

| | | | |
|------------------------------|---|----------------------------------|---|
| Faculty and Staff Notes | 2 | General Faculty Meeting | 3 |
| Transitions | 2 | St. Petersburg Quartet Residency | 3 |
| Sarah Stoll's \$20,000 Grant | 2 | Tom Sherman's Place in Ohio | 4 |

The Observer

Volume 18, Number 13

March 28, 1997

THE OBERLIN COLLEGE FACULTY AND STAFF NEWSPAPER



PHOTOGRAPH BY JOHN SEIFRIED

Andrew Bertoni '88, piano, and senior Tim Savage, alto saxophone, rehearse a piece by Paule Maurice, a French lecturer and composer, for *High Heels: Celebrating Women Composers*.

College Celebrates Women Composers at Cat-in-the-Cream Coffeehouse

Come nine o'clock tonight at Cat in the Cream, collaboration between four elements of Oberlin College will result in a program of music celebrating women composers. Shilpa Davé, assistant dean in the Multicultural Resource Center, conceived the program and approached an enthusiastically supportive Claudia Macdonald, associate professor of musicology, about putting on the event to observe Women's History Month. Soon the Conservatory of Music and the Women's Studies Program added their support to that of the Division of Musicology and the Multicultural Resource Center, and student performers gathered for the cause.

Most of the music on the program was composed between 1909 and 1997, including Carrie Jacobs Bond's 12 "Half-Minute Songs," written in 1910-11. Works of two current conservatory students, seniors Christina Agamanolis and Cathy Elliott, will also be heard. Celebrants will listen to women's folk songs in four film clips, two made in Gambia in 1970 and two made in India in 1982. Roderic Knight, professor of ethnomusicology, lent the films.

Members of A&PS to Be Surveyed

Love your job? Feel stressed? Consider your political orientation far right, far left, or middle of the road? Think it's important to help others in difficulty?

All members of the Administrative and Professional Staff (A&PS) will have a chance to register their answers to these and other questions in the next "couple of weeks," according to Ross Peacock, director of institutional research. That's when Peacock plans to have a new five-page survey in campus mail. The forms will ask A&PS members about their job and work-environment satisfaction, stress levels and sources, perceived College priorities, social and political views, and other bio-demographic information, such as education level.

The survey will parallel surveys Peacock previously administered to Oberlin faculty, alumni, and students. (See "Like Minds: Views and Goals of Oberlin's Faculty and Students," in the *Observer* of January 31 for some combined results.) When all the surveys are compiled, he will be able to compare and contrast answers across all the groups of respondents.

Peacock promises anonymity; not only will he not know who returns which form, but he will be unable to track individuals in analyzing the responses. Also, he says, "results of the survey will never be presented to anyone in a way that allows identification of individual respondents."

Information from the A&PS, faculty, student, and alumni surveys will be incorporated into the College's self-study report, part of the accreditation procedures Oberlin will follow in spring 1998.

"I encourage all A&PS members to complete and return the survey according to the instructions that accompany it," says Peacock, who is looking for a response rate of at least 70 percent. The more people who return the survey, he says, the more meaningful will be the results. The survey will take about 20 minutes to complete. Space on the back page will allow for written comments either on the questions or about related issues. Peacock anticipates sharing the results in the fall, including at an A&PS breakfast.

Research Status and Fellowships Will Allow Faculty to Write about Chinese Culture, the Holocaust, Novels by Women

Four Oberlin professors in the College of Arts and Sciences have been granted research status for 1997-98, and five other members of the College Faculty will be on junior-faculty fellowships during the year. Recipients of the appointments, approved by the trustees and recommended by President Nancy Dye, were selected by the General Faculty Research and Development Committee with concurrence of the College Faculty Council.

Research-Status Appointments

Robert Harrist, associate professor of art and East Asian studies, will conduct research on a book to be titled "The Legacy of the Orchid Pavilion: Wang Xizhi and Chinese Culture." The book will explore the ways in which Wang Xizhi (307-356) transformed the art of calligraphy in China and was commemorated throughout later Chinese history in paintings, decorative arts, gardens, and scholarly games. Harrist plans to complete most of the research for his book and to draft the first four chapters during his research-status appointment. During summer and early fall 1997 he will travel in China to collect research materials and to consult scholars, especially in Beijing, Shanghai, and Sozhou. He will also visit the site of the Orchid Pavilion near Shaoxing in Zhejiang Province. After returning, he will settle in Princeton, where libraries house most of the materials he will need to continue his research.

Heidi Tewarson, professor of German, will write a book to be titled "A German Jewish Family's Survival in Nazi Germany and Theresienstadt." It will be a study of a German Jewish family's fate in Nazi Germany and the concentration camp Theresienstadt. Based on original papers and documents written by various family members, the texts—including memoirs, diaries, letters, notes, the baby's medical records, and mementos—tell a "compelling and unique story," says Tewarson, that will add significantly to the history and literature of the Holocaust. Tewarson will consult the collection of unpublished Holocaust manuscripts at

the Leo Baeck Institute in New York as well as the Brüning papers at the Harvard University Archives. She plans to travel to Germany and Israel during early summer 1997 to collect narratives from family members. She expects to have the preliminary work completed by July 1997, so she can devote the research-status appointment to writing and editing the 300-page book in Oberlin. She expects to submit the finished manuscript for publication in early 1999.

James Tanaka, associate professor of psychology, will undertake an examination of changes in neural activity that are associated with the acquisition of expertise. In the project the neural activity of bird experts and nonexpert subjects will be recorded and compared while they identify common birds and nonbird objects. "Results from the study could provide important insights into understanding of the neural basis of expertise," says Tanaka. He will pursue his research at the Institute for Cognitive and Decision Sciences at the University of Oregon. Results from the study will be written and submitted for publication to appropriate peer-review journals, such as the *Journal of Cognitive Neuroscience* and *Neuropsychologia*. Tanaka also intends to present his results at the meetings of the Cognitive Neuroscience Society and Psychonomics Society.

Grover Zinn, Danforth Professor of Religion, will write a book-length manuscript analyzing the mysticism of Hugh of St. Victor, especially as found in Hugh's treatises on Noah's Ark and the drawing described in those works. The book will address major issues in medieval religious experience and intellectual history, the use of symbols, and medieval theology. To carry out the final stages of research for the book, he will visit at least two research centers, Princeton University and the Medieval Institute at the University of Notre Dame. Zinn has completed major parts of research for the book, published related articles, and presented pertinent papers, and the bulk of the research-

Continued on page 3

Planning Teams Continue to Consult

The College's long-range Planning Teams are continuing to consult with their constituencies, including faculty, staff, students, alumni, and trustees. Some team co-chairs have

begun to circulate early drafts of their teams' final reports to other team members and department and division heads. Final reports are due to the Steering Committee April 7.



Faculty and Staff Notes



College archivist **Roland Baumann** has been named a member of the Waldo G. Leland Prize Committee of the Society of American Archivists. "I consider this prize committee to be the top one in the archival profession," says Roland. According to the society's literature, the prize "encourages and rewards writing of superior excellence and usefulness in the field of archival history, theory, or practice." • The January/February issue of *Timeline* includes an article by **Geoffrey Blodgett**, Danforth Professor of History: "Father Finney's Church," a history of the First Church in Oberlin. *Timeline* is a publication of the Ohio Historical Society. • President **Nancy Dye** has been given top honors in the 1997 Greater Cleveland Women of Achievement Awards. The awards are a program of the Cleveland YWCA. The Women of Achievement Award "hon-



ors women who demonstrate outstanding leadership qualities professionally and/or in the community, and have made significant accomplishments reflecting the mission of the YWCA through community involvement in Cleveland and/or at the national or world level, and who embody the qualities that make them role models for other women," according to YWCA literature. The nominating letter cites Dye's emphasis on "the college's impressive history of educating women and minorities and her dedication to that tradition" and mentions Dye's accessibility to students and the top place of community service on her agenda. The YWCA will present the award at a May 9 luncheon. • The February 9 issue of the *Richmond-Times Dispatch* ran a review of *Models of the Universe: An Anthology of the Prose Poem*, edited by **Stuart Frieber**, professor of creative writing, and **David Young**, Longman Professor of English. The reviewer calls the book, published in 1995 by Oberlin College Press, "an important and marvelous collection because of the generous attention given to non-English-speaking poets, some of whom may be unfamiliar to many readers." • **Calvin**



Hernton, professor of African-American studies, was a visiting artist at the Paul Laurence Dunbar State Memorial in Dayton January 24 and 25. He presented his own works and conducted a writers' workshop. • **Diana Kahn**, visiting assistant professor of women's studies, has received a \$5000 award from the Radcliffe Research Support Program at Radcliffe College for her research program *Considered Lives: New Options for Family and Work*. The project is a 20-year followup of her 1975 research on 130 women of the Oberlin College classes of 1975 and 1976. • On January 31 **Jody Kerchner** presented a session, *Creative Music Listening: Multisensory Modes for Student-Generated Responses*, at the Ohio Music Education Association annual meeting. She guest conducted the Franklin-Fulton County middle-school festival choir in Waynesboro, Pennsylvania, March 7-8. One hundred seventy-five 7th through 9th graders from south central Pennsylvania participated. Jody's Northwestern University dissertation, "Perceptual and Affective Components of the Music Listening Experience As Manifested in Children's Verbal, Visual, and Kinesthetic Repre-



sation," has been nominated for consideration by the Council of Research in Music Education as the Outstanding Music Education Dissertation of the Year. • **Anuradha Needham**, associate professor of English, and **Anna Agathangelou**, visiting instructor of women's studies, were panelists in a session called *Writing in the "Contact Zones"* at the working conference *Cultures of Writing: Places, Spaces, and Interfaces of Writing and Writing Technologies*, held February 28 through March 2. Affiliate Scholar **Lawrence Needham** co-organized the conference, which was sponsored by the Society of Critical Exchange.



Transitions

New Employee

Millie Modic is a programmer and analyst for the computing center. Originally from Garfield Heights, Modic received a two-year degree from Range Technical College in 1970. She previously worked as a programmer/analyst for Sherwin Williams (1978-1984), Analyst International (1984-1989), and Squire, Sanders & Dempsey (1989-1997).

Changes in Appointment

On April 1 **Margaret Laurie Holcomb**, research assistant in the Neuroscience Program, will leave her job to take on a new one. She'll be the lab technician in the Biology Department. Holcomb has worked at the College since 1992.

Departures

Ted Cohen, Neuroscience Program research assistant, left Oberlin March 14; he'd started in June 1996. On March 15 **Holly Morgan**, residential life area coordinator since August 1996, left the College. **Michelle Magyar**, dispatcher in Safety and Security, left Oberlin March 16 after more than a year with the College. **Elizabeth Kjos**, secretary in the conservatory's assistant deans' office, will leave March 31, after 12 years with the College. **Louise Osborne**, administrative assistant in the physical plant, will retire May 1. She has been with the College 18 years, beginning as a clerk in the heating plant. On June 30 **Steven Daigle**, acting director of opera theater, **Marie Lancaster**, assistant technical director and shop supervisor for the Theater and Dance Program, and **James Smith**, technical director in Theater and Dance, will leave the College. They have been here for seven, 12, and two years, respectively. **George Andrews**, Andrew and Pauline Delaney Professor of Mathematics, and **Jere Bruner**, associate professor of politics, will retire June 30, the same day **Lanna Hagge**, director of career services, will leave the College. Bruner started at Oberlin in 1967, Andrews in 1962, and Hagge in 1974.

Assistant Professor of Chemistry Sarah Stoll Receives \$20,000 to Study New Routes to Magnetic Materials

Sarah Stoll, assistant professor of chemistry, has received a two-year \$20,000 grant from the Petroleum Research Fund, administered by the American Chemical Society. Her project involves the synthesis of rare-earth and transition-metal calcogenide materials.

Stoll will explore ways to synthesize new magnetic materials under low temperatures. First she will create "precursors"—molecules that contain certain elements in the right ratio to form a desired solid material from solution. "Precursors can be designed to

control the composition, structure, and properties of the resulting materials," says Stoll. Converting tailored molecular precursors to functional materials is currently an area of high interest to solid-state chemists.

Stoll will grow crystals from the molecular precursors with hydrothermal synthesis, a method that uses high pressure to maintain solvents as a liquid at temperatures above their boiling points.

Traditionally, materials have been made by combining elements and compounds, then heating them to high temperatures (about a thousand degrees Centigrade). This method is not only more expensive, Stoll says, but limits the types of materials

made. Now, she says, solid-state chemists are beginning to "knit together" under low temperatures small molecules to make bigger molecules in a more controlled, designed, and knowledgeable way.

"Materials with novel magnetic properties are of interest not only for study of fundamental physical phenomena, but also for important technological uses," says Stoll in her grant proposal. She cites information storage, such as magnetic tape, and information processing, such as inductive reading heads for magnetic tape, as the most notable applications. Stoll's work, though considered fundamental research, also bears on subjects of interest to the petroleum industry.

Bessie Meadows Yarber, Retired Cook

Bessie Meadows Yarber, retired Oberlin College cook, died in Oberlin March 8. She was 101. Born in Jasper, Alabama, she had lived in Oberlin 60 years. Her years with the College were 1946 to 1949 and 1953 to 1966.

Described by Marie Henderson, retired supervisor of Talcott Dining Hall, as "motherly," she "always had advice, always had good words," says Henderson.

Lucille Walker Champe, Housekeeping Retiree

Lucille Walker Champe, who retired from the Oberlin College housekeeping department in 1977 after 30 years with the College, died March 8 at Avon Oaks Nursing Home. She had been ill a year. Born May 18, 1912, in Fairmont, West Virginia, she lived most of her life in Oberlin.

"Talcott was her home," says Marie

Henderson recalls that she enjoyed bowling at the College Lanes well into her later years.

She was active in the Mount Zion Baptist Church, where she was the oldest member.

Surviving are two sons, two daughters, 18 grandchildren, 48 great-grandchildren, 15 great-great-grandchildren, and two sisters.

Henderson, Talcott's retired dining-hall supervisor, who often "sat and talked" with her when both were employed in the residence hall.

Her interests included fishing, coin collecting, traveling, and gardening.

Survivors include three nephews and her close friend Eleanor "Molly" Marshall.

The Observer (ISSN 0193-368X), the faculty and staff newspaper of Oberlin College, published 17 times a year, is delivered to employees and made available to students on campus. Copies are mailed to retired employees, certain alumni and friends of the College, and paid subscribers. The editor welcomes off-campus readers but does not always provide background information for them: news that has already been reported in the *Review* (the student newspaper) or announced elsewhere may not be reported fully or prominently in the *Observer*.

Editor: Linda Grashoff. Editorial assistant: Adam Shoemaker '96.

Published by the Oberlin College Office of Communications, Alan Moran, director. Address: Office of Communications, 153 W. Lorain St., Oberlin, OH 44074-1023. E-mail: observer@oberlin.edu. Issued biweekly August 30 to December 6, 1996, and January 31 to May 23, 1997. Periodicals postage paid at Oberlin, Ohio, and at additional mailing offices. Yearly subscriptions are \$16.

Letters to the editor directly related to campus events are welcome; those from employees and students take precedence over those from other correspondents. All letters are subject to editing; if time permits, the editor will consult with the correspondent about changes.

All Oberlin College Office of Communications publications include a minimum of 10 percent postconsumer waste. Discarded *Observers* may be recycled with office paper.

POSTMASTER: Send address changes to *The Observer*, Oberlin College Development Resources, Bosworth Hall 4, 50 W. Lorain St., Oberlin, OH 44074-1089.

Faculty Meeting

General Faculty Defeats Motion to Change Legislation of PCRC by 44-28-9 Vote

The March 25 General Faculty (GF) meeting resulted in no change to the procedures of the Professional Conduct Review Committee (PCRC). The proposed change, voted down 44 to 28 (with nine abstentions), would have made changes to existing legislation to enable the PCRC to hear charges against divisional academic deans. Opponents of the proposed changes argued that the PCRC is not the appropriate body to hear charges lodged against a dean. They called for the General Faculty Council to bring forward a proposal for a new process by which charges against a divisional dean could be heard.

At the beginning of the meeting, the GF also heard memorial minutes for Emeritus Professor of Physics David Anderson, delivered by Professor of Physics Joseph Palmieri, and Emeritus Director of Libraries Eileen Thornton, delivered by Root Director of Libraries Ray English. The president spoke briefly about the March trustee meeting and about long-range planning, including a special April 29 GF meeting to discuss long-range planning.

St. Petersburg String Quartet Residency Made Possible by \$125,000 Grant from the Reinberger Foundation

The St. Petersburg String Quartet of St. Petersburg, Russia, will be in residence at the conservatory for the 1997-98 academic year, Dean Karen Wolff announced recently (see "Faculty Meeting" in the March 14 *Observer*). Oberlin will make use of a new \$125,000 grant from the Reinberger Foundation to fund the residency. The Reinberger grant will also be used to fund a similar program in the future.

In Oberlin the St. Petersburg Quartet will perform, in five concerts, the entire cycle of 15 Shostakovich string quartets. The group will also give one of the concerts of the Artist Recital Series. The residency will include master classes, open rehearsals, and chamber-music coaching sessions for Oberlin students.

Members of the quartet will bring their families from Russia to live in Oberlin during the residency.

"We are very excited to have this opportunity to work for an extended period with such a premier ensemble as the St. Petersburg Quartet," says Jeffrey Irvine, professor of viola and director of the String Division. "They have a wonderful feel for the Russian quartet literature and for the classics, and they teach with an intensity and devotion that will be very inspiring to our students."

Members of the St. Petersburg String Quartet are Alla Aranovskaya, first violin; Ilya Teplyakov, second violin; Konstantin Kats, viola; and Leonid Shukaev, cello. The quartet was founded in 1985

as the Leningrad Quartet by graduates of the St. Petersburg Conservatory.

Sony Classical released its first recordings by the St. Petersburg String Quartet in fall 1994 with the group's set of the complete quartets of Tchaikovsky. In spring 1995 Sony released two Borodin quartets and the first installment (numbers 3, 5 and 7) of the complete Shostakovich Cycle. The Shostakovich recording was nominated

for a 1996 Grammy Award and chosen Best Record of the Month in the November 1995 issue of *Stereo Review*.

Clarence Reinberger, a Cleveland businessperson, established the Cleveland-based Reinberger Foundation in 1968. Reinberger developed the Automotive Parts Company and later chaired the board of Genuine Parts. Today Robert and William Reinberger direct the foundation.



The St. Petersburg Quartet will play all 15 Shostakovich string quartets during its Oberlin residency.

Research . . .

Continued from page 1

status appointment will be spent producing the book manuscript.

Funds for research-status appointments come from the regular operating budget of the College.

Junior Faculty Fellowships

Medoune Gueye, assistant professor of French, has received the B. Wade and Jane B. White Fellowship in the Humanities, under which he will do a study of three novels by women. He plans to analyze the philosophy of resistance shown by the heroines in three Francophone novels from Senegal, Guadeloupe, and Quebec. Gueye has already started research for the project, inspired by a course on women writers from the Francophone world, which he taught during spring semester 1996. He intends to present his preliminary findings at an international conference on women writers held this December in Senegal. He plans to do the project in Quebec, France, and Senegal. His stay in these places will allow him to study in depth the literary tradition of women writing in the Francophone world and help articulate his interpretation of the philosophy of the heroines in the three novels. Gueye intends to publish the finished project in a major Francophone literary journal in Senegal, Guadeloupe, or Canada.

The B. Wade and Jane B. White Fellowship supports a program of early sabbatical leaves of absence for untenured faculty members in the humanities. The fellowship is endowed by a gift from the Whites and is also supported with funds from the National

Endowment for the Humanities and the SURDNA Foundation.

Thomas Newlin, assistant professor of Russian, has received the James and Anne D. Ford Fellowship in the Humanities. He will complete a book, "The Voice in the Garden: Andrei Bolkhov and the Anxieties of Russian Pastoral, 1738-1833," an investigation of the pastoral ideal of the Russian nobility as it found expression in literature and estate culture during the 18th and early 19th centuries. The book will be a radical expansion and development of the dissertation he completed in 1994. Newlin plans to spend this summer writing a first draft of Chapter Four and the fall expanding and revising the chapters he has already written. The new chapters and additions reflect new archival research he did in summer 1995 during a five-week stay in St. Petersburg. Newlin hopes to return to Russia for several weeks in January 1998 to verify some archival materials. He expects to submit the whole book manuscript to a publisher in spring 1998.

James and Anne Ford Fellowships support a program of early sabbatical leaves of absence for untenured faculty members in the humanities.

Stephen Crowley, assistant professor of politics, has received an Andrew Delaney Fellowship in the Social Sciences. His project will attempt to explain why workers in postcommunist societies, despite dramatic economic and political upheavals, have been unable to act collectively either by striking, forming independent trade unions, or influencing democratic political outcomes. It will do so through a comparative case study of six countries in the former Soviet Union and Eastern Eu-

rope. The research follows on his past research, which will be published this winter by the University of Michigan Press as "Hot Coal, Cold Steel: Russian and Ukrainian Workers from the End of the Soviet Union to the Post-Communist Transformations." Crowley's aim is to complete another book manuscript or a series of articles.

Andrew Delaney Fellowships support a program of early sabbatical leaves of absence for untenured faculty members in the social sciences.

Gregory Quenell, assistant professor of mathematics, has been awarded the W.M. Keck Foundation Fellowship in the Natural Sciences. He intends to work on two papers. In a research paper on spectral theory of graphs, Quenell plans to explore a question that emerged at a recent spectral-geometry workshop sponsored by the National Science Foundation. The question concerns the application of the Sunada construction, an important tool in the study of special geometry, to the spectral theory of abstract graphs. Quenell will consult with experts in the field (Pierre Bérard, Carolyn Gordon, and Robert Brooks, among others) and read and try to understand existing work on the subject by both spectral geometers and graphs theorists. Then he will "do what a mathematician spends most of his time doing," he says: think about the problem. In an expository paper with the working title "The Sounds of Geometry," Quenell will introduce a general scientific audience to the subject of spectral geometry. He plans, again, to consult with experts in the field and to read and try to understand the literature on the subject from its beginning in the 1940s to papers that now exist only in preprint form. Quenell hopes his paper will appear in *Scientific*

American or a journal with a similar purpose and audience. He expects to spend most of his midprobationary leave at Vassar College and Dartmouth University, and to make one or more visits to the Mathematical Sciences Research Institute in Berkeley.

The appointment annually of a Keck Scholar is made possible by a grant from the W.M. Keck Foundation of Los Angeles.

Francesco Melfi, assistant professor of Judaic and Near Eastern studies, has received a Donald R. Longman Fellowship. His project focuses on the rise and the growth of the Jewish Ladino novel in the Ottoman Empire and the course of the 19th and the beginning of the 20th century. The paper he presented at the recent annual conference of the Pacific Ancient and Modern Language Association recapitulates the first results of this research and shows how he deals with the material. After Melfi returns to the U.S. from the Middle East in September, he will spend the fall semester at the Widener Library of Harvard University and at the Rare Book Room of the Jewish Theological Seminary of America in New York researching their large Ladino collections. He will discuss and exchange his ideas and findings with Professor Aron Rodrigue of Stanford University, the only other scholar to have worked on Ladino literature in the Ottoman Empire. Melfi will spend his leave organizing his findings and preparing them for publication. He will report the results of the research in several essays and, eventually, in a book.

The Donald R. Longman Fellowship supports a program of early sabbatical leaves for untenured members of the College Faculty.

Observations

Water and Ice on the Glacial Till

By Thomas Sherman

The form of the land is shaped by water, and so is the form of life. I walked along country roads one sunny day in early March. The red-winged blackbirds, recently back from the South, were chattering in the trees above the Black River, and everywhere snow was melting along the edges of the lanes. The fields were alive with the glitter of light on patches of ice and snow, and little freshets of water ran everywhere across the land, forming their own lacy routes to the ditches beside the roads and to the meandering tributaries of Elk Creek and the Black River. The day was witness to a world of creation, as the crystals of winter liberated again the flowing waters of life. Here in a countryside of roads and agricultural fields, the wild forces of nature were everywhere awake, generating new patterns across the greening land.

The most common things of our world are also the most miraculous. All living architecture is based on water, for water is more prevalent in organisms than all other substances combined. Without this most common of substances, all the miracles of living activity cease. Spirit and body instinctively sense the crucial link between life and water. An injured animal will seek shelter by a pool, drawn to its healing powers. A lonely spirit may seek a flowing brook, model and metaphor of our nature. Like a river, all life is water moving beneath the energy of the sun, a union of the rain, the uplands, and the ocean.

The magic of water is often hidden from our view. Seldom do we stop to think that it is the most universal of solvents, attuned to holding the myriad chemicals of life in its gently electric matrix. Its cohesiveness within and strength along its surface, and its thermal stability combined with conductivity all contribute to the organization and activity of life. And it dwells at just the right thermal interfaces between liquid, solid, and gas. Water, as the ancient philosophers and poets foresaw, can hold earth and air and gentle fire within it.

When water freezes, it can suddenly reveal—to our watery eyes and nerves and brain—the miracles it holds inside. On a winter's morning, the first rays of the sun disperse their colors through fractal fronds of frost on the windows. How many hours would a craftsman labor to make such fine crystal patterns from the nighttime air? Yet from formless gas, by the mere chill on the world, come the frost crystals on the window or the snowflakes in the air. From simple actions and common matter, the complex beauty of nature emerges.

That the landscape is shaped by water is evident to all who live in a country of soft shales and clay. When I walk the streambeds of the Vermilion River, even in the driest of summer seasons, water seeps out at many points along the high walls of the gorge above me, and with every trickle of water, the flakes of shale come loose and fall, sometimes forming great conical heaps of soft stone beside the river. As winter ice along the steep banks gives way to the rays of the springtime sun, the shale itself seems to melt from the canyon walls, and a chorus of falling stone accompanies the songs of dripping water. In such a country, landforms give way to the forces of water before our very eyes. At the junction of Chance Creek and the Vermilion River, the little promontory on which I like to sit is greatly altered from the form it had before the torrential rains of July 4-5, 1969, when the rivers flowed 12 feet or more above their customary shallow levels and swept away much of the point. Another time will see a different world.

The sedimentary rocks beneath us were created by the forces of water on ancient landscapes, as rain and streams brought other highlands down to other lowlands. In the mud of our rivers flows the land into a new time and different form. In soft country like this, everyday observations lead easily to the idea that large floods may have helped to shape the land we see before us.

Early geologists were well instructed as children in the biblical flood, which required Noah to build an ark, and for many the account was accepted as earth history rather than human allegory. Fossils of seashells found high in the sedimentary rocks of the Alps seemed to be evidence that the biblical flood had indeed been extraordinary. If the idea seems preposter-

then back out toward the central flow again, orbiting around and about until, by some unseen variation in the flow, they are released to find another pool and another pattern of motion. For all its grandeur, the earth is like a leaf swirled in the eddies of galactic time. Science was born partly from the perception of the orderly and predictable motions of the heavens relative to the earth: that night follows day, and winter follows summer. But modern science has learned that the linkage of simple forces and motions can lead to complexities that defy exact prediction. Such is the case with weather and climate.

We seldom give an appreciative thought to the unique arrangements that make life possible on the earth. The intensity of sunlight, and the amount of energy received from it, varies inversely with the square of the distance from the sun; if the earth were twice as far from the sun, it would receive only one quarter as much solar energy—and even the warmest parts of the earth would be colder than the Arctic and Antarctic regions. If the earth did not turn on its axis, half the earth would receive twice the energy and the other half would receive none. If the earth did not revolve around the sun, with its axis of rotation tilted to the plane of its orbit, there would be no seasons—no yearly averaging of the heat of summer with the cold of winter, no changing lengths of days and nights. On a spherical earth, the regions that face the sun perpendicularly receive far more energy than do those that face the sun less directly, but this advantage is shared across a latitudinal band of 47 degrees by the oscillations in the tilt as the earth revolves around the sun. The biomes of the world depend on such devices. The leaves that swirl before me in the Vermilion River

would be other leaves if any of these arrangements were slightly different.

In the depth of winter, our little Chance Creek, or even the Vermilion River, may freeze across the surface, its waters running silently below. I have skied on a winter's evening through the snowy turns and sweeps of the Vermilion gorge, beside ice falls hanging from the shale cliffs; in the moonlight, the frozen river reflects a memory of ages past, when ice lay everywhere on this land. As spring begins to dissolve these frozen scenes, ice crystals still form in shallow pools at the river's edge, among scatterings of Canadian granitic rocks, dropped during our glacial nights. The icy fern-like, feathery patterns speak of the immense creative power within the simplest elements of nature—a universal presence that shapes the long history of this and every other land, uniting us at any time or place with the elements of all the stars.

Thomas Sherman, emeritus professor of biology, lives in Maine. These passages are excerpted from the chapter "Water and Ice" in his book A Place on the Glacial Till: Time, Land, and Nature within an American Town, copyright 1997 by Oxford University Press. Published by arrangement with Oxford University Press, New York. Sherman gave a slide presentation related to his book for the Oberlin College Library Faculty Book Talk series this past Monday, March 24.



PHOTOGRAPH BY JOHN SEYFRIED

ous that water once covered central Europe to a depth of 14,000 feet, how likely does it seem, from the perspective of lives on apparently solid ground, that the Alps have been raised that distance from a position previously below the ocean? Marine fossils on mountaintops show that land and water have undergone remarkable processes of one kind or another.

Other geologic features of Switzerland—and of northern Ohio—baffled nineteenth-century observers. The story that science has invented to explain them may seem far less probable than Noah's flood. The scientific verdict, almost universally accepted today, is that millions of square miles of Europe, Asia, and North America were recently covered not with 14,000 feet of water, but with an equivalent thickness of ice.

In northern Ohio, the most pervasive glacial feature is one we seldom notice until we dig in the garden or wonder why the rain or melting snow so easily forms pools on the land: the soil over much of our land is impermeable clay. In shale country, glaciers have no difficulty in grinding up the soft rocks to make clay. In northern Ohio, this glacial till (or drift, or ground moraine) is often 20 to 50 feet deep; beneath parts of the Cuyahoga River, its depth reaches 500 feet.

Across the shallow pools of the Vermilion River, I watch the autumn leaves caught by the complex currents, swept inward to catch the shaly shore,