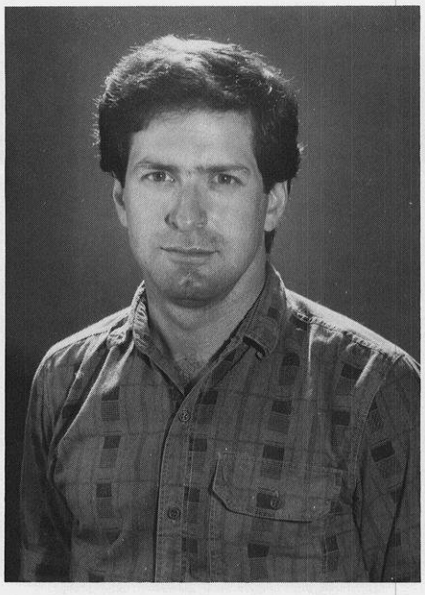
Frances Hamerstrom is a wildlife biologist, who with husband Frederick has received numerous awards for over fifty years' team research, including the National Wildlife Federation Award for Distinguished Service to Conservation. They did advanced work with Aldo Leopold at UW–Madison. Their research on prairie chickens, done mostly for the Wisconsin Conservation Department, is internationally recognized and 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. Fran's long interest in raptors is conveyed in *Birding with a Purpose* and *An Eagle to the Sky* (1970) also from Iowa State University Press. Her latest book *Harrier: Hawk of the Marshes* was published by the Smithsonian Institution Press in 1986.

Robert A. McCabe a Milwaukee native, received a B.A. in biology from Carroll College in Waukesha and a M.S. and Ph.D. under Aldo Leopold at the university in Madison. He was Leopold's assistant from 1943 to 1948. His publications are in professional journals and popular outlets. In 1986 he received the Aldo Leopold Medal which is "presented for distinguished service to wildlife conservation and is the highest honor bestowed by The Wildlife Society. It is the ultimate recognition of a wildlife professional." He has recently completed a book on his university years with Aldo Leopold (see review).
He and his wife Marie have four children and four grandchildren. They spend weekends and vacations at their farm in Iowa County. He continues to be active professionally.

Robert McCabe





Curt Meine

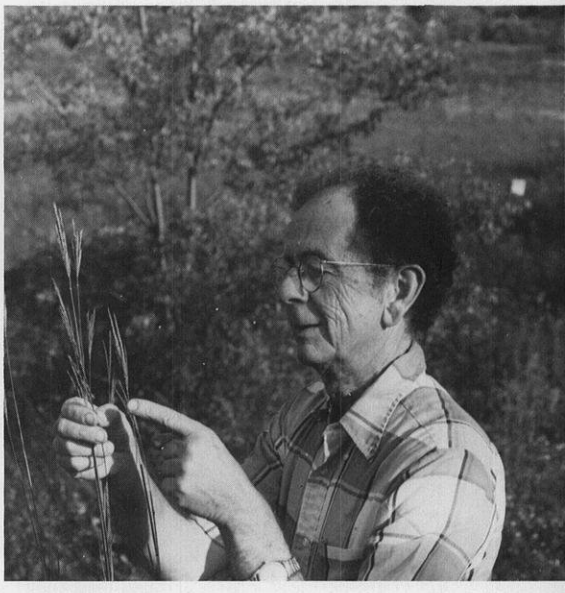
Curt Meine has received a Master's degree and is working on a Ph.D. in land resources at UW–Madison. His biography of Leopold, *Aldo Leopold: His Life and Work* will be published by The University of Wisconsin Press in early 1988.

Gretchen Holstein Schoff

Gretchen Holstein Schoff is professor of general engineering and teaches also in the integrated liberal studies program and the Institute for Environmental Studies at UW–Madison. Her last work for the *Review* was "American Writers and the Environmental Movement" (vol. 29, no. 4, Sept. 1983).

James Hall Zimmerman is a consulting ecologist, writer, and senior lecturer at the UW–Madison Department of Landscape Architecture and Institute of Environmental Studies, teaching wetlands ecology and field ecology courses. Jim obtained his B.A., M.A., and Ph.D. in botany from UW–Madison under Profs. N. C. Fassett and Hugh Iltis. Between 1959 and 1976 he served as naturalist for the Madison Public Schools and the UW–Madison Arboretum, and taught "reading the landscape" at MATC. Environmental work has included an alternative to the LaFarge Dam, founding the Wisconsin Phenological Society and the Wisconsin Wetlands Association, and coauthoring "Wildflowers and Weeds" (Van Nostrand-Reinhold, 1974) as well as coauthoring with his wife, Libby a weekly newspaper column "The Nature of our World" for the *Wisconsin State Journal* for ten years. At present he is a consultant to the Door County Planning Department for natural resources maintenance.

James H. Zimmerman



In the early 1930s Leopold noted that a major biological puzzle for conservationists to solve was the causes of the cyclic change in the numbers of wild animals.

Aldo Leopold and the Biological-Cycle Dilemma

By Robert A. McCabe

In every branch of science there is at least one major hiatus in our knowledge. Some of these "black holes" are regarded as insolvable, others too formidable for one person or even a team to tackle, and each is often too costly to consider. For Aldo Leopold, the game cycle was one such gap in our understanding of animal population behavior. A cycle in the numbers of certain game species increases to very high levels and then in a short span of time falls to incredibly low levels. The amplitude of the highs is clearly evident and the periodicity regular over a series of years.

This biological phenomenon of cycles Leopold regarded as the keystone problem in the management of game. The year 1931 was a turning point in his effort to understand these undulating population levels among animals in the wild. In that year he published a paper with John N. Ball in the *Canadian Field-Naturalist* entitled "British and American Grouse Cycles."

It was one of the very first attempts to document the fluctuations in grouse numbers that exhibited cyclic behavior. In that same year he was invited to a conference on biological cycles, organized and financed by a private individual, Copley Amory of Boston, held at Matamek Factory, Matamek River, Quebec on the north shore of the St. Lawrence River. It was here that three "giants" in the field of wildlife biology gravitated to each other through an interest in cycles and by the intellectual stimulation of the triad. Aldo Leopold from the University of Wisconsin, William Rowan, a professor of zoology at the University of Alberta at Edmonton who was a versatile zoologist and astute thinker in the field of animal ecology, and Charles C. Elton, a population biologist, skilled author, and head of the Bureau of Animal Population in the zoology department at Oxford University in England formed the trio. Elton was at that time engaged in a study of fluctuations in animal numbers derived from a Canadian inquiry which particularly concerned the snowshoe hare.

Regrettably there were no complete proceedings of that meeting (only a report summary was printed) where the words of thirty concerned scientists could have been passed on to those who were to follow. The three who held the limelight remained friends and in close contact over the remaining years of their lives, and they all went on to greater heights in their respective branches of biology.

On his return from Canada with the excitement still fresh in mind, Leopold helped to set up a study of cycles in Wisconsin with Wallace Grange as principal investigator. It was supported in part by public subscription and was short lived, but it was one more involvement for Grange to add to his wide field experiences. He was later to respond with a *magnum opus* in his excellent book, *The Way to Game Abundance.* In the section on cycles he said his conclusions had "not previously been published, even in scientific journals." None would have been new or a surprise to Leopold, as all had at some time been discussed in conferences and in the literature. Had Grange worked on the cycle problem quantitatively and long enough in consecutive years, he might have had a more definitive reply regarding the ecological mechanisms that produce cycles. Leopold continued to think seriously about cycles in those years, although another thirty-five years were to elapse before there was light at the end of the tunnel.

The ideas and stimulation that Leopold received from that memorable conclave (the Matamek Conference on Biological Cycles) is reflected in his book *Game Management* in 1933. Under the caption of "Properties of Game Populations" he discusses the salient aspects of game cycles. At that time he postulated in error on several counts:

(a) "Cycles . . . are caused by disease."

(b) "The fact that the cyclic period is substantially synchronous over this continent indicates that the virulence may be affected by some cosmic force as yet unknown."

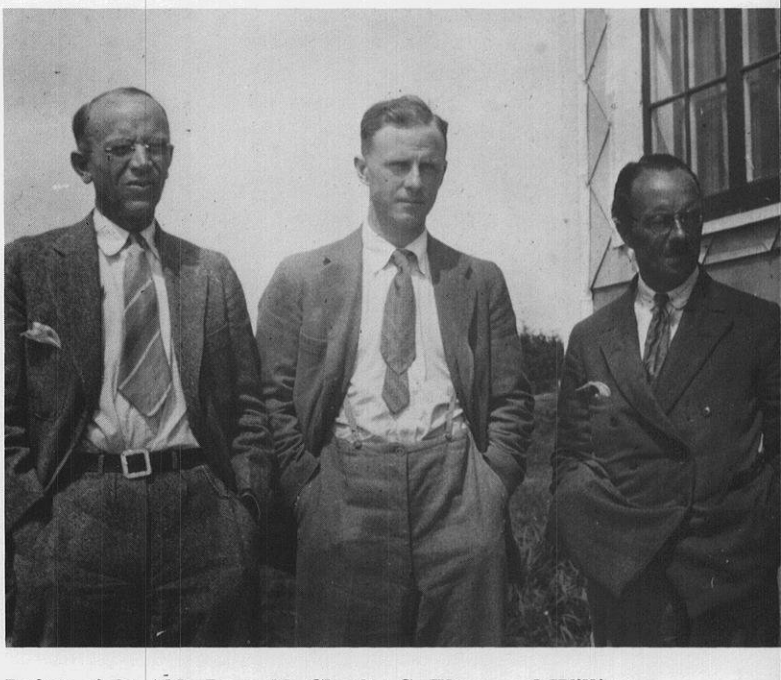
(c) "Cycles are most pronounced in species which are immune to starvation because of their food habits. . . ."

He was not willing to discard the sunspot or similar "force" as the key element causing fluctuations but clung to disease as the ultimate cause—for which there was only suggestive data. When he spoke of animals immune to starvation he had grouse in mind, but failed to reckon with the even more violent changes in abundance among snowshoe hares and the altered habitat resulting from high densities.

Leopold and others did not recognize that the causes of regularity and synchrony may be different, as it was later determined. His stance was less rigid the following year.

In the summer of 1934 Leopold addressed the nation's farmers over the NBC network on the occasion of Conservation Day. The broadcast was sponsored by the National Farm and Home Hour. The title of his talk was simply, "The Game Cycle—A Challenge to Science."

He pointed out that the periods of abundance followed by scarcity occurred about every ten years, and he anticipated a crash in game numbers in 1934. He put it thus: "Between 1933 and 1935 perhaps half a



Left to right Aldo Leopold, Charles S. Elton, and William Rowan at the Conference on Biological Cycles held at Matamek Factory, Matamek, Quebec, Canada, July 1931.

billion grouse, rabbits [hares] and furbearers will die or disappear in northern North America from causes still largely mysterious." The nature of this loss he regarded as a "challenge not only to the scientist, but every layman-conservationist on the continent." This comment was, of course, more a hope for concern than a realistic challenge for laymen. If scientists were confused, indifferent, or uninterested, surely the layman/farmer was in no position to take up the challenge. Leopold himself said, "I can't tell you what a cycle is because nobody knows."

The base data from which the population biologist must operate are statistics on abundance and scarcity. Leopold however, had no cautious words about such data for Wisconsin, and he summarily dismissed (correctly) the impact of "sunspots" (a flare-up in solar activity on the surface of the sun) as relating to cycles of animal numbers on earth. In a manner unlike him, he tipped his hand only three minutes into his twenty-minute talk when he said: "If I had to guess the 'cause' of the cycle, I would say the present evidence favors disease, operating not alone but in conjunction with a drop in the reproductive rate." Later research documented the drop in reproductive rate, but did not couple it with disease. In fact, *outbreaks of infectious disease* play no significant role in cyclic declines.

Another aspect of the cyclic behavior of animals that Leopold regarded as fascinating was that "[t]he severity of the cycle is known to taper off southward [from northern Canada]" and "there is little trace of it below the Lake States. . . ." That aspect has also been verified and studied. He rightly dismissed the cycle as "something induced by civilization" and said, "If the cycle is man-caused at all, it is so by reason of some influence, such as fire or disease. . . ." He still could not get the disease aspect out of mind, and although there was as yet no major evidence that land use had affected cyclic change in numbers of wild animals, that specter still remained.

Grange in 1949 did not regard disease as an initiating or regulating factor for cycles, but placed great emphasis on fire. In current ecological thinking on cycles, neither disease nor fire is of major importance over the geography of cycles.

Leopold stretches when he uses the die-off of animals (e.g. rabbits on the Kankakee in Illinois) as part of the cyclic phenomenon. We have always had fluctuations in rabbit numbers, but whether such changes are cyclic in the same sense as snowshoe hares or ruffed grouse has not been determined as of 1987. However, he elaborates on that issue with the statement: "Apparently we must learn to think of fluctuation, not as an abnormal population behavior, but as a thing all flesh is heir to, given the right set-up of environmental forces." It is the "right set-up of environmental forces" that has recently been investigated to clarify the cyclic behavior.

After laying bare all of the questions raised by cyclic behavior, speculating on the limited data available and presenting the bits and pieces to this biological puzzle then available, Leopold asked: "Who can fit all these disjointed fragments of fact and fancy together into one unified picture, one comprehensive and consistent theory of cycles?" I raise the hand of Professor Lloyd B. Keith from Aldo Leopold's department of wildlife ecology at UW–Madison.

I do not know whether there would be a consensus on the unity, comprehension, or consistent aspects of Keith's work, but that it is the most formidable there is no question.

He began a team study at Rochester, Alberta, in the heart of the "cycle belt" in 1961, and during the next sixteen years investigated all the questions posed by Leopold in his 1934 talk and numerous others relevant to the cycle dilemma. It would not be possible in the space available to present in detail the basic research that supports Keith's conclusions relative to the complex cyclic behavior of wildlife populations. However, the following is a condensation from his latest report.

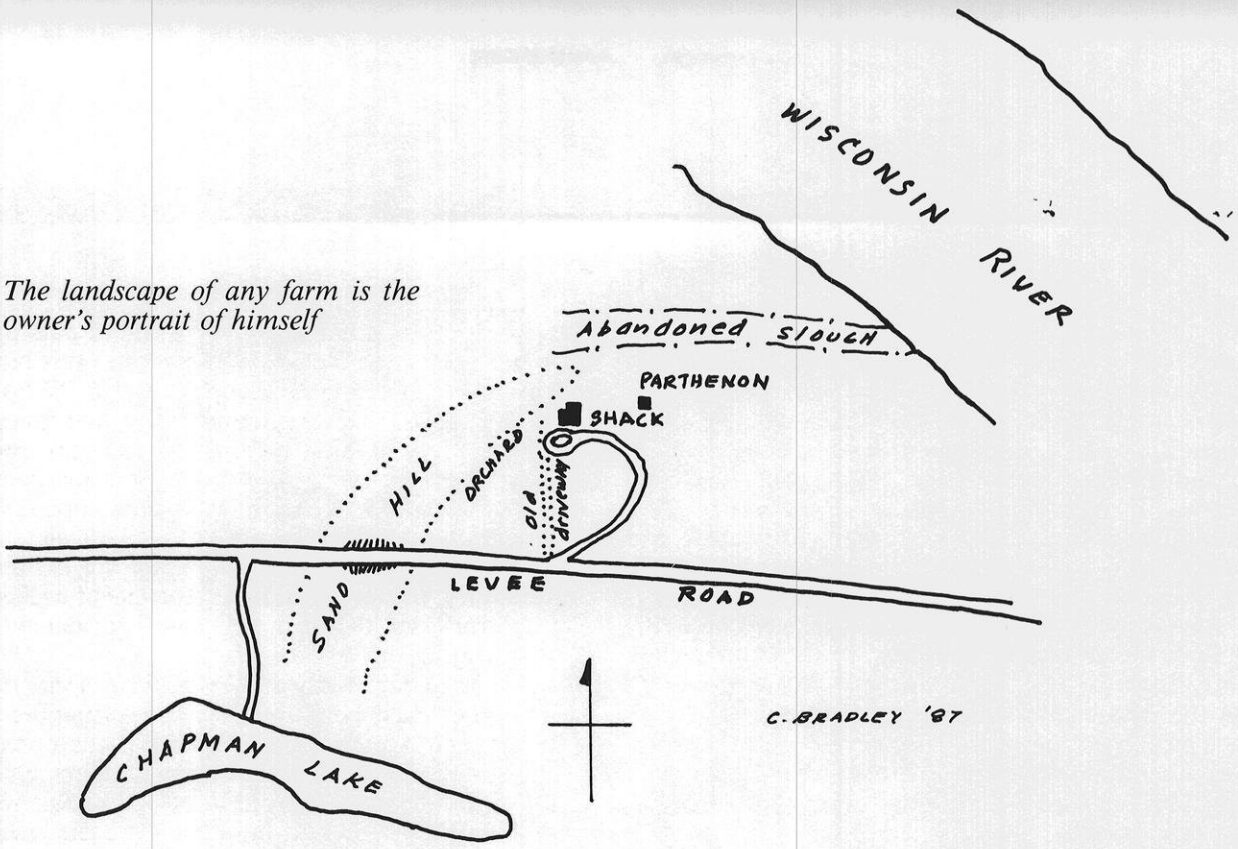
> A conceptual model, consistent with current information, maintains that the snowshoe hare cycle is generated intrinsically by a hare-winter food interaction. Food shortage and malnutrition at peak densities trigger cyclic declines by markedly elevating losses from starvation and predation. Predation intensifies during decline years and drives the population to its cyclic low. Interregional synchrony is maintained intrinsically by highly mobile predator populations and extrinsically by mild winters that moderate mortality in peak populations and allow lagging ones to attain peak densities.

The nature of the increases regarding the numbers of litters and litter size and survival, and the degree of food depletion and predator losses are documented in his many papers dealing with these mechanisms.

Aldo Leopold intuitively and with a naturalist's eye saw the various elements of the cycle puzzle, but there was no research to give cohesion to those elements. He was financially incapable of even beginning a research program on animal cycles.

I did not have the skill, inclination, or the opportunity to work on cycle research, but my student Lloyd Keith did, so it was Aldo Leopold's "professional grandson" who put the "disjointed fragments" into scientifically logical order. Whether that order is definitive only greater effort will determine.

Aldo Leopold's interest in cycles never flagged, but he was aware that the "how and why" were in his day supported only by theory and logical supposition and that research data were lacking. Nonetheless he said, "as for conservation, the question of population levels is the very core of it."■



The landscape of any farm is the owner's portrait of himself

Doctor of the Land

A Matter of Degree

By Charles C. Bradley

Aldo Leopold was always slightly embarrassed when people referred to him as "Doctor Leopold." He had come to academe directly from the U.S. Forest Service with a degree in forestry from Yale—but it was not a doctor's degree. There was no such thing as a doctorate in game management until the University of Wisconsin-Madison created a department of that name and made Leopold its head. And like many another person ahead of his time he died without having received an honorary doctorate. He would have been astounded at the celebrations honoring him on this centennial year of his birth. He'd have been cheered to know that *A Sand County Almanac* has now been translated into Russian, Japanese, and Chinese with a German translation in the wings and a French translation on the drawing board.

Aldo Leopold left us a rich heritage in his penetrating perceptions on ecology, his broad-based vision of man's relationship to the biosphere (the land ethic), his outstanding graduate students, and finally but not least, the eloquence and urgency of his prose. Less well recognized is the heritage of natural beauty he left behind as his bequest, resulting from thirteen years of self-imposed hard labor, sweat, and perhaps tears, on the area now documented in the National Register of Historic Places—the Shack. Regardless of academic degrees, what he left was the work of a skilled doctor who restored to health and beauty a piece of farm land, used, abused, and finally abandoned for dead.

The beauty of a landscape sends us its signals through all of our senses, the feel of the summer sun or the bite of a blizzard, the sound of night voices in the marsh or the wind in the pines, the smell of rain, the colors of the seasons, and the taste of wild strawberries. Thus it is presumptuous of us here to try to portray for you in two-dimensional monochrome the landscape transformations performed by the doctor and his family. We must rely on your uncontrolled imagination to fill the gaps, to sense the miracle, and to remember the quiet lesson behind it all.

A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community.

It was winter 1935 when Aldo Leopold purchased his sand farm and with his family started to rehabilitate the dilapidated shed which has since been dubbed "the most famous chicken coop in the world"—the Shack. Even after the knee deep manure was shoveled out and the place was cleaned up and propped up it was not an impressive piece of architecture. No one except possibly Leopold himself saw it as a weekend shelter for his family and a headquarters for field testing the land ethic. Family recreation? Yes, but in its original sense, re-creation, rebuilding the land and rebuilding man's sense of responsibility for the land.

Aldo, Carl, and Nina cover the front of the future shack with driftwood siding scrounged from the Wisconsin River, seen in the background. Just to the right of Nina's head is a river birch which is still alive today and is the largest river birch so far measured on the Leopold Memorial Reserve.

Aldo Leopold married Estella Bergere in 1914. Their five children in birth order are Starker, Luna, Carl, Nina, and Estella. The author is married to Nina.—Editor

The Shack today nestles into the setting created for it by the Leopold family and friends. In summer it is the gathering place for the Shack Seminars. It is also, winter and summer, the weekend gathering place for Leopold's grandchildren and great-grandchildren. Here they too meet wild things and participate in the continuing resurrection of the land.

The Shack is complete with door, windows, stove pipe, and a bunk-wing added to the left side. In a pinch it could sleep the whole Leopold family of seven plus any friends who got trapped in the new recreation works.

Today from nearly the same angle the Shack is almost lost in the planting. The bur oak in the foreground right grew from an acorn planted by the British ecologist Charles Elton, a friend of Aldo.

A brick chimney has replaced the original stove pipe visible in upper photograph on previous page. Young Estella and Pepper Jackson help Aldo add another layer of bricks to encourage a better draft for the smoking fireplace. To the left can be seen branches and leaves of a recently transplanted aspen emerging from behind the Shack.

Today the aspen has reached old age. Its top has started to die, but the pines, also planted behind the Shack, soar forty feet above the roof. The stratigraphy of the chimney records the repeated attempts to solve the smoking fireplace by adding height to the chimney. The fireplace still smokes.

Aldo Leopold is planting pines in the middle of his original entrance road. Why here? Let us guess from the photograph.

Behind him the road runs straight as an arrow due north from River Road (now known as Levee Road) to the Shack. Thus the road is much more closely related to a compass needle or the star Polaris than to the land it traverses. Straight roads tend to be dull because of their unrelatedness. Equally imaginative is the straight row of elms, spaced precisely 20 feet apart, that defines the west edge of the road.

A glance at the ground below the gate tells us that Leopold has already decided to replace the old road with his own gracefully curving driveway whose visual treasures are always just around the next bend. But the curved road decision appears to be Aldo's second thought, not his first thought. Beneath the left end of the upper rail in the gate can be seen a residual snow drift induced by a low line of willows planted by Leopold as the start of an east border for the original road. Perhaps then comes the revelation! Why attempt to beautify what is basically ugly? Hide the ugly under a grove of pines and build a driveway to display the pines, the prairie, and the Shack.

The lone elm to the left should be noted because its dead standing trunk has survived to the present. The rest of the elm row has gone to stubs, stumps, duff, and morel mushrooms.

Today pines dominate the entrance. The dead trunk of the lone elm, now propped up by live pine trunks, marks the west edge of the original entrance road, while a tall spray of willow trunks, visible through the left end of the gateway marks the east edge. These two markers and the scattering of morel mushrooms are the only reminder of a less lovely time and place.

This photograph looks northeast from the entrance gate across the quackgrass-sandbur flats that are today the Shack prairie. Aldo's curving entrance road is clearly in place.

Young Estella sits on the gate and watches her mother and father plant pines. The sandy track called River Road can barely be seen on the extreme right. The gnarled white oak across the fence from Mrs. Leopold is a remnant of presettlement times when oak-savanna was the normal ecotype here. Today that oak has the largest measured girth of any white oak on the Leopold Memorial Reserve.

This side of the white oak stands a straight young shagbark hickory. It too is alive today and considerably larger. Note carefully the small black oak sapling immediately to the right of the hickory. Black oak grows rapidly. Today it is almost as big as the hickory (see below). To the right and beyond the giant white oak is another sapling. Today it is a giant cottonwood crowding the widened River Road. If push comes to shove, which should yield, the cottonwood or the road?

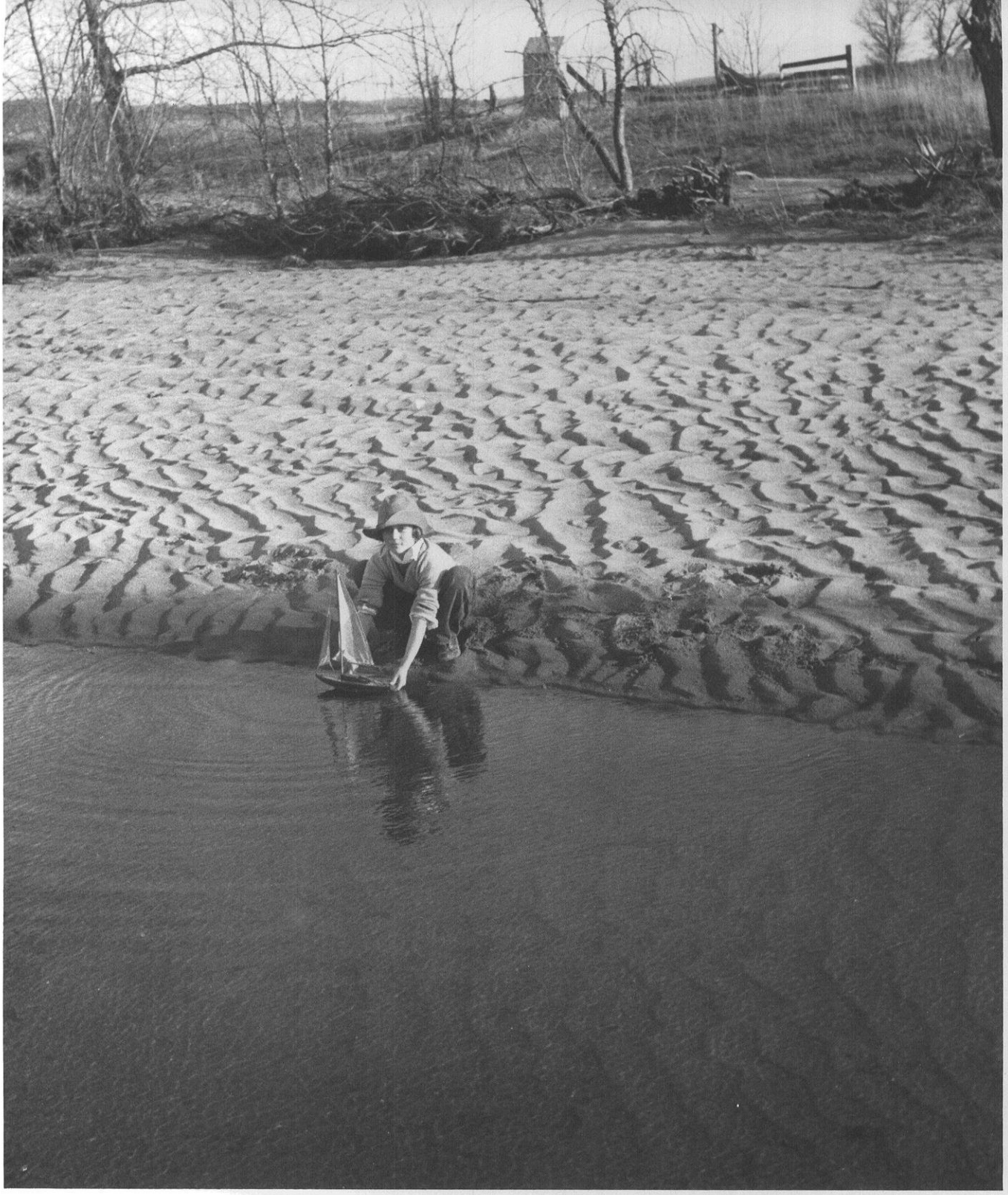
Nina looks critically at the pine plantings of forty-five years ago. They could stand more thinning—especially around the venerable oaks, hickory, and cottonwood.

In the field west of the Shack at the foot of the sand hill Mother Leopold plants another bucket of red pine. She does not know that these trees will become the log walls of the Bradley Study Center, headquarters for the research program on the Leopold Memorial Reserve. Young Estella follows to lend a hand. With the exception of the elm marked with an arrow all of the elms in the row now are gone.

Nina stacks brush and firewood where her mother planted pines. The field is now an orchard in a native prairie restoration. The arrow indicates the surviving elm stub rotting slowly away.

Mother Leopold, of Spanish descent, grew up in Santa Fe. This picture illustrates her adaptability to Wisconsin winters. She has just skied down the sloping River Road on the west side of the sand hill above the intersection with Chapman Lake Road. The skier at the top of the hill is son Carl. Left of Carl stands the tree featured in Chapter II of *A Sand County Almanac* entitled "Good Oak." The leaning tree is another ill-fated elm.

Nina stands where her mother stood half a century ago. The "good oak" stump has rotted away. The stub of the leaning elm is not quite hidden in the pines that now clothe the sand hill.
River Road itself has been widened and paved. The raw road cut at the crest of the rise has lowered the gradient. These newer features plus the berm left by the snowplow and the many tire tracks tell us that the settler's wagons have long gone and automobile is now king.



One hundred feet north of the Shack young Estella sails her sloop in an active slough of the Wisconsin River. Across the wide sandy beach and up near the crest of the rise is the building known to the Leopold family as "the Parthenon." The skyline of broken fences, weedy fields, and scrubby trees is presumably the former "landowner's portrait of himself."

Today the modern Parthenon (arrow) is discretely hidden in Leopold pines. The river, playing its own role in the change of scenery, has moved its channel farther north, leaving Estella's beach and marina to the forward march of prairie grasses.

It is summer again. Young Estella walks down River Road on the east side of the sand hill. The road is two narrow ruts in the sand left by wagons rolling west. Prior to that it was an Indian trail and prior to that probably a river edge game trail that attracted Indians. The brushy roadside probably results from nature's attempt to reclothe its nakedness after too much human activity.

Today Nina walks the modernized River Road now shaded from the hot summer sun by Leopold pines.

The wear and tear of settlers' wagons on the sandy substrate tended to make a shallow ditch of the early River Road. In spring or other times of flood the road became a drainage ditch and a threat to the few automobiles that dared travel it. The quiet, generous-minded Mr. Lewis who lived near here often hitched up his team of horses to help the unwary motorists.

At such times Leopold parked his car on County Trunk T and waded the two miles to his Shack for a weekend of recreation. Here we see him with his friend, Flick, returning at the end of the weekend to his waiting—and dry—vehicle. He has another mile to go.

Nina with her friend, Chaco, retraces, without rubber boots, her father's wet journey. Had this photo been taken on September 30, 1986 instead of July 30, 1987 she would probably have been wearing boots, for at that time even this elevated, new and improved version of River Road was under water as the result of an upstream decision to open the gates that control floods.

Believing that the human drama could not be understood apart from the physical setting, Leopold promoted the union of human history and natural history.

Aldo Leopold and the Biotic View of History

By Curt Meine

Aldo Leopold's effectiveness in his own time, and the endurance of his legacy into our own, can be attributed to the same causes: the unity of his thought, the grace of his writing, and an uncommon ability to translate ideas into action. This centennial celebration of his birth gives us the opportunity to consider the many fields in which he made contributions both revolutionary and lasting. In forestry, soil conservation, wildlife ecology and management, conservation administration, education, wilderness preservation, restoration ecology, environmental literature and philosophy, Leopold defined new aims and new methods, to the extent that one historian could, without undue exaggeration, label his career "perhaps the most distinguished . . . in twentieth-century conservation."

A common thread bound together Leopold's diverse activities. Permeating his work—so completely that it is often overlooked—was a view of history that is only now coming into broader circulation, a view that promises to yield insights far into the future. As we celebrate the many concrete accomplishments of Leopold, we might, too, consider this deep, clear wellspring of his efforts.

Beginning in the autumn of 1931 and extending into the following spring, Leopold conducted for the state of Iowa an extensive survey of wildlife conditions as part of an ambitious, twenty-five year conservation plan. The scope of Iowa's plan was unprecedented, and particularly noteworthy in view of the tough economic conditions of the time. Leopold's contribution to the plan was in itself remarkable: never before had he tried to apply in such detail over such a great geographical area his newly promulgated principles of game management. He opened his final report on the survey with these words:

> In studying the behavior of human populations—which we call history—we were once taught to memorize the names of kings and the dates of battles. He who could recite the longest list of such facts was accredited a scholar, who might one day be entrusted with some post in the prediction or control of population behavior—which we call sociology and politics.
>
> It is now apparent that such 'knowledge' gave no clue to the underlying forces which caused races to rise and empires to perish; that we were studying merely the froth on the surface of a swirling tide, the cause and direction of which remained unknown. The real task of the historian is to explain the tide; of the statesman to control it for beneficial ends.

It was a lesson learned the hard way in the cold Depression years of the early 1930s. Yet, even Leopold was as yet unable to comprehend fully the depth and power of those "swirling tides." His point in thus opening the Iowa report was to illustrate to his readers that animal populations were similarly subject to underlying forces that determined their status in the "economy of nature" and that those forces could be influenced so as to bring back the decimated game

ranges of Iowa. In the years shortly to follow, however, Leopold would come to realize that the forces flowing beneath human history and natural history were in fact part of the same great current of time's change.

This realization would revolutionize his thinking. Human history, in his mind, could no longer be considered in isolation, but had to be placed first and foremost in its natural context: the climate, soils, waters, plants, and animals that together formed what he once termed "the very fabric of our prosperity." A year after the Iowa survey in his landmark address, "The Conservation Ethic" Leopold summarized the point:

> A harmonious relation to land is more intricate, and of more consequence to civilization, than the historians of its progress seem to realize. Civilization is not, as they often assume, the enslavement of a stable and constant earth. It is a state of mutual and interdependent cooperation between human animals, other animals, plants and soils, which may be disrupted at any moment by the failure of any of them. . . . In short, the reaction of land to occupancy determines the nature and duration of civilization.

Historians, when they considered natural objects and natural systems at all, generally did so only peripherally. Now, as the science of ecology emerged, and the impact of mankind's technological prowess became clear, the study of history in its broadest context demanded that account be given of the dynamic interplay of man and land. The human drama could no longer be fully understood, or fully appreciated, apart from its physical setting.

Leopold had no shortage of examples with which to demonstrate his point. In fact, to as astute an observer of land as Leopold, every place was more than just a place; it was the latest expression in a very old, yet ongoing story. In one of his favorite metaphors, Leopold described land as a history book, the components of which constituted only the most recent page. To read it, one need only become literate in the ways of its plants and animals. In "The Conservation Ethic" he speculated on the process by which aboriginal Kentucky, "when subjected to the particular mixture of forces represented by the cow, plow, fire, and axe of the pioneer, became bluegrass." His own experience as a forester in the American Southwest had sensitized him to the delicate equilibrium inherent in that dry land; yet, "few people know anything about it. It is not discussed at polite tea-tables of go-getting luncheon clubs, but only in the arid halls of science." As a teacher, Leopold challenged his students to unravel for themselves the mysteries in their backyards:

> We are driving down a country road in northern Missouri. Here is a farmstead. Look at the trees in the yard and the soil in the field and tell us whether the original settler carved his farm out of prairie or woods. Did he eat prairie chicken or wild turkey for his Thanksgiving? What plants grew here originally which do not grow here now? Why did they disappear? What did the prairie plants have to do with creating the corn-yielding capacity of this soil? Why does this soil erode now but not then?

In this manner, history became not the record of a buried past, but the prelude to the living world of the day, necessary to any reasonable discussion of current issues, vital to the true progress of understanding. Leopold's contribution came in his extension of that discussion to include the nonhuman components of the system. Just as his land ethic appealed for a broadened definition of "community" that would admit those components, so did his historical perspective call for a more inclusive, ecological view of the community through time. The theory of evolution, of course, described such a change over geological time. Standard human history recorded, in passing, the subjugation of the community over historical time. Now Leopold was seeking out an approach that might harmonize the two. Conservation needed such an approach to strengthen its foundations. History needed such an approach to remain relevant.

A biotic view of history was necessarily interdisciplinary in its approach, integrating the wisdom of fields ranging from anthropology to zoology. For this reason, this kind of history could not be fully developed until the separate disciplines had themselves attained a certain degree of maturity. In retrospect, we can see that Leopold was in many respects the right man at the right time to advance this new perspective. Although his formal training was in forestry, not history, he had the restless curiosity that no competent historian can do without. His intuitive grasp of ecological analysis gave him a step-up on a science which was only then putting its own pieces together. His progressive tendencies, stubborn individualism, and capacity for self-criticism kept him free of the constraints of ideology. The instability of the Depression years both confirmed and further stimulated his dedication to the task of reconciling social change with environmental change. By the late 1930s, he deemed the revelations of ecology to be so important that, increasingly, he turned his considerable communications skills over to the task of explaining ecology to the layman and to society's leaders. This would result, he hoped, in a wiser citizenry, as well as "better advice from economists and philosophers." Unless such a view of land and its history took root, he felt, all our attempts to understand historical processes would be incomplete, and all our efforts to correct land abuse ineffective.

Leopold's emphasis on the ecological aspects of history was particularly important in his defense of wilderness areas. Although Leopold had been known since the early 1920s as a national leader in the struggle to preserve wilderness, it was not until the 1930s that he began to argue for wilderness on ecological grounds. The lesson of the Dust Bowl, and of other contemporary environmental disasters, was that wilderness was not only worth keeping for its scenic and recre-

ational values, but for its scientific value. During these years, Leopold keyed in on the concept of "land health": the capacity of natural systems and their component parts to regulate and regenerate themselves. Too often, the process of settlement disrupted this capacity. Wilderness, conversely, provided a "base datum of normality" for those who sought to understand the human impact on plant and animal communities. Historian William Cronon, in his ground-breaking study of ecological change in New England *Changes in the Land* (1983), writes, "When one asks how much an ecosystem has been changed by human influence, the inevitable next question must be: 'changed in relation to what?'" There are, as Cronon points out, no simple answers to that question. But a full, living area of wild land, where natural change may occur with minimal distortion, is a good place to begin the search.

By the end of his life, Leopold placed high value on this special quality of wilderness; it was "the raw material out of which man has hammered the artifact called civilization." For those whose view of history placed little value on the actions of the nonhuman players, wilderness was irrelevant. For those who began to see cultural change "embedded" (to use Cronon's word) within ecological change, wilderness was necessary. The last word Leopold wrote on wilderness made the point:

> Ability to see the cultural value of wilderness boils down, in the last analysis, to a question of intellectual humility. The shallow-minded modern who has lost his rootage in the land assumes that he has already discovered what is important; it is such who prate of empires, political or economic, that will last a thousand years. It is only the scholar who appreciates that all history consists of successive excursions from a single starting-point, to which man returns again and again to organize yet another search for a durable scale of values. It is only the scholar who understands why the raw wilderness gives definition and meaning to the human enterprise.

Leopold was not the first, nor the only one, to appreciate the value of a biotic view of history. Historians of ancient cultures, for example, recognized the important role of agricultural systems in understanding the rise and fall of those cultures. But modern times made the need for such analysis and synthesis imperative. George Perkins Marsh, in his 1864 classic *Man and Nature*, anticipated this need, providing in the process impetus for the conservation revolution that was to follow. Such contemporaries of Leopold as geographer Carl O. Sauer and historian James Malin, among others, also bridged the disciplinary gaps. Now in the aftermath of the environmental movement of the 1960s and 1970s, a core of solid ecological histories has begun to form and promises to expand as the need and interest increases.

There are limits to this kind of inquiry. It cannot and will not replace the detailed investigations of human lives and institutions that more conventional history offers. In fact, it depends upon these for its intellectual rigor. And, no doubt, it will generate its share of bad history as well as good. At its best, however, it may allow us a new range of insights and a view of our *becoming* that is less hindered by our species' pride and more thoughtful about the future of humanity's impact on the natural environment.

One evening, early in November 1935, Aldo Leopold sat alone in a hotel room in Berlin, Germany, and jotted down some notes to himself. He was nearing the end of a three-month investigation of the forests and wildlife of Germany and Czechoslovakia, and on the back of a sheet of hotel stationery he began to write an essay bearing the tentative title "Wilderness." It was a topic much on his mind during his travels.

He never completed the essay. He managed to write three short paragraphs that evening, but never even got around to mentioning the title subject. Yet, his experiences in Germany had stimulated him to consider the broad questions of conservation's intent and the potential impact of the still-new science of ecology. His final paragraph read:

> One of the anomalies of modern ecology is that it is the creation of two groups each of which seems barely aware of the existence of the other. The one studies the human community as if it were a separate entity, and calls its findings sociology, economics, and history. The other studies the plant and animal community, [and] comfortably relegates the hodge-podge of politics to "the liberal arts." The inevitable fusion of these two lines of thought will, perhaps, constitute the outstanding advance of the present century.

A bold prediction, indeed! Especially for Leopold, whose meticulous mind yielded such sweeping statements only cautiously. In a century witness to unimagined technical and intellectual achievements, such a "fusion" of thought as Leopold predicted seems hopelessly quaint.

There is a power in his statement, however, and it lies in Leopold's all-but-unconscious grasp of the connection between human freedom and the human environment. Our freedom rests on an enlightened understanding of underlying forces. Those forces, we now know, are both social and natural in their origins, and unless reconciled can only work against one another. "The question is" Leopold wrote, "does the educated citizen know he is only a cog in an ecological mechanism? That if he will work with that mechanism his mental wealth and his material wealth can expand indefinitely? But that if he refuses to work with it, it will ultimately grind him to dust? If education does not teach us these things, then what is education for?"

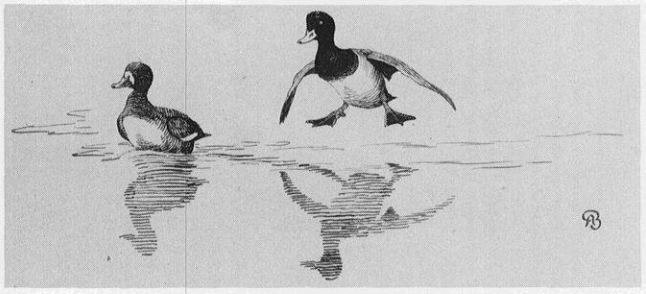
These, for Leopold, were the lessons history taught and the questions it begged. ■

We asked Fran Hamerstrom about Leopold's personal and professional influence on her. We also asked what the Hamerstroms considered their finest professional achievements. Here is her answer.

Leopold's Influence

By Frances Hamerstrom

Fig. 1 Ducks by Allan Brooks (frontispiece of *Game Management*. Used by permission of Charles Scribner's Sons.



The measurement of Aldo Leopold's impact on the present is fraught with enormous difficulties—and for a scientist, it is lacking in tools. I shall touch on four aspects: the poetic approach, powerful writing, wildlife management, and pure science.

Long ago, when I was a graduate student, I quoted a line of poetry to Aldo. He gave me a quick look and said, "So you know Rossetti too." Something sad had just happened, and I had tried to give comfort by saying, "The woodspurge has a cup of three." If I have failed to find the right quotation, it does not matter. What matters is that in that quick moment I learned that Aldo did not scorn poetry, and from that day forth my writing was to include the music and the sound of words.

His influence on me and our shared delight in dawn light and in poetry profoundly altered my attitudes, particularly when I wrote *Walk When the Moon Is Full*—a book for children—published in this country by Crossing Press (1975) and in Japan by Kaisei-sha (1978). As a result of that book, senior citizens have gone wading at night, and thousands of Japanese children have had their appreciation of the night and its creatures enhanced. It is unlikely that Leopold expected his influence to extend to Japanese children, and he probably never heard the odd euphemism "senior citizen." In just such ways has his magnetism spread.

Leopold selected his illustrators for what I like to call poetic realism. Examples are Allan Brooks, (figure 1) who illustrated *Game Management* (New York: Charles Scribner's Sons, 1933; Madison: The University of Wisconsin Press, 1986); Charles W. Schwartz, who illustrated *A Sand County Almanac* (New York: Oxford University Press, 1949); and H. Albert Hochbaum, whose illustrations Leopold enormously admired. And so, in the same mood, I selected Robert Katona to illustrate *Walk When the Moon Is Full* (figure 2).

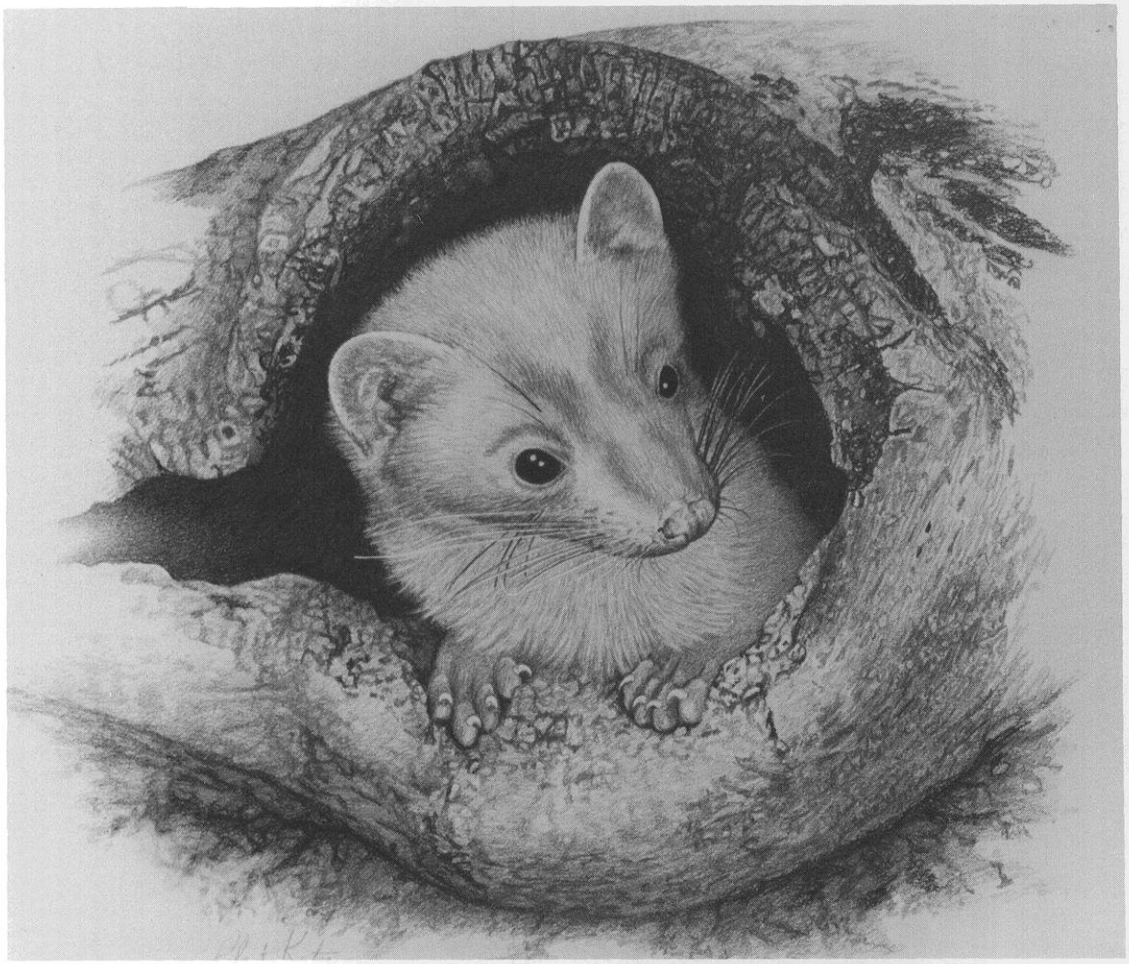
Others who have illustrated books for me in this vein are Deann De La Ronde, Elva Hamerstrom Paulson, Jonathan Wilde, and Donald Malik. Jack Oar, at my request, illustrated *Birding With a Purpose* (Ames: Iowa State University Press, 1984) in an almost cartoon style. It is my rowdiest book, and I felt that I was veering away from Aldo—that is, until I recently read about his youth. So much for the poetic approach.

Leopold was a powerful writer, and he has influenced my husband Frederick and me there, too. I looked through our bibliographies and found just what I wanted—an article called "Not on the Far Side of the Earth" published in the *Wisconsin Academy Review* (Vol. 16, No. 4, 1970, pages 33–34). It was supposedly written by F. and F. Hamerstrom, but Frederick wrote it. I will quote from it:

> But the real problem is not too many plows, cows, and machines. These are only symptoms. It is too many people—too many people demanding too much of an ecosystem which has finite and inviolable limits to what it can deliver . . . The human capacity to reproduce is greater than the capacity of our environment to meet our demands.
>
> In short, the greatest challenge today is to bring our population into harmony with the environment. Our current ecologically unrealistic demands for "progress," ever-expanding markets, and increasingly high standards of living have already brought us close to the point of no return. We still have a little time and a little choice, perhaps, but our present course is quite certainly self-destructive if unchanged. The first and all-important step is to curb our cancerous proliferation of people. The goal is zero population growth.
>
> Not on the far side of the earth; here, and starting now.

Nongame management is rather a new field. Not long ago we encountered a young nongame biologist who said, "Game management is just for hunters" and he lifted his lily-pure head to look down his nose at us. With gentle persistence, Frederick pointed out to him that essentially all the techniques used by nongame biologists were first developed by game managers. Leopold spearheaded the move in this direction

Fig. 2 Weasel by Robert Katona (from *Walk When the Moon Is Full*). Used by permission of Crossing Press, 22D Roache Rd., Freedom CA 95019.



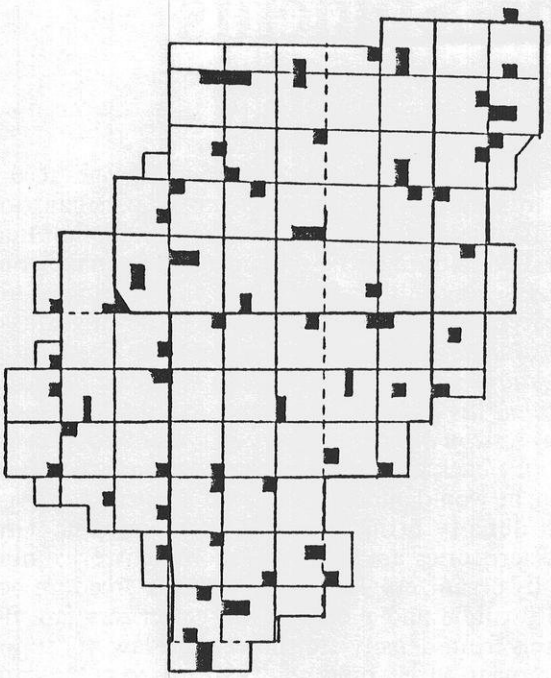


Fig. 3a Scatter pattern for infiltrating a large area with a desired species.

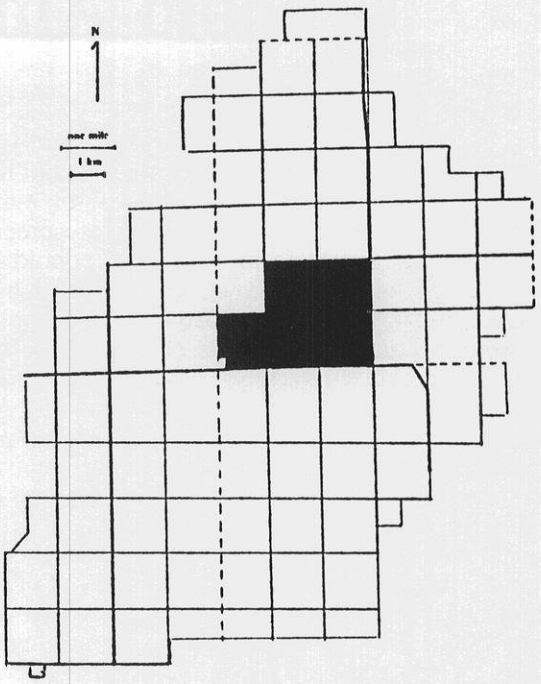


Fig. 3b Blocking, *with the same number of acres*, does not permit the species to infiltrate the whole area.

when he changed the name of his University of Wisconsin department from game management to wildlife management (now department of wildlife ecology). Leopold, who was much interested in falconry, helped lay the path for the first book on quite a new subject, management of raptors, of which Frederick was chief editor (Management of Raptors. Proceedings of the Conference of Raptor Conservation Techniques, 1973, part 4, F. N. Hamerstrom, Jr., Bryon E. Harrell, and Richard R. Olendorff, eds. Raptor Research Report 2, 1974). Just as Leopold's attitude toward predation changed from 'control' (get rid of them) to respect, so did ours, and this changed us from hawk shooters to biologists involved in 'management' (save or increase them). The current crop of recovery plans for endangered species are quintessential wildlife management—management not just to permit enjoyment of a species, but management to save from extinction.

Leopold saw the need for setting aside land for wildlife. This was often done in big blocks, such as Wisconsin's Horicon Marsh. Perhaps Frederick's greatest contribution to management was to recognize that this was not the only, nor always the best, way. Blocking (i.e., large areas set aside) can be an administrative luxury. He recognized, as Leopold did, that no species uses all the parts of its range. So why buy them all? Why not buy a scatter pattern—just the parts that need special attention? (figures 3a, 3b) This concept has saved the prairie chicken in Wisconsin, and every spring the melodious sound of their booming rolls across meadows and marshes.

Pure science is often the forerunner of practical management. Perhaps what I deem my major scientific breakthrough will lead to understanding of more than one species. Leopold was perennially intrigued by population fluctuations of birds and mammals. His descriptions of carrying capacity—the ability of the land to support a given number of individuals—and saturation point—how crowded members of a species can be without getting into trouble—are classically simple (*Game Management*, pp. 50–56). And now, these many years later, I have discovered that it is a food, namely a *mouse*, also known as a vole (*Microtus pennsylvanicus*) that regulates the populations of northern harriers (*Circus cyaneus*). I wish that Aldo could have read my latest book, *Harrier, Hawk of the Marshes—the Hawk That Is Ruled by a Mouse* (Washington, D.C.: Smithsonian Institution Press, 1986). I can imagine him leaning forward as he reads:

> On my 50,000 acre study area, more harriers nest when voles are abundant. Furthermore, when voles are abundant old males tend to indulge in polygyny and take on more mates. And *besides*, when voles are reasonable abundant, and only then, do young males breed—males so young that they are still in immature plumage.

I can imagine him saying, *Why, Fran, how long did it take you to find this out?*

Twenty-five years.

And then he would say, *I have a question . . .*

It is the question I'll never hear.■

Leopold Among the Students

By Gretchen H. Schoff

In the timeless world of after-death, it is not likely that spirits manifest much interest in matters diurnal and ephemeral. Yet these are precisely the things which occupied Aldo Leopold's attention—deep rooted oaks, dawn light, Silphium by the roadside. And if, after nearly forty years, Leopold as shade were to return to old haunts, choosing once again to poke about the University of Wisconsin-Madison campus, he would be amazed.

Rambler and observer that he was, he would probably notice first the loss of vistas and of green and living things. The elm cathedral that once arched over Langdon Street, vanished; Bascom Woods cut into by the social scientists; Indian mounds hemmed by roads and sidewalks. If he sought out the shoreline of Lake Mendota near the Union, he would find a nine-story undergraduate library whose acronym, among students, is UGLI. And hard by, in the library tower, the professors of philosophy and literature camp out. They have found it possible to arrive at this tower by car, creeping into a subterranean parking lot, from whence they can be transported by elevator to their work. There, in cement block and sometimes windowless rooms, untouched by wind or rain or natural sunlight, they may write their lectures on Nature.

At every turn, Leopold would find "progress": forty-four thousand students instead of eight or ten thousand; ten libraries instead of one; laboratories where the limited, naked eye can stretch its range by electron microscope to plumb the depths of the cell. Should the shade of Leopold begin to feel claustrophobic, it might flee for what, in his day, were the edges and margins of the campus, the fields and marshes along Willow Drive. Here too, all's changed. The great phallic WARF building cuts the horizon, a parking lot and hundreds of cars sit where muskrat and geese rode the waters, and in the distance, a hospital looms, so huge that doctor and patient sometimes lose each other and medical students call it Hospital Galactica.

For the thoughtful, nostalgia eventually gives way to a search for understanding the past. "Doing history" Leopold called it when he turned sawyer and his blade cut through the rings of a fallen oak. He read in the layers of his tree the transect of a century and laid out, in a few brief pages, the natural history of a hundred years. This small essay tells more of changes in land, waters, and people than many a historical tome. Sentence piles on sentence, detail upon detail. Nineteen hundred ten—a university president writes a book on conservation, a sawfly epidemic kills millions of tamaracks, a dredge drains Horicon Marsh. Nineteen hundred nine—smelt are planted in the great lakes and, because the summer is wet, the legislature cuts forest-fire appropriations.

This is history writ large, recorded by one accustomed to nature's dynamism and to its penchant for taking its time. Historian and master of metaphor that he was, Leopold might be moved again to make connections, seeing in the altered face and bearing of his university a new allegory. *Could it be* he might ask, *that this jungle of brick and concrete temples to learning, this urge to tidy up the weed patch and pave the mud puddle are the signs of a climax community, some final expression of the mentality of unchecked growth?* Able to flit back and forth in time, as shades supposedly can, he would understand how it happened. Moves toward density bring "violent conversions." Uncharted territories are chopped into patchworks, nibbled at by organizers. In such conditions, freedom begins to dwindle and pioneers and colonizers fare ill. "All gains from density are subject to a law of diminishing returns." He would not be surprised at the density of our times, though the depths of its entrenchment might give him pause.

Once Leopold had grasped the lay of the land, he would probably be curious to find out what education is up to these days. He would go in search of teachers and students. Had he been lurking near my desk three weeks ago, I think he might have been interested in what was on my mind.

I had just ordered eighty-five copies of *A Sand County Almanac* for my fall class when I decided to housecleanmy files. There it was—a syllabus from 1972, and on its list of required readings, *Sand County Almanac.* Those who teach, and Leopold was one of our ranks, know that throwing out the old, adding the new are vital to the teaching craft, two or three years being the half-life for most courses before ideas begin to yellow and grow stale.

"Why" I was asking myself, "from all the books that I might choose does *Sand County* continue to make the final cut every year?" That Leopold wrote of Wisconsin was not an answer; a dozen others could have been chosen for local color. Somehow this slim book resisted obsolescence or the ins-and-outs of literary fashion. (Does anyone teach Rachel Carson anymore?) Leopold's book metamorphosed with the years, changing with the times so that the lectures I had written thirteen years before bore scant resemblance to those I was planning today.

I also knew, from listening to my students, that the book still "worked." Read in the first years after its publication by a relatively small inner circle of the environmentally aware, *Sand County* had passed through printing after printing, throwing its net wider, until now it was a landmark and one of the centerpieces of the environmental canon.

"Tell me of what plant birthday a man takes notice, and I shall tell you a good deal about his vocation, his hobbies, his hay fever, and the general level of his ecological education." If Leopold were to question students today about plant birthdays, would they give better answers than the students of forty years ago? What would Leopold urge his graduate students to work on today? Would his own dream of a land ethic take on a new, harder outline when he saw the burgeoning millions of the earth's dispossessed?

I would ask him these questions, and as he answered, I would listen and watch. I would watch his body, the look in his eye, checking for the weather that surrounded the man. The living presence of the writer behind the pen had changed forever my ideas of Frost and Bellow. After I had felt their "weather" their poems and novels took on a different cast for me. I have often wished for the same revelation about Leopold, an impossible wish given his early death and my youth at the time. I have had to be satisfied with guesses and with close attention to his words.

Those who did know Leopold in the flesh are beginning now to disappear . . . his wife and one of his children dead, colleagues retiring or gone, his own graduate students graying and growing venerable. Today, another crop of graduate students is at work, one of them writing Leopold's biography. Week after week, through painstaking research, Curt Meine pieced together the life from Leopold's papers and correspondence, from conversations with those who knew Leopold, from travels to places where Leopold lived and worked. He discovered early the pitfall that awaits the biographer—each person who knew Leopold knew but a part. When the young writer completed a chapter on Leopold's boyhood and youth, its contents turned out to be a revelation to Leopold's own children. Wisconsinites who thought they knew him well find, in the chapters on the West, that they had scant knowledge of what he was before he was ours.

Writing biography is a daunting business and the young biographer is sobered. "I stand in front of that wall of books and papers and think—here is a whole life, birth certificate to death certificate. How can I describe the feeling that comes over me?" The biography project is just in time to catch the hem of the garment, making what it can of the images conjured by those who remember such things as his work habits, his favorite hat, and his eyes as blue as sky. The project is just in time, too, to prevent idol-making. Too much distance between biographer and subject produced too many sentences which begin, "It is probable that. . . ." Biographers learn much from those who have shared bread, borne reproaches, and seen the feet of clay of the subject at hand. These are the correctives biographers need to keep nonsense to a minimum.

In another forty years, those who knew Leopold will be gone and the work will stand for the man entire. Assessments of his ethic and his economics will go on, the way he did science will be replicated. But the work that will touch hearts and change minds will be *Sand County*.

With this development, I think Leopold would be pleased, perhaps even feel vindicated. Leopold was a scientist, but he chose to invest his most precious coinage in his essays. Because he had the scientist's respect for "cold potato mathematics" his flights of imagination were grounded in scientific truth. His woodcock performs for his lady on the dance floor, but does so in an atmosphere that is "romantic light" at precisely 0.05 foot candles. Leopold counted geese for half a dozen years before he felt free to call them "bereaved survivors."

In brief, he was most fundamentally a poet and his real metier was the word. As Wallace Stevens has so powerfully put it, the true poet casts his final vote with "flawed words and stubborn sounds." The file copies of Leopold's manuscripts tell the story. From first version to last and polished version, one can see the word-squeezer at work. The perfect cadence comes from long, hard practice. After many tries and scratchings-out, the right word is finally found, and when it is—the sentence that lay lightless suddenly turns incandescent.

What has happened to *A Sand County Almanac*, a book he never saw in its present form, would amaze Leopold most of all. He would find it everywhere: slick gift editions, lavishly illustrated and priced for the affluent, coffee table models for the pretentious, thumbed and worn copies on professors' bookshelves, the book pulled from the row for sanity's sake when academe turns sour. But at Paul's used book shop, seldom a copy. Students may be more cynical and skeptical than they were in Leopold's day, but they are not stupid. Walk into Paul's on any day and you can buy Stendahls by the dozen; "dry" John Dryden can be bought by the pound. All the while, copies of *Sand County* are going camping and canoeing, or riding about the campus in backpacks and bike bags. "Trade in the botany text, but hang onto your Leopold." Students know a keeper when they see one.

When the autumn sun fades, stillness creeps over the Union terrace chairs, empty except for summer echoes. At the end of a day of return, Leopold's shade might float along the yellow-lit windows of the Rathskeller, with its smoke and beer and punk rock, only to turn and flit toward the edge of the lake. There, on the pier and along rocky ledges, kindred spirits sit, those who at the end of a day drift toward open horizons. They come to watch the sky ink over.

"Not a bad idea. Find open country where you can." This advocate of fugitive shuttling from campus to country learned more than Biblical phrasing from the old texts. Go into the desert, take time by the waters. The hours of work and the crowds will then be bearable.

Hopes might rise, slim as a fingernail moon, at the thought that some had heard his message: Learn all you can, including when to forbear. Great possessions are like starlight—flickering, odd, and spare, they will not yield to the probing material finger. ■

Silphium, the Prairie

What a thousand acres of Silphiums looked like when they tickled the bellies of the buffalo is a question never again to be answered, and perhaps not even asked.
Aldo Leopold, *A Sand County Almanac*

Silphium, the prairie
sunflower, once grazed
in the wind, a herd of color

horizon gold, while the browns
of the buffalo swayed and rolled
undulating sky.

We have flattened both
the color and the herd:
concrete and cornfields now

wash over the old ranges
of others. As with the shark
survival comes down to the single-

mindedness of hunger
and the strength of the jaw, and we conquered
the prairie with clenched resolve.

Whatever conquers us
may they say their blessings also
before they eat; may they ask something

of corn bread and computer;
may they hold their breath
when the thunder buffaloes.

Victoria Ford

Impressions of Aldo Leopold: A Student's View

By James H. Zimmerman

Among several influential teachers, Aldo Leopold changed my life the most. Leopold not only broadened my interests from botany to wildlife and ecology, he instilled in me a missionary drive to encourage others to involve themselves in the planetary ecosystem, for pleasure and profession.

Through an accident of scheduling I found myself, a naive University of Wisconsin sophomore, in Leopold's challenging wildlife ecology class during the last year he taught the course entirely by himself. (The popularity of the class required teaching assistants thereafter.) That was spring 1944. The contagiousness of his diverse interests soon spurred me to explore two fields that I have pursued all my life: phenological observations (the annual timing of natural events) and the behavior of animals, especially birds. Leopold always was eager to learn, and these were new fields both for him and for science in general. I became a keen observer of nature, with Leopold, who took great pleasure in this pursuit, as my role model. Leopold enjoyed planting such "seeds"; when he observed my mother stop one day and look up when a cardinal sang overhead in a tree, he had to tell me about it. He found satisfaction in the thought that my new interests had rubbed off on her.

Underneath Leopold's charismatic charm—a quiet, thoughtful manner, lightened at the right moment by a sparking eye and an amusing observation—was the great depth of both his commitment to scholarship and his understanding of nature and people. With boyish enthusiasm he had to share each new discovery of fact or interpretation with his class or anyone who was nearby. But that was only the tip of the iceberg. Leopold had a tremendous compulsion to figure things out. Botanist Norman Carter Fassett once described Leopold's mind as one whose gears would be set to grind relentlessly away by each new piece of information. When Leopold found a place where the new puzzle piece fit into his evolving scheme of things, he would brighten and, with obvious excitement, try out his explanation on others.

I believe it was his joy of exploration, combined with an addiction to thinking about a topic until he had delved into its every meaning, that enabled Leopold to excel at many things, from teaching to research to writing. In each phase of his life he built upon the old and polished a new facet of his personality: the hunter, the forester, the family man, the game manager, the administrator, the board member, the naturalist, the writer, the conservationist, the investigator of new fields of study, and the philosopher. Each was a transformation into something even more complex and beautiful, always with new opportunities beckoning. These transformations were as much an inspiration to others as were his joy of discovery and compulsion to figure things out.

But by no means was his teaching merely a setting of example. He cared about people deeply. One of his most conscientious pursuits was the cultivation of his audience—his students, and later his readers—as if they were his garden and his own children. Before class he carefully thought out a question to ask each student, tailoring it so the individual could both handle it from his or her experience and level of understanding and grow in the course of answering it. Leopold had each student in for a personal conference in which, to put the student at ease, he would start by asking for advice on something he was working on. A student who cared was cultivated further.

When I hung around, fascinated by Leopold and his work, he graciously invited me to attend his delightfully informal yet very serious graduate seminars. I did so faithfully. I became a part of the group that met evenings upstairs in the old King House and munched apples while pondering wildlife research and management presentations by students and agency people. Leopold believed managers and researchers must be brought together to overcome the isolation and animosity that can breed from specialization. After he died, the two camps never again met regularly on campus.

Leopold's gift was, I believe, a special spark of kinship made up of intellectual and emotional enthusiasm for all things, including people. Like a skilled campfire builder, he would fan each person's spark into flame. His presence, whether in person or in writing, worked a spell, quietly and unobtrusively, that grew and grew over time. My first boss, Paul J. Olson, admits to being inspired to become an active conservationist and the architect of Madison's outdoor education program by merely reading *A Sand County Almanac.* By working with Olson, I received a double dose of the Leopold magic. As a matter of fact, I actually received a triple dose, for I learned botany from Fassett who, as an early associate of Leopold in Wisconsin, may have nursed the spark of Leopold's conservation ethic. Many critics debate Leopold's effectiveness in his time and the integrity of his conservation philosophy. I prefer to see him as highly successful in inspiring others to become involved in environmental issues—a great achievement. Leopold's friendship, philosophy, and ethic have influenced my entire career.

In my attic I recently found forgotten notes scrawled in 1936 when, as a kid, I had been taken to a lecture series taught by geologist Trewartha, botanist Fassett, and wildlife expert Leopold. All of the ecological principles and conservation concepts were there—ideas I thought I had picked up much later. In retrospect, it seems clear that the infectious spark of Leopold's caring had set my life course way back when I was the tender age of twelve!

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Leopold's Life: A Synopsis

The early years 1887–1909

- Born and raised in Burlington, Iowa. Developed a love for hunting, exploring natural areas, and reading books about natural history
- Received a Master of Science degree from Yale University's School of Forestry

The forest service years 1909–1924

- Employed by the newly established U.S. Forest Service as a forest assistant in the Arizona and New Mexico territories
- Married Estella Bergere, whom he met in New Mexico, and eventually had five children
- Appointed to supervise the Carson National Forest in the newly created state of New Mexico
- Met with sportsmen and others interested in forming organizations for local game protection, in response to increased human pressures on wildlife in the Southwest
- Wrote numerous articles for professional journals asking for stricter federal regulations in game management, as yet an undeveloped field
- Urged erosion control in national forests
- Wrote the article "The Wilderness and Its Place in Forest Recreational Policy" as a rationale for setting aside wilderness areas based on their recreational value
- Served as the Forest Service's chief of operations in Arizona and New Mexico
- Helped to establish the Gila Wilderness Area in New Mexico, the first land to be set aside in the National Forest Wilderness system—forty years before the Wilderness Act

The Wisconsin years 1924–1948

- Served as associate director of the U.S. Forest Products Laboratory in Madison, Wisconsin
- Worked as game consultant for the Sporting Arms and Ammunition Manufacturers' Institute
- As a game consultant, conducted a study of wildlife of the Midwest, resulting in publication of his "Report on a Game Survey of the North Central States"
- Awarded the Outdoor Life medal for his game survey, credited as the first and most intensive study of game populations in the country
- Served on the council of the Society of American Foresters
- Helped to write the first game policy for the United States
- Appointed to President Franklin D. Roosevelt's Committee on Wildlife Restoration
- Wrote and published *Game Management*, establishing the guidelines for this new field of study
- Appointed chairman of the newly created Department of Game Management at the University of Wisconsin-Madison, the first such department in the country
- Purchased an abandoned, worn-out farm along the Wisconsin River in southcentral Wisconsin; spent much time there with his family, staying in an old shed; did plantings, encouraged wildlife, and helped restore the land to a healthier condition; observed and wrote intensively about the flow of life on this land, as recorded in his book *A Sand County Almanac*
- Helped found the Wilderness Society to help preserve primitive areas served on the council and as president
- Served as associate editor of the *Journal of Forestry*
- Served on the board of directors of the National Audubon Society
- Served as vice president of the American Forestry Association
- Helped found the Wildlife Society and later served as president
- Served as a member of the Wisconsin Conservation Commission
- Recognized the problems of an expanding deer population and recommended the harvest of both bucks and does, for the protection of both the forests and the deer population
- Served as a member and president of the Ecological Society
- Served as an advisor on conservation to the United Nations
- Died while helping to fight a fire on a neighbor's farm
- Posthumous publication of his book, *A Sand County Almanac*, and a collection of his essays and journals as the book *Round River*

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Leopold Resources

Compiled by Anne Hallowell, Dee Ferver, and Gary Laib

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Meine, Curt. *Aldo Leopold: His Life and Work.* Madison: The University of Wisconsin Press, 1988.

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--. "Leopold Helped Set Course of Modern Conservation." *Wisconsin Conservation Bulletin*, Vol. 19, No. 12, Dec. 1954.

--. "Leopold Urged Incentives for Game Management." *Wisconsin Conservation Bulletin*, Vol. 25, No. 6, June 1960.

--. "The Leopolds: A Family of Naturalists." *Science*, Vol. 207, March 7, 1980.

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Gibbons, Boyd. "Aldo Leopold: A Durable Scale of Values." *National Geographic*, Vol. 160, No. 5, Nov. 1981.

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Hively, Kay. "The Wit and Wisdom of Aldo Leopold." *Water, Woods and Wildlife*, Nov. 1978.

Isherwood, Justin. "Leopold Land." *Wisconsin Trails*, Autumn 1977.

Leopold, Aldo. "Allegory." *Wisconsin Natural Resources*, Vol. 1, No. 1, Jan./Feb. 1977.

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Ribbens, Dennis. "A Sand County Almanac: The Making of a Title." *Wisconsin Academy Review*, Vol. 28, No. 4, Sept. 1982.

Schoenfeld, Clay. "An Aldo Leopold Album." *Wisconsin Academy Review*, Vol. 28, No. 4, Sept. 1982.

Schoenfeld, Clay. "Aldo Leopold Remembered." *Audubon*, May 1978.
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Wild, Peter. "And the Green Fire Died." *Outdoor America*, Sept./Oct. 1979.
Wild, Peter. "Thinking Like a Mountain." *Wisconsin Natural Resources*, Vol. 4, No. 2, March/April 1980.

Newspaper articles

The following newspapers have carried articles about Aldo Leopold: Madison *Capital Times*, *The Milwaukee Journal*, *Portage Daily Register*, Madison *Wisconsin State Journal*. Contact the newspaper or your local library for an index to back issues.

Tapes

Hickey, Joseph. A presentation to the Poynette High School Conservation class. Jan. 23, 1985. Available from: Gary Laib, Rt. 2, Box 219, Poynette, WI 53955.

McCabe, Robert and Curt Meine. "Remembering Aldo Leopold." An interview and reading. Jan. 9, 1987. WHA Radio, 821 University Ave., Madison, WI 53706. Attn. Ev Lohrei.

Swift, Ernie. A short segment on Leopold in a tape dealing with Swift's activities as a game warden. State Historical Society, Visual and Sound Archives, 816 State St., Madison, WI 53706. Attn. Myrna Williamson.

Voegli, Jim. A radio documentary view of Aldo Leopold through the eyes of those who knew him best. Available from: Jim Voegli, 903 Swarthmore Ct., Madison, WI 53705; State Historical Society, Visual and Sound Archives, 816 State St., Madison, WI 53706. Attn. Myrna Williamson.

Audio-visual materials

Aldo Leopold, A Prophet for Time. Video. Contact: Milwaukee Audubon Society, 12259 Underwood Pkwy., Wauwatosa, WI 53226, 414–453–5640.

Built on Honor to Endure: Evolution of a Leopold Family Philosophy. Slide program. Presented by Leopold specialist Sharon Kaufman, Clinton County Conservation Board, Environmental Education Program, P.O. Box 161, Grand Mound, IA 52751, 319–847–7202.

The following two films are available from: Centre Publications, Inc., 1800 30th St., Suite 207, Boulder, CO 80301.

Aldo Leopold: His Life and Thought. 27 min. This biography of Leopold, "The Father of Ecology" shows how his ideas developed over his lifetime through observation and experience. The film is a visually beautiful introduction to Leopold's life and the meaning of ecology. Cost: 16 mm purchase $525; video purchase $299; rental $50.

Aldo Leopold: A Sand County Almanac. 29 min. This film is a dramatic recreation of the environment that inspired the writing of *A Sand County Almanac*, Leopold's collection of beautiful nature sketches and philosophical essays on ecology and ethics. Cost: 16 mm purchase $525.00; video purchase $299.00; rental $50.00.

The following three films are available from: University of Wisconsin, Bureau of Audiovisual Instruction, P.O. Box 2093, Madison, WI 53715, in Wisconsin call toll-free 1–800–362–6888.

A Prophet for All Seasons: Leopold. 60 min. This film gives a biographical outline of Leopold's life and an explanation of his "land ethic"—his philosophy for a new era of living in balance with the rest of nature. The film contains scenic footage of the countryside he loved and traces seasonal changes near Leopold's cabin in central Wisconsin. Cost: 16mm rental $20.00/week. Film #9871.

Sand County Almanac. 16 min. Presents the writings and ecological ideas of Aldo Leopold with special emphasis on his sand county farm in Wisconsin. Cost: 16 mm rental $16.50/5 days. Film #4106.

Sand County Revisited. 16 min. Visits the wildlife preserve that has developed on and around the land of Wisconsin's Aldo Leopold—scientist, philosopher, and writer. Discusses the restoration of the sand counties area, research in progress, and man's relationship with the land. Cost: 16 mm rental $7.00/week. Film #1750.

Workshops

Workshops about Aldo Leopold—his life, teachings, and philosophy—are available by request. For information, contact:

Gary Laib, Rt. 2, Box 219, Poynette, WI 53955, 608–635–4879.

Joel Stone, MacKenzie Environmental Center, Rt. 2, Box 825, Poynette, WI 53955, 608–635–4498.

Entertainers

Douglas Wood writes, sings, plays guitar, and gives talks about Aldo Leopold. He performs and has produced albums and tapes of his music and stories. Address: Douglas Wood, 104 4th St. North, Sartell, MN 56377.

David H. B. Drake, singer/songwriter, and Betty Salamun, dancer, perform environmental programs. "The Earth Speaks" a duet performance, combines songs, dance, and slides with readings of Aldo Leopold, John Muir, Black Elk, Sigurd Olson, and others. Their full-length dance production, "A Sand County Almanac" is based on the writings of Leopold and includes music, narration, and dance by Dancecircus, a Milwaukee-based modern dance group. For information, contact: David H. B. Drake, 810 S. 37th St., Milwaukee, WI 53215, 414–383–3355. ■

BOOK MARKS/WISCONSIN

ALDO LEOPOLD: THE PROFESSOR by Robert A. McCabe. Madison, WI: Rusty Rock Press, 1987. 172 pp. $29.95.

By Clay Schoenfeld

Outside of the members of his immediate family, Aldo Leopold was probably known more intimately for a sustained period of time by only one particular person. For forty years that man has suffered in relative silence as other persons less equipped than he—including me—have attempted to present accurate recollections or interpretations of Leopold. "For some reason" McCabe says, "it was very difficult for me to write about A. L. and even more difficult to talk about him; I don't really know why." Now at last the seal has been broken, so to speak—fittingly enough, in the Leopold Centennial Year—and we have Robert McCabe's long-distilled insights into "The Boss" he knew "personally and up close" for nine years as his beloved major professor, colleague, fellow scientist, essayist, conservation activist, hunting partner, sand county naturalist, counselor, family man, friend.

Through "a master stroke of fate" Bob joined Leopold as a graduate student in the fall of 1939, the year the country's first department of wildlife management was founded at the University of Wisconsin, and was then at his side as assistant throughout Leopold's singularly productive years at Madison until that tragic, untimely death in the spring of 1948. Professor McCabe was subsequently chairman of that department for twenty-seven years, earning his own national Wildlife Society Leopold Medal in 1986. So he writes with consummate knowledge of his subject, colored by an admitted "admiration and affection" that fortunately never becomes treacly.

By no means does the author propose that this book is a scholarly biography spanning Leopold's sixty-some years. McCabe acknowledges that he performed no archival research. The book is simply his snapshot of Leopold in his professorial period, relying principally on vivid recollections. As I once wrote in a somewhat similar circumstance, "Aldo Leopold was a many-faceted person. All I know is what I saw and admired. Others may have varying perceptions." That phrasing could well explain McCabe's own rationale, with no apologies for records unexamined or associates unconsulted. Indeed, the book may be all the more valuable for its uncontaminated remembrances of things past.

What emerges in living color is an indelible picture of a man who epitomized in our eyes the appellation "gentleman and scholar" a picture that lends priceless perspective to Leopold's elegiacal *A Sand County Almanac.*

For some readers, McCabe's remembrances will reinforce their impressions of Leopold; for others, McCabe may puncture some illusions. One example: On the basis of testimony supplied to me, I once wrote that Leopold's purpose in purchasing his sand county acres was as a laboratory where the Leopold family could "take a tract of worn-out land and bring it back to its original state of harmony." Not so, believes McCabe: Leopold probably "just wanted a hunting shack with huntable land nearby." Admittedly, neither of us was there at the creation in 1935.

Most readers will find unique the peripheral profiles of Leopold's five department secretaries, for instance, or of his twenty-six successful graduate students of record (some of the more compelling careers having been cut short by wartime exigencies), of eleven special friends and associates (with some surprising omissions), of the Leopold family (with emphasis on the elder son Starker with whom Bob and A. L. shared a particular rapport), of the sites of sketches here and there (from Adams County coverts to the valley of the Gavilan). The routines at the 424 University Farm Place office and at The Shack McCabe delineates in

anatomical exactitude; the ethos of the 1939–48 times he recalls with evident sensitivity.

Like any biographer, McCabe reveals something of himself in his chronology. In certain ways he and Leopold, by accident and design, had much in common. They shared the same birthday. Each had three sons in whom he inculcated their "congenital hunting fever." Each kept a detailed journal. Each collected library artifacts. Each acquired a rural retreat. Each was a precise observer of natural phenomena from which he deduced profound ecological principles. Each was a competent administrator. Each was a practical campaigner for progress in conservation.

In one regard, however, McCabe confesses freely to a dissimilarity. He lacks his mentor's facile pen. In another regard, McCabe exposes a feisty Irish temperament that contrasts with his descriptions of Leopold's usually unfailing elegance and equanimity. Bob reflects a particular irritability with perpetrators of what are in his eyes warped interpretations of Leopold's philosophy, as well as a bit of down-right venom for purported plagiarists. There is no fury like Bob McCabe in indignant defense of his idol. On the other hand, there is no warmth like his expressed identification with those associates fortunate enough to share some common memories of what he terms "the golden years."

How accurate is this book? About some evidence I can testify. The author and I have been in each other's ken for almost fifty years, and in that time I have never met a more honest man. Bob McCabe doesn't know how to dissemble. What he writes in these 172 pages he believes to be the truth and nothing but. By chance I knew A. L. before Bob did, and I later had separate experiences with some Leopold family members and associates. Yet barring a few inconsequential redactions, everything I remember or have read supports the McCabe record.

It must be noted that this book is as distinguished for its construction as for its substance—the former the contribution of the author's eldest son, Dick, today the national Wildlife Management Insititute's chief editor. The voluminous hitherto-unpublished photographs of the Leopold legacy contained therein, the exquisite Charlie Schwartz line drawings, and the rare facsimiles of first-draft Leopold manuscripts are alone worth the price of admission. Any sale residuals are dedicated to the UW–Madison Department of Wildlife Ecology. The book is available there and at University Book Stores in Madison.

Manifold casual Leopold fans will find manifold enjoyments in this book, and Leopold aficionados will be vastly intrigued. But its larger value will undoubtedly lie in the irreplaceable service it will perform for a professional historian of the environmental movement at high tide—when he or she comes to put together a definitive portrait of that 1965–85 phenomenon and of the mountain-minded man who was one of its principal progenitors.

GAME MANAGEMENT by Aldo Leopold. Foreword by Laurence R. Jahn. Madison: The University of Wisconsin Press, 1986. (reprint) 482 pp. $14.00 paper.

By Clay Schoenfeld

The year 1988 will mark the fifty-fifth anniversary of the publication of Aldo Leopold's monumental book, *Game Management.*

It is difficult today to recall the game management world of 1933. Leopold himself estimated that there were then less than sixty game research projects under way in the whole United States and in the universities only some twenty game researchers, all of them part time. To aid them there were a few species monographs like Stoddard's *Bobwhite Quail* and a few local manuals such as the *Management of Upland Game Birds in Iowa.* But there was no "bible" no "Baedeker." *Game Management* was to change all that.

Leopold's comprehensive text was distinguished not only for being the first of its genre; it introduced three concepts that were to become the hallmarks of the Leopold approach to what today is called wildlife ecology.

First, the subject matter of the volume was hung not on a framework of species or land units but on ecological factors, because the object was "to portray the mechanism which produces all species on all lands rather than to prescribe the procedures for producing particular species or managing particular lands." Thus Leopold gave game management its first theoretical underpinning.

Second, Leopold eschewed "cookbook" techniques and emphasized the need for research and more research: "A game man must be by nature a scientific investigator . . . The game manager must acquire the scientific point of view . . . Facts about game must be found before they can be taught."

Third, there was already in evidence in *Game Management* the graceful prose and the ethical considerations that a later generation would come to find in *A Sand County Almanac*:

> Twenty centuries of 'progress' have brought the average citizen a vote, a national anthem, a Ford, a bank account, and a high opinion of himself, but not the capacity to live in high density without befouling and denuding his environment, nor a conviction that such capacity, rather than such density, is the true test of whether he is civilized. The practice of game management may be one of the means of developing a culture which will meet this test.

Game Management was many years in the making. In the preface Leopold explains that his ecological "factors" or "influences" were first conceived "as a personal hobby" while in the employ of the U.S. Forest Service in Arizona and New Mexico in 1910–25. The opportunity to test the set of ideas came during an

assignment with the Sporting Arms and Ammunition Manufacturers' Institute in 1928–31 on a game survey of the northcentral states. Portions were presented in a series of lectures at the University of Wisconsin in 1929 and others in conservation journals in 1931.

Many books of the nature and stature of *Game Management* are solo contributions to a single scientific or technical field. It was given to Aldo Leopold, however, to reach wide popular acclaim as the author of *A Sand County Almanac and Sketches Here and There*, in manuscript at the time of his death in 1948 and published in 1949—what Stewart Udall was later to call "a noble elegy to the American earth and a plea for a new land ethic." Its theme: "We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."

Game Management's scientific insights and philosophical arguments have illuminated the professional field of wildlife ecology and the broad conservation movement for fifty-five years. The reprinting of this volume presages continuing impact.

(Adapted from a September 1982 *Review* (Vol. 28, No. 4) article, "Fifty Years of Aldo Leopold's *Game Management.*)

Clay Schoenfeld is emeritus professor of journalism and mass communication and of environmental studies, emeritus chairman of the Center for Environmental Communication and Education Studies, and emeritus dean of Inter-College Programs at UW–Madison.

THE YOSEMITE by John Muir. Foreword by Michael P. Cohen. Madison: The University of Wisconsin Press, 1986. (reprint) 284 pp. $32.50 cloth; $10.95 paper.

By Hugh N. Anderson

President Reagan's Secretary of the Interior, Donald Hodel, has recently proposed that the federal government tear down the dam that has flooded the Hetch Hetchy Valley since early in this century. The magnificent cliffs and waterfalls of the Hetch Hetchy would be exposed and restored. The University of Wisconsin Press's recently published edition of John Muir's guide to the Yosemite region should stand as the foundation for a response to Mr. Hodel's startling proposal.

The Hetch Hetchy dam and reservoir lie within the Yosemite National Park, twenty miles from Yosemite Valley proper. In the early days of the park, the Hetch Hetchy Valley was regarded as a rival to Yosemite itself. Muir noted the enthusiastic opinion of artist William Keith:

> Although its walls were less sublime in height, in picturesque beauty and charm Hetch Hetchy surpassed even Yosemite.

In addition to its charm and beauty, Hetch Hetchy possessed structural characteristics that made it a prime location for a water supply and power reservoir for San Francisco. Despite the bitter opposition of Muir, the Sierra Club, and other conservationists of the day, the federal government approved the construction plans of the Hetch Hetchy dams in 1916.

Muir makes clear in *The Yosemite*, first published in New York 1912, that the natural wonder of the Hetch Hetchy Valley sprang from far more than granite cliffs and falling waters. His vivid descriptions show that rock, water, tree, flower, bird, and butterfly formed a single flow of nature that could not be turned off and on like a spigot.

To savor the spectacle of Hetch Hetchy's lofty cliffs, Muir invited the observer to stand waist-deep in the flowery meadows of the valley "while the great pines sway dreamily with scarcely perceptible motion." The Hetch Hetchy's valley walls were more than bare stone: they were adorned with groves of golden-cup oak on ledges at various heights. The streams that dove down the valley's walls not only drew the observer's eye but also watered "many a hidden cliff-garden and fernery. . . ."

To John Muir, every element of the natural world of the Yosemite region was worthy of study and praise. Every place in the park was filled with song. The winds, the trees, and the waterfalls each sang their own songs. To Muir, even the avalanches sang booming songs. All other songs, in all seasons, were "delightfully enriched with bird song. . . ."

Secretary Hodel's proposal would restore mere sound, not song, to Hetch Hetchy. Muir stated flatly in *The Yosemite* that the submersion of Hetch Hetchy would utterly destroy it. Without the trees, the birds, and the meadows, the lone rock walls are but a hollow echo of the valley before the dam. In the fine foreword to the Wisconsin edition, Michael P. Cohen rightly observes that to Muir "Hetch Hetchy was a sacred place of life" and that Muir passionately had argued that the dam and reservoir would kill the valley's life and "damn Hetch Hetchy forever." No restoration attempt, no matter how well-intentioned, can bring the song back to Hetch Hetchy.

The Yosemite is a practical guide to the national park that is and was. The original eighteen photographs reprinted in this edition illustrate Yosemite as it was in the early part of this century. This book is also a reminder to heed and preserve nature's songs, wherever they are sung.

Hugh N. Anderson, an attorney in the Madison office of Wickwire, Gavin & Gibbs, P.C., holds a Master's Degree in water resources management from UW–Madison. His practice includes environmental and natural resources matters.

ANCIENT ANATOLIA: ASPECTS OF CHANGE AND CULTURAL DEVELOPMENT. Essays in Honor of Machteld J. Mellink edited by Jeanny Vorys Canby, Edith Porada, Brunilde Sismondo Ridgway, and Tamara Stech. Madison: The University of Wisconsin Press, 1986. xvii + 120 pp. $35.00.

By John Bennet

This volume—another in The University of Wisconsin Press's expanding Wisconsin Studies in Classics series—honors the long and distinguished career of Machteld Mellink. Since 1943 she has published 200 books and articles (listed on pp. xiii-xvii) on the archaeology of ancient Anatolia (modern-day Turkey) and the Aegean. To scholars working in Greece and the Aegean islands she is perhaps best known for her comprehensive and extremely valuable reviews of "Archaeology in Asia Minor" published in the *American Journal of Archaeology* since 1955. These periodic reviews were written *in addition* to many more specialized articles on the archaeology of ancient Turkey—including reports of her own excavations—and reflect her wide-ranging interest in all aspects of Anatolian archaeology. The breadth of this interest and her enthusiasm for ancient Turkey are reflected both in the diversity of contributions presented in this volume and in the personal note of admiration contained in the dedications of each author.

The volume contains eleven essays covering nearly 20,000 years of history and ranging in subject matter from the strictly anthropological study of human bones to the reinterpretation of hieroglyphic Luwian inscriptions in the light of recent archaeological finds. The articles are offered by a distinguished list of fifteen internationally recognized scholars from the United States, Turkey, England, and Germany, all of whom are specialists in their own branches of Anatolian studies. The standard of production for both text and illustrations is excellent, as we have come to expect of this series.

Despite the apparently unifying subtitle of the book, there is no overall unity of theme. Nevertheless, patterns can be distinguished in the different approaches necessitated by the changing evidence. The contributions are arranged in chronological sequence beginning with two articles dealing with prehistoric Anatolia: that is, the period before we have written records dealing with the area either in the Anatolian languages, or in those of her neighbors. R. J. and L. S. Braidwood summarize the evidence in Southwest Asia for the cultural phase which *precedes* the village-farming phase. They term this phase the "incipient era" and consider the identification of material associated with this phase as a necessary prelude to examining the processes which led to the emergence of sedentary agricultural communities (such as their own site of Çayönü: c. 7250–6750 B.C.) as viable human settlement types. Their conclusion is that material belonging to this class is still lacking in the area of modern Turkey and that the search for such material therefore represents an important research priority in Anatolian prehistory. The contribution which follows, by J. L. Angel and S. C. Bisel, deals likewise with unassuming materials—bones in this case—and serves to demonstrate what a wealth of interesting data can be gleaned from mute informants who died some 5,000 years ago. Their detailed analyses of skeletal pathology (complemented by excellent photographs, which are oddly not cross-referenced to the text) in two Early Bronze Age cemeteries in southwest and northcentral Turkey (Karataş, excavated by Mellink, and Kalınkaya) show that both communities were relatively healthy and well nourished and were increasing in size. In addition, the larger sample of skeletons (584) from Karataş displays high variability, suggesting the peaceful incorporation of different ethnic groups within the population there.

The site of Kültepe in eastcentral Turkey provides the focus for the third and fourth contributions. In the early years of the second millennium, this site was the home (*karum*) of a group of Assyrian merchants, many of whose commercial documents have been preserved. T. Özgüç discusses material from new excavations at Kültepe showing that trade relations (evidenced by imported pottery and jewelry) already existed across Anatolia from the Troy region into northern Syria in the third millennium. Kültepe already seems to have been an important node in these networks, a fact supported by the existence of monumental buildings there. N. Özgüç focuses on the period of the Assyrian colonists and demonstrates links between Kültepe and *other* Anatolian sites (such as Acemhöyük) on the basis of identical and similar seal impressions appearing on bullae and clay documents at different sites.

The next four contributions deal with the period of Hittite domination in Anatolia (c. 1650–1200 B.C.) and demonstrate the qualitative change in the approaches which now incorporate textual and iconographic material. J. V. Canby takes as her starting point an enigmatic rock crystal figurine of a child in the Walters Art Gallery, Baltimore, and shows convincingly that it belongs to a widespread tradition of "miraculous" children in Hittite iconography and myth. H. Güterbock presents—for the first time since its original discovery in 1899—a group of finds (including a well known, but long lost tablet) probably from the Hittite capital Boğazköy, now at Grinnell College, Iowa. E. Uzunoğlu presents three previously unpublished cylinder seals from the Hittite area. The cylinder seal, a typical feature of the cultures of Syria and Mesopotamia, is a relatively rare type in Hittite Anatolia. Finally, E. Porada looks at Anatolian-Near Eastern influences in the opposite direction by examining in great detail a Middle Assyrian cylinder seal which, she argues, displays Hittite elements in its iconography.

The last three contributions all deal with first millennium Anatolia. David Hawkins uses the publica-

tion of a new monumental inscription in hieroglyphic Luwian dating from the late eighth century B.C. to explain three other known inscriptions of this type, using parallels from the Assyrian and Babylonian worlds. When viewed in context, it seems clear that the new inscription, and the three already known, fall into a well-known Near Eastern type, the royal statement of ideal prices: "When I was ruler, the economy was OK." Kurt Bittel then reviews the material (epigraphic, iconographic, and archaeological) known to exist at Kızıldağ—a site in southern Turkey. The site has been known since the last century, but was never excavated, and Bittel enters a plea for a more detailed examination of its remains. R. D. Barnett closes the volume with a possible solution to a puzzle: namely, the function of a class of large bronze cauldrons widely attested in graves and sanctuary sites in the eastern Mediterranean (including Greece). The clue lies in the bronze human-headed birds attached to the rim of the cauldrons. These figures often have six fingers on the right hand—a mark of supernatural powers—and may be associated with funerary ritual. If so, it seems likely that the type originated in Syria or Palestine, rather than in Urartu, the area to which they are customarily attributed.

If it has not become clear already, this is not a book for the faint-hearted! No map is included for those unfamiliar with the ancient geography of Anatolia. References, to a specialized literature, are extensive. (These could usefully have been consolidated into a single bibliography in my opinion.) Similarly, the contributors make little attempt to place their discussions in a wider context. The essays are therefore intended as serious (if brief) contributions to the field. As such they represent a fitting tribute to and reflection of Machteld Mellink's own wide-ranging scholarly interest in the cultures of ancient Turkey.

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FESTIVALS OF ATTICA: AN ARCHAEOLOGICAL COMMENTARY by Erika Simon. Madison: The University of Wisconsin Press, 1983. (Wisconsin Studies in Classics.) xx + 122 pp., 12 figs., 32 pls. $21.50.

By Barry B. Powell

It is common to observe that the Greeks had a weak religion and even that classical Greek culture begins with denial of the gods' reality. Yet the material and literary monuments of ancient Greece are expressions of a religious culture, glorifying, sanctifying, or questioning the god. To the ancient Greek, religion was a sequence of celebrations of a very diverse nature, some public, some private or deeply secret. The sequence of celebrations was central to the Greek's experience of life and so powerful that it took precedence over the natural sequence of the seasons as the basis for his crude calendar, whose months he named after a festival celebrated (or once celebrated) within them.

We know more by far about the cycles of Athens and Attica than we know about all other Greek festivals put together. Ludwig Deubner wrote the great study of these festivals in his *Attische Feste* of 1932 (Berlin) and gathered together all the literary evidence that illumines their nature. H. W. Parke made use of evidence, mostly archaeological, that has come to light since 1932 and offered a chronological approach to the material in his magisterial *Festivals of the Athenians* (Ithaca) of 1977. The book by Erika Simon, the well-known art historian from the University of Würzburg, will not replace Deubner-Parke as the standard authorities on this topic, and it does not intend to do so.

A publication of her 1978 Mary Flexner Lectures at Bryn Mawr College, Simon's book retains the limitations of scope and treatment inevitable in such a format. This is partly a shame, because a full-fledged discussion of Attic religion in light of modern archaeological research is needed and within the author's power to produce. On the other hand, Simon's small volume is a good synoptic essay on Athenian and Attic festivals, easy to digest, and also contains original and persuasive interpretations of many details.

Simon's six chapters are organized, like Deubner's study, according to the gods: Zeus, Demeter, Athena-Aphrodite-Hephaistos, Apollo-Artemis, and Dionysos, with one chapter devoted to the Parthenon frieze. This is a convenient method of presentation, the same as Deubner's, but prevents an easy reconstruction of the sequence of festivals. We cannot easily, therefore, draw from her presentation the Greek's perception of the rhythm of these festivals, which itself had important religious meaning. Covering twenty-five festivals in ninety-six pages, Simon must be too curt with her material.

Admirable is Simon's attempt to place the festivals in historical context, finding their origin in the early Dark Age, Bronze Age, or even, following Karl Meuli and Walter Burkert, in hunting cultures that preceded the Bronze Age. She convincingly supports Deubner-Parke's explanation of the mysterious Arrephoria, when young Athenian girls carried unknown objects in a basket down a hidden staircase from the acropolis to the temple of Aphrodite, as a rite designed to bring the fertilizing dew to the Attic olive trees. Very attractive is her explanation of the opaque word *thesmoi*, "placed things," carried by the *thesmophoroi* in a famous Athenian festival to Demeter, as being piglets and cakes that were buried and dug up again, rotten.

The composted flesh and cake "that had been laid down" is a form of fertility charm. The best part of the book is Simon's description of the subject and thematic construction of the Parthenon frieze, which sensitively interprets the figures and action on the frieze as reflecting the details of Athenian cult.

On the whole I agree with Simon's interpretations, although a surprising naivete about literature and the history of religion can lead her to underestimate the speculative nature of some assumptions. I do not agree with Simon that the story of Helios and his flocks in the *Odyssey* is evidence for a cult of the sun in the Mycenaean age, and it seems very odd to speak of "Mycenaean times when the cult of trees was in high esteem" as if it were clear what a "cult of trees" might have meant to a Mycenaean Greek. More disturbing is a recurring suggestion that a specific god can exist under another name, as when she writes that "Apollo's precursor may also have been identical with the sun god Helios" or when she is tricked by words into writing that because Apollo "was a god of purification, Apollo was therefore also a god of vegetation." The purification from miasma and ghost persecution that Apollo offered is simply not the same as the purification sought in rites designed to encourage vegetable growth. Nor does she give grounds for claiming that the *omphalos* is a chthonic symbol, or say what she means by a chthonic symbol.

Simon is best on art historical questions. Her analysis of the Parthenon frieze, which takes issue with that of John Boardman, alone makes the book worth reading. The book is handsomely produced, as we have come to expect from The University of Wisconsin Press, with numerous black-and-white plates, for which the text serves as commentary. Here is an attractive essay on a topic of perennial interest.

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CORPUS SPECULORUM ETRUSCORUM: USA 1, MIDWESTERN COLLECTIONS by Richard Daniel De Puma. Ames: Iowa State University Press, 1987. 241 pp. 45 plates (double, no color). $36.95.

By Warren G. Moon

The ancient pre-Roman inhabitants of central Italy, the Etruscans, were rich in metals, magic, and art, and recently they have been the focus of considerable scholarly activity; a consortium of Italian museums (notably Florence, Siena, Bologna, and Arezzo) made 1985 the "Year of the Etruscan." Such featured status has not always been accorded the Etruscans; our knowledge of them is spotty because their literature, i.e., Etruscans commenting on themselves, has been entirely lost, and though there are some 10,000 inscriptions extant, Etruscan language has not been easy to translate and render. Parenthetically, I might add, the scholarship of Murray Fowler, emeritus professor of linguistics and classics at UW–Madison has been essential to our understanding of this mysterious language. Modern evaluation of the Etruscans, therefore, depends heavily on their artistic achievement, which was prodigious, and towards these ends the publication of corpora and scholarly catalogues are making this art available for study. Such is the type of book under review.

De Puma's book is the first American fascicle of an international effort to publish Etruscan bronze mirrors. This series (and there are others on urns, inscriptions, etc.) was inaugurated in 1973, and a projected 100 fascicles will eventually present some 3,000 mirrors (mostly hand mirrors), a large percentage of which are unrecorded, without photograph or description. Beautiful, favored by collectors since the Renaissance, and portable, scattered in private collections and museums far from the Italic tombs for which they were created, the mirrors are fascinating for what their elaborately engraved scenes tell us of significant aspects of Etruscan daily life, details of dress and custom, religious belief and mythology. Pails and covered boxes, mirrors, chariots and armor, furniture overlay were prized items of the metal arts which often display vivid narrative, engraved or in repoussé, with the scenes sometimes in Etruscan pictorial phraseology, sometimes with Greek reminiscences. The Etruscans were quick to appreciate other established artistic traditions of the Mediterranean. The earliest form of the Etruscan mirror, for instance, is essentially Egyptian. And like the latter the Etruscans were obsessed with the afterlife; such items of toilette and domestic adornment were all the more important not only for life's luxury, but as indicators of station in the celestial (or infernal) heyday.

The first Etruscan bronze mirrors date to the last quarter of the sixth century B.C. These examples were circular with a simple peg or tenon to be inserted into a handle of wood or bone; later they became more pear-shaped, with handle and mirror blending into a single, continuous shape. The caryatid or anthropomorphic mirror handles so cherished in Greece were never overly popular in Etruria. Midwestern collections boast a variety of mirror types, of different dates and places of manufacture, the fourth century B.C. and Hellenistic being the best represented. The scenes on these mirrors equally admit a range of complexity and accomplishment in design and in artistry. Engraving, which is essentially outline drawing, was a most exacting skill. The planishing of the metal surface to receive the design was time-consuming, the metal itself was pricey, and any mistakes in conception and execution could not be changed or effaced.

Solo dancers and people in pairs remind us of an Etruscan reinterpretation of Bacchic frenzies and depictions of Aphrodite (Etruscan Turcan) between Love and Desire, or Dionysos (Etruscan Fufluns) and satyrs wheeling round are quite appropriate subjects for a woman's dressing table, whether in Greece or the Tuscan Hills. A superior mirror in the Elvehjem Museum of Art sports Dionysos, in fine style and rare type. A specimen in Milwaukee depicts a warrior in Attic helmet, and one in Rockford, Illinois has a four figure composition which has heroic overtones. Another in Rockford may represent the Dioskouroi, and a third is entirely without pictorial decoration (the obverse here is surely a modern addition). Some mirrors have greater narrative which speaks of magic and the priestly caste which practiced and interpreted it. A third-century B.C. mirror from Tuscania (now in Florence) depicts animal entrails which are being examined as the mythical character Tages teaches the art of divination to Tarchon. Cicero (*On Divination* II.23) tells us that Etruscan religious practices were "revealed" by a baby boy, Tages, who appeared in prophecy as a peasant plowed his furrows. How documentary these engraved mirrors can be and how beautiful. A fourth-century B.C. mirror from Bomarzo (also now in Florence) has both silver repoussé and is engraved. Three gods are depicted: Aplu (Apollo) is on the left, Tinia (Jupiter) with his scepter and thunderbolt is appropriately in the center, and Turms (Hermes or Mercury) is on the right. A magnificent piece, indeed!

Madison, Chicago, and Toledo have recently accessioned Etruscan hand mirrors and the latter (plate 39) should be mentioned for its uncommon artistry. Again the story is the Dioskouroi and the Argonauts' encounter with Amykos, king of the Bebrykes. A back view of Castor is combined with a three-quarter of his brother, Polydeukes. Numerous small parallel lines model the musculature of the powerful bodies, similar strokes make eyebrows bushy, wavy lines simulate tree bark. Irregular shapes create rocks and landscape. Eos, the dawn-goddess, holds the body of her dead or dying son, Memnon, on the reverse (plate 41) of the new mirror at the Art Institute of Chicago. At 470 B.C. it reminds us of the famous tondo design by the Attic red-figure cup-painter Douris, which is in the Louvre. Perhaps the most splendid mirror in the Midwest is at the Indiana University Art Museum (plate 4). It belongs to a small but very fine group of Hellenistic tang mirrors which are characterized by large circular discs (18. cm.), heavy rims, and pronounced extension points. The scene, in glorious style, seems to be a conflation of a toilette scene (the adornment of Turcan, Helen or Malavisch) and the Judgment of Paris. Two other midwestern mirrors need comment. A mirror at the Dayton Art Institute has a full and pretty scene (plate 20) of a nude female offering a beribboned laurel crown to a seated male, as Minerva with all her attributes looks on. The mirror handle at Oberlin College (plate 28) is both elaborate and well preserved; a ram's head marks its termination and at midpoint there are juxtaposed griffin heads.

De Puma examined, photographed, and drew Etruscan mirrors in twenty-one midwestern collections. One can sympathize with him that a few examples had to be "excavated" from the dusty strata of museum magazines or "retrieved from the limbo of 'Egyptian' storage." De Puma's artistic eye is sure; furthermore, with the microscope he has seen much about technique and metallic structure. The format of this publication is uniform with the CSE series and is necessarily spare. The photographic documentation in this fasicle seems a bit uneven; as in all De Puma's scholarly writings his own line drawings are a gift to the reader. The scholarship is superb, at every turn. *A Guide to Etruscan Mirrors* edited by Nancy Thompson de Grummond (Archaeological News, Inc., Tallahassee, Florida, 1982) provides an enlightened historical account of the study of Etruscan mirrors.

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GOD AND NATURE: Historical Essays on the Encounter between Christianity and Science edited by David C. Lindberg and Ronald L. Numbers. Berkeley: University of California Press, 1986. 586 pp. $17.50 paper.

By Herbert M. Howe

The heresiarch Manichaeus was flayed alive in A.D. 275, but his teaching marches on: the human race follows his lead in dividing the world into endless conflicts—Light vs. Dark, Cowboys vs. Indians, and, perhaps longest lived of all, Religion vs. Science. A few years ago a group of scholars, American and European, met in Madison to consider this alleged conflict; this excellent book, a collection of the papers they read, chronicles its battles.

Earlier historians took sides. The titles of John H. Draper's *A History of the Conflict between Religion and Science* (1874) and Andrew Dixon White's *The Warfare of Science with Theology* (1896) set the tone for a century of education and popular thought. No doubt the martial figure came from St. Paul, by way of "Onward, Christian Soldiers" (1864) and other stirring hymns; it certainly fitted the mood of the times. Draper and White could divide the world into Good Guys and Bad Guys; the contributors and editors of this book have repeatedly replied, "Yes, but—" and

by so doing have illuminated not only the controversy itself but also all the phases of life it touches, from the time of St. Augustine to that of the scientific creationists. Of course, historians of science have moved in this direction for fifty years, but they have rarely attained the clarity and coherence of this work, the fruit of the tact and skill of the editors, two professors at UW–Madison, in blending the separate essays.

A short review cannot do justice to the individual contributions; a sketch of the book's organization must suffice. The introduction surveys scholarly work on the subject, roughly from the time of Draper on. The first and second chapters discuss the growth of science in the church down to the death of Copernicus in 1543, two years before the Council of Trent and three before the death of Luther. Seven more bring us to Newton, the Enlightenment, and the beginnings of positivism, and another is given to Laplace. With the end of the eighteenth century come chapters on biology, geology, and evolution, with their impact on religious thought, and the last three discuss creationism and modern physical science, with its effect on current theology.

God and Nature actually contains little new material, but the interconnections it establishes and the breadth of its material illuminates far more than the histories of science and religion. Avoiding Mr. Pickwick's method of writing on Chinese Metaphysics by mixing encyclopedia articles on "China" and "Metaphysics" the book marshals all sorts of information not referred to in this context, so that the reader sees the matter in a way far more plausible than the Good Guys-Bad Guys approach many of us were taught in school. The contributors all try (a) to explain the reasoning of those who defended ideas eventually rejected—Tempier, Urban VIII, Agassiz, Wilberforce; (b) to point out that new ideas rarely emerge armored with full proof—how often even do we hear that "evolution is only an unproved theory"?; and (c) to emphasize that almost all the thinkers the book discusses had to work their way through doubt, uncertainty, and the inertia of their own upbringing. Their fairness appears, for example, in the excellent chapter on Laplace. Asked by Napoleon about the place of God in his system, the astronomer is said to have replied: "Sire, that is a hypothesis of which I have no need." This is usually taken as a sneer, but the essayist remarks that it *was* a serious matter for Laplace, and one that caused him considerable anguish. The essayist adds little to convince us that Laplace was in fact a crypto-theist, but his attempt lends plausibility to his argument. (I cannot resist observing that almost a century later that eminent thinker Sherlock Holmes was annoyed to be told that the earth orbited the sun. "If it went round the moon" he replied to Dr. Watson, "it would not make a pennyworth of difference to me or to my work.")

The organization in separate essays gives us a number of matters well handled in part but inadequately for the whole period. One such is biblical criticism, textual and other, which began with Justin in the second century and is still a live source of controversy. The chapter on the Council of Trent gives a good account of the reasons for the Roman insistence on the authority of the Latin Vulgate, but no mention that Erasmus had earlier rejected I John 5.7 ("There are three that bear record in Heaven, the Father, the Word, and the Holy Ghost, and these three are one."). The verse is found in the Vulgate, but not in any good Greek source; Erasmus was later forced to restore it, and it appears in the King James Bible. Newton was a good scholar and rejected it, thereby bolstering his own Arian beliefs, but what is the poor Tennessee hillbilly to do? The spread of literacy generated, on one hand, various sorts of figurative interpretation, and on the other, strict literal understanding, though the word "inerrancy" only appeared in 1867. All this should be remembered, if only for its current political importance. A fundamentalist friend, hearing me refer politely to a Roman Catholic priest as "Father" so-and-so, growled at me, "Matthew 23.9!" ("Call no man your father upon the earth.")

A second tantalizing brevity is the discussion of the part played in the controversy by the development of mathematics, especially probability and statistics. Curiously, the numerological passages in Daniel and Revelation have been subject to all sorts of nonliteral interpretation; is this because they look to the future rather than the past or present? Be that as it may, it would be hard to find mathematical propositions which contradict scripture; Copernicus had to fight for greater respect for the subject in the scale of truth, but not for its validity. After Newton mathematics seemed for a time to join the two books of Nature and Revelation: Addison could paraphrase Psalm 19, "In reason's ear they [the heavens] all rejoice . . . Forever singing as they shine, 'The hand that made us is divine.'" Or Pope could write, "Nature and Nature's laws lay hid in night. God said, 'Let Newton be!' and all was light." A good two hundred years later some wag continued, "It could not last. The Devil, shouting 'Ho! Let Einstein be!' restored the status quo."

Such comment on *God and Nature* is, of course, mere regret that it has only eighteen essays instead of eighty, and that casual remarks of less than a paragraph make one turn to the ample notes and bibliography, only to find that there is no full treatment. The lectures were given six years ago. Consider the stimulus given religious activity in those few years by, for example, molecular biology and its technical application. *God and Nature* does not mention these. But the summary the authors have given us provides, either explicitly or by suggestion, for a new alignment of past faith, knowledge, and prejudice, and a basis for facing the future.

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A LOVING PLACE by Mark Dintenfass. New York: William Morrow, 1986. 287 pp. $17.95.

By Telise E. M. Johnsen

Murray Farber, seventy-four, has retired to Florida with his wife Irene. Home for the Farbers is Lyme Bay Ridge, an "adult community" that has been "thrown up by the developers on a piece of reclaimed swampland northwest of Fort Lauderdale."

Murray is in Florida for the usual reasons. "The things for which he had been set upon this earth—to bury his parents, to bring a little joy into the world, to lend his neighbors a hand, had all been accomplished." Murray believes he has earned "a little relaxation, a little peace."

But these are only the proximate causes of his migration. By the time Irene started urging him to move, Murray had lost his "loving place."

What is the concept that author Mark Dintenfass, on the faculty of Lawrence University in Appleton, makes central to his novel about an old man coming to terms with his past, his present, and even his future in the context of the pastel houses and shimmering heat of southern Florida? "A loving place . . ." Murray's loving place. What was it? Or first perhaps, where was it?

Murray opened Farber's Toys and Joys on Nostrand Avenue in Brooklyn in 1945, when he was close to forty. The war was over, and by that time he had "seen too many newsreels and read too many accounts of extermination camps and atomic bombings." He had supped full of horrors and so was ready to part company with the hard-boiled characters who had filled his world in the days when he made his living as a bookie and political hanger-on.

Correctly guessing that supplying one's children with the juvenile paraphernalia one had never dreamed of owning would become part of "completing the quick three-step from greenhorn to real American" in the prosperous postwar U.S., Murray opened his toy store.

> And for almost a quarter of a century, the toy business, kept within appropriate bounds, set apart from the pointless struggles of all the rest of the avaricious and murderous world, gave Murray pleasure.

That pleasure was a delicate blend of the best of Murray and the best of Farber's customers—"clumsy grown-ups plotting a child's delicate joy." As toy merchant, Murray could do what he thought more important than getting rich, "follow the warm impulses of his heart and store up riches for that vague, restless part of himself a more religious man would have called his soul."

Then, inevitably, "they started ruining it for him." Liberal, tolerant, kindly, he adjusted to the increasing numbers of black families in his Italian/Jewish neighborhood the way he knew the black families who had lived there long before him had adjusted when the city began to encroach upon them, bringing the Jews and the Italians with it.

But he couldn't get used to the burglaries, the violations—isolated incidents at first that culminated in wholesale vandalism of a store full of "innocent merchandise." Though he believed it must have been "some wretched illusion of childhood" the vandals were attacking, Murray saw in the broken dolls and ripped teddy bears the destruction of his loving place.

He entered a long, slow period of crisis. He lost interest and money, sold the business, allowed Irene to talk him into buying a house—something he, the archetypal New York apartment dweller, had never done before—and joined thousands of other transplanted New Yorkers living out their last years in the sunshine.

When the book opens, Murray and Irene have been in Florida for almost ten years. But Murray is not, in come essential way, settled. In the two days chronicled, Dintenfass deftly interweaves Murray's history, returning in unpredictable flashes, with the Friday poker game, a visit from the kids, arguments with Irene, a reunion with old Brooklyn neighbors to capture all the richness and confusion of Murray's life and his attempts to make peace with who he is, who he has been.

There is the long-ago affair with Mary Malloy. Had he loved her, and if so why had he chosen to remain with Irene and his children? Murray never told Irene about Mary; should he tell her now, after all these years?

Irene herself, does Murray love or hate her? After almost fifty years of marriage, the answer eludes him.

Danny, the son Murray had "of all the people in the world, most honestly, most wholeheartedly loved" is shut away, moody. Is something on his mind, Murray wonders, and will the two of then be able to break the barriers between them and hold some kind of intimate conversation? Murray does not want Danny to be left when he dies, as Murray's silent father left him, with the feeling that some essential link to his past "had been carelessly, ignorantly broken."

Murray wonders, too, if his sense of a special destiny reserved for him was a mere youthful fantasy. As he struggles to make sense of memories and feelings, Murray thinks with baffled frustration that he has "nothing to look back upon but the mediocre sorrows and pleasures of an ordinary life."

Children are present throughout this novel—pressing noses against the toy store window, playing on Montgomery Street, visiting grandparents in Florida, waving to Murray from the back window of a subway train as he inspects an underground air raid shelter during the war.

Children as motivating force suggest answers to some of Murray's questions and prompt his rediscovery of the surest "loving place."

It is when Irene glances at him while their son Danny and his wife Sara argue that Murray feels

a warm broth of old affection spread all through him because the silent communication was so perfect: you bring them into the world, you suffer for them, you struggle and sacrifice, and all you want from them is that they should be happy, and make their children happy, and avoid your own mistakes. But look what happens!

In the sleepless night that follows, Murray and Danny talk at last. Danny, nearing forty, is unhappy, thinking of leaving his marriage, having an affair. Murray, recognizing himself at forty and remembering his own confusion over Mary Malloy, tells Danny his long-kept secret.

After seeing Danny and his family off at the airport, Murray and Irene watch a planeload of New York and New Jersey youngsters being met by their joyous grandparents. Murray knows the happiness of that moment won't last long. "Within a couple of hours the kids would be driving the old people wild." But it is "authentic happiness" nonetheless. Smiling over the scene, he realizes then "that his real destiny had long since been achieved."

On the drive home, as he plans how to tell Irene about Danny and Sara's possible separation, Murray is "almost at peace" seems to have found the loving place in his own heart. After a restaurant meal, he will tell Irene about Danny and be her comfort. His vision of the two of them leaving the restaurant is an acceptance of the life he has yet to live.

Murray sees them as someone else might, "going through the restaurant arm in arm, bucking each other up, as they walked slowly, with solemn dignity, just a couple of Florida old fogies, heading toward the exit."

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THE AGE OF PAPER: CONSOLIDATION OF THE WATER POWER AT WISCONSIN RAPIDS, 1886–1904 by Dave Engel. Wisconsin Rapids: River City Memoirs, 1986. 115 pp. $14.95.

By Charles R. Lee

In *The Age of Paper* Dave Engel focuses upon the chain of events leading to the formation in 1902 of the Consolidated Water Power and Paper Company of Wisconsin Rapids. This thin book is a compilation of short pieces, some of which appeared in Engel's weekly series in the Wisconsin Rapids *Daily Tribune*, "River City Memoirs." Three earlier books, *River City Memoirs* (I, II and III), are fixtures in bookstores and libraries around the state. This latest work was supported by a Consolidated Papers, Inc. grant and by the State Historical Society of Wisconsin's "Community Historians in Residence" program.

Unlike his earlier general interest, local panoramas books, this book is a corporate history for the general public, full of anecdotes and photographs. Personalities like George Whiting, Frank Garrison, Welcome Hyde, and George Mead are the linchpins of this story. Whiting first brought papermaking from the Fox River Valley to the Wisconsin River Valley in the 1880s. Almost twenty years later Mead became the first president of Consolidated Paper. In between, these individuals demonstrated an entrepreneurial spirit that overcame all obstacles, legal and natural. Some were not papermakers by trade. Mead was not one, but a businessman who came to the business through the death of his father-in-law. They were seat-of-the-pants engineers. Mead once overruled his engineer's selection of a dam site on the strength of his visual inspection. All of them were set upon harnessing the river to industry; fires, wayward boulders crashing into town blown from some blasting site, and the construction of dams kept things interesting those twenty years.

There is sufficient discussion of business to be informative, but this book is not primarily concerned with corporate entities until it gets to Consolidated Paper, Inc. Earlier companies came and went and consolidation was attempted once before and failed. Investors and lawyers play their necessary roles here. The book does not dwell long on these matters though. This is corporate history of a more heroic kind.

The Age of Paper has some shortcomings. There is no narrative link to sustain a broader perspective on events. This period of time was important in the transformation of the Wisconsin papermaking industry, from the pulp and lower-grade product industry to the specialty and fine-grade paper industry of today. In fact, *The Age of Paper* is printed on Consolidated's fine enamel-coated paper. This book reads too much like a collection of short pieces, which it is. (A fine introduction to the history of papermaking in Wisconsin can be found in the *Wisconsin Academy Review*, Vol. 30, No. 1, December 1983, "Wisconsin—The Papermaking State."

The physical presentation of this book is a distraction. Most of the selections are accompanied by a photograph, and to keep each selection plus photograph to one page or two facing pages, the size of the type varies—sometimes significantly—from selection to selection.

These shortcomings aside, *The Age of Paper* will be appreciated by local historians for its account of the formation of Consolidated Papers, Inc. and for the photographs.

Charles R. Lee is an assistant professor of history at UW–La Crosse.

COMPANY K, 6TH REGIMENT, WISCONSIN INFANTRY by Merton G. Eberlein. Mauston: Juneau County Genealogical Society, 1987. 30 pp. $3.50 by mail.

By Jim Green

Mauston held its first-ever and likely first annual "Co. K Days" festival in May to honor the Civil War unit recruited from Juneau County that became part of the celebrated "Iron Brigade." One belated benefit, after printing delays, is a multipurpose spiral-bound background booklet compiled by Eberlein, historiographer/archivist for the Juneau County Historical Society.

For the introduction and forward, Eberlein uses a feature article, "Good Old Rufus" written by Dennis McCann for *The Milwaukee Journal*'s *Wisconsin* magazine of May 17, 1987. It explains the festival and Eberlein's long-time interest in Gen. Rufus R. Dawes, principal recruiter of Company K and its first captain.

Then, scrapbook style, Eberlein substantiates Company K with early rosters, 1860s news clippings, and Iron Brigade doings—for more actions (30) and more casualties (15.7 percent) than any other federal unit. Best are a "Company K" poem and "Charge of the Iron Brigade at Gettysburg" essay by Sgt. James P. "Mickey" Sullivan.

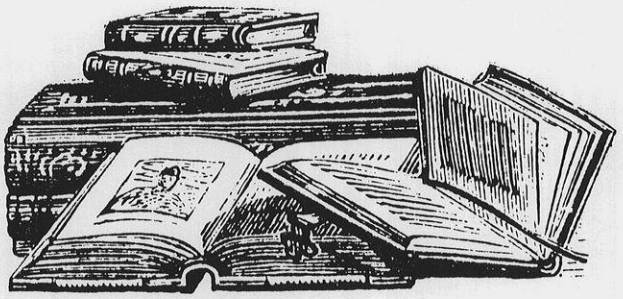
However, as Eberlein states, "My biggest interest was in Dawes, because of his great war record and personal life, to prove that he actually resided with his father in Juneau County and in a short time became one of its best-known citizens."

He cites Rufus for 1850s visits before graduating from Marietta (Ohio) College in 1860 and joining his father, Henry Dawes, local merchant and landowner. Rufus made his own way while campaigning on horseback to help Henry be elected county commissioner and coroner.

There is also a section on Corp. Reuben Huntley because both his wife and Dawes were descended from William Dawes, who rode with Paul Revere. (Besides, they were great-grandparents of the late Chet Huntley, TV commentator, another link to fame for Juneau County.)

Sales, to benefit the county genealogical society, are being handled by Joyce L. Martin, 121 E. State St., Mauston, WI 53948.

Jim (James P.) Green is assistant historian of the Descendants of William Dawes (Who Rode) Association after a varied career in news and public relations for both public and private agencies.



New Books to Note

J. Baird Callicott, editor. *Companion to A Sand County Almanac: Interpretive and Critical Essays.* Madison: The University of Wisconsin Press, 1987. $22.50 cloth.

Curt Meine. *Aldo Leopold: His Life and Work.* Madison: The University of Wisconsin Press, 1988. forthcoming.

Stanley A. Temple & John R. Cary. *Wisconsin Birds: A Seasonal and Geographical Guide.* Madison: The University of Wisconsin Press, 1987. (Sponsored by The Wisconsin Society for Ornithology.) 364 pp. $27.50 cloth; $9.50 paper.

H. Russell Zimmermann. *Magnificent Milwaukee Architectural Tresures 1850–1920.* Milwaukee: Milwaukee Public Museum, 1987. 288 pp. Color photographs. $39.95 cloth.

Attention writers

The Council for Wisconsin Writers, a statewide volunteer organization to encourage creative expression, announces the Paulette Chandler Award. Created by the will of the late Paulette Chandler of Madison, the $1500 award will be given annually to a Wisconsin short story writer or poet on the basis of talent and need. Applications will close February 1, 1988, and the award will be announced in late spring. For specific guidelines and an award application, please send a self-addressed stamped envelope to: Paulette Chandler Award, Council for Wisconsin Writers, P.O. Box 55322, Madison, WI 53705.

The Council for Wisconsin Writers will offer its annual awards for work published in 1987 in the categories of book length fiction, short fiction, book length nonfiction, short nonfiction, children's picture books, juvenile books, outdoor writing, poetry, and plays. Entries are due January 15, 1988. For complete contest rules and entry form, please send a self-addressed stamped envelope to: CWW Awards Committee, C/O Elizabeth Deakman, 2122 S. Whitney Way, Madison, WI 53711.

The Council for Wisconsin Writers is an affiliate of the Wisconsin Academy of Sciences, Arts and Letters.

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