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Volume 21, Number 2
Spring 1975

WISCONSIN ACADEMY REVIEW

"Growing Up In Wisconsin"

is the theme of the
1975 annual meeting
of the Wisconsin Academy
of Sciences, Arts and Letters

April 19, 1975
UW-Waukesha
9:00 - 5:00

WASAL friends & members
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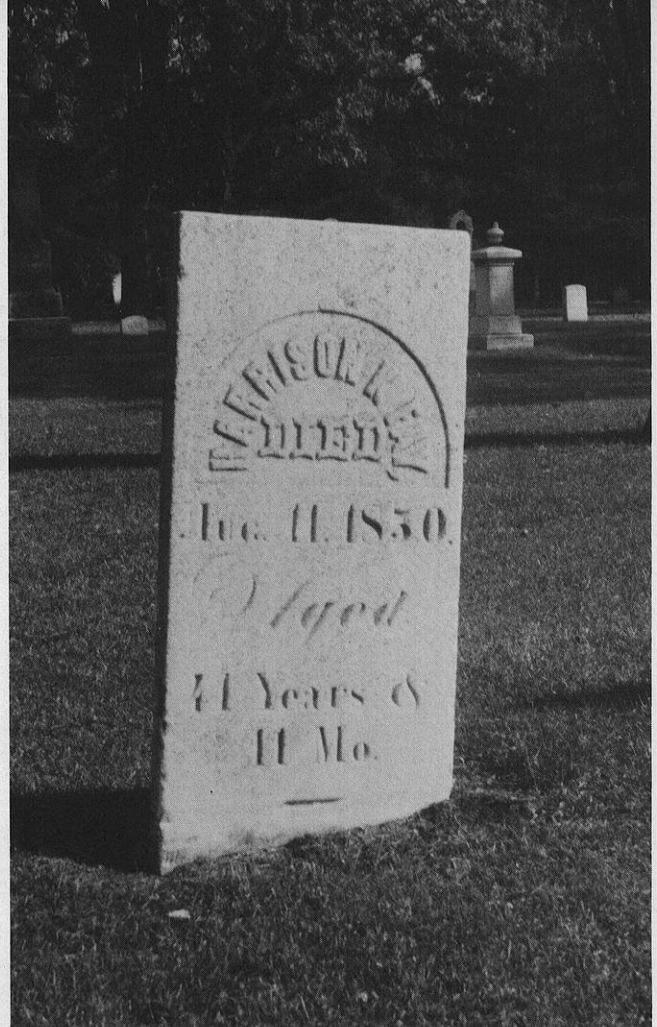
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Tombstones and Epitaphs:

JOURNEYING THROUGH WISCONSIN'S CEMETERIES

By Maurice E. Perret

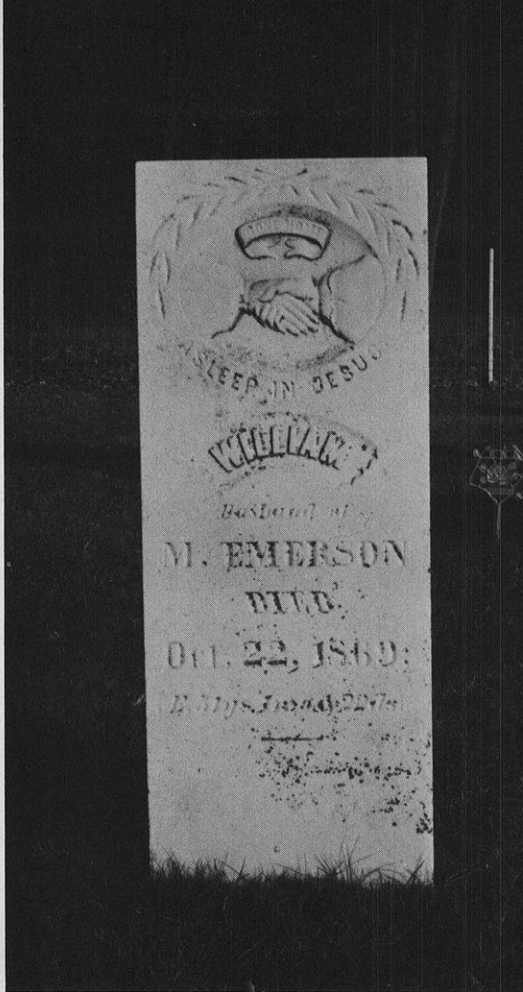


Early tombstones in Wisconsin were spare, rectangular slabs of sandstone or limestone with finely incised inscriptions. Over time, the styles became more elaborate, adding symbols, epitaphs, and a variety of shapes.

A visit to a cemetery is a kind of confrontation with death. Yet, once the initial sense of uneasiness is overcome, it can be a richly rewarding experience—not unlike that offered by a visit to a museum or library. The cemetery, too, yields insight into the life and times of a land and its people.

In Wisconsin, the styles of the tombstones themselves reflect the tastes of the communities and the waves of immigration occurring through the late 1800s and early 1900s. The earliest style, used extensively between 1830 and 1860, was a spare rectangular slab of white sandstone or limestone with inscriptions finely incised, often in italics to imitate handwriting. Each stone represented an individual burial.

During the 1860s, the styles became more elaborate. The top of the slab was sometimes rounded or pointed and symbols were often added: a weeping willow for sorrow, a crown for victory over death, a rose for virtue, clasped hands for friendship or farewell, a forefinger pointing heavenward, or a half-open gate for the entry to paradise. For young children a lamb for innocence, a dove for gentleness, or an angel to carry the youngster to eternal life were popular. Symbols also documented secular life



events. The grave of a soldier or veteran showed a flag and members of fraternal orders displayed their identifying marks—rings for the Odd Fellows, compass and trowel for the Freemasons. In some cases, several symbols might be blended into a single design. Also during the 1860s, epitaphs appeared, apparently introduced by German Protestants.

A number of changes were introduced in the 1870s and 1880s. The entire monument in many cases became symbolic: a broken column for a life that ended early, an obelisk signifying eternal life, an anchor for hope, a tree for regeneration. Tombstone materials also changed. Red granite from Montello or Wausau became popular, but other materials also were used: gray granite, marble, concrete, and iron. Individual graves began to be replaced with family lots, one monument being used for all members. This led to the scarcity of symbols and epitaphs, and eventually they were no longer used.

A number of trends led to more recent practices. Obelisks and columns grew in size, reaching ten or fifteen feet at their maximum around 1900. Then the style changed and massive blocks replaced the high monuments. Often the blocks were marked with family name only and small stones, used for each member of the family, were aligned on the front or back of the plot.

Eventually, as fewer children died in childhood, family lots were replaced by graves for couples, a single stone bearing the names of husband and wife. In many cases, the stone was set in place at the

death of one of the spouses. The name and birthdate of the living mate already engraved; only the date of death was left blank. Occasionally, a photograph of the deceased was inlaid or, sometimes, a picture of a married couple, even though one was still living.

The general outlook of cemeteries, especially old ones, was largely shaped by religion. A hundred years ago, all Catholic tombs displayed crosses, whereas Protestants avoided that symbol, often using instead an urn at the top of an obelisk.

Cemeteries also reflected the Old World traditions of the early settlers. Iron crosses, celtic or orthodox crosses, and statues define countries of origin. And in the cemetery at Nelsonville, a block of red granite inscribed as "Granite from Norway" bears witness for the affection felt for the deceased one's native land.

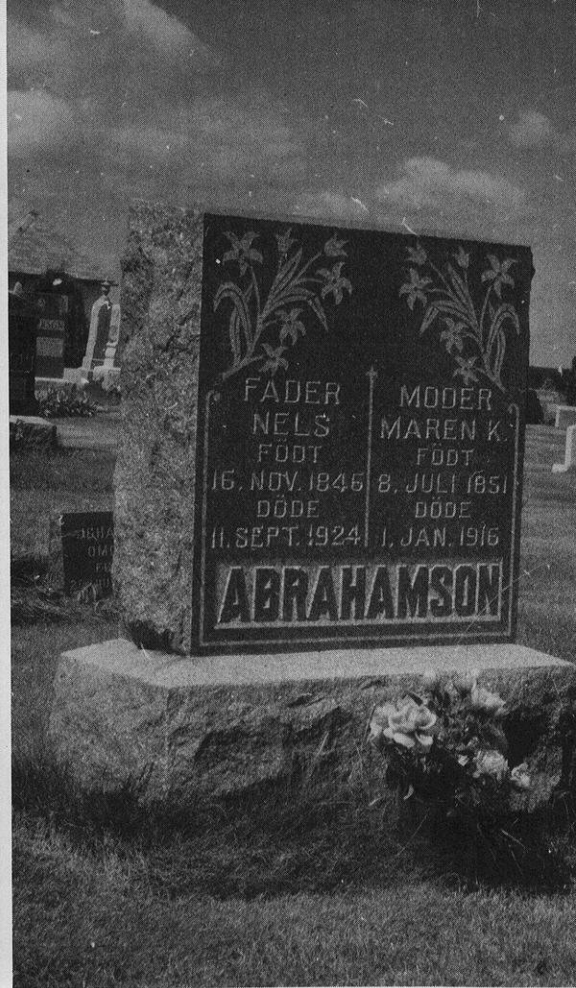
As in a book, the visitor to a small cemetery may read the local history of small towns and rural areas. A monument to a local notable might detail important attributes. For example, the following information is to be found in an old cemetery at Knowlton:

JOHN BAPTISTE DUBAY
1810-1887

SON OF A MENOMINEE INDIAN PRINCESS
SON-IN-LAW OF CHIEF OSHKOSH

TREATY-MAKER * INTERPRETER
INDIAN TRADER
FIRM FRIEND OF WHITE MEN

Information recorded in cemeteries includes the history of settlement of an area, languages spoken, predominant religions, clues to the sources of settlement names, and the process of anglicization of names. Events of state, national, and international history are often juxtaposed with events of personal tragedy.



Direct evidence may also be found of the origin of the pioneers and immigrants. In the cemetery of Hazel Green is the following:

JOHN G. EGLOFF M.D.
BORN IN HERISAU, CANTON APPENZELL
SWITZERLAND
RESIDENT OF HAZEL GREEN SINCE 1853
MARRIED MARY GREEB 1860
DIED 1882

Often the inscriptions tell far more than just names, dates, and places. For instance, in the cemetery of Somerset, we read:

ADOLPHUS LAVENTURE
1858-1951
CAME WITH HIS PARENTS TO HOMESTEAD
IN THE TOWN OF STAR PRAIRIE WHERE
HE LIVED HIS ENTIRE LIFE

It is also common to find inscriptions on grave-stones in the native tongue of the person buried. These provide additional clues to the history of settlement of Wisconsin. The German is easily recognized: *geboren* or *geb.* (born), *gestorben* or *gest.* (died). In Polish the respective terms are *urodzil* or *ur.* and *umarla* or *um.* The Danish or Norwegian are *födt* and *död* or *döde*; Swedish, *född* and *dödd*; Bohemian

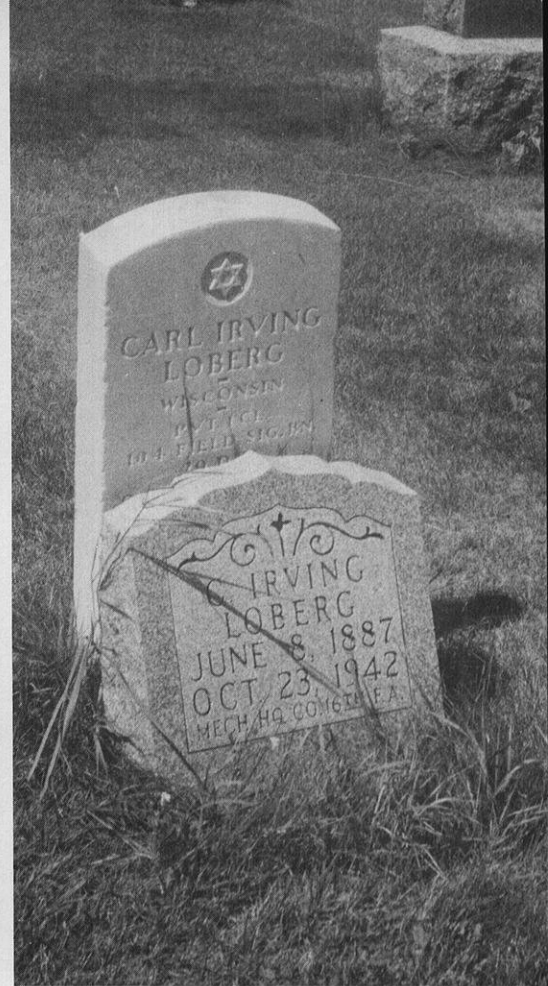
(Czech) *rozeny* and *zemrel.* Other languages represented in Wisconsin cemeteries include French, Welsh, Italian, Spanish, Finnish, Slovak, Dutch, and Friesian. This last originates in the northern part of the Netherlands, the origin of the founders of Vriesland, buried in the local cemetery.

In cemeteries, too, we can trace changes in name to adapt them to the English pronunciations. On the same family plot, or in the same cemetery, we may find *Dziurdziela* or *Jurgella*, Czech and Check, *Urbanowski* and *Urbans*, *Szuliszt* and *Schulist*, *Mueller* and *Miller*, *Weber* and *Weaver*, *Schmidt* and *Smith*, *Duranceau* and *Duranso*, *LaGrandeur* and *Grant*, *Poirier* and *Puariea*. In Saint Peter's Cemetery in Stevens Point, a monument has the following inscription:

MANKIEWICZ
1859 JOHN FATHER 1960
1871 JOSEPHINE MOTHER 1945
1898 ANTONIA DAUGHTER 1914
1914 PVT. RALPH SON 1945
KILLED IN ACTION IN ITALY

But off in a corner of the family lot is a government monument to:

RALPH L. MANSVAGE
WISCONSIN
PVT. 337 INF.



Obviously, Ralph Mankiewicz and Ralph L. Man-savage are the same person.

Many towns, townships, and villages are named after settlers who are buried in the local cemeteries. In the cemetery of Gibbsville are the graves of Benjamin L. Gibbs who died in 1869 at the age of sixty-one and of John Gibbs, 1804-1889. Arpin was probably named after the twin brothers John Baptise and Antoine Arpin, born at Saint-Ours, Canada, March 29, 1827. Their family lots, where they are buried with their wives and children, are in the cemetery at Wisconsin Rapids.

But places are also named after the birthplace of immigrants. In the cemetery of Altdorf, Wood County, there is a grave to:

BISSIG JOST
BORN AT ALTDORF KT URI SWITZERLAND
DEC 18 1882
DIED NOV 3 1890

Fragments of national history are also recorded in cemeteries. Tombs of soldiers who fought in the Civil War, the First or Second World Wars or other wars indicate the units in which they were enlisted and the places where they died, a battlefield or a hospital far from home. The government-provided tombstones for soldiers who died while in the service of the country are standard models. A cross identifies Christians and the Star of David, Jews. In the Lutheran cemetery of Nelsonville, then, we are very sur-

prised to see a stone with the Star of David. A Jew among Lutherans? That seems strange. In fact, it is a mistake. The soldier was Carl Irving Loberg who died in war. Those who ordered his tombstone probably did not know him and from the name they inferred that he was a Jew, like the Rosenbergs, Weisbergs, Goldbergs. Loberg, however, is a Norwegian name common in the Nelsonville area; Loberg is also the name found on the block of granite from Norway described earlier.

Even world history events are mentioned. For example, this reference is found in the old Saint Peter's Cemetery in Stevens Point:

PETER SZYMANSKI
1845-1932
BORN IN POLAND
FOUGHT NAPOLEON

It was not the great Napoleon, but Napoleon III and Szymanski was with the German troops during the Franco-Prussian War (1870/1871).

Cemeteries have much to reveal about the tragedies of life. How many parents had to grieve the loss of children, sometimes all of them? How many young wives died in childbirth? How many men died, leaving a widow with small children? Fifty or a hundred years ago, many people, especially babies and young children, died of illnesses which today are rare. Whooping cough, measles, croup, dysentery, and especially diphtheria took a heavy toll of youngsters.

Five identical monuments in the East Cemetery of Westfield document the heartbreaking losses of the Carl and Mathilde Krentz family.



Consumption, the common term for tuberculosis, was fatal to many adolescents and young adults.

Some families were severely hit. In the East Cemetery of Westfield, we discover the tragedy of the Carl Krentz family. Carl Krentz was born in 1843, probably in Germany. He married Mathilde Klampe, born in 1850. In 1866, they had one boy, Edward; later three girls were born, Matilda, Rebekka, and Mary. But on January 4, 1880, Edward died and, in February, 1881, an epidemic took the lives of Rebekka, Matilda, and Mary. Four monuments, identical but for the inscriptions, were erected in a line. For Edward, the epitaph was in German; for the girls they were in English. This one is dedicated to Mary:

*So the bird of my bosom
fluttered up to the dawn
A window was opened
Our Minnie was gone,
A truant from time,
from tears and from sin.
For the Angel on watch
took the wanderer in.*

The parents were not old yet, and they had one more child, Homer Raymond. He passed infancy and childhood, but as he was reaching adolescence, he, too, was taken. A fifth monument, identical to the others was placed in the line. The epitaph tells the distress of the parents:

**IN LOVING REMEMBRANCE OF
HOMER RAYMOND KRENTZ**

*We miss thee from
our home dear Homer
We miss thee from
thy place. Forever
on earth a shadow
over our life is cast*

*We miss the sunshine
of thy face.*

*We miss thy kind and
willing hand. Our life
on earth forever is
dark without thee here.*

*We miss thee days
We miss thee nights
We miss thee everywhere.*

*Yes we miss our beloved Homer
Everywhere*

*Yes thy memory will be by us
cherished. Till we see thy
heavenly face with Jesus.
Good Bye*

The parents still lived many years. Their graves behind their children's monuments, are marked with plain stones:

FATHER

*Jesus said: "Take ye away the stone"
St. John 11-39*

MOTHER

*Blessed are the dead which die in the Lord
Rev. 14-13*

Leaving a cemetery, a visitor will have an introduction to the living community. The names on the mail boxes and the business signs in the town are familiar. These people are the relatives of those met earlier. Their heritage is written in the lives from another year. In many ways, they have become friends.

Maurice E. Perret is professor of geography at the University of Wisconsin-Stevens Point. A glossary of ethnic terms frequently found in inscriptions and their translations is being prepared for publication in TRANSACTIONS of the Wisconsin Academy of Sciences, Arts and Letters.

Wisconsin's Women Lawyers - Past and Present

By Priscilla Ruth MacDougall

When the girl lawyer tries her first case the jury will smile affably upon her, and so perhaps will the Judge; but there is one person who will not smile, and that is the opposing counsel, who objects to a woman adversary. There are some lawyers who go so far as to say that given a woman plaintiff and a woman attorney and the defense might just as well lie down if the case be before a jury. Be this as it may, it is an ordeal for a woman at the outset of her practice to encounter in the person of the opposing counsel a courteous, well-bred gentleman whose antagonism is obvious . . . the sooner the woman lawyer can learn to expect and desire nothing from her adversary but a fair field and no quarter, the better for herself and for all other women who may follow her in the profession . . .

—“A Woman Lawyer’s Chances”
in Case and Comment Vol. 21
1914-1915

So we find no statutory authority for the admission of females to the bar of any court of this state. And, with all the respect and sympathy for this lady which all men owe to all good women, we cannot regret that we do not. We cannot but think the common law wise in excluding women from the practice of the law . . . The law of nature destines and qualifies the female sex for the bearing and nurture of the children of our race and for the custody of the homes of the world and their maintenance in love and honor. And all lifelong callings of women, inconsistent with these radical and sacred duties of their sex, as is the profession of the law, are departures from the order of

*nature; and when voluntary, treason against it . . .*¹

With these words and many more about the proper role of women, Chief Justice Edward Ryan denied Wisconsin’s first known female attorney, Lavinia Goodell, the right to practice law before the Supreme Court of the state in 1875.

Born Rhoda Lavinia Goodell in Utica, New York, in 1839, Miss Goodell moved with her parents to Janesville in 1871 after having been an active participant in the anti-slavery movement, a teacher, and an editorial writer for *Harper’s Bazaar*. She studied law in the offices of Jackson and Norcross and was admitted to the bar of Rock County in 1874. She

wrote her own brief, preserved in the Court’s opinion, but her unsuccessful bid for admission was necessarily moved by a male attorney, I. C. Sloan.

In 1877 the Wisconsin Legislature enacted a law prohibiting discrimination in the practice of law because of sex. Therefore, on June 18, 1879, Miss Goodell’s application was granted by the court, with Justice Ryan again dissenting. Lavinia Goodell’s law practice, although very active, was of short duration. She died less than a year later in Milwaukee.²

It is perhaps not surprising that the Wisconsin Supreme Court denied Miss Goodell’s application in 1875. In 1872 the United States Supreme Court had denied Mrs. Myra Bradwell, the first known

female attorney in Illinois, the right to practice law in that state, stating that the practice of law was not a "privilege or immunity" of United States citizenship as defined by the Constitution. Illinois had since passed a law allowing women to practice law in that state, and around the same time, as Miss Goodell pointed out in her well researched brief, the states of Iowa, Maine, Michigan and Missouri, and the District of Columbia had admitted women to the practice of law. It was one opinion at the time that, because the common law did not allow women to vote, hold public office, and participate in civilian affairs, laws specifically granting the right to women to practice law were necessary. To be certain of its legal ground, Iowa passed a statute giving women the right to practice law after Bella Mansfield had been admitted in 1869.

Although Lavinia Goodell paved the way for Wisconsin female attorneys, it was Belle Case LaFollette, active suffragist and feminist, writer, public speaker, counsellor to the whole Progressive Republican movement, and wife of Governor and later United States Senator Bob LaFollette, who, in 1875, became the first woman to graduate from the University of Wisconsin Law School. Starting law study with her husband in 1871, she pursued her studies to completion in the top of her class, although her husband never finished his degree.

Other women followed Mrs. LaFollette. In 1881 Kate Pier and her daughter, Kate Pier, graduated from the law school. Mrs. Pier's other two daughters, Caria H. Pier and Harriet H. Pier followed suit in 1891. These four women organized the few women attorneys in the state at the annual state bar conferences during the latter part of the nineteenth century and early twentieth century, as veteran attorney Dorothy Walker of Portage still recalls.

Although the 1900 United States census did not include any women in its statistics on lawyers, and major law schools in the East, such as Columbia and Harvard,



State Historical Society of Wisconsin Iconographic Collections

In 1875 Belle Case LaFollette became the first woman to graduate from the University of Wisconsin Law School.

were not even admitting women to their institutions, several more women were graduating from the Wisconsin and Marquette law schools and being admitted to the bar. Some were serving as notary publics and justices of the peace in the first quarter of the twentieth century. Many of these women, such as Attorney Belle Bortin Rupp, Milwaukee practitioner and leader of the Wisconsin state branch of the National Woman's Party, were active in the feminist movement and members of the NWP.³

In 1922 Dorothy Walker, one year after her graduation from the University of Wisconsin Law School, became probably the first woman and youngest person (twenty-three years old) to be elected district attorney in the United States. After serving two terms during the Prohibition years, she went into private practice in Portage with the firm of Grady, Farmsworth and Walker until 1938 when she opened her own office. It is said she still never misses a day in court.

Wisconsin's second district attorney was Elaine Fitzgerald of

Richland County, elected for two terms in 1958. And running unopposed in 1972, fresh out of the University of Arizona Law School, Melinda Olsen became the third known D.A. in Wisconsin, serving Rusk County for one term.

But despite the achievements of these women, the number of Wisconsin female attorneys has remained small, and until 1969 when Olga Bennett was elected county judge of Vernon County, no woman was ever elected or appointed to a judgeship in the state. In 1971 Governor Patrick Lucey appointed Vel Phillips as a judge of Milwaukee County's Children's Court; and Cody Split, one of the four women attorneys in Appleton, ran unsuccessfully for county judge. In the fall of 1974, Beverly A. Temple was elected a municipal judge in Milwaukee. According to Justice Horace Wilkie there were 150 women licensed to practice law in the state in 1970. While the State Bar Association keeps no specific records on the numbers of women licensed or practicing in the state today, it is estimated that the number has at least doubled since that time, as

evidenced by the growing numbers of women being admitted to and graduating from the University of Wisconsin and Marquette law schools.⁴ Many cities and counties, however, have no women attorneys at all.

Women Lawyers of the 1970s

When I came to Madison in 1970, I was told within the first few weeks of my arrival by at least a half dozen male lawyers that the top two attorneys in the city were a particular woman and a particular man. The same people added that if they were to have a major case they would want the female lawyer to do the legal briefing and the man to do the trial and negotiations! Traditionally, women attorneys have been considered best suited for "deskwork" and certain areas of the law such as domestic relations, trusts and estates, and tax, and have usually found the least discrimination in government work. Many of the early women attorneys of Wisconsin got into practice through their husbands or fathers. This is no longer the case. Today's practicing women lawyers in Wisconsin are a mixture of general practitioners, government attorneys, and activist "feminist" lawyers who are not afraid to assert their legal rights to equal opportunities for themselves and their female clients and women generally. They are advocating judicial and legislative reform in the law as it applies to women and voicing their opinions within the structure of the traditional bar associations, law schools, and the legislature. The University of Wisconsin Law School has had, since the mid-sixties, two tenured professors, and recently hired two assistant professors. The first tenured law professor, Margo Melli, heads the State Bar Section on Family Law and is an advocate of reform of the state's marriage and divorce laws. Professor Shirley Abrahamson, nationally known tax expert, is responsible for effectuating a change in the policies of the Madison Club, which had refused to serve women in certain of their

restaurants or to admit women as members on the same basis as men.

"One of the reasons I decided to go to law school," wrote Linda Roberson, then a student, in the *Capital Times* of April, 1973, "was so that I could work more effectively for the extension of full equal rights to women." Now an attorney with the Legislative Reference Bureau, she and three other 1974 Wisconsin female law graduates filed a complaint against the Wisconsin Department of Industry, Labor and Human Relations (DILHR) for discrimination in

"...these women may not realize... that they were truly exceptional to even go to law school and do not realize how outstanding they were and are."

failing to hire female staff attorneys and hearing examiners. In another action, law students at the UW Law School filed a complaint with DILHR against a local law firm which allegedly refused to hire women.

Many of the younger female attorneys today expressly state that they feel they and other women have been discriminated against in employment opportunities. The older attorneys take the position that if one were good, she would not face any discrimination. "What these women may not realize," says DILHR hearing examiner and project director for the Equal Economic Opportunities Commission in Madison, Carolyn Fribance, "is that they were truly exceptional to even go to law school and do not realize how outstanding they were and are."

One long-time attorney, Emily Dodge, for many years a hearing examiner for the Workmen's Compensation Division of DILHR, who served as an assistant professor at the UW Law School in the early 1950s, believes that there was discrimination against women when she started to practice law after her graduation in 1943. "It is hard for

any single attorney to practice alone," she remarks. "One cannot be a specialist in more than one area of the law or be in six places at once." But until recently one did not see women in the large law firms. Today they are forming their own firms with other women and men, or working with the government.

The few women who stuck out the study and practice of law in the past usually were at the top of their class, confirms Mrs. Ruth Doyle, assistant dean of the University of Wisconsin Law School. A look at the recipients of the Dalberg Prize, an award given to outstanding graduates at Wisconsin, indicates that between 1931 and 1974, eight were awarded to women. Between 1920 and 1975 three women served as editor-in-chief of the *Wisconsin Law Review*, numbers highly disproportionate to their representation in the law school. The numbers of women accepted at the law schools in the entire country increased dramatically towards the end of the 1960s Mrs. Doyle points out.⁵ As the numbers of women students increase, she notes, the women fall into the middle of the class like the other students. But, she added, unlike many of the graduates of old, they do not drop out of the practice of law upon getting married and/or having children.

Social Activism of Today's Women Attorneys

"We did not think in terms of legal issues pertaining only to women in the past," claims an older woman who asked not to be identified. "I still do not believe in it." Today's female attorneys, however, cannot help being affected by the current legal status of women, claims another lawyer. The feminist issues of the day—employment and credit discrimination, reproductive freedom, differential treatment on the basis of marital status, and marriage and divorce laws—are issues which women necessarily find themselves litigating for affected clients. As Daphne Webb, a partner in the Madison firm of Hauser, Glover and Webb, and chairperson of the

Women's Rights Committee of the State Bar Section of Individual Rights and Responsibilities explains, a feminist attorney follows women's issues, wants to litigate them, and tries to make changes in the legal structure where necessary.

Evidence of the concern for women's legal issues among female attorneys—and indeed many male attorneys—is the organizing of women attorneys within the state and county bars and the Wisconsin Civil Liberties Union, and the publication of pamphlets on women's legal rights. As this article goes to press, the Governor's Commission on the Status of Women is preparing a pamphlet on Wisconsin laws pertaining to women. The Center for Public Representation in Madison, directed by Attorney Louise Trubeck, has published a brochure on women's rights to credit; she also helped draft guidelines to implement the state's new law outlawing discrimination on the basis of sex or marital status. The State Women's Rights Project of the Wisconsin Civil Liberties Union, headed by Attorney Sara Joan Bales, a partner in the feminist law firm of Edlund and Bales in Milwaukee, is preparing a handbook on employment discrimination.

Other attorneys, such as Milwaukee practitioner L. Mandy Stellman, frequently speak on women's rights. Cooperating attorneys for the Civil Liberties Union have challenged the state laws regulating abortions and sterilizations, prohibiting the sale of contraceptives to unmarried persons, and the giving of veteran's points to job applicants, among other things. Schools within the university system have responded to the interest in women's legal rights by offering courses on women and the law, and conferences sponsored by the Governor's Commission and University of Wisconsin Extension have centered on this issue. "I am just

amazed," states Assistant Professor June Wiseberger of the Wisconsin Law School who is teaching such a course this year, "at the amount of activity among young lawyers and law students in this area."

While many female attorneys graduating from law school today feel they are discriminated against, they will not be told, as was University Regent Nancy Murray Barkla in the early 1950s, that women were frowned upon at Marquette because they would just get married and leave the profession. But male prejudice can still be strong. "Practicing law with a lady has a very detrimental effect on appearance," says a well-known attorney from La Crosse, where there are no women attorneys. "It is a combative profession, tends to make women practitioners age more rapidly and become less attractive more readily." And according to Judge Bennett, who knows of no other women attorneys in her county, people have more confidence in men than in women and this is a "natural" reaction.

Conclusion

Despite their growing numbers in Wisconsin, women lawyers are only beginning to recognize themselves as a group. No statistics on their numbers, specific occupations, salaries, and geographical locations have as yet been compiled, and no historian has thoroughly researched the contribution of women attorneys to the state. It is the opinion of this writer, however, that through the state and local bar associations, the Wisconsin Civil Liberties Union, the Center for Public Representation, and the law schools, women attorneys in Wisconsin are taking form as an independent and potentially strong force in shaping the legal system of Wisconsin and will bring about needed changes in societal and judicial attitudes towards equalizing the legal and social status of women.

Priscilla MacDougall is a Madison attorney and member of the Wisconsin and Illinois bars. Currently, she is serving as chairperson of the Section of Individual Rights and Responsibilities of the Wisconsin State Bar Association. The author wishes to thank all of the women attorneys who supplied information for this article.

FOOTNOTES

- ¹ In the Matter of the Motion to admit Miss Lavinia Goodell to the Bar of this Court, 39 Wis. 232(1875), at 244-245.
- ² See Goodell, "A Day In the Life of A Woman Lawyer," *The Woman's Journal*, Nov. 10, 1877, p. 354; Reed, *The Bench and Bar of Wisconsin*, at 531-532; Berryman, *History of the Bench and Bar of Wisconsin*, at 501-503; Kohler, *The Story of Wisconsin Women*, at 48-49; "Mrs. Goodell's Case," *Central Law Journal*, Vol. 3, at 186. Reports to the State Bar Association of Wisconsin (1878-85), at p. 249.
- ³ "More Than Four Hundred Women Hold Municipal Office in Wisconsin," *American City*, No. 31, Aug., 1924, p. 155 (1909), "Women Law Makers in Wisconsin," *Equal Rights*, Vol. I, No. 37, Oct. 27, 1923, at 290. "Woman on City Service Commission," *Equal Rights*, Vol I, No. 42, Dec. 8, 1923, p. 300. In 1929, Attorney Rupp represented Mabel D. Holt in an unsuccessful bid against the Secretary of State, Treasurer, and Civil Service Commissioner and others for employment with the state legislature on the grounds that equal employment was mandated by the state equal rights statute of 1921.
- ⁴ At the University of Wisconsin Law School seven women were graduated out of a class of 130 in 1970, 42 out of a class of 320 in 1974. In the fall of 1973, 196 women of a total of 984 students were enrolled. In the fall of 1970, 70 women were enrolled out of a total student body of 821 students. Marquette has not compiled figures as to graduating women, but indicates that in the first year class of 1963-1964 five women of seventy-one were enrolled. In 1972-1973 the first year class consisted of 12 women out of a class of 160. In 1973-1974 fifteen women out of a first year class of 160 were enrolled, and in 1974 thirty women were in the first year class of 170. According to the schools, women were never precluded from admission to either institution.
- ⁵ Statistics from the Wisconsin Law Schools may be compiled by the time this article is printed. But see, for a national picture, Bysiewicz, 1972 Association of American Law Schools Questionnaire on Women in Legal Education, 25 *J. Legal Ed.* 5(1973) and "Women Penetrating The Law," 9 *Trial*, No. 6, Nov./Dec. 1973. For a discussion of women in law schools in Canada, see Bankier, "Women and the Law School: Problems and Potential," *Chitty's Law Journal*, Vol. 22, No. 5(1974), p. 171.



Trade and Travel in Montreal Country

By Otis Bersing

Travel eastward along the rock shores and wave-cut cliffs of Wisconsin's Lake Superior coast brings one eventually to the Montreal River. This beautiful wild river twists and turns, and rushes northward for more than seventy miles before spilling over a ledge to the surface of Lake Superior.

Long before Europeans arrived, the river was well known to the Indians. The Chippewas called it *Kawasiji-wangsepi*—White Falls River or "Where-there-is-a-strong-foaming-current-in-the-river." Legend has it that in this region of the Iron Range near present-day Hurley was the nesting place of the enormous Thunderbirds, *Wassamowin* or the "lightning makers." With the thunder from their flap-

ping wings and the lightning from their flashing eyes, the giant creatures brought storm and rain—and warnings of the Great Spirit's displeasure.

The earliest European reference to the river is on a 1688 French map. Jesuit missionaries possibly named the river for the resemblance of its bluffs to the mountainous site of Montreal on the St. Lawrence River. Alternatively, the Montreal may have been named by Duluth, who in 1680 became the first white traveler to portage the Brule to the St. Croix.

From its appearance on a map, one might assume that the river was a main travel route to inland sites. But sharp rapids, waterfalls, rocky beds, chutes, high cliffs, and

Above: The roar of water rushing through boulders can be heard long before Spring Camp Falls comes into view. (Photo by Stephan Albert)

steep banks made travel difficult. Passing through alder, tamarack and cedar swamps and possessing very few fording sites, the river was, needless to say, useless for steamboats or barges.

The Montreal River flows entirely in what is today Iron County. Early descriptions named the swamps and small lakes north of Turtle River as headwaters for the Montreal and suggested that it was interlocked with the Flambeau. But surveys to establish the Wisconsin-Michigan boundary made by engineer T. J. Cram in 1841 showed that the mainstream Montreal was actually formed by the junction of two branches, the east fork, or Pine River and the west fork or Gile River.

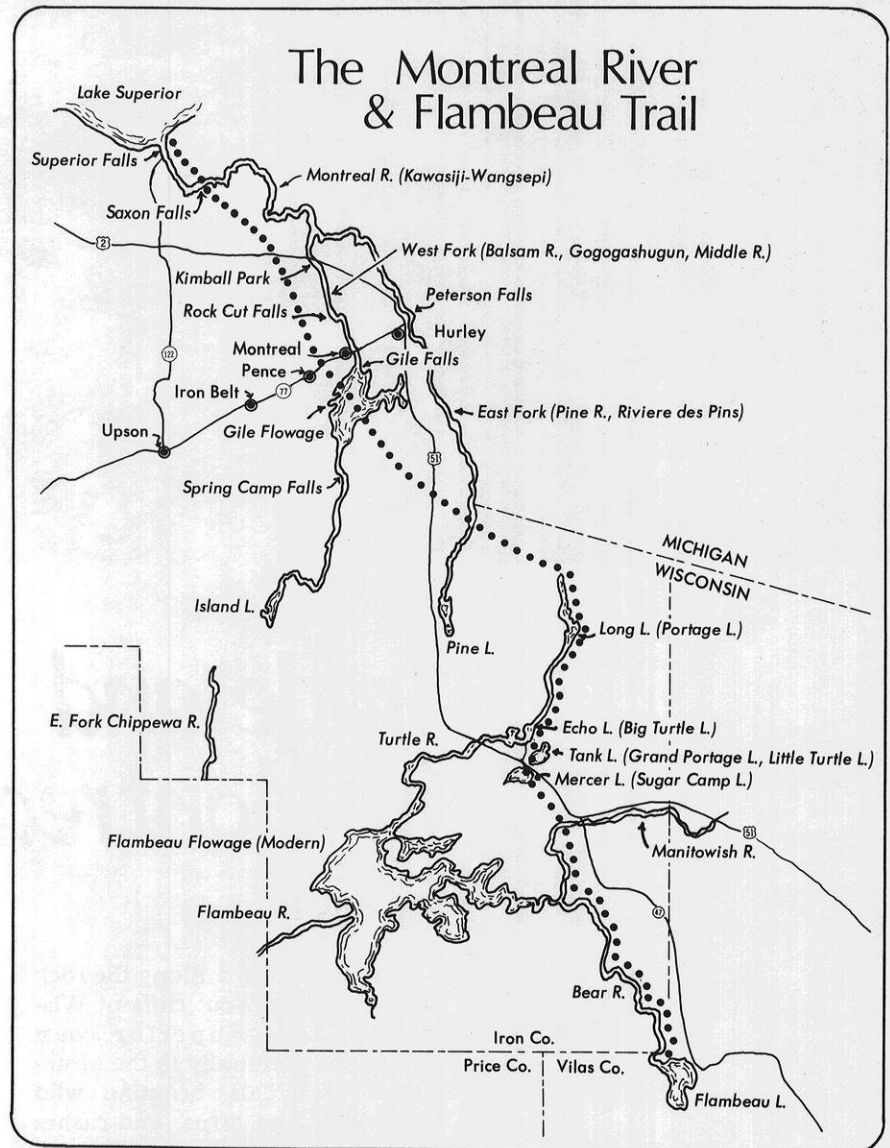
The east fork flows north for some thirty-five miles, through the Montreal gap of the Penokee Range between Hurley and Ironwood, Michigan. It has been called the Pine River (*Riviere des Pins*) or the Spruce River and is the main stream of the Montreal. Its source is three-hundred-acre Pine Lake, nine miles above Mercer on U.S. Highway 51. Peterson Falls, a unique series of three falls with scenic pools in an undisturbed wild setting, grace the east fork about two miles up the river from Hurley. The falls, less than a mile north of the ancient Chippewa lookout of Eagle Bluff, can be reached by following U.S. Highway 2 to a short town road, and finally, a foot trail.

The west fork, or Gile River (pronounced with a hard "g"), is about thirty miles long and rises at Island Lake in the central part of Iron County, not far from the east fork of the Chippewa. For five miles, the west fork runs through Gile Flowage. A most beautiful series of falls, the Gile Falls, can be seen by driving to the north end of the flowage, in the city of Montreal. Another falls, the narrow Spring Camp Falls, a couple of miles south of the Gile Flowage, can be found (if one has a map) near the end of a little-traveled rough road where the rushing sound of water through the boulders reveals its location before it comes into view.

The Gile River flows through Rocking Chair Gap, another of the gorges of the Penokee Iron Range. About two miles north of State Highway 77, it flows over Rock Cut Falls. And two miles further down river from the falls, particularly near Kimball County

and the final drop to the lake at Superior Falls, since 1917 the site of a 127-foot hydroelectric dam.

Human use of, and impact on, the river is of long standing. Chippewa Indians found fishing at the mouth of the Montreal good and built weirs to catch whitefish and



Park, are a series of rapids. The west fork has been known by many names, among them Balsam River, Middle River, and Rocking Bridge River. The Indians and some early travelers called it *Gogogashugun*—"River-crossed-by-a-fallen-swaying-tree."

The two branches merge to form the mainstream of the Montreal River, which winds through the remaining thirty-five miles to its mouth at Lake Superior. On the way, it passes over Saxon Falls

sturgeon. In the first half of the nineteenth century, a trading post was operated at the mouth by the American Fur Company, and a fisheries station was started by the traders around 1824. When logging began in the 1880s, dam franchises were granted for any point along the Montreal where there was a need to facilitate log driving. The perpendicular walls of Superior Falls were blasted down by lumberers to improve log movement. Today, iron min-

ing towns are found opposite the ridge gaps of the Penokee Iron Range.

From the first, written records speak of the Montreal's striking beauty, its waterfalls and cliffs. "The Montreal . . . presents . . . a great variety of beautiful scenery, and the extreme wildness of its features possess peculiar charms for the lover of the picturesque" wrote T. J. Cram when he surveyed its source in 1841.

J. G. Norwood, a geologist who followed the Flambeau Trail southwest to the upper Wisconsin River in 1847, described Superior Falls: "About two yards from the lake shore the river falls in two cascades of about 40 feet each over the edges of the tilted sandstone."

James Doty, Wisconsin's second territorial governor, and the famed geologist Henry S. Schoolcraft made an expedition to explore the geological and mineralogical resources of the country in 1820. They reported: "This stream is generally very rapid and at its mouth where we landed a beautiful fall is seen of about 70 ft. The banks are 100 ft." Doty added a note on the Montreal's use for travel: "Above the falls is a succession of rapids not navigable even for canoes."

The Montreal River has been a major factor in the boundary disputes between Wisconsin and Michigan. When the Wisconsin Territory was established in 1836, the boundary between Michigan and Wisconsin was held to be a continuous water line from Green Bay, up the Menominee River, to Lac Vieux Desert (then thought to be the source of the Montreal), then down along the Montreal to Lake Superior. This impossible line, based on a faulty map, would have made Upper Michigan an island. Cram's survey of the boundary in the 1840s redefined the source as the junction of the east and west forks, north of Hurley, but did not settle the dispute.

The case dragged through the courts on several occasions. A suit, begun by Michigan as late as 1923, claimed that the west fork was the main stream of the Montreal, and therefore the starting point for the boundary line. Had

that claim been accepted, Wisconsin would have lost thousands of acres of land, valuable mines, and the city of Hurley. The U.S. Supreme Court finally confirmed Wisconsin's title to the disputed area.

That the problem could at times be taken with levity was illustrated by the Ironwood (Michigan) *Times*, which in February of 1924 appeared with these headlines: "WE'RE THREATENED WITH HURLEY AGAIN. Legal Action over Boundary Progressing. Wisconsin Wants to Keep Hurley and She's Welcome to the Burg."

Confronted with the perils of canoe travel on the Montreal River, the early fur traders became the first Europeans to use the Flambeau Trail, an overland access route to other Wisconsin waterways suitable for the laden birch bark canoes of the voyageurs. This trail, combined with other portage trails and the waterway networks of the Brule, St. Croix, White, Bad, Namekagon, Chippewa, and Flambeau, was to provide the voyageur with a transportation system before the forests were opened to horse and wagon.

The trail had been used by the Sioux and Chippewa as a war road, for tracks to habitats of wild game and fish, for easy access to the sugar bush and berry regions, and as connecting links between villages.

On their second visit to what is now Wisconsin, Radisson and Groseilliers, pathfinders of the fur trade, were guided along the south shore of Lake Superior. Upon reaching the mouth of the Montreal River, their Indian guides turned inland "to win ye shortest way to their nation," probably over what was later to be known as the Flambeau Trail, bound for Lac du Flambeau or the sources of the Chippewa River.

Actually, the trail, also known as the Montreal Trail, followed neither the Flambeau nor Montreal rivers as we know them today. The first forty-five miles of the overland portage began on Lake Superior near the mouth of the Montreal and ran through a wilderness of pine, spruce, hemlock,

and cedar, through valleys of sugar maple and other hardwoods. It crossed the Montreal just downstream from Saxon Falls. From there, it took a generally southeasterly direction, through the Penokee Range, over hills, swamps, and boulder-laden creeks, passing close to the present location of Montreal, and again crossing the west fork (now the Gile Flowage) where the traders forded by means of stepping stones. Continuing southeasterly, the trail crossed the Pine River (east fork) and in another six miles reached Portage Lake (now Long Lake) in Iron County. Here canoes were loaded for the remainder of the southward journey by water and short portages to the end of the trail, Lac du Flambeau.

One account of life on the trail is given by Francois Victor Malhoit, a twenty-eight-year-old clerk of the Northwest Fur Company. From his station at Fort William on the north shore of Lake Superior, he was sent to spend the winter of 1804-1805 trading with the Chippewa at the fur trade post or fort at Lac du Flambeau. His perilous experiences were characteristic of life in trading at that time. With the birch bark canoes loaded (flour, port, and other foods; twenty kegs of rum and high wines; kegs of powder; bags of shot and bullets; kettles; guns, traps, and other trade goods), he and his voyageurs started out from Fort William, paddling along the shore to a post on the present site of Superior, then proceeding to LaPointe on Madeline Island and along the south shore to the mouth of the Montreal. The three hundred mile trip took seventeen days, due to delays when "the wind was too strong to allow my continuing the journey."

Disembarking, Malhoit and his seven canoists began the forty-five-mile portage to Portage Lake (now Long Lake), each carrying two eighty-or-ninety-pound packs. The portage, which took about 120 pauses (the number of times the voyageurs stopped to rest, each representing about one-half mile) or two days, was said to be "one of the worst in Wisconsin." Malhoit recounts: "The portage trail . . . is narrow, full of overturned

trees, obstacles, thorns, and muskeg . . . inhabited solely by owls because no other animals could find a living there . . . I will not undertake the portage today because these men from the interior ask . . . rest. How weak they are." At one point on the trail, he notes, "We are camping because several of the men are complaining greatly of pains in their legs and it is necessary to spare them."

After gumming the canoes at Portage Lake, they continued on, paddling and portaging the remaining sixty miles of the Flambeau Trail. In two days they reached the trail's end, the fur trade center and Chippewa settlement of Lac du Flambeau.

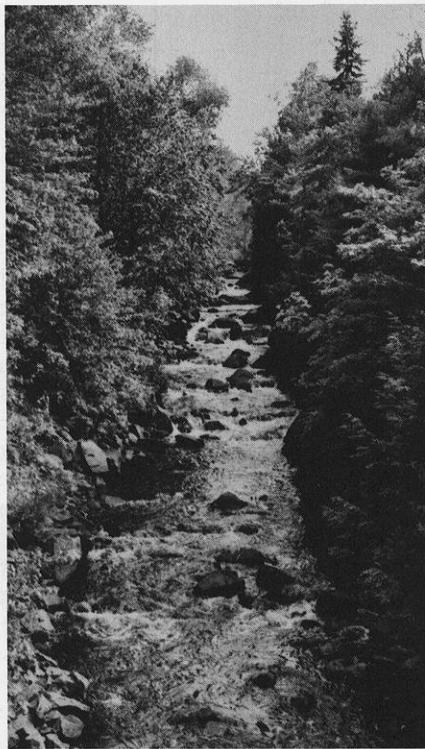
An alternate route from Portage Lake has been described by others. This trail passed through a series of small lakes connected with winding streams to Echo Lake at Mercer (then known as Big Turtle Lake), with a short portage to Tank Lake (then Little Turtle Lake) and into Mercer Lake. From there, a grueling "six pause portage" brought the travelers to the Manitowish River, once called the east branch of the Chippewa. "The trail runs over a sand barren, with the exception of the last half mile, which runs through one of the worst tamarack swamps I have ever seen" wrote the geologist Norwood in 1847. The trail continued via the Manitowish for eighteen miles and the Bear River for twenty-four miles to the post at Flambeau Lake.

Lac du Flambeau (or Torch Lake, named from the custom of spearing fish by torch light) was actually a group of connected lakes on the cross roads of the Chippewa River route to the Mississippi and the Montreal route to the Wisconsin River. Its location made it a well-known rendezvous for the exchange of trade goods for fur. There, Malhoit, like many traders after him, traded liquor, blankets, clothing, knives, beads, and other goods for beaver, otter, muskrat, marten, fisher, mink, deer, moose and bear meat and skins, pemmican, and wild rice. His traders followed many other trails over vast areas in dealing with the Indians—to the Wisconsin River, Court Oreilles on the Chip-

pewa, Trout Lake, Lac Vieux Desert, the Mercer lakes, Tomahawk Lake, the Pelican lakes near Rhineland, and as far away as Keeweenaw Bay. They often returned to various sites on the difficult portage trail to gather up trade goods left *en cache*.

In doing business, life was far from pleasant. Malhoit wrote: "As to Lac du Flambeau, it is worthier of the name swamp than of lake. . . . This season it would be easier to catch bullfrogs in the nets than fish. We are threatened with a famine because the savages absolutely want to go on the warpath. We had quarrels all day with the savages. . . . Spears, knives, hatchets, etc. all were brought into play. . . . They made a breach of the fort." Enroute, before arriving at Lac du Flambeau, Malhoit had written: "Our people from Lac du Flambeau arrived here. They are thin and emaciated like real skeletons. They say half the time they had nothing to eat."

After spending an adventurous ten months at the interior post, Malhoit started the return trip, again following the troublesome land portage to Lake Superior. It had not improved. "The portage was never so bad, the flies are



Rock Cut Falls: ". . . not navigable even for canoes." (Photo by Otis Bersing)

eating us up. The road is so bad and there are so many overturned trees that I was lost for an hour and should still be so had I not had a gun." The water was up to their knees at times and forced them to make a raft in order to cross the west fork of the Montreal.

Until the 1880s, when railroads and settlements came to the area, the Flambeau Trail continued to be used for moving goods and furs. Today, the portage trail has no practical use, but it has not been forgotten. Oldtimers tell of having seen blazed trees and "seat trees" at Montreal River crossings. They tell of men like Tom Morris, a land-looker, logger, and mail carrier who rode horseback over the trail. They insist that, despite the logging and burning, portions of the trail can still be seen, particularly at Long Lake where evidence of its considerable use in the fur trade remains. There has been increased activity in recent years to trace the entire trail and secure recognition of its historical significance. Several miles passing over the properties of cooperative land owners have already been opened to hikers.

Unfortunately, a present-day voyageur cannot merely step out of a car and onto the trail. For unlike a simple route to a previously used fishing or hunting spot with recognizable landmarks, the remains of the Flambeau Trail cross uncleared land, with weeds, brush and second growth trees—all of which tend to look alike in this rough and unfamiliar country. It is easy to lose track of directions, to cross an old tote road, deer trail, or likely looking path, and have the "real" trail escape notice. But in spite of these frustrations, the wildness of the region and a deep sense of peace and solitude contribute to the experience. A real feeling of closeness with those who trod these paths and the beauty of the Montreal country cannot help but linger in each hiker's memory.

Otis Bersing, formerly with the Department of Natural Resources, is the author of A Century of Wisconsin Deer and Bow and Arrow Big Game Hunting in Wisconsin.



Wisconsin Photographers' Showcase: John Barsness

Wisconsin photographer John Barsness took to wandering the back roads and mountains of Montana last summer. He returned with a photographic portrait which mirrors his reverence for the land and people. These three pages are but a small portion of the record of that journey.

Above:
"Josephine Mine, Granite, Montana"
1/250; f:5.6
Plus-X; ASA 160
50 mm lens

Barsness's involvement with Montana dates to his years as a student at the University of Montana at Missoula. After studying for an additional year at the Brooklyn Museum Art School, he returned to his native Madison and completed a MFA at the University of Wisconsin. He is currently an art instructor at Edgewood College, in Madison.

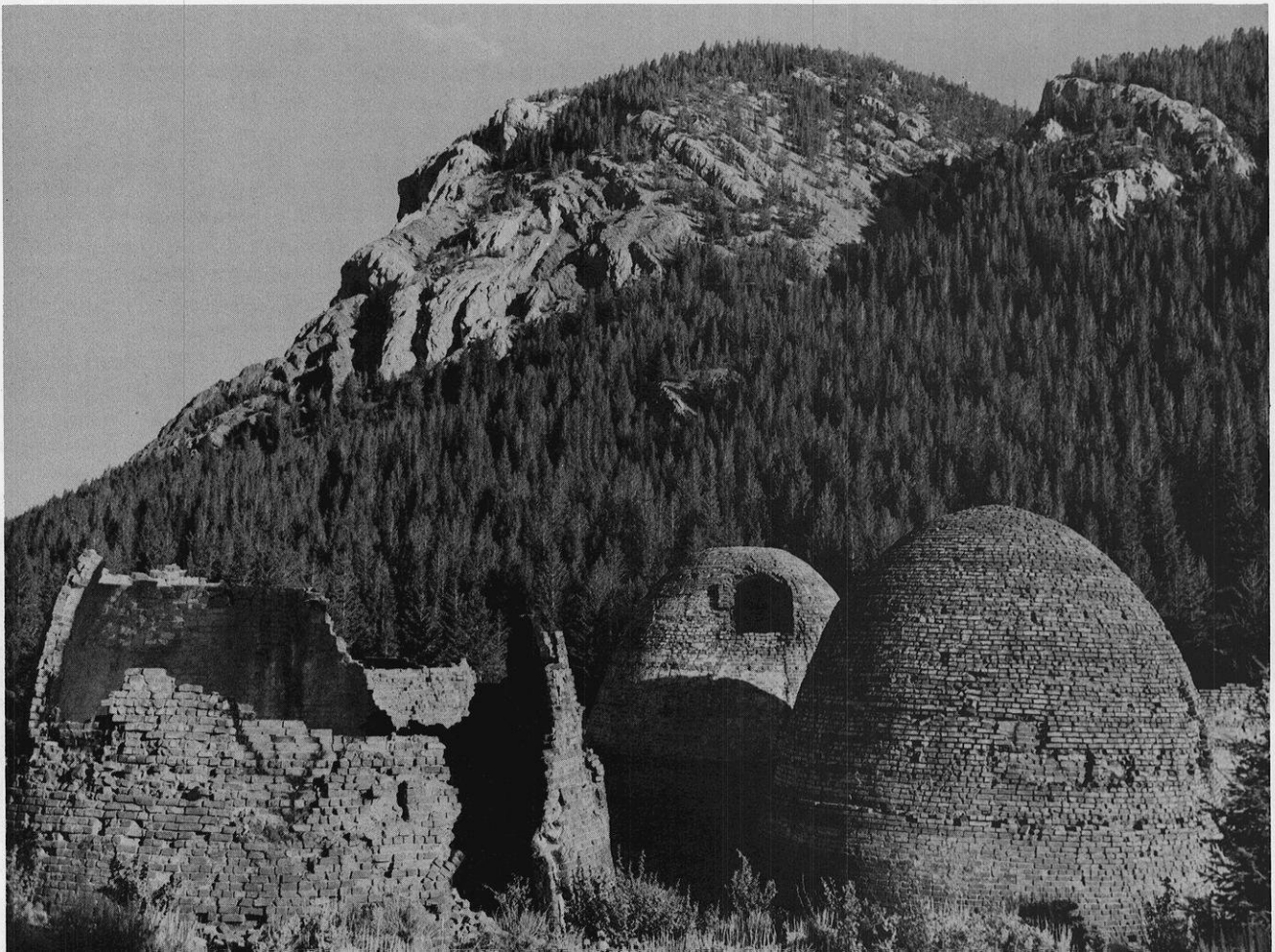
Right
"Shift Change, Anaconda"
1/125; f:4
Pan-X; ASA 32
85 mm lens

Below:
"Sunrise Mill"
1/30; f:11
Plus-X; ASA 160
35 mm lens

Far right
"Miners' Graves and Mill"
1/250; f:5.6
Panatomic-X; ASA 32
85 mm lens

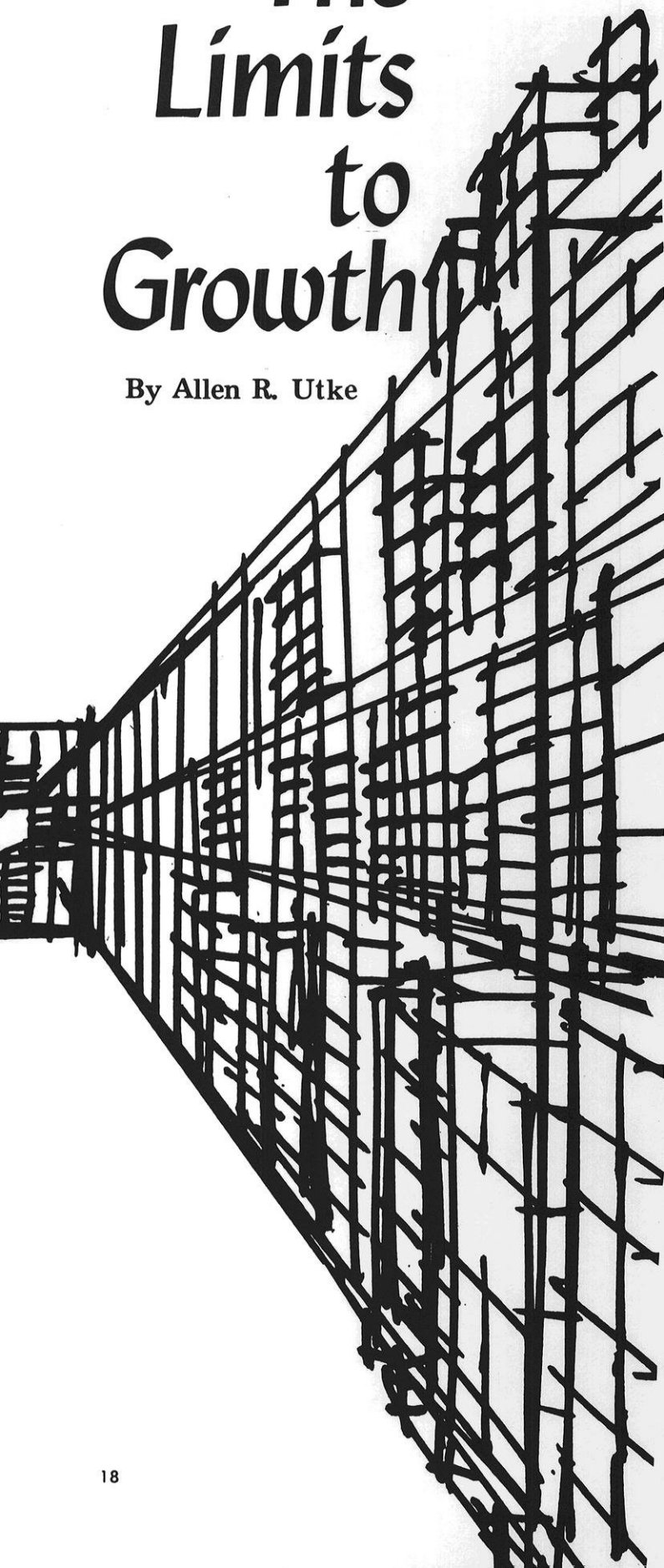
Far right, below:
"Lime Kiln Mountain"
1/15; f:16
Panatomic-X; ASA 32
85 mm lens





The Limits to Growth

By Allen R. Utke



The American people have given very few indications to date that they realize that the "energy-crisis" is a long-range, global problem. Most seem to believe it is a temporary problem and that there are permanent solutions just around the corner. There are probably a number of interrelated reasons for this extremely serious misperception. Unfortunately, the most important reason may also be the one that is the least obvious: most people lack a basic understanding of the historical nature, characteristics, and implications of exponential growth.

Energy Consumption and Population Growth Through the Ages

One of the best ways of finding out where you are is to take a look at where you've been. This is also true in the "energy crisis." Let's assume there were about 100,000 of our human ancestors on the earth in one million B.C. (That's about the current population of Green Bay!) Let's further assume that each individual consumed energy only in terms of the food eaten—about 2,000 calories per day. By the time of Christ, energy was being consumed through the use of fire, animals, wind, and water—in addition to that consumed as food. Energy consumption had increased about five times per person (about 10,000 calories) per day and there were about 2,500 times (about 250 million) more people on the earth. But it had taken one million years for these increases to occur!

There were still only roughly as many people in the world at the time of Christ as there are in the United States at the moment! In 1900 there were about 1.5 billion people in the world (about six times as many as at the time of Christ), with each of them in the more developed countries consuming about 70,000 calories (about seven times as much energy) per day. But those increases had only taken about 1,900 years to occur! Today, there are almost 4 billion people on the earth (about 2.6 times as many as in 1900), with each of them in the more developed countries consuming about 220,000 calories (about three times as much energy) per day. Those increases have taken only about seventy-five years to occur!

It should be obvious that, historically speaking, both energy consumption and population have been growing in an accelerating fashion, a pattern known as exponential growth. For energy, as a very rough approximation, it took one million years for the first tenfold increase in global energy consumption, 1,900 years for the next tenfold increase, and only seventy-five years for the last one!

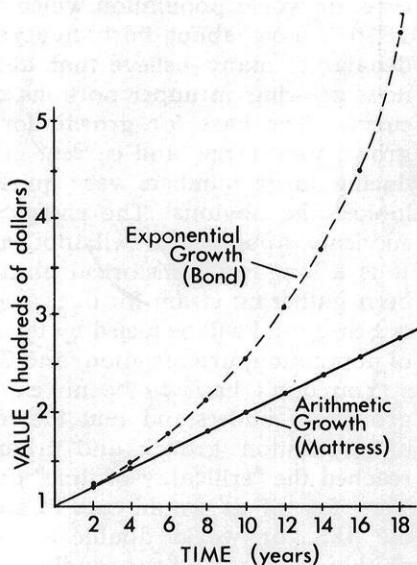
The Deceptive Nature of Exponential Growth

Almost everyone understands linear or arithmetic growth—something growing in a manner of 1, 2, 3, 4, 5 . . . etc. But very few people understand the nature and implications of compounded or exponential growth—something growing in a manner of 1, 2, 4, 8, 16 . . . etc. This is unfortunate because the differences are both impressive and important. To help picture those differences, imagine yourself to be

a miser with \$100 in savings which you would like to see grow. Would it grow faster if you put it under your mattress and saved an additional \$10 per year, or if you bought a \$100 savings bond which paid 10% interest per year? Selected results for the two savings schemes are shown:

SELECTED RESULTS OF TWO SAVINGS SCHEMES

End Year	\$ Under Mat-tress	\$ Savings Bond
1	110	110
2	120	121
3	130	133
4	140	146
5	150	161
6	160	178
7	170	200
...
14	240	400
21	310	800



Note that for the first year or so there's very little difference in the two savings schemes, but that from then on the difference increases rapidly. With the bond, you would have doubled your money in seven years and quadrupled it in fourteen. After twenty-one years, the value of the bond has grown eight times, but the \$100 under the mattress has increased only three times. Exponential growth is obviously compounded, accelerating growth—growth upon growth.

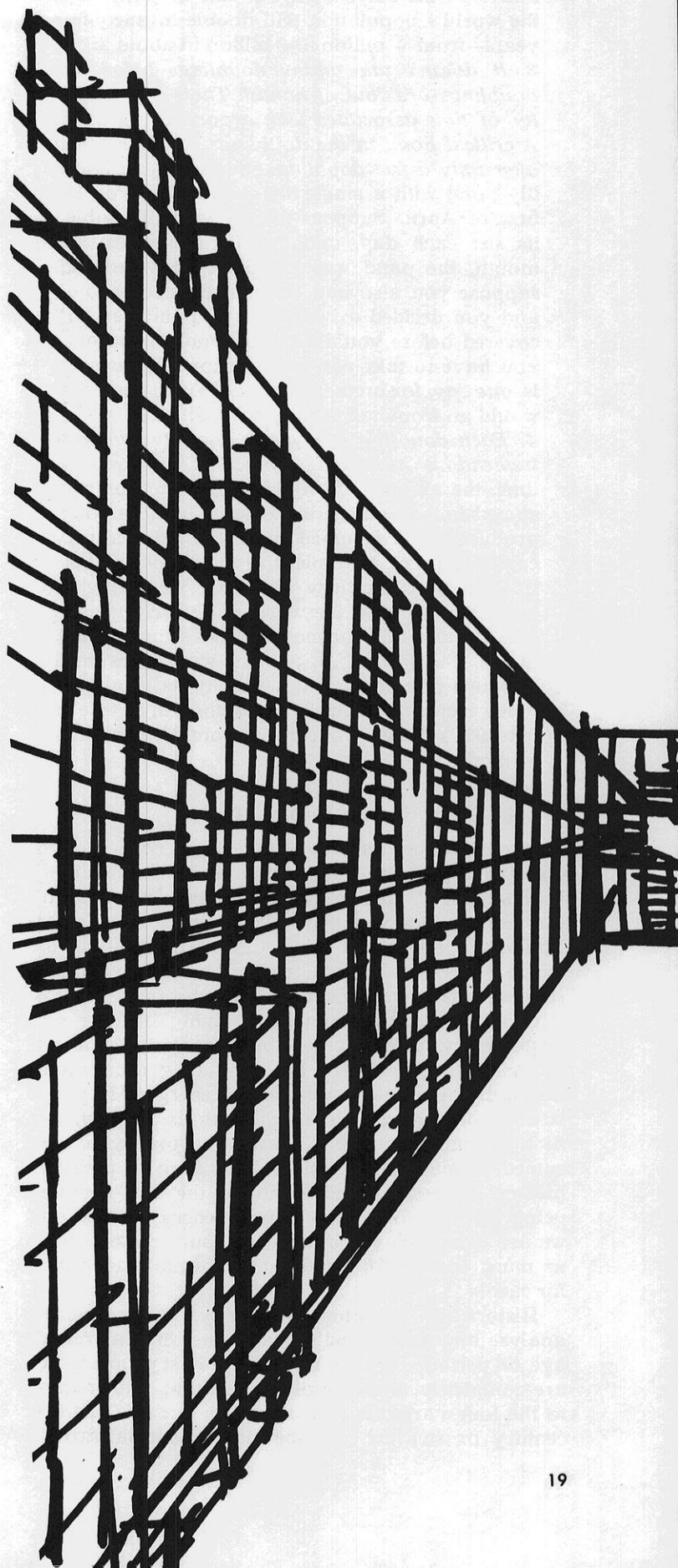
It is often useful to think of such growth in terms of "doubling time"—the time it takes a quantity growing exponentially to double. Associated doubling times for selected exponential growth rates are:

EXPONENTIAL GROWTH AND DOUBLING TIME

Exponential Growth Rate (%)	0.5	1	2	3	4	8	10
Doubling Time (years)	140	70	35	23	17	9	7

Exponential growth is deceptive, so deceptive, in fact, that at certain times and in certain situations, it might even be termed sinister. In particular, four properties create numerous pitfalls:

1. If there is a large numerical base present on which to build, even small exponential growth rates can generate very large numbers very quickly. Many people believe that world population is growing at a rate of "only" 2%. But the base for that exponential growth rate is currently about 4 billion people. Thus, every minute a small village (150 people) is added to the world's population, every hour a small city (8,000 people), every day a line of people sixty miles long (190,000), every year another Cana-



da and Mexico (70 million people), and every three years another U.S. (210 million people)!

2. *Even small growth rates have short doubling times.* At the current growth rate of "only" 2%, the world's population will double in thirty-five years—from 4 billion to 8 billion in about 2010!

3. *It doesn't take many doublings before the doublings are "out of hand."* There is a criticality of time associated with exponential growth. A critical point in the doublings can be reached after only a few doublings. Suppose you had a lily pond with a single lily growing on it on the first of April. Suppose the lily growth doubled its size each day, until, on the last day of the month, the pond was completely covered. But suppose you also had other spring chores to do and you decided to wait until the pond was half covered before you'd act. How much time would you have to take corrective action? The answer is *one day*, for on the last day of April the pond would go from half to fully covered!

4. *Each doubling of a given quantity can have tremendous historical significance.* In doubling time, the amount of the thing produced or consumed in that time period is equal to the amount produced or consumed in *all* previous history combined! For example, the consumption of petroleum and electricity has been increasing in both the U.S. and the world at a yearly growth rate of almost 8% for most of this century. Thus, in the 1960s, the U.S. and the world consumed as much petroleum and electricity as in all previous history combined! The same will be true in the 1970s if a growth rate of about 8% continues for both.

Our "Abnormal" Age

It should be obvious that energy consumption, population growth, urbanization, and Gross National Product (GNP, the value of a country's goods and services for one year) are all interrelated variables. You can't talk about one without talking about the others. Current growth rates for these variables (averages from many sources) are shown in Table 3.

Growing numbers of people, living in more and larger cities, demanding a better material standard of living (higher GNP) are producing accelerating demands for, and consumption of, energy. The world is now consuming at least ten times as much energy as it did in 1900. The U.S. and the world have consumed as much energy since 1960 as in all previous history! If present trends continue, the U.S. could be using three or four times as much energy in 2000 as we are using today and the world four or more times as much energy. That's about two or more doublings for each!

Historically speaking, it's always much easier to analyze and understand a past, rather than a present, age or period. Perhaps that's why most people today are completely unaware of the fact that, with regard to the four variables just discussed, our age (the last century or so) has been the most abnormal growth

period in the history of the earth. It has actually been a period of "super exponential growth." Not only have the rates of growth been higher in the last century or so than ever before in the past, but they have also increased, either in "spurts" for energy consumption, urbanization, and GNPs, or continually as in the case of population growth. Thus, the doubling time for world population which was eighty years in 1850 is now about thirty-five years. Although it is debatable, many believe that all four variables are now growing in upper portions of their exponential curves. The base for growth for each variable has grown very large, and current growth rates are producing large numbers very quickly. We have overlooked the obvious! The energy crisis did not just suddenly appear and will not suddenly disappear. It is a long-range historical phenomenon which has been gathering steam for over a century. It has been, is being, and will be fueled by the exponential growth of population, urbanization, and GNPs.

You don't have to be an expert on exponential growth to understand that the historical doublings of population growth and urbanization have now reached the "criticality of time" described previously. Very few of us would care to see the population of the U.S. or world double again or see our cities double in size. And yet, oddly enough, even though energy consumption is growing at a rate twice that of population in the world and more than four times that of population in the U.S., and has been for some time, we seem to believe that such consumption can continue indefinitely. We just have not put energy consumption into historical perspective yet. Most people thus believe the energy crisis is a short-range historical problem and are far more worried about energy supply than energy demand.

Our Current Game Plan

Is there enough historical "room" left for energy consumption to about double twice more in the U.S. and the world by 2000? Unfortunately, it appears we will not be able to fill such a vastly increased energy appetite with oil and natural gas—which together currently supply about 75% of the world's energy needs. It is becoming increasingly clear that M. King Hubbert and others may be correct in their predictions that U.S. petroleum may be about 90% depleted around 2000, U.S. and world natural gas about 90% depleted about 2015, and world oil about 90% depleted about 2032. Nevertheless, our current game plan in both the U.S. and the world remains accepting as largely inevitable a growing appetite for energy, and attempting to fill it. If we are being increasingly surrounded by demand, and we can't fill it with oil and natural gas, we'll simply develop alternate energy supplies! We'll send for the "scientific-technological cavalry"! The "cavalry" *can* provide us with partial, short-range energy solutions, such as using coal "as is," coal gasification, coal liquification, magnetohydrodynamics (MHD), conventional nuclear reactors, breeder reactors, hydrogen as a fuel, oil shale, tar sands, trash and refuse burning,

hydropower, the winds, and the oceans. But these sources *cannot* supply us with significant amounts of energy (often electricity only) before 1985! The "cavalry" *will* bring us unlimited energy with the development of solar, geothermal, and fusion power—but *not* until after 2000! Unfortunately, while we're waiting, a sudden quadrupling in the price we must pay for increasingly needed, imported, Arabian oil has created a multitude of increasingly serious problems in the U.S. and the world. But our game plan is flexible! We will simply use voluntary or mildly mandatory energy conservation measures as necessary until about 1985, when once again we can fully return to a "business-as-usual," growth philosophy of life. For it's less painful to emphasize energy supply than it is to emphasize energy demand. We'd rather count on energy sources that haven't been developed yet—and worry about paying their tremendous associated costs later—than acknowledge today that our earth is finite and that there may be limits to growth on the horizon.

The Possible Flaw in Our Current Game Plan

Our current energy game plan looks reasonable on paper. However, there may be a flaw which could invalidate it—the idea of global limits to growth. Before 1972, that idea was difficult to quantify and was thus largely ignored. But in 1972, the results of a computer study of the world, done at the Massachusetts Institute of Technology, for an organization known as the Club of Rome, were published in a book titled, *The Limits to Growth*.

In the study, the researchers involved defined five, interrelated variables which they said would decide the fate of the world. Those variables were population, resources, pollution, food production, and industrial output per capita. The group made different sets of predictions (different models) for the five variables, fed the data to the computer, and let the computer make an overall prediction. In each model, the computer predicted global population collapse in the next century due to depletion of food and natural resources; overindustrialization; overpopulation; and a toxic buildup of pollution, destroying crops and killing people outright. An increasing possibility of conflicts and wars even before that point was reached was not specifically considered—only the possible end result. Attempts were made to change the predicted outcome by assuming a future doubling of natural resources over and above what we now expect to have, the availability of "unlimited" resources (as in our current game plan), increased pollution controls, increased agricultural productivity, voluntary birth control, and various combinations of these assumptions. The end result was delayed until as long as about 2100, but it was always the same—eventual global population and industrial collapse.

The study basically says that if you continue to pump something like energy into the global system, the other variables are stimulated to further growth and the system will ultimately burst as global limits to growth are reached. The only solution that the

computer would agree would prevent this frightening outcome was to bring both population and industrial output per capita to zero growth rates as soon as possible—on a global basis! The computer said that efforts to achieve zero population growth (ZPG) and zero economic growth (ZEG) must be started as soon as possible. Waiting to start until 2000 would also end in disaster, according to the computer. A second study, titled *Mankind at the Turning Point* was published late in 1974. This study is somewhat milder in tone than *The Limits to Growth* and emphasizes possible regional rather than global catastrophes. But the general recommendations, particularly that of needed global co-operation remained essentially the same.

Perhaps the cold reality of these studies, the shock they produce, and their recommendations of ZPG and ZEG run counter to our instincts. But for whatever the reasons, the general public has largely ignored both studies. In the scientific community, those who accept the studies are still in the distinct minority, although their numbers seem to be slowly growing. The cries of "alarmists," "pessimists," "doomsday prophets," directed toward that minority seem to be slowly subsiding. Overall, however, the debate in the scientific community is intense.

The New Game Plan— The Needed Revolution

The ultimate lesson to be learned from *The Limits to Growth* and *Mankind at the Turning Point* is that there *are* limits to growth for Planet Earth. One can argue *when* those limits will be reached, *but not whether they will be reached*. This lesson has been so obvious historically that most of us have overlooked it! However, once that lesson is realized, it becomes quite obvious that our current energy game plan will have to be modified or even scrapped. Instead of emphasizing filling our growing appetite for energy, we must devise a new game plan which emphasizes serious cutbacks of our appetite. And if the two studies are anywhere near being quantitatively correct, we must start as soon as possible, for the future is now! The extremely formidable roadblocks in the way of such a revolutionary change in historical direction will be emotional and psychological as well as physical and material. We'll thus need a world revolution in thought every bit as dramatic as those brought about by Galileo, Darwin, and Freud. But that revolution—the idea that more is not necessarily better—is dawning. It's a revolution which has history on its side, a revolution whose time is rapidly coming. The revolution could be hastened by self-sacrifice and concern for future generations, but, unfortunately, those qualities seem to be largely absent in our society today. It's time we all became revolutionaries, for time is running short!

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Moscow Vignettes

By Jean Cronon



Moscow is a city of surprising, even startling, contrasts. It is a sophisticated cosmopolitan capital and at the same time an isolated provincial village. Its atmosphere is vibrantly alive and also monotonously drab, its streets and buildings carefully manicured and dismayingly unkempt, its residents warmly hospitable and chillingly suspicious and aloof. Yet, might not the same be said of New York, London, Paris, or Tokyo, or indeed any city of seven million population? The answer, of course, is yes. But Moscow is not just another large city in a predictably familiar country; it is a new and unique experience in one's life.

My acquaintance with Moscow and the Soviet Union began in February, 1974, when my husband Dave, seventeen-year-old son Bob, and I arrived to spend four months at Moscow State University. Dave, a specialist in American history, was one of seven American professors selected to inaugurate the first Fulbright exchange lectureship program with the U.S.S.R. during the 1973-74 academic year. This exchange was one of the first fruits of the detente begun by former President Richard Nixon and Secretary General Leonid Brezhnev at their initial summit meeting. My husband was thus a pioneer, as he was cautioned repeatedly by Americans and Russians alike. He would be the first American to teach a regular history course for credit in the largest and most prestigious university of the Soviet Union.

An inevitable drawback of pioneering, however, is lack of maps to follow. While it was helpful to talk with friends who had recently visited Moscow as

tourists or on research, details about what we might expect to find at Moscow University were sketchy or nonexistent. Fortunately, several months before our departure we were able to have as our house guest a visiting Soviet professor of American history who would be one of my husband's colleagues in Moscow. He provided us with much useful information about our new life, from advice on what to bring with us to such mundane details as the starting date of the second semester at the University (something not even the Fulbright office or the State Department had yet been able to learn). Best of all, he promised to look into the arrangements for our housing upon his return to Moscow. We had heard a number of horror stories of foreign families obliged to live for several months in a single small hotel room at exorbitant cost. We were well aware that there is still a serious housing shortage in the Soviet Union and that foreign visitors who bring their families are an added burden.

Our arrival in Moscow on February 1, 1974, was auspicious. We were met at the airport by a representative of the American Embassy who helped us through the minimal customs formalities. Our Soviet professor friend was also there to greet us, and had brought a University minibus to transport us to our new home in Moscow State University.

The University is a huge city within a city, dominating Moscow from the Lenin Hills along the banks of the Moscow River. In describing the vast dimensions of the main University building the official Moscow guidebook cautions: "To see all its 45,000

rooms, you would have to walk 145 kilometers, and even if you only spent a minute looking at each one, it would take you 750 hours to make the rounds. . . . The central section has on both sides 18-storey wings, flanked by 12-storey buildings which contain dormitories and apartments for the lecturers and professors." It was in one of these outer faculty towers that we were to live for the next four months, an unprecedented and generous assignment of choice living space, thanks to the influence of our Soviet friend.

Instead of the single hotel room we had expected, we were delighted to find that we had been given a large faculty apartment, perhaps twice the size of those of faculty colleagues who subsequently entertained us. Our apartment's six rooms were newly furnished and refurbished, starting with the freshly varnished wooden floors, a rarity in the Soviet Union. The large living room-study included a convertible sofa-bed for Bob. My husband and I shared a large bedroom overlooking the University's park-like interior courtyard. Our small dining room was fully outfitted with company china, silverware, and cut-glassware of assorted sizes. The kitchen was well-furnished with a gas stove, and a large assortment of pots, pans, and other cooking utensils, and on the table was a fresh supply of tea, sugar, candy, and cookies thoughtfully provided by our friend. (It seemed an appropriate time to celebrate, so we had our first Russian tea party.) A large pantry off the kitchen with a refrigerator assured us of plenty of storage space. The bath and toilet were in separate rooms, and all rooms were connected by a large hallway with a commodious wardrobe for our outerwear. Bed linen, blankets, towels, and even table cloths were provided, along with free laundry service. Other extras included a large new television set to receive Moscow's four channels, a one-station radio, and a private telephone. Contrary to our expectation, our Russian friend informed us that our apartment was provided by the University free of charge.

The other Fulbright professors did not fare quite as well as we, but were nevertheless very pleased with their accommodations, too, having expected much less. Housed in a student dormitory section of the main University tower, each Fulbright family occupied two rooms adjoining a private bathroom, the space normally assigned to four students. The Americans shared a communal kitchen with students living on that floor, but could use their electric frying pans and hot plates in their rooms. They, too, found their quarters newly furnished and equipped with a refrigerator, television set, dishes, etc. It was quite evident that Moscow University had made a considerable effort to insure that the Fulbright professors and their families would be comfortably housed for the semester.

Learning at least a little Russian is a virtual necessity for anyone planning more than a short visit to the U.S.S.R. Few Russians know English, and ordinary citizens—including clerks, bus and taxi drivers, waiters, and other service personnel—speak only Russian. In preparation for our stay in the Soviet Union, we had worked diligently with a tutor for two hours a week for five months. This gave us at least a nod-

ding acquaintance with the Cyrillic alphabet, a meager vocabulary, and a healthy respect for the complexities of Russian grammar. Our Russian improved as we were obliged to use it daily, aided by the Russian language class provided by the University for the Fulbright families. Perhaps because of the greater resiliency of youth, our son made rapid progress in learning Russian, so impressing our teacher that she arranged for a special tutor to help him improve his pronunciation and for additional work in the linguistics tape library. By the end of our stay he was going to dances with Russian students and confidently telling jokes in Russian. Dave and I had to be content with rather more formal and halting communication, aided by our pocket dictionary and even sign language. We were, however, able to shop and travel about the city with no difficulty.

While most Russians speak only Russian, we were occasionally surprised to find someone with an excellent command of English. One night when we came home late we found the front door to our apartment tower locked, and after a considerable and anxious delay managed to rouse the doorman to let us in. Just as he unlocked the door another Russian tenant arrived and entered with us. On the elevator I tried to ask him in halting Russian what time the door was customarily locked at night. He listened patiently while I stumbled through several false starts and then said in flawless English, "Why don't we try English?"

Having been forewarned of the long, cold winters in Russia, we packed a generous supply of heavy clothing, most of which, as things turned out, we could have easily done without. The Moscow weather was surprisingly mild most of the time, and the temperature dipped below zero on the Fahrenheit scale only once. Letters from friends in Madison informed us that our feared Russian winter had probably been waylaid in Wisconsin, where February was considerably colder than in Moscow.

Life in any foreign land can be difficult, and this is especially true of the Soviet Union where the entire society is organized along quite unfamiliar lines. Our way was smoothed by a remarkably helpful and friendly group of student aides, however. Each week the history department assigned a different student, selected from among the eighteen American history majors taking my husband's course for credit, to assist us in shopping or as guides or in whatever way we needed help. Most of these students spoke excellent English, and we welcomed this opportunity to get better acquainted with them on an informal out-of-class basis.

Every day the student assigned to us for the week telephoned to ask if he or she could help in any way. Early in our stay we made many such requests, our first being for a tour of the University. In addition to the huge main building described earlier, the campus includes a number of other academic buildings and several shops selling food. Our first guides showed us how to use the efficient system of public transportation to get from the University to the center of Moscow for the many sightseeing attractions in and near Red Square, as well as the best routes to the

American Embassy and the special foreign currency stores selling scarce food and consumer products. Students, and sometimes faculty specialists, served as expert guides to museums and historic places in and about Moscow, including various parts of the Kremlin, the Tretyakov Art Gallery, and the ancient towns of Vladimir and Suzdal.

One day we asked our student helper to take us to the special post office for foreign mail so we could mail some packages home, as we feared this complicated task would require more of the Russian language than we had yet mastered. When the student arrived, he introduced us to his brother whom he had recruited because, "He speaks better English than I do." It turned out that we needed all the extra help we could get, for mailing packages is a formidable undertaking in the Soviet Union. All of us laboriously filled out the five customs forms required for each of the several packages we were mailing. Each form had to be written in both Russian and English and duplicated without the aid of carbon paper. Two hours elapsed before we completed the paper work and got in the line to have our packages wrapped (the post office wraps all foreign parcels, no doubt so the contents can be scrutinized), weighed, stamped, and finally mailed. Somewhat bedraggled, one of our student friends commented, "Now you know why Russians don't mail many packages."

Upon leaving the post office, the students asked what else we would like to do that afternoon. Being slightly weary and concerned about how much of their day we had already preempted, we thought we should go home, but they suggested visiting the Borodino Museum, which contains a huge circular panorama painting, 380 feet long and 50 feet high, commemorating the famous battle against Napoleon in 1812. We had previously tried to visit this museum several times but had always been deterred by the long lines of waiting Russian tourists. Our student friends assured us we would not have to wait this day. When we arrived at the museum, however, we were dismayed to see the usual long lines outside it. One of the students pushed his way inside and shortly returned with tickets. We were then ushered through the waiting crowd and once inside provided with our own English-speaking guide. Afterward, somewhat embarrassed by this special attention, we thanked the students for making possible our visit to this truly impressive life-like panorama. They assured us that it was they who were grateful, for they had never visited the museum before either, and consequently welcomed the chance to enter with this "distinguished foreign professor." This was not the only time our Russian friends used our status as honored foreign guests to their, as well as our, advantage.

We were invariably impressed with the courtesy and thoughtfulness of Dave's students. When they came to call for us they were dressed in their best clothes, the men in coats, white shirts, and ties, and the girls in stylish pant suits or dresses and stockings. Indeed, we found the Muscovites in general to be more stylishly dressed than we had expected, with a high proportion of the men wearing suits and the

women in fur-collared coats with matching fur hats. Sometimes we inquired of particularly well-dressed students where they purchased their clothes, and usually they answered that they were tailor-made. This is apparently rather common, at least among professional people, if one wants a more stylish outfit than is available in the regular clothing stores, where the ready-made clothes tend to be of indifferent style and quality.

An amusing incident, and near family crisis, occurred one evening when a student came to escort us to a ballet performance at the Bolshoi Theater. Just prior to his arrival I had insisted, over strenuous objections, that our son must wear a white shirt and tie. The more formal patterns of dress in the Soviet Union had done nothing to change his American teenage predilection toward casual attire. Imagine my surprise when the Russian student arrived dressed in a new set of blue jeans topped by a matching jean work jacket. Hurriedly, I went to the bedroom where Bob was still dressing, and informed him that he could wear his turtleneck shirt after all. Later at the ballet we told the Russian student about the argument over Bob's attire, and jokingly commented on his new blue jean outfit. "Why, blue jeans with a matching jacket are the height of elegance for young people in the U.S.S.R.," he said proudly. When we learned subsequently that even used American blue jeans sell for as much as \$75-\$100 on the black market, we could better appreciate how much he valued his American Levis.

In addition to our student guides, the history department looked after our needs in other ways as well. The department arranged a number of tours of historic sites in and around Moscow and to several old towns of the Moscow district. We were given tickets to the ballet, opera, concerts, and the circus, and were even provided with cross-country skis. My husband's colleagues entertained us a number of times in their apartments, a rare treat for foreign visitors. The warmth and generosity of Russian hospitality is legendary, and we can attest to the fact that it remains undiminished under Soviet rule. For four months our lives were a whirlwind of social and cultural activity, for we took the fullest possible advantage of our opportunity to get tickets to the richly diverse cultural activities of the city through our contacts at the University and the American Embassy. Such assistance is needed, because tickets for most performances are hard to come by without some organizational influence.

More than in most countries, the American Embassy serves as the center of the life of the small American community in Moscow, providing resident Americans with many valuable services unobtainable elsewhere in the city. We were able to send and receive mail through the diplomatic pouch from Vienna or Helsinki, thus assuring our correspondence of fast delivery and complete privacy. The Embassy commissary furnished us with such American staples as peanut butter, Jello, cold cereal, and other foods not available in the Soviet Union. Mario, the Italian cook at the Embassy snack bar, managed to turn out some



Moscow's outdoor pet market is a sight no visitor should miss.

of the best meals in town, but sometimes we were ready to settle just for one of his hamburgers, some french fries, and a Coke as a reminder of home. Although the Embassy is located about forty-five minutes from the University by means of three different forms of public transportation, we generally went there four or five times a week for mail, shopping, lunch, or an occasional movie.

Most of our shopping was in Soviet stores, of course, and we quickly learned that this could be a difficult and time-consuming experience. The ordinary Russian food stores specialize in different types of food products, so one must go to separate shops for bread, meat, fish, milk, vegetables. The stores are usually crowded, and you customarily must stand in line to see what is for sale and decide on your purchase, then stand in a second line to pay for it, and finally stand in the first line again to turn in your receipt and collect your purchase, if it hasn't been sold out in the meantime (as sometimes happens). Every shopper carries a folding bag of some sort, for the stores provide no other means of carrying purchases home. Dave generally carried two string bags in the pockets of his overcoat, and their suspicious bulges resulted in his being frisked twice by alert plainclothes detectives when we visited the Lenin Tomb!

Our fellow shoppers usually recognized us as foreigners and often tried to be helpful. One day, when buying some eggs, I was a few kopecks short of the correct change and gave the clerk a five ruble bill. A kind Russian lady behind me in the line insisted on giving me the necessary kopecks so I would not have to break the larger bill. She then helped me pack the eggs carefully into my shopping bag, for the clerk had as usual handed them to me in a cone of rolled newspaper. Even with this solicitous care,

I arrived home with two broken eggs, no small loss at a price of \$2.00 a dozen.

For most of our groceries we shopped in special Soviet food stores, one requiring foreign currency rather than rubles, and the other special coupons which we purchased for dollars from the Embassy. This latter store, called the coupon or diplomatic gastronom, is intended for the diplomatic corps and a few other foreign residents like ourselves whose involvement with government programs brings this privilege. Both of these special food stores, and especially the coupon store, contain many items not available in regular food stores—the finest cuts of meat, fresh fruit, and a limited range of frozen foods. Prices on most items are about half or even a third of those in ordinary food stores. We noticed that a sizable number of the customers were Russians, and concluded that we were not the only Moscovites receiving preferential treatment. In contrast to the regular food stores, these special stores were operated very much like American supermarkets, with a whole range of food departments, foods wrapped in plastic or in vinyl bags, grocery carts, and check-out counters. Even though it took us as much as an hour to reach the coupon gastronom by several forms of public transportation, the much greater selection and cheaper prices there made it worth the effort. Usually all three of us went on a shopping venture, so we could carry home enough food to last for several days. Even so, I would sometimes think twice about opening another can of vegetables, knowing that it meant another pound or so of weight that would have to be replaced in our larder.

Moscow also has several free enterprise markets, where peasants sell the food raised on their private plots at higher prices than in state stores. Entrepreneurs come from as far away as Tashkent, 2,000 miles east of Moscow in Central Asia, to sell exotic melons, parsley and other greens, dried mushrooms, and other foods unavailable in regular food stores. One cold March day we couldn't resist buying a small sliver of a huge melon for \$4.00, an exorbitant price, perhaps, but worth it when one has not tasted much fresh fruit for a long time. The lady selling the melon was from Tashkent, and when she learned we were Americans she called all her Uzbek friends over to meet us. Our communication was hardly profound, but the smiles were broad and genuine. This experience was repeated many times, for never during our four months in the Soviet Union did we experience even a hint of anti-American feeling.

Some of our warmest experiences with Russians occurred when we were entertained by my husband's faculty colleagues. Housing is still in short supply in the Soviet Union, and even professors (who rank high in status and income) live in rather cramped quarters, usually two or three small rooms, plus kitchen and bath. More often than not we would be served in a room that doubled as a living, dining, and sleeping room, and, depending on how long the party lasted, might serve all three functions. Russian parties begin when the guests have assembled around a large table, for Russians believe that a successful

party depends upon close proximity and that food and drink must go together. Typically, the hostess loads the table with a seemingly endless variety of salads, cold cuts, smoked fish, and cheese, while the host initiates an equally endless round of vodka toasts. Vodka is drunk straight, with perhaps a mineral water chaser, and it is considered bad form not to drain one's glass with each toast. After an hour or so of feasting and toasting, the cold course gives way to a hot course of roast pork or duck or some other meat delicacy with vegetables, accompanied by more toasting. Bread, a staple of the Russian diet, is served throughout; it comes in many flavors and shades, and is both delicious and inexpensive. Hours later the final course arrives, usually a variety of pastries and fruit, with tea and cognac for a final series of toasts. By this time the toasts have become ever longer and more eloquent, ranging over such subjects as the beauty and culinary skill of the hostess to the future of Soviet-American detente and particularly the Fulbright exchange. The secret to sobriety and even survival at such an affair is to eat plenty of food, and, once started on vodka, not to be tempted to mix it with any wine or cognac. Such parties can go on for many hours; our first one lasted for eight hours of virtually steady eating and drinking. Yet much to our surprise, we felt no ill effects either then or later, only a glow of friendship for such warm-hearted and generous people.

Life in any large city can be frustrating at times, and Moscow was no exception. Public transportation is cheap and efficient, especially the subway system which deserves its reputation as one of the most ornate, cleanest, and most efficient systems in the world. It must also be the cheapest, costing only five kopecks (less than seven cents) to ride anywhere in the city with unlimited transfer privileges. Smoking is forbidden on the trains and anywhere in the stations, and the rule is strictly enforced, much to the delight of nonsmokers like us. On the other hand, travel by other means—bus, tram, or trolleybus—is usually less speedy and reliable. We rode buses a good deal because the University was located more than a mile from the nearest subway stop, and we quickly learned that it was impossible to get a seat and often difficult to get on if you were not boarding near the beginning of the line. Equally important, such crowding required you to anticipate your stop several blocks ahead so as to work your way to the door in time. The bus driver halts at each scheduled stop no matter how jammed the bus, so at each stop there is a contest to see how many waiting passengers can cram themselves onto the bus before it gets under way again.

Moscow State University dominates the Moscow skyline from its location at the edge of the Lenin Hills, a beautiful glaciated area along the far bank of the Moscow River. Nearly every evening we walked a mile to the overlook point in front of the University, some 260 feet above the river, to enjoy the spectacular view of the central city below. The Lenin Hills are kept as a large park and recreation area

stretching for miles along the Moscow River. On May Day and other special holidays large crowds gather here to watch the perfectly synchronized fireworks displays scattered about the city; exactly the same colored sky rockets shoot up at precisely the same time from ten different places across the horizon, a truly spectacular sight.

There are two ski jumps and many slopes for skiing and sledding throughout the Lenin Hills, and the area is as popular in winter as in summer. After a heavy snow one morning we were cross-country skiing in the Lenin Hills, and unexpectedly came upon a group of men playing soccer in a clearing, the eight inches of new snow flying in all directions. When we later expressed surprise to a student that Russians seemed willing to play soccer in any sort of weather, he responded, "Why not? We love soccer." This seemed to be true of all sports, for not a day passed without seeing groups of students, boys and girls alike, dressed in their blue sweatsuits trotting to or from some sports activity. Across the street from our apartment was a large ice rink for recreational skating and ice hockey, where beginners were taught to navigate on wobbly legs while more experienced skaters were free to skate to the popular music blaring from the loudspeakers until eleven each night. Hockey is probably the most popular winter spectator sport, and although tickets are hard to get we were fortunate to see a game between two excellent teams, one drawn from the Red Army and the other from a large labor union. The crowd was every bit as enthusiastic as the most rabid Badger fans, whistling loudly when dissatisfied with a questionable call by the officials. Our Russian friends were apologetic at some of the more vociferous partisanship, but we assured them we expected worse at the Dane County Coliseum.

Moscow has forty-five active Russian Orthodox churches for its seven million people. There are many more churches in the city, of course, but most are abandoned and empty, though a few are maintained as museums. While atheism is officially promoted by the government and ruling Communist Party, religion is far from dead, as we discovered when we sought to attend services on Easter eve. Easter is the high point of the Russian Orthodox liturgy, and the hours-long Easter eve service is particularly impressive. Nearing the church, we discovered throngs of people headed in the same direction. At the only open gate into the church grounds, scores of soldiers and police were carefully scrutinizing and limiting the number of people permitted to enter. My husband was allowed to enter, but neither my son, nor I was able to get in until Dave remonstrated that we were part of his family. Evidently the guards were keeping out all young people, perhaps so the elderly (and more likely believers) could have priority. Whatever the reason, my husband's preferential treatment in this instance made him the butt of a good deal of family kidding afterward.

We did not attempt to enter the heavily guarded church itself, but waited with the hundreds of believers on the church grounds. At the stroke of midnight, the

church bells began to peal, the doors were thrown open, and the priest and congregation appeared, shouting "Christ is risen!" as they marched three times around the church carrying icons and lighted candles. The worshippers in the churchyard also lighted their candles, as did hundreds of other persons among the literally thousands of people jamming the streets outside. It was a powerful demonstration of the residual strength of religion in a land where its practice is actively discouraged.

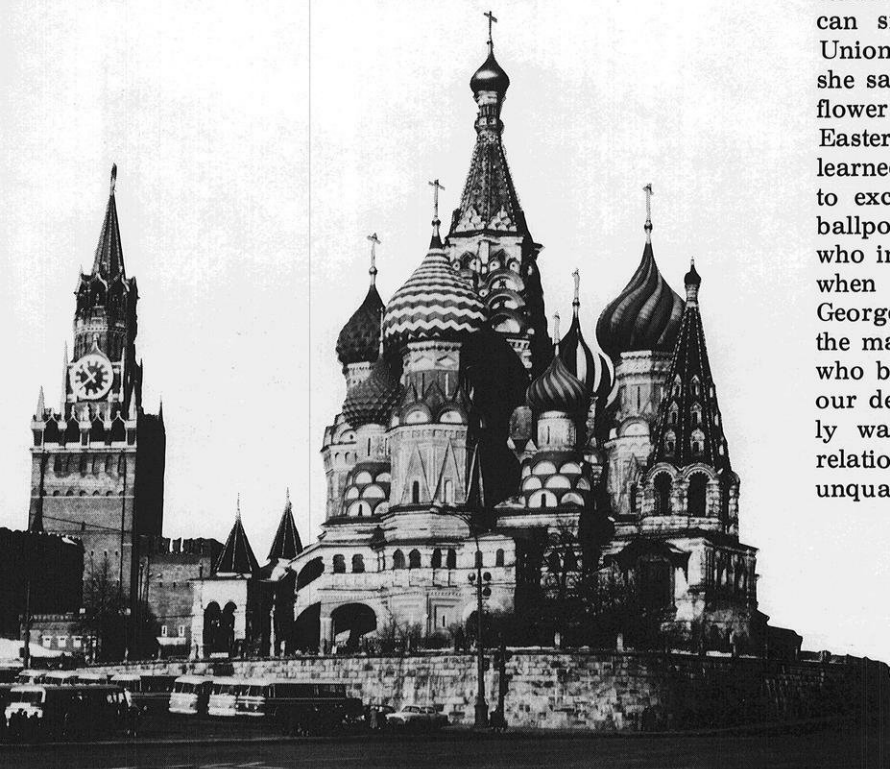
Moscow's private enterprise outdoor pet market is a sight no visitor should miss. Every Sunday morning thousands of persons gather here to buy and sell (and in many cases simply to look at) pets of all kinds—exotic tropical fish, many varieties of birds, and animals of every description. There were rabbits of every size and hue—tiny babies and huge adults—whether intended as pets or for the oven we were afraid to ask. One section was for cats, another for dogs, some obviously mongrels and others of impeccable lineage, but all evidently well-cared for and intended for loving homes. One peasant tried to sell us a likely looking young goat for eighteen rubles, assuring us that within a year we would have a good supply of meat or milk, though presumably not in that order. The pet market is a photographer's paradise, as many pet owners were proud to pose with their pets. One of our American friends had a Polaroid camera, which produced pictures immediately, much to the delight of the Russians who crowded about him, evidently never having seen such a camera before. They begged to have their pictures taken and to buy the pictures or the camera. Needless to say, our friend left the market with no pictures, just warm memories of what may well be the happiest and friendliest place in Moscow.

Not everyone was eager to be photographed, however. Sometimes people deliberately avoided being included in a picture, not being sure of our identity or purpose. Once, in a market, we had a friendly chat with two men until we asked if we might photograph them with their vegetables, to which they strongly objected. In Bukhara, in Soviet Central Asia, a man actually came after us with a knife when he mistakenly thought Dave was trying to photograph him. Most of the time, though, we had no difficulty taking the pictures we wished—always keeping in mind the official restrictions on photography, of course. Often people would ask to be photographed and would request us to send them a picture when we returned home. We met some interesting people that way: an old lady selling artificial flowers in the market at Tbilisi, a peasant proud of the quality of his corn in Samarkand, a friendly group of university students in a Tashkent teahouse.

Indeed, it was the people who made our stay in the Soviet Union so memorable. How can we ever forget the doormen of our apartment building who greeted us each day with a friendly "Dobray ootra!" (good morning); the motherly lady who always managed to find room for our coats even when the checkroom was full; our patient Russian teacher who never despaired of her laggard students; our good friend and interpreter, Boris, who accompanied us on a ten-day lecture trip to Leningrad and Kiev, worrying every minute like a mother hen that something would spoil our enjoyment; the young guide at Prince Yusapov's country palace who gave us her personal set of picture postcards when there were none left for sale at the museum shop; the student who learned we were going to Leningrad and promptly gave us an expensive art book about the Hermitage Museum so we would have an appropriate souvenir of our visit; the student who was surprised to learn that Americans can smile on their passport photo ("In the Soviet Union it is forbidden to smile in an official photo," she said); the little girl who spontaneously gave me a flower in Armenia; the old woman at the midnight Easter service who literally clung to us when she learned we were Americans; the children who begged to exchange pins for chewing gum in Moscow (or ballpoint pens in Uzbekistan); the villagers in Georgia who insisted that we eat, drink, and dance with them when we happened upon their celebration of St. George's Day in an abandoned ninth century church; the many friends who invited us into their homes and who brought us costly gifts as farewell presents upon our departure. Russians, we found, are an exceedingly warm and generous people in their individual relationships. Clearly, on this level detente is an unqualified success.

Jean Cronon was elected secretary of the Wisconsin Academy of Sciences, Arts and Letters and served for two terms.

St. Basil's and Spasky Tower Gate



Driftless Diversity

By Robert A. Hirschy

A casual journey through Richland County along major highways reveals an amazing assortment of landscapes. The county is heavily traveled, especially in May and again in September, as the Kickapoo apple country near Gays Mills in Crawford County attracts thousands of visitors at blossom time and again at harvest. Coming from eastern Wisconsin, travelers pass through the Sauk County community of Spring Green before entering Richland County near Lone Rock. In the sixteen miles from Lone Rock to Richland Center, the highway passes first through an area of jack pine and scrub oak, interspersed with small dry prairies. Red cedars sparsely cover the steep sides of the Wisconsin River valley a mile to the north. A floodplain forest with an occasional stand of tamarack along the lower Pine River can be seen. Leaving Richland Center, the highway passes through rugged hills covered with hardwoods. Rock outcrops punctuate the upper portions of the ridges, often rising more than four hundred feet above the valley floors. From Richland Center westward to Gays Mills, the highway roller-coasters up out of the Pine River valley to the top of Bashford Hill, down into the valley of Mill Creek and the village of Boaz, up to the top of Maple Ridge, down into Knapps Creek, up to the high elevations of Rolling Ground, dropping abruptly at last into the scenic Kickapoo valley. Flowers, apples,

cider, or sorghum are only part of the reward for such a journey; the passage through Richland County has greatly added to the pleasure and interest of the trip.

As spectacular as the diverse landscapes have been on such a casual trip, many additional features of the Richland County scene will have been missed. Delightful scenery is found in the valley of the Pine River north of Richland Center or in the valley of Willow Creek north of Ithaca. Steep cliffs of Galesville sandstone line these narrow valleys. The cliffs support an unusual northern flora: white

and red pine, hemlock, yellow birch, and many other plants that are typical of northern Wisconsin. Also passed without notice will be the twenty-one explored and mapped caves within the county, including one with Indian petroglyphs. Numerous effigy mounds and occasional rock shelters will probably also be overlooked. Also unnoticed may be small wetlands, including cattail marshes, sedge meadows, and shrub carrs.

The great diversity of plant communities is partly due to the lack of recent glaciation, when compared with northern and east-



Cedar Point stands tall in the valley of Knapps Creek. The castellated bluff of Jordan sandstone is typical of the diversity of Richland County. Within this one area are a spring, a yew relict, a shaded rock cliff, an exposed rock cliff, and a prairie.

ern Wisconsin. It is, of course, this lack of glaciation that has given the region the label "driftless area." Much of Richland County is deeply dissected by streams, an appearance quite unlike other areas of the state. This has provided steep south-facing slopes, which are ideal for small prairies, and shaded, cool, north-facing slopes on which we find relict populations of northern species.

In addition, Richland County (and all of southwestern Wisconsin) is located at sort of a junction of three major North American biomes. To the west are the prairies, to the south are the mesic hardwood forests, and to the north are the mixed conifer and hardwood forests. It is not at all surprising, then, that small differences in temperature and moisture at a particular site will greatly influence the plant species present.

The remarkable diversity of Richland County led biologists at the University of Wisconsin Center-Richland to a reasonable question: what should be done to identify and preserve some of these unusual areas? When the campus began operation in the fall of 1967, action began immediately to preserve a unique tamarack bog located twelve miles north of Richland Center. At that time the bog was being used as a town landfill. After two years of cooperative effort, the Hub City bog became Wisconsin's eightieth state scientific area. Cooperation demonstrated in the project was spectacular. Involved were the Wisconsin Department of Natural Resources, the Nature Conservancy, the Town of Henrietta Board, the UW Center-Richland, the Kettle Moraine Garden Club, and several individuals from the area. The result is a fifty-five acre natural area that includes not only the five-acre bog, but also cliffs along Soules Creek which support hemlock, white pine, yellow birch, mountain maple, Labrador tea, trailing arbutus, wintergreen, and swordmoss. Around the bog is a cattail marsh and shrub-carr community. On the cliffs at the west end of the area is a small prairie. It is, therefore, possible to visit two plant communities typical of

northern Wisconsin and a prairie, all within a hike of less than half a mile.

It is, indeed, fortunate that Wisconsin has pioneered in the preservation of scientifically significant sites. The long and dedicated efforts of the Scientific Areas Preservation Council have resulted in a remarkable system of over 120 sites. But that represents only a small fraction of the potential sites throughout the state. In Richland County alone, a dozen or more sites could possibly be included. However, it would be impractical to undertake the development of a state-wide scientific areas system of this magnitude. Many sites would be duplications. Others would be unavailable because the present owners would desire to retain possession. Still others would lack the quality of sites available elsewhere in the state, yet on a more local level would be of considerable interest.

With the recognition that many locally significant sites in Richland County deserved identification, a new county scientific areas system was begun in the spring of 1973. The original work was supported by a small grant from the University of Wisconsin Center System. The Richland County Scientific Areas System is guided by an eight-member Richland County Scientific Areas Council. Included are representatives from the UW Center-Richland, the University of Wisconsin-Extension, area high schools, the Department of Natural Resources, and the Richland County Board of Supervisors. Two members are selected at large from the community. The council meets twice each year. It is self-perpetuating and members serve for two-year terms.

The County Scientific Areas System is based upon agreements with landowners who allow a portion of their land to be designated as a scientific area. Identification signs help interested individuals locate the site and are checked and maintained several times each year. A brochure, which is updated as new areas are added and as existing areas are studied more completely, briefly describes the areas and contains maps of each. Landowners receive this brochure and

a yearly report on usage and studies that have been done on their land.

It should be emphasized that the landowner receives no funds or tax breaks for allowing the land to be designated as a scientific area. It is gratifying that there have been so many owners who are willing to share their bit of unusual landscape with others. Perhaps we no longer need to share the pessimism of Aldo Leopold who claimed that "when the private landowner is asked to perform some unprofitable act for the good of the community, he today assents only with outstretched palm."

Thirteen Richland County scientific areas, widely distributed throughout the county, have been designated. Two are mesic hardwood forests of sugar maple and basswood, the theoretical climax vegetational type for the county. The larger of the two, the forty-acre Pier Spring Woods three miles west of Richland Center, has been ungrazed for decades, and there is no evidence of any timber harvest. A large draw separates two ridges, each with an elevation of about two hundred feet above the entrance to the area and a prominent north-facing cliff of Jordon sandstone. The west ridge has large areas covered with shining clubmoss, which is uncommon in the county. Spring ephemerals abound in these rich woods.

The second sugar maple-basswood stand is within the city of Richland Center, located on the west side of the Pine River valley. And although it contains only five acres, Hein Maple Hill receives considerable study, due to its proximity to the UW Center-Richland campus.

Although four of the scientific areas contain examples of prairie, the two main representatives of prairie flora are the Button Cemetery Cedar Glade and the Gotham Sand Blows. The Button Cemetery site, located on a steep south-facing hillside in the Wisconsin River valley, contains a fine assemblage of prairie plants, including Indian grass, little bluestem, big bluestem, pasque flower, puccoon, agoseris, cutleaf compass plant, prickly pear

cactus, and ladies' tresses. Conifers include red cedar and common juniper. An exposed rock cliff with a small cave or rock shelter is located at the top of the cedar glade.

The Gotham Sand Blows is only two miles southwest of the Button Cemetery site. Large areas of wind-blown sand are surrounded by stabilized groundcover of little bluestem, rock spikemoss, hudsonia, prickly pear cactus, and lichens. Much of this site is rapidly being invaded by jack pine. Resident animals include the six-lined skink and pocket gophers. County ownership of the twenty-one acres makes this the only tract that is publicly owned.

Wetlands are noticeably scarce in Richland County. Only along the major rivers and streams do small examples remain, and many of these have been reduced by ditching. At the present time, there are two wetlands included in the system. A walk through Bear Creek Sedge Meadow, in the valley of Bear Creek north of Lone Rock, in late summer is an unusual experience. The ground is uneven and wet; sedges and occasional cattails rise to shoulder height. Many of the other flowering plants are tall and showy, such as the spotted joe-pye-weed, great Saint-John's-wort, and sneezeweed. Although this area is only fifteen acres, it is a significant part of the system.

The other wetland is a small cattail marsh along Mill Creek in the south-central part of the county. Basswood Ponds contains four areas of open water, surrounded by a zone of emergents. Wood ducks, blue-winged teal, mallards, and pied-billed grebes are frequently seen.

The lowland hardwood forest representative is Orion Island in the Wisconsin River. This small island is typical of the lower Wisconsin. It is covered by silver maple, river birch, American elm, willow, and poison ivy. Located only a hundred yards from State Highway 60, this is one of the most visited and studied of our sites and has fairly easy canoe access.



Orion Island in the Wisconsin River is representative of a lowland hardwood forest. It is covered by silver maple, river birch, American elm, and willow.

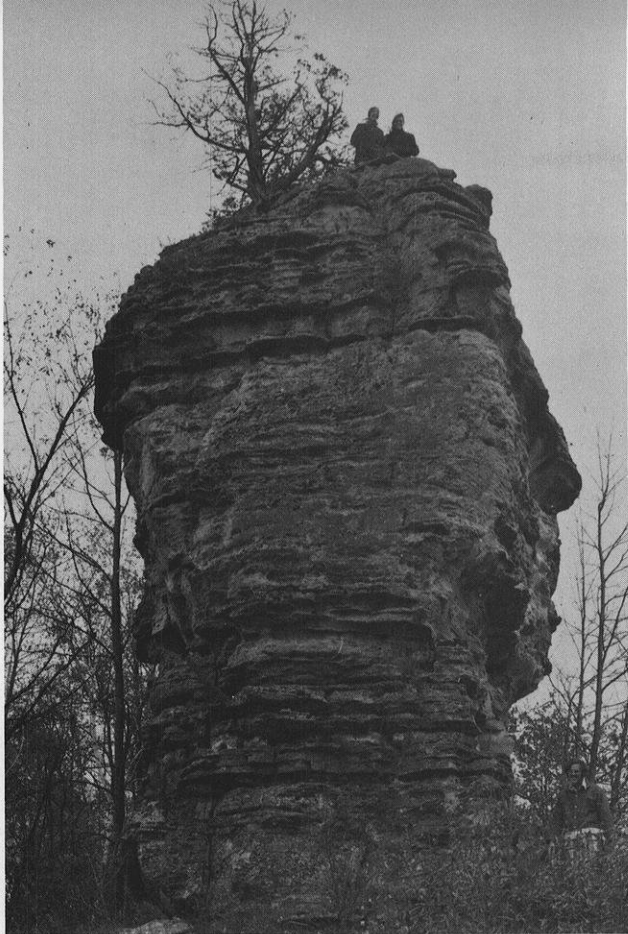
Another lowland community is the Sextonville Bog, the latest addition to the system. The eighty acres contain one dense two-acre stand of tamarack, and a sprinkling of the species elsewhere throughout the area. This land is part of a public hunting and fishing ground leased by the Department of Natural Resources.

Four scientific areas have been established to identify conifer relicts. Two are hemlock and pine relicts and two are American yew relicts. The hemlock and pine relicts are both found on shaded cliffs of Galesville sandstone. A fast, cold stream flows at the base of each cliff, and both contain Labrador tea, which is more commonly found in bogs. Melancthon Creek Hemlock is north of Hub City about two miles. This stream is one of the county's most popular trout waters. The cliff is about fifty feet high and faces northwest. Near the south end of the cliff is a small prairie. The other hemlock and white pine relict is known as the Willow Creek Hemlocks. It is located near Loyd on State Highway 58. The mixture of hemlock, white birch, mountain ash, and white pine is especially attractive.

In the far western part of the county are two relict stands of American yew. One is the Tunnelville Yew Relict, located near an

abandoned railroad tunnel in the Kickapoo Valley. The other is Cedar Point Yew Relict in the valley of Knapps Creek near the Crawford County line. Both areas are on north-facing slopes and both contain walking fern on small rock outcrops somewhat below the top of the ridge. The Cedar Point site is a castellated bluff of Jordon sandstone and typical of the amazing diversity which characterizes Richland County. Within this one area are a spring, a yew relict, a shaded rock cliff, an exposed rock cliff, and a prairie. The sandstone outcrop is laced with three natural bridges. Northwest of the cliff is a small cave which was reported by the 1843 surveyors to be the home of a black bear.

Another site of geological significance is Popp's Cave, also known as Big Bear Cave. This has long been a favorite of Wisconsin spelunkers and is one of the largest caves in the county. The rooms and passageways involve nearly seven hundred feet. An unusual series of travertine dams retain small pools of water. A few stalactites still remain in some areas, although vandalism through many decades has greatly reduced the number of formations. A visitor's register placed at the site, recorded visitors from four states within the first year.



The ascent of Cedar Point today is as difficult as reported by the 1843 surveyors. They reported that "there is no passage to the top of this rock except the very dangerous one of climbing the side of the crumbling sandstone."

The surveyors also reported that the cave on the north side of Cedar Point was occupied by a large bear.



Additional sites are continually coming to the attention of the Council. Several more wetlands are being sought, among them an effigy mound site and a grove of American chestnut trees. No limit on the number of areas to be included has been set by the Council.

We believe that this approach to identification and preservation has several advantages. The first is low cost. The entire system op-

erates for about \$150 per year. This includes the original cost of signs, replacement of signs, travel to check the areas several times each year, mailings, and publication of the brochure. The cost effectiveness is very attractive, especially when the use these areas receive is considered.

The second advantage of this system is local interest that results. Although the general location of

many of the sites is familiar to area residents, most have been unaware of the uniqueness of the particular area. As the significance of the sites becomes known, an increased appreciation of the local environment follows.

The third advantage is the increased sense of "custodial responsibility" by landowners. This may be one of the most important functions of this type of system. The quality of our landscape and the maintenance of its diversity may greatly depend on the awareness and sensitivity of individual landowners. Preservation of unique sites should become every landowner's responsibility, not just that of some remote governmental agency, institution, or private preservation organization. Aldo Leopold in *Sand County Almanac* mentioned this specific idea when he wrote concerning natural areas, "An ethical obligation on the part of the private owners is the only visible remedy for these situations." It is this ethical obligation that is being cultivated by the Scientific Areas System.

There are also some obvious disadvantages in the system. One is the lack of permanent preservation that is obtained by public ownership. We are concerned that the present owners may withdraw permission due to abuses, inconvenience, or economic interests. Only as the system continues for many years will the extent of this problem be known. Thus far, at the completion of two years, there have been no withdrawals or threats of withdrawals.

Another disadvantage is lack of control over occasional conflicting usage. This has been a problem at three sites, where grazing nearby or within the area has an undesirable effect.

In spite of these disadvantages, this type of system has potential in providing an additional mechanism through which natural areas can be studied and appreciated.

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SENDING & RECEIVING

A COLUMN ABOUT COMMUNICATION

By Arthur Hove

Homes for Bewildering Appliances, Etc.

We had hardly passed through the front door before the kids started racing toward the Pleistocene epoch. Four floors and slightly over three hours later, we were traversing an African savannah, being observed with diffidence in our passage by antelope.

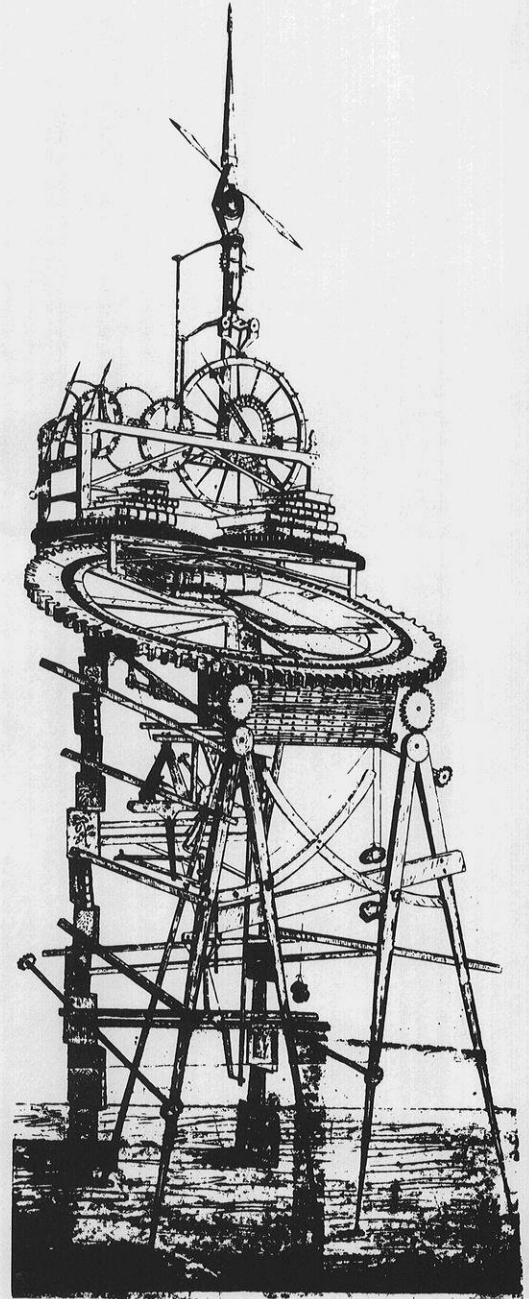
Caught in a time warp? Not quite—just part of our annual pilgrimage to the Milwaukee Public Museum, one of the state's important cultural resources. We had done the museum in our usual fashion—from bottom to top—pushing buttons to activate animated displays as we went, pausing to watch special movies on such things as the flight characteristics of water birds or the cultural history of man, spelunking with no risk into a cave inhabited by creatures who never see daylight, winding down a staircase to the ocean floor, wandering along the gaslit streets of Old Milwaukee, and later pausing in the courtyard of a Mexican hacienda.

Each exhibit contained more information and offered more im-

pressions than we could possibly assimilate, particularly at the pace the kids moved. As we charged from one display to the next, I wistfully recalled my own youthful excitement as I regularly rattled around through the halls of Chicago's Museum of Science and Industry. I am not a scientist or an industrialist, but I remember the impact the museum had in shaping the way I looked at the world.

Many of us tend to take museums for granted, or not at all. Yet, in spite of occasional loud talk about their being nothing more than musty mausoleums housing the remnants of dead civilizations, this century has seen a virtual explosion of museums.

A casual inventory of Wisconsin's museums is informative and helps reinforce the contention that museums are not cultural charnel houses but vital institutions. The intriguing variety of museums in the state helps indicate the range of possibilities. There is a Trolley Museum at East Troy, a Logging



A "Students Desk" designed by John Muir is now among the "bewildering appliances/For mastering the arts and sciences" being cared for by the State Historical Society of Wisconsin. (Illustration courtesy of the Iconographic Collections of the SHSW.)

Museum at Rhinelander, the Museum of Medical Progress at Prairie du Chien, and the National Railroad Museum at Green Bay. Madeline Island Historical Museum, the Circus World Museum at Baraboo, and the Wesley Jung Carriage Museum at Greenbush are but a few of the sites operated by the State Historical Society.

Many counties throughout the state have established museums to proudly record and preserve important local achievements. Even private entrepreneurs have capitalized on the public's curiosity and have established what could be loosely characterized as museums of one kind or another to attract tourists.

A recent estimate counted more than 300 million museum visits in the United States during a year, but some people will never voluntarily walk into a museum. They are convinced that everything inside has nothing to do with their daily lives. Museums, like banks, have sensed this attitude and changed considerably over the past generation. They no longer maintain their intellectual aloofness or consider themselves exclusively temples to the Muses—the private province of a select group of scholars and dilettantes. And like bank presidents, museum directors now walk among us, eager to share the resources of their institutions.

Museums, perhaps more than any other similarly oriented institution, have recognized the effectiveness and the potential of the media for generating interest in a subject. They have utilized the media to accomplish one of the museum's basic functions—to educate.

Contemporary museums give special emphasis to making spectators a part of the display. Exhibits are not roped off or packed away behind smudged glass cases. As Victor J. Danilov has noted in a recent issue of *American Education*: "Rather than a 'hands off' policy, museums encourage the public to touch the exhibits, push buttons, turn cranks, lift levers, and listen to taped messages on telephones, thereby participating in a learning experience." Museums thereby offer us the oppor-

tunity to fiddle with what W. H. Auden has labeled those ". . . bewildering appliances/For mastering the arts and sciences."

For those who still resist the traditional museum, there are scores of museums without walls dotting the countryside. Since we have become so profligate with our natural resources, one could argue that any stretch of the landscape that remains in a recognizably natural state could be considered a museum, whether it be the Florida Everglades, the Grand Canyon of the Colorado River, or even our own University of Wisconsin Arboretum.

Cities, of course, are living museums. Changing constantly, they show how the past, present, and future intermingle to shape the variety and vitality of everyday life. The continually great cities of the world are those which recognize that continuity is essential to fixing one's place in time. These cities have made special efforts to preserve the past while trying to accommodate the needs of the present and future. The race to save the legacy of the past from oblivion is invariably a close one. It has unfortunately become such a commonplace that it is a cliché to point out that many of our national architectural treasures have been thoughtlessly razed to make room for asphalt parking lots or fast food stands.

Fortunately, some individuals and institutions have shown a willingness to act before it is too late. We have them to thank for such sites as the Cornish restorations at Mineral Point, the construction of Stonefield Village at Cassville, and the excavation of Aztalan, the Indian settlement near Lake Mills.

Individuals, particularly private collectors, have provided the major resources for the overwhelming percentage of museums. It was during the Renaissance that private collectors stimulated the growth of modern museums as they sought places to store their collections. The rising middle class interest in culture in the eighteenth and nineteenth centuries caused a further expansion of museums.

Individual collectors have had the special vision and, equally important, the wherewithal to ac-

quire items that have particular historical and aesthetic value. It is often the individual collector who has recognized the intrinsic value of a body of material even before scholars or curators have acknowledged or recognized its importance. The foresight of these collectors has produced unusual dividends for both scholars and the general public.

In spite of their rising popularity, contemporary museums depend quite heavily on public largesse to keep their doors open. The cost of maintaining museums is increasing at a disturbing rate. There is a hesitancy, however, to pass the cost on to the museum visitor. There has been a noisy row in Britain the past couple of years over moves to cut back on the hours of operation and to charge admission to public museums. Free admissions are apparently considered to be a part of the British birthright.

But the practical concern of paying the bills remains for all museums. Virtually none can make its own way without some form of steady revenue—whether through an admission fee, a grant from a private foundation, or a governmental subsidy. Personal vanity has provided some philanthropic windfalls. People and organizations have given large sums to have their names memorialized through such devices as nameplates on display cases or exhibits. Collections have carried their names beyond their own generation. Special rooms and wings have been named for benefactors. And collectors have passed on their treasures just to make sure the items in their collections will remain intact and be guaranteed some form of perpetual care.

Milwaukee used to underwrite the operating costs of its museum through a line item in the county budget. But the politicians and cost accountants eventually realized that running a statewide facility with only local support is not the most defensible of practices. Now, if you don't reside in Milwaukee County and want to tour the museum, you have to pay a modest tariff to get in.

It's one of the best buys around.

BOOK REVIEWS



Philosophical Origins

THINKING LIKE A MOUNTAIN by Susan L. Flader; University of Missouri Press, Columbia, 1974. 284 pp. \$12.50.

Susan Flader's book on Aldo Leopold's ecological philosophy has been eagerly anticipated since publication of her earlier work, with Charles Steinhacker, *The Sand Country of Aldo Leopold*. The wait has been worthwhile. She provides us with a carefully researched analysis of Leopold's lifelong "philosophical odyssey" leading to his pioneering ecological perspective—known to his readers as an eloquent plea for a land ethic.

Since Leopold has become one of the patron saints of the environmental movement, this carefully researched and rigorously analyzed study makes a major contribution. It offers insights into the experiences and thinking behind *A Sand County Almanac* and other works. It is not a biography, although it tells us much about the man. Rather it is a historical review of his activities which result in sequential changes in his understanding of a deer-habitat relationship. It also covers his dramatic shift in attitude toward large predators.

The first chapter, also titled "Thinking Like a Mountain," is worth the price of the book. It summarizes his intellectual and philosophical climb toward the perception of natural systems from an ecological viewpoint—as a mountain would view its inhabitants.

In the succeeding five chapters, Dr. Flader analyses more thoroughly the specific steps in Leopold's philosophical evolution—the Southwest (the Gila National Forest specifically) and his Wisconsin experiences, first as a forest

research administrator, then as a professor, and finally as a conservation commissioner. An epilogue describes what happened in Wisconsin deer management following his death—and how untimely was his absence from the resolution of that public issue.

Unfortunately, with an initial summary and subsequent elaboration, the reader will find some repetition and restating. But, while this can be distracting, it does help weave together the work of a unique and complex leader.

For those readers who only know of Leopold through *A Sand County Almanac*, the book will be especially significant for the information on the kind of active, multifaceted man he was. Leopold's activities follow several paths. In addition to his competence as a scientist and field researcher, he was a strong professional leader and organizer, and is credited with establishing the wildlife ecology field. His writing skills and promotional instincts helped him gain support for his proposals, fulfilling his own view of himself as a wildlife propagandist. Finally he was active in public debate on conservation issues, helping to create new conservation agencies in New Mexico and Wisconsin. He promoted the wilderness preservation concept, sought greater support for field research, and assumed leadership in conservation groups. The book describes his successes and also his failures and disappointments which often lead to new and stronger understanding.

The book shows clearly what many environmental leaders understand from personal experience, that gaining acceptance of new ideas is a bitter struggle. Leopold's losing efforts were often vindicated by later events, but clearly he was often disappointed. Especially interesting for Wisconsin readers

will be his activities as a conservation commissioner. Originally, Leopold expected to administer the new conservation agency he helped establish, but he passed through years of frustratingly cool relationships with the agency until finally appointed to the policy commission. In seeking to apply his long background on deer, he suffered great abuse for his position that Wisconsin had too many, and not too few deer as the public believed. That experience has special timeliness because of the current Wisconsin debate over whether to retain or change the existing citizen board approach to environmental management.

As is so often the case, Leopold's writings are perennially instructive:

"If the public were told how much harm ensues from unwise land-use, it would mend its ways." This was once my credo, and I think still is a fairly accurate definition of what is called "conservation education."

Behind this deceptively simple logic lie three unspoken but important assumptions: (1) that the public is listening, or can be made to listen; (2) that the public responds, or can be made to respond, to fear of harm; (3) that ways can be mended without any important change in the public itself. None of the three assumptions is, in my opinion, valid.

Some will wonder why a book researched while the author was at the University of Wisconsin-Madison was published at the University of Missouri where Flader now teaches. Instead of an answer, this reviewer would suggest we should be grateful to have the book available. Further, we should encourage her to complete the Leopold bibliography on which she is working.—David W. Walker, Executive Secretary of the Wisconsin Environmental Education Council.

Applied Science

EDWIN BROUN FRED: SCIENTIST, ADMINISTRATOR, GENTLEMAN by Diane Johnson; University of Wisconsin Press, Madison, 1974. 179 pp. \$10.

One must admit, in reviewing this book, that it does not convey the full picture of its subject. But then, how could it? Those of us who know Edwin Broun Fred well are the first to admit that it is an impossible task to describe him in words. He was called a genius with "more ideas per minute than any man I know" by one interviewee. Yet he was a disciplined scientist, willing to give what it took of his time and energy to the experiment at hand. When he turned to university administration, he did the same—or more so, if that were possible. To some it may be a surprise that he could so completely switch careers. But are the fields so greatly different? I think not. In science Dr. Fred was accustomed to assemble his data, weigh them, and separate facts from wishful thinking. He did likewise in administration.

Biographies are usually produced long after the events and often after the deaths of their subjects. This biography was proposed and written now, during the retirement of Dr. Fred. He was told of the plan and, I understand, approved of it rather reluctantly. Once committed, however, he wholeheartedly cooperated with the author, Diane Johnson. The reader will be interested to know that Dr. Johnson used this work for her doctoral dissertation in the history of science department. In fact, she was chosen to do so because she herself has a degree in bacteriology and is now in administration (assistant dean in the College of Letters and Science, UW-Madison). She had the great advantage of making tape recordings with Dr. Fred personally, and with many of his family, former students, and colleagues. Family records were opened to her, both in Madison and in Virginia. Even had she not written the book, she would have made a valuable con-

tribution by assembling and collating the Fred archival materials.

What to say about the book? Perhaps it should be mentioned that the writer of this review is a former student of Dr. Fred, familiar with his work as a bacteriologist. Perhaps, for that reason, the lengthy details in Chapters 4, 5, and 6 may be questioned. They are not really biography. To this reader they are well known and not needed to evaluate the work done. Although they may serve as background to the non-bacteriological reader, they are heavy reading and sometimes confusing in arrangement and emphasis. Sauerkraut was not so important in Dr. Fred's career as to appear in thirteen places in the book! However, the range of his scientific interests *is* important and that is well brought out. To the scientific but non-bacteriological reader may it be said: remember the primitive methods available for experimentation then. No automatic analyzers and recorders! To the agricultural reader: remember the state of agricultural sciences when American agriculture was dramatically expanding without full knowledge of its *absolute dependence* upon soil fertility. The soil bacteria were very imperfectly known and a bacteriologist, if he were not a medical bacteriologist, had a wonderful chance to explore and explain many phenomena.

The inquisitive mind of Dr. Fred had full range and wonderful insight as to where the problems lay, as the titles of his published papers will attest. Reading these papers now is a pleasure and a revelation. As would be true of many early science papers, there were a few errors (e.g., rhizobia do *not* fix nitrogen in artificial culture, but Dr. Fred himself corrected that later). Perhaps his best sustained work was done with the rhizobia of the root nodules of leguminous plants—a total of eighty-five papers bridging his science career from early days in Virginia to a monograph in 1932.

His administrative years are less well documented (a single chapter attempts to cover both administration and retirement); but this is acknowledged by Dean

Johnson. It is hoped that a separate writing of this period will be forthcoming, as it is important to picture Edwin Broun Fred as truly great among the deans and presidents of the University of Wisconsin. Until then, we who know him well will treasure this book and our memories of a very special scientist, administrator, and gentleman.—*Elizabeth McCoy, Professor Emeritus of Bacteriology, UW-Madison.*

The Ice Age Cometh ?

ICE AGE LOST by Gwen Schultz; Anchor Press/Doubleday, New York, 1974. 360 pp. \$10.

Gwen Schultz has a passion for glaciers, ice ages, and cold weather, and indulges it in *Ice Age Lost*. Her attempt to convince us that cold is better than warm is sprinkled with entertaining yarns and footnotes of ice ages (glaciers in Wisconsin were probably 12,000 feet deep), human evolution (Neanderthals didn't just go around grunting, they buried flowers with dead children), and cold things today (glacier ice is great in drinks).

The book does not so much get to a point as it does blanket the countryside of cold regions past and present. For readers who want just "the facts" of ice ages and glaciers, *Ice Age Lost* may be too rambling and full of cheering for cold.

For those who want to spend a leisurely winter evening in front of an empty fireplace, this book can entertain and maybe convince us to enjoy the present high-cost-of-energy cold snap.

Prof. Schultz, of the Geological and Natural History Survey, is writing for people who know little about glaciers and ice ages. In explaining science to non-scientists, she begins in the right way: she says scientists don't know it all. They are confused and in disagreement just as her readers will be. Dates are approximate and records are fragmentary.

This concept of science as a human endeavor with real accomplishments but also real failings is a crucial one for both science

and our society. Scientists who want to speak *ex cathedra* should expect to be ignored if the public doesn't understand them, and out-cast if the public does understand enough to see they're not infallible. In the case of ice ages, Prof. Schultz says all we can do is look at what's known or believed now (and say which is which). And that, she is certain, is worthwhile and even fascinating.

At times she is too enthusiastic. When the "never-say-die ice-age troops" seek to "reassert (their) commanding influence" and prevent "the magnificent ice age dissolving into memory," I'm afraid I can't even clap my mittened hands. She explains that the story calls for "powerful language," but excitement must (and does) come from descriptions of glaciers and the people, animals, and plants around them. To say glaciers are "thrilling" is in itself rather dull.

Besides sharing her appreciation for ice and cold, Prof. Schultz warns of dangers to ice that remains and to world climate. Her concern ranges from litter on mountainsides, to dust-spreading that melts glaciers for their water, to plans for melting arctic ice to warm northern regions.

She is worried we might lose the beauty of ice—"more precious than a pearl is a glacier"—and that we might change our world and climate in ways we never expected.

Climate change, technologically induced or natural, is something we cannot predict, she says, when we "cannot get an accurate local forecast for tomorrow's weather." Yet, she later makes her own forecast, on the theory that "sitting backwards on a moving vehicle," we can tell generally where we're headed. She thinks it's toward more warmth, which along with civilization's heavy hand on the countryside will wipe out many remaining glaciers.

Roughly the last half of the book deals with these things of ice present and future, and it gets bogged down. The early chapters on the coming of ice and the arrival of *Homo sapiens*—which Prof. Schultz sees as connected by more

than coincidence—keep moving forward. But the rest advances and retreats several times over the same ground: ice is good and it's in danger.

If the remains of the ice age are to be lost, Gwen Schultz hopes at least we can remember them well and have a sense of what they and we were.

Then again, if our winters grow longer and our summers cooler, she would welcome the opportunity to sell us on a shiny new ice age as well as the ten-thousand-year-old model.—*Tom Murray, Madison.*

Nouveau Riche

THE LEGEND OF BABY DOE
by John Burke; G. P. Putnam's
Sons, New York, 1974. 273 pp.
\$7.95.

A popular radio soap opera once asked the question: "Can this girl from a mining town in the West find happiness as the wife of a wealthy and titled Englishman?" This book asks the question: "Can a girl from Oshkosh find happiness in the West as the paramour and wife of a buffoon who made and lost a fortune in Colorado's silver mines?"

Her name was Elizabeth Bonduel McCourt. She was born in Oshkosh in 1854. As a voluptuous young lady, she married William Harvey Doe, Jr., a young man whose father had some mining properties in Colorado that offered the potential of getting rich quick. It was a tantalizing possibility, particularly for an ambitious girl whose own family had come on hard times. But Harvey Doe could give Elizabeth little more than the surname that has formed a part of her legend. (The "Baby" apparently came from the ingenuousness of her appearance which contrasted so markedly with the rugged surroundings of Central City and Leadville.)

The man who could offer Baby Doe the wherewithal to establish a legend was Horace Tabor, a stunningly mediocre man who literally stumbled into a fortune when a marginal mine in which he owned an interest suddenly proved to be

the source of a mother lode of silver.

Baby Doe aggressively courted Tabor and his money. They were eventually married after divesting themselves of their former partners. By then Horace's money had bought him political influence—enough to get him a thirty-day appointment as a U.S. senator from Colorado.

For nearly fifteen years, the Tabors tried to buy their way into the high life of Denver. Acceptance had its price, but Denver society was not on the Tabor silver standard. So Horace created his own world. He built an opera house and a regal mansion with scores of peacocks parading on the lawn. But the Tabors remained the arrivistes in the neighborhood.

Then the roof fell in. The United States formally adopted the gold standard in 1893 and Horace Tabor's overextended financial empire began to disintegrate like a sandcastle under the wash of an incoming surf.

Baby lived on long after Horace. Once the apotheosis of the surface trappings that money could buy, she lived out her life in proud but pitifully humble circumstances, waiting for luck to strike again.

Such is the stuff of legend. Or soap opera. John Burke's narrative is efficient but not inspired. He takes too many liberties with his sources, oftentimes creating scenes or events out of whole cloth. But then occasional flights of imagination are perhaps excusable considering the nature of the material he had to work with.

Any chronicle of Baby Doe's life, again because of the nature of the subject, faces the danger of reading like something out of a dime novel. Nevertheless, John Burke's book is helpful in providing a background for understanding the person and the context which inspired the John La Touche-Douglas Moore opera, *The Ballad of Baby Doe*. It is the opera itself which remains the most haunting evocation of a woman who lived during a time when money came spilling out of the Colorado hills.—*A. H.*



Vis-a-Vis

On Hearing Through the Headlines

By James R. Batt, Executive Director
Wisconsin Academy of Sciences, Arts and Letters

What kind of day was it? Was it, as Walter Cronkite used to say, "A day just like any other day"?

It started out that way.

The weather outlook for Madison on Saturday, December 28, called for cloudy conditions, becoming partly cloudy in the afternoon. The high for the day was to be in the upper thirties, low in the upper twenties, with southerly winds ten to eighteen miles per hour.

The day had started with morning fog. There was an astronomical note in the local morning newspaper that the moon that night would be in the constellation Gemini and that the planet Saturn would be at its greatest brilliance of 1974.

It was good that there should be such a show of natural beauty, weather permitting. The works of man seemed to leave something to be desired. The newspaper headlines of the first six pages alone drummed out a mind-numbing dirge, an incredible composition of despair:

"Suit Seeks Curbs on CIA"; "Amy Vanderbilt Plunges to Death"; "Schools Uncertain of Operating Plans"; "State to Charge Adoption Fee" (a new policy one county judge compared to the "sale of children"); "Darwin Battles Disease Threat"; "Boston School

Officials Cited"; "Gate-Crasher Charged"; "Police Seeking Murder Suspect"; "U.S. Steel to Close Works"; "Crash Kills 20"; "45 Ethiopian Students Found Strangled"; "Abduction Victim Undergoes Surgery"; "Mine Blast Fatal to 40"; "Neighbor Charged in Five Murders"; "Watergate Arguments End";

"Convict Admits Rape, Murders"; "Male Prisoners Increasing"; "Zenith to Close TV Tube Facility"; "Audit Shows Funds Missing"; "Unable to Help, Aide Kills Self"; "Gold Sets Records, Dollar Dips"; "New Rise Seen in Jobless Rate"; "Airlines Finish Worst Year Ever"; "50-50 Nuclear War Odds Seen Through Year 2000"; "Prices in Tokyo Rise 21.5% for Year"; "U.S. November Trade Balance in Red"; "Former Thai Premier Returns to Arrest"; "Airlines Faulted for Favors to VIPs."

Within the same six pages were follow-up stories on the death of comedian Jack Benny. The coup de grace was a boxed item on the front page which announced, "Because of spiraling costs starting with the editions of Dec. 29, the six day daily price of this paper will be increased by 15 cents per week and the Sunday paper by 10 cents."

You had to look hard for an encouraging word. There was frail hope only in the news: "Ford Shaping Energy Policy"; "Fish

Oil: Protein for Humans"; and "Leveling Seen in Green Bay Deterioration." That, Mr. Cronkite, seemed to be the kind of day it was.

We live in a world in which the unusual has become the usual, a world in which the news media bring us, all too efficiently perhaps, audio, visual, and verbal accountings of the brutal and the bizarre. How do you shock a people whose holidays are highlighted by statistical analyses of road deaths this year compared to last year, in the same manner we compare seasonal records of passes completed or batting averages.

Is it possible, under such conditions, to retain the ability to hear the still faint heartbeat of humankind through all this? Or do we, rather, become subject to what someone once described as a "narcotizing dysfunction" of communications—emotionally crippled, desensitized to the point of apathy.

How many "public service announcements" portraying hungry children, disabled veterans, needy colleges, and killer diseases—how many of these does it take to anesthetize our response systems?

And it is within this context and within the current condition of economic stress that your Wisconsin Academy raises its own appeal for financial assistance. Stiff competition.

Are you listening? Will you help? Can you hear us through the headlines?

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