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Friends of the
University of Minnesota

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Can Animals Think? Do You Know What Your Spouse Is Worth?
 How Come Slobs Don't Get Good Jobs? Is Epilepsy As Bad As We Think?
 Are You Going To Catch the Flu This Season? Is a Tornado Headed Toward Your Town?
 How Powerful Is Your Psyche? Is Our Grain Going To Get Us?
Answers Inside.



JAMES GARTNER

You're the boss. You have a promotion, and two eligible employees. One is personable, the other is a slob. All other factors are equal. Be honest—whom will you pick?

Getting Along And Getting Ahead: What's the Connection?

by Jeannie Hanson

Do you discuss sports with a "boss" of the opposite sex, work very near to your co-workers, or have a pretty or handsome face?

If you do, you have a good chance of advancing within your organization, an advantage based on "interpersonal attraction," or, the psychology of how people get along together. Add this psychological "chemistry" to the skills and abilities necessary to advance in an organization, and you have a person on the rise.

Without this kind of attraction, many careers are stalled, according to William Weitzel, psychologist and business professor on the Twin Cities campus of the University.

Being reasonably nice looking is only one part of it, Weitzel said. Those who are not afflicted with maladies like bad breath or foot odor, but are less than beautiful, do not have to resort to plastic surgery to get ahead. "But," Weitzel said, "have you ever seen a really ugly executive? If you have, he or she probably got the job from a relative."

Beyond physical appearance, other aspects of attraction are important in organizations every day, Weitzel said. Being close to the significant people in the organization, physically and psychologically, is quite important.

Industrial relations research indicates that people develop good business relationships with those who work close to them, even if their first impressions were bad. Related research indicates that productivity goes up when people work in the presence of others.

"Offices could be designed to improve this closeness, but usually are designed to achieve privacy or show status," Weitzel said. "People have to engineer their own closeness."

Another important factor is being similar to key people in personality, values, and beliefs. "No one wants to work closely with an obnoxious person or one they feel uncomfortable with," Weitzel said. And the further up the organizational ladder one moves, the more important these factors become.

Women and members of minority groups can run into problems here — they may not seem similar enough to many managers, Weitzel said. "Men, especially the older ones who head many organizations, often are uncomfortable discussing football with women, or politics with minority people," he said.

These two groups of people should confront the problem directly and politely with the individuals involved, admitting that they too find the problem a little uncomfortable, Weitzel said. Managers must reciprocate by admitting that many women do read the sports pages, and that they do have many things in common with their minority-group employees.

If there are not enough common interests, however, women and minority-group people may have to change some aspects of their outward behavior to succeed in certain organizations, he said.

Another way to rise in an organization is to make a concerted effort to meet the needs of the organization — and to make sure that others realize the contribution you are making, Weitzel said. "Every day is not too often to make some effort along these lines."

Being pleasant and agreeable, and sincerely liking other people in the organization, are equally important, Weitzel said. "People who criticize co-workers behind their backs, using their wit against others, will probably not advance very far," he said.

The more people increase their interpersonal attraction, the more influence they will have, and the more they will accomplish, for themselves and for the organization, Weitzel said.



William Weitzel

TOM FOLEY

UPDATE

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Psi-ence and Science

TOM FOLEY

by Vivien Bacaner

Is the world only what we perceive through the five senses of sight, hearing, smell, taste, and touch? Have all the seers and mystics throughout the ages been frauds, madmen, or misguided do-gooders? Or is there "something" out there?

Physics, one of the most basic of the sciences, has long been used as a tool to investigate such "unknowns." Physics probes the smallest particles of matter as well as things in space, huge beyond measure, which cannot be directly sensed with ordinary sight, hearing, smell, taste, or touch. So it is only natural that some physicists have long been interested in psychic phenomena.

Recently, in a University physics class, the professor was trying to get across the concept of probability. He took his class on an interesting sidetrack into the realm of psychic phenomena.

Choosing ten cards out of a deck, he asked the students to guess the color of each card. As statisticians would expect, the guesses fell from high to low in accuracy. Most students actually guessed right in the middle — about average.

But what of the two individuals who got 9 and 10 right answers out of 10? Such answers defy the laws of probability. Were these two just lucky guessers? They were tested again — and again scored well above average.

To some this was just a streak of luck and more luck. Others saw it as some sort of freak occurrence. For others, it was an obvious example of extrasensory perception (ESP) — the ability to see physical events or read the thoughts of others without the use of the physical eye.

At the University of Minnesota, curious students have been able to investigate ESP and other psychical phenomena (psi) in a College of Liberal Arts course taught by Eleanor McGill and Mulford Sibley. The course is also broadcast for extension credit over the University radio station, KUOM, three times a week.

According to McGill, the study of ESP and other psychic experiences has just begun to gain scientific credibility after a long history of ill repute.

The rise in respectability was acknowledged in 1969, when the American Association for the Advancement of Science extended associate membership to



Are We Playing With a Full Deck?

the field of parapsychology. "Scientists have now begun to investigate how and why psi phenomena work but only after they spent 50 years of proving that it really existed within the scientific world," McGill said.

In one experiment conducted over the radio, KUOM producer Steve Benson chose a picture that was then sealed in an envelope and hidden in the radio station. Listeners were asked to try to "see" the hidden object. Guesses were sent in and opened on the air by McGill.

The picture showed a little girl staring intently at a rose. Out of 20 responses, McGill considered five to be close. Two people actually suggested a rose, one drew a rose leaf, and the rest suggested plants of approximately the right shape. McGill expected a certain percentage of

correct guesses, but she was intrigued by another factor in the response. If people got the rose, why not the little girl or the whole picture?

She considers the outcome quite representative of psi phenomena in general. "There's something going on, but it's hard to make out any sort of order or construct any theories."

Modern investigations have approached psi phenomena from two directions: experiments and case studies.

McGill emphasizes the laboratory approach in class. Students must design their own investigation of a chosen phenomenon including rigorous controls. McGill feels it's extremely important that students learn to set up an experiment that will eliminate all possible normal explanations.

There is a drawback to laboratory investigations, however, in that such phenomena are not controllable in the same way that one can control the amount of light exposure. The laboratory investigator is restricted by his or her ability to design an environment where such unpredictable phenomena will occur.

Thus there is need for the second, or case study, method. It is used to observe the nature of the beast on its own ground. According to McGill, who does intensive personal investigation on reports of inexplicable occurrences, it is a drawn-out, often frustrating, waiting game. "It requires a great deal of patience and curiosity to keep plugging on towards very elusive goals."

McGill says she finds a wide range of attitudes in her students, from very derisive and not willing to admit the curiosity that brought them in, to those who will believe everything. She says the latter worry her the most because they are easily taken in and from her experience she knows that there are plenty of proclaimed spiritualists ready to do just that. Ideally she would like to inspire a sense of open-mindedness mixed with a healthy skepticism.

McGill believes that everyone has some measure of psychic talent but that individual ability varies considerably. "It's like playing the piano; everyone can achieve technical facility if they work hard enough but not all can become pianists.

"I would like students to take from my class a sense of awe and wonderment at the abilities we seem to have and do not use," she said.

Is Epilepsy Getting A Bum Rap?

by Maureen Smith

If you were forced to make a choice, would you rather have heart disease, diabetes, or epilepsy?

Two of the three are life-threatening. Yet most people, presented with the hypothetical choice, say they would rather have heart disease or diabetes than epilepsy.

Sister Ann Vivia Walton of the Comprehensive Epilepsy Program on the University's Twin Cities campus sees those responses as an indication of the overwhelming fear that is still triggered by a diagnosis of epilepsy.



Sister Ann Vivia Walton

"If you look back in history, it's pretty apparent that people have had some queer notions about epilepsy," she said. "We've never quite gotten rid of those ideas. As a result, people who learn that they have epilepsy, or the parents of children with epilepsy, come into it with utter terror. Teachers also have strong feelings."

Sister Ann offers in-service workshops to teachers, nurses, fire fighters, police officers, and nursing home staff members, and she works with parents of children who have epilepsy. She has presented classroom lessons on epilepsy to elementary, junior high, and high school students.

"Basically, I'm out educating people about epilepsy," she said. After 25 years as an elementary school teacher and principal, she thinks teaching is what she does best. And as a victim of epilepsy herself, she knows what she is talking about.

Her partner in presenting the workshops and classroom talks is Judy Beniak, a senior general staff nurse at the University, who talks about the medical aspects of the disease (the most common types of seizures, the appropriate first aid, the drug program, the possible side effects of drugs). Sister Ann talks about the psychological and social aspects.



KORNGABLE RESEARCH

Caesar's Seizures

Gaius Julius Caesar, Alfred the Great, Feodor Dostoevski, William Jennings Bryant, William Pitt, Buddha, George Frederick

The same old queer notions about epilepsy still surface in the discussions, she said. One notion is that someone who has epilepsy must be possessed by demons. "Remarkably enough, we gave a talk the other day, and someone asked 'Are you sure they aren't possessed?'"

Other notions are that people with epilepsy are mentally retarded, or criminally inclined, or just plain crazy. "My favorite is one that society hasn't picked up on so much — that a person with epilepsy must be a genius," she said.

Sister Ann thinks she knows where some of those ideas come from. "Epilepsy is a disorder of the central nervous system located in the brain. People feel that if there's something wrong with your brain, you must be mentally retarded."

One of the problems in combating the myths is that "a seizure does look strange," Sister Ann said. "The person does seem to be acting in a very peculiar way." Someone who is having a grand mal or tonic-clonic seizure may fall down, groan, stop breathing, thrash around. Someone having a psychomotor seizure may appear to be drunk or on drugs.

Still, Sister Ann said, the reality of epilepsy isn't as bad as the fears. After years of keeping her epilepsy a secret from everyone, she contacted the Minnesota Epilepsy League and discovered that "lo and behold, I was not the only person in the world

Handel, Alexander the Great — all were epileptics. Yet all went on to successful careers. Are the perils of epilepsy exaggerated?



Alfred the Great

who had it. What was most helpful to me was learning the facts and finding out that it wasn't as bad as all my ideas."

Now, she said, "living with epilepsy is perfectly acceptable to me except on the days when I have a seizure. Then I can go right back into the hating-it bit. It is still embarrassing, it is still frustrating."

Sister Ann's epilepsy had been under good medical control for several years when she had a breakthrough seizure a little over a year ago. Adjusting her medication took a few months, and now her disease is again under control.

"For most people, control is a very possible thing," she said. Sister Ann began having seizures late in 1968, and her epilepsy was diagnosed in 1969. She didn't tell her family, didn't tell anyone. "I spent a good number of years refusing to talk to anyone about it and just pretending I didn't have it," she said. "I would probably still be doing that if it weren't for my nephew."

When her nephew started to have seizures, she said, "I listened to his mother talk about his frustration and his refusal to take medication, and I recognized myself." It was then that she told her sister and other family members about her own epilepsy. "They still claimed me as a family member," she said.

She contacted the Minnesota Epilepsy League, looking for a program for children. What she found instead was a program for adults. "I went not to help myself but to help my nephew. I ended up helping myself."

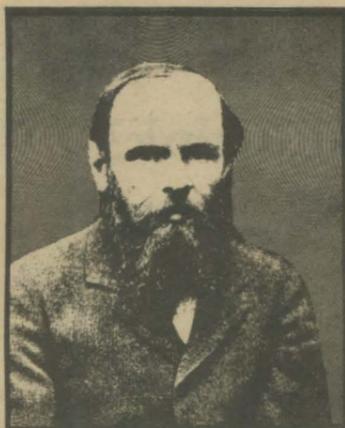
While she was still looking for a way to help children with epilepsy, Sister Ann met Judy Soderberg, educational coordinator for the Comprehensive Epilepsy Program, and was given a job.

Sister Ann would never have chosen to have epilepsy, but she knows that her own experience adds impact and credibility to her talks. "My partner says she is tempted to say that she has epilepsy," she said.

Even more important, her experience makes it easier for people with epilepsy to talk to her. Last summer a teenage boy was brought to her by his parents after he had announced that he would not return to school in the fall because he was too embarrassed about having seizures. Sister Ann could tell as he walked into the room that he didn't want to see her, didn't want to talk.

"You don't like having seizures, do you?" she asked him. "No," he said, still uncommunicative. "I don't either," she told him. With the discovery that Sister Ann had seizures, his whole attitude changed. "He just flooded out all his feelings," she said.

One of his big concerns was that he had been ready to get a driver's license and now would have to give that up. "I was very able to understand," Sister Ann said. "At the time, I didn't have a license. I was waiting for my year to be up." She knew, too, how the boy felt about having seizures in public.



Feodor Dostoevski

The boy was not taking his medication faithfully because it made him sleepy. Sister Ann suggested that he consult his doctor about changing his regimen so that he could take the medicine at a different time of day. Eventually, the boy agreed to go back to school.

Sister Ann's nephew, now almost 13, is also doing well. His epilepsy is under medical control, he is active in sports, he talks openly about his seizures. "He's really come a long way," his aunt said.

In talking with teachers, Sister Ann begins by helping them to admit that "they are scared stiff and think they won't be able to handle the situation."

Youngsters with epilepsy need to be "treated as normal kids

who may occasionally have a problem," Sister Ann tells the teachers. She has found that physical education teachers are among her "most difficult customers" because they are often "afraid to let the kids play for fear that they'll get hurt." It is important that children with epilepsy not be shielded away from or over protected, she said.

Teachers want to know what they can do to help. Sister Ann emphasizes that the physical first aid they can offer is very limited. Someone who is having a psychomotor seizure should



William Pitt

not be restrained but should be gently guided away from stairwells or other dangerous places. Someone who is having a grand



Buddha

mal seizure should be helped to lie down, and nearby objects should be moved out of the way.

No attempt should be made to put anything in the person's mouth, she said. People who are having seizures "are not going to swallow their tongue, because it's attached. If they bite their tongue, it will heal. But if someone knocks their teeth out, that's more serious."

Whatever anyone does or doesn't do, the seizure will soon be over. The child then needs what Sister Ann calls "emotional first aid and social first aid." Having someone read to the child for a few minutes, or talk about last night's game, can ease the embarrassment and confusion. Children who have had seizures need reassurance that they are all right, they are still valued for who they are, they have not been diminished as persons.

Children and teenagers in classrooms are Sister Ann's favorite audience for her talks. "Our best bet lies in educating the next generation," she said.

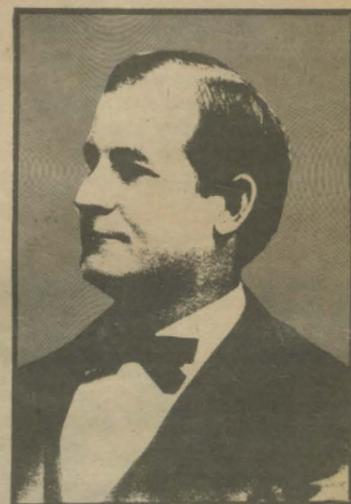
"The youngsters I've taught have been most receptive," she

and what they can do to make it easier."

Sister Ann tells elementary school children that there are two things children with epilepsy need. "They need their bottle of pills, and they need friends."

Occasionally Sister Ann is asked: "Weren't you afraid to come to this classroom, afraid you'd have a seizure?"

She tells them that she has two choices. She can either stay home for the rest of her life, or she can take the risk of going out. "That makes sense to them," she said. Given those choices, they know that she or anyone with epilepsy should choose to go on with life.



William Jennings Bryant

said. "They are utterly fascinated with the facts, and fascinated that I'm a real live person with epilepsy. They are very keen to pick up on how the child with epilepsy might feel



George Frederick Handel



Alexander the Great

by M. V. Santelman

Do animals other than man feel fear, affection, happiness, misery, hope? Is there reason to believe that they have mental experiences comparable to ours?

Humans like to think they do. We can all tell stories of animals that seem almost human, and many of the most popular children's books are about animals. The fictional adventures of Dr. Doolittle, a veterinarian who could speak the animal's language, spend more time in circulation than on the library shelf. Is it all imagination, or is there basis for the belief that animals can relate to humans on more than the simplest levels?

"There is a historical basis," says Dr. Joseph Quigley, a veterinarian on the Twin Cities campus, who is constructing a course on animal-human relationships and community health. As a dog-owner himself, he feels that "a dog shows a consciousness I can relate to," but he is quick to add that this

do, but because you are conscious does not mean that your dog is."

In the past few years, behavioral scientists have made considerable progress in their efforts to communicate with animals. Several chimpanzees have been taught to speak American Sign Language, the language of gestures used by the deaf. Faced with such evidence, the scientific world is reconsidering.

The chimpanzee, Washoe, has been extremely important in changing the opinions of members of the scientific community, said Frank McKinney, University ethologist. Washoe was raised from infancy by Beatrice and Robert Gardner. The Gardners spoke only in American Sign Language in her presence, and trained Washoe to use sign language herself.

In four years, the chimpanzee learned between one- and two-hundred words. She can communicate with her foster parents, and even invents phrases herself from words she already



Gail Peterson and Milton Trapold

is his own feeling and is not scientifically based.

A scientific basis for such feelings has been difficult to establish. From about the 1930s until quite recently, many scientists have avoided the subject of animal awareness. To bring it up was to risk criticism and accusations of anthropomorphism.

Gail Peterson and his colleague, Milton Trapold, psychologists conducting research on animal learning at the University, emphasize the dangers of projecting human feelings onto animals.

"People should realize that it is possible to explain much of an animal's behavior without any appeal to the existence of a consciousness or mind," Peterson said. "Your dog may do things or exactly the same reasons you

knows. As she watched a duck land in a pond for her first time, she signaled "water bird." When a doll was placed in her cup, she responded "Baby in my drink."

This and other research has sparked interest in animal communication and animal behavior. "In the last decade," McKinney said, "there have been discoveries that have made people cautious about saying, 'It could never be.'"

"There's no doubt," Trapold said, that Washoe can communicate. However, the psychologists are reluctant to credit her with mental experiences. "This research is important," Peterson said, "but it does not mean that chimpanzees are capable of higher consciousness, abstract thought, or retrospective or reflective thought. It doesn't mean



UNIVERSITY OF OKLAHOMA

that they enjoy the kinds of psychological lives humans seem to enjoy. If Washoe pops up and writes a book on philosophy, then I'll be impressed."

Washoe

TOM FOLEY



Frank McKinney

Our questions about the existence of a mind in animals will not be answered for years to come. Continued, cautious research could yield fascinating insights into animal behavior, and may have practical applications as well. Studies on animal learning, for example, have resulted in the development of highly successful behavior modification techniques used to treat

Washoe, p. 14

TOM FOLEY



Joseph Quigley

January 18, 1978: The Night the University Made \$615

by Maureen Smith

"The College of Liberal Arts has been experiencing severe financial cutbacks. We are calling alumni all over the country to see if they might make small tax-deductible contributions."

Nine University students were on the phones the night of Jan. 18, the third night of their campaign to raise funds for the College of Liberal Arts (CLA) on the Twin Cities campus.

Every \$10 or \$25 they raised would be put to good use. But more than that, the students knew that a \$10 or \$25 gift might begin a pattern of giving that would spiral upward over the years.

"We're less concerned with the amount of the gift than we are with the fact that alumni or

friends make their first gift," said Patt Kelly, assistant director of annual giving who coordinates the telephone program for the University of Minnesota Foundation.



In 1976 the team of students on the telephone raised about \$75,000 for the University. Final figures for 1977 are not in, but pledges totaling about \$115,000 were received from some 6,500 individuals. (Final figures will

be lower, because not everyone who pledges follows through with a gift.)

Once in a while, a student caller hits the jackpot. One routine call last year resulted in a \$300,000 annuity trust for the Institute of Technology (IT). After making a \$25 pledge, the benefactor surprised the student by asking for information about making a bequest. A development officer took it from there, and an endowment fund was established.

November and December are the big months for the telephone team, the two months during which they call LYBUNTS. LYBUNT is the fund-raising term for someone who gave "last year but unfortunately not this." Someone who gave in a "past year but unfortunately not this," is called a PYBUNT.

"Colleges like engineering and law and business get generous support from their graduates. It's harder for CLA. The dean has asked me to call you."

The students like calling LYBUNTS. "If you'd been here in December, you would have heard the money rolling in," said Cynthia Kaufman, one of

the callers. It's harder to get a pledge from someone who hasn't yet given that first gift. And calling for CLA is considered to be a "hard run."

Until last summer, alumni non-donors were called from cards arranged by year of graduation. "The pitch was very general," Kelly said. Now calls are directed to alumni college by college.

"We have much better success when we can call nursing graduates and say we have this great new building but we're short of equipment and Dean Ramey has asked us to call," Kelly said.

Nursing, education, and home economics graduates were called last year. The CLA calls this year will be followed by calls for IT in February, the College of Business Administration in March, and General College in April. Gifts to the coordinate campuses are also encouraged.

Knowing the graduate's college can tell the caller quite a bit about the person, but "with CLA it doesn't help us much,"

Phone Gang, p. 14

The Foundation phone gang. Front, left to right: Char Pearo, Julie Fascianna, Kim Hellier. Middle row: Jon Savin, Cindy Kaufman, Azhar Chughtae, June Kreutzkamp. Back: Paul Ajagbawa, David Hanson, Buddy Hasnudeen.





At the Count of Ten, Disaster Season Officially Begins

by Michael Finley

If you are congratulating yourself on making it through most of the bad weather season, here is some news that will break your heart:

Winter is Minnesota's safest season. The disaster season has not yet begun.

"Historically, the worst storms occur at the end of winter — in March — and at the very beginning — in November," said Clifton Halsey, extension conservationist and head of the University's weather emergency preparedness program.

"The spring floods come in April, May and June are the worst months for tornadoes, and flash floods continue through the summer, along with other severe summer storms — which takes us to forest fire season in the fall and then right back to November blizzard season."

In addition, there is always the possibility of nuclear war — the original reason for the emergency preparedness program — which is always in season.

"Back in the early 1960s, there was quite a lot of worrying about nuclear war, Khrushchev had taken his shoe off at the United Nations, and people were making all sorts of plans for fallout shelters, decontamination procedures, and the like. At that time there were civil defense units in only four Minnesota counties. I was involved in civil defense, so I got involved in this, too."

"Then, around 1968, there was a lot of reassessing and everyone decided to tie civil defense procedures together with weather emergency procedures, so as to be more acceptable to the public. There are similarities between the two. Nowadays, we hardly ever hear about nuclear war plans. Once in a blue moon someone writes in and inquires."

Although nuclear war is less pregnant a possibility than it once was, we don't have to worry about not having something else to worry about. Between the federal government's disaster directives and the research by extension people, a big fat folder of disaster options has been compiled. Your county agent has one. Included in its recommendations are how to:



Clifton Halsey

TOM FOLEY

- salvage flood-soaked mattresses;
- repair submerged tractors;
- store milk during electrical breakdowns;
- remove massive amounts of mildew;
- thaw frozen udders;
- move fallen trees;
- get rid of animal carcasses;
- minimize rodent and insect infestation;
- stay alive overnight stuck in a snowbank; and
- feed 50 from a fondue pot.

(Briefly, the suggested responses: Soaked mattress? Forget it, unless you can get the local hospital to autoclave it for you. Wet equipment? Try a repair shop. Milk storage? Keep bulk tanks handy. Mildew everywhere? Vacuum, air out, daub with alcohol, fumigate if necessary. Frozen animal parts? Better call a vet. Fallen trees? A chain saw and a truck or a bulldozer should do the job. Carcasses? Send them to a rendering plant, or else cover temporarily with kerosene and bury later. Rats? Carry a club and a flashlight and be careful. Stuck in a snowbank? You should have thought of this earlier — hope that you have candles, coffee cans, matches, clothes, first aid kit, knife, wire, and some food in the car with you. Fondue for 50? Good luck.)

The *Disaster Handbook* anticipates just about everything, from how to claim tax deductions for destroyed property to what to do about contaminated wells, wet books, injured trees, questionable livestock feed, soggy shoes, post-flood disease control, insurance claims, funny smells, ruined food, impure water, poisonous snakes, lightning, tornadoes, ice buildup, insulation, windbreaks, power failures, and botulism.

The advice on what to do after a nuclear attack should be distributed to the leaders of every nation.

In fact, a glance at information in the handbook may well alter permanently one's notions about what constitutes a disaster and about how thoroughly things like tornadoes interfere with our routines. When disaster strikes, we all find ourselves camping out, whether it's vacation time or not.

The wonder of it all is that it most certainly *can* happen here. Minnesota is famous for its blizzards, ice storms, floods, tornadoes, forest fires. The past few years have only underscored our vulnerability, according to Halsey. Remember the Fridley tornado of 1965? The 1975 "storm of the century," a blizzard that claimed six-lives? The flood in Little Falls last year? And who ever dreamed that south Minneapolis would be submerged as it was in last summer's flash floods?

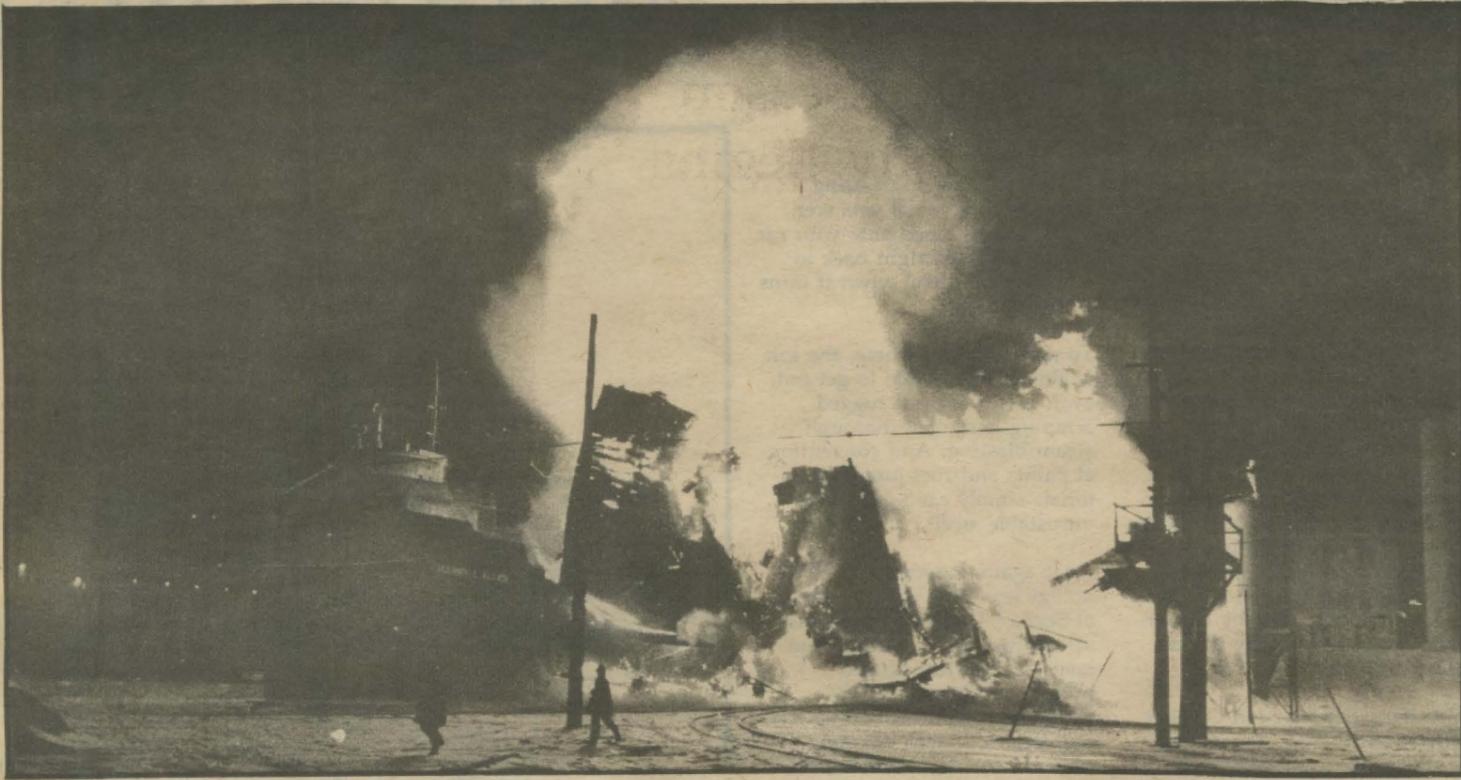
Minnesota is not even immune to hurricanes. Every so often we feel the kick at the tail of a storm coming up from the Gulf Coast.

For lovers of the exotic disaster, the worst earthquake in the history of the United States occurred not in San Francisco or in Alaska, but in our solid neighbor, Missouri, on Dec. 16, 1811. A million square miles trembled, and the Mississippi flowed backward.

Also, you never know what cornfield a volcano may sprout from.

We probably take good, peaceful weather too much for granted. The weather emergency preparedness program reminds us that there is a gray cloud outside the silver lining.

TOM SWEENEY, MINNEAPOLIS STAR



Grain Energy Combusts Prematurely; Explosions Rip Nation

by Nancy Johnston Hall

Americans are suddenly faced, in this era of calamities, with a new problem: keeping their storehouses of grain from blowing up. From Dec. 21 to Jan. 21 this winter, grain elevator explosions in Louisiana, Texas, Illinois, Mississippi, Kansas, Missouri, and Minnesota killed more than 60 people and injured as many more.

These separate tragedies have given many communities an air of uneasiness, and caused many people living near grain elevators to eye these neighbors cautiously.

But are grain elevators really time bombs, merely waiting for a tiny spark or some dust-filled air to turn them into catastrophes? Or have the recent blasts caused people to overreact to the dangers?

Robert Aherin, safety specialist with the University department of agricultural engineering, points out that prior to this year's explosions, the death rate for the grain elevator industry was quite low when compared with that of other industries. "As with anything, if you don't have any accidents for a while, regulations get a little lax," Aherin said. "Then something happens, and things tighten up."

The federal agency responsible for establishing and enforcing safety standards in industry has

been doing just that. The Occupational Safety and Health Administration (OSHA) has sent a "Grain Elevator Hazard Alert" to the 10,000 grain elevator employers in the United States. This 34-page document emphasizes the potential safety and health hazards in grain storage, and reviews precautions that must be taken to prevent explosions.

The real dilemma, according to Aherin, is that the two components needed to produce an explosion — dust and an ignition source — are tough to eliminate in grain elevators.

"Anytime you get small particles of anything, you have the potential for an explosion and fire," Aherin said. "If you ground up a file cabinet into small enough particles, it could explode."

Both field dust and grain dust are always present in grain elevators. Much of it floats into the air during the movement of grain from storage bin to storage bin, and to and from grain carriers. "When you get a certain concentration of dust mixed with the air — anywhere from a 20 to 30 percent mixture of dust to air — you're in the explosive range," Aherin said.

Therefore every step must be taken to control the dust. Most grain elevators have dust collectors and exhaust fans that pull the dust away from dumping areas.

Grain storage bins have vents that release pressure as the grain is poured into them. "Cyclone" collectors on some of the vents separate the dust from the air as it escapes through the vents.

Most grain elevators also have vents in the buildings themselves, so that inside and out-

side pressures can be equalized, thereby reducing the air currents that cause dust to float rather than settle.

Good "housekeeping" within the grain elevator is another important preventive measure. "Some elevator operators get lax in keeping the whole area — equipment, floors, and rafters — clean from dust," Aherin said. "This extra dust lying around just adds to the potential for a larger explosion and fire."

Because dust is an inevitable fact of life in a grain elevator's operation, perhaps even greater efforts must be made to reduce the second component of an explosion, the ignition source. "Even the smallest spark can cause the dust suspended in the air to ignite very rapidly," Aherin said.

"First you get a small flash fire. The heat and pressure from this fire in turn cause the larger secondary explosion. Often there are a series of major explosions following the first small fire."

Included in OSHA's Hazard Alert are several precautions to prevent this:

All equipment and power tools must be explosion-proof, designed so that no arcs, sparks, or heat are emitted.

Static electricity sparks must be eliminated.

Rules against smoking must be strictly enforced. The penalty for breaking the rules is quite stiff — usually the employee is fired.

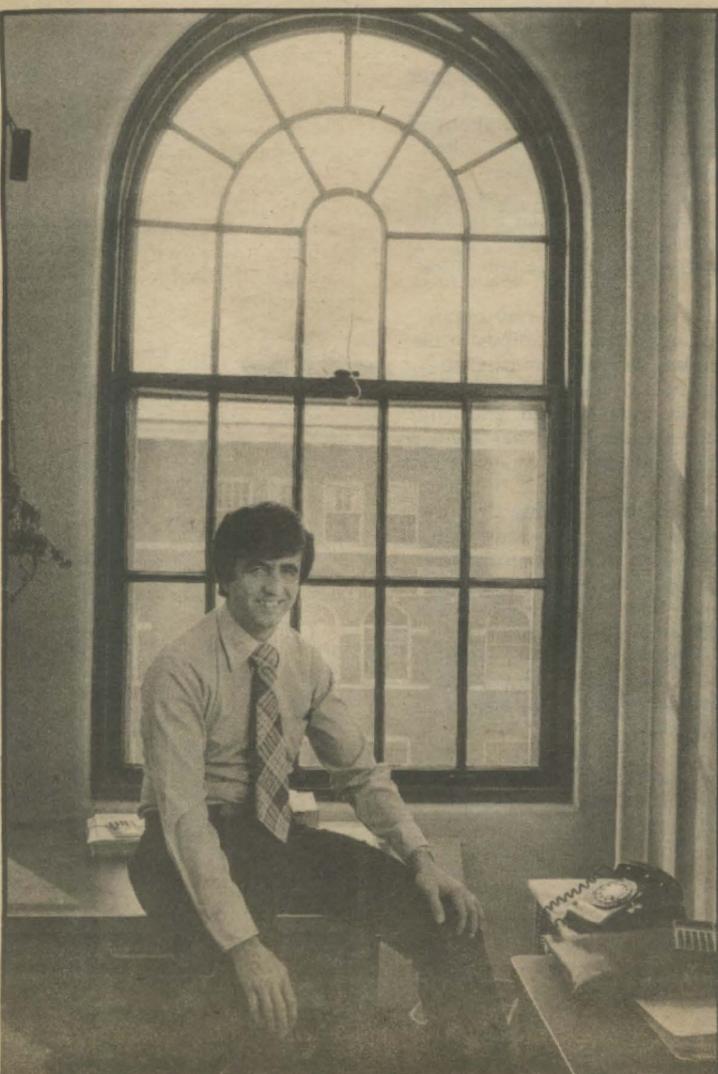
Alarm systems must be used to warn against overheated bearings on electrical motors, belts, and pulleys.

OSHA representatives visit and inspect grain elevators, checking the percentage of dust in the air, and examining the housekeeping and equipment. But an OSHA employee admitted that the agency can't visit all 10,000 elevators.

Aherin said that elevator insurance carriers are at the elevators regularly, working with employees. "An elevator must abide by the regulations in order to maintain its insurance," he said.

Because grain elevator blasts are usually severe, little evidence is left to aid in determining the cause. In the explosions that have occurred in the United States since 1958, the cause has been unknown in 62 percent of the cases. Investigations into the causes of the recent explosions are still under way.

Perhaps this year's explosions have had a positive effect on the grain elevator industry. It may be a long time before complacency settles in again.



Robert Aherin

Rust Is Only Nature's Way of Telling Your Car To Fall Apart

by Michael Finley

Sometimes, all you have to do to hear it is slam the car door. Suddenly your car is a half pound lighter, and a pile of reddish-brown crud that used to be part of your car has returned to the ground.

Rust is the price of the good life of Minnesota, and it ranks right up there with death and taxes among the great inevitabilities. It costs us plenty in depreciation, wear and tear, and anxiety, and all we do about it is crack slight jokes.

But Prof. Morris Nicholson, director of Continuing Education in Engineering and Science on the University's Twin Cities campus, has comforting words, at least for nature freaks.

Rust is natural. That ore you see lying around up on the Iron Range is really, for all practical purposes, rust. Steel, on the other hand, is the anomaly, the abomination of nature's intentions. Rust is just steel's way of getting back to the earth.

Clearly, if what Nicholson says is true, we might as well junk

steel cars right now and find substances less abhorrent to nature.

"Silver is a possibility," Nicholson said. "At least it wouldn't rust out. It would, however, be very heavy and weak, cost hundreds of thousands of dollars, and turn black after a month on the highway."

Gold is also quite popular as a rust-proofing device, especially among shahs, but it, too, can be costly. The recent plating of a \$140,000 Rolls-Royce in Kuwait wound up tripling the cost of the automobile, thereby obviating whatever economy the car offered in the showroom.

The state legislature in October invited Nicholson and several other University faculty members to talk about the problems posed by highways and salt. The inquest wanted to know if the benefits of salting outweighed the damage. Nicholson talked about cars falling apart.

"The first thing I had to establish was that rusting was a kind of electrochemical oxidation," he said. "It happens most simply when steel comes into contact with moisture. The problem with salt is that it hangs around and intensifies the ordinary chemical reaction, trapping itself

in the rust and reactivating whenever the metal gets wet. Thus, salt splashed onto your car in January goes right back to work on the metal when it rains in May."

To make matters worse, the salt is almost impossible to get out, even with the most rugged scraping and most thorough steam-blasting. And conventional paints and rust-proofing materials simply can't guarantee unrustable steel.

Once again, it seems, our technology leaves us with the choice of Scylla ("Do you want to slide off the road into a bridge abutment and get turned into pulp?") or Charybdis ("Or would you rather watch the second-largest investment you'll ever make metamorphose into a heap of crumbly red dirt?"). We usually choose the latter, but neither is much fun.

There are little glimmers of hope on the horizon, Nicholson says. Auto manufacturers are actually doing something to extend the lives of new car bodies by a factor of 3 to 5 times over the life expectancy of 1970 models. Galvanizing and steel pretreatment — to make paint adhere more tenaciously to every crack and crevice — should go a long

CORROSION IN



According to the stories, our bridges are deteriorating as quickly as our auto bodies. Which will collapse first?

way toward this end. There are also more expensive kinds of pretreatment, in which the steel is essentially pickled in oil for several days, for use in especially vulnerable places.

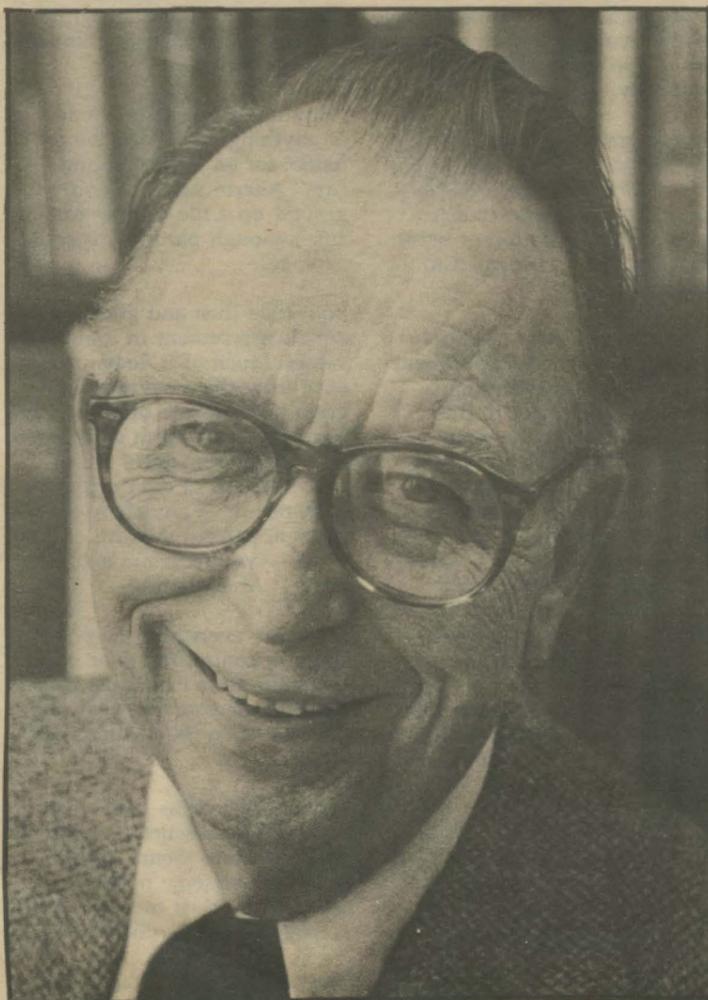
New materials are a partial answer, Nicholson says, but he doubts that the world will ever experience a severe rust shortage. He recalls a story about an electronics firm that consulted him once. The company was wondering why its parts were corroding. Nicholson traced the problem to salty fingers and vending machine potato chips.

And then, just the day before this interview, the pipes of his kitchen sink gave way. One wonders if Nicholson would enjoy an ocean voyage, knowing what the salt water was doing to the vessel's keel.

Actually, since taking over the duties of directing Continuing Education in Engineering and Science, Nicholson hasn't had much time for his work with corrosion. He welcomed the opportunity to share his expertise in the legislature project and to get back to his main area of interest.

He admitted he was getting (what's the proper expression?) out of practice.

Morris Nicholson



TOM FOLEY

R. SCHOLLES



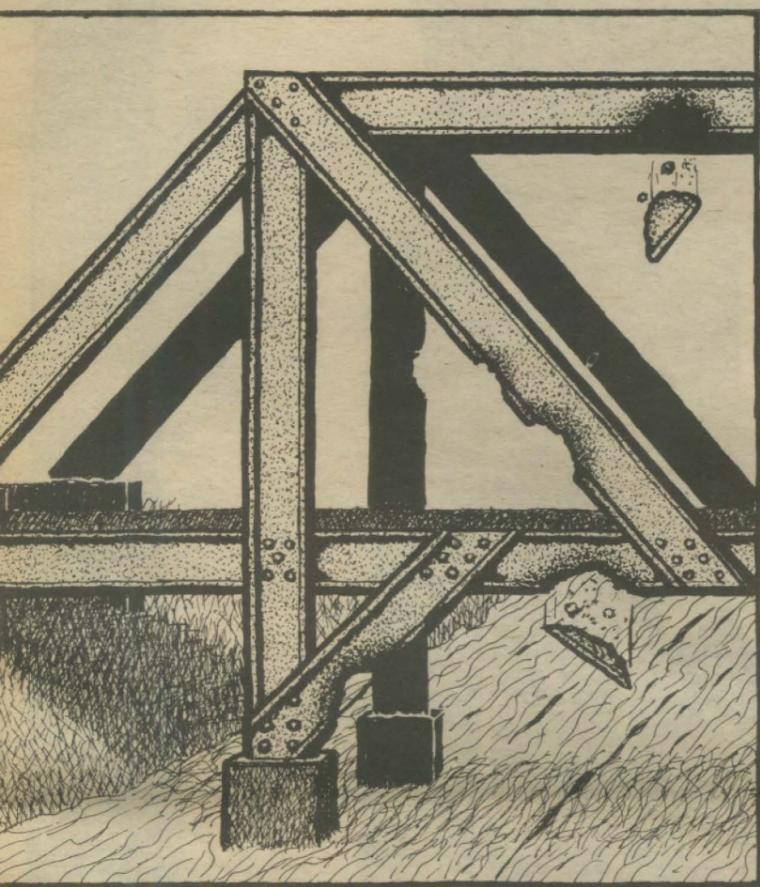
Future Tails

Here's an idea that ought to sound new: cattails. The University has been doing cattail research for four years now, mainly because, in the words of botanist Douglas Pratt, "the plant is so productive."

According to Pratt, cattails may end up everywhere — in our furnaces, in our paper pulp, even on our plates. They're compact, grow on otherwise useless, swampy land, and don't pollute the air when they burn.

Stick that in your pipe and smoke it.

HIGH PLACES



by Michael Finley

It stands to reason that more bridges should collapse in Minnesota.

With all of our rivers and lakes, we have lots of bridges. And with all of our cold weather, the bridges get a lot of salt dumped on them. And with all of that salt eating away at the concrete and steel, it's surprising more bridges don't fall into the water.

Maybe they will. Not all at once, perhaps, but it doesn't take 1,500 bridge failures to get our attention.

The legislature is worried enough about that possibility to have held hearings on the problems of road salting a couple of months ago. The Twin Cities campus resident expert on bridge deterioration, Asst. Prof. Charles Nelson of civil engineering, was on hand to testify.

Bridges are one of a very small number of structures, along with parking ramps and tunnels, that break one of the canons of modern building: instead of becoming obsolete before they wear out, they wear out before they become obsolete.

"Which really gets to be a problem," Nelson said. "The high-

way department spends many millions of dollars every year building and replacing bridges. Some of these are built by floating 40-year bonds, and then they fall apart in 10 years. It's not at all uncommon to have the bridge or ramp condemned before the bond expires."

That means taxpayers wind up paying for bridges 30 years after they've stopped existing, Nelson said, which isn't most people's idea of sharp economy.

"The problem with bridges, of course, is that they're self-supporting. This means that the steel has to be fairly close to the concrete surface. Concrete and steel ordinarily work very well together, because the concrete has a low pH and thus protects the steel. It isn't at all uncommon, for instance, to find a 100-year-old sewer tunnel of concrete and steel, with the steel underneath as new as ever. It's the salt that causes the problems."

Bridge surfaces are never absolutely flat, Nelson said, so the "juice" of salt and melted ice tends to collect in pools. And since concrete is fairly porous — Nelson says good concrete is about 10 percent air — the juice seeps down into the cracks.

So far so good. Eventually, however, the juice gets to the bare steel, and that, Nelson said, is when the heartache begins. The outside of the steel turns to rust,

the rust takes up more space than the original steel, the swelling causes the concrete around it to crack and crumble, and the juice spreads, and the steel continues to rust, and so on, and so forth, until the bridge is just a lot of junk with cars going over it — not the ideal situation.

Bridge inspectors, of course, are there when funds permit. Their job is very similar to what dentists do, Nelson said: they look for cavities. The only difference is that while dentists probe with a pick weighing a few grams, the bridge inspector's pick weighs 20 pounds. And what the bridge "dentists" do with their picks is less scientific.

With the possible exception of Kuwait, no country in the world can afford to build new bridges every 10 years. There is a solution to the problem of dissolving bridges, and Nelson can sum it up in one word:

Plastics.

One problem with the art of concrete-making is that it uses lots of water, half of which is actually part of the concrete and half of which is just there to keep the concrete workable, to lubricate it. When the second half evaporates, it leaves holes in the concrete — holes the juice seeps down through.

Some construction companies are already employing additives called "super-plasticizers" —

plastics that lubricate the concrete without evaporating later and leaving air holes. Super-plasticized concrete has the added advantage of being lighter than water-lubed concrete, because it uses less lubricant. Nelson calls the super-plasticizers the ideal solution to bridge-rot.

Similar proposals include polymer concrete, polymer-impregnated concrete, latex-modified concrete, and wax beads and concrete. Nelson thinks the last especially ingenious.

"When the concrete is poured onto the surface, wax beads are mixed in. After it sets, the beads are heated and the wax melts into the cracks, air holes, and interstices."

Another idea being tried is covering bridge surfaces with waterproof membranes, essentially a rubber carpet. The problem with the membrane, however, is that it's bound to get a hole in it somewhere, the juice is bound to get in, and the bridge will rot out and collapse anyway. Membraned roads make about as much sense as painted teeth.

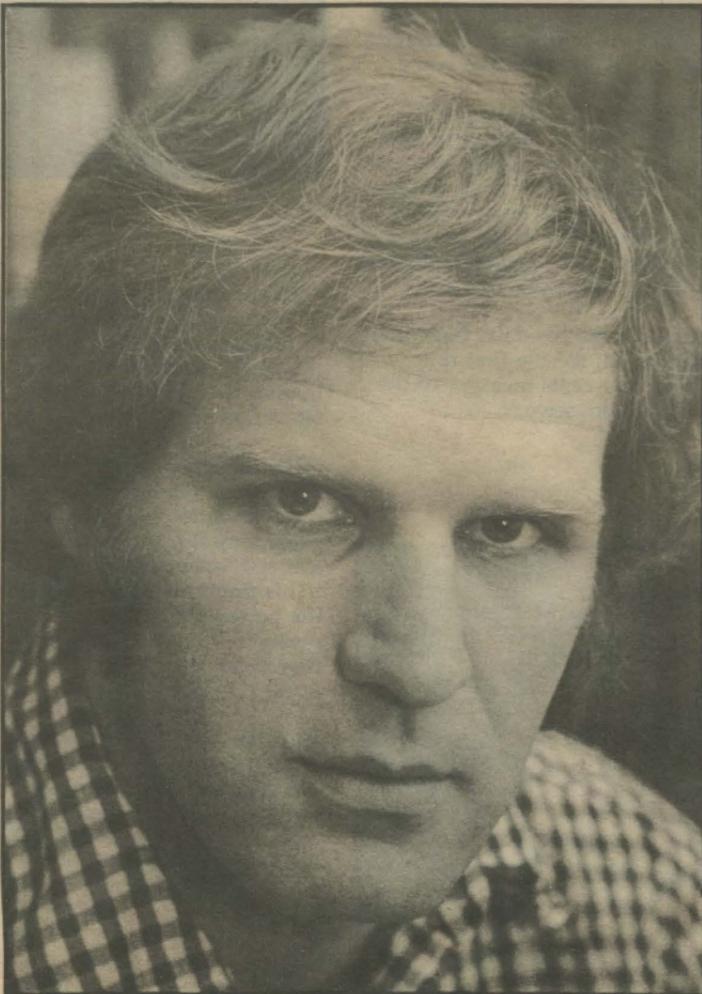
'Road Dentists' Fight Salt Cavities, Strengthen Bridgework

All of these solutions, however, tackle the problem of holes in concrete, and Nelson knows that the concrete isn't really the problem.

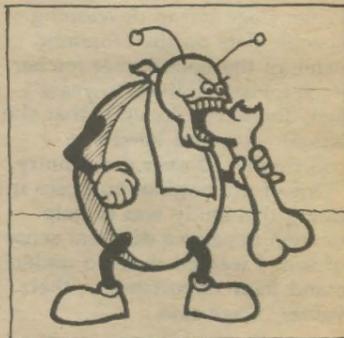
"The state of the art of concrete-making is about as good as it can get," he said. "The real problem is the fact that steel rusts when it gets wet and salty. One idea making the rounds right now is epoxy-coated reinforced steel. The idea is that if you coat the steel with a good, impermeable glue, it doesn't matter how much juice leaks through the concrete. The bridge won't weaken."

If somebody had thought of making bridge-tops out of glue 70 years ago, when cars first came into use, we wouldn't have had epoxy, of course. It would have been the ultimate indignity for horses to pave the roads for their replacements.

Charles Nelson



TOM FOLEY



JAMES GARTNER

Meat the Beetles

Here's an idea you might not really want to hear about at all: bone-cleaning beetles. If you've ever wondered how places like the Bell Museum of Natural History on the Twin Cities campus get their skeleton exhibits so clean, it's because little beetles eat the meat off the bones.

The Bell Museum maintains a colony of the creatures just for this cleaning feature — careful, of course, to keep them away from exhibits the museum doesn't want skeletonized. No payment is involved — it's on an all-you-can-eat basis.

The Worth of a Wife (or Mother, or Spouse) in Dollars and Cents

by Nancy Johnston Hall

Last year the mother of nine children was killed in a car accident while driving a hockey car pool. Her family sued the other driver for negligence, asking not only for punitive damages but also for financial compensation to pay for the loss of the homemaker's services. The family needed the money to hire someone who would take over her work at home.

There are few people in this country, however, who know how to measure the dollar value of the job of homemaking.

The family's lawyer certainly didn't. He had planned to accept an offer of \$30,000, but before he did, he wisely contacted Geraldine Gage, one of the few experts in this area.

Gage, a professor of family social science at the University, calls the lawyer's estimate "a piece of nonsense." Her research shows that the amount of money needed to replace the work of a housewife with several children is, at the least, five times the lawyer's estimate. Her evaluation in this case was an amount well into six figures.

When Gage began developing specific data on the economic value of the homemaker for her doctoral dissertation 15 years ago, she never dreamed that she would soon find herself in courtrooms all over the country. "One of my original purposes in doing this study was to help women develop a different sense of self. I wanted them to understand their importance — their value," Gage said.

But a magazine article on her dissertation findings was seen by several lawyers, and her new role as trial witness began. Gage's reputation grew and, in the past 15 years, she has testified in a number of cases.

For each trial, Gage evaluates the total amount of money the family will need in the years to come to replace the work done by the homemaker, usually the victim of an accidental death caused by someone's alleged negligence.

Gage was originally part of a research group that was looking at how women used their time at home. The researchers developed precise data on housework by asking a large sample of homemakers to record their exact activities every 10 minutes.

Their figures were enlightening. They found, for example, that the average woman with three children works slightly more than eight hours a day on household tasks, such as cooking, cleaning, laundering and ironing, child care, marketing, and management. A woman with three children who is employed outside the home for 15 or more hours a week still spends an additional six hours per day working in the home.

This amount increases, of course, with an increase in family size. But even a wife with no children and no outside employment still works an average of 5.7 hours a day in the home. If employed, she spends 3.7 hours a day at household tasks.

Armed with this data, Gage then developed, for the first time, a dollar and cents measure of the value of housework.



MIKE FINLEY

"A basis for measuring the value of any economic good is the cost of replacement," Gage said. "In this case, the value is the cost of buying an equivalent amount of labor time."

Gage uses the average wage rate charged by domestic help, a figure that varies somewhat with geographical area, but currently averages about \$2.65 an hour. "This figure may not get them the person they want, or the person who will do everything they need, but at least it's an opener," Gage said.

For each case, Gage computes the number of total work hours per year and the number of years that the deceased would have spent on household tasks by matching the facts for this individual with the established data.

"I need an exact description of the job she did — how many children she had, for example,

and their ages," Gage said. "Work load is highly correlated with the age of the youngest child."

The data Gage uses allow for the gradual reduction of the work load as children grow older and leave home. Another important consideration to Gage is the extent to which the father will be able to share the parenting responsibilities. His occupation is a big factor in this.

"In my opinion, you can't have kids alone at home on a permanent basis — even teenagers up to 18. It's not in the best interest of the kids, and it's not in the best interest of society."

Gage emphasized that many of the valuable jobs done by a homemaker — from chauffeuring the children to sewing clothes for the family — are not included in her computations.

"One woman died leaving 1,500 jars of vegetables from her garden," Gage said. "I didn't include it in my estimates, though, because we don't at this point know how to evaluate that kind of work."

The figure Gage arrives at, then, is for the most routine work. She sees this as an advantage in a trial situation. "It is absolutely pared to the lean. There's no way to attack it successfully."

Gage said that society has traditionally undervalued the economic contributions of the homemaker. This is reflected in the awards made by juries, awards usually thousands of dollars lower than the values shown in Gage's data.

But Gage remains firm in her stand. "A family that no longer has the mother is economically in trouble. They're going to have to take a big cut in their standard of living. There is really no substitute for the woman at home."

TOM FOLEY



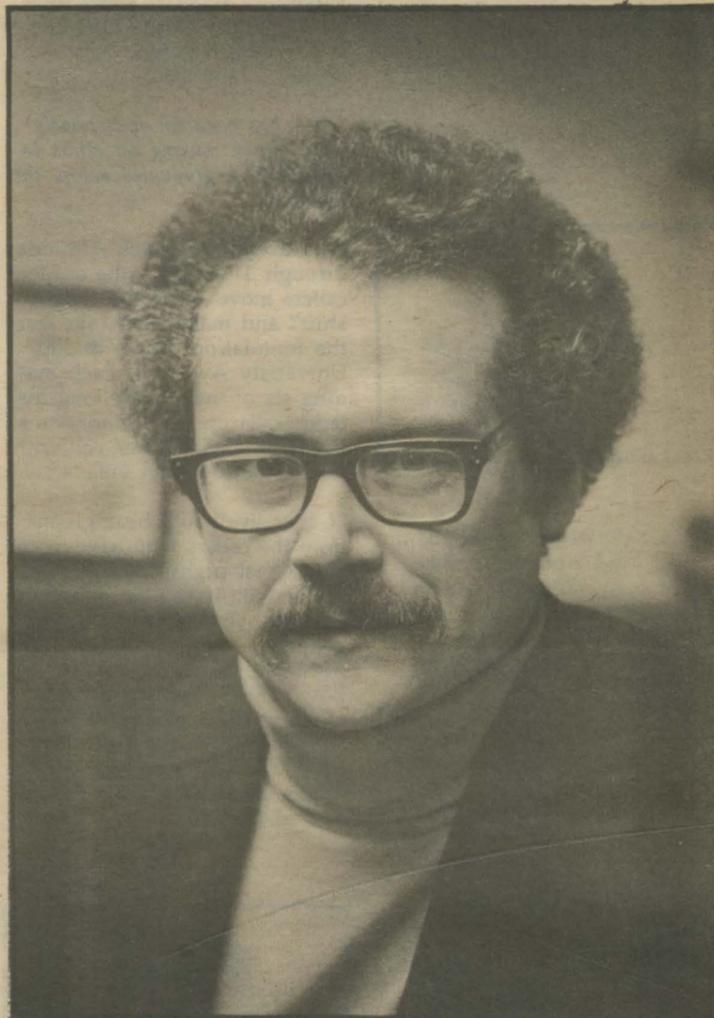
Geraldine Gage

A Special Russian Flu Primer On Viral Infections

Francisco Goya's "Self-Portrait
With Dr. Arrieta" (1820)



Henry Balfour



TOM FOLEY

by Michael Finley

They are the smallest things we know of that may be called alive, yet they are the biggest killers in the universe.

They are so small that they cause diseases in bacteria. They also cause diseases in plants, animals, and people. The names of some of the diseases people get from them: polio, influenza, encephalitis, Newcastle disease, herpes simplex, measles, mumps, smallpox, and rubella. Some people think they might even be the root cause of many cancers.

And despite all our efforts, viruses will be here long after people become obsolete.

Henry Balfour knows a few things about viruses. Balfour, an associate professor of laboratory medicine and pathology and pediatrics on the Twin Cities campus, is a virologist, and part of his job is diagnosing acute viral infections that come to his attention at University Hospitals.

Part of the problem of being a virologist is scale. Like bacteriologists, virologists study germs,

only their germs are germ-size compared to normal germs (bacteria). Nobody knows how many varieties of viruses there are, according to Balfour, but he estimates that there are at least as many as, and probably many more than, there are varieties of bacteria — perhaps hundreds of thousands of individual species.

"If there was a landmark event in the field of bacteriology, it was probably the discovery of penicillin," Balfour said. "So far, virology has not yet discovered an analogous cure."

Unlike bacteria, viruses cannot function independently. When not living off a host organism, they tighten into tiny, inert packages, like golf balls. It is only when they make contact with a warm, living cell that they do anything.

"Once the virus gets into its host, it multiplies very quickly," Balfour said. "In the case of a sore-throat type of virus, the virus gets into the epithelial tissue lining the throat. Almost immediately, the virus takes charge of the cell, turning it into a virus factory. Instead of the cell going

about its usual business, manufacturing its own materials, organelles, it starts turning out more viruses. The cell is recoded to produce its own enemies."

The sore-throat virus eventually forces the epithelial cells to explode, killing the cell tissue. It is this exploded, or *lytic*, tissue that feels so scraped and raw. Something similar happens in the sinuses, in the lungs, in whatever tissue the virus attacks.

"A virus attack is not always assured of victory beforehand," Balfour said. "Two factors are always involved: the degree of infectivity of the virus strain and the individual's capacity to fight off the attack."

The individual's line of defense is, of course, the body's immune system — the complex armies and navies of antibodies, lymphocytes, and other germs whose job it is to protect the body from foreign invasions.

In a sense, Balfour said, every viral infection is a battle of wills between the severity of the virus and the thoroughness of the immune system. "It's a dynamic relationship. Whatever approaches there are to viral infections must begin with one or the other of the two factors."

There are, of course, people who claim never to have had a sick day in their lives. More likely, according to Balfour, they were sick and didn't know it, or wouldn't acknowledge it. "There isn't anyone in the world today who hasn't had a viral infection at one time or another. The people who say they haven't either have vigorous immune systems or just don't like to complain."

The question is sometimes asked: "If we can put a man on the moon, why can't we cure the common cold?" Balfour's response is tripartite:

One, there is no such thing as "the common cold." There are hundreds of viruses that can cause a cold, thus requiring perhaps as many cures.

Two, if there were a vaccination for cold viruses, vaccination would probably have to be nearly 100-percent effective in the population in order to avert epidemic spread of colds, such as we have now.

And three, with diseases like influenza, encephalitis, herpes, and smallpox to worry about, virologists have more pressing

ways to spend time and money than on trying to dry up sniffles.

For one thing, there is cancer. Occasionally a lone virus may inhabit a single cell for a long time, perhaps years. One theory proposes that the long-term influence of the alien virus turns the cell against its neighbors, which likewise turn malignant and form the beginnings of a tumor.

Another interesting case is the La Crosse virus, sometimes called Mississippi sleeping sickness. It is transmitted by mosquitoes in the summer, and its symptoms are very similar to those of encephalitis. What interests Balfour is that not every child who is bitten comes down with the disease — a resistance to attack often seen with other viral infections. Why some people get it and some don't is a question that, once answered, may lead to just the sort of penicillin-like discovery virologists have been waiting for.

Even without that kind of breakthrough, though, virology has had its share of triumphs. Thirty years ago, polio was a national tragedy, putting thousands in wheelchairs every year. Today the disease is practically extinct — although there have been warnings that too many people are neglecting to get vaccinated.

"Likewise," said Balfour, "in 1964 there were 30,000 cases of birth defects attributed to German measles, or congenital rubella, in the United States. In 1976 there were 30 cases, a reduction to .1 percent of the earlier total."

Immunologists are making inroads, meanwhile, in tampering with people's immune systems, training lymphocytes to recognize foreigners more quickly and thus rally to the body's defense that much sooner. Vaccinations of the 1960s are receiving careful review, in case better vaccines are available for the 1980s. And last year the World Health Organization pronounced the dread disease smallpox finally eliminated from the list of the world's epidemic killers.

Phone Gang...

Kelly said. If the pitch about easing the financial crunch in the college doesn't seem to be clicking, the caller might suggest that a gift be designated to go to the graduate's department. Pledges designated for journalism, public affairs, and social work were received Jan. 18.

All of the student callers develop their own pitches, suited to their



styles. "Whatever they say is the truth," said Abdool "Buddy" Hasnudeen, supervisor of the callers. Foundation staff members research a college's needs and meet with the dean.

"I'm calling at the request of Frank Sorauf. He's the dean of CLA now. Are you familiar with his name?"

A caller who has started to have a good night can usually make money in subsequent calls, Kelly observed. "Something shows in your voice: 'Here I am with this great opportunity for you to give money to the University.'"

The best callers are buoyed up by a positive call but not deflated by a negative one, she said. "When you've just had someone hang up on you, you have to ignore that. You can hang up and rant and rave, but you can't anticipate the same reaction on the next call."

Nobody hung up on anybody Jan. 18, but June Kreutzkamp started the evening with two negative calls. "Would you make a notation that I never want to be called again?" one woman asked her. Kreutzkamp bounced back and never seemed to lose her enthusiasm as she continued with her calls, but she finished the night with just \$35. (During the week of Jan. 3-5, she was the top caller at \$465.)

People usually respond favorably to a call from the University, Kelly said. "You don't have to sell anything. Most people are already sold on the University. The question really is whether they can afford to give right now."

One man who was called Jan. 18 said that the moment he re-

ceived his Ph.D. from the University was the greatest moment of his life. A woman who pledged \$10 said that she and her husband had come from lower-middle-class backgrounds and would never have had the opportunity to go to college if it had not been for a state-supported institution like the University. "I hope at some time we'll have an income that makes it possible to give a large amount," she said.

"CLA has been hit particularly hard. We're making an effort to call all CLA graduates across the nation."

Four evenings a week—Monday through Thursday—the student callers move in as the "night shift" and make their calls from the foundation offices at 3300 University Ave. S.E. Each evening six of them make long-distance calls on the foundation's WATS lines and three call within the metropolitan area.

"Generally, you'll hear groans from the callers who have to call metro that night," Kelly said. "When you have a set of national cards, you expect to do better."

Why is a Californian a better prospect for a pledge than a Minnesotan? Is the University easier to love from afar? Kelly thinks the answer lies in the impact of the call.



"If you live in Fridley and we call you from Minneapolis, you're not going to be too impressed," she said. A call from Minneapolis to Virginia or Montana or Texas is a bigger deal.

"If you get the Minneapolis or St. Paul papers, you hear about the University and sometimes you hear bad things," Kelly said. "If you live in California you never hear anything." The callers try to keep informed about homecoming plans, football schedules, and other information of interest to graduates.

The alumni who are most excited to hear from the University are usually those who have been away the longest, she said. "It's not unusual that our call is the first time they've heard from the University in 20 years." Recent graduates who have only been away for a few months are also likely to be pleased by a call, she said.

Sometimes the callers provide ombudsman service for graduates, Kelly said. If a graduate complains about a problem in getting a transcript, the caller can check up on it and send a note. "Even if we don't raise money, in the long run it helps," she said.

When a woman told David Hanson that she would like a University sweatshirt, he found out about colors and costs and sent the information to her.



Occasionally a caller will become a messenger between parents and their sons and daughters. Sometimes the only phone number the University has for the graduate is the parents' phone. A caller will typically ask for the graduate's address and phone number and then ask if the parents want to send a message. "Tell her we love her" is the most common response. One caller was able to be the first to tell a young woman that her sister had had a baby.

"The math department was hit very hard and had to cut back on its sections. Students got into a fight in the registration line this winter. That made the papers. The music department has been hit, and the studio arts department, and the English department, and there are others. These are just the ones I know about personally."

At the end of each evening's calls, a sign is posted on the bulletin board showing the top caller for the night and the total pledges received. In this way, the foundation's "day shift" is informed of the progress of the student callers.

Although the students compete for top honors each night, Kaufman said, the team spirit is even stronger. "We all want each other to do well."

Azhar Chughtaee, a three-year veteran caller from Pakistan, topped all of the callers for the months of November, October, August, and July. Paul Ajagbawa from Nigeria came in first in September, and Charlotte Pearo, an American, led all callers in December. Hasnudeen, who is from Guyana in South America, was a top-notch caller before he was given the supervisor's job.

Why the unusual success of foreign students as callers? Kelly

isn't sure. "I think it has more to do with individual manner," she said. "Confidence has a lot to do with it. Two of our nine callers are foreign students right now, but I interviewed two foreign students I didn't hire."

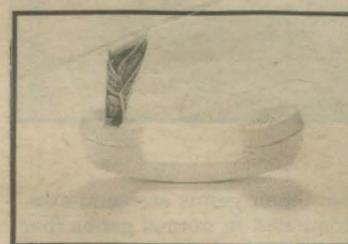
Each applicant for a calling job is asked to make a sample call, and "then we have to go on what we think will make a good caller," she said. Some mistakes can be corrected, but "having enthusiasm in your voice is not something you can teach someone."

Hasnudeen has his own theories about the success of the foreign student callers. "A little bit of accent adds flavor to the conversation," he said. "People get very curious and ask where you come from and what you are studying."

"Besides, foreign students are hardworking. Foreign student employment is very limited, so when they do have a job, they grasp the job and give their best."

Chughtaee said he was excited about the job in the beginning because it represented "a chance to talk to all kinds of Americans." Even now that the novelty has worn off, he said, "I look forward to coming here."

Other student callers are Julie Fascianna, Mary "Kim" Hellier, and Jon Savin.



The five top student callers took on five development officers in a "challenge night" Nov. 17. When the evening was over, the students had made twice as much as the development officers.

Nov. 17 was during LYBUNT-calling season, so "the development officers didn't have it really rough," Kelly said. "They didn't have to call nondonors."

Making those calls showed the development officers "how difficult it is to raise \$15 'cold,'" Kelly said. It isn't the same as asking for money from someone after building a personal relationship.

As the pledge cards came in after challenge night, Kelly said, the development officers—who are accustomed to thinking in terms of big dollars—took pleasure in smaller successes. "Oh, good. That \$10 came in," they would say.

"The college is facing severe cutbacks. All departments are pressed for money. We are calling alumni all over the country."

One lesson the student callers have learned is that they can never tell for sure who will make a pledge.

Kaufman had asked a man if he might make a small contribution. He didn't know, he told her. With taxes coming up, he just didn't know. Finally, he agreed that he could make a small gift.



How much?

"I don't know. Maybe it'll be \$100. Maybe it'll be more."

"That will be great," Kaufman said, expressing her enthusiasm but concealing her glee. "I'll put you down for \$100." As soon as she hung up the phone she recounted the story.

She finished the night at \$200, far in the lead. The total for all callers was \$615.

Kaufman and Hanson were remembering the time during LYBUNT calling when they each received a \$100 pledge within seconds of each other.

"You'd think we were getting the money ourselves, the way we act about it," Kaufman said.

Washoe...

humans. What we learn about animals and their behavior can help us understand ourselves and our behavior.

"Once we appreciate the uniqueness of animals, we will also be able to see the commonness among them... there are real applications from the animal condition to the human condition," Peterson said.

Quigley, the veterinarian, believes there will be benefits "from all research that increases our knowledge of animals, humans, and their interrelationships." He says, "It is important, if we are going to live with animals, that we understand them. If we understand our animals, we will have more respect for them, and if we have respect for them, we'll be better off."

More Retrenchment Ahead

The University ended last year \$1 million in the hole, President Magrath revealed in January. Immediate budget cuts are being made in order to avoid a similar deficit for this current year.

The problems stem from the difficulty the University is having in adjusting its budget to this year's enrollment decline. Just last year, the University braced

itself for a dramatic enrollment increase.

For the moment, a hiring freeze on new faculty is in effect. Colleges and departments have been asked to pare a total of \$400,000 from their current budgets. Meanwhile, much study is under way, as University administrators and the Board of Regents look for ways to keep prediction errors from happening again.

Student Body Count Down

Winter enrollment at the University was down 2.4 percent from a year ago, to 52,144 full-time students. This parallels the fall quarter decline of 1.2 percent from the record-setting enrollment of fall 1976. The biggest decline was on the Twin Cities campus.

The enrollment of women was up again (32 percent in dentistry, 20 percent in medicine).

The Waseca campus was up 5 percent, so it now has more students (1,051) than the Crookston campus (1,031).

Three More Years

Cal Stoll, head football coach, has job security for the next three years. The Board of Regents approved the extension of his contract for two years beyond its 1978 expiration.

"I think the football coach, under difficult circumstances, has done a good job," Magrath said.

Memories of the shutout game against Michigan last season still linger.



Robert Stein

Stadium News

Whatever else happens in the plans for a new stadium, one thing is certain: the University can't pay rent for it. Vice President Stanley Kegler made this point in a letter to the Metropolitan Sports Facilities Commission last month.

The reasoning? The University's intercollegiate athletics program doesn't make money; thus the University is in no position to exert future tenant-type influence on the choice of a stadium site and is remaining officially neutral.

Kegler said the University has higher priorities for both academic and athletic facilities than a stadium for the football team. "Carving out men's intercollegiate football alone and moving it to another location addresses only a minor fraction of our total concern for athletic facilities," he said.

A New VP

The University has a new vice president, Robert A. Stein, vice president for administration and planning. He succeeds Walter Bruning, who left the University last August.

Stein, 39, has been on the Law School faculty since 1964, and was named associate dean of the Law School last year. He has been active on President Magrath's task force on intercollegiate athletics, and also on a committee that studied faculty consulting several years ago. He is largely responsible, through other committee work, for proposing the Law School building that opened on the West Bank in January.

"His general legal background would be extremely helpful to me with many of the legal issues we face these days," Magrath said, "not least of which are the very complicated questions involving collective bargaining."



University sheet metal workers show off their brass-and-walnut wall mounting of the Humphrey logo.

committee to raise funds internationally for the institute. (Other committee members include Sargent Shriver, Nelson Rockefeller, former Treasury Secretary Henry Fowler, former U.S. Information Agency Director Leonard Marks, and Frances Humphrey Howard, the late senator's sister.)

In addition, former President Ford attended a fund-raising dinner for the institute in San Francisco, adding his testimonial to the thousands of tributes that have accrued in the past few months.

The fund-raising drive is sponsored by the University of Minnesota Foundation. The goal of the drive is to raise \$20 million.

No Moss on HHH Institute

Following Hubert Humphrey's death, momentum for the Hubert H. Humphrey Institute of Public Affairs—to be located on the Minneapolis campus of the University—has sped up.

Several things have happened in the past couple of months. The nation of Iran has contributed \$250,000 to the fund. Henry Kissinger has taken charge of a

Chicano Report

"In spite of retrenchment, it is important that we maintain momentum in meeting special student needs."

With those words, President Magrath accepted a report of recommendations for meeting the needs of Chicano students at the University. The report was presented to the regents in February.

Recommended in the report were centralization of services for Chicano students; increased efforts to recruit Chicano students, faculty, and civil service employees; and an outreach program for the Chicano community.

Magrath estimated the cost of implementing all the recommendations to be more than \$440,000.



TOM FOLEY

Protest Notes

Student activism is back, only this time with a note of self-interest. Students in the music department have been waging a campaign in recent months to

force improvements in the music department's facilities and budget.

Besides the antiquity of the students' practice rooms, they are concerned about the depart-

ment's status in the Big Ten. They are calling for establishment of an autonomous school of music, a bachelor of music degree, and unification of the music department's budget.

WHAT CAN YOU DO FOR MINNESOTA

Your friends and relatives could be among those listed below who have been lost in the University of Minnesota's official alumni records. They are individuals who have been unable to maintain those special contacts with classmates and collegiate faculty who have touched their lives and careers.

If you can help us find them, both your friends and the

University of Minnesota will benefit. And you will have the satisfaction of knowing that you have helped the University of Minnesota expand its outreach to maintain that margin of excellence that enables the University to stand tall today.

Please fill in the coupon accompanying these listings if you can help. Our lost alumni and our University thank you.

1949

- Aberg, Richard Sterl (IT)
- Abrahams, Simon P. (Nurs)
- Abrahamson, Mr. K. P. (MortSci)
- Abrahamson, Roy E. (Ed)
- Allaway, Dale Leroy (IT)
- Allen, Alden L. (UC)
- Allen, Miss P. L. (GC)
- Allerhand, Revel F. (CLA)
- Alsager, Leslie E. (IT)
- Anderson, Clayton L. (MortSci)
- Anderson, Mr. D. O. (GC)
- Anderson, Dr. Dorrance I. (Dent)
- Anderson, Erland S. (IT)
- Anderson, Miss M. R. (Ed)
- Arnett, Miss Marilyn J. (Nurs)
- Arnett, Raymond L. (Grad)
- Bacon, Donald C. (IT)
- Baker, Miss S. L. (CLA)
- Becker, Richard L. (Ed)
- Bell, Orin R. (IT)
- Benassi, Mr. R. C. (CLA)
- Benton, George R. (CLA)
- Berger, Miss Lois A. (CLA)
- Bergeson, Norman B. (Bus)
- Berscheit, Miss Mary J. (CLA)
- Beson, Everett Eugene (IT)
- Beuzis, John D. (IT)
- Beyer, James G. (IT)
- Bissonette, Clement L. (IT)
- Bossenmaier, Eugene F. (Ag)
- Bradley, Edward (IT)
- Bray, William Oliver (IT)
- Brecke, Miss Jeanne (CLA)
- Britzius, Mrs. Jane U. (CLA)
- Brodale, Donald L. (Bus)
- Burdick, Miss L. V. (CLA)
- Burdsal, Mrs. T. G. (CLA)
- Burford, Robert Raymond (IT)
- Butler, Bartlett Russ (CLA)
- Callan, Robert W. (IT)
- Calva, Roberto (IT)
- Campbell, Miss M. A. (Ed)
- Carlson, Mr. D. L. (CLA)
- Casey, Richard A. (IT)
- Chandler, Miss Janet (Ed)
- Chapman, Kenneth G. (IT)
- Chatfield, Ms. N. S. (CLA)
- Chelberg, Howard L. (Bus)
- Clarke, Miss Helenann (CLA)
- Clauson, Mr. W. W. (IT)
- Clement, Miss Helen E. (HEC)
- Clough Jr, David M. (CLA)
- Colberg, Fay V. (IT)
- Comita, Gabriel W. (Grad)
- Corazzo, George E. (GC)
- Cox, Chester C. (Bus)
- Cramolini, Ernest J. (IT)
- Cress, Dean F. (IT)
- Dahlstrom, Miss J. I. (Ed)
- Datel, William E. (CLA)
- Davidson, Arthur (Bus)
- Davidson, Mrs. A. W. C. (IT)
- Davis, Clark G. (IT)
- Davis, Mr. W. F. (CLA)
- De Sutter, Mr. D. H. (IT)
- Delaney, Thomas A. (IT)
- Demoss, John C. (Law)
- Deppe, Mrs. Norma R. (Ed)
- Diamond, Mrs. Margaret (CLA)



- Dille, Miss Loris E. (CLA)
- Dingle, William F. (UC)
- Dols, Arthur A. (Ed)
- Doran Jr, Clement J. (Phm)
- Dow, Miss Rhea V. J. (Ed)
- Duffy, Neil C. (Law)
- Dunn, Miss Rosemary J. (Ed)
- Durham, Miss Coleen L. (Ed)
- Eaton, Lloyd W. (IT)
- Edwards, Bruce G. (Bus)
- Egan, Miss Margaret M. (HEC)
- Ekstrand, Waldo L. (Ed)
- Erickson, Clifton F. (CLA)
- Erickson, Richard B. (IT)
- Evans, Earl S. (IT)
- Farkell, G. David (CLA)
- Farrell, Eugene J. (Law)
- Finkbinder, Dorothy G. (Nurs)
- Flynn, Raymond Thomas (Bus)
- Folken, Miss Suzanne P. (Ed)
- Frants, Byron L. (Ed)
- French, Richard E. (For)
- Fries, Mr. R. S. (Bus)
- Fritts, Arden K. (Bus)
- Fulks, Dr. W. B. (IT)
- Gable, Mrs. E. J. (UC)
- Gamelin, Milton C. (CLA)
- Ganfield, John F. (CLA)
- Garetz, Floyd K. (CLA)
- Garin, Edward D. (Bus)
- Garon, Sherman (Law)
- Gibbs, Lowell W. (IT)
- Gibson, Thomas R. (IT)
- Gill, Miss Patricia M. (UC)
- Giloner, Mr. J. W. (CLA)
- Glancy, John E. (CLA)
- Goldberg, Jerome L. (CLA)
- Grace, Kenneth T. (IT)
- Graves Jr, William J. (Bus)
- Guderian, Walter L. (IT)
- Haberl, Miss Anne Marie (GC)
- Haberl, Ms. Carmelita A. (GC)
- Hall, Ms. C. J. (Bus)
- Hanson, Mr. L. F. (Ed)
- Hanson, Richard H. (Bus)
- Harkins, Rev. James R. (CLA)
- Harris, Miss Margery R. (Ed)
- Hawes, William H. (GC)
- Hayes, Miss Dorothy A. (CLA)
- Hegland, Miss Dorothy J. (Ed)
- Hegland, Gerald C. (GC)
- Henle Jr, Robert A. (IT)
- Hoffman, Miss M. C. (CLA)
- Hok, Miss Brita E. (Grad)
- Holter, Mrs. Willard L. (Ed)
- Horton, Robert G. (CLA)
- Hovick, Mr. R. A. (GC)
- Hveding, Dick C. (IT)

- Hyser, Robert V. (CLA)
- Isaacson, Donald O. (Bus)
- Jacobson, Miss Lois K. (Bus)
- Jarvis-Ekert, Dr. Marilyn (Med)
- Johnson, Miss Doris M. (Nurs)
- Johnson, Mr. E. A. (CLA)
- Johnson, Miss Martha L. (CLA)
- Johnson, Mr. R. H. (Bus)
- Johnson, Robert H. (Bus)
- Johnson, Robert P. (UMD)
- Johnson, Wendell A. (IT)
- Johnson, Willard A. (MortSci)
- Johnson Jr, Mr. R. E. (CLA)
- Joyce, James W. (IT)
- Junghans, Clifford A. (IT)
- Kahz, Miss Miriam V. (OT)
- Kane, Mr. D. P. (Law)
- Kaproth, Miss Josephine (Bus)
- Kass, Miss Gloria M. (Ed)
- Kennedy, Robert L. (IT)
- Kerrigan, William F. (Bus)
- Kiefer, Ms. Dorothy E. (CLA)
- Kildow, W. (CLA)
- Kinney, Arthur R. (CLA)
- Klinkert, Jan R. (CLA)
- Kneip, Alfred M. (GC)
- Knopp, Miss Mary P. (CLA)
- Koeckeritz, William A. (Bus)
- Kosiak, Miss Michael A. (HEC)
- Krause, Mrs. D. G. (CLA)
- Kuinze, Mrs. S. (Nurs)
- Lackner, Miss Lois F. (Ed)
- Lande, John H. (GC)
- Landry, Mr. R. M. (Grad)
- Lewis, Clarke R. (IT)
- Lewis, Miss Geraldine M. (CLA)
- Lidgerding, Miss R. M. (Ed)
- Lindquist, Miss Marcia L. (CLA)
- Lingle, John T. (IT)
- Locksley, Norman M. (Grad)
- Long, John H. (CLA)
- Lorenz, Miss P. (Ed)
- Lund, Miss Audrey T. (Nurs)
- Lund, Gerald A. (GC)
- Lundquist, Leslie E. (IT)
- Mac Lean, Dr. Eleanor (Med)
- Mackaman, Mr. F. H. (CLA)
- Mahlman, Bert H. (IT)
- Mahoney, Ms. Mary C. (CLA)
- Marsh, Quentin J. (Ag)
- Martin, Benjamin P. (IT)
- Marzolf, Charles E. (IT)
- Mc Cabe, Cyril B. (CLA)
- Mc Gillicuddy, Joseph L. (IT)
- Mehta, Pashupati R. (Ag)
- Melancon, Paul E. (IT)
- Merthan, Lawrence C. (Law)
- Miller, Miss Charlotte A. (Ed)
- Morken, Calvin T. (CLA)
- Morrison, Mrs. Mabel L. (Ed)
- Moyer, Edward P. (CLA)
- Mueller, Miss Katherine L. (CLA)
- Muska, Henry J. (IT)
- Myron, Russell E. (Law)
- Nawrocki, James T. (IT)
- Nelson, Donald T. (GC)
- Nelson, Miss Dorothy J. (Ed)
- Nelson, Mr. M. A. (UMD)
- Nelson, Robert D. (CLA)
- Nelson, Rudolph (IT)
- Ness, Miss Beverly D. (HEC)
- Olander, Mr. R. G. (IT)
- Olerud, Mrs. Carol L. (CLA)
- Ollila, Mr. H. J. (CLA)
- Olson, Arthur B. (IT)
- Olson, Mr. D. W. (Grad)
- Olson, Miss Ethel B. (CLA)
- Olson, Geoffrey W. (CLA)
- Olson, Mr. S. C. (Law)
- Oswald, William A. (IT)
- Paffel, Wayne C. (Bus)
- Pagel, Kenneth G. (GC)
- Paulsen, Gerald A. (Bus)
- Pearson, Gordon A. (Bus)
- Pearson, Miss J. E. (Ed)
- Pehrsson, Mr. P. H. (Grad)
- Peterka, Paul T. (GC)
- Peterson, Richard A. (IT)
- Pile, Mrs. R. B. (CLA)
- Pope, James C. (IT)
- Potter, Harold C. (IT)
- Proesch, John F. (IT)

- Prosch, Miss Bernice R. (Nurs)
- Qualle, Eugene L. (MortSci)
- Randall, James G. (Ed)
- Raymond, Miss Anna M. (Ed)
- Rehder, Gordon A. (IT)
- Reilly, Lavern G. (IT)
- Rengel, Neil W. (IT)
- Richard, William J. (IT)
- Richter, Mr. E. W. (CLA)
- Ripley, Douglas J. (CLA)
- Rockne, Donald E. (Law)
- Rogers, Roland J. (MortSci)
- Royer, Quentin (Dent)
- Ryan, George W. (CLA)
- Ryan, Thomas A. (Bus)
- Sabine, Gordon A. (CLA)
- Sacks, Mr. W. R. (Bus)
- Sagdahl, Raymond H. (CLA)
- Sakamoto, Miss P. L. (CLA)
- Scanlan, Miss Anne L. (Nurs)
- Schaefer, Richard E. (For)
- Schelhart, Miss Dorothy L. (CLA)
- Scherf, Mrs. George G. (HEC)
- Schmidt, Phillip F. (CLA)
- Schroeder, Richard E. (For)
- Schumann, Richard P. (IT)
- Schwab, Mr. R. N. (CLA)
- Schwarz Jr, Carl E. (IT)
- Schwob, Clair A. (Bus)
- Sears, Mr. W. N. (Bus)
- Severinson, Merton R. (CLA)
- Sewall, Samuel (Bus)
- Sexton, Joseph R. (IT)
- Shaw, Donald E. (Bus)
- Silness, Arnold N. (Bus)
- Sinn, Ms. Thelma M. (DentHyg)
- Siro, Einar E. (Ed)
- Sletten, Harry B. (CLA)
- Smith Jr, Mr. J. N. (CLA)
- Sobiech, Florian A. (CLA)
- Sorensen, Miss Betty F. (CLA)
- Strong, Richard E. (CLA)
- Swanson, Mr. E. A. (OT)
- Swanson, Miss Joan A. (CLA)
- Takata, Harry H. (IT)
- Thomas, Donald H. (IT)
- Thompson, Miss Dorothy A. (Nurs)
- Thornby, John I. (CLA)
- Tideman, Philip L. (CLA)
- Turley, Kermit G. (GC)
- Urban, Gilbert W. (Bus)
- Vagle, Donald A. (Ed)
- Van Dusen, Miss R. L. (Nurs)
- Wagner, Charles (Bus)
- Wahoske, Warren K. (Bus)
- Warner, Frank A. (Bus)
- Warren, Bruce H. (UMD)
- Wessel, Mrs. Dorothy M. (CLA)
- Wheeler, William H. (CLA)
- White, David U. (Ag)
- Whitmore, Mr. C. H. (IT)
- Wiegand, Miss Jean (CLA)
- Williams, Mrs. J. A. (GC)
- Williamson, Wayne A. (Bus)
- Willis, Mrs. Stan J. (Ed)
- Willson, Keith E. (IT)
- Winn, Jules M. (IT)
- Wisti, Wyman E. (CLA)
- Zachman, Neil J. (IT)
- Zaiser, Jack K. (IT)
- Zang, Robert (Ed)
- Zaspel, Donald F. (Ed)

1950

- Aaby, Waldo S. (IT)
- Aaseby, Mrs. P. (Nurs)
- Abels, Lewis Gale (IT)
- Adamic, Mr. E. L. (CLA)
- Adamic, Mr. R. J. (CLA)
- Ahmann Jr, Benedict L. (CLA)
- Ammondson, Dr. Clayton J. (Grad)
- Amodeo, Charles A. (Ed)
- Anderson, Miss Joyce M. (Ed)
- Anderson, Miss Marjorie A. (Ed)
- Anderson, Ray H. (Grad)
- Anderson, Miss R. S. (Ed)
- Aschenbeck Jr, Mr. A. F. (IT)

- Auken, Miss Jane (CLA)
- Austenson, Ms. M. (Ed)
- Barickman, James H. (Bus)
- Barnum, William C. (CLA)
- Barringer, Dr. P. L. (Med)
- Barta, Ms. Betty J. (Ed)
- Beck, John William (IT)
- Benson, James C. (CLA)
- Benson, Mr. L. F. (CLA)
- Berkowitz, Martin B. (CLA)
- Berris, Dr. B. (Med)
- Bingham, James W. (CLA)
- Bissell, Mr. M. H. (CLA)
- Bloom, Clyde C. (Bus)
- Boston, Theodore L. (CLA)
- Brant, Dr. Allen G. (Dent)
- Bratt, John N. (CLA)
- Broding, William C. (IT)
- Brown, Elliot B. (CLA)
- Brown, Robert T. (Ag)
- Browne, Miss Fern I. (CLA)
- Bruun, Miss Ruth N. (Grad)
- Buckman, Robert E. (For)
- Burling, Irving R. (CLA)
- Buschell, Robert N. (IT)
- Calvin, Allen D. (CLA)
- Carlson, John M. (Bus)
- Carlson, R. Arthur (Bus)
- Carlsted, Luverne L. (IT)
- Casserly, Mr. J. J. (Bus)
- Champlin, Ralph A. (CLA)
- Chatterton, William A. (CLA)
- Clark, James W. (IT)
- Clark, Mr. R. J. (IT)
- Cole, Mitchell G. (UMD)
- Collings, Lloyd E. (Ag)
- Cookson, Miss Nancy M. (CLA)
- Cooper, Donald (CLA)
- Cooper, Harry I. (Ed)
- Courtney, Mr. J. G. (CLA)
- Cowden, Ms. Marilyn L. (CLA)



- Cressler, Mrs. David (Grad)
- Cueva, Carlos A. (IT)
- Culhane, Michael L. (Law)
- Daggett, Miss June E. (UC)
- Dalager, Miss Theora J. (HEC)
- Dale, Mr. I. Z. (Ed)
- Danielson, Burton F. (IT)
- Davis, William C. (GC)
- Derauf, Miss Ann B. (Ed)
- Dexheimer, Miss Vera H. (Nurs)
- Dolan, Miss Joan L. (CLA)
- Donovan, Mrs. Pat L.
- Drehan, Dr. E. L. (Med)
- Du Toit, Miss S. (Ed)
- Dunn, Cecil W. (Ag)
- Durell, Mr. S. H. (Ed)
- Eastwold, Dr. Conrad E. (Med)
- Ensign, Miss B. J. (CLA)
- Esoph, George H. (Bus)
- Everson, George B. (MortSci)
- Faaberg, Vernon E. (Ed)
- Fast, Elmer E. (IT)
- Fisher, Theodore R. (Ed)
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- Flocken, Ambrose L. (IT)
- Foley, Wayne A. (GC)
- Fortune, Mr. H. B. La (For)
- Foss, Miss Muriel C. (Ed)
- Freerks, Arnold E. (Bus)
- French, Mr. A. P. (Ag)
- Friedrich, Mrs. Arlene J. (HEC)
- Fujimoto, Mrs. Elizabeth Y. (Ed)
- Gaellman, Mrs. D. V. (CLA)
- Gagner, Mrs. R. P. (Nurs)
- Gehlsen, Norbert J. (Bus)
- Gibbs, Byron J. (Grad)
- Gilbert, Miss Joan S. (Ed)
- Gilman, Miss Margaret A. (HEC)

(continued on next page)

Gluesing, Mr. E. C. (Grad)
 Gold, Miss Barbara L. (CLA)
 Goo, Mrs. A. (Grad)
 Goodman, Mark E. (Ed)
 Gorham, Mrs. S. (MedTech)
 Grant, Donald E. (GC)
 Graves Jr, Mr. C. E. (CLA)
 Grijak, Roy (Ed)
 Gunderson, Mrs. T. M. (CLA)
 Hackenberg, Robert A. (CLA)
 Haedrich Jr, Stanley F. (IT)
 Hagland, Mrs. Patricia M. (CLA)
 Hammerand, Roy E. (IT)
 Hanson, J. (CLA)
 Harding, Miss B. Louise (Nurs)
 Harvey Jr, Chester M. (CLA)
 Haugen, Arland J. (Bus)
 Heil, Maynard R. (CLA)
 Helgerson, Mr. H. A. (IT)
 Henderson, Lavaniel L. (Grad)
 Henning, Miss Lois J. (HEC)
 Henry, Miss H. J. (CLA)
 Herranen, Miss Ailene M. (IT)
 Hickok, Mrs. Mary J. (Ed)
 Hinseth, Mrs. O. (Nurs)
 Holmberg, Robert F. (IT)
 Hoover, Dr. Norman W. (Med)
 Huestis, John L. (Ed)
 Huskins, Miss Barbara R. (CLA)
 James, Miss Margaret A. (HEC)
 Jensen, Everts P. (IT)
 Jensen, Miss Helen I. (MedTech)
 Jernberg, Miss Evelyn L. (Nurs)
 Jewett, Donald E. (IT)
 Johansen, Miss Esther U. (Ed)
 Johnson, Mr. B. A. (UMD)
 Johnson, Mr. D. M. (CLA)
 Johnson, Mrs. Dona L. (CLA)
 Johnson, Donald E. (IT)
 Johnson, Forest R. (IT)
 Johnson, Mr. G. (Ed)
 Johnson, Miss J. I. (UMD)
 Johnson, Leland M. (CLA)
 Johnson, Richard C. (GC)
 Johnson, Richard L. (IT)
 Johnson Jr, Dr. Chester W. (Med)
 Johnston, Mrs. R. L. (CLA)
 Jones Jr, Mr. G. B. (CLA)
 Kampa, Eugene D. (Ed)
 Karich, Dr. Anthony F. (UMD)
 Kelberer, John J. (IT)
 Kempf, Miss Kathryn A. (GC)
 Kittleson, Theodore G. (Ed)
 Koloski, Robert M. (CLA)
 Kreuer, Robert F. (IT)
 Krueger, Mrs. Lola (HEC)
 Kurka, Ralph J. (For)
 Langland, Stanley G. (CLA)
 Larson, Kermit E. (Ag)
 Larson, Lawrence W. (IT)
 Lavan, James J. (For)
 Lavine, Charles J. (UC)
 Lentz, Edwin E. (Ag)
 Lindholm, Charles L. (CLA)
 Lockwood, Mrs. Robert W. (CLA)
 Long, Ralph W. (Bus)
 Longley, John H. (CLA)
 Lundgren, Richard L. (GC)
 Mac Donald, William G. (IT)
 Macken, R. Gordon (Bus)
 Maddox, Miss Lillian E. (CLA)
 Madigan, Robert I. (CLA)
 Maki, Franklin A. (Ag)
 Marshall, James R. (IT)
 Mason, Miss Jeanette A. (Nurs)
 Matlon, Joseph J. (Ed)
 Mc Auliffe, Mr. J. H. (CLA)
 Mc Donald, Mr. C. F. (Ed)
 Mc Garthwaite, Thomas P. (GC)
 Mee, Richard J. (GC)
 Meinz, Mr. R. J. (Grad)
 Melzer, Leo (CLA)
 Mickman, John V. (IT)
 Miettunen, Robert N. (CLA)
 Miller, Hugh E. (CLA)
 Minkler, Wayne R. (CLA)
 Monson, Mr. R. N. (UMD)
 Moore, Miss Leona B. (Ed)
 Moren, John E. (CLA)
 Motter, Mrs. William S. (Ed)
 Murray, John H. (CLA)
 Myers, Mr. E. J. (CLA)



Myers, Robert L. (IT)
 Nathans, Mr. R. (Grad)
 Neilson, James M. (IT)
 Nelson, Donald W. (IT)
 Nelson, Edwin J. (IT)
 Nelson, Mr. M. L. (IT)
 Nelson, Newton P. (IT)
 Nelson, Robert Ray (IT)
 Neuman, Jerome A. (CLA)
 Newcomb, Robert G. (CLA)
 Olafson, Mr. J. H. (Grad)
 Oloughlin, Dr. B. J. (Med)
 Olson, Mr. E. W. (IT)
 Pagnotta, Domenic A. (For)
 Paulson, Lawrence (IT)
 Pearson, Donald L. (IT)
 Pedersen, Conrad J. (CLA)
 Peterson, James E. (IT)
 Peterson, Miss M. R. (HEC)
 Peterson, Mr. M. R. (Ed)
 Peterson, Mr. R. V. (CLA)
 Petrich, Miss Murlyn J. (Ed)
 Petstring, Miss I. F. (Nurs)
 Pfaff, S. Robert (CLA)
 Phillips, Roland B. (CLA)
 Pospichal, Leo B. (For)
 Pretzel, Miss Jean F. (Ed)
 Ptacek, Miss Shirley (Bus)
 Quarfot, James E. (Bus)
 Quist, George C. (IT)
 Ramberg, Miss Lorraine S. (Ed)
 Rane, Mrs. Marilyn (GC)
 Ranta, Raymond A. (Bus)
 Reed, Miss I. C. (CLA)
 Rees, Dr. W. J. (Nurs)
 Remman, John R. (CLA)
 Renk, Mrs. Shirley R. (CLA)
 Retka, James A. (CLA)
 Ringold, Stanley B. (For)
 Ringsred, Thomas B. (CLA)
 Risdal, Miss Marilyn J. (MedTech)
 Roberts, Thomas R. (IT)
 Robertson, Russell E. (CLA)
 Robey, Duane A. (Ag)
 Robinson, John P. (Ed)
 Robinson, Mrs. R. D. (Ed)
 Rohlf, Mr. R. H. (CLA)
 Rumble, Miss Lillian V. (CLA)
 Rundle, William J. (IT)
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 Saunderson, Donald M. (IT)
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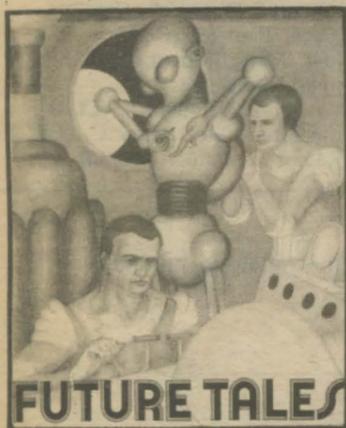
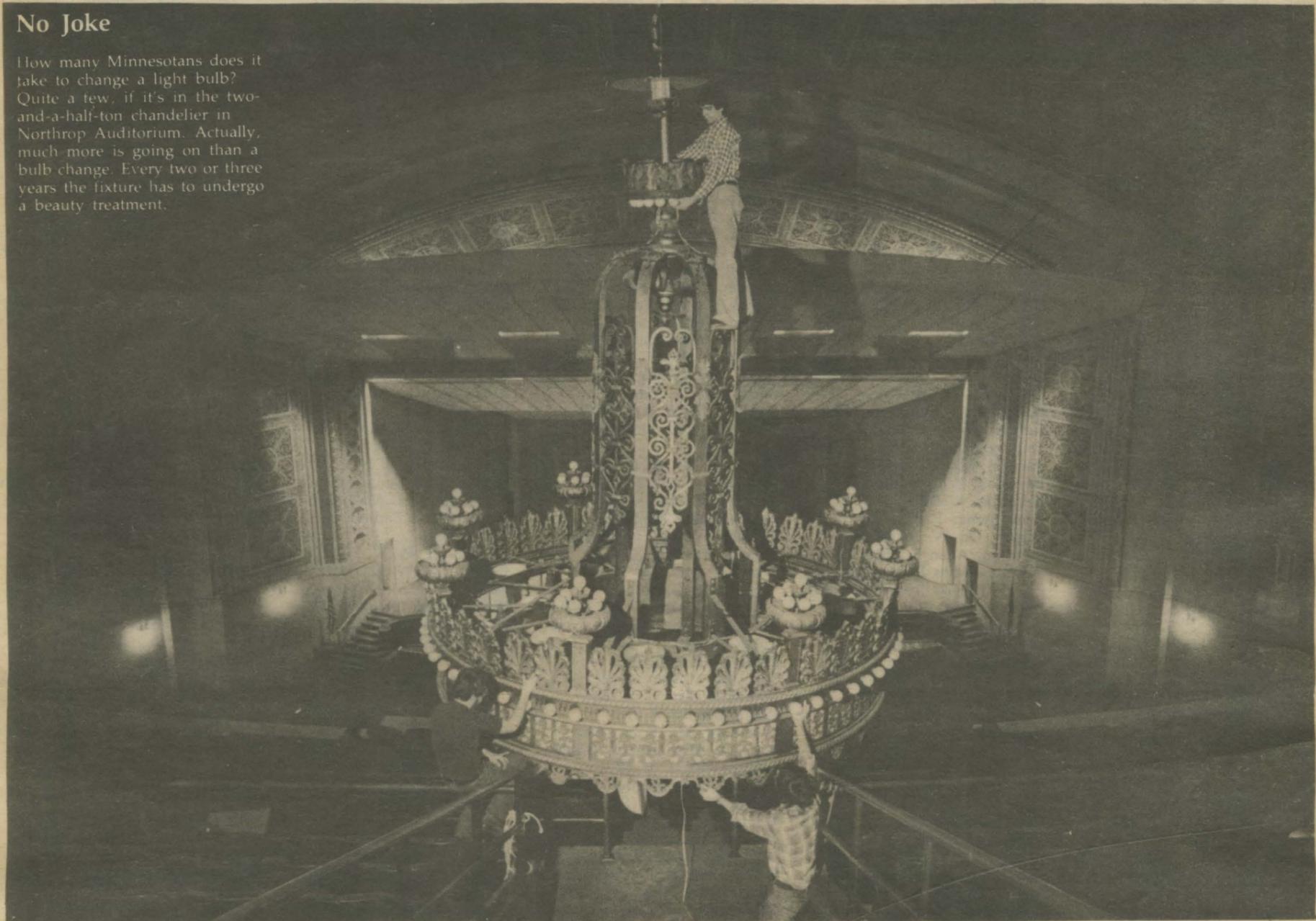
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Thanks for helping the University of Minnesota.

No Joke

How many Minnesotans does it take to change a light bulb? Quite a few, if it's in the two-and-a-half-ton chandelier in Northrop Auditorium. Actually, much more is going on than a bulb change. Every two or three years the fixture has to undergo a beauty treatment.



If for any reasons you feel I should not get your marvelous **Update**, OK too. I never get rancorous.

G. V. Herbach
Minneapolis

Female Mail

Please continue finding women worthy of quoting, as e.g., Jeannette Piccard, *et al*, in the latest **Update**. Alas, of the 54 eyes on the future, only 6 were the eyes of women!

Genevieve M. Plumb
Duluth

Future Feedback

I am not too happy with the fall edition. This emphasis on futurism is very discouraging, and that is saying the least. Our son, if and when he graduates, may look like this:



Mrs. V. Janzer
Milwaukee, Wis.

Moved

I have checked carefully, as your name/address change coupon suggested, to see whether I'd gotten married or moved. There is a nice guy around the house on occasional mornings, and while the feeling is warm and laid back, I don't think we're married. I don't think he thinks so, either, because he never

leaves any laundry, gripes, or instructions behind.

The newspapers and books stacked in the closets have very old dates, so I know I haven't moved. But I have *been moved* by your *Future Tales* edition — to laughter, tears, and some consternation. Thank you for letting me look through 54 eyes which, while focused on the future, gave a sharp reflection of today.

Laura Oesterle
Point Mugu, Calif.

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Too Futuristic

Update has helped immensely to uplift the image of this intellectually gigantic University, a marvelous light in our dark, ethically confused world. I hope you will continue to send it. I have no son or daughter at the U, but always have students as tenants at *very moderate rent*.

The last issue did not have quite the first class excellence of previous issues. It was too much the same, too futuristic.

Future Imperfect

Bad luck! Your assertion that the University has always charged tuition is incorrect, as attested from the *Litchfield Independent* of May 30, 1888. I found it in an old book belonging to my grandfather, and it apparently led to his sending his eldest son, my uncle, to the University. Oh well, you can't always be right.

Edward V. Lofstrom
Minneapolis

UPDATE

Summer 1978
Volume 5
Number 4

A Publication for
Friends of the
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R. SCHOLES

HEARTS

What We Aren't Doing
To Live Longer



The Sinking of the
Edmund Fitzgerald
and Other Ups
and Downs in a
Northern Port

Plus Learning To Talk Again,
The Myths of American
Education, Minnesota's Good
Life Looked at, and A Tribute
to Maurice Visscher

Magrath: American Education Needs Demythologizing

by Bill Huntzicker

University President C. Peter Magrath says that American education needs "demythologizing" in order to overcome general public disillusionment with the educational system.

In remarks delivered to the Breck School Cum Laude Society in May, Magrath said education has shared in an American "crisis of confidence" in major institutions.

"In fact," Magrath said, "some critics have leveled their sharpest and most pointed arrows at our schools for their perceived failure to educate students and to train our young people for jobs in society.

"One writer even went as far as to title his critique of American education 'Why Johnny Can't Read, Why Johnny Can't Write, Why Johnny Can't Do a Blessed Dam Thing.' All of this leads me to react with mixed feelings, for I think Johnny is not as pitiful a creature as some doomsayers would have us believe."

Magrath said that test scores showing declining literacy rates, for example, are the result of larger numbers of people staying in school long enough to take standardized tests that measure literacy.

"In short, and to be very blunt, we do have more students taking standardized tests who are less bright and less capable than their brothers and sisters, or fathers and mothers, of 10 to 30 years ago. But that does not mean that we have fewer bright students than we had 10 to 30 years ago," he said.

Magrath said that a second factor related to declining test scores is the increasing number of "special groups of learners" who are staying in school longer than they did in the past.

In Minneapolis, for example, more than half the Native American and a fourth of the black students fail to complete school, but the dropout rates are a "marked improvement" over a few years ago, he said. Besides



C. Peter Magrath

minority students, he listed the handicapped and slow learners as people who are staying in school longer.

"And in serving these previously disenfranchised groups,

we have accepted the reality of lower overall average scores on certain tests," Magrath said. "But rather than rue the fact that test scores might have dipped, we should be saluting the efforts of the Minneapolis schools to serve a larger and disadvantaged clientele."

Magrath said that some studies have shown improvements in test scores over the past 30 years. "In fact, it was found in a recent study that today's students read just as well as, if not better than, their counterparts in the middle 1940s," he said.

Quality in education is still a major concern, he said. "We still have many quality institutions with high standards, just as we have record numbers of quality students and faculty."

Magrath said that a physicist who recently lectured at the University pointed out that "breakthroughs of the century" 40 years ago are today the subject of routine discussion in grade-school science classes.

The myth Magrath said he finds most irritating is that of the United States as "an overeducated nation in which a college education no longer guarantees the payoffs it once did either to students or to society."

The gap in earnings between college graduates and nongraduates has narrowed from 12 to 8 percent in recent years, but "the economic advantages of a college education over one's lifetime are still as impressive as ever," he said.

Rates of employment, salaries, chances of promotion, and chances at alternate jobs are better for college graduates, he said. "They have more control over their economic futures."

Although the economic case is still strong, Magrath said, "the really important return from an investment in education is a happier, more productive individual and a better, more responsive citizen."

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William Jennings Who?

Dreams for Reality

Your article on animal behavior (Winter/Spring **Update**) is thought-provoking. Gail Peterson and Milton Trapold are quoted as saying that "it's possible to explain much of an animal's behavior without any appeal to the existence of consciousness or mind." I must point out that it is completely necessary to explain all human behavior within the same terms since to my knowledge no one has ever seen as much as a teaspoon of either consciousness or mind.

Harry B. Lewis
An 88-year-old student
Minneapolis

So-Called Epileptics

I am curious about your source ("Is Epilepsy Getting a Bad Rap?" Winter/Spring **Update**) for

notable epileptics in history. Although the Epilepsy Foundation of America's knowledge would be more authoritative than mine, I can speak to the inaccuracy in citing William Jennings Bryant (sic). I wonder whether you mean William Jennings Bryan, William Cullen Bryant — neither of whom has ever been identified on any list I have seen — or George Gordon, Lord Byron, who is known to have experienced seizures.

Mary Jo Borreson
Gaithersburg, Md.

Envy

Thank you for **Update**. As kids in the University area we used to bike around campus. How we

envied the "rich" kids that could afford to go to the U. Now our two sons attend, but they live too fast to share what they are learning with their old Ma. I love walking around the U now, as everyone is so friendly.

Mrs. R. Kepper
Minneapolis

by Maureen Smith

You don't have any heart for your job anymore. You aren't finding any excitement in it, you aren't taking any risks. All the idealism you brought to the job in the beginning has been thwarted. You feel tired all the time, you can't shake a cold, you frequently have headaches.

What you are suffering from is *burnout*.

Robert Veninga, associate dean of the School of Public Health on the Twin Cities campus, has been studying burnout as part of his investigation of the relationship between work and health. He defines burnout as "a debilitating psychological condition caused by work-related frustrations, resulting in lower worker productivity and morale."

People typically become burned out when they feel that their ideals are being frustrated and they are unable to accomplish their goals, Veninga said.

One reason for burnout, he said, is that people follow self-defeating scripts. One is the script of the workaholic: "I'm going to succeed even if it kills me." Too often, Veninga said, this script becomes a self-fulfilling prophecy and workaholics drive themselves to death.

For a workaholic, he said, all of life becomes work. One of the basic principles of mental health is that work, recreation, and companionship be kept in balance. For the workaholic, this balance is lost.

Another self-defeating script is "Trust only yourself." Those who are unable to delegate responsibility soon suffer from information overload and are prime targets for burnout, Veninga said.

A third harmful script is "Everyone should see the world as I see it." People who are following this script are likely to come into conflict with their co-workers and to feel that their own ideals are being thwarted.

It is possible to become burned out without following any of these unhealthy scripts, Veninga said. Sometimes people can be worn down by the demands placed upon them by their organizations. They may be given responsibility without authority, or responsibility without resources, or responsibility with-



'Trust Only Yourself' and Other Good Advice From Burnt-Out Cases

out commensurate rewards. "Any of those conditions can cause a person to burn out."

People who are burned out may react in one of three ways, Veninga said. One response is to do the assigned work, follow the rules, avoid conflicts, and become passively compliant. People who are unhappy with their jobs may not be able to quit, he said, but they can drop out psychologically and stop investing themselves in their work.

Everyone loses when a worker drops out psychologically, Veninga said. The employee loses the rewards that come with investing oneself in an organization, and the organization loses productivity.

Another response to burnout is to fight back and attack those who are seen as the sources of frustration. Fight-back strategies are losing strategies, Veninga said. "Morale sinks when organizational wars are raging," and energy that could be spent in accomplishing tasks is used up in the battles.

The third choice is to find a constructive way of responding to burnout (or of avoiding it in the

first place). Veninga offered several suggestions.

To cure or prevent burnout, he said, it is important to make sure that a person has enough "space from work." Taking a vacation or finding an enjoyable hobby can make a big difference.

Veninga likes to tell health professionals that if they are taking briefcases home every evening, or if they just can't find time to take a vacation, they probably are not good models of health. Sometimes he is accused of advocating less commitment to work, but the contrary is true, he said. Those who find space away from work are able to return to work refreshed and invigorated.

"Most professionals have to take work home some of the time," he said. "I do it, and I'm not against it." What can be un-

healthy, he said, is to become "totally consumed by the job."

When there are conflicts with fellow workers, Veninga said, it helps to talk them out openly and honestly. People too often collect grievances secretly until they build up to an explosion, or close their eyes to all problems, or play "Ain't It Awful" by complaining to others about how bad things are, without taking any constructive action.

Because people are happiest when their achievement needs are met, Veninga said, it is helpful to set goals. By spending an hour on a Friday afternoon setting goals for the following week, for example, a person is more likely to have a sense of accomplishment when the goals are met.

In setting goals, he said, it is important for at least one of the goals to be "something that really excites you." Some goals will be obligatory because they are expected on the job, but other goals can be included as well. "For me it might be read-

JAMES GARTNER

ing a book I've been wanting to read that would help me in my teaching, or going to lunch with a faculty member I always enjoy but haven't seen for a while."

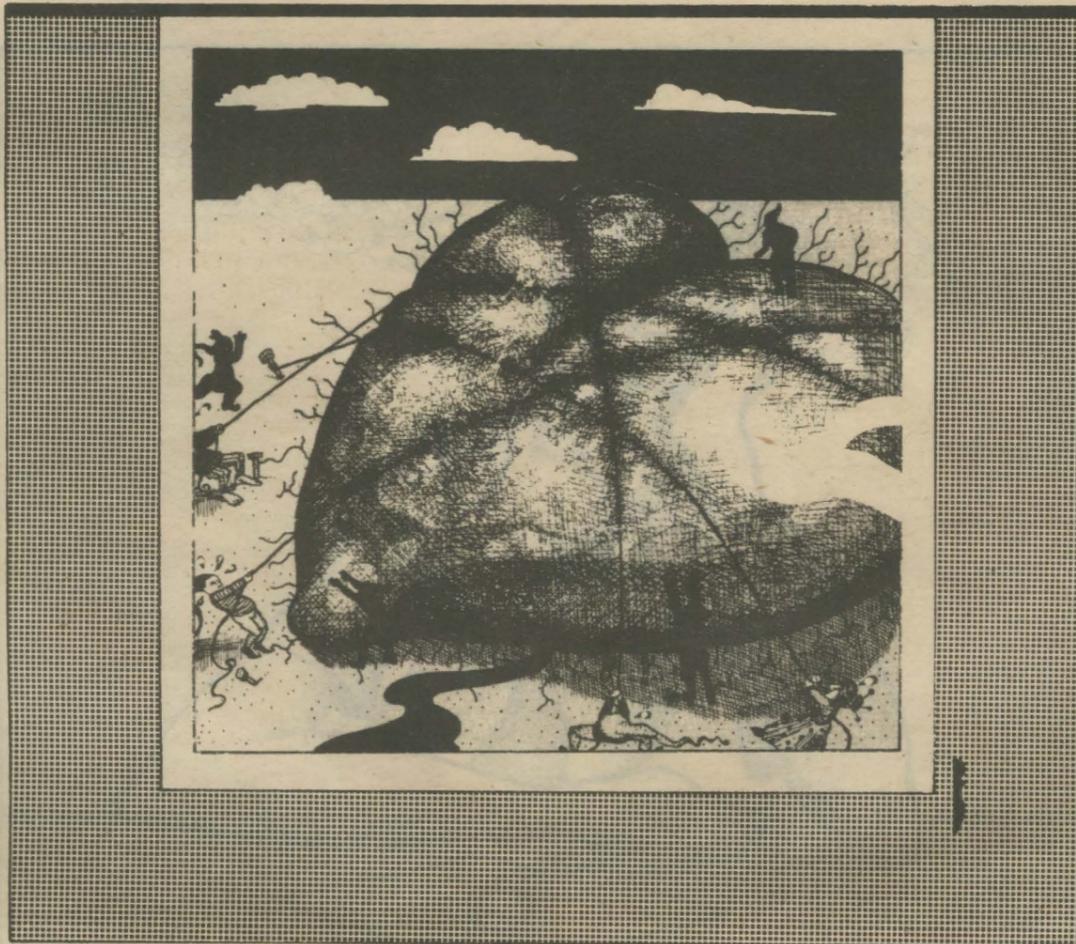
Setting goals builds a sense of accomplishment and "keeps in focus the things you want to bring to the job," Veninga said.

Although frustrated idealism leads to burnout, he said, giving up your ideals is not the answer. In order to recover from burnout, it is important to find ways to recapture your idealism and rediscover the reasons you made a commitment to the field in the first place.

People can be burned out, or they can be enthusiastic, in all kinds of jobs, Veninga said. He thinks of two restaurants near his home. In one, the employees are always cheerful and efficient; in the other, they don't seem to care. Veninga said he has become convinced that supervisors can make a big difference by showing how valuable they think their employees' work is.

When burnout is accompanied by depression, professional counseling may be needed, Veninga said. But he believes most people who are suffering from burnout can find their own way out of it. One of his convictions is that "most people really want to do a good job."

Someone who is not burned out will be growing, keeping up with the field, looking for new ways to do things, taking risks. Veninga likes to quote John Gardner's *Self-Renewal*: "If you want to keep on learning, you must keep on risking failure — all your life. It's as simple as that."



R. SCHOLES

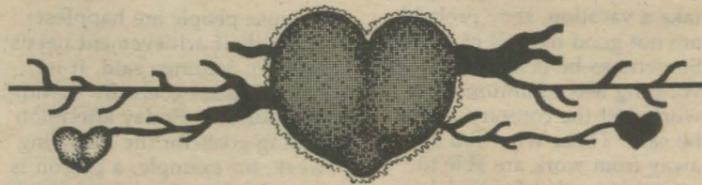
HEARTS

by Mike Finley

It is difficult to overrate our hearts. Human physiology is a dumbfounding catalog of marvels and miracles, but even where marvels and miracles are routine, the heart looks great.

If a person's heart beats 72 times a minute, and that person has a life expectancy of 75 years, that heart has the responsibility for filling and emptying itself almost 3 billion times. In the cosmic scheme of things, 3 billion is not such a fantastic number. But every one of those beats is "invented" solely by the electric muscle of the heart itself, with no outside help of any kind.

Imagine a disposable lighter with 3 billion lights. That flicks itself.



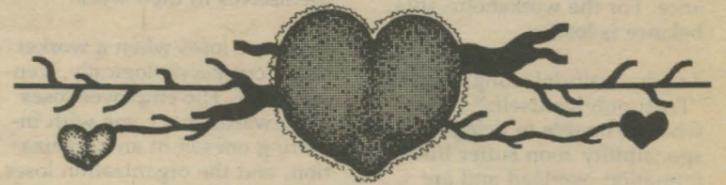
When we think of doctors and hearts, our imaginations usually fix on the drama of open-heart surgery. Few human procedures can match the sheer daring of cutting open a fellow being and keeping the blood flowing through that person while complex and dangerous procedures — often involving complete removal of the heart — are performed. Few images sum up the precariousness and the amazing persistence of life more graphically than that of the heart outside the body, still beating.

The University of Minnesota is an acknowledged world leader in the field of heart surgery. Christiaan Barnard,

Owen Wangenstein, C. Walton Lillehei, John Najarian, Demetre Nicoloff, Richard Varco, Henry Buchwald — these people have added thousands of years to the lives of patients over the years, and they have developed new techniques at every step along the way.

Still, one suspects that there must be more to life than honoring illustrious surgeons; and thousands of years of extra life may not be all that significant to a population of 200 million, whose direst affliction and greatest killer is disease of the heart and cardiovascular system. More than 800,000 of us fall by the wayside every year because of heart attacks, atherosclerosis, and heart failure.

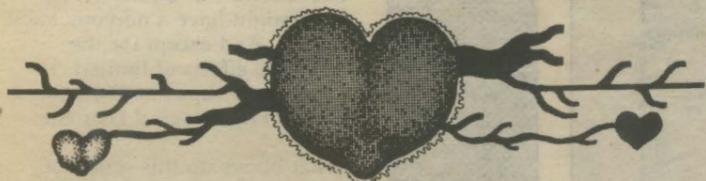
Surgeons are the first to admit that theirs is not the ideal solution to the general problem.



"The Laboratory of Physiological Hygiene is kind of an awful name," conceded its director, Henry Blackburn. "It doesn't say much to people. But hygiene doesn't mean washing your hands and brushing your teeth. Properly speaking, it comes from *hygeia*, which is Greek for health. Hygienic living is healthy living. Hygienic approaches are non-drug, non-traditional-medical approaches."

The laboratory's mission? To find out what people are doing that shortens their lives and to find ways to keep people living healthily and living longer.

The dynamics, Blackburn said, can go under the heading of *technology transfer*. Much has been learned in the world's laboratories in the past few years about risk factors. Now it's just a matter of adapting research mechanisms to real-life situations or, as Blackburn put it, "making practical what we already know but don't yet do."



The first big laboratory breakthrough, of course, occurred in what was just about the first laboratory devoted to learning about things cardiovascular. It was the laboratory of William Harvey, a British scientist who studied in Italy. This year marks his 400th birthday.

H. Mead Cavert, associate dean of the Twin Cities campus Medical School, helps us put Harvey's discoveries in perspective.

"Harvey discovered circulation," Cavert said. "While it may seem obvious to us today, we have to remember that working from pure observation was something quite new in the 16th century. Working with cadavers, snakes, dogs, and rabbits must have seemed very bizarre to a generation of physicians classically trained in Galen's theory of the four humors. But the important thing is that Harvey was looking right at the functioning heart, not reconciling it in his imagination with an abstract theory. Harvey's work was a model of biological inquiry."

Harvey described the chambers of the heart, he saw the arterial pulsations, he saw the veins. He did not see the capillaries, the business end of circulation, Cavert said — where the exchange of vital gases and nutrients actually enlivens the body — but that was because he had no microscope. The discovery of capillaries awaited only the invention of that instrument 40 years into the revolution Harvey helped initiate.

Professor Jay Cohen, head of the cardiovascular division at University Hospitals, ticks off a list of developments in more recent times:

First of all, heart disease has become a factor in world health. In Harvey's time, few people lived to a sufficient age to experience heart failure.

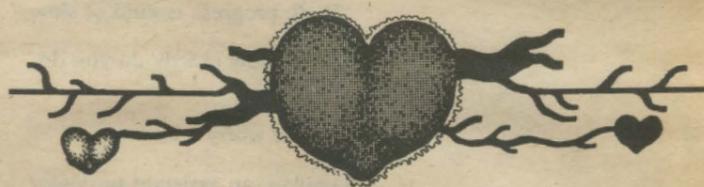
Between 800,000 and 1,000,000 people in the United States will experience an acute myocardial infarction — a coronary, a heart attack — this year.

In the past 10 years, there has been a 15 to 20 percent decrease in deaths of people brought to hospitals with infarcts. Better nursing and paramedical care, better treatments, drugs, and techniques are keeping more people from dying sooner.

Believe it or not, from an epidemiological standpoint, cardiovascular mortality is actually down. People aren't smoking quite so much. People are slowly awakening to the threat posed by high blood pressure. Diet in this country has improved a bit. People are even exercising more.

Fifteen percent of heart attack deaths still occur among people in their primes, people between the ages of 45 and 55, when they are supposed to be most productive. Even so, many, many people in practically terminal stages of heart disease have been restored to life through the use of new drugs.

And as the learning continues, so does the healing improve. Doctors are quantitating their results for the first time. Old standard treatments that had no real effect are finally, under the pressure of numerical scrutiny, falling by the wayside. Everything is getting a stern once-over, and then a twice-over, as if lives depended on it.



"We used to kid ourselves that heart disease was something that happened to you when you got old, almost as a reward for surviving everything else," according to Irwin Fox, professor of physiology. "It was only during the Korean War, when autopsies on fallen soldiers revealed no wounds, that we started to change that opinion. Soldiers were dying of heart attacks on the battlefield!"

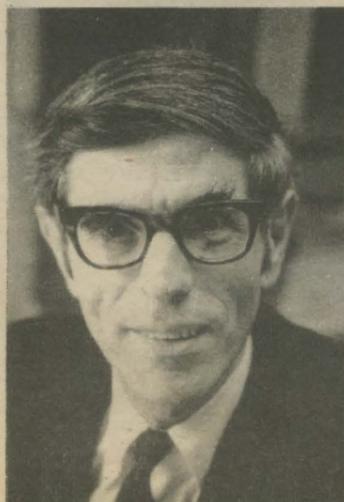
The battlefield example is an exotic one. Fox cites the dangerous example of people like Artur Rubinstein, 90-year-old concert pianist and great lover of gourmet foods, whipped cream, and hollandaise sauce. How come he gets away with that while 19-year-olds drop dead? It is not only mysterious, one thinks, it is unfair to boot.

The heart continues to amaze. A muscle that has the capability to lift 15 to 20 pounds a meter into the air every minute. A pump that can match the performance of any man-made instrument, yet operate reliably for as many as 100 years in a cool rib cage. It needs no boiler, Fox said. It asks for no rest. And you don't even have to supply it with Gatorade.

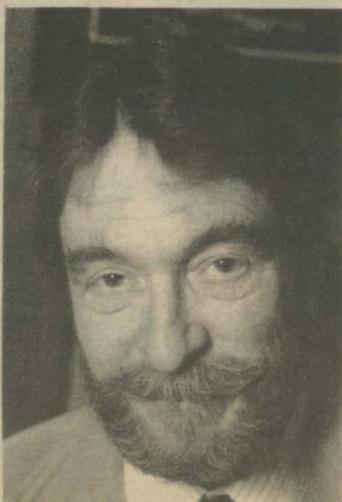
TOM FOLEY



H. Mead Cavert



Irving Fox



Henry Blackburn

The Easy Life Is Catching Up With Us



R. SCHOLES

by Mike Finley

The question is asked: "Does changing the way thousands of people live pose any special difficulties?"

And Russell Luepker answers: "Well, progress is kind of slow."

Q: "So how exactly do you do it?"

A: "We worry a lot."

Luepker, an assistant professor at the Laboratory of Physiological Hygiene on the Twin Cities campus, is charged with the responsibility for constructing strategies to get whole cities, counties, and countries to live smarter — to eat better, to quit smoking, to exercise more.

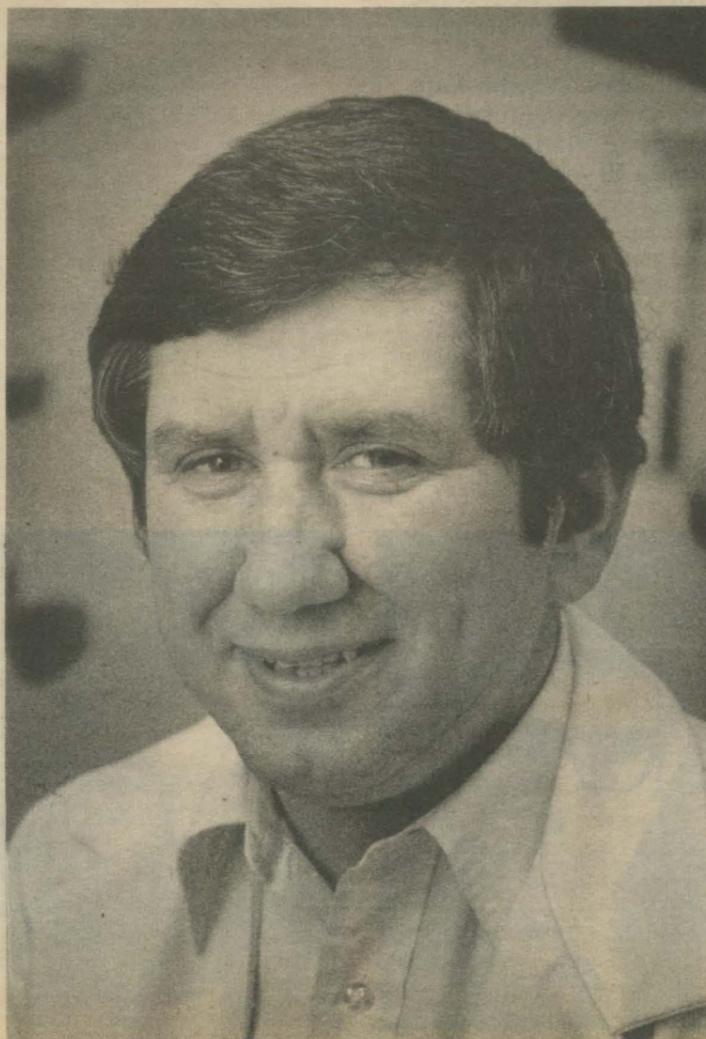
Living smarter, of course, is something everyone favors but few ever get around to actually doing. It challenges the very rituals that many people — Americans in particular — find necessary to their well-being. Buttered popcorn, beer, an easy chair, a pocketful of cigarettes, and a double-header on the tube, for instance.

"The factors that lead to heart disease are ubiquitous in the American way of life," Luepker said, "and this explains the great resistance we feel toward intelligent change.

"Even doctors have pretty much thrown up their hands in

despair. I can identify with those guys at the clinics. Patients don't come in to be talked to about their bad habits.

They come in because they're sick, or because they need a physical for their insurance. So the doctor has five, maybe ten



TOM FOLEY

minutes to make a difference in the lives of people who take better care of their kids than they do of themselves."

Which leaves the work of informing the public largely undone, Luepker said. Except for the occasional 30-second anti-smoking ad on TV at about 1:30 a.m., which has the tremendous effect of suggesting to a handful of America's insomniacs that they might have a nervous habit or two. And except for the fledgling efforts of limited crusades by groups like the Laboratory of Physiological Hygiene.

What buoys up this group of not-really-messianic physicians, social scientists, and other professionals, are their findings that heart disease is not the inevitable killer Americans find so perversely attractive. Other industrial nations, notably Japan, have incidence rates much lower than ours.

The reason? For one thing, Japan is not a nation of burgermasters, whose covenant with the populace is symbolized by golden arches. "McDonald's fries its stuff in lard," Luepker said. "And their all-beef patties are full of fat. So if that's how you're getting your red meat, that's not all you're getting."

Changing McDonald's, it seems, just might be harder than changing the whole rest of the world. But Luepker is impressed by what some other restaurants have been up to.

"The Embers restaurants here in town have gone out of their way to stress the lean meat cuts on their menu," he said. "And even Burger King boasts about the lower fat content in their broiled burgers."

One area Luepker is hopeful about is working with restaurant associations. "A lot of restaurateurs are interested in the idea of healthier menus but don't know what to do," he said. "We tell them the advantages of chicken, turkey, and fish dishes. We tend to adhere to a middle-level approach. A strict vegetarian diet is best for avoiding cholesterol, but most Americans, including myself, are not able to make that radical switch. So we do what we know is possible."

Luepker has a long list of beefs against the livestock industry. The typical American, he said, eats 120 pounds of beef per year, and then a bite or two of pork and lamb as well. The livestock industry netted \$55 billion last year — a formidable economic force to take on. And the irony is that these cattle, raised at the

Russell Luepker

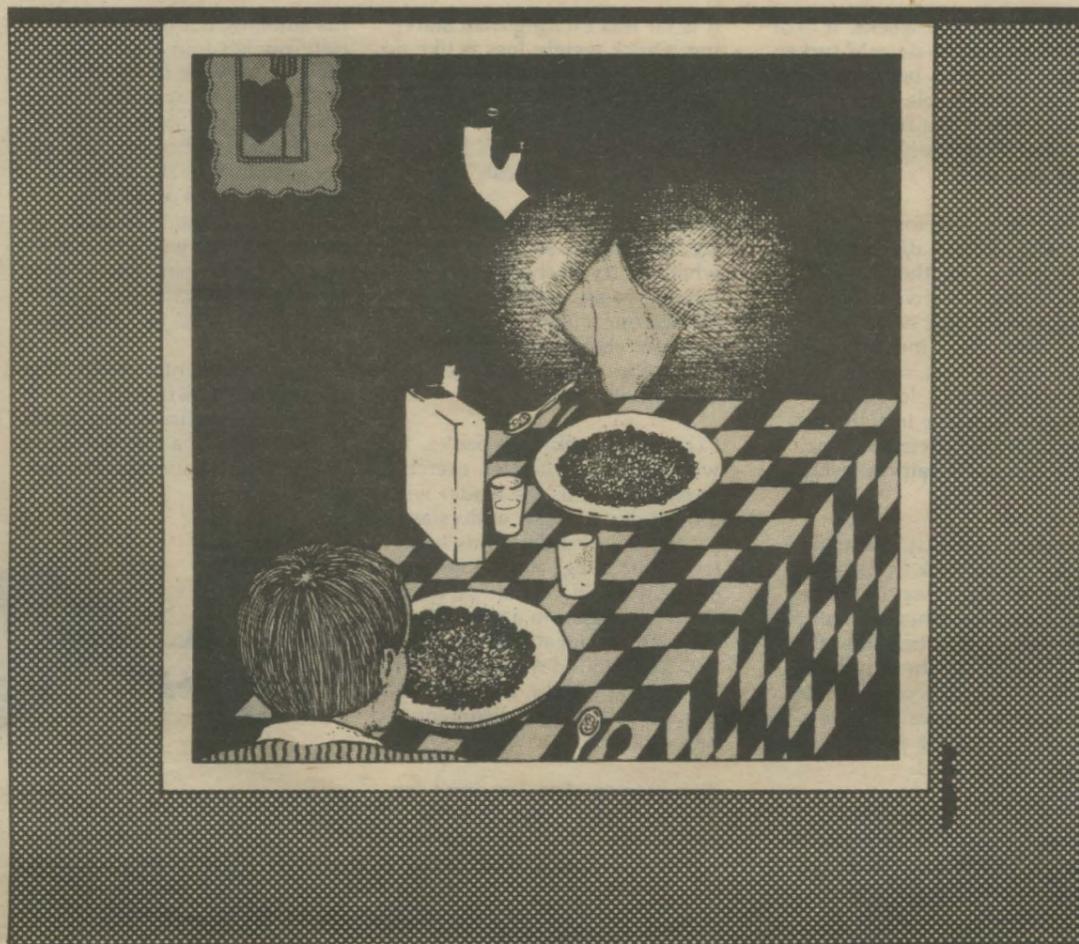
trough without benefit of exercise or proper diet, live much the same sort of life as the rest of us. (Fortunately, none smoke.)

What's to be done? In one word, a word that one hears a lot at the Laboratory of Physiological Hygiene, *education*.

The same goes for exercise. "Few people today, not even farmers, really live by the sweat of their brow," Luepker said. "Steelworkers spend their days pushing buttons in air-conditioned cabs. Manual labor jobs are being engineered out of existence. When Unit F of the health sciences complex went up this spring, I watched the workers. While three were in there working up a sweat, seven others conducted observations on randomly selected coeds.

"We drive to work in comfortable cars to jobs that are easy to perform, switch on the TV when we get back home, and watch highly paid athletes perform our exercise for us.

"Why go look clumsy at the neighborhood ball park when Rod Carew does the same thing so much better, in our stead? With the revolution in conveniences around the house, housekeepers don't even have to go out and hang the wash. What are we supposed to do, go back to scratch and make our jobs hard again?"



R. SCHOLES

It's easy to get the impression on campus — where joggers whiz back and forth with breezy regularity — that the whole

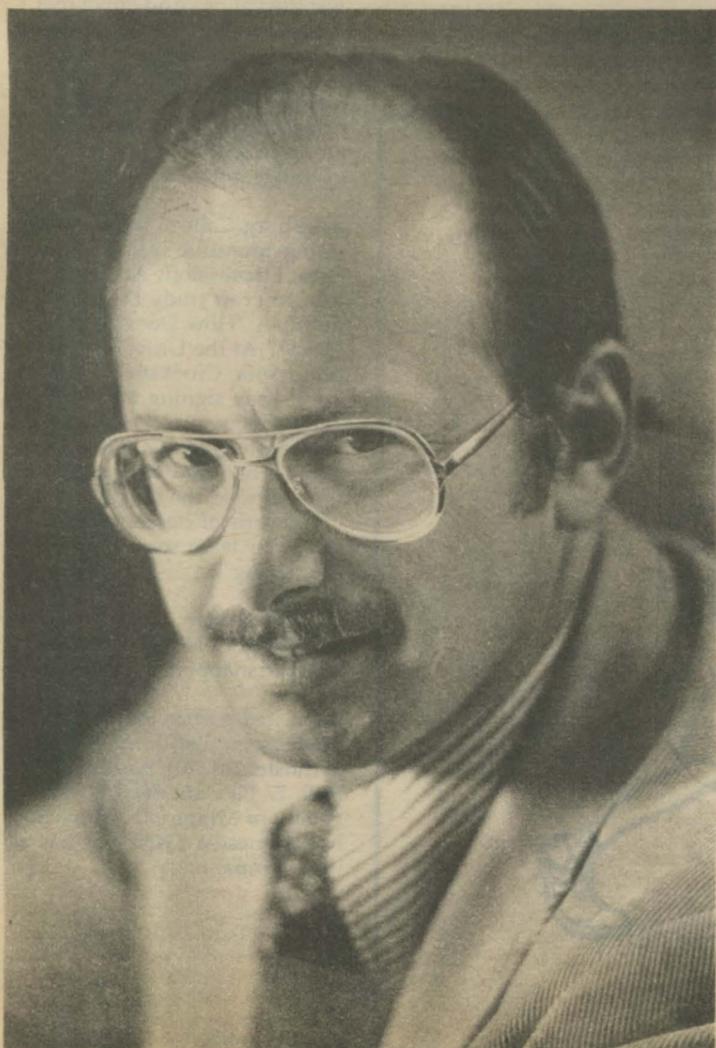
world must be nursing joggers' kneecaps every night. But most folks are just nursing their beers.

If only this were a hygiene dictatorship, someone suggests wistfully. Remember how Mao Tse-tung got everyone in China to kill five flies a day for 10 years and wiped out all the flies? Why not do that with other problems?

It isn't as much fun to not smoke as it is to kill bugs is why not. Luepker remarked that even the USSR, which is pretty good at getting people to do things, can't get the Soviet peoples to relinquish their vodka and cigarettes.

To reiterate: Changing the world does pose certain difficulties. Progress is slow. But Russell Luepker and the others at the Laboratory of Physiological Hygiene are working hard to find ways to make it possible for us to change.

And if we don't get it right this year, maybe next year.



Maurice Mittelmark

Unhealthy Habits: Crooked Threads in the Cloth

by Mike Finley

It's as if the entire century were conspiring to convey one simple, cruel message: "You're a failure."

Couldn't quit smoking? Or you quit for a couple of months, then found yourself reaching for the pack? You're a failure.

Couldn't keep off that weight you lost once in a fit of dietary enthusiasm? You jogged four days in a row and on the fifth day watched the Twins instead? Failure, failure, failure.

Of course, it's bad enough being just generally a failure. What's worse, says Maurice Mittelmark, is that you might end up with a more specific phenomenon: heart failure. And then you'll really kick yourself.

Mittelmark is a psychologist specializing in heart disease and working in the Laboratory of Physiological Hygiene. That may seem like an odd combination, but Mittelmark would like some even odder ones.

"This is an extremely interdisciplinary outfit," he said. "We have physicians, behaviorists, nutritionists and dietitians, and a statistician or two, and soon we will have anthropologists and a sociologist. I think it would be great if we could add a philosopher to boot."

The main thrust of the lab these days, of course, is to identify the causes of heart disease — professionals prefer the more thorough term *cardiovascular disease* — and then figure out ways to stop causing it. The first part was fairly obvious 20 years ago: people who smoke, people who eat too much food or the wrong kind of food, people who sit around and never exercise, people with high blood pressure are much more likely to collapse on a stairway someday than people without these habits or conditions.

It's when people want to quit smoking, eating, and sitting, but when they try they fail, that Mittelmark enters the picture. Mittelmark is the man who devises strategies for overcoming these temporary failures and getting people to keep trying.

"It isn't an easy job," Mittelmark said. "The last thing I want is for your readers to think, 'Well, that idiot Mittelmark hasn't the dimmest glimmer how hard it is to break a habit.'"

The problem is, he said, that people in the United States have

Next page...

evolved to the curious point where the notion of difficulty is simply unacceptable. "We accomplish our objectives today not by dint of honest effort but through the use of gadgets, contrivances, and look-alike substitutes. Pick up a paper and you'll see an ad that says 'Lose Weight — Feel Full.' Or you know you like bacon so you buy something that looks like bacon. Or you quit smoking Camels and switch to a lower tar cigarette."

The road to cardiovascular health is not paved with soy-bean sausage patties, according to Mittelmark. There is only one kind of real change, he said, and that is (gulp) *real change*.

"The problem is that people undertake change projects under the impetus of some initial enthusiasm, plus whatever they read in a magazine article or heard from a friend," he said. "The information is almost unfailingly inadequate. Quitting smoking 'cold turkey,' for instance. What people never hear is that most people who quit cold turkey lapse back into the

habit after a few weeks. It is often necessary to do cold turkey five or six times before it finally 'takes.' But people don't know that, so they just figure they're failures, hopelessly addicted, and give up.

"The same goes for dieting. Invariably, people diet for the wrong reasons: they want to look better, not live longer. So they go on some crack-brain regimen, starve for two days, then sip cabbage soup for the rest of the week, lose a few pounds, squeeze into the old dress for one afternoon, and then promptly gain the weight back."

For a psychologist, Mittelmark gets a funny look in his eye when he discusses the ways quick-change schemes manipulate people. Furthermore, there is a severity in the way he employs certain adjectives: "We have set measures of success for ourselves that are positively *criminal*," he said.

"What does fitting into an old dress for a day or two have to do with anything? There is only one true measure of success, and

it is far less exciting than starving. Quick weight loss is like no weight loss. The right diet will have you losing far less than two pounds per week, but that weight you do lose will be much more likely to stay lost."

What we must all come to realize, Mittelmark said, is that when we try to change our silly habits, we are really trying to change our whole lives. And one does not change one's life in one fell swoop. All one can do is a little bit at a time.

"The typical self-help book, whether it's about diet, exercise, or smoking, fills the reader with a flush of overnight enthusiasm, so that the next day finds him trying to change his life all at once," he said. "What we do instead is suggest to a man who likes a lot of meat that he not eat any on certain days of the week. It's not hard to do, and he'll be proud of the accomplishment; he's on track.

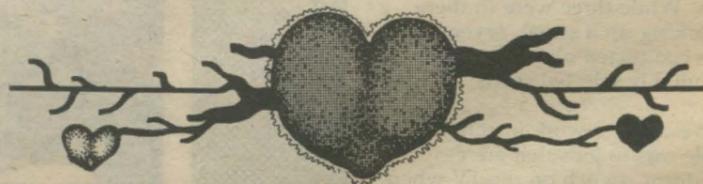
"If a man smokes, we don't say, 'We want you to cut down to half a pack a day.' We find out

his smoking habits. If he typically smokes four cigarettes on the way to work in the morning and five on the way home later, we suggest not smoking while in the car, maybe even locking the cigarettes in the trunk for those two times of the day. As time goes on, he keeps adding times when he won't smoke. Pretty soon he isn't smoking before breakfast, or in the bathroom either, and he's on track."

In the experimental groups Mittelmark works with, no specific method is practiced religiously; instead, every patient has a program tailored especially for her

or his individual habits. Every avenue is explored: the media, group sessions, individual sessions with laboratory people — whatever eventually works.

"People's greatest health hazards lie right within their own behavioral repertoire," he said. "It's like a piece of cloth, and we want to extract a few threads from it. It isn't easy: you yank one thread and the whole fabric resists. Our resistance to healthful change is simply ferocious. We are looking for ways to get those few threads out."



Oldsters Hit the Road for Summer Learning, Fun as Elderhostel Catches On

Minnesota Elderhostel '78 is already under way, but that doesn't mean you can't still check out some of the action.

People have been signing up for this unique living-and-learning opportunity in surprisingly large numbers, considering that this is the first year an elderhostel has been tried in Minnesota. The reason is fairly simple: it's a lot of fun.

The idea of the elderhostel, according to Phil Lundblad, acting state director for the program, is to provide one-week experiences of campus life and academic stimulation. Eighteen college and university campuses in Minnesota are participating, each offering a different curriculum, and the overall effort is being organized from a University of Minnesota office in Minneapolis.

"How it started is kind of a neat story," Lundblad said. "A guy at the University of New Hampshire, Martin Knowlton, was chatting with a friend at a Durham watering hole, and the two were absently saying what a great thing youth hostels were, how they offered unusual experiences, the chance to meet all kinds of people. As they had a little more wine, they started thinking it would be great if more people could have that kind of experiences, instead of

just the young. And out of that discussion grew elderhosteling."

Most of the colleges in this summer's elderhostel program offer three courses. The June courses are over, but there are still lots of things going on.

Augsburg College has an interesting-sounding course on the Great Depression. At Bethel College you can study the lyrical question "How Does a Poem Mean?" At the University of Minnesota, Crookston, people are already signing up for the August seminars on rosemaling and mystery novels. There are about a hundred courses like these around the state — all are "fun" sorts of classes where you can really learn something interesting.

There is a catch, though. You have to be "old": 60 or over. No whippersnappers allowed.

Interested parties may write Trish Blomquist, Minnesota Elderhostel '78, 201 Westbrook Hall, 77 Pleasant St. S.E., University of Minnesota, Minneapolis, Minnesota 55455. She has all the information.



Anita Kozan, second from left



TOM FOLEY

by Nancy Johnston Hall

Imagine living in a world where everyone can talk except you. When you try to speak, the thought is there but the words aren't. Others don't know how you feel, what you're thinking, or what you want or need. You're isolated — separated from the rest of the world.

A nightmare, right?

For many of the 20 people who had dinner together at a Minneapolis pancake house recently, that nightmare is a reality. They are all members of the Metropolitan Aphasia Group, a seven-year-old club for "communicatively handicapped" people. The group is cosponsored by the rehabilitation centers at University of Minnesota Hospitals and St. Mary's Hospital.

Most of the members are stroke victims. Many have been left with both paralysis and aphasia — the inability to communicate or understand spoken or written language. The group, which meets twice monthly, represents a wide range of age and speaking ability.

Marion Rasmussen, a member of the group for five years, speaks well enough to give regular talks for hospital personnel on understanding the problems of the stroke victim. Yet she still comes to the meetings, she said, "because we're a peer group."

"Only a person who has had a stroke really understands the problems," she said. "If you feel

Learning to Speak From Scratch Again: 'I Don't Feel So Alone Anymore'

like crying with this group, you can. Sometimes I still feel like an idiot. But here I'm free from inhibitions. It was a godsend for me."

Other members feel the same. For Gene Wiener, whose hobby had been writing short stories and poetry before he suffered a series of strokes last summer, the damage to his speech center was a particularly distressing loss. He works hard at bringing words back, writing newly returned ones on paper so he can remember them.

Although talking with the group is getting easier and easier for Wiener, he still always thinks ahead about two sentences, he said.

Jack Watson, the father of four school-age children, has avoided social situations since his stroke eight years ago. Although his

paralysis is nearly gone, his speech is still severely impaired.

Because he has no visible handicap, social occasions are particularly nightmarish for him, since he can't even explain his problem to puzzled strangers. "Everything comes out wrong," Watson said. "I do everything wrong."

Consequently, he avoids social situations except for the aphasia group, where he feels comfortable.

Because trying to talk is so stressful, communicatively handicapped people tend to isolate themselves. And the isolation aggravates the problem, explained Anita Kozan, a University of Minnesota speech and language pathologist who helps direct the group.

"It's so important for them to keep up social relationships — to get out. Friendships have grown out of this," she said.

Kozan does not believe in offering specific language exercises at the meetings. "The more meaningful the task, the more worthwhile it is for the person," she said. "Conversation is what they need to practice."

Recently, for example, each member was asked to tell what his or her plans were for the summer. Several agreed that this was a tough and frightening task.

The restaurant meeting was a first for group members — they usually meet at St. Mary's Rehabilitation Center — and a milestone for many members who dread such obstacles as understanding a menu and talking to a waitress.

Lorraine Kragness, a soft-spoken woman whose speech is limited to a few words and phrases, was very nervous about coming to the restaurant. "She was so worried about tonight that she began to stutter today," her college-age daughter told the group. "Lorraine," another

member scolded, "you just haven't been coming enough."

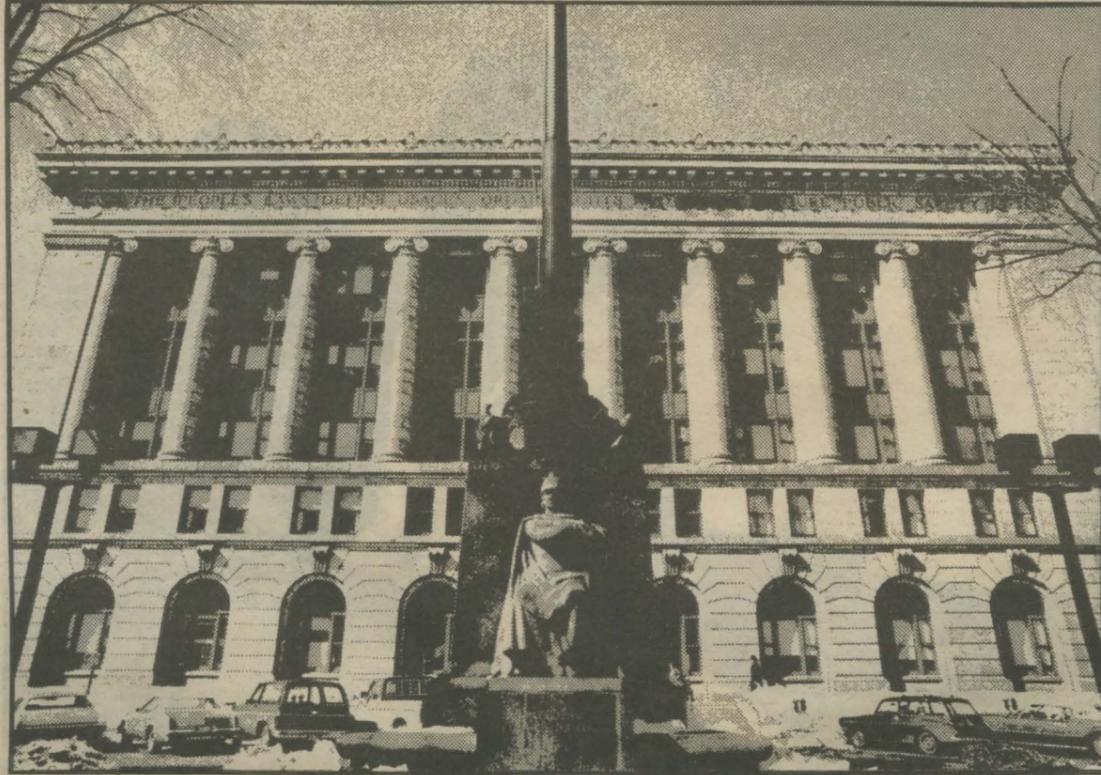
Half of the meetings are devoted to educational topics. "We did two sessions on sexuality," Kozan said. "Too little attention has been given to sexual adjustment to disabilities. One member came up afterwards and said, 'I can't tell you how valuable this was.'"

The group is for family members of the communicatively handicapped also. "Spouses need a chance to talk about the strain they're under," Kozan said.

Watson's wife, Jan, who was only 32 when her husband had his stroke, said the group offers support that is hard to find anywhere else. "I don't think enough experts know about counseling stroke families," she said. "Patients get all the attention at the time of the stroke. The family's problems are ignored."

"I remember feeling so alone and isolated. It's hard for friends or relatives to understand. They haven't been through it. When we're with strangers, I can't relax. I want to jump in and help Jack talk. Here I can relax. And I don't feel so alone anymore."

TOM FOLEY



A detail from the St. Louis County Courthouse

A Courthouse, Some Houses, A Ship: Ups and Downs in Duluth

by Mike Finley

Every moment a new wave laps against the harbor walls of the city of Duluth, and each wave deposits something new, and each takes something away with it into Lake Superior.

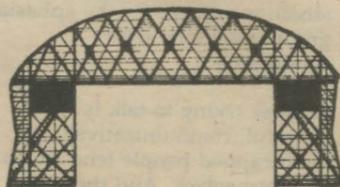
The hoopla of the bicentennial celebration is itself a part of history now. Several million copies of *Roots* later, questions of identity persist.

Jack Webb used to say that there are as many stories in a city as there are citizens. Philosophical historians might prefer the image of growth rings spreading from the heart of a great tree. A homelier image might be the structures humans erect and surround themselves with.

Duluth is a city that lives simultaneously in the present and the past. The mansions from earlier, wealthy days, the great Romanesque high school, and the pil-

lared city government center exist peacefully side by side with the newer University complex, Radisson Hotel, and pyramidal Methodist church overlooking the harbor.

It is a city of contradictions. Of boosterism and of decay. Of expansive civic spirit and of uncertain economic future. A city whose population of 100,000 was once expected to grow to rival Chicago's. The third cosmopolitan sister in a provincial state. An international port, yet a synonym, in Johnny Carson's monologues, for remoteness and cold. A city of rough-hewn hills and endless, flat, fresh water.



A further contradiction might be its attitude of arrogance and humility. Or so suggests John Husband, campus minister at the University of Minnesota, Duluth (UMD), and an alumnus of the University's School of

Architecture and Landscape Architecture on the Twin Cities campus.

The architecture of turn-of-the-century Duluth provides abundant evidence that the city was once a place to make a million dollars and to live the good life.

The Bradley house, the Ordean house, the Congdon house, the Cotton house, the Loeb house, the Kitchi Gammi Club — all these and dozens of other residences in and around the harbor exude a robust and self-congratulatory air of success, of people aware of their accomplishments, confident that they had laid the groundwork for an American Renaissance in what only a few years earlier had been non-white wilderness.

"I think arrogance is as good a word as any," Husband said. "Even our nomenclature for the people who built those houses smacks of royalty — 'lumber barons,' 'shipping magnates,' and the like. And their buildings are mirror reflections of their sense of self-importance. They are monuments."

Husband briefly related the history of Duluth architecture. At a major convention of American architects in Chicago at the turn of the century, Daniel Burnham was voted most influential, upsetting the more innovative Louis Sullivan.

Burnham, sometimes known simply as "Uncle Dan," was a bit of a throwback to the Greeks and Romans. The aristocracy of Duluth invited him to head its "City Beautiful" crusade. The main structures to emerge from his stay in Duluth were the St. Louis County Courthouse complex, finished in 1909, and the 14-story Alworth Building.

The courthouse, according to Husband, is not a great building; but to be fair, neither is it a pretentious horror. It is a box surrounded by pillars, a must for neoclassical buildings of the time, especially for civic structures. It is adorned with lions' heads. Its formality makes it a particularly suitable setting for the rituals of a court of law.

"Many buildings, designed similarly as cubes with beautiful walls, have not fared so well," Husband said. "While our courthouse makes an adequate courthouse, similar buildings have made poor libraries and banks."

And the courthouse today still reflects the pride felt by Duluth's one-time kings. It says that what

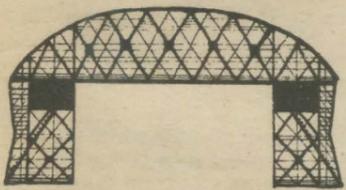
KEN MORAN



One house of the Jackson Project

to the aristocracy was certain was also true: that Duluth was a city to be reckoned with, a city that dared take on even Chicago for supremacy on the Great Lakes, a city that was to be the glittering gateway to the Great Northwest. Uncle Dan was less the problem-solving architect than he was the flattering portraitist, Husband said.

Within a few decades of the completion of the courthouse, the Iron Range seemed on the brink of depletion, the virgin timber was all but spent, the lake fisheries' profits were declining, and no new buildings had been built in the city of past opulence. The American Dream came face to face with the Great Depression.



In 1933 a subsistence housing project began to take shape in the hill community of Hermantown, a few miles west of Duluth. Nationally the project was known as the Duluth Homesteads. Locally it was referred to as the Jackson Project. Altogether the project encompassed 84 homes.

The Depression spawned lots of federal housing projects, of course, and few of them were grounds for architectural rejoicing.

But the Jackson Project was different. The houses were of good quality, each standing on five or ten acres of land and all built in a simple brick and mortar style that is unusually comely and cottagelike for American homes. No buildings could offer a stronger contrast to the Greco-Roman mausoleums of Uncle Dan Burnham than these comfortable, anonymous brick homes.

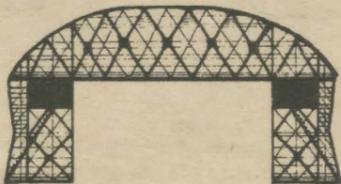
Furthermore, according to Judy Trolander, head of the Northeast Minnesota Historical Center at UMD, the houses of the Jackson Project have endured the travails of age every bit as well as their patrician cousins farther down the hill. The asking price for a home in the project these days is around \$45,000.

A paper on the Jackson Project by Timothy Garvey has just been published by the Minnesota Historical Society. Garvey, a graduate student on the Twin Cities campus, did his research while he was an undergraduate at UMD, with the help of Trolander and the historical center. The center is a sort of clearinghouse for regional materials of

historical interest and is used extensively by students at the University as well as by native Duluthians.

Trolander claimed that the center does not chronicle only the good half of Duluth's history. One student dug deep and came up with all that is known about the lynching of three blacks in Duluth in the 1920s. Another paper documents the ups and downs of commercial fisheries operating out of Duluth over the past century.

Trolander's own research on settlement houses of the Depression was published in 1975. But the center's main work is sorting through the myriad mementos from the past that people continually drop on its doorstep. It is a process that never ends.



Other kinds of structures in Duluth are also important. The filling station at 706 E. Superior St. has a strange, compact dignity.

It was built in 1921 and presumably pumped gas into the tanks of the millionaires' new limousines. The old Fitger's brewery, with its medieval facade, stands ready for some future use. Among several interesting railroad depots, a standout is the Duluth Union Depot, a Norman mini-castle complete with conical turrets and probably the best known symbol of the city. And there is its rival for the position of top symbol, the Aerial Lift Bridge over the Duluth Ship Canal.

To the drifter passing through, the bridge may seem an exotic annoyance: when the bridge lifts to let ships pass under, the wait is sometimes longer than five minutes. But those who live in Duluth, like their predecessors 50 years ago, know how inextricably their lives are connected to the vessels passing in and out of the harbor.

Julius F. Wolff is even more acutely aware of the connection than most people are. As a self-styled "utility man" in UMD's political science department, Wolff has studied the greatest of all structures in Duluth's harbor, with one perverse hitch: he waits until they have sunk. He has been investigating Lake Superior shipping disasters for 22 years.

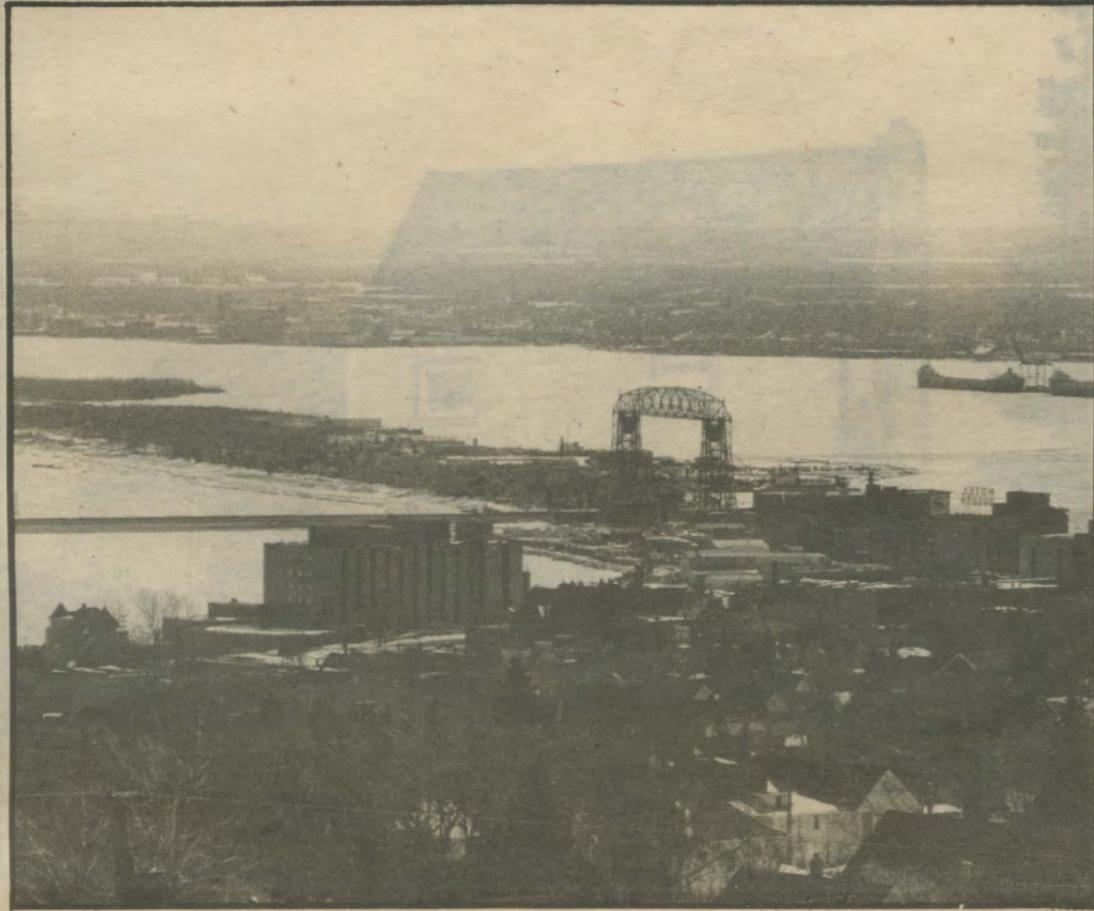
With the increase in size and strength of the new freshwater ore carriers, Wolff may have thought his line of inquiry was necessarily rooted in the past, that the biggest boats that will ever sink had already sunk years ago.



He recalled two great post-World War II sinkings: the 500-foot *Emperor*, sunk while maneuvering a routine turn in 1947; and the *Henry Steinbrenner*, 427 feet long, which fell victim in 1953 to one of the fiercest hurricane-force storms ever to hit the Great Lakes.

It was almost the end of an era, then, when a new generation of bigger and safer ore carriers was built in the past decade. The new ships seemed to have removed the danger that had always made Great Lakes

Next page...



TOM FOLEY

shipping seem somehow more adventurous than, say, farming. The finest of the new ships was the *Edmund Fitzgerald*, the queen of the American merchant marine, 729 feet long and operating out of Duluth.

"The *Edmund Fitzgerald* passed under the lift bridge at 1:15 p.m. on Nov. 9, 1975," Wolff recalled. "It was Indian summer, but within six hours gale warnings were issued. At 6 o'clock that evening it began to drizzle, by 7 it had started to blow, and by 8 the rain had turned to a heavy snow. By 1 a.m. the storm hit the *Fitzgerald*."

"Waves at the time were 10 feet high, with winds coming in at 52 knots. At that point the storm did a strange thing: it turned diagonally, seeming to follow the course of the ship around Copper Harbor and Keeweenaw Point. Soon the ship was sailing in the worst of the storm. Wind force was 62 knots, hurricane level.

"On the afternoon of the 10th, the captain, Ernest McSorley of Toledo, decided to follow the Canadian shore rather than adhere to a middle route.

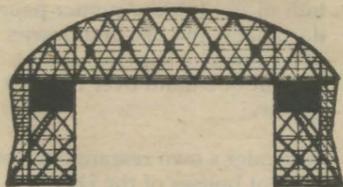
"The storm got worse. Waves came in 15 to 35 feet high. The *Fitzgerald* radioed the next ship back in a line of five ships, the *Cedric Willard*, to say that its radar apparatus had been blown away, and asked the *Cedric Willard* to stay in sight. The *Fitzgerald* was maneuvering to find the lighthouse at Whitefish Bay, unaware that the signal was out.

"McSorley called the *Willard* again, saying, 'The sea is terrible. I have never seen anything like it in my life.' At 6 p.m. the *Willard* asked how the *Fitzgerald* was doing, and this answer came back: 'We are holding our own.'

"Just then the snow squalls intensified, and then almost as suddenly they subsided. When the squalls lifted, the *Willard* no longer detected the *Fitzgerald* on its radar."

It wasn't until the following May that photographs of a ship at the bottom of the lake were taken. The photographs revealed a chilling sight: the name of the *Edmund Fitzgerald* was upside down. The *Edmund Fitzgerald's*

240-foot stern had been sheared off by a wave of almost incalculable magnitude and went down upside down.



The story of the *Edmund Fitzgerald* has been told many times by

now, and with reason. The disappearance of the biggest lake ship of its day and the death of its entire crew, on "civilized" waters, reminds people that there are still untamed and untamable elements at hand in our world.

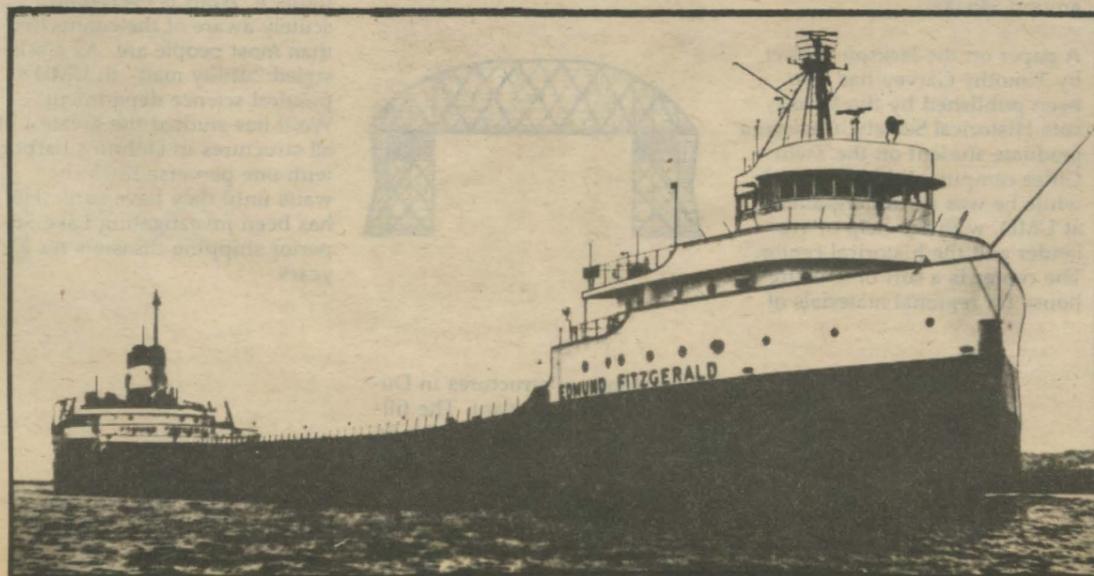
"When I was 12 years old, I used to hear stories about the old lake captains, and their exploits became almost mythical to me," Wolff said. "And while the stories of the great shipwrecks are interesting, there is another way of looking at them. These ships made us what we are. Without the lake traffic there

would be no Duluth. This place would be just a corner of a gigantic forest preserve."

Perhaps that is why the buildings are so interesting to people today. The world of the Duluth lumber and iron potentates, of the financiers in their hillside mansions, still reveals to people today the nature of the struggle to get to the top.

The comfortable homes of the Jackson Project are markers of another kind of success — the feat of sheltering people well in a time of economic catastrophe.

And the great ships passing through the harbor, and those lying at the bottom of 530 feet of dark Lake Superior water, tell their stories of work and endurance, of the nature of the lives of the people of the north country.



JAMES GARTNER



The Good Life in Minnesota Revisited

by Jeanne K. Hanson

Remember that fish, the one that decorated the *Time* cover story on Minnesota? Do we live in the lake-studded paradise the story described? Or is that fish getting a bit putrid?

Are we second in the quality-of-life competition? Twelfth? Or what?

A new survey taken by two Twin Cities campus faculty members shows that, at least as far as Minnesotans are concerned, the quality of life in Minnesota is still high. "People here are generally quite satisfied," said Geraldine Gage, professor of family social science. Gage collaborated on the survey with Hazel Stoeckeler, associate professor of design.

Unlike other quality-of-life surveys, this one sought the opinions of individual Minnesotans on such things as family life, neighborhoods, noise, schools, and taxes. Twin Cities and rural men and women in two-parent families with at least one child under 18 were surveyed.

More than two-thirds of those surveyed said they were satisfied with the quality of life in Minnesota, and many rated life here better than it was five years ago. In these ratings, as in most of the others, the opinions of residents of metropolitan and nonmetropolitan areas did not differ significantly.

Virtually all of those surveyed rated family life as the most important factor leading to their satisfaction, and more than 90 percent reported satisfaction with their own family life. Also receiving plaudits from about three-fourths of metropolitan and rural Minnesotans were their state, their communities and neighborhoods, and their family housing.

More negative rankings were given to energy conservation efforts, noise levels in the metropolitan area, and the appearance of the natural environment, especially in the Twin Cities. However, the level of dissatis-

faction registered did not lower people's generally high opinion of the quality of life in the state, according to the survey.

A significant number of people — nearly half — reported dissatisfaction, however, with their family income level, their standard of living, and their current work situation.

Respondents were least satisfied with local taxes, the effective-

ness of their local government officials, and the safety of their property, especially in the metropolitan area. Property safety, in fact, was rated most important, next to family life, by Minnesotans all over the state.

"Information from this poll should be very useful to public policy planners since this is the first time residents have been asked to rate their state's quality of life," Gage said. Other rankings have been based on external factors such as the number of police officers available to each block and the type of cultural institutions in a particular area.

Both researchers felt that the most surprising findings will also be the most useful. For instance, Minnesotans — particularly those in rural areas — are significantly dissatisfied not with their own family housing situations, but with the housing supplies in their communities. "Maybe housing supply has been emphasized too exclusively

as an urban problem," Gage said.

Retail services and health care also were important concerns of rural people and should continue to be discussed by planners and citizens in rural and urban Minnesota, according to the researchers.

Gage said she found it interesting that quality of life was more clearly associated with the state as a whole than with smaller areas such as neighborhoods.

Gage and Stoeckeler also think it is significant that people from the Twin Cities and those from nonmetropolitan areas have similar viewpoints on many issues.

"Things here are as good as or better than they ever were," Gage said. "When a national poll shows us slipping from second to twelfth, that's probably only because other states have finally been getting on the stick."

TOM FOLEY



Geraldine Gage

Exceptions

Why Maurice Visscher Is Especially Special

Text by Mike Finley
Photo by Tom Foley

Editor's note: It is a commonplace in journalism that everyone who is ever featured in an article is always a special person. It is a nice rule of thumb, but it causes problems when, every few years, we find ourselves talking to someone more special than the usual special person. Thus our awkward epithet in the title.

1

Born in 1901, Maurice Visscher might be just another retired professor — *except* that he's a regents' professor (the University's highest faculty distinction), and *except* that he's never really retired.

Visscher first showed his face on campus in 1923, as a graduate student, and returned a few years later, in 1936, to head, at a tender age, the University's Department of Physiology. Fifty-plus years with one department sounds like the history of a man who loves security. *Except* that scarcely a day of that long period lapsed when Visscher wasn't fighting on one metaphorical battlefield or another.

A man with many friends, Maurice Visscher can take almost equal pride in the opponents he has taken on: everyone from obsolete educators and it-can't-be-done medical types to the House Un-American Activities Committee, the Vietnam War, and antivivisectionists.

With enemies like those, Visscher might be excused if he were possessed of a severe disposition. *Except* that he is a man of considerable humor.



Maurice Visscher

2

"At this juncture I am reminded of the definition of education which has been propounded by my friend Herbert Geigl, the philosopher. In describing contemporary education he says that it consists in the casting of artificial pearls before real swine. I have been told that the interest of the congressional House Un-American Activities Committee in the investigation of textbooks was aroused by a secret report that some teachers were instead throwing real pearls around.

"I cannot vouch for the accuracy of this story because such matters are strictly confidential and I was told it by the mother-in-law of a university president who said she heard it from her cleaning woman who is the wife of a janitor in the philosophy building who said he read it in the wastepaper he picked up from the office of a graduate student. However, it has the ring of truth about it."

from "Musings of a Physiologist," lecture by Maurice Visscher, 1949

3

The long and the short of it is that a revolution in medical knowledge has occurred in the past 50 years, and it is no accident that this period and Visscher's career have coincided. Open-heart surgery was an unthinkable pipe dream until students and colleagues of Visscher's developed the heart-lung machine.

The names of others of Visscher's students are like a *Who's Who* of 20th century medicine. Everyone knows one or two of these names, and to people in the medical professions, they are all bona fide superstars: Clarence Dennis, Richard Varco, Demetre Nicoloff, C. Walton Lillehei, K. Alvin Merendino, Herbert Warden, Lloyd MacLean, Vincent Gott, Morley Cohen, Norman Shumway, Christiaan Barnard, Gordon Moe, E. B. Brown, Jr., Francis Haddy, P. F. Pillsbury, Nathan Lifson, and Victor Lorber.

Of Visscher's work in cardiovascular physiology, and of the University's world leadership in heart surgery, fellow regents' professor emeritus Owen Wangenstein, a surgeon, said, "It simply wouldn't have transpired without him."

Marvin Bacaner, associate professor of physiology, said, "No question. I love the man. He is a giant."

4

So physiologists will not hesitate to state that Visscher's great accomplishment has been his studies of the transport of materials across membranes, especially the mucosa of the intestine. Charles Code once wrote that "armed with his isotopes, his optimism, his brains, and the help of his graduate students, he quickly demonstrated that the movement of water across the mucosa of the bowel was indeed in both directions. There is no area in his multifaceted career in which Visscher's virtuosity is more brilliantly displayed than in his studies of intestinal transport. He really was plowing new ground — all alone."

5

Cardiovascular people, on the other hand, are absolutely certain that it was his teaching and research in physiology that led directly to breakthroughs in the long-sought technology for artificially aerating blood and maintaining artificial circulation during surgery.

And if you think open-heart surgery is a glamorous but seldom-used surgical technique, think again. These days 300,000 heart valves are replaced every year. Thousands of congenital and acquired defects get patched up in this country every week. And the implantation of an ordinary pacemaker, once a clumsy procedure, is now routine and smooth. Millions of years have been added to all our lives.

6

"A few months ago," Visscher said in 1949, "I listened to one of the deputy surgeons general of the U.S. Public Health Service explain the underlying principles of the theory of crime and guilt. He told the story of a chemist in England who was hauled into court, charged with possession of a still. The chemist admitted possession of the still but he couldn't understand why it was illegal to have one. He was told that it was because of what he might do with the equipment in his possession. He then became very much concerned and said he was ready to plead guilty, but he also wanted to plead guilty to other crimes, in particular that of rape. He was asked whether he had actually committed rape. "No," he said, "but I have the equipment in my possession!"

7

Visscher's students heap praises at his feet, and Visscher has a few to heap right back.

"By and large," he said, "the grad students in surgery who came over to physiology were very highly motivated people, and fundamentally very intelligent people as well. I was lucky in this regard, because Owen Wangenstein, who was in charge of surgery then, didn't appoint fellows to come to me unless they were very good. At any given time he would have 100 or so fellows in surgery. With very few exceptions — Wangenstein could occasionally be soft-hearted, but it was not a habit of his — his appointments were superior."

front row. And third, just as McLaughlin entered with two white Russian wolfhounds, he turned down the lights for a slide show, rendering the dogs invisible.

When the darling child raced from his mother to Visscher, it was McLaughlin who looked hangdog.

9

The world has had its share of devoted scientists and its share of fine educators, and it has been replete, from time to time, with brave citizens. What it has had only a few times is all these things in one person. A defender of academic freedom and free speech, a pioneer in the food co-op movement, an internationalist both educationally and politically, and so on and so forth...

Interestingly enough, Maurice Visscher, whose contributions have helped revolutionize modern surgery, said he hasn't scrubbed for a surgical procedure since he was an obstetric clerk at Minneapolis General Hospital, where he delivered 50 or so babies back in the 1930s.

"I see no reason for wishing it any different," he said about this and about all of his career.

And anyway, the equipment was always in his possession.

8

At the core of Visscher's physiology-surgery curriculum, it must be mentioned, was work with live animals. One of the reasons American surgery wasn't going anywhere in particular was that it followed the British mode of learning primarily on human cadavers. Naturally, Visscher's practices attracted the hostility of antivivisectionists, among them Irene Castle McLaughlin, the celebrated dancer of the 1920s and 1930s. In debates, she had the vexatious custom of bringing a beautiful dog or two into the room with her. One night the debater she planned to vivisect was Visscher.

Visscher was equal to her wiles. First, he spoke primarily on how surgical advances stemming from work with animals had benefited children. Second, he had arranged for a colleague's wife to bounce her beautiful 4-year-old boy on her lap in the

You may think that people who give money to the University get a lot in return. And the University would like to think its sincere thanks makes the large gift worthwhile. But the fact is that the University can't name a building after everyone, and tax deductions only go so far.

So this column is for the unsung heroes and heroines who have helped Minnesota reach the fifth rank in voluntary support among American schools. What's more, giving, which accounts for almost a third of the University's total budget, more than kept pace with last year's high rate of inflation.

The people of Austria, as a bicentennial present, gave \$1 million to establish a center for Austrian studies at the University.

The Elsa U. Pardee Foundation provided a \$500,000 grant to endow a professorship in cancer biology.

Edith Potter Meyer gave more than \$400,000 toward the construction and maintenance of a conservatory at the University's Landscape Arboretum in Chaska.

Unsung Heroes

An anonymous donor gave \$350,000 to support scholarships for students in premedical studies at the University's Duluth campus.

A University professor established an anonymous trust in excess of \$200,000 to support scholarships.

And an alumnus, Dayton P. Kirkham, has left in his estate a grant of over \$150,000 for financial assistance to students in forestry.

Last but far from least were grants from the Bush Foundation (\$1 million), the Northwest Area Foundation (\$100,000), and the McKnight Foundation (\$330,000) to keep the minority medical scholarship and tutorial program going.

We will not even mention the \$13.4 million raised so far for the Humphrey Institute of Public Affairs. Altogether, the University of Minnesota received gifts during the last fiscal year totaling \$33,888,567, a very lucky number.

The Opinion Page

the minneapolis star

6A

Tues., June 6, 1978

Further cutbacks at 'U' will impair quality

By STEPHEN ALNES
The Star's Editorial Editor

The State We're In

Like most people who attended the University of Minnesota, I love it and hate it. I hate it for its size and indifference, for those long registration lines, huge classes, teaching assistants only marginally more advanced than their pupils, advisers who were never available, for not being able to get into required classes, for the whiff of condescension and elitism that hangs over all institutions of higher learning, for the annual buildup and inevitable letdown by the football team, for loneliness and frustration, and, in recent years, for the ever-larger bite it demanded of tax dollars.

But I regard it fondly as the place where I first felt the excitement of newspapering on the Minnesota Daily, where I played more bridge in three years than I have in the 29 years since, where friendships were formed that have lasted more than a quarter century, where I felt the first stirrings of what I would like to think was true intellectual curiosity.

I admire it for the education it can deliver if you can find the loading dock. I recognize it as an asset of immeasurable value to the Twin Cities and to the state. How dull we would be without the university!

It is the place where I met my wife. We were married in a chapel on campus. We always assumed our children would go to

the university, and they did. Three are now graduates and the fourth should make it in another year or so.

But for all the memories, I never contributed a dime. We paid taxes, I rationalized, and they supported the university. We and our children paid tuition and dormitory rent, and that supported the university. Contributions, I felt, are for private schools and they're made by rich people and neither circumstance applied to the university or me. All solicitations from the University of Minnesota Foundation have routinely gone into the wastebasket.

Except this year I sent a check. It was small and more symbolic than anything else. In the first place, voluntary sources account for only 6.5 percent of the university's budget. Voluntary contributions amounted to some \$27 million in one recent year. Our \$100 won't make much impression.

Why bother? Mostly, I suppose, because I have begun to sense that the budgetary restraints imposed upon the university in recent years are starting to hurt. I don't know that for sure, because there is no way of knowing how much money a university needs. It's a feeling and not a certainty.

But I think University President C. Peter Magrath means it when he says, "I've really tried to build this (budget) request on the assumption that the quality of the Uni-

versity of Minnesota's established programs is the key to this university and that in a period of real fiscal stress, we have got to have enough resources so that we don't erode quality. . . . Those aren't words. I really believe that. I think we're at the point that if we have to have further cutbacks, or can't get reasonable additional support, something is going to have to give and that something is going to be the quality."

Secondly, as a graduate of the journalism school, I have always been pleased to have that school rated at or near the top in the nation even though I didn't always see how it could deserve the rating.

It gratifies me that several other university schools or departments are also highly regarded throughout the country. It comes to me somewhat late in life that I would like to hear someone say "he has a master's from Minnesota" with the same reverence accorded a master's from Harvard. An outstanding university can only improve upon the quality of life in Minnesota and the Twin Cities. If I ever march down the street waving my forefingers in the air, it will be to celebrate the academic achievements of my university and not the prowess of its jocks.

The university, as Magrath says is a paradox. On the one hand, it's a huge public institution, with 45,000 students on its Twin Cities campuses, another 9,000 or so on its outstate campuses and maybe 25,000 more in evening and continuing education programs. "That's why we do have those damned long registration lines." On the other hand, says Magrath, it is also one of the nation's elite institutions of higher education.

And the test for Minnesota is whether it can sustain and improve the quality while continuing to serve such large chunks of the public. I'd like to bet that it can.

I achrymosity in the afternoon

Oh, God, the poor, frightened, blir horse! He has no part in this

UPDATE

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Mike Finley, editor
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Nudging the Pillars: What's a University To Do?

Plus Shakespeare Fever,
Grow Your Own Gas,
Fear of Drilling,
Minnesota Bluegrass,
Chicken Manure,
Acne,
And Other Interesting
Stuff,
Inside.

WHATEVER TO THE IVORY

by Mike Finley

It's hard to give up cherished notions. The ideas of a flat planet, or manifest destiny, or the soundness of the dollar are all comforting in one way or another, and it is with a certain reluctance that we let them fade into obsolescence.

So too with the ivory tower picture of higher education. Wouldn't it be great if colleges and universities actually were places high on hills, where devotion to history, literature, and science superceded the hectic pace of modern life?

That ivy languorously clinging to the walls of aging classroom buildings — what an incisive image for the quiet work of scholars, detached from the great fears, the hustle and bustle, the rat race! It almost says: Don't bother us with news of the world. We have ponderous matters, weighty questions, and impenetrable, ageless mysteries to get to the bottom of.

The problem is that it ain't that way at all. Universities are involved in ponderous matters, all right: what to do about the parking shortage, for instance. The University of Minnesota, in case no one's noticed, ceded its parking lots along the Mississippi River to the city of Minneapolis. The river flats are a nice stroll-through park now, but meanwhile students, faculty, and staff meander about the fringes of the campus like modern-day Odysseuses, looking for a place to stash their automobiles.

Weighty questions? Sure, such as what precisely to make of the Supreme Court's long-awaited Bakke decision. All year long, University administrators kept their fingers crossed, hoping that the court wouldn't toss the whole idea of affirmative action — which came to be known as "reverse discrimination" for a while by some people — into the constitutional wastebasket. Then this summer the decision came. At first glance, everyone seems to have won *and* lost.

"The decision, as we all know, is a very complicated one and is difficult to sort out," President Magrath said in August.

Vice President Stein predicted at that time that a host of nationwide lawsuits would finally determine how the decision will affect the University. At the moment, the Law School is the only unit that might be affected: in each incoming class, it sets aside up to 15 slots for which race might be one selection factor. Meantime, University officials, who were certain that affirmative action was a good way to redress generations-old injustices, can no longer be quite so certain.

In another court case, the University is trying to learn its rights regarding another controversial topic: faculty collective bargaining elections. The campuses have been the site of a great deal of union organizing of late. Naturally, this signals a change in the way the University relates to its faculty. The same thing is happening with the staff, a smallish army of nonfaculty personnel.

The University wants to reform some of its older regulations concerning faculty tenure, grievance procedures, and the like, but it doesn't know if it can do so without violating current collective bargaining guidelines. It's been five years since the University was last permitted to change some of these conditions, and meantime some conditions have truly needed changing.

Then there was the Park Plaza controversy. Back in July, the University was told it had the opportunity to purchase, for about \$3 million, the University Park Plaza office building in Prospect Park. At the mo-

HAPPENED TOWER?

ment, the University owns and occupies a diverse gaggle of structures near there, most of them administrative units. Buying Park Plaza would have meant getting all those administrators together under one roof: it might have meant less bureaucracy.

Unfortunately, it would also have meant millions of dollars taken off the Minneapolis tax rolls, an eventuality to which Mayor Al Hofstede and University regent David Lebedoff objected. Also, University money has been quite tight lately, so the deal fell through.

Speaking of money, it's biennial request time: time to ask the legislature for money for the next two years. It is a subject that is close to the hearts of millions of people in the state, especially because in this case it involves \$638 million. Like every previous request, this one is also a record high. It follows more than half a decade of belt-tightening, which in turn has been the cause of a great deal of controversy within the institution. This year, the administration approaches the state's representatives knowing that the budget is already hurting a lot of people — that any "padding" is long since gone — but still the administration has to be more than a little worried.

Why? Because something out in California by the name of Proposition 13, born of double-digit inflation, has shaken this so-called ivory tower on the Mississippi like a warning tremor. Everyone senses that a new era of taxation — with representation — is under way, and the University wants to adjust to *it* before *it* adjusts the University. Even the ivy is trembling.

Meanwhile, in the unravelable conundrums department, the University lost a court case defending its principle of autonomy. The case concerned architect selection — whether the University or the legislature has the right to make the choice — but it may eventually have far broader implications. It's tough to be an ivory tower without autonomy.

It's also tough to run an intercollegiate athletics program when the program seems to have one gun or another continually pointed at it. By now, everyone knows the story of how the best Gopher basketball season record of all time was erased by the National Collegiate Athletic Association because of policy violations that occurred the previous year. And now the University looks forward to another investigation — this time into alleged improper money transactions by the football program. It may be that the charges are trumped up, or there may be a basis for them. In any event, it means that administrators will have to talk more about football this year than they had planned.

And, finally, the impenetrable, ageless mysteries. Everyone knows that the baby boom is over — that there won't be enough student-age people in the future to fill our country's college classrooms. Right?

Well, this summer's second session fooled everyone: a record enrollment. Allegations that the University has been cloning new freshmen, it must be asserted, are without basis in fact. Still, it shows just how useful statistical projections can be, even when they seem to come down from heaven itself.

What's the point of all this? Well, people at the University are often reminded by friends how tough it is in the "real world."

With the ivory tower under all-out siege, the real world doesn't sound half bad.



These Oil Fields Don't Need Drilling



TOM FOLEY

by Mike Finley

"It's as if we were back in the Stone Age," Melvin Calvin says.

That's because Calvin is busy these days doing what Neanderthal man was busy doing — figuring out ways to domesticate wild plants.

Only Calvin isn't a cave man, or even an agronomist. Long after the most recent ice age, Calvin was involved in the Manhattan Project — the ultra-secret atomic research group that helped end World War II and begin the cold war.

And now he's working on something that may be bigger than that. He feels he's on the verge of developing, from a humble weed, a new cash crop that will render Mideast oil importation obsolete. A renewable, indigenous, and, for all practical purposes, infinite supply of petroleum — and it grows on scrub land!

Calvin, a University alumnus (Ph.D., 1935), head of Berkeley's

Laboratory of Chemical Biodynamics, and winner of the 1961 Nobel Prize in chemistry, has been experimenting with a poinsettia-like bush, which he said produces oil. Already, on a few small plots, he has reaped humankind's first crop of crude oil. The price? A commercially prohibitive but not completely discouraging \$20 a barrel. (Saudi Arabia's oil — the kind that comes out of the ground — sells at around \$10 a barrel.)

Calvin is said to be betting his Priestley Award, the American Chemical Society's highest honor, that he can double his yield in 1978 and cut the cost to match Saudi Arabia's.

If he's right, then his manipulation of a greasy weed will be more significant than what the Manhattan Project did. It will be a new lease on life for an industrial planet.

Poinsettia, p. 15

Crude Oil May Be the Biggest Crop Ever



Melvin Calvin

JEFF BEDDOW



by Nancy Johnston Hall

The embarrassment of ugly acne hits teens at a time when they're most insecure about their body image — a fact that may explain why decades of teens and their parents have willingly opened their purses to hundreds of products promising relief.

Many products offered little improvement, however, and some actually aggravated the condition. But now things are looking up for the teen with acne.

"Our treatment of acne is a lot more effective than in the past," said Robert Goltz, who heads the department of dermatology on the University's Twin Cities campus. "For the first time, we can assure people that we will be able to help them."

Goltz emphasized that no magical cure has been discovered and that some difficult cases are still resistant to treatment. But for most patients with an acne problem, low doses of antibiotics and new types of face medication can now provide real help.

Acne comes in two forms: non-inflammatory (blackheads and

New Research Puts Whole New Complexion on Acne

whiteheads) and inflammatory (papules, pustules, and cysts — in nonmedical terms, pimples).

Blackheads are now considered to be the primary lesions in acne. "If you don't have blackheads, you don't have acne," Goltz said. Blackheads are formed from inside the skin, not outside, and are black because of pigment, not dirt or makeup as commonly believed.

Many of the old standby over-the-counter medications that are hawked between records on teen radio stations do offer some help against blackheads — and their under-the-skin cousins, whiteheads — by causing the skin to inflame and peel. The strongest such medicines contain benzoyl peroxide.

A more potent skin peeler, vitamin A acid or retinoic acid, is available by prescription. It pre-

vents new blackheads from forming, but it is a strong irritant.

Studies several years ago showed that retinoic acid therapy was superior to benzoyl peroxide, but more recent animal research at Temple University indicated that retinoic acid heightens skin sensitivity to

sunlight, possibly increasing the risk of skin tumors. The Food and Drug Administration is keeping an eye on developments.

Inflammatory acne is now being treated with low doses of antibiotics (primarily tetracycline), which fight the bacteria found in inflamed lesions. The treatment is inexpensive and nearly free of side effects — except for allergic reactions — so most patients can take the medication for months or even years.

Cysts, the severe acne lesions that often hang on for months, can be treated with liquid nitrogen.

Many physicians no longer believe that diet is a significant factor in acne. A University of Minnesota study completed a decade ago showed no direct relationship between oil flow on the face and diets high in either sugar or fat. So a junk diet of

potato chips and greasy hamburgers, long believed to be a culprit in acne formation, has been exonerated.

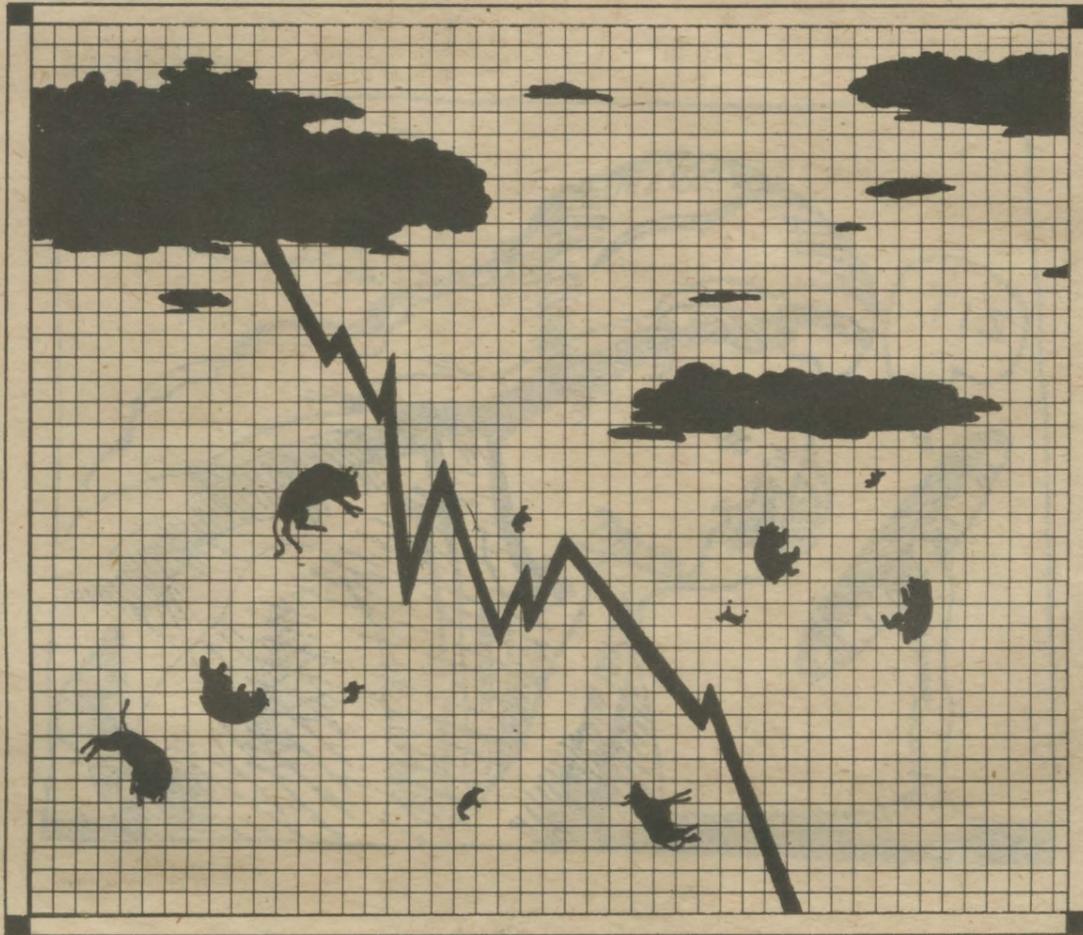
Acne also isn't caused by anger, constipation, poor washing habits, masturbation, or lack of sleep, as many once thought.

Nor can it any longer be called an inevitable scourge of adolescence that only time can heal.



TOM FOLEY

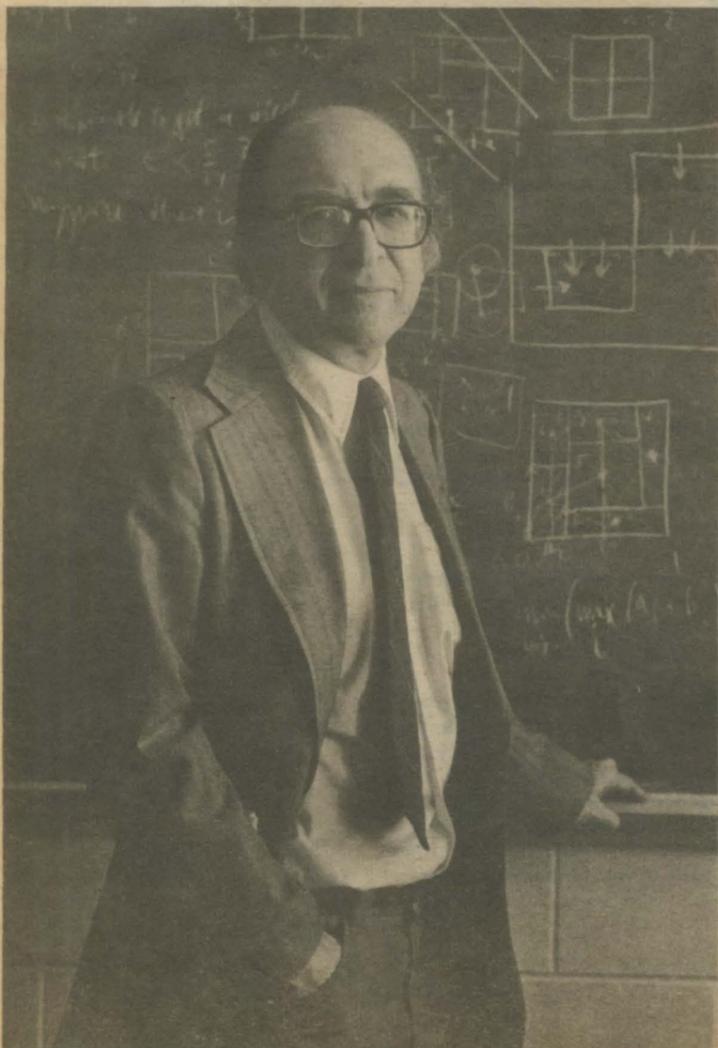
Robert Goltz



R. SCHOLLES

How Is the Economy Like the Weather?

TOM FOLEY



by Bill Hafling

"Heat wave tomorrow. Record temperatures expected," goes the weather forecast. Better not wear that wool pants suit or that thing with the llama fur vest. Not today.

"Economists predict record unemployment. Recession expected to last at least until fall," goes the economic forecast. Better not tell that turkey of a boss off and quit just now. A new job might be tough to find.

People rely heavily on the sciences of meteorology and economics to help them make decisions in their daily lives and often complain when forecasts do not come true.

Both sciences have come in for their share of jokes. Economics has long been known as the "dismal science" because it sometimes deals in such subjects as poverty, famine, waste, and unemployment, though its pri-

mary goal is to maximize human satisfactions from limited natural resources.

Regents' Professor of Economics Leonid Hurwicz of the Twin Cities campus, a former meteorologist, said in an interview that the two sciences have many fundamental elements in common other than their public images of imperfect attempts to foretell the future.

Hurwicz predicted that economics will become more useful and more accurate in its forecasts as economists continue to make use of the highly sophisticated tools of mathematics available today.

He said that the use of mathematical analysis for economic systems has significantly reduced the gap between economic theory and reality. "In the 1950s this gap was about 80 years. At present, I would estimate it at between 5 and 10 years," he said.

Economists actually do fairly well, for example, at predicting the gross national product and employment rates, but according to Hurwicz this isn't enough. "Customers for such data want to know how it affects them. A very small percentage error in predicting unemployment can

affect large numbers of people. It's like predicting rain: scattered thundershowers. You can't really predict where they will fall — on you or somewhere else.

"Just as in economic systems," Hurwicz said, "what happens in the atmosphere is both micro and macro — an aggregation of small factors develops to create large ones.

"One of the safest forecasts anyone can make is that tomorrow will be like today," he said. "A forecaster who does this will look very good in terms of the average 'hit' score. Of course, this simple-minded approach to forecasting either the weather or the economy isn't much good when a significant change, such as a cold front, starts coming in."

Meteorology uses all the tools and expertise of the basic science of physics, including laboratory experiments. It seems that this should make weather forecasting very precise. It is a simple matter to produce "snow" or "rain" in the laboratory, and once the same conditions occur in the atmosphere, the predicted results should follow. However, as Hurwicz pointed out, there are other forces — uncontrollable forces — at work in the real world.

Leonid Hurwicz

For One Thing, Everyone Talks About It

Indians in a White World

Sometimes a Word Is Like an Arrow

"We are forced at this point to go to statistical analysis to try to forecast what will happen," he said. "To relate a model to reality you have to interpose probabilities. You have to account for random components. Errors. Any statement in connection with reality has to be probabilistic: what is the chance that the predicted event will occur?"

"In economics," he said, "we're often confronted with policy decisions. For example, will a tax cut of a certain size at a certain time increase unemployment without contributing too greatly to increased inflation? The decision is made. Afterwards the argument continues. People say, 'It was going to happen anyway.' Others say, 'It would have been worse.' It pushes you to go beyond just forecasting. We want not only to understand the cause and effect relationships but to develop means to improve the system itself."

"Just the same, reality is such that the public demands the best we can humanly do. We're often in a position similar to that of medicine. At times, no one is asking for absolute proof that proposed remedies are going to work. They just say, 'Might it work? If so, give it to me!' Physicians, for example, often don't understand what causes an illness, but can still eliminate its effects or tone them down."

Hurwicz said that one area in which people think economics, as well as some of the other social sciences, differs from the so-called hard, or physical, sciences is that "economists argue according to their prejudices." For example, they might argue a business point of view versus that of labor.

"Of course physicists argue over such things as the relative safety of nuclear power plants, and biologists argue about genetic engineering," he said, predicting that "we will probably be seeing much less unanimity among scientists about conclusions than we did in the past."

As for disagreements among economists, Hurwicz said, "Ideology does not have as much influence as people think. Seemingly very diverse economists have many, many things in common. We have a common core of techniques for use in the analysis of economic phenomena, for example. At the level of analysis, as distinguished from policy recommendations, consensus is very great. Of course this still allows for disagreements on policy."

The day of the old, diverse economic schools of thought that did not understand one another

Forecasting, p. 14



A "letter" from a Mandan Indian to a white fur trader, circa 1830, translates: "I will give 30 beaver skins and a gun for the skins of the three animals on the right side of the cross."

they are real people living in a society they don't understand but are forced to be a part of.

"I want people to imagine Indians as human beings, not as units delegated and sorted by the social sciences," Vizenor said.

The names in many of the stories have been changed, but the people and the circumstances are real. In some cases, such as those of Minneapolis attorney Doug Hall and local Indian activist Ron Libertus, Vizenor uses real names.

To facilitate his writing in the third person, the author chose the name Clement Beaulieu for himself. Clement was his father's name, and Beaulieu was the family name of his paternal grandmother. Beaulieu, or Vizenor, is involved in many of the stories. "This was the beginning of radical expression among Indians, and I was there," he said.

The book includes the first account of some incidental experiences related to the South Dakota trial of Thomas White Hawk. White Hawk, an Indian, was convicted of murder and sentenced to death. His sentence was commuted to life imprisonment after many Indian and non-Indian people intervened. Vizenor was among them.

Wordarrows is Vizenor's 13th published book. His earlier works include poetry, children's stories, and collections of narratives on Minnesota Indians. His first novel, *Darkness in Saint Louis Bearheart*, will be published this fall. He is currently a member of the faculty at the University of California, Berkeley.

by Judy Vick

The major battles between American Indians and non-Indians did not end in 1891: the cultural word wars continue to this day.

These conflicts and the effects they have on the lives of Indian people are depicted in a new book, *Wordarrows: Indians and Whites in the New Fur Trade*, published by the University of Minnesota Press.

The author, Gerald Vizenor, of Anishinabe and French descent, is a member of the Minnesota Chippewa tribe, White Earth reservation.

"Most of Western civilization is not tribal, it is competitive. It is not a celebration of the earth, it is an exploitation of it. It is a separation from the earth," Vizenor said, explaining the "tribal view" he presents in the book.

TOM FOLEY



Gerald Vizenor

"The tribal view is a constant state of balancing between good and evil," he said. Vizenor said he prefers the term *tribal* to *Indian* because it "suggests a world view" and "emphasizes a collective and different consciousness." He added that it does not

have many of the negative connotations that the word *Indian* has.

In *Wordarrows* he presents "a cameo version of what every tribal person has had to experience."

Among the people presented are Rattling Hail, who refuses to accept the idea of white people providing "services" for him; Laurel Hole In The Day, who struggles between city life and life on the reservation; Marleen American Horse, whose ancestral home has been literally washed away by a government dam project; and Mother Earth Man, who is constantly surrounded by a cloud of flies and blond women.

The Indians revealed here are not idealized noble savages;

Shakespeare Fever...

by Maureen Smith

Readers of the popular magazine *People* are drawn to it because they like to read about interesting people and their loves, troubles, and struggles for power.

Thomas Clayton, professor of English on the Twin Cities campus, thinks those readers would do better to turn to Shakespeare.

The range of human experience and sympathy represented in Shakespeare's plays is so wide that almost anyone can find characters to identify with and situations that ring true to experience, Clayton said. "Shakespeare tells it like it is — like it was, like it is, and like it ever shall be."

People who are turned off by Shakespeare are mainly those who have never had an opportunity to be turned on by him, Clayton said — "either people who have had no exposure at all or people who have been dragged kicking and screaming to the local showing of *Julius Caesar* by their eighth grade English teacher."

The more exposure people have to Shakespeare, he said, the more likely they are to be attracted to him. "In England it's still the case that you see pretty substantial working-class representation at a production of Shakespeare, both in the theater and in the cinema."

Americans may dislike Shakespeare because "he is high culture and we are a bourgeois society," Clayton said. "In England there is no built-in reason to dislike Shakespeare, and Shakespeare is a national cultural hero. That's perhaps a reason in itself why he isn't here."

Clayton knows that not everybody likes Shakespeare. Last February when he gave a talk on Shakespeare for the Minnesota Forum (and surprised the audience by dressing in what he called "Elizabethan drag"), the title of his lecture — "What Is Shakespeare Good For?" — implied that there are those who would say Shakespeare is good for nothing in the 20th century.

But Clayton doesn't think Shakespeare needs to be humbly



Clayton *qua* Guildenstern



... Catch It!

or apologetically defended. "If you think Shakespeare can tell you nothing about meaninglessness or anxiety, atom bombs and the people of our own time, you are wrong.

"Shakespeare tells us exactly about modern humanity, because he tells us about humanity. Think of fallen kings and remember the present or recent day. Why begin with the argument that Shakespeare is relevant to the present day when the present day is, as it seems, not even relevant to us?"

Lost in translation

The language of the plays can present difficulties for modern readers, Clayton said. "Shakespeare's language is more unfamiliar now than it was two decades ago."

Modern translations of the Bible and changing liturgy in the churches have contributed to the loss of exposure to the language of Shakespeare's day, he said. He suggested a version of the 23rd Psalm: "The boss takes care of my sheep. I don't need nothing."

Some attempts have been made to translate Shakespeare into modern English, Clayton said. A translation of *Hamlet* by Tom Burnham is "not bad as translations go, but simply by comparing it with the original you get a pretty good idea of what gets lost in translation."

Not only is Shakespeare's language often remote because usage has changed, Clayton said, but also because it is a language of metaphor and nuance and a huge vocabulary that is "outside the range of our technologically oriented talk."

Much of the dialogue is also in verse — seen on the page but

usually not heard on the stage — and some readers are put off by verse, he said.

Yet Shakespeare's style is part of his power. The first words that Romeo and Juliet exchange with each other form a sonnet. No real-life lovers would spontaneously speak a sonnet, but the form underlines what Clayton called the deep "reciprocity of affection" that is love at first sight.

It is never too late to learn to like Shakespeare, Clayton said. The problem is that it "requires opportunities, and opportunities tend to close up behind one and also in front of one as one gets older, as one gets locked into cultural patterns."

Eloquent testimony

So what is Shakespeare good for? Clayton's answer is an eloquent testimony not only to Shakespeare's power but to the value of a liberal education.

"The sorts of things I say to undergraduates I tend genuinely to believe," he said. "I owe a great deal of what I know about human beings and human experience to literature in general and Shakespeare in particular."

Clayton said he continues to learn through a combination of rereading Shakespeare and gaining breadth and depth of experience as he grows older. "The same literary work I may have read for the first time 25 or 30 years ago is still enlightening me.

"What I tell students is that Shakespeare gives you a vicarious introduction to a wide range of human experience that prepares you for the world better than anything else I can think of. I do think that is true of Shakespeare in a way that is not true of any other writer," he said, although there are a few who come close. "Dante probably comes as near as anybody else."

Clayton doesn't believe every course in the University's curriculum should be directly useful or immediately relevant to students' lives. "That is, I don't believe a course in Shakespeare

ought to be a typing course in disguise. One of the effects of requiring papers is that it improves people's typing — which is a great thing in itself — but the function of a university is to do much more.

"I don't think anybody can read Shakespeare without understanding things better and therefore being able to get by somewhat better. But I don't think that's the only reason for reading him. That's a kind of fringe benefit.

"It's the old issue of the practical versus the applicable, the pertinent, the valuable. People ask, 'What can I do with my English major?' 'Well, you can teach.' 'What else can I do?' 'You can enjoy yourself while you're doing other things.' An English major does prepare you very well indirectly for a number of things."

One thing that interests Clayton in Shakespearean tragedies and in life is that people come to grief as often as a result of their virtues as they do as a result of their excesses. "There is a kind of disparity between the slot an individual occupies and the stature he brings to the occupying of it."

It isn't that the tragic heroes or their counterparts in life are saints, he said, but that the good in them can become one of the means by which they are destroyed.

John Kennedy, Robert Kennedy, and Martin Luther King are modern parallels to the Shakespearean heroes, he said. "In each case they had various orders of shortcoming — much played up in the press and probably exaggerated all out of proportion — but their shortcomings were certainly overridden by their virtues."

Saying something new

Clayton has received a Guggenheim Fellowship and is on sabbatical leave to write a book on Shakespearean tragedy, with special attention to "the relationship between individuality, society, and politics in different kinds of tragedy."

The book will not be addressed exclusively to Shakespeare specialists. Clayton's intended audience is the general educated reader.

"I think I do have some new things to say. I'm not undertaking a revolution in how Shakespeare is to be read. If I came out with wholly novel interpretations of many of the plays, I'd

have to suspect myself of having gone crazy. The general lines of reasonable interpretation have been pretty well established for at least 100 or 150 years.

"One approaches a subject like Shakespeare with considerable trepidation and all due humility. A number of considerable eminences have had very substantial and largely irrefutable things to say about Shakespeare that have become part of our experience and understanding of Shakespeare. I'm thinking of Samuel Johnson in particular, and Coleridge and Freud and others. In the company of such people as this, one approaches with caution."

Still, he said, the vantage point of 1978 is different from that of 1878, and no two people can ever read the same play in the same way. "I've been teaching Shakespeare for at least 18 years now. I've been reading Shakespeare for many more years than that. I have some conviction about him, some interest in him, some affection for Shakespearean drama that I would like to share with others."

The general rule, he said, is that "what is true is not new and what is new is not true."

"It's quite possible to be madly intelligent and quite wrong and to be stimulating. It's not enough — at least it's not enough for a teacher — to be stimulating and provocative. You have to be not only provocative but to a fairly substantial extent right."

"Why begin with the argument that Shakespeare is relevant to the present day when the present day is, as it seems, not even relevant to us?"



The Grass Is Green in Roseau County, Timothy Capital of the World

by Mike Finley

The golfer rears back, the hips swivel, the shoulders follow through, and the number one wood streaks through the air, misses the ball, and sends a four-inch-square divot about 40 yards down the fairway, just outside Swansea, in Wales.

At the same moment, a family of five in Hokkaido, Japan, sits down to a platter of steaming cheeseburgers.

The United States balance of trade swings ever so slightly back in our favor.

And Laddie Elling maintains a steady 55 miles per hour as he drives north on Highway 2 toward Roseau, Minnesota.

These events actually are related to one another. The common denominator in all of them is grass. Elling is a professor of agronomy and plant genetics on the University's Twin Cities campus. And Roseau, thanks

largely to Elling's driving back and forth from his office in St. Paul, is the timothy and bluegrass capital of the world.

"I have figured it all out," Elling said. "Since 1947 I have made more than 340 trips to Roseau County. It's a long drive. I have spent, altogether, 27 working months in my car, driving to and fro."

Back in 1947 it was clear that the northernmost counties of Minnesota, up along the Canadian border, were in dire economic straits. The problem was the weather — farmers had no guarantee that when they woke up each morning their crops wouldn't be wilted with frost.

As recently as 1976, Roseau County farms accounted for a

mere 600 acres of corn. Contrast that figure with the 118,000 acres of corn in southerly Steele County. No crops, of course, meant no money to speak of. Main Street a while back was a good place to get your car stuck in the mud.

Today that's all changed. Main Street is long since paved, along with a lot of other roads, and the rural landscape is dotted with gleaming new Quonset huts in which grass seed is stored.

For 12 years Elling worked in the area, trying out different kinds of forage crops — alfalfa and clovers. His work was made more difficult by the fact that in 1942 much of the area's farmland was drained to make way for a flax industry that never quite blossomed. The area had begun to get a reputation for its forage crops when, in 1959, a 12-pound sack of Kentucky bluegrass was planted by a local seed man.

Ordinarily, 12 pounds is enough for six acres, which should in

turn yield 200 to 400 pounds of seed. Somehow, though, the land yielded 2,500 pounds of seed. You could almost hear the eyebrows arching. Area farmers realized they were onto something.

Since then, Roseau farmers have taken to Kentucky bluegrass, timothy, and reed canary grass like ducks take to water.

In the process, they have learned to put up with the side effects of the industry. The stubble of each year's crop, for instance, has to be burned after harvesting. This means acres of fire and smoke, something of a nuisance in otherwise pollution-free Roseau County. But local people figure a day of smoke is better than haying to use noxious chemicals to achieve the same effect. And anything is better than getting your car stuck on Main Street.

"The big advantage of grass is that it enables farmers to diversify their crops," Elling said. "A grower can harvest 200 acres of bluegrass by July 4, another 200 of timothy by the beginning of August, and then another 200 acres of sunflowers or small grains in September. It spreads

TOM FOLEY



Bill Christianson and Laddie Elling out standing in their field

where the Twin Cities campus footballers frolic, sports an attractive coat of something called NK 200 fescue and Adelphi bluegrass that was grown in Roseau.

The story of Roseau's grass keeps reverberating. Besides making the bank accounts of local farmers bulge — and Roseau County is the most prosperous Minnesota county north of Highway 2 — it has had a significant effect on the statistics for United States agricultural exports — just about the only economic factor keeping the Mideast oil drain from making the dollar an abject laughingstock at the world's money exchanges.

the work load, reduces risks, and makes more efficient use of expensive farm equipment."

Elling said that 80 percent of the timothy seed goes to other countries, citing Holland, England, Belgium, Germany, Wales,

Denmark, and Japan as major importers.

Timothy, although it is grown for its seed in Roseau, is eventually sold in the form of baled grass, as forage food for sheep and cattle. The Japanese are especially interested in the timothy, Elling said. "Maybe they are tired of fish," he speculated.

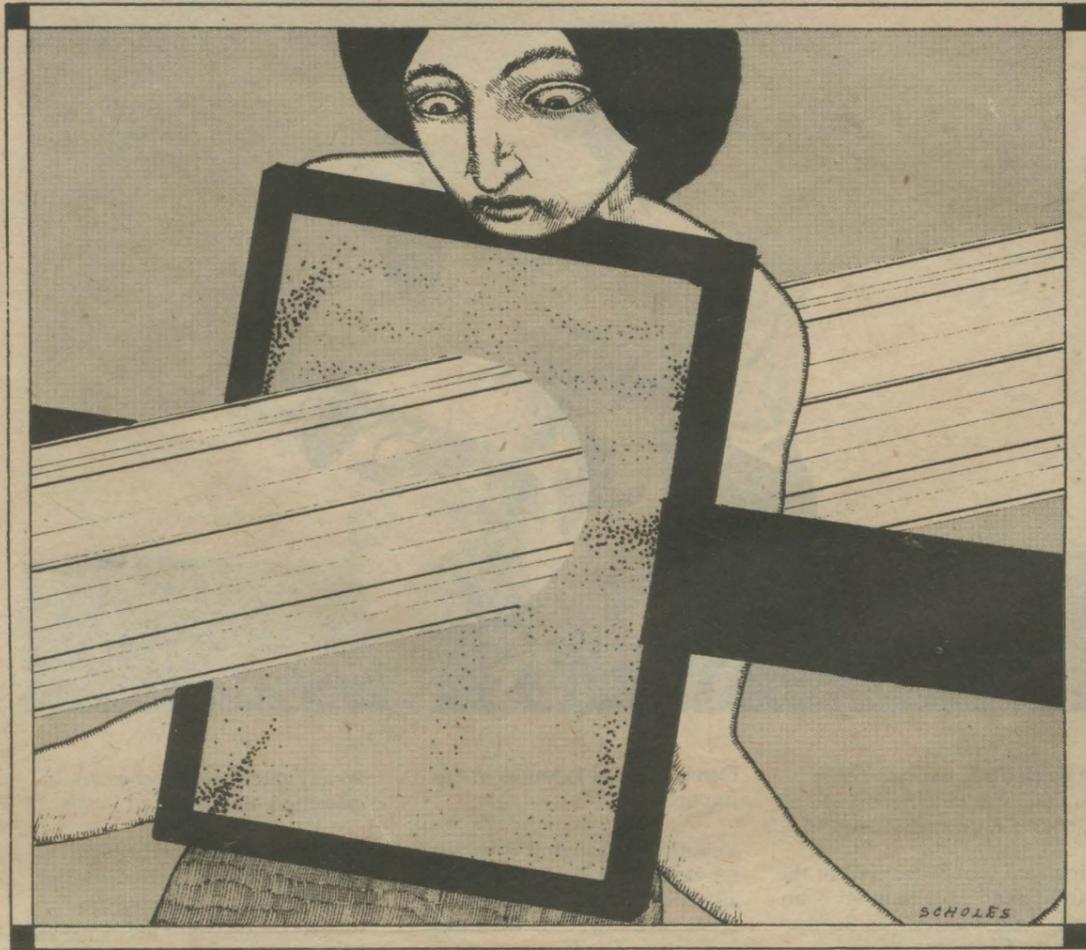
At any rate, beef ranches are increasingly important in Japan.

Bluegrass, on the other hand, is sold as seed and is used by sod farmers and for cemeteries, roadways, recreation areas, and golf courses. Memorial Stadium,

Everyone knows the story of the three little pigs and how only the house of brick could keep the wolf from the door. The people of Roseau know better, however. Sometimes the house of grass does quite nicely.



TOM FOLEY



R. SCHOLES

Mammography Putting the Risks in Perspective

by Terri Mandel

Mammography — radiography of the soft tissues of the breasts and surrounding tissues — is a diagnostic tool that has been the focus of a raging controversy in the medical community for the past five years.

Roentgen's announcement of his new X-ray procedure in 1896 was followed by many attempts at X-ray diagnosis of the breast. But the results were always erratic, usually because of the inferior quality of the radiographs.

As early as 1883 a well-known surgeon had said, "I do not doubt that cancer will one day be curable, but I do not believe that this will be procured through the surgeon's scalpel."

In 1898, however, a procedure for radical mastectomy was developed, and it achieved a 41 percent four-year survival rate. This was such an impressive im-

provement that interest in diagnostic methods decreased.

And so, aside from sporadic attempts at X-rays, radiography of the breast was largely abandoned until a study of mammography published in 1960 revitalized interest in the technique as a means of screening a large segment of the general population for breast cancer.

Breast cancer is the single largest cause of cancer deaths in women, and the death rate has not changed in many years. The average woman has a 7 percent chance of developing breast cancer in her lifetime.

A screening process that could detect a tumor in its early stages, when the survival rate is 50 percent better than it becomes once the lymph nodes are involved, was not to be ignored. In 1973 the National Cancer Institute set up 27 demonstration projects across the country, using mammography extensively as a screening device.

But in 1976 researchers began to suspect that mammography itself was causing cancer in young women by repeatedly exposing them to radiation. The medical community was highly divided on the issue, and the National Cancer Institute set up a task force to review the use of mammography and to weigh its benefits against the risks involved.

The task force concluded that mammography should not be used as a routine screening device in women younger than 50 because the risks are greater than the benefits. Another conclusion was that the amount of radiation used in mammography was too great and should be reduced to less than one rad per exposure.

Mammography today is still acknowledged to be an extremely useful diagnostic tool, but it is used only under certain circumstances. Victor Gilbertsen, director of the University's Cancer Detection Center on the Twin Cities campus, said that mammography is used on fewer than 10 percent of the women who come to the center to be tested for breast cancer.

He said that it is used on women whose physical examinations reveal nothing out of the ordinary but who are particularly vulnerable to breast cancer because they are over 50, have had cancer in one breast already, or have a mother or sister with breast cancer; on women with

massive breasts; and, to determine which lumps should be examined further by biopsy, on women who have many breast lumps.

There are a great many benign diseases of the breast. The most common is chronic cystic mastitis, which causes painful breast and palpatory nodules or cysts to appear in the first half of the menstrual cycle, abate suddenly with the onset of menstruation, and reappear at ovulation. In order to differentiate a cyst from a tumor, doctors often use a needle to drain the contents of the cyst, then fill the cyst with air and take a mammogram.

The difficulty involved in reading mammograms has been greatly reduced by the development of a new electrophotographic process called xeromammography.

Another key to successful mammograms is correct positioning, so that the entire breast is included in the X-ray. One or two exposures of each breast are taken from different angles. The

procedure is not painful and takes less than 15 minutes.

Laura Knight, a radiologist formerly in charge of mammography at University Hospitals, feels strongly that women should not fear mammography. They should, however, insist upon knowing the radiation level to which they will be subjected. If the radiologist is unwilling to give that information or if the dosage is greater than one rad, the procedure should be refused, Knight said. The University is using dosages as low as .5 to .7 rad per exposure.

As Gilbertsen said, "We don't have all the answers on mammography yet, but it is clear that the risks are far less than they were just a few years ago."

Mammography is not the complete answer it was once thought to be, but it can play an extremely valuable role in combating the cancer that is not only the one most feared by women but also the one that for them involves the most surgery, the most radiation therapy, the most chemotherapy and hormone therapy, and the most fatalities.



who heads the pediatric dentistry division.

Till believes that learning how to make patients psychologically comfortable is one of the most important lessons a dental student can learn. Educators, psychologists, and communicators on the dentistry faculty teach courses in behavioral and educational psychology and in interpersonal communication.

"Patients are in an ultradependent position when they're in the dental chair," said Q. T. Smith, who teaches the dental school's communication course. "They feel helpless and are afraid they won't be able to tell the dentist if they're feeling pain."

Smith's course, which was added to the curriculum five years ago at the request of students, is designed to help dental students understand and empathize with their patients. Students are given specific advice on how to put patients at ease. For example, Smith encourages students to show an honest personal interest in patients instead of a brusque "let's get down to business" attitude.

He also emphasizes that confidence is catching. "It's called the concept of modeling," Smith said. "If the doctor is self-assured, the patient will feel confident, too."

Patients have heightened awareness in a dental chair, he said. Any tension in the dentist's

voice, or even the slightest grimace on the dentist's face, can make the patient anxious.

The words a dentist chooses when talking to patients are also extremely important. "There is a dental instrument that is known as a hatchet," Till said. "But if you asked your assistant for the hatchet, the patient might jump out of the chair."

Till said a child should be told that a tooth is going to be put to sleep — never that he or she is going to get a shot. Other words — *pain*, *drill*, and *pull*, for example — produce anxiety even in adults.

Estimating the costs of procedures ahead of time is another way to reduce tension, according to both Till and Smith. "It's horrible to sit in the dental chair and wonder the whole time what in the world it is going to cost you," Till said.

As many dentists can attest, putting children at ease is a special challenge. "There are many more dentists afraid of children than vice versa," Till said.

Next page . . .

Dental Students Learn Peaceful Drillside Manner

by Nancy Johnston Hall

Going to the dentist is rarely a cheerful experience.

If people having semiannual checkups dread that the dentist will find cavities, imagine the terror in the mind of someone who hasn't seen a dentist for five years.

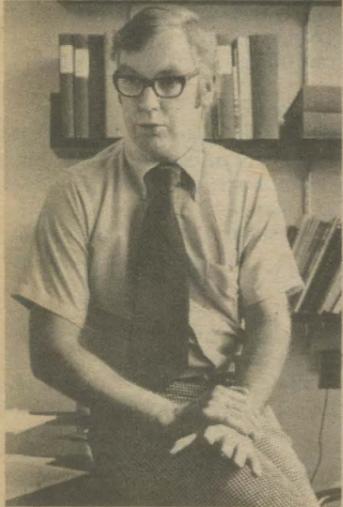
Dentists today use a variety of aids to make the experience as painless as possible. But the School of Dentistry at the University's Twin Cities campus believes dentists themselves can do a lot to diminish their patients' anxiety.

"When I went to dental school, dentistry was taught as a 'drill and fill' operation," one faculty dentist said.

In the past, little or no thought was given to teaching the communication and listening skills necessary for putting patients at ease, according to Michael Till,



Paul Walker and Nancy Rundell



Dentistry ...

Michael Till

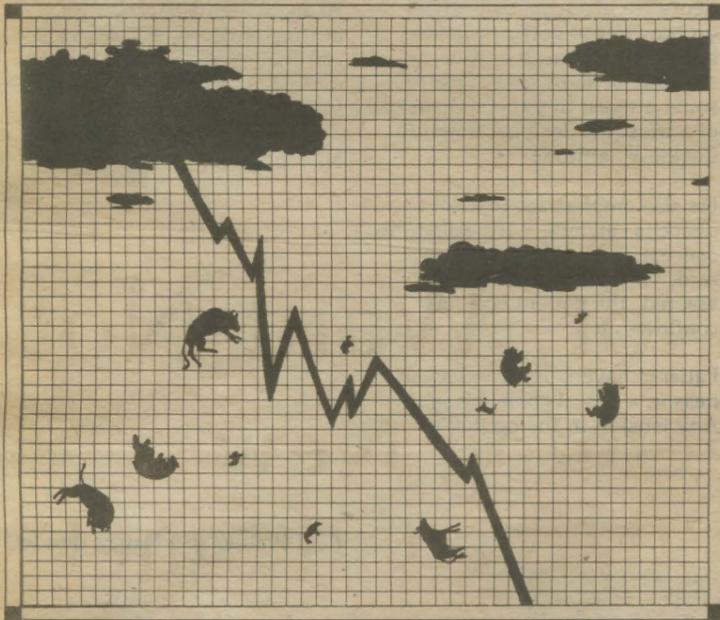
Children are sometimes afraid of dentists because of a bad experience in the past, Till said, but more often they learn fear from brothers, sisters, or parents.

"I've known parents who told their children, 'If you don't behave, I'll take you to the dentist,'" Till said. "You can imagine the problems those children's dentists are going to have."

Dentists rarely can talk patients out of their fears, Till said, but they can demonstrate that there is nothing to fear. A "tell, show, do" method works well with children, he said. First the dentist tells the child what is going

to be done. (The dentist doesn't ask the child's permission, because the child is likely to say no.) Then the dentist shows the young patient the dental equipment and explains how each part works. Only then should the dental work be started.

Nonverbal signals are as important as verbal communication in putting a child at ease. Till suggests that dentists develop the habit of sitting behind the child with one arm around the headrest in a cradling manner. A calm, relaxed, and affectionate attitude is invaluable, Till concluded.



Forecasting ...

has long since passed, according to Hurwicz. He said that even Soviet economists, who might be expected to use a Marxist economic model, instead use econometrics, just as they use Western electronic computers. "There is nothing Marxian about the way they analyze their own current economic problems nor in the way they work," he said.

Hurwicz said that economics, as a science, has continued to respond to criticism of its older,

simplistic theories by building into its models such aspects of the real world as "uncertainty, time structure, externalities, economies of scale, sensitivity to incentives, and monopolistic or manipulative behaviors."

"Economics as a discipline need not be apologetic for having encountered phenomena that are not satisfactorily explained in the light of earlier theories," he said. "After all, physicists and astronomers have just recently discovered new evidence contradicting the heretofore accepted theories of how and why the sun shines."

Hurwicz predicted that, in the future, economists would not be content with mere prediction, but would continue to "move

toward a creative and imaginative role in designing social mechanisms and institutions superior to those now existing."

It's time once again to call attention to some of the major gifts the University has received in recent months.

The largest was a \$1 million gift from the nation of Japan, earmarked for the new Hubert H. Humphrey Institute of Public Affairs. This gift is the largest the institute has received from a foreign government.

The Humphrey Institute has also received large gifts from two Minnesota corporations: \$50,000 from the General Mills Foundation and \$10,000 from the St. Paul Companies.

William Applebaum of Miami has given \$50,000 to establish the William C. and Cecilia K.

Unsung Heroes

Applebaum Endowed Scholarship and Student Loan Fund.

And Claire Gonska, a resident of New York City, left a bequest of more than \$400,000 to the University's Duluth campus to establish the John and Mary Gonska Cultural Fund in memory of her parents. The fund will be used to support various cultural events at UMD—music, drama, opera, and special convocations and lectures.

Sometimes people think that a substantial gift automatically means a statue on the campus mall. Would that this were possible; unfortunately, statues would soon outnumber students. What the University can do, however, is tender these unsung heroes its sincerest thanks.

R. SCHOLES



process by which green plants turn sunshine into food, usually a sugar. Some plants, he said, reduce the sugar until it contains no oxygen at all, just hydrocarbons. At this point, he said, the plant is manufacturing a kind of crude petroleum.

So far, Calvin figures he can get 10 barrels of oil per acre of the weed. At the moment, he feels it will be a decade before oil plantations start turning out the first commercial crude oil. Maybe sometime thereafter, his work will have put an end to the bitter queuing up at gas stations that was so common during the last oil boycott.

Calvin can look backward to the millions of years it took to make the fossil oils that are now finally running out. Or he can look forward to pulling up to — who knows? — Poinsettia Gas stations on our street corners.

Or, as he says he is already doing, he can look even farther into the future, to a time when he, or somebody else, can figure out how the little plant traps sunlight in the first place and turns it into oil.

"I know a good bit about how," he said, "but I don't know exactly how."

Poinsettia ...

The plant causing the uproar belongs to the genus *Euphorbia*. Minnesotans will be happy to learn that one of its many English names is "the gopher plant." Its leaves contain a milky mixture of hydrocarbons and water. One place where Calvin found the weed growing was on his Healdsburg ranch in northern California.

Calvin's Nobel Prize was for work in photosynthesis, the



Waste Not, Want Not Something New for the Bovine Gourmet

Crookston Library Under Way

The ground is broken for a new addition to the Learning Resources Center on the University's Crookston campus. It happened on August 22. Governor Perpich, Crookston provost Stanley Sahlstrom, and many special guests were on hand to give the new library a good start.

The expansion of current library facilities will provide better accessibility and a wider range of technical services in graphics and audiovisuals for UMC students, faculty, and people living around Crookston.



With global population soaring, agricultural scientists throughout the world are rushing to find ways to increase food production from the earth's limited land mass. And University scientists have demonstrated that one way to increase nature's efficiency is to recycle chicken manure.

Researchers at the Northwest Experiment Station in Crookston have shown that a combination of chicken manure and sunflower hulls — both byproducts of food production — feeds beef

cattle nearly as well as more expensive fare such as alfalfa.

In a study conducted by animal scientist G. D. Marx and agricultural engineer E. C. Miller, equal amounts (by weight) of chicken manure and sunflower hulls were mixed and ensiled in an oxygen-limiting structure. Following a three-week fermentation period, the mixture was fed to holstein steers. Control animals were fed alfalfa haylage. In addition, both groups were fed 10 pounds of ground barley per animal daily.

Animals that ate the chicken manure-sunflower hulls mixture gained 2.03 pounds daily, and those in the control group gained 2.29 pounds daily. Carcass quality of the two groups was the same, according to Marx.

Scientists found that the experimental mixture created no unusual unloading or feeding problems and that its odor was

similar to that of well-fermented and -preserved silage feeds.

"In the future, a greater number of animals will be fed poultry and cattle wastes," Marx said. "But caution must be exercised to insure that the manure is free from illegal compounds or drugs that could end up in meat or milk," Marx said.

UPDATE Correspondence

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A Far Cry

Regarding your article "The Easy Life Is Catching Up With Us," I have some criticisms.

The article states that the typical American eats 120 pounds of beef per year. This statement is totally incorrect. This 120-pound figure is commonly thrown around and is a misconception about consumption since this figure is actually carcass weight. Actually, the preliminary figure for 1977 from the USDA is 125.4 pounds on a carcass-weight basis. The similar figure for retail weight is 92.8 pounds. However, this is still not beef consumed. If we assumed that, of the retail beef sold, approximately 25 percent of it is still fat that will be trimmed away by the consumer along with the bone (and I'm sure no one eats beef bone), then the resulting figure is 69.6 pounds of beef. However, one must also consider an approximate 20 percent cooking loss. Thus, the actual amount of cooked product consumed is 55.68 pounds. This is a far cry from 120 pounds.

The article states that McDonald's all-beef patties are "full of fat." I hardly think that this is an accurate



Maurice Visscher

description. One recent article indicated that their regular patties are 18.5 percent fat and that the quarter pounders are 20 percent fat. Keep in mind that this is on a raw basis. Extension folder 382, "Amount of Fat and Cholesterol in Meat," indicates that about 44 percent of the fat in beef patties is lost during cooking. As you are probably aware, Minnesota rules and regulations for retail sale of ground beef have maximum fat contents for ground beef, lean ground beef, and extra lean ground beef of 30 percent, 22 percent, and 15 percent, respectively. Thus, I would submit that McDonald's all-beef patties are not "full of fat."

The article mentioned that Professor Luepker "has a long list of beefs against the livestock industry." These "beefs" were not specifically mentioned but I imagine they relate to fat, cholesterol content, etc.

In the article, the discussion of healthier menus suggested that chicken has less cholesterol than beef. According to Feeley et al., 1972 (*Journal of the American Dietetic Association*, 61:134), beef has a cholesterol content of 68 mg/100 g edible portion. Raw chicken, including flesh and skin, has a value of 81. Cooked chicken breast has a value of 84 mg/100 g edible portion and 79 for meat only, and the drumstick has a value of 91 for edible portion and 91 for meat only. The point is that beef does not have more cholesterol than chicken, and I think that this is a common misconception, not only of the public, but of medical doctors as well.

The extension folder demonstrates that meat varies considerably in fat content and points out that cholesterol is not associated with the fat content of meat (another common misconception among the public and medical doctors).

Low-fat beef has many merits (less fat and fewer calories, to name two), but beef with a higher fat content

also has merits. I believe that people eat the latter because they prefer the flavor of beef with a little higher fat content.

Richard J. Epley
Professor of Animal Science
and Extension Meat Specialist
Twin Cities Campus

Special!

I especially enjoyed your recent articles concerning the sinking of the *Edmund Fitzgerald*. They brought back many memories, since I was born and raised in Duluth and spent my summers working on ships like the *Edmund Fitzgerald*.

George Engstrom
Hagerstown, Md.

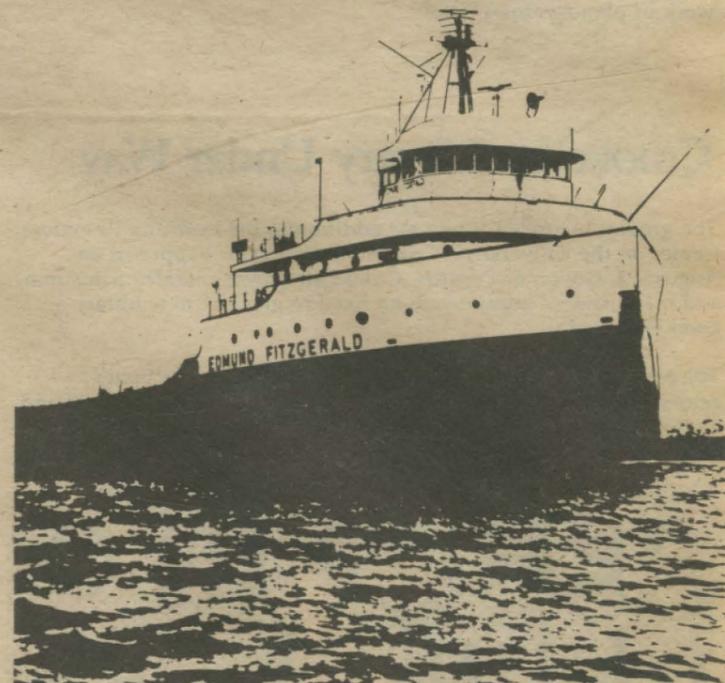
Excellent!

Fascination is the word which arises while reading your article "Ups and Downs in a Northern Port." Mr. Finley, hats off to you and your excellent staff.

Richard O. Wold
(A native Duluthian)
San Rafael, Calif.

Fantastic!

Thanks for bringing us a terrific paper with good editing and a good format — and great reading! During



the past few years my husband and I have moved three times, and each time **Update** goes with us. We've become exceedingly proud to be alumni along with all those fantastic people you write about. We love the paper!

Donna Salmon Gorski, '61

Also Great!

I have to thank you for the wonderful piece about my great friend Maurice Visscher. As a writing man, I think your writing is superb.

I am sorry you did not touch on one of Dr. Visscher's greatest contributions, which was in the field of medical economics, and which re-

flected a degree of courage few medical men possess. This was his defiance of the professional establishment in actively helping to establish the Group Health organizations. This did not result without some grievous confrontations.

It is possible that the influence of Gertrude Visscher had something to do with the kind of equal respect that exists between Group Health members and its professionals. She is a great person, too.

Frederick S. Gram
St. Paul

Enworded?

Mike Finley, you are great. Learning good things was never so enjoyable as having them enclosed (enworded?) in your inimitable style. As one who fancies good prose, I enjoy reading **Update** for more than one reason, the extra one being the fun I get from being educated so good-humoredly. If I could afford it (no way since I'm a middle-aged housewife with children still in college, etc.), I'd send a gift to the University, based on your description of what is being done there. Salud.

R. Jean Yourkowski, '47
Renton, Wash.

Mike Finley, editor of **Update** the past five years and author of several books of poetry, has left the University to work on the *Worthington*, Minnesota, *Daily Globe*. To all the readers and friends in and out of Minnesota — even the half million whose addresses are lost — he sends his thanks and warm wishes.