


WINDOW


CREIGHTON UNIVERSITY



FALL 1995



"I do not know the poor. I cannot be in solidarity with them unless I know them, talk to them and see their daily lives."



25 de Noviembre
DIA INTERNACIONAL DE LA
CONTRA LA MUJER

Mujer Y Violencia



Alumna Touched
by Dominican
Experience

Jesuits on the Moon?
Astronauts
Fly Over Them

"Vitamin Vic"
Heads the Cast
of Characters

The Social
Roots of Our
Environmental Plight

WINDOW

Volume 12/Number 1 ■ Creighton University ■ Fall 1995



Alumna Touched by Her Dominican Experience

Alumna Kaela Volkmer finds a special bond with the poor in her semester abroad in the Dominican Republic. Michael Flecky, S.J., follows her with his camera. Page 4

34 Jesuits on the Moon: An Astronomical Story

John Scott, S.J., tells us about the 34 Jesuits whose names are associated with the moon's features, and also informs us about the history of Jesuits in astronomy. Page 12



High on the Character List: 'Vitamin Vic' Revisited

Writer Bob Reilly recalls the life and times of Dr. Victor Levine, one of Creighton's more memorable characters. Page 16



An Environmental Predicament: What Are the Problems, Solutions?

Dr. Charles Harper tackles the social implications of the current environmental problems facing our world. Page 20



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Publisher: Creighton University; Rev. Michael G. Morrison, S.J., President; Michael E. Leighton, Vice President for University Relations. WINDOW staff: Jana M. Martin, Executive Editor; Robert U. Guthrie, Editor; Pamela A. Vaughn, Associate Editor. Editorial Advisors: Rev. Donald A. Doll, S.J.; Richard L. O'Brien, M.D., Allen B. Schlesinger, Ph.D., and David G. Schultenover, S.J.

Creighton University WINDOW (USPS728-070) is published quarterly in January, April, July, and October by Creighton University, 2500 California Plaza, Omaha, NE 68178-0001. Second class postage paid at Omaha, Nebraska, and additional entry points. Address all mail to Public Relations and Information, Omaha, NE 68178. Postmaster: Send change of address to Creighton University WINDOW, P.O. Box 3266, Omaha, NE 68103-0078.

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LETTERS

WINDOW Magazine edits Letters to the Editor, primarily to conform to space limitations. Personally signed letters are given preference for publication. Our FAX telephone number is: (402) 280-2549.

Meeting Society's Unmet Needs

Friends of mine gave me a copy of your summer issue of WINDOW because they knew I'd be interested in your article on women's religious life. They were right.

Please compliment Dr. Eileen Wirth on her treatment of "Women Religious of Today's World." As a member of a monastic contemplative order that is almost 400 years old but has recently moved into the inner city of Minneapolis to meet the spiritual needs of the poor, I heartily agree with Dr. Stevens' statement about religious life's task today: "meeting the unmet needs of society."

I appreciate the way Dr. Wirth allowed various religious to speak for themselves, and I thank you for providing the space that they needed to do so.

Since I facilitate a monthly women's group for those considering religious life in the St. Paul/Minneapolis area, I'm hoping that you could send me copies of your summer issue so that I could give the Wirth article to the women.

Again, thank you for your willingness to continue to educate your clientele on women's religious life. May all of our efforts bear fruit for the church of the 21st century!

Sr. Karen Mohan, VHM
Visitation Monastery of Minneapolis
Minneapolis, Minn.

Linn Article Overdue

Congratulations to WINDOW, Bob Reilly and those who responded to the excellent, overdue article on Father Henry Linn, S.J.

Father Linn was my dean, my exciting Latin teacher, my wise advisor and friend while at Creighton University, 1944-1948 included. His most valued advice to women students was to educate themselves to insure dignified

employment in the fields of medicine, social work and education. Having discovered my ineptitude in the "dissection of the dog fish," Father Linn guided me into elementary education, for which the medical profession and I are most grateful. In fact, all we women of Creighton University of the '40's are most grateful for his guidance!

We also await the dedication of something significant in his honor bearing his name at his beloved Creighton University.

I am confident of reading more marvelous articles by the talented, insightful, compassionate Bob Reilly. His Father Linn article was of such quality as to bring again into vivid focus those special memories of the great man's days at Creighton University.

Please keep that other great man, Bob Reilly, busy!

*Mary Ann Connor, BA'48
Omaha*

Creative Photography

My husband graduated Creighton University Medical School and my third Creighton student starts undergrad in the fall.

We've enjoyed the many publications through the years, especially the creative photography. Actually, Lea, my newest student, is quite the photographer herself. Thanks for the inspiration.

*Robert D. Pascotto, MD'66
Mrs. Joan M. Pascotto
Fort Myers, Fla.*

Retired 'Graduate'

Technically, I am not an alumnus of Creighton, but I did teach there from 1959 to 1984 and feel that I did "graduate" when I retired.

I have thoroughly enjoyed each issue of *WINDOW* I have received. Your (our?) magazine is an excellent publication in every way.

Please continue to send it to me.

*Laurie S. Robertson
Carlsbad, Calif.*

Too Slick

I want to compliment you on *WINDOW*. I read it from cover to cover usually the same day it arrives. Although I still dislike the slick appearance, knowing that that is very expensive and doesn't speak well of those pursuing the cause of peace and justice, I still like to read the articles.

Some of my favorites are Fr. (Don) Doll's photos, the various health care issues and new technology, the Holocaust, God in suffering, the remodeling of the suffocatingly hot halls of Deglman, travel stories. I read with joy anything about some of my idols in my days in Creighton (from late '40's to early '60's): stories about Fathers William Kelley, John Scott, Linn, Reinert, Deglman, Bishop, Ginsterblum, Smith, Flanagan, and pastors of St. John's, wonderful confessors, and interested priests.

There were great professors like Kennedy, a great librarian like Mary Hunt, and great dieticians whose names I never knew. My days at Creighton were truly growth-producing and lots of fun.

During my days there, many Sisters were spending their precious summers getting degrees at Creighton. Are there not some stories about these great ladies who took the message of Creighton to their own areas and made a difference in their school systems and community's hospitals? All we ever hear of them are names in the obituary column. Didn't the Sisters make any differences worth writing about?

*Sr. Irene Hartman, O.P., MSEdu'61
Larned, Kan.*

Dear Old Friends

I look forward to each issue. It is most informative to learn of alumni activities and world-wide reports. It is also entertaining to read great stories of dear old friends such as Fr. Linn and Fr. Deglman. Hope you can "dig up" more on such personalities as Fr. "King" Reilly, Fr. "Tiger Jim" Walsh, and Fr. "Butch" Noonan. I was so privileged to have known them all, and to have learned so much from them.

*Charles F. McManus, BS'41
Sedona, Ariz*

Cover to Cover

I always enjoy reading *WINDOW* cover to cover and have saved many of the copies. Especially enjoyable to me are Bob Reilly's articles.

Being a nursing graduate, a lot of the medical topics are very interesting, but our family now includes a lawyer, so we enjoy them all.

The Jesuits have been an influence on my life. May their work and influence continue.

*Mary Vanderheiden Chase, SJN'54
Joseph E. Chase
Omaha*

Dr. Jacks Was It

I graduated in '55 and was taught by Dr. Jacks, who in my estimation was the best teacher I had. However, Dr. Kennedy was a close second. Then there was Father Kelley, who had a wonderful sense of humor and I truly believe sympathized with all the Sisters coming out of classrooms and getting into another.

I've also sent students to Creighton. I read *WINDOW* all through! I loved Creighton.

*Sr. Mary Catherine Kelsey, S.C., MSEdu'55
Colorado Springs, Colo.*

Makes C.U. Top Shelf

WINDOW is truly one of the many things that make Creighton the top-shelf university that it is. The fact that the university has the confidence to back it and send it to alumni regardless of their contributions is an equally impressive feat.

*Patrick K. Porter, MS'90
Des Plaines, Ill.*

Brought Tears

I'm not ashamed to say that I cried when reading the article on Fr. Linn.

Bob Reilly really captured the essence of the man I loved and admired. He gave me my first part-time job at Creighton and I worked for him for many years.

*Delores Kirchofer
Omaha*

Dominican Women Teach Human Values

Alumna Finds Experience Touching

By Pamela Adams Vaughn





Photographs by Michael Flecky, S.J.

Candida Santana (left) and Kaela chat. The two became good friends while Kaela was in the Dominican Republic.

“As I embrace the world, like a cool breeze that envelops the earth, so must you embrace the world, the poor — with an open heart and gentle spirit.”

Last August, alumna Kaela Volkmer, BSW’94, returned to the Dominican Republic as a Study Abroad intern for Creighton University.

Having spent a semester in Santiago herself as a college junior, Volkmer, now assistant coordinator of the Children’s Crisis Center at Omaha’s Child Saving Institute, said she “knew well just how life-touching” the Study Abroad experience could be.

As an intern from August 1994 through May 1995, Volkmer’s job involved working with Program Director Tom Drexler to “facilitate an experience of life, study and service for Creighton students in a developing Latin American country.”

Her internship took her from planning and carrying out student retreats to

working for eight months with a women’s organizing group in one of Santiago’s poorest barrios, Los Ciruelitos. The group, named for Dominican poet and educator Salomé Ureña and part of a larger federation of 10 neighborhood women’s organizations (Coordinadora de Mujeres del Cibao), became the focus of much of Volkmer’s work.

“The Coordinadora unites itself with the general popular movement of the poor and marginalized,” Volkmer explains, “but stresses the importance of creating a society in which women are allowed the dignity to control their own lives and to participate equally and freely in their society.”

“This goal is achieved through popu-

lar education in the streets of the barrios in the form of workshops, meetings, speeches, marches, worship services and other events that organize and unify poor women.”

Her sojourn is captured here in her journal entries and in the photographs of Fr. Michael Flecky, S.J., who was the Arts and Sciences faculty member for the Study Abroad program in the spring semester.

Volkmer’s experience with the women’s group “was a time of great blessing ...” she says. “Once again, I learned the



“God calls us to feel the pain of the poor in the world — to feel the frustration, the injustice, the hopelessness, the hurt and the rage — then to see in the poor that essential part of humanity,”

value of building human relationships, of being connected and being present to others to the best of my ability.

“I was reminded of what it means to put people first, what it means to welcome a stranger ... to open up your life, your home and your heart to others. That is what these women did for me ...

“The strength of their spirit continues to astound me.

“When I reflect on the poverty, injustice, inequality and violence that these women struggle against daily ... I am

On the anniversary of the women’s group, chairs were set up in the middle of the dirt street in Los Ciruelitos, and people of the community — mostly women — came.

simply amazed at their ability to overcome the darkness.”

Theirs is a darkness bred, in part, by cultural uprooting, Fr. Flecky believes, as agrarian families, driven by poverty to the city, find their skills of little value. To feed and clothe their children, the women will accept the low-paying factory jobs that their husbands shun. Often in the Free Trade Zones, these jobs center in multi-national companies, including U.S. businesses, which exploit them.

“Our Western lifestyle, our consumption, depend on this exploitation,” Fr. Flecky says.

In the barrio, among the poor, he says, the results of exploitation are painfully evident. But the people are struggling to change all this. Fr. Flecky finds there “a growing sense of solidarity, an attempt to reform the family, to

bring together the young and the old, to remember their connection to the land, to take responsibility for improving the living conditions, to speak out for justice.”

In this way, the people in the barrio attempt to reclaim or replace what they’ve lost in their urban world — “the time to talk to each other, the extended families, the ties to the land.”

The selected journal entries of Kaela Volkmer in the Dominican Republic

Sunday, August 28, 1994
Today I prayed in the chapel. As I closed my eyes and felt the breeze blow across my face and cool my skin,

I felt so at peace and what came to me was, "As I embrace the world, like a cool breeze that envelops the earth, so must you embrace the world, the poor — with an open heart and gentle spirit."

I thought about how enormous is God's love and how Jesus must have felt when he knew that he was to help bring the Reign of God — or to help people recognize that it is already here — it is alive! This is what as human persons we are called to do.

Monday, August 29

I do not know the poor. I cannot be in solidarity with them unless I know them, talk to them and see their daily lives. I pray that working with the women's group will give me this wonderful opportunity ...

God calls us to feel the pain of the poor in the world — to feel the frustration, the injustice, the hopelessness, the hurt and the rage — then to see in the poor that essential part of humanity, that way of living and being that only they possess.

Then, after feeling the pain, the dying (Death itself!) — comes the resurrection — the hope, the joy of new life and new creations. The two can-

not be separated ... It truly is in the dying that we experience the resurrection.

Sunday, September 18

I pray that I will live a life of solidarity with the poor of our world — that I will engage in the struggle no matter where it leads me. I was reminded of a passage in Mev Puleo's book, *The Struggle is One*: "When you live the gospel and opt for the poor, there is no fear because your belief and trust in

God and in the cause of the poor is so great." I want that. I want a life that somehow contributes to the liberation of the world.

I know nothing of poverty, of solidarity, of oppression as the oppressed. That disturbs me. That is where God is — with the poor. Where am I?? How do I live a life in communion with the gospel?

Wednesday, October 5

Today I went with Dilenia to a com-



Posters call attention to "Día de la no violencia en contra de la mujer" — a day of no violence against women.

"I do not know the poor. I cannot be in solidarity with them unless I know them, talk to them and see their daily lives. I pray that working with the women's group will give me this wonderful opportunity ..."

"I went to Los Ciruelitos and did the puppet show with the kids today. It was so wonderful! I just can't get over how excited the kids got over little paper bag puppets — you'd have thought I brought them the world the way they responded to those things."

munity called Los Guandules. ... No water source, school for the children or medical facility for the sick ...

I noticed that the dilapidated little house next to the club in which we were meeting had a contraption that brought the rainwater from the dirty, dusty tin roof into the house as a water source, and Dilenia was saying, "No somos animales; somos seres humanos" — "We are not animals; we are human beings."

That spirit of struggle is so alive among the poor — people whose faith for all practical purposes should have long ago been decimated by sharp, cutting reality — are instead somehow miraculously filled with hope, and life, and passion. It really uplifted and humbled me to be with those women.

Saturday, October 22

Today I went to a march in Hato Mayor to protest the murder of an 18-year-old "jovencita" in that community as well as to protest all forms of violence against women. Organized by the women of the barrio, many women's groups from surrounding communities came to "toca la cam-



Paper bag puppets are used in a show about the importance of brushing teeth.

pana," to add their voices to the message that the violence must stop.

We walked the pot-holed, trash-filled streets of the barrio carrying signs, singing and praying together. As we progressed, I felt myself getting caught up in the cause, but then we reached the house where the young woman was killed. People began crying hysterically and shouting out in pain. My heart stood still as I realized how very real and how very sad the situation really is. It is much more than a "cause" to believe in.

Sunday, January 29, 1995

People don't choose to be poor for awhile and then go back to living a "normal" life. One of the most difficult things about poverty is the fact that one is stuck in it and really does not have other options — I have to be very careful not to kid myself about what it is that I am doing.

Tuesday, February 7

To truly be of service, to be a servant, one has to freely and humbly give of oneself out of simple love for the other. It is giving of oneself for the purpose

of deepening the bond that we share as human persons — and this enriches and beautifies the world. Serving involves the letting go of one's self to let others in. It is finding out what people's needs and hurts are and then using our special gifts in whatever way we can to somehow heal that hurt. It is being humble enough to allow the other to teach us the things that we do not know through their gifts. And this is hard for those of us who think that service is something we do for other people.

Today was a good day. I had class this morning and then this afternoon I went to Los Ciruelitos to give my "charlita" on Dengue Fever. It went really well!

People just came to life as they began talking with each other about the problems in their barrio — the rotting trash, the gaping holes in the streets that fill with stagnant, black water. It was so incredible to see ... people come alive and take control — to plan, to organize, to do something. They decided to send a group down to the ayudamiento (a public works office) to discuss the problem. I can't wait to hear about what happens! I feel so good that I helped to provide a little spark that set people off to deal with a community problem. I'm feeling more a part of things there. Today was a big step in my relationship with the women. I could see them looking at me in a different way.

Tuesday, March 14

I went to Los Ciruelitos today. We didn't have a meeting. A few of us gathered at Candida's house and we spent the afternoon just talking. Dilenia kept telling me how happy she is with my work — which made me so

happy because it has taken so long — almost seven months — to get to this point where I truly am a "compañera." (They call me compañera Kaela now instead of the "gringa" or "americana" — which I never really minded.)

The really exciting thing about this afternoon, in addition to the wonderful feeling of belonging that to this point I have never felt like I did today, is that Dilenia shared a dream of hers with me.

She talked about breaking the cycle and the stereotypes early. Involve girls in activities outside the home, explore their interests and encourage them to develop their gifts. Dilenia asked if I wanted to be a part of this and I got so excited — to be a part of the message that girls don't have to be without voice, without a face — that they can be proud of their womanhood and know that they are worthy of dignity and respect. I would love to be involved in that kind of work. But, then, I realized that I am leaving here in two short months and I started to feel a deep sadness.

Saturday, March 18

I went to Los Ciruelitos and did the puppet show with the kids today. It was so wonderful! I just can't get over how excited the kids got over little paper bag puppets — you'd have thought I brought them the world the

way they responded to those things. But then kids in the barrio really don't have much to entertain them — old wheels, sticks, tin cans and broken pieces of glass and other pieces of garbage become their toys. So I guess the paper bag puppets were pretty special after all.

The puppet show, about "the importance of brushing our teeth," seemed to be a great success — everyone wanted to participate and I think they may have even learned something, too!

Monday, April 24

Today is the anniversary of the women's group. Fr. Flecky and I went to Los Ciruelitos this evening to photograph the event. We set up chairs right there on the dirt in the middle of the street and people of the community came (mostly women and children) to hear the speaker.

A doctor from Santiago came and



Los Ciruelitos children look at photos of community members and events.

"What I like about the way the women's group goes about education is that they bring the information into the barrio. The information becomes accessible, easy to grasp and therefore easy to utilize and incorporate into everyday life."



Kaela chats with children in Los Ciruelitos.

"I feel so very blessed and privileged to have shared in el grupo Salome Ureña. I don't think they'll ever know how very much they gave me."

talked about basic preventative health care, infant care and good nutrition. And I really think that people "heard" him. What I like about the way the women's group goes about education is that they bring the information into the barrio. The information becomes accessible, easy to grasp and therefore easy to utilize and incorporate into everyday life.

Monday, May 15

Saying goodbye is so very hard, especially when you feel like you were just starting to get to the heart of things. I remember saying goodbye to the women of Hato Mayor — it hurt so much — and it hurts all that much more now that I have had the opportunity to spend two semesters with the women rather than one. A big part of me wants to stay, to continue working and learning ... but I know that I can't.

The women gave me a wooden mug on which they signed all their names as a recuerdo. Candida gave me a key-chain and a Padre Nuestro porcelain especially from her. That made me cry.

She has been such a special friend to me. She reached out right away when everyone else was still unsure of me. I have come to admire and respect her so much. I'll miss her smiling eyes and her joyful laugh. As I go, I carry all of them in my heart, but especially my friend Candida. I thank God for each of them and I dearly hope that they understood my Spanish when I told them how grateful I am for having known them — I am a better, stronger person for it.

I feel so very blessed and privileged to have shared in el grupo Salome Ureña. I don't think they'll ever know how very much they gave me.

New Creighton Enterprise Walks in Friar's Steps

The Dominican friar Antonio de Montesinos, a Spanish missionary sent to the island of Hispaniola (part of which would later become the Dominican Republic), looked around him at the treatment of the native people in this first wave of the Conquest; he was outraged.

He took to his pulpit in Santo Domingo on the following Sunday, just before Christmas in 1511, and began his sermon: "In order to make your sins against the Indians known to you I have come up on this pulpit. I who am a voice of Christ crying in the wilderness of this island, and therefore it behooves you to listen, not with careless attention, but with all your heart and senses..."

"This voice says that you are in mortal sin, that you live and die in it, for the cruelty and tyranny you use in dealing with these innocent people.

"Tell me by what right or justice do you keep these Indians in such a cruel and horrible servitude?

"On what authority have you waged a detestable war against these people, who dwelt quietly and peacefully on their own land?..."

"Have they not rational souls? Are you not bound to love them as you love yourselves?..."

"Be certain that, in such a state as this, you can no more be saved than the Moors or Turks."

The colonists were furious, and they sought an apology from Montesinos. Thinking they had coerced him into silence, they returned to church on the following Sunday.

But the Dominican friar berated them again.

Soon Montesinos would be expelled from the island and sent back to Spain.

But the spirit of his words remained. Today, Montesinos is remembered as the first voice in the struggle for justice in the New World.

It is no coincidence, in inaugurating its Montesinos Center for the Study of the Dominican Republic, that Creighton University should incorporate the friar's name.

"In a sense, we take Montesinos as a patron, a foreigner who

respected the native people and their culture and sought to support them," said Dr. Robert Heaney, who was named director of the center this summer.

In this spirit, Dr. Heaney hopes to help build the Creighton resource as the "premiere North American center" for the study of the Dominican Republic.

"For anybody with a serious, scholarly interest in the Dominican Republic, we'd like them to discover what they need at Creighton," Dr. Heaney said.

The John A. Creighton University Professor and internationally-recognized osteoporosis researcher envisions this scholarly focus to include the island's people, culture, history, politics, literature, art and ecology.

Among the new center's resources and services, Dr. Heaney envisions:

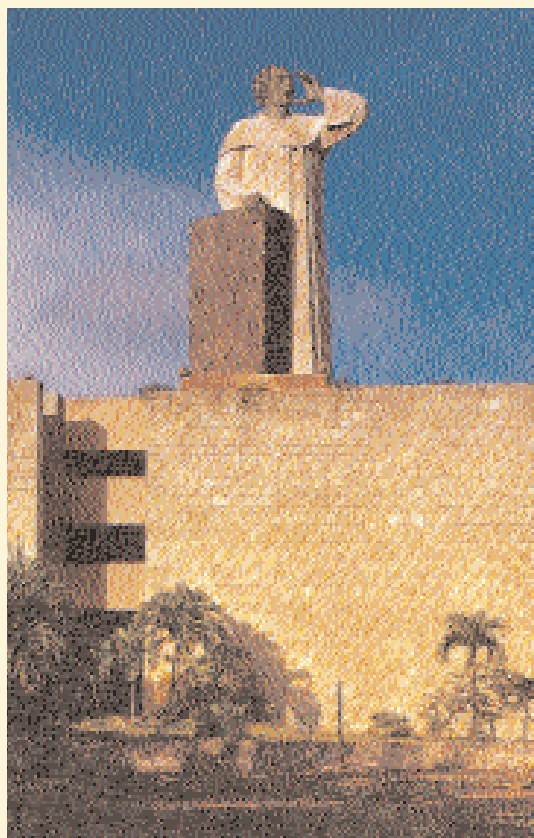
- an extensive collection of library holdings and related materials;
- small grants and other incentive programs to encourage research and scholarship;
- course development;
- public, all-University lectures, films and concerts;
- conference reports and monographs;
- an annual or biennial conference for scholars, and
- coordination with the service and formation program of the Institute for Latin American Concern (ILAC).

Dr. Heaney sees the new center enhancing Creighton's mission in

many ways. "It reinforces our ILAC program, making it stronger, giving it a scholarly depth." He views the new center as a third component of Creighton's presence in the Dominican Republic, a presence that includes not only the health care focus of ILAC, but also the Semester Abroad program for undergraduate students in the Colleges of Arts and Sciences and Business Administration.

The center "also fits our mission as an institution of higher learning," Dr. Heaney added. "After all, the generation of new knowledge is part of the responsibility of a university."

The new Montesinos Center for the Study of the Dominican Republic is set for a formal inaugural in spring 1996. **W**



This huge statue in Santo Domingo was erected as a memorial to friar Montesinos.



34 JESUITS 'ON THE MOON'

By John M. Scott, S.J.

The next time you look up at the moon, remember that you are looking at the “home” of 34 Jesuits. Their names have been given to craters on the moon.

When our astronauts were in orbit around the moon, they used Jesuit names in describing the rough terrain beneath them.

Who were these men, and what did they do to merit this honor?

Thanks to Fr. Joseph MacDonnell, S.J., of Fairfield University, I can share the following information with you.

All the Jesuits, whose names are on

moon maps, taught and wrote books on astronomy, physics and mathematics, and many of these books are still extant. During the first two centuries of Jesuit history there were 631 Jesuit authors of geometry books alone!

Moon Maps

At the entrance to the Smithsonian’s moon exhibit is a large copy of one of the earliest (1651) selenographs or moon maps. This map is taken from *Almagestum Novum*, a book authored by Jesuit astronomers Jean-Baptiste Riccioli and Francesco Grimaldi. Across the top

is written: “Neither do men inhabit the moon nor do souls migrate there.” It is the best known of all selenographs, having been used by most scholars of lunar nomenclature for three centuries.

During these centuries astronomers took turns naming and renaming craters, a process that resulted in conflicting lunar maps.

In 1922 the International Astronomical Union (IAU) was formed. It codified all lunar objects, and 34 of the 39 Jesuit names survived to be listed in the National Air and Space Museum (NASM) catalog, which identifies about 1,600 points on the moon’s surface.

Additional Jesuit names are still being added to the list by the IAU.

It would be a mistake to think the Jesuit names are on selenographs only because other Jesuits put them there. Their inclusion was, rather, the result of a convergence of astronomers' opinions over three centuries. Selenographers before and after Riccioli confirmed the decisions again and again that these Jesuits deserved the honor.

This is not surprising.

Recent histories emphasize the enormous influence Jesuits had not only on mathematics but on the other developing sciences such as astronomy. Historians of science always listed a surprisingly large number of Jesuits among the greatest scientists and mathematicians of all time.

Jesuits, at the cutting edge of the sciences, by 1773 operated 30 of the world's 130 observatories.

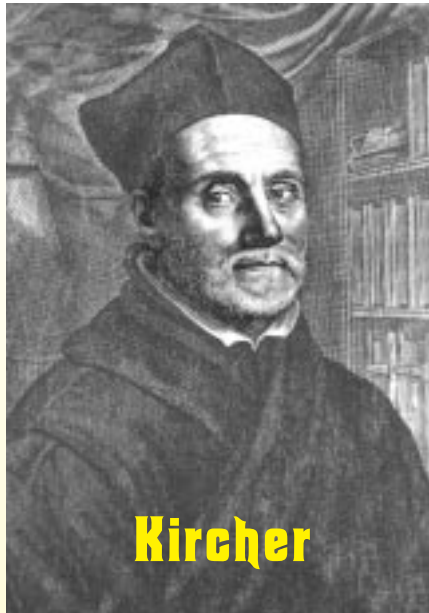
Our Men on the Moon

It is fascinating to consider briefly some of the Jesuits whose names are on moon maps.

First and foremost is Christopher Clavius, for whom one of the moon's largest craters is named. When Galileo, with the help of his "cannocchiale" or "telescopio," discovered the phases of Venus, the "three-bodied" appearance of Saturn, and the mountains of the moon, Clavius verified these phenomena and praised Galileo for his discoveries.

Galileo was delighted and expressed his joy with Clavius' compliments, "as much appreciated as it was desired and little expected," bringing him "such testimony to the truth" of his observations. In fact Galileo was sick in bed when he received Clavius' letter and claimed that the letter brought him so much joy, it occasioned his immediate recovery. Galileo knew the impact that Clavius' opinions had on the learned world, and wrote: "All the experts, especially the Jesuit fathers, agree with me, as everybody will soon know."

Christopher Grienberger, Clavius' successor, verified Galileo's discovery of the four moons of Jupiter, then later in 1611 organized a convocation honoring Galileo. At this gathering of cardinals,



princes and scholars, the students of Clavius and Grienberger expounded Galileo's discoveries, to the delight of Galileo. The Jesuits said that if Galileo had heeded their advice and proposed his teachings as hypotheses, he could have written on any subject he wished, including the rotation of the earth. (Instead, Galileo alienated the church by proposing his ideas as truth.)

Francesco Grimaldi, also a Jesuit, discovered diffraction and anticipated the invention of the diffraction grating. He was one of the earliest physicists to suggest that light was wave-like in nature. He formulated a geometrical basis for a wave theory of light. His treatise attracted Isaac Newton to the study of optics.

Grimaldi was also the first to publish verification of Galileo's discovery for free-fall depending on the square of the time, and first to consider the effect on free-fall resulting from air resistance.

Another Jesuit, Christopher Scheiner, discovered sunspots independently of Galileo, but erroneously thought they were small planets. But he correctly explained the elliptical form of the sun near the horizon as the effect of refraction.

Magic Lantern and Egyptian Hieroglyphics

The late Cecil B. De Mille was the main speaker at a Communion breakfast held at Loyola University, Los Angeles,

March 11, 1956. De Mille said, "We who have been in the motion picture industry for 40 to 50 years sometimes think of ourselves as pioneers - but the real pioneer of motion pictures was a Jesuit, Athanasius Kircher, who invented the magic lantern in the middle of the 17th century.

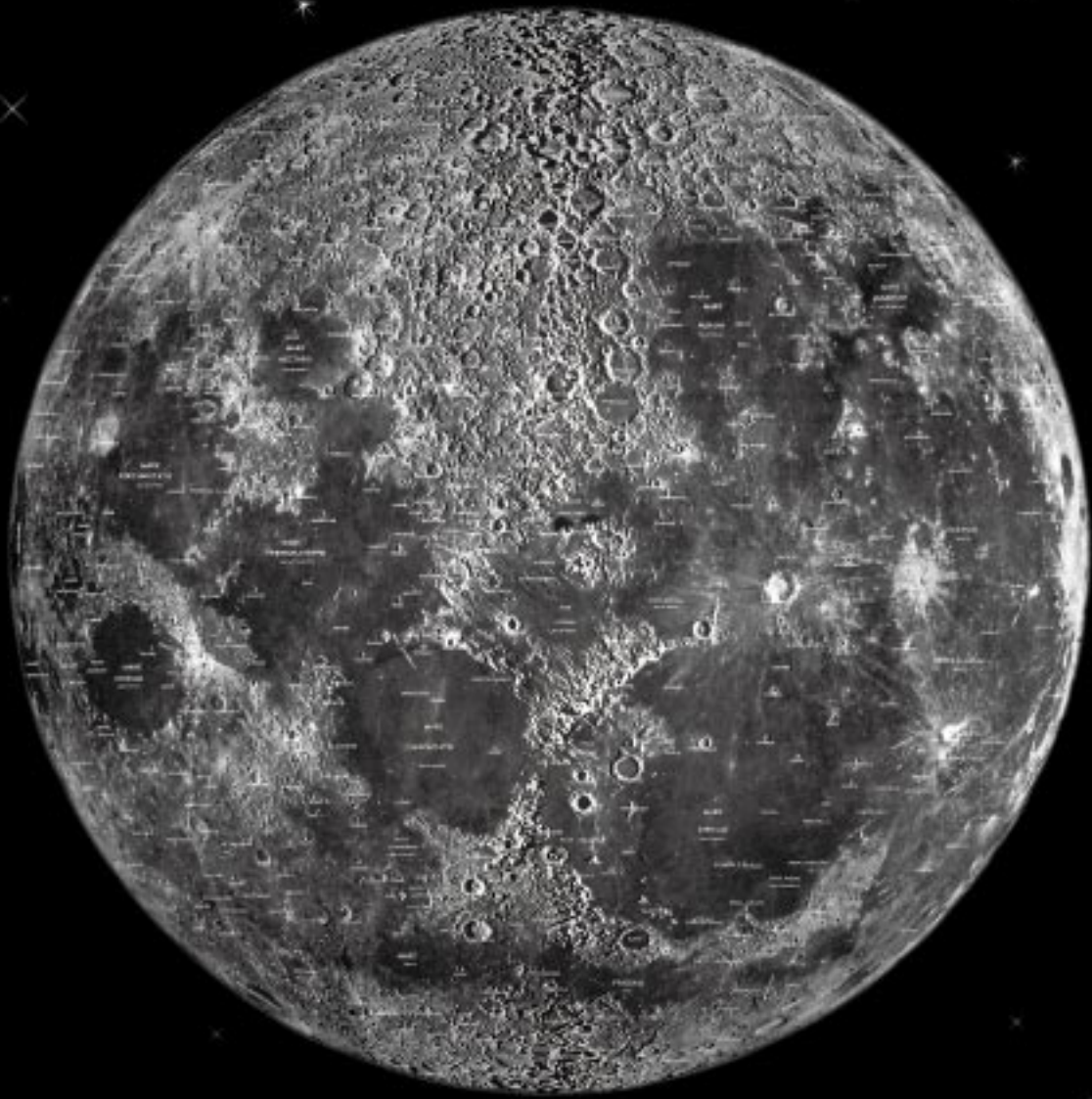
"It is interesting," De Mille continued, "to note that the same Fr. Kircher was the first European scholar to call attention to the importance of Egyptian hieroglyphics."

Kircher's interest in interpreting obelisks led him to such a thorough study of the subject that princes, popes and cardinals appointed him to decipher various obelisks. It was not until the discovery of the Rosetta stone in 1799 that anyone else had any success. In fact it was because of Kircher's work that scientists knew what to look for when interpreting the Rosetta stone. Kircher has been called the real founder of Egyptology.

Because of his widespread interest and genius Kircher has been compared to Leonardo da Vinci. His first publication concerned magnetism; he emphasized the parallel between the forces of gravity and magnetism. Then he wrote of sundials and in 1656 on the bubonic plague. In the latter he attributes the plague to tiny animals which he had observed under a microscope. This is one of the earliest hints of what we today call "germ theory."

In his book, *Arce Noe* (Amsterdam 1675), Kircher makes it clear that he understands the evolutionary process; later biologists have been impressed by this remarkably progressive viewpoint.

Present at the violent eruption of Mount Etna in 1630, Kircher had himself lowered into the cone for closer observation. It was good preparation for his two-volume work, *Mundus subterraneus*, (Amsterdam, 1665), probably the first printed work on geophysics and vulcanology. In it he held that many of the phenomena on earth including the formation of minerals were due to the fact that there was fire under the terra firma, an unusual teaching for those days.



1. Mario Bettini, *Italian, 1582 -1657, math/astr*
2. Jacques de Billy, *French, 1602-1679, math/phys*
3. Giuseppe Biancani, *Italian, 1566-1624, math/astr*
4. Roger J. Boscovich, *Croatian, 1711-1787, math/phys*
5. Nicolas Cabej, *Italian, 1586-1650, phys/astr*
6. Christopher Clavius, *German, 1538-1612, math/phys*
7. Jean-Baptiste Cysat, *Swiss, 1588-1657, math/phys*
8. Francois de Vico, *French, 1805-1848, astr*
9. Gyula Fenyi, *Hungarian, 1845-1927, astr*
10. George Fournier, *French, 1595-1652, math*
11. Francesco Grimaldi, *Italian, 1613-1663, phys*
12. Chris. Grienberger, *Swiss, 1564-1636, astr*
13. Johann Hagen, *Austrian, 1847-1930, astr*
14. Maximilian Hell, *Hungarian, 1720-1792, phys/astr*
15. Athanasius Kircher, *German, 1602-1680, science*
16. Francis X. Kugler, *German, 1862-1929, hist/math*
17. Charles Malapert, *French, 1580-1630, math/phil*
18. Christian Mayer, *German, 1719-1783, astr/math*
19. Paul McNally, *American, 1890-1955, astr*
20. Theodore Moretus, *Belgian, 1601-1667, math*
21. Denis Petau, *French, 1583-1652, hist/astr*
22. Jean-Bap. Riccioli, *Italian, 1598-1671, selenography*
23. Matteo Ricci, *Italian, 1552-1610, math/geog*
24. Rodes, *Hungarian, 1881-1939, astr*
25. Romana, *Spanish, astr*
26. Christophe Scheiner, *German, 1575-1650, math/phys*
27. George Schoenberger, *German, 1597-1645, math/astr*
28. Ange Secchi, *Italian, 1818-1878, astrophys*
29. Hughues Semple, *Scottish, 1596-1654, math*
30. Gerolamo Sirsalis, *Italian, 1584-1654, selenography*
31. Andre Tacquet, *Belgian, 1612-1660, math*
32. Adam Tannerus, *Austrian, 1572-1632, math/theol*
33. Nicolas Zucchi, *Italian, 1586-1670, math/astr*
34. Jean-Baptiste Zupi, *Italian, 1590-1650, astr*

For three centuries a science museum founded by Kircher (perhaps one of the first of its kind in the world) survived in Rome. Recently the scientific items of this museum were divided up and spread throughout three Roman museums.

In his book, *Jesuite Geometers*, Fr. MacDonnell gives us this interesting account: "As a youngster Kircher had three near-death experiences. While swimming in a forbidden pond he was swept under a mill wheel; later inadvertently he was pushed from an onlooking crowd into the path of race horses, and finally he suffered a gangrenous leg from a skating accident. The last cured suddenly after he prayed to the Blessed Virgin and it occurred to young Kircher that he was receiving a great deal of divine protection and he did not forget these signs. In 1661 he found the remains of an ancient Marian church built by Constantine on the spot of St. Eustace's vision. He restored the place as a shrine and visited it often. When he died, his heart was buried there according to his last request. It is rather remarkable that this brilliant geometer and encyclopedist, called the father of geology and of Egyptology, founder of the first public museum and skilled in so many other branches of knowledge, should reveal such simple piety. Kircher deserves the title given him, 'Master of a Hundred Arts.'"

Reflecting Telescope

The reflecting telescope was invented by Nicolas Zucchi in 1606 who brought it to Johannes Kepler as a gift from the Society of Jesus at the urging of another Jesuit, Paul Guldin. Kepler was so thrilled with it that he dedicated his last book to Guldin.

Achromatic Telescope

The achromatic telescope was invented by Jesuit Roger Boscovich. He did not suffer fools gladly. When shown the treasures of the Jesuit school at Sens in France, that included a rib of the prophet Isaiah, he told the rector to throw it away in the interest of truth.



Boscovich developed the first coherent description of an atomic theory - one of the great attempts to explain the universe in a single idea. His influence on modern atomic physics is undoubted and his works are kept as the Boscovich Archives in the Bancroft Library of Rare Books at the University of California, Berkeley.

The Most Well-Known European Name in China

The *Encyclopedia Britannica* called the Jesuit Scientist Fr. Matteo Ricci "the most well-known European name in China until recent times." Fr. Ricci's arrival in China in 1583 marked the beginning of the Catholic missions there. After working in various provinces he finally settled in Peking in 1601, where, under the protection of the emperor Wan-li, he remained until his death.

His success was due to his complete adaptation to the culture, as well as to his personal qualities and abilities. Recognized as an authority in mathematics and science, he disseminated geometry by lecturing, writing, publishing maps and making scientific instruments. He introduced trigonometric and astronomical instruments and translated the first six books of Euclid into Chinese.

Fix That Clock!

For 20 years Ricci had tried to reach the emperor in person, but the emperor

was a recluse not accustomed to seeing even his own people. For a time suspicious landlords would drive Ricci and his companions from their dwellings, until they hit on the plan of renting houses that locals considered to be haunted. Then no one bothered them.

Unexpectedly the emperor summoned Ricci and his companions to inquire about a ringing clock brought to him by the Jesuits. His own scientists had failed to fix it when it stopped. Since the emperor could not receive these foreigners in person, he had an artist draw full length portraits of them, so that they could have a vicarious interview with him.

Eclipse of the Sun

Another opportunity for the Jesuits in China was occasioned by an eclipse of the sun: The prediction of the expected time and duration made by the emperor's own Chinese astronomers differed considerably from the Jesuit prediction. When the latter prediction proved correct, the place of the Jesuit mathematicians was secure.

It is curious that the Jesuits taught the Chinese the heliocentric theory, unaware that Galileo's trial had taken place. So, at the very moment Galileo was being accused of heresy in Rome, the Jesuits in China were teaching the same heliocentric message that they had learned from their Jesuit colleagues before they had left Rome. There was a good five-year lag in communications.

The China Mission

The influence of the China mission was spectacular, and included such projects as determining the Russo-Chinese border. These stories are told in tapestries and paintings found in the world of art, and world histories include references to this mission. Europe was thrilled at the venture.

Louis XIV was so enthusiastic about the work of this mission that at his own expense he equipped a Jesuit group of "Royal Mathematicians" with the latest scientific instruments and paid their passage to Peking. **W**

'VITAMIN VIC' REVISITED

Dr. Levine Heads Creighton's Cast of Characters

By Bob Reilly

Creighton had its share of eccentric personalities, each one a rich source of parody. Those Jesuits with the friendly epithets — “Butch” and “Daffy Dan” and “Friar Tuck.” The ROTC commandant who drank too much, the history professors who shared an office but not a single political view, and the incomparable Duce Belford, wryly observing an unkind universe, where both budget and players were too short.

Dr. Victor Levine, who once held the University's chair of biochemistry, should be counted among the aberrant elite. After all, a man who can wear eskimo clothing to class, inhabit an office where even rats wouldn't nest, and surprise medical students with chunks of “frozen urine,” can't be considered part of the conservative norm.

Dr. Levine was unique. His teaching style was spontaneous, his personal life a blend of loneliness and adventure, and his impact on his profession a lasting one.

Born in Minsk, the capital of Belorussia, in 1891 to a middle class Jewish family, Victor Emanuel Levin (the final “e” was added later) entered a nation in ferment. A great famine ravaged central Russia. The political situation was volatile, and a man named Nikolai Lenin had just reached maturity. Minsk was a major industrial and scientific center. Its population was better than a third Jewish until Hitler's murderous regime virtually erased their presence. Also born in 1891 was Sergei Prokofiev, and both Boris Pasternak and dancer Waslaw Nijinsky were just a year old. Dostoyevsky was gone, but Tolstoy and Chekhov continued to write, and Tchaikovsky was working on *Symphonie Pathetique*, which was performed posthumously. The year the Levins departed Russia — 1898, when Victor was seven— the Social Democratic Workers Party was formed in their home town.



Dr. Victor Levine

The emigrants arrived in a country engaged in a war with Spain and settled into the melting pot streets of New York. Victor attended public grade school, Townsend Harris High School, and, in 1909, received his B.A. degree from City College of New York. This was the same year Robert Peary and Matthew Henson reached the North Pole. Two years later Levine earned an M.A. in organic chemistry from Columbia University— as Amundsen conquered the South Pole — and, in 1914, Victor became one of the first people in the United States to receive his Ph.D. in biochemistry, also at Columbia. The next four years, the young Dr. Levine taught at Columbia and

Fordham, and directed chemical laboratories at Beth Israel Hospital and for the City of New York.

In 1918, at the age of 27, Victor arrived in Omaha as an assistant professor of biological chemistry at the Creighton University School of Medicine. The Civil War was on in Russia and, in the United States, a flu epidemic was to claim over half a million lives.

Dr. Levine spent 41 years at Creighton. He watched the enrollment at Creighton's medical school grow, its faculty more than double, and the tuition rise from a few hundred dollars to several thousand. He served under six deans and nine university presidents. In 1921, he became chairman of the department of biochemistry and, the following years, reflecting his own interest and convictions, the department became “Biochemistry and Nutrition.” By the time he retired to emeritus status in 1959, it was titled “Biological Chemistry and Nutrition.” Today, these subjects and others are included as part of Biomedical Sciences.

Victor Levine's career, however, is measured as much by anecdotes as by accomplishments. He became something of a

legend, with a generation of physicians repeating stories, often with variations.

Creighton's medical school history, for example, reports on Dr. Levine's writing on the blackboard, continuing rapidly on the walls, which were blackened by soot from the nearby trains, and even resorting to the floor when space ran out.

"There were no overhead projectors then," explains Dr. John Sheehan, whose Creighton teaching assignments ranged from biology to pathology. "Vic would reproduce enormous detail, wearing out the chalk."

Dr. Richard Egan, dean of the medical school from 1959 to 1970, was a student of Dr. Levine's and recalls his blackboard antics this way.

"Prior to an exam," says Egan, "Dr. Levine, displaying an incredible memory, would list all of the biochemical formulae we freshmen needed to know, doing so with blinding speed, and using whatever surface was available. We couldn't stay up with him, of course, but he forced us to burn the midnight oil trying to recapture this information."

Another former student, Dr. Clarence S. Moran, adds this paragraph about Dr. Levine in *A Century of Teaching and Healing*:

"He was a very peculiar character. He was short...and I suppose you'd call him a little vain; most of us are. He was starting to show his age a little. To compensate for his height, he wore shoes with high heels. And for his gray hair, he'd use hair dye."

No fashion plate, Dr. Levine favored cellophane collars long past their vogue, and many students recall the hair dye — some remember it as red, some purple — streaking down his neck and staining his collar.

The image of his cluttered office is also a solid memory. Papers cascaded off his desk to the floor, where bookmarked volumes were stacked. Artifacts were everywhere, and magazines and journals and newspapers. It looked like a storage bin had exploded.

Those few who visited his room at the now-defunct Fontenelle Hotel report a similar dysfunctional decor. It was the residence of a bachelor who had more important things on his mind. His work was his life.

Dr. Wayne Ryan, founder and CEO of Streck Laboratories in Omaha, was one of Dr. Levine's graduate students and later a colleague.

"He hung around the lab all the time," says Ryan. "And he might keep us there until seven or eight at night."

Victor Levine didn't seem to have much time for recreation, for sports or entertainment. Did he ever even date, I wondered? There is no clear answer to that query.

"Occasionally," reveals Ryan, "he would be picked up after work by this tall blonde. She drove his Fleetwood Cadillac. I remember this because she was 6 inches taller than Vic and his head would barely be visible above the door. She'd take him to

the Fontenelle and drop him off. She never went inside."

Besides the students, who were very fond of Dr. Levine, he had his faculty friends. No one was closer to him than Dr. Nicholas Dietz Jr., who worked with Dr. Levine in biological chemistry for more than a quarter of a century. They were a strange pair. Dr. Dietz earned the sobriquet of "Meticulous Nicholas," and was as organized as Dr. Levine was disorganized. Gentle and extremely religious, Dr. Dietz could be nettled by the more iconoclastic Dr. Levine, but they functioned well as a team. Despite any differences they may have had, Dietz wrote a touching memorial to his chairman, and was always the essence of loyalty.

Dr. Levine would do things that the more circumspect Dietz would never attempt.

Vic would, for example, bring a vial of urine to class, explaining to students that, before the advent of more scientific methods of testing for diabetes, physicians would dip a finger into the specimen and taste it. Dr. Levine proceeded to



Dr. Levine joins popular WOW-TV personality Martha Bohlsen in this 1949 show called "Creighton University Presents." The topic was "Eating to Keep Healthy." Such educational programs were produced every two weeks.

demonstrate, much to the discomfort of the students. Then he would tell them:

"This demonstration was to test your powers of observation. None of you noticed that I dipped in one finger, but licked another."

(Could this anecdote have been the basis for the scene in the Hollywood movie, *Gross Anatomy*?)

More stories emerge from a luncheon with Dr. Richard Andrews and Dr. Matthew Severin, both of them Levine students. They talk about his casual attitude toward money.

"He used his checks as bookmarks," states Dr. Severin. "Royalty checks, his university paychecks. He also owned property. The tenant of one of these houses at 56th and Blondo

faithfully paid his rent every month, but Vic would rarely cash them. He drove bookkeepers and bankers crazy.”

That reminds Dr. Andrews of another absent-minded professor story.

“One day John Sheehan delivered Vic to his hotel,” says Dr. Andrews,” but he had taken his shoes off in the car and left them there, shuffling shoeless up the steps of the Fontenelle. Sheehan had to phone a bellboy to come and collect the shoes.”

Dr. Levine kept busy, combining teaching and public lecturing with toxicology work for the Omaha Police Department, and a remarkable amount of publishing. Colleague Dietz catalogs this work:

“His 200 publications, or an average of four per year for 50 years, encompassed an amazingly wide science spectrum: biochemistry, nutrition, bacteriology, public health, military medicine, pediatrics, dentistry, anthropology, genetics, forensic medicine, polar science, science history. They included many review articles (water - and fat - soluble vitamins — which brought him the affectionate appellation of ‘Vitamin Vic,’ and food deficiencies, food and acid-base equilibrium, diet in health and disease, value of meat as an antiscorbutic, classification and treatment of the anemias, etc.), and several books and book chapters (biochemistry, nutrition, toxicology, pesticide residues, biologic aspects of the Eskimo, etc.).”

Much of this research was conducted with very little funding and often archaic scientific instruments.

“Still,” Dr. Andrews reminds us, “he was one of the first people to recognize the relationship of saturated and unsaturated fatty acids in diet. He also traced the effects of vitamins on metabolism and, despite criticism from other scientists, was a pioneer in studying what he perceived as genetic disorders.”

Dr. Levine attended Creighton’s medical school part time, while still involved in all these other activities, and received his M.D. in 1928. He also served the School of Dentistry as a professor of nutrition, was a consultant to the United States Public Health Service, and took a leave of absence to serve four years of military service during World War II, attaining the rank of lieutenant colonel. Egan believes he sometimes wore the uniform for lectures.

But the garb most associated with Dr. Levine was the authentic Eskimo parka and attendant gear which he occasionally wore to class and, for effect, to some social events.

“Since the skins that made the clothing were usually softened by chewing,” recalls Dr. Andrews, “if the room was warm, he reeked.”

Dr. Levine’s first trip to the Arctic regions occurred in 1921,

and the medical school history credits him with at least 10 trips to Alaska and points north. Many of these were summer excursions and he brought along medical students to help him with his nutritional research. The longer journeys, taking up to a year and a half, required a leave of absence.

“I think he really wanted to be an explorer,” theorizes Dr. Severin. “This was a great era of discovery and the romance attracted Vic.”

But Dr. Levine also had a purpose. He analyzed the Vitamin C content in Eskimos and related it to their resistance to heart attacks. He observed their diet and their lifestyle. Research instruments of that day were fairly primitive, so much of his data was the result of observation.

This was no sabbatical respite. His subjects were isolated and not easily reached. No in and out by airplane. To survive, he had to live like the people, and they had a hard existence.

For the most part, Dr. Levine seems to have spent much of his time with the whaling Eskimos around Point Barrow, that northernmost outpost favored by weathercasters. Dr. Levine readily adapted to the sub-zero temperatures, the limited cuisine, and the periodic long nights. He stayed busy examining nutritional habits, metabolism and genetic blood types. His studies included blood and urine chemistry, physical and cultural anthropology, and medical and dental health status of these Alaskan natives. It was tough duty but, besides the valuable research, the treks provided “Vitamin Vic” with an endless supply of stories.

“Back in the thirties,” says Jack Williams, longtime Creighton registrar, “we invited Dr. Levine to speak to the Pasteur Club about his expeditions. He spoke for 3 1/2 hours — but he was fascinating. We all hung in there.”

He loved to bring to class a block of yellowed ice, telling students this was the way urine samples were extracted in the Arctic. He’d warn the future physicians about eating the liver of polar bears, which contained too much Vitamin A. As if that were a common medical concern!

In Alaska, however, his absent-mindedness didn’t diminish.

Several friends tell of the time he was due to return to the States and kept bugging the clerk at the steamship office about departure times. The clerk told one of his companions, “If you don’t keep that guy out of here, I’m going to shoot him.” Finally the ship docked — and sailed. Without Vic.

When the crew discovered his absence, they sent a Coast Guard cutter back for him. The officer found him in one of the Eskimo houses, pressing his pants.

Dr. Levine’s office was further congested with the addition of Alaskan artifacts, everything from tools to clothing to a frozen toe. In 1935, he brought back a malamute puppy which



Dr. Levine, here a major in the Army, served as a medical nutritionist and laboratory officer during World War II, attaining the rank of lieutenant colonel.

he kept in the Fontenelle penthouse he occupied in return for his services as a house physician. That sinecure evaporated after Vic left the dog and a supply of food when he set out on a 10-day speaking trip. The penthouse required complete redecoration and Dr. Levine relocated.

Creighton medical graduates remember many of Vic's one-liners:

- "Well over 90 percent of illnesses would cure themselves if you fellows wouldn't interfere."
- "To have a good liver, you must be one."
- "In spite of wars more people die by the knife and fork than by the gun and sword."

Others recall his impact on them as a teacher.

"If you were struggling in biochemistry," recalls Dr. Severin, "all you had to do was tell Vic you were flunking anatomy and he'd see that you passed his course."

"He was easy to work with," states Dr. Ryan, "but hard to talk to at times. He worked at being a character and was fond of doing whatever struck him at the moment. But I believe he always felt it important that people like him."

"I admired him very much," says Dr. Sheehan. "He was quiet, a scholar. Not someone you'd invite to a party. He didn't waste any time."

Dr. Egan called him kind and fair, a good teacher — and a dedicated researcher.

"Sometimes he would leave the lunch table," recalls Dr. Egan, "saying he had to return to the office and write an article. I don't know if he was joking, since everyone marvelled at his scholarly output. Still, I sometimes saw him putting something in the mail at 2 o'clock. Maybe he could do things that fast. Many of his articles appeared in the *Journal of Biological Chemistry*."

Some former students invest him with a deep voice, some with a high voice, some with a New York accent. They all agree he could become excited, animated, that he could project like a thespian.

"He never wanted to be called 'Doc,'" says Dr. Severin. "It had to be 'Doctor' or 'Professor.' He might keep after you with questions, but he was never malicious."

Dr. Ryan agrees.

"His lectures wandered at times, but he was always interesting, and always a gentleman. He was not an angry man, and didn't frighten students as did some of his colleagues. He was reasonable, but would react to a challenge."

As the years passed, Dr. Levine kept his varied schedule, adding in lectures in this country and abroad, appearing on television, serving as one of the local media's most quotable sources. His name appeared in *Time*. His honors were as diverse as his pursuits — membership in the Explorers Club of New York, the American Society for the Advancement of Science, the National Association of Authors and Journalists, and the American Writer's Association. He was elected president of the Nebraska Academy of Sciences in 1948. Creighton and Columbia both presented him with distinguished awards.

But the times were changing.

"Levine and Dietz were caught in something of a time

warp," believes Dr. Ryan. "The world changed, technology changed, grantsmanship changed, and they struggled to keep up."

In 1959, Dr. Levine became emeritus, but his work wasn't done.

"In August, 1960," writes Dr. Dietz, "he left for Europe as a Fulbright lecturer and scientific investigator for the State Department. He taught at the Universities of Valencia and Madrid, and also lectured before medical and other scientific groups in other academic centers of Spain, as well as in Portugal, France and

Switzerland, using the Spanish, French and English languages ... Linguistics seemed to come easily. Russian, Yiddish, English, German, French, Spanish, Eskimo and perhaps other tongues."

So much of "Vitamin Vic" remains a mystery. What drove him? How did his immigrant years affect his life? What were his religious convictions? Who was his tall driver? Why did he settle for loner status? What attracted him to the frozen North?

These secrets went with him when he died on September 29, 1963, of coronary disease. He was 72.

But his voluminous research lives on. His emphasis on proper nutrition has many modern champions. And the stories never run out.

Like the time Dr. Sheehan, depositing Vic at his hotel, mentioned the date and Dr. Levine fled into the Fontenelle, with only hours left to file his income tax.

Or the tale of a medical student, flunking his class, who waited outside the school for hours, until Vic, trapped in his office, shouted out the window, "You passed!"

And was there any truth to those rumors that Dr. Levine once accompanied Admiral Byrd?

His reputation also served Creighton well.

"When we began getting around in medical education circles," says Dr. Egan, "and we mentioned Creighton, people would say, 'Oh, that's where Dr. Levine was.'"

Vitamin Vic might enjoy even more this comment from Dr. Andrews, whose own research missions caused him to cross the Alaskan tracks of his predecessor.

"The Eskimos remembered Vic." **W**



Dr. Levine sometimes showed up at social events in his Eskimo parka.



The Social Roots Of Our Environmental Predicament

Doomsayers and Pollyannas at the Antipodal Extremes

By Dr. Charles L. Harper

Associate Professor of Sociology Chair, Department of Sociology and Anthropology

You probably don't spend very much time or energy worrying about environmental problems. Compared with the problems we find more personally threatening, environmental problems seem vague, abstract and somehow "less real."

We are more concerned about things like our careers, families and neighborhoods. By contrast, we don't experience environmental threats in a very personal way. That is because they operate over very long time periods (often in the

future) and their effects seem small because they are spread over very large numbers of people.

Environmental doomsayers once warned of an apocalyptic ecological crisis so severe that by now much of humanity should be in a state of virtual starvation, many resources exhausted, including petroleum, and a general ecological and social collapse should be upon us. Those specific forecasts were obviously wrong.

At the other extreme, environmental Pollyannas argue we should not worry about environmental problems, because human ingenuity and technological innovation can always "fix" problems, find substitutes for exhausted resources, and enable us to produce an ever increasing supply of goods and services to satisfy our mushrooming population and appetites. They argue that "environmentalism" is nothing more than an

anti-capitalist conspiracy against individual property rights, growth, profits and jobs.

Both views represent the outer boundaries of public debate and discourse about environmental issues, particularly as they filter through various interest groups, sensationalist media and the hyperbole of electoral politics.

Discounting both of these rhetorical extremes, scientific communities exhibit consensus as well as differences about environmental problems. The vast consensus among all scientific communities, whether among physical or social scientists, is that environmental problems are indeed serious and we ignore them at our peril. But they disagree about how to address environmental problems.

The majority of economists believe that if it were made more costly to damage the environment, overuse resources or pollute, we would consume less or do

(Editor's Note: Dr. Harper has taught at Creighton for 27 years. His book, Exploring Social Change, is the best-selling university text of its kind in North America. Another book about environmental issues and sociology, Environment and Society: Human Perspectives on Environmental Problems, is scheduled to be published this fall.)

so in less damaging ways. We would invest in less harmful technologies and in substitutes for threatened resources.

Other social scientists and most natural scientists think that price and technological changes are useful but not sufficient to curb environmental problems. Addressing our environmental predicament also requires stabilizing the size of human population, transforming human culture and attitudes (emphasizing material “sufficiency” rather than the unqualified virtues of “more”), and effective political regulation of environmentally destructive behavior.

Moreover, physical scientists emphasize that while there are many possible substitutes for the uses we make of petroleum, metals and lumber, there are no known technological substitutes for resources like arable soil, fresh water, clean air — all of which are stressed and currently degraded. Similarly, there are no technological substitutes for the variety of “environmental services” provided by the diversity of living things to the planet. Physical scientists emphasize that we are in a new situation without precedent in the short history of *homo sapiens* on Earth: A large and growing human population and unprecedented consumption levels among the affluent classes combine to produce an unprecedented assault on nature.

In a remarkable joint statement in 1992 the U.S. National Academy of Sciences and the Royal Society of London, two of the world’s most prestigious scientific organizations — neither known for taking extreme stands — said that “advances in science and technology no longer could be counted on to avoid either irreversible environmental degradation or continued poverty for much of humanity.”

Furthermore, though the Vatican strenuously objected to what it feared would be a greater tolerance of abortion as a family planning method resulting from the 1994 U.N. Cairo Conference on Population and Development, it did not, in the end, dismiss the seriousness of rapid population growth. The Vatican did not, partly because the group of scientists and theologians it appointed

from the Pontifical Academy of Sciences to study the issue reported that continued rapid population growth and increased consumption are indeed important problems.

In short, the predictions of environmental doomsayers that an environmental crisis or sudden collapse of everything is just around the corner has been shown to be nonsense. But the consensus of scientists is that the cavalier attitudes of Pollyannas about environmental problems are equally misleading. There are legitimate concerns, and if not a crisis, a serious environmental predicament. Ours is an on-going condition that, if long ignored, has the capacity to seriously erode the well-being of humans on the earth (not to mention survival of many other species with which we share the planet).

Human-Environmental Revolutions

The most powerful source of environmental alterations today is human eco-

nomics activity, which is itself broadly embedded in human culture and society. Depicted in very broad strokes, there have been only two great transformations in human history that fundamentally changed human livelihoods, social life and connections with nature. In historical retrospect, they truly were revolutionary, but surely did not seem so to people living them out “one day at a time.” Both are familiar from our study of history.

Both the Neolithic agricultural revolution (8,000-3,000 B.C.) and the industrial revolution of the last 200 years were based on key technical and economic innovations that increased the production of food and material resources. Both increased the size of human populations, the complexity of society and the degree of human inequality. They first transformed small bands of hunter-gatherers into settled agricultural communities, and then transformed agriculturalists into urban workers in large cities with powerful expansive states, bureaucratic

The Challenges Are Not Technological

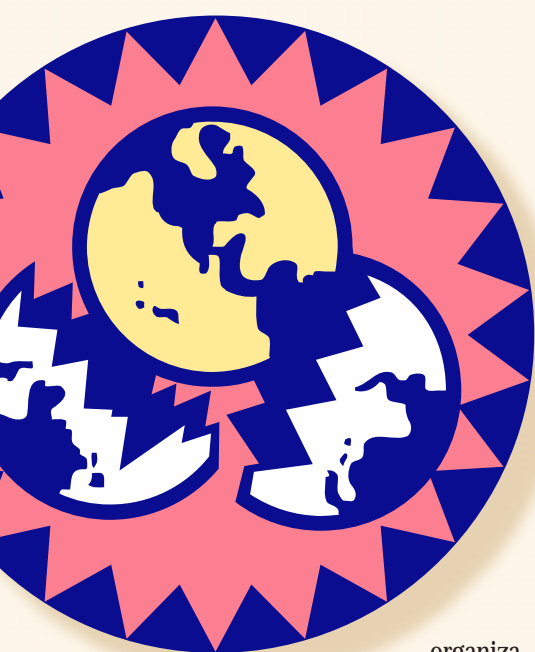
What needs to be done about our environmental predicament is remarkably easy to state abstractly. A transformation to more sustainable societies requires:

- stabilizing human populations,
- reducing excessive material consumption, and
- changing damaging technologies into more environmentally benign ones.

The main barriers to these changes are not technological ones but are political, institutional and cultural. As to culture, promoting sustainability means promoting three sets of ideas among people around the world:

- that cohabitation with nature is necessary,
- that there are limits to human activity, and
- that the benefits of human activity need to be more widely shared.

As always, the “devil is in the details.”



organiza-
tions, and
specialized institutions.

We now know that the technical discoveries in both of these transformations were partly responsible for ecological problems, such as the propensity for hunter-gatherers periodically to consume beyond the limits of their wild food supply, and the virtual clear cutting of English forests by the 1700s.

Both transformations included cultural developments that severed our sense of connectedness to nature, a relationship that hunter-gatherers understood intimately, in spite of their periodic abuses of nature.

We also know now that the first agricultural civilizations, such as those of the Mesopotamians, Mayans and the Western Roman Empire, declined not only because of the dynastic brawls recorded in our history texts, but also because they overfarmed, overirrigated and eroded their lands, and were afflicted with slow but inexorable declines in agricultural productivity. In short, their decline began when their agricultural wealth was no longer sufficient to pay the overhead costs of maintaining social institutions (temples, armies, cities). Over hundreds of years they devolved into simpler societies and migrated to “virgin lands.” Not peacefully, of course, but with intensified dynastic squabbles and often with the “barbarians” outside ready to pick the bones of systems in decline.

Both revolutions transformed human

cultural understanding of the human-environment relationship. As human technological prowess grew, nature became viewed as merely resources for human exploitation — to be cleared, plowed and mined. *Homo sapiens* came to view themselves as an exceptional species, not subject to natural limits as were other species.

No one today escapes the effects of environmental deterioration, but we know that its impact falls very unevenly on different groups within society. Research has exhaustively documented that low income groups and ethnic minorities bear the brunt of exposure to environmental hazards. Toxic waste dumps, hazardous industries and landfills are more likely to be located in their “backyards” rather than close to the affluent. African Americans, for instance, have higher blood levels of carbon monoxide and pesticides, and their children have a rate of lead poisoning six times higher than that of white children. Not only are they more exposed to the results of environmental degradation, but there is growing recognition that such groups have been subjected to hazardous and dangerous projects that more affluent communities were able to resist.

If environmental threats affect groups in society differently, the reverse is also true: In every society the affluent classes have a much greater impact on the environment. They do so, because, even though they can afford the newest and most environmentally benign products, the sheer volume of their consumption accounts for an over-proportionate share of environmental impact. New autos for example, are more fuel efficient than older ones, but more affluent Americans

now drive more miles, so the effects of efficiency are canceled.

This inequality of impact is also international. On a per capita basis, people in the industrialized north (Europe and North America) are responsible for the overwhelming share of environmental impacts, consuming more resources and producing respectively more — and more dangerous — pollution. With about 20 percent of the world’s population, the industrial nations consume 10 times more energy than their counterparts in the developing nations, 10 times more timber, 13 times more iron and steel, 14 times more paper, 18 times more synthetic chemicals and 19 times more aluminum. Worldwide, they account for a disproportionate share of resource depletion, environmental pollution and habitat degradation.

Indeed, most scientists believe that a world full of affluent societies that consume at such levels is a physical impossibility.

The consumption habits of people of the industrial nations underline the role of culture in shaping our behavior. Consumption of goods and services at some level is, of course, essential for life, and the forced underconsumption of

Consumate Consumers

In 1990 the developed industrial nations had about one fifth of the world’s people, but they consumed almost three fourths of the world’s energy. The United States alone, with 6 percent of the world’s people, consumed 30 percent of the world’s energy. Presently, one American consumes as much energy as do three Japanese, six Mexicans, 14 Chinese, 38 Indians, 168 Bangladeshis, 280 Nepalese or 531 Ethiopians.

poverty is certainly no virtue. But the consumerist culture — a set of values that emerged in industrial societies — is something different.

Consumerism, the modern incarnation of materialist values, has elevated the consumption of goods to a defining feature of the “good life.” The notion that consuming more is preferable to consuming less is so deeply embedded in industrial culture (particularly American culture), that the question “How much is enough?” seems unnatural.

Materialism as a value (and a temptation) is, of course, not new or unique to modern societies. Indeed all of the world religions, from Christianity, to Hinduism, Buddhism and Islam, whatever their disagreement about other matters, all agree in denouncing material consumption as a paramount principle of life.

But the consumerist culture of industrialism gives consumption without limits far more support than it enjoyed in earlier societies. How we came to acquire this focus on consumption was not entirely unintentional. Consumerist values have an obvious connection with maintaining constant growth in demand in the market economy, and growth is taken as a measure of progress and social status. Indeed, a whole industry emerged to promote it.

After World War II, retailing and advertising analyst Victor Lebow declared: “Our enormously productive economy ... demands that we make consumption our way of life, that we convert the buying and use of goods into rituals, that we seek our spiritual satisfaction and ego satisfaction in consumption ... We need things consumed, burned up, worn out, replaced and discarded at an ever-increasing rate.”

Does ever-increasing consumption make us happy? No one would suggest that desperately poor people are as happy as the affluent. But empirical studies of the relationship between affluence and happiness suggest a far weaker relationship than one might expect.

Since the 1950s Americans have nearly doubled their per capita consumption.

Yet regular surveys by the National Opinion Research Center reveal that no more Americans report that they are “very happy” now than in the 1950s. Social psychologist Michael Argyle has summarized cross national evidence suggesting that there are very small differences in levels of reported happiness found in rich and poorer countries. Upper class people are indeed happier than the poor, but they are no more satisfied than the upper classes of much poorer countries.

The Third Human-Environmental Revolution

The first two human revolutions are still with us and have not yet run their course. But many believe that a third revolution is under way. It will involve a re-working of industrialism even as industrialism transformed agricultural societies. Analysts have concocted various names for this new revolution: post-industrialism, information society, post-modernism and even a “new age” of spiritual revitalization. Around the world, fundamentalists of all sorts (both cultural and religious) recognize that the conventional world is under attack by currents of change. My guess is that within the next century there will be an intellectual consensus about how to describe this third revolution.

Some of its dimensions are already clear. This third revolution will involve an information transformation, meaning that the creation, storage, transmission and utilization of information — espe-

Bird Decline May Be Indicator of Earth Health

Although collapsing fisheries and water scarcity attract attention because of their immediate economic effects, the worldwide decline in bird populations may be a more revealing indicator of the earth’s health.

Recently compiled data by BirdLife International of Cambridge, England, show populations dropping on every continent. Of 9,600 species, only 3,000 are holding their own; the other 6,600 are in decline. Of these, the populations of some 1,000 species have dropped to the point where they are threatened with extinction.

The precise reasons for this decline vary, but they include deforestation, particularly in the tropics; drainage of wetlands for farming and residential construction; air and water pollution; acid rain, and, for some species, hunting.

cially scientific and technical information — is becoming as powerful a force in human societies as growing food and making things were in the past.

We will, of course, still need food and things, but increasingly the production of wealth will be driven and organized by information systems.

Another dimension of the third revolution will be an interdependence transformation, by which there are increasingly dense, powerful and

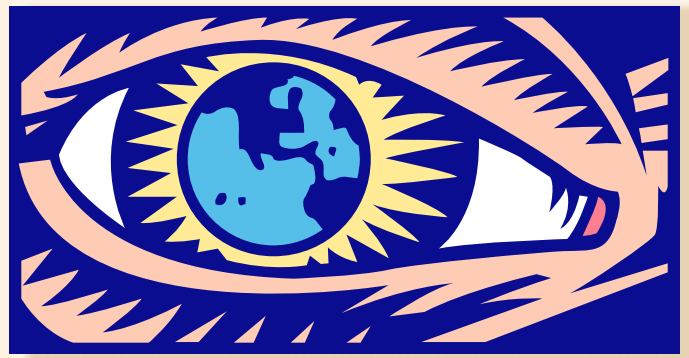
volatile relationships between people in the same society and between societies. We are being pulled together into integrated webs of interdependencies that have many strands: economic, political, cultural, religious and demographic. And we are rediscovering our dependence on a shared biophysical environment. Growing interdependence has not meant that local and regional differences disappear into some sort of bland global culture. Indeed, as interdependence proceeds, the world is full of local groups (new tribalisms?) struggling bitterly, and often lethally, for autonomy long suppressed in the Cold War structure of the industrial era.

A third feature of this new revolution may be a sustainability transformation. I say “may be” because this is not as certain as the informational-interdependence transformations now under way. A sustainability transformation may evolve in response to our deepening environmental predicament. It now seems unavoidable that the world our children and grandchildren will live in will be warmer, more crowded, more interconnected and more culturally diverse, with less wilderness, fewer

species and more constrained food-producing systems. In an extraordinarily short period — a matter of decades — we will need to feed, house, nurture, educate and employ at least twice the number of people already living on the earth.

The doomsayers are certainly wrong in predicting an imminent, cataclysmic environmental collapse. The more likely consequence of failing to address our environmental predicament is a gradual deterioration of nature accompanied by declines in well-being for much of humanity, both the relatively privileged and the underprivileged classes and nations. It may all happen so gradually that humans will only be dimly aware of the “world that was lost.”

The deepening environmental predicament, our awareness of it, and our rational choice-making capability all make a sustainability transformation likely as a part of the third revolution now under way. But that transformation is by no means inevitable, and there is



certainly enough evidence to justify pessimism as well as hope. What in fact does happen will not “naturally evolve” in relation to some powerful forces that entrap us, but will be importantly conditioned by the individual and collective choices that people make.

Human beings are smart and inventive. I hope that 50 years from now the verdict is not that we were fools as well. Last semester I asked my student Megan whether or not she thought a transformation to a sustainable world was likely. She said she didn’t think so, because “our luxuries mean too much to people to give any up.”

Megan, I hope you are wrong. I think you are. But in this, your guess is as good as mine. **W**

Population to Double in About 35 Years

For thousands of years human population grew at a snail’s pace. It took over a million years to reach about 1 billion people by the beginning of the 19th century.

But, then, the pace of population growth quickened: A second billion was added by 1930, and a third by 1960. The current total is about 5.7 billion, and the current doubling time of the global population is about 35 years.

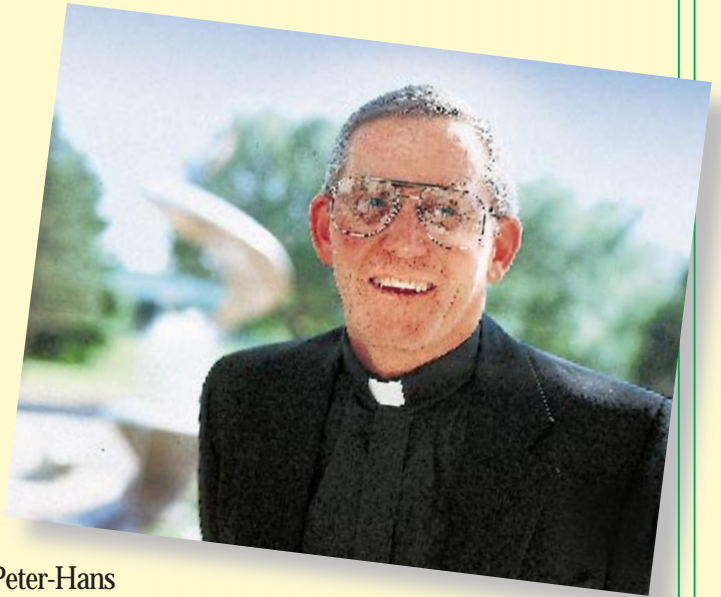
In the world’s poorest nations (Haiti, Bangladesh, Rwanda) the population doubles in only 15 years, which means that every 15 years they must double the supplies of food, water, housing and social services just to maintain current dismal living standards.

If the world population growth rate remains close to what it is now, we will have a minimum of 6 billion people on the planet by the year 2000, and probably 9 billion by the year 2025. If the growth rate declines, the World Bank projects a more or less stable population by the year 2100 of between 10 and 14 billion people.

PROFILE OF ACHIEVEMENT

Fr. Mathie Installed as Leader of Jesuits

On Friday, Aug. 11, 1995, in a Mass at St. John's Church, Creighton's Fr. D. Edward Mathie, S.J., officially accepted leadership of the Wisconsin Province of the Society of Jesus.



Named provincial this spring by Superior General Peter-Hans Kolvenbach, S.J., Fr. Mathie now widens his ministry to include overseeing the Jesuit order in Nebraska, Wisconsin, Minnesota, Iowa, South Dakota, North Dakota and Wyoming. The province includes three Jesuit high schools, two universities — Creighton and Marquette; three Native American missions; and several parishes and retreat centers.

Fr. Mathie, who also marks 1995 as his 40th year as a Jesuit, has served Creighton, his order and the church in many capacities: director of Campus Ministry, rector of Creighton's Jesuit Community, member of the University's board of directors, rector and spiritual director of Campion House in Omaha, and high school principal and superintendent of schools at Holy Rosary Mission in Pine Ridge, S.D.

Fr. Mathie, a Milwaukee native, holds a bachelor's degree in English and a master's degree in philosophy from Spring Hill College in Mobile, Ala., and a master's degree in theology from St. Louis University.

Our prayers are with you, Fr. Mathie ... and our best wishes!

Congratulations!

**CREIGHTON
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