Space—atmospheric, planetary, galactic, and extra-galactic—has become a major field of exploration and education at Rochester. In 1962 the University established the Space Science Center, one of the country's first multi-disciplinary units for space research and training. Its purpose: to bring together and further develop the space-related activities already under way in many departments and, hopefully, to initiate new ones. Directed for its first four years by Wallace O. Fenn, Distinguished University Professor of Physiology, and since September by Professor Robert G. Loevy (whose appointment is reported on Page 23), the Center now coordinates space-oriented programs in biology, medicine, physics, astronomy, engineering, optics, geology, and psychology. This fall construction will start on a Space Science Building, the first unit in the new River Campus science complex.

The precise domain of what is popularly termed "space science" is difficult to define, as Professor Morton Kaplon points out in his article on the opposite page. That this domain covers a considerable amount of territory—intellectual as well as intergalactic—is indicated both by the sampling of UR space projects depicted on Pages 4 through 11 and by the speculations of philosopher Lewis W. Beck in the article that starts on Page 12.

Interestingly, a number of UR alumni already have become heavily involved in space-science endeavors—among them Leo D. Welch, '19, who was the first board chairman of Communications Satellite Corp., and scientist-astronaut Edward D. Gibson, '59, one of the first six men chosen by the National Aeronautics and Space Administration for future moon-flights. And this roster is certain to grow—in part, at least, because of the existence of the Space Science Center itself, under whose sponsorship 30 graduate students are currently taking advanced training.

Obviously, the number and variety of space-related activities on campus merits a far more extensive report than can be encompassed in the Review's special section; however, it is hoped that the pages that follow will provide at least a brief introduction to one of the newest and liveliest interdisciplinary units on campus.

The editor wishes to thank Miss Elsa Rubin of the Office of Public Relations, who served as contributing editor for this special section.

Space of another and distinctly terrestrial kind continues to command its share of attention at Rochester these days, as the University sets in motion its long-term plans for adding some $80 million in new facilities over the next ten to fifteen years. Some ideas on that subject are bandied about in a four-way dialogue, The Changing Face of the Campus, that begins on Page 15. —J.B.
In considering what is meant by the term "Space Science," I am reminded of the admonition to "keep your eye on the doughnut and not on the hole." I am reminded of this because it is so inappropriate. Indeed, in the case of space science, the "hole" is so important that in a sense the space science "doughnut" would collapse without it.

In this context the all-important "hole" is the vast array of supporting disciplines without which the space science doughnut would collapse. It includes all the basic sciences, all the fields of engineering, and several fields outside the life sciences and physical sciences. These other fields, such as economics, sociology, law, and even philosophy, constitute a part of the "hole" because the physical move into space has made—and will increasingly make—an enormous impact on our economy, our global interaction, and our way of life. Surely the advent of the Space Age will change our lives as much as—or more than—any scientific advance to date.

What is the doughnut? It is the laboratory supplied by space itself, and this laboratory is a new and fertile field for study, both of the intrinsic properties of space and of its influence on materials and man. If we were to ask what is space science, in the narrowest sense the answer would have to be the study of the properties of space itself and the phenomena taking place in it. But where does it begin and where does it end? These questions imply, for example, that astronomy (classically a scientific discipline in itself) and the study of upper atmospheric sciences belong to space science, and, indeed, they are under its umbrella. But to study phenomena in space you have to get instruments and people there and be sure that their response is faithful. Thus, medicine and biology play an important role, and so does the study of materials and structures and so on.

In this infancy of space science it is almost impossible to separate in an intelligible way the doughnut from the hole. In the future, perhaps, when we understand and feel comfortable about the role of the hole, we may find a better defined niche for space science. For the foreseeable future, however, it must certainly call upon a variety of other disciplines. ■
"High-minded" cosmic ray researchers at the University of Rochester use huge balloons to carry their instruments aloft. This three-million cubic foot balloon, launched over Minnesota in 1964, carried a gamma ray telescope for Professor Everett Hafner and graduate student Gerald Share.

Just a year ago three University researchers sent a cosmic ray detector 23 miles above Palestine, Texas, as part of the UR's continuing study of the tiny packets of mass or energy which constantly bombard the earth as they speed through space. Last April the data collected on the expedition enabled the Rochester team to pinpoint the first area in space which can be identified as a source of gamma radiation.

The headline-making discovery was the latest in a long list of accomplishments of the UR's Cosmic Ray Group, formed in 1948. The research group has been headed since 1951 by Professor Morton Kaplon, who, while a graduate student at the University, co-discovered the R-star (R for Rochester), which gave the first clearcut evidence of the production of large numbers of mesons in high-energy nuclear collisions at the top of the earth's atmosphere. Two years later Kaplon's cosmic ray studies enabled him to measure the life-span of the neutral meson.

His work illustrates one of the reasons scientists are interested in cosmic rays: practically all of the so-called elementary particles which physicists try to create on earth with huge cyclotrons and other accelerators are produced in nature as a result of cosmic ray interactions in the atmosphere. Indeed, many of the particles were
“Humpty-Dumpty” and its cargo, a spark chamber cosmic ray detector, enabled UR physicists to find the first celestial body identifiable as a point source of gamma rays. The balloon which lifted canister and equipment 23 miles above Texas dropped them onto a Georgia pig farm. Graduate student Roland Cobb repairs damage inflicted by angered pigs.

first discovered through cosmic ray research. Scientists also believe that there may be some connection between the origin of cosmic rays and the so-called radio stars (concentrated sources of radio waves far out in space). Moreover, since gamma rays may be produced by nuclear interactions of charged cosmic rays in space, studies of gamma rays may yield data on the density of matter in space.

Last spring’s discovery of the gamma ray source climaxed five years of research by Assistant Professor J. G. M. Duthie and two graduate students, Roland Cobb and Joseph Stewart. Their search for the point in the region they dubbed “Cygnus GR-1” was prompted by a 1958 theoretical prediction by Professor Malcolm Savedoff, also of the Cosmic Ray Group.

Duthie, who led the Texas expedition last year, plans to conduct a series of balloon flights from Australia this fall to look for gamma ray sources in the skies of the Southern Hemisphere.

Last July a three-man team traveled to Ft. Churchill, Canada, on the shores of Hudson Bay, to send a cosmic ray detector to an altitude of 25 miles. The instrument, a counter telescope, was carried on two flights by the biggest balloons currently in use for scientific research—giant helium-filled “teardrops.”

Researchers pack up a counter telescope used in July’s balloon flights from Ft. Churchill, Canada, near the Arctic Circle. The instrument records data about helium nuclei in cosmic radiation. Gautam Badhwar, a graduate student, and Roy Lamberton, a sophomore, assist Clifford Deney, research associate who supervised flights, and James Munn, mechanical engineer.
Robert A. Majka, UR electrical engineer, gives a final once-over to test consoles he designed to check out and calibrate the Ft. Churchill equipment. Majka was a member of the 1965 expedition to India.

James A. Geissinger, senior engineer of the UR Cosmic Ray Group, examines part of the electronics apparatus used in analyzing and processing signals from the cosmic ray detector flown from Ft. Churchill.

The counter telescope recorded information about helium nuclei in cosmic radiation. According to Clifford Deney, research associate in charge of the trip, the flights are conducted at northern altitudes where the earth’s magnetic field is weak enough to allow the lowest energy cosmic rays to enter the atmosphere.

During the previous summer similar balloons took two Rochester instruments aloft from Ft. Churchill to study low-energy cosmic rays. The Ft. Churchill experiments, sponsored by the National Aeronautics and Space Administration, have been conducted since 1961.

Another UR counter telescope will be aboard NASA’s Orbiting Solar Observatory E1 (OSO-E1). The satellite will carry the same experiments which were lost when OSO-C failed to go into orbit in 1965. On its 300-mile-high orbit, the OSO instrument will measure the intensity of charged particles and primary high energy gamma radiation.

In February 1965, two Rochester researchers took a large version of the OSO counter telescope and a spark chamber detector to a plateau near Hyderabad, India, for a series of balloon flights. That expedition, part of the research effort of the International Year of the Quiet Sun, yielded valuable information on the Crab Nebula as a producer of gamma rays.

Future balloon and satellite experiments should continue to provide the Rochester researchers with important data about cosmic radiation, which, in turn, will give scientists a better understanding of the nature of the physical world.—ELSA RUBIN
Astronomers at the University's new Mees Observatory don't have their heads in the clouds very often. The Observatory is the highest in the eastern half of the country. Site overlooks Canandaigua Lake.

From the top of Gannett Hill—one of the highest points in the Finger Lakes area—UR astronomers can look down and see Canandaigua Lake and the surrounding valley. More important, they can look up into a sky unobscured by city lights and ground fog.

There, in the University's new C. E. Kenneth Mees Observatory, the researchers are 2,260 feet above sea level and just 40 miles from the River Campus.

Forty-six acres of the Observatory grounds were made available by Mrs. Frank Gannett, widow of the publisher; another 23 acres were purchased from Ontario County. A $102,300 grant from the National Science Foundation helped to equip the research and teaching facility; additional funds came from the Eastman Kodak Company and the family of the late C. E. K. Mees, former Kodak vice president and director, who headed the company's research laboratories for many years.

It seems fitting that at the Observatory—the newest in the nation—astronomers are studying some of the youngest stars in the universe. An NSF grant is supporting their investigations of about 50 "multiple stars," youngest of which are 10,000 years old. (Most stars are more than 10 million years old.)

UR astronomers are also studying white dwarf stars—the oldest stars known to science. By studying the relative distribution of stars of different ages, the researchers hope to obtain data on the evolution of our galaxy's spiral pattern. They are also investigating the gases and cosmic dust between stars, the so-called variable stars, and the movements of several planets.

To carry out their studies, the UR researchers and their students use the Observatory's 24-inch Cassegrain reflecting telescope—the largest telescope in New York State. About a dozen graduate students are currently seeking Ph.D. degrees in astronomy. Half of them are studying theoretical astronomy; the others are in the observational program, established this year, which was made possible by the construction of the Observatory.

In addition to pursuing their research, the graduate students also serve as guides for the 1,000 visitors who come to the Observatory each year.—E.R.
The nebula of the constellation Orion was photographed through the University's new telescope by Assistant Professor Donald Schmalberger and a graduate student.

Starry-eyed UR astronomers use the Mees Observatory's 24-inch Cassegrain reflecting telescope to study some of the oldest—and some of the youngest—objects in the sky.
Star light . . . is measured with an astrophotometer by a graduate student in observational astronomy.

Star bright . . . is sighted through a camera attached to the UR's 24-inch telescope by astronomy Ph.D. candidate Donald Schuerman. About a dozen graduate students, five faculty members, and several undergraduates utilize the telescope and its equipment for their research.

Professor Sharpless shows John Littleton, a graduate student, how to adjust some of the telescope's auxiliary equipment.

On a clear night they can see practically forever, so during the day Littleton and Harvey Richer, also a graduate student, prepare for the evening's research by balancing the telescope. Lead counterweights keep the massive (2,500-pound) instrument from toppling.
The soil Weston collected in Chile contains virtually no water to support life—a condition similar to that on Mars.

Weston examines soil at one of the driest spots on earth. Here the Chilean desert receives less than 1/25 of an inch of rain each year.
What does the Chilean desert have in common with the surface of Mars? Charles R. Weston, peripatetic research associate in space biology at the University, spent several weeks near Antofagasta last spring trying to find out. His conclusion—both environments are extremely hostile to life.

Weston's expedition had two goals—to bring back soil samples for analysis at Rochester and to locate likely areas for field-testing the Wolf Trap, a device designed to detect extra-terrestrial life. The trip was sponsored by the National Aeronautics and Space Administration, which supports research on the Wolf Trap.

Named for its originator, Professor Wolf Vishniac of the Department of Biology, the instrument is intended to be soft-landed on Mars by a future space vehicle. There it will automatically take in samples of Martian soil, examine them for evidence of living organisms, and relay the information back to earth.

The Wolf Trap can detect a lone microbe if the proper nutrients are provided in its growth chambers, although many hours—even days—may pass before the population of organisms becomes large enough to be detected. Weston found that the Chilean desert, with fewer than 1,500 microorganisms per gram (about 1/8 teaspoonful), was about a hundred times "more lifeless" than Death Valley, where he tested the Wolf Trap in 1965. (Back-yard soil contains upwards of several million organisms per gram.)

Because of the paucity of water to support life—a condition which exists on Mars to an even greater degree—the Chilean desert has been selected as a future test site for the Wolf Trap.

Weston and Vishniac are awaiting a new model of the Wolf Trap, suitable for space flight, which will be tested in their laboratories and then in Chile. After that, its future hinges on the nation's space policy. It may be one of several life-detectors on the unmanned craft scheduled to be landed on Mars in 1973.—E.R.
I know nothing about the subject I am going to discuss. Lest you think that there is something wrong with the Rochester faculty, let me say: nobody knows anything about this subject. It is a field of almost unlimited speculation—just the kind of field in which philosophers once felt most at home. But, oddly enough, although it attracted much attention in earlier periods of philosophy, recent philosophers have almost completely ignored it. For my part, my reflections are those of neither a philosopher, nor an astronomer or biologist, but simply those of a layman who has found the subject fascinating since childhood.

The subject of intelligent extra-terrestrial life is one on which human ignorance may be not only great, but invincible. For if there is no intelligent life in the universe off the earth, it is quite certain we shall never know that fact. Even if the number of stars in the universe is finite, it is quite certain we can never examine each of them. But our period is unique in one respect; if there is intelligent life in the universe off the earth, we may (if there is enough intelligence on the earth) be able to find out that there is. If we suppose that there are intelligent beings elsewhere in the universe who are wondering (as we are) whether they are alone, then it is not utterly fanciful to suppose that we and they just might be able to discover each other’s existence. Just how reasonable or unreasonable is this supposition? This is my question.

At various times in history, very different views on intelligent extra-terrestrial life have been held by thinking people. In Greek philosophy before Plato and Aristotle, it was a matter of common belief; but Plato and Aristotle formulated a conception of the astronomical universe which did not have the “right shape” for supra-terrestrial life. That is, the earth had a privileged position in the universe and differed fundamentally from everything else in the universe. Its uniqueness in an astronomical sense seemed to imply that it would be unique biologically too; and for fifteen centuries, during which Aristotle’s astronomical system was accepted, there was little or no thought that there might be inhabitants of other planets. Heaven was, to be sure, “up there” somewhere, but it did not
fit into any of the astronomical charts.

With the Renaissance, however, came the theory of an infinite, uniform, and isotropic universe in which the earth had no central position or prerogative; and Nicholas of Cusa before Copernicus, and Bruno just after, assumed almost as a matter of course that heavenly bodies are inhabited. This view became almost as characteristic of the modern world-conception as the uniqueness of the earth was for the medievals. In the eighteenth century, when it was commonly believed that God created the stars and that they show his handiwork, natural theologians inferred from this that God had put creatures on planets around every sun; for why, they asked, would God have created other suns if not to give warmth and light to His creatures there? By the end of the century, it was not so obvious to anyone that God had designed and created the universe for a purpose, Kant and Laplace were arguing that planetary systems originated mechanically, but necessarily; they must be very frequent in the universe, and there was no reason to think that there were not other planets more or less like the earth, and hence able to support life.

In the nineteenth century, biological considerations pointed in the same direction. Men came to believe in the natural origin of life, and came to know a greater variety of life and a greater variety of life-supporting environments than had been suspected before that time; hence it was easy to believe that even if there was no other planet like the earth, each planet could support its own forms of life. None of this, of course, was a conclusion from rigorous scientific thought; but it was part and parcel of a general view of the universe, and it was a theme often used in literature.

For a while in the early part of this century, criticisms of the Kant-Laplace hypothesis convinced many astronomers that planetary systems were highly improbable accidents in the universe; and for a while it was believed that life in the universe might be very rare or even exclusively terrestrial. This was perhaps comforting to those with religious views which have been called "internally Ptolemaic"—viz., the view that man is the unique center of the universe in a spiritual sense even if not in an astronomical or geometrical sense. But this kind of internal Ptolemaism has not been widespread among twentieth-century thinkers or even in the common sense of the century; on the contrary, our century seems to favor a process of dehumanization, of denying the uniqueness of man, of seeing him as a kind of animal or a kind of machine, essentially a natural product or accident. I cannot but think that this dehumanization of man favors also a view that the earth itself is not unique, and that something like man may be found almost wherever carbon, hydrogen, oxygen, and nitrogen are present in the right proportions.

I have spoken of common opinions which may affect and be affected by science but are far beyond scientific evidence. But it will be better to try to determine, on the basis of what we know, what the likelihood is that there is intelligent life off the earth.

First of all, it must be granted that, for all we know, the probability may be zero. So far as we know, life is a unique terrestrial phenomenon, present nowhere else in the universe. But if the probability is not zero, even though it be exceedingly small, in a universe as big as ours the number of living systems may be very large. To take an arbitrarily small fraction, let us say one star out of a million has planets; one planet out of a million supports life; one out of a million of these systems produces intelligent organisms. We are guessing that one out of a million million million stars supports intelligent life. But even so, there will be not less than 100,000 abodes of intelligent life in the known universe. Even so, this would mean that many galaxies have no planets bearing intelligent life, and, for all we know, we would be the only one in our galaxy. Hence there could well be in the universe 100,000 or many more civilizations without our ever having even a ghost of a chance to discover a single one.

Now some of these fractions I have repeatedly used—one out of a million—seem to me almost certainly too small. First, the number of stars having planets seems likely to be far greater than one out of a million. If stars of the type of our sun in respect to mass, rotation, age,
and temperature are alike in having acquired or produced planets, then star-counts of stars like our sun would suggest that the number of planet-bearing stars in our galaxy alone is of the order of $10^7$.

Likewise it seems to me that the second fraction I chose—also one out of a million, for the number of planets which support life—is probably too small. For all we know, earthly life may be all there is; but this seems to me highly unlikely. Here the meteoritic evidence is uncertain; the apparent vegetation on Mars, however, is slightly more convincing: but if the Wolf Trap* can show life, however lowly, anywhere except on earth, it will raise the estimates of frequency throughout the universe almost immeasurably. The present theories of the origin of life make it seem that mixtures of simple compounds of carbon, hydrogen, oxygen, and nitrogen, etc., over aeons of time will give rise to life under conditions very different from those obtaining on the earth now. If we go farther and hold that life need not be based on carbon and need not be confined to the ranges of terrestrial temperature, the likelihood is again increased by an immeasurably great factor that there is life, or something chemically analogous to life, scattered all over the universe. But disregarding the highly debatable theories of non-carbon living systems and confining ourselves to the fact that in our solar system one and maybe two planets support life, we might extrapolate to the other planetary systems we have estimated at $10^7$ and would end with the number of life-bearing planets in our galaxy at between 1 and $2 \times 10^9$.

The next fraction I chose arbitrarily as one out of a million—the ratio of intelligent living systems to all living systems—is one for or against which we have absolutely no evidence. We simply do not know whether organic evolution "tends to intelligence and consciousness," as Teilhard de Chardin believed, or whether consciousness and intelligence are products of incredibly unlikely combinations of mutations, as George Gaylord Simpson argues in his famous essay, "The Non-Prevalence of Humanoids." We have evidence sufficient to say only this: biological evolution can produce conscious and intelligent beings, for it has done so, once. Whether it has done so twice we not only do not know, but we cannot possibly find out except by actually finding another biological system where it has occurred. We might, if we could, examine life on a million other planets and find none of it more intelligent than a lichen or an earthworm, and still not know whether intelligent life had been produced elsewhere.

My discussion would come to a sudden and uncere-
River Campus Colleges
Arts and Science • Business Administration • Education • Engineering and Applied Science • University School

C. G. SMITH has been elected treasurer of Tennessee Eastman Co.

G. P. LANE has been named head of one of Sears, Roebuck and Co.'s buying divisions in Chicago.

GEORGE K. WRIGHT has been promoted to managing editor of General Code Publishers Corp.'s educational and experimental division, Spencerport.

Marriages
GENEVIEVE L. PLANT to William F. Zimmermann, Jr.

VERNA C. VOLZ is on a year's leave from her post as director of the YWCA at Carnegie Tech, and is associated with the Bangkok (Thailand) Riding and Polo Club.

J. WILLIAM ZABOR has joined United States Gypsum Co. as vice president of research and product development.

GEORGE M. MULLEN has been elected a director of the Mutual Federal Savings and Loan Assn., Whitman, Mass.

ROGER E. DREXEL has been promoted to director of the manufacturing division of Du Pont's Industrial and Biochemicals Department.

RICHARD W. SPEARS is a director of Morley Machinery Corp.

ELMER M. CONWAY heads the National Distribution Advisory Council.

JOHN L. O'BRIEN, former UR assistant director of university development, has opened a law office in Rochester.

KENNETH J. SMITH has been promoted to managing editor of the Lawyers Cooperative Publishing Co.

JAMES C. CONLY has been named manager of chemical development at Mobil Chemical Co., New York City.


ANGELINE H. LOGRASSO, '18G, received Bryn Mawr College's 1965 distinguished teaching award.

SARA TWITCHELL HARRIS, '45G, Rochester schools' chief consultant in elementary education, is retiring after 44 years in education.

PAUL W. LYDDON, manager of advertising planning for the radiography markets division, Eastman Kodak Co., has retired.

BEULAH BRUSIE COMPTON has been appointed dean of Keuka College.

LOUIS M. Nourse, who has retired after almost 24 years in the St. Louis public library system, was the subject of an editorial in the St. Louis Post-Dispatch.

REV. GEORGE H. TOLLEY is retiring after 21 years as minister of the First Baptist Church, Jamestown, to take over a part-time position in fund raising.

CLAUDE L. KULP, treasurer of the New York State Teaching Association, has received the N.Y.S. Council of City and Village Superintendents' Distinguished Service Award.

EDWARD P. DOYLE edited As We Knew Adlai, a book on Adlai Stevenson. Doyle is an editor of the Encyclopedia Britannica.

ELEANOR DYLEWSKA OTTO's book, To The Stars, was recently published.
Last spring the University dedicated the maisonnets encircling the Valentine and de Kiewiet Towers of the new graduate living center to seven early leaders in the educational process at Rochester—William Kelly, John B. Trevor, the Rev. Edward Bright, Dr. Edward Mott Moore, Rufus Sibley, Lewis P. Ross, and Dr. John P. Munn. For 71 years—from 1860 to 1931—these men presided over the trustee board, but their contributions to the life of the University have been well-nigh obliterated by the mists of time.

When the first of these presidents (the designation “chairman” was not adopted until 1923) assumed office, the ideal of higher education in the United States was represented by Mark Hopkins on one end of a log and an undergraduate on the other. By the time the last of them laid down his responsibilities, the situation had changed radically. (Then, one needed to rise to the Top of the Mark in San Francisco and gaze across the bay to Berkeley where the University of California catered to and cultivated a vast array of intellectual and scientific tastes—and some distastes. A stereotyped table d’hôte menu had yielded to a chaotic à la carte.) In the interval, what had been a good, regional college for men at Rochester was by way of becoming a university of national, indeed international, stature.

These seven board presidents were diverse in their educational experience, vocations, and places of residence, yet they shared a common impulse to advance the kingdom of truth, to enrich young lives, and thus to better society. So long as Martin Brewer Anderson was chief executive of the University, trustee presidents had relatively little to do, for he ran a tight ship and his hand seldom left the tiller. It was different during the administration of his immediate successors, David Jayne Hill and Benjamin Rush Rhees, who had learned valuable lessons on the management of an institution of higher education from the great German shrines of learning and research. The minutes of trustee deliberations are not very appetizing fare; there must have been lighter moments known only to a recording angel, if such there be. Only twice were the presidents of the board and their fellow trustees called upon to perform their weightiest responsibility—the selection of a new administrative head of the University—and that must be something of a record. During their tenure the account books of the institution were habitually drenched in red ink, but somehow finances were held steady when the operating budget involved fewer thousands of dollars than it does millions nowadays. With slender means enduring results were achieved. The trustees tried to give teachers dignity, security, and strength. They aided in the recruitment of students of ability and promise. They helped to shape the public image of the University.

One of the men—John B. Trevor—divided his allegiance between the University and the Rochester Theological School; he rarely turned up at meetings, and yet at the time of his death in 1890, he was the largest single benefactor of the University. Another—Dr. Edward Moore—belongs among Rochester’s immortals—a skilful physician and an untiring promoter of civic causes, he was admired and beloved in the community he so beneficently served. While he occupied the chair of trustee president, a goal toward which he had long and patiently strived was attained: The gentler sex—"the neglected sex"—was admitted to the college on equal terms with males.

It is appropriate that we honor these seven men of impressive stamp. But a symbolic quality surrounds this remembrance, for in a larger sense these leaders of the past personify their colleagues on the trustee body who devote time, talents, and thought to the well-being of the University. Their pioneering labors are a challenge to reflection and a summons to duty. ■

Office of Education, gave the commencement address at the State University of New York College at Fredonia.

Dr. Frank R. Schell has been re-elected vice president of the Medical Board of St. Joseph’s Hospital, Paterson, N.J.

E. Roy Sweet is operations manager of Linde Division of Union Carbide Corp.’s Cryogenic Products Department.

- 1944

Donald B. Miller is president of the International Management Society.

Erwin Klingenberg is a research fellow in American Cyanamid Co.’s research laboratories, Bound Brook, N.J.

- 1945

Jerome E. Korpeck has been appointed a substitute judge for the People’s Court, Rockville, Md.

- 1946

John E. Bush has been appointed supervisor of secondary education in New York State’s Division of School Supervision.

- 1947

20th Reunion: 1947

Esther Levering MacMullin represents elementary school librarians on the State Board of the Arizona School Libraries.

John Richmond has joined Stone & Webster Securities Corp., New York City, as manager of the municipal sales department.

- 1948

David C. Gilkerson is optical research manager for the graphic systems group of 3M Co., St. Paul.

Paul W. Brayer is personnel manager in the corporate facilities planning and management department of Xerox Corp.

- 1949

Stuart Smith, ’51G, associate professor of education at Alfred University, has been appointed chairman of the university’s Education Department.

Richard C. Dales has been elected to a one-year membership in the Institute for Advanced Study at Princeton. He will be engaged in research and writing on two major projects in the Institute’s School of Historical Studies.

Frank J. Sraughnnessy has been appointed director of clinical services at the Tryon School for Boys, West Perth.

Norman R. Garner has been elected a fellow of the American Society for Quality Control.

Theodore Houck, ’50, director of the University of Wisconsin’s Space Astronomy Laboratory and a member of its Space Astronomy Team, was among the scientists participating in last season’s launching of the orbiting astronomical observatory (OAO) satellite from Cape Kennedy. One of the Wisconsin group’s experiments was aboard the satellite in the observatory, which was hailed as the most complicated unmanned spacecraft orbited by this country to date.
W. Gary Morrison has been appointed associate director of admissions at the University of Louisville in Kentucky.

James G. Duffy, '53G, has been appointed to a new post, chairman of social studies, in the Eden School District.

William B. Sabey, executive director of Family Service of York and York County, has been appointed chairman of the Council of Agency Executives.

1950

Paul Smith is now associate professor of English at Trinity College.

Mary Lee McPherson Littell is a graduate assistant at Florida Atlantic University, where she is working towards a master's degree in education and linguistics.

Helen Baker Crouch has been elected president of the Junior League of Rochester.

Luella K. Fox has been promoted to associate professor of nursing at Jamestown Community College.

Ray C. Johnson, '54G, has been promoted to professor of mechanical engineering at Worcester Polytechnic Institute.

Births

To Mr. and Mrs. Russell L. Fullerton, a daughter, Nancy Grace, Jan. 23.

1951

Philip P. Thorpe is president of the Falcon Alarm Co. of Springfield, N. J.

Kay J. Rote has been appointed assistant director of the data processing and payroll department at the Kodak Park Works.

J. Francis Imo has been appointed employee benefits administration manager for Burroughs Corp.'s Todd Division.

John J. Reichardt was graduated from the Advanced Management Program conducted by the Harvard University Graduate School of Business Administration.

Vincent L. Seguin has become coordinator of graphic arts products planning at Eastman Kodak.

Wade L. Callender has been promoted to special research engineer in Shell Oil Co.'s Houston Research Laboratory.

1952

15th REUNION: 1967

Stanton C. Oates has received a Ph.D. from the University of Southern California's School of Education.

Robert H. Randolph has become business office manager of the Rochester Democrat and Chronicle and Times-Union.

Robert N. McFadden is product development manager in the research and engineering department of Graflex, Inc.

John T. Lanzetta recently received an alumni citation from Lafayette College "for distinguished teaching and contributions."

John A. Dietz has joined the legal staff of Eastman Savings and Loan Assn.

Erich W. Marchand, research associate in physics at Kodak Research Laboratories, spoke at the Congress of the International Commission of Optics in Paris.


Roger D. Lathan, '54, has been promoted from associate director to director of university development. He will be responsible for the University's annual giving programs among alumni, parents of students, and corporations, as well as its programs of support from private foundations. Lathan has been a member of the University's development staff since 1960, when he was appointed assistant director of the UR Fund.

1953

Dr. Carl Teplitz, assistant professor of pathology at the Boston University School of Medicine, received a Lederle Medical Faculty Award.

Hugh B. Montgomery is staff consultant on mining and geological matters for the Appalachian Regional Commission.

1954

Ronald E. Shaw's Erie Water West, a prize-winning book on the history of the Erie Canal, was recently published by University of Kentucky Press.

Births

To Rosalyn and Raymond W. Harbold, twin daughters, Leslie Rae and Lynne Noelle, April 27.

1955

Gary Balliett has become social studies chairman for grades 6-12 at Bryam Hills Central School, Armonk.

Philip J. Keuper has joined the copy editing staff of Business Week magazine.

Alfred L. Jacobson is a vice president of Summer Rider & Associates, Inc., New York City industrial public relations firm.

David T. Nelson, associate professor of physics at Luther College, received a summer research appointment at the Ames Laboratory, Iowa State University, under the Faculty Participation Program of the U. S. Atomic Energy Commission.

Eugene B. Michelsen has been promoted to manager of financial planning at the Rochester Division of Friden, Inc.

John E. Shantz is assistant vice president of Discount Corp.

CAPT. Kenneth B. Ruhm has been awarded the U. S. Air Force's Air Medal for "successful accomplishment of important missions in Southeast Asia under extremely hazardous conditions."

Jean Cason Streichholm received the 1966 Brotherhood Award of Bergenfield-Dumont (N. J.) B'nai Brith.

Births

To Barbara and Peter Avakian, a daughter, Lucille Loveland, May 10.

To Mr. and Mrs. Arnold Lederman, a daughter, Diane Sara, December 18, 1965.

1956

Robert H. Love, '62G, has been promoted to associate professor of psychology at Chatham College.

Births

To Mr. and Mrs. John T. Lurcott, a daughter, Karen, June 4.

1957

10th REUNION: 1967

Alice Holloway Young won the annual Sojourner Truth Award of the Rochester chapter of the National Association of Negro Business and Professional Women's Clubs. On leave from her post as elementary school principal, she is administrator of Title I, Elementary and Secondary Education Act, for the Rochester City School District.

G. Bennett L. Rosner reports that he is on active duty with the U. S. Public Health Service and instructor, department of psychiatry, Indiana University Medical Center.

Walter Cooper, a senior research chemist at Eastman Kodak, received the Leroy E. Snyder Memorial Award, Rochester Junior Chamber of Commerce's top honor.

Ronda DeSola Cheyvin has received a Danforth Foundation Graduate Fellowship for Women. The fellowship is designed to aid future teachers.

G. Russell West has been elected assistant trust officer by the Marine Midland Trust Co. of Rochester.

Bruce Thompson has been promoted to assistant to the mid-Atlantic regional marketing manager of Hormel Foods, Inc.

Irving Torgoff has become associate professor of physics at Oakland University.

Births

To Dr. Louis and Sylvia Lurie Lurie, a daughter, Jennifer Lynne, April 11.

1958

Douglas G. Miller is chairman of the physics department at Haverford College.

Jose Sanchez has received a Ph.D. in chemistry from Brown University.


Richard R. Gamble has been appointed director of research and sales development for WOKR-TV, Rochester.

Edward Vavolo teaches high school English and history at Haddon Heights (N. J.).
Pigeons on the grass—or on the pavements of Manhattan—hold a perennial appeal for New Yorkers like UR alumna Judith Anderson, '63. A former Rochesterian, she is now fashion editor for Earshawn Publications, Inc., for which she covers the children's wear market. Some 3,000 UR alumni currently live in the New York area.

LT. Robert Christensen has received a master's degree in electrical engineering from the U. S. Naval Postgraduate School at Monterey, Calif., and is stationed in Yokosuka, Japan as engineering officer aboard the U.S.S. Reeves.

Erik S. Buck has been commissioned a second lieutenant in the U. S. Air Force and has been assigned to Pennsylvania State College for training as a weather officer.

Thomas Grubbs has received a master's degree from the Manhattan School of Music.

Anthony P. Zazzara, assistant professor of accounting at the State University Agricultural and Technical College at Morrisville, has been named the field director by the National Economic Foundation.

Dr. Geoffrey A. Tucker is resident in psychiatry at the Metropolitan Hospital, New York City.

Glenn Koch, formerly with the Equipment and Systems Division of Burroughs Corp., has become business manager for the East Rochester School District.

Ernest G. Muntz, assistant dean of the University of Cincinnati's University College, has been assigned to UC's new Raymond Walters Branch.

Emmanuel Drandakis, '63G, is associate professor of economics at UR.

Walter Muslinger, who received a Ph.D. from the University of Illinois, is a research chemist at Eastman Kodak.

Bernard Evans Harky has been named to the faculty of Albany Law School.

Donald H. Heim has been promoted to vice president at the Jersey State Bank, Jersey Shore, Pa.

Alan D. Belknap, who received his M.D. degree from St. Louis University, is a resident at City Hospital, St. Louis, Mo.

Marriages

Benett J. Serkin to Barbara R. Schmel, March 27.

Births

To Patricia and Alan D. Belknap, a son, Robert Alan, July 18, 1965.

To Walter and Jeanette Shrager Muslinger, a son, David John, April 15.

1961

Gary V. Pfeiffer, who received a Ph.D. from Carnegie Tech in June, is a postdoctoral research associate at Princeton. Frederick J. Holbrook has received the LL.B. degree from the College of Law at Syracuse University.

Kenneth F. Kinsey has been appointed associate professor of physics at the State University College at Geneseo.

Leon J. Ablon, assistant professor of mathematics at Alfred University, has received a National Science Foundation Fellowship for study at Belfer Graduate School of Science, Yeshiva University.

Nicholas D. Richie, who received a master's degree in social work from the State University of New York at Buffalo, is working at the Buffalo Veterans Administration Hospital.

Glady's Hall Baldeck is teaching at Abington Heights (Pa.) High School.

Charles Edward Cladel has received the M.D. degree from the State University of New York Upstate Medical Center.

Ruth Sansone Wolfe has been elected to the board of directors of the Lebanon (Pa.) Publishing Co.

Marriages


Births

To Roger and Susan Davis Zeman, a daughter, Jane Ellen, June 6.

To John H. and Marcia Witters Parker, a son, Lisa Beth, March 31.

1962

5th REUNION: 1967

Kenneth C. Landall has become administrative assistant at City Savings Bank of Pittsfield, Mass.

William K. C. Tom has received his M.D. degree from the University of Colorado.

Lt. Caryl W. Clarke has been awarded the Navy Commendation Medal for action in Southeast Asia.

Stephen Willard, '64&'65G, formerly a faculty member at Lehigh University, is assistant professor of mathematics at Western Reserve University.

Lew Holzman, who has received the M.D. degree from New York University School of Medicine, is interning at the University of California Affiliated Hospitals, Los Angeles.

Chih-Min Yen has been appointed a staff engineer in engineering automation at IBM's Electronics Systems Center in Owego.

William Boags has been appointed to the newly created post of administrative assistant to the dean of faculty at Monroe Community College.

Robert A. Gardner, Lawrence B. Levinson, and Harold M. Reed have received the M.D. degree from the State University of N. Y. Upstate Medical Center.

Marriages


Births


1963

David W. Malone has received a bachelor of divinity degree from Colgate Rochester Divinity School.

Rita Finley Hilsen received a master's degree in French literature from the State University of New York at Buffalo.

Donald Adam has joined the faculty of Chatham College.

Jerome Goldstein, who has received the M.D. degree from the State University of N. Y. Upstate Medical Center, is interning at the San Francisco General Hospital.

Carol Emery is taking graduate work at the University of Hawaii.

Lt. (j.g.) Bruce A. Hopkins has been assigned to the Data Processing Department of the Naval Supply Center, San Diego.

Norman L. Pieman and Richard W. Jamison have received the M.D. degree
from the State University of New York Upstate Medical Center.

Marriages


1964

THOMAS H. KRAKAUER has received his M.S. from the University of Miami. LEONARD S. LYONS has received his M.A. in philosophy from Brown University. RACHEL BELL ROSENBERG is a junior high school art teacher in North Syracuse. JOSEPH J. RANZELLI is receptionist at the New York Life Insurance Co. HENRY LUDMER and IRA W. FRANKEL are Peace Corps volunteers stationed in Somalia and Iran, respectively.

1965

ROONEY T. J. TAYLOR has received his M.A. in teaching from Oberlin College. LINDA LEWIS CANNING is the editor of the Eastern New York edition of TV Guide. DUANE L. MOLNYNAUX is a field underwriter for the Rochester general office of the New York Life Insurance Co. ANN FRANKLIN is teaching at the Churchill School, Homewood, III.

1966

JON MEZZ is doing graduate work in English at the University of Minnesota. JULIEN HARTZELL is in the graduate program in creative writing at the University of North Carolina.

1967

CLAIRO WOOSTER DAVEY received the M.Ed. degree from Cornell University and is teaching in England.

Marriages


1968

CAROL STRONG to ALAN KLEMPNER, March 5. . . MARTHA THAYER to CRAIG MURCHISON, Aug. 29, 1965. . . ROBERT WARD to WALTER WARD to Susan M. BERKOWITZ, 66. . . JOHN C. KNOWLTON to CLAUDIA KUNZ, 65N, June 12. . . CARROLL R. BELL to RICHARD P. ENGLISH, June 11.

1969

LEONARD C. MEAD to Regina E. Nutile, March 12. . . MARGARET DOWNEY KAPLIN serves on the Board of Directors of the arts program at Eastman School of Music. CHARLOTTE JENNEY WESTMAN is a trustee of the New York Life Insurance Co. W. THOMAS MARROCCO, 40GE, lectured at the University of Mississippi last spring.

1970

RICHARD KOCH in May. . . SUSAN TOWLE in March. . . ROBERT FINK to Margaret L. Wilderman, April 16. . . JAN FREISKO to RICHARD KOCH in May. . . SUSAN TOWLE to Dr. Norman Milton in April.

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Marriages


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ROONEY T. J. TAYLOR has received his M.A. in teaching from Oberlin College. LINDA LEWIS CANNING is the editor of the Eastern New York edition of TV Guide. DUANE L. MOLNYNAUX is a field underwriter for the Rochester general office of the New York Life Insurance Co. ANN FRANKLIN is teaching at the Churchill School, Homewood, Ill.

1985

JON MEZZ is doing graduate work in English at the University of Minnesota. JULIEN HARTZELL is in the graduate program in creative writing at the University of North Carolina.
1941
Joseph H. Bein, '48GE, of the Miami University School of Fine Arts, recently guest-conducted the Richmond (Va.) Symphony Orchestra.

1942
LT. COL. WILLIAM SCHEMPF, GE, '60GE, directed the U. S. Military Academy Band in concerts in Elizabeth, N. J. and in Ithaca, N. Y. He is also director of music for the West Point Glee Club, which sang recently in Boston, Washington, and Allen town, Pa., at Carnegie Hall and Town Hall in New York City, and at the 1966 Mississippi Arts Festival.

Scott Huston, '42A'52GE, conducted the world premiere of his "The Wisdom of Patrotism," for chorus, band and orchestra.

1943
ROBERT BAIRSTAIN, '48GE, conducted the University of Kansas Symphony Orchestra in a Centennial Series tour.

1944
ERWIN RUFF, GE, directed the University of Redlands Concert Choir in three programs in Las Vegas.

WILLIAM WARFIELD was soloist with the New York Philharmonic recently in Bach's "St. John Passion."

1945
PETER MENNIN, '45E-GE,'48GE, president of the Juilliard School of Music, was composer-in-residence at Dartmouth College.

DOROTHY PENNINGTON KELZIAH, '46GE, was promoted to the post of head of music section, examining division, in the Copyright Office, Library of Congress.

1946
THOMAS BEYERSKORF, GE,'50GE, appeared in a program of his compositions at Southwest Missouri State College.

FLORENCE REYNOLDS, '57A'60GE, was a recent guest soloist with the Missoula (Mont.) Symphony Orchestra.

1947
PAUL PARMELEE was a judge for the 1966 Metropolitan Opera Orchestra, gave a recital and sang in a West Chester (Pa.) State College production of "La Perichole."

JOAN FRANKS WILLIAMS was cited in High Fidelity magazine for her work in advancing contemporary music. She is director of Seattle's New Dimensions in Music.

JOSEPH HENRY, '53GE, has resigned as conductor of the Utica Symphony.

ALVIN PULTON, '53GE, is director of the Arts Antiqua madrigal group which performed recently at Colorado State University.

WALTER ASCHAFFENBURG, GE, was one of five composers who received Awards in Music from the National Institute of Arts and Letters.

1948
MARGARET BICKLER DUNCAN is president of the Junior League of El Paso, Tex.

KENNETH BALLENGER, GE, of the music faculty at the University of Arkansas, will spend the 1967 spring semester studying at leading European opera houses.

MARVIN RABIN, GE, was guest conductor during the annual Festival for High School String Musicians at Manchester College.

JAMES C. WILLIAMS has been named visiting professor of theory-composition and acting chairman of the University of Miami music department.

1949
JOHN DIERCKS ('50GE) "Quintet for Piano and Strings" was performed at the opening of the Roanoke (Va.) Fine Arts Center and Junior League.

RICHARD BLUM is a member of the University of Wisconsin Piano Quartet, which performed recently in Racine, Wis.

DONALD J. JOHANS, '52GE, and the Dallas Symphony Orchestra, of which he is conductor, were in residence at North Texas State University as part of a composers-performers workshop last spring.

VANCE JENNINGS, clarinetist, is a member of the Wichita Woodwind Quintet, and teaches at Wichita State University.

ROSEMARY CLARKE, GE, was judge for the National Guild of Piano Teachers auditions in Albany.

1950
NORMAN PAULU '56GE, and DAVID VAN-DERSKNOO, '52A'53GE, are members of the Oklahoma String Quartet, which appeared recently at Colorado State University.

WILLARD SCHULTZ, GE, is an advanced piano teacher at Cornish School, Seattle.

1951
ROY SWEET, GE, produced, directed and sang in a West Chester (Pa.) State College production of "La Perichole."

JEAN SLOOP, GE, was guest soloist at a concert at St. Bernard's school in Peapack, N. J., and was guest soloist with the Nutley Symphony in Newark.

JEAN SLOOP, GE, was guest soloist at a Grinnell (Iowa) College concert.

GORDON PETERS, '62GE, directed a Northwestern University School of Music performance in Evanston, Ill.

JEAN EICHBERGER IVEY'S (GE) "O Come Bless the Lord" and "Lord, Hear My Prayer" have been published. The former work was premiered in Washington in a concert broadcast. Two other works were performed at a convention of the Music Teachers National Assn.: "Ode for Violin and Piano" and "Pinball," an electronic piece. Her "Magic Circles" appears in Contemporary Collection No. 2, recently published by Summy-Birchard.

RUT HOWELL JOBS, GE, formerly of Aruba, Netherlands Antilles, has been reassigned to Taiwan, where she will teach missionary children.

1955
NEIL MCKAY, '56GE, composer-in-residence at the University of Hawaii, has written an overture for orchestra which was premiered by the Duluth Symphony.

SESTER M. JANET SHURR, O.S.F. (GE), assistant professor of music at Alverno College, Milwaukee, received an NDEA grant to participate in an Institute for Advanced Study in Arts and Humanities at the University of Texas last summer.

ROBERT STERN'S (56A'62GE) latest songs for soprano and horn were premiered at the University of Massachusetts by DOROTHY ORNEST FELDMAN, '42E, last spring.

COSMO LONTI has begun teaching music at the White Plains high school.

BENJAMIN HUSTED, GE, directed the chorus for the Eastern District Music Festival at Boyertown, Pa.

1956
SHELLEY GRUSKIN was featured in a concert of French and Italian baroque music at Woodward, N. Y. He is a member of the Manhattan Consort, which recently performed in Croton, N. Y.

PAUL FREEMAN, '58A'63GE, returned to his home town of Richmond, Va., last spring as conductor of Rochester's Hochstein Sinfonia, which he founded.

STEPHEN WOLOSONOVICH, violinist, gave a concert at St. Bernard's school in Peapack, N. J., and was guest soloist with the Nutley Symphony in Newark.

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JOHN WHITE, '54A'60GE, JAMES LERCH, '64GE, and JOHN DEMPSEY, '64GE, appeared in a recent recital by the Emanon String Quartet in Hudson, Ohio.

KATHERYN SILVER DEGREE gave a piano recital at Upsala College, East Orange, N.J.

Roy SWEET, GE, produced, directed and sang in a West Chester (Pa.) State College production of "La Perichole."

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WALTER ASCHAFFENBURG, GE, was one of five composers who received Awards in Music from the National Institute of Arts and Letters.

1953
WILLIAM STEDMAN, GE, has become dean of the Conservatory of Music at the University of the Pacific.

RAYMOND GNIEWERK, concertmaster of the Metropolitan Opera Orchestra, gave a recital in New York's Town Hall last spring.

LESTER SLEZAK, '54GE, a member of the U. S. Foreign Service, is stationed in Lyons, France.

RONALD Onderka, '54GE, is conductor of the Pittsburgh Symphony Symphonetta, which appeared in concert recently at Bethany (W. Va.) College.

1954
CRAWFORD GATES, GE, is conductor of the Beethoven Symphony Orchestra and artist-in-residence at Beloit College.

P. Peter Sacco, '59GE, conducted the Stasha (Calif.) Symphony Orchestra in his "Symphony No. 1" and "Meditation No. 2" in Redding, Calif.

DANIEL WINTER, GE, was a featured artist in a concert at Young Harris (Ga.) College.

JOAN MRAZ TALLUS' (GE) article on the role of music in worship appeared in the Holland, Mich., Sentinel.

1957
JOHN HAMM, GE, is director of the Covernant College Chorale, which last year toured several southern and eastern states.

THOMAS BRICETTI conducted the Pinellas County Youth Symphony in a concert during Clearwater, Fla.'s recent festival.
1958
REV. CYRIL R. UDALL, C.S.B., director of the award-winning Rochester Aquinas Institute band and chairman of the school’s music department, has been assigned to a new post by the Basilian Fathers.

JOSEPH CARLUCCI, GE, is listed in the new edition of Who’s Who in the South and Southwest. He is musical director of the newly organized Natchitoches-Northwestern Symphony Society and chairman of the wind instrument section, Louisiana Music Teachers Assn., of the college division, Louisiana Music Educators Assn., and of Region 9 of the National Association of Schools of Music. He is the author of a series of articles on woodwinds currently appearing in Louisiana Musician magazine.

RAY TADLOCK, GE, directed 20 pianists in a massed-piano concert in Rockford, Ill.

HERBERT COLVIN, Jr., GE, directed the second annual contemporary music festival at Baylor University, Waco, Texas.

HELEN BOVBJERG, '59GE, recently sang “Boulevard Interlude,” a new opera by Hans Werner Henze.

1959
JOHN DAVISON’s (GE) “Trombone Concerto” was performed in Radnor, Pa.

DAVID DALTON, ’61GE, was featured in a concert at Brigham Young University.

DONALD PANHORST was a soloist at a Cornell Symphony Orchestra concert.

JON BICKELS, ’61GE, recently gave a publication for a Ford Foundation grant.

JOSEPH CARLUCCI, GE, is listed in the new edition of Who’s Who in the South and Southwest. He is musical director of the newly organized Natchitoches-Northwestern Symphony Society and chairman of the wind instrument section, Louisiana Music Teachers Assn., of the college division, Louisiana Music Educators Assn., and of Region 9 of the National Association of Schools of Music. He is the author of a series of articles on woodwinds currently appearing in Louisiana Musician magazine.

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1960
ROBERT B. WASHBURN is serving in the newly created post of acting associate director of the University College at Potsdam’s music department.

SUE GARZA, GE, performed in an all-Gershwin concert in Fort Worth, Tex.

ALLEN QIMES, GE, JOHN PERRELL, ’47& ’49GE, and WILLIAM PUECIL, ’52& ’56GE, members of the Iowa String Quartet, performed at San Jose State College.

SHARON BENNET D’WYER, ’62GE, has received a Rockefeller grant for advanced study in music. She and JOSEPH FENNIMORE, ’62GE, performed in the annual Salute to the United Nations presented by radio station WNYC and the National Federation of Music Clubs.

GEORGE VAN OSTRAND, GE, a music teacher in the East Irondequoit school system, is studying for a doctorate in applied music at Eastman.

GLORIA WILSON SWISHER (GE) is in Japan. Her “Cancione” was premiered at the University of Redlands recently.

F. DONALD TRUESDELL, GE, gave recent piano recitals at the College of William and Mary and at Hollins College.

1961
WILLIS STEVENS has become associate professor and chairman of the piano faculty at Southern Illinois University. Recently he gave his second recital in New York’s Town Hall.

JONATHAN LEVINE received his M.A. in 1965 from N.Y.U. and is now working toward a doctorate in American history at Cornell University.

WILLIAM HALLER, ’64GE, gave an organ recital opening National Music Week activities in Fort Worth, Tex.

Marriages
JONATHAN LEVINE to Abby Bernstein.

1962
5th REUNION: 1967
DIANE WEINER GOLD received an M.M. degree from Teachers College, Columbia University.

FRED HEMME, saxophonist, was guest artist with the U. S. Military Academy Band at West Point.

KERRY McDEVITT, ’64GE, was guest artist at concerts in Bay Shore and Glen Head, N. Y. He recently completed a tour of France and Italy for the U. S. Information Agency, and is now studying at Juilliard. With-Mo Kim, GE, was violin soloist with the Dubuque (Iowa) Symphony for a concert at Clarke College. He was named best instrumentalist of the year at the Berkshire Music Festival.

RICHARD FOTE, GE, directed the Midwestern Instrumental Music conference.

Births
TO Frank and Alice Whitcher Smith, a daughter, Emily Wylene, May 15.

1963
SYLVIA KHATCHADOURIAN, ’65GE, was soloist in an Albany performance of Mendelssohn’s “Elijah.”

DAVID COWLEY and MYRON KARTMAN, ’58GE, are members of the Antioch String Quartet, which recently performed in the Columbus Gallery of Fine Arts.

NANCY BURTON, pianist, performed before the Dallas Symphony Orchestra League.

MICHEL ASHMORE gave a piano recital at the Southeastern State College Chapter of Music Educators National Conference.

THOMAS MOORE was featured in a Winston-Salem, N. C., concert celebrating the city’s bicentennial anniversary. A portion of a symphony, commissioned for the celebration, by CHARLES FUSSELL, ’60E&’64GE, was played at the concert. Fussell is composer-in-residence in Newton, Mass., under a Ford Foundation grant.

JACKLYN SCHNEIDER won the eighth annual Town Hall award recital in New York.

MARIE KOSCKA YADZINSKI has become first violinist, second section, of the Buffalo Philharmonic.

1964
DANIEL NIMETZ has joined the music faculty at Albany State University.

ALICE CONWAY has been named administrative assistant to the director of Rochester’s David Hochstein Memorial School.

EDWARD WOOD, pianist, won the Arlington, Mass., Philharmonic Society’s Young Artist Competition.

BARBARA HEIDEN POULARIKAS, violinist, performed at Arkansas’ Festival of Arts.

Marriages
WILLIAM LYNNCH, GE, to BARBARA KAVULICH, ’62N, June 11.

1965
ELLEN NIVERT made her Syracuse debut during the Civic Morning Musicals series.

FREDERICK KABALIN, GE, guest conducted the Detroit Symphony Orchestra in a program of Croatian music, including his Chamber Concerto for flute and strings. Five choruses from his settings of Spanish poetry, “Cantos anejos,” were performed by the Radio Chorus, Sarajevo, Yugoslavia, the first performance of his works in his native country after World War II. Kabalin recently wrote and narrated five TV programs and commissioned programs of Croatian music over Station WDET, Detroit. In addition to reviewing books for Choice, a publication for college and research libraries, he writes a weekly column for the Midland, Mich., Daily News.

Medicine and Dentistry

1935
DR. CHARLES L. RINGE has been named chief of staff at the Newton (N. J.) Memorial Hospital.

DR. J. H. ZIMMERMAN has been promoted to superintendent at the Cresson (Pa.) State School and Hospital.

1939
DR. FRANK S. JANAS is president of the Tompkins County (N. Y.) Medical Society.

1940
DR. ROBERT WICKS HURD is medical director of Utica Mutual Insurance Co.
DR. S. E. MERGENHAGEN, '57GM,
WINS DENTAL RESEARCH AWARD

The International Association for Dental Research this year named a UR alumnus, Dr. Stephen E. Mergenhagen, as winner of its $1,000 Award for Basic Research in Oral Science. Dr. Mergenhagen was honored for his studies on host-parasite interactions in oral infection.

A microbiologist at the National Institute of Dental Health, he was named chief of the immunology section of the Institute's laboratory of microbiology last year.

Dr. Mergenhagen received his Ph.D. in bacteriology from Rochester in 1957 and served in its Department of Bacteriology from 1954 to 1958, when he joined the NIDH staff.

1944
Dr. Baldwin G. Lamson, associate dean of the University of California at Los Angeles Medical School, has been named director of hospitals and clinics at the UCLA Health Sciences Center.

Dr. John J. Butler, associate professor of medicine at New Jersey College of Medicine and a former director of medical education at St. Michael Hospital in Newark, is now director of medical affairs of the Catholic Hospital Association, St. Louis.

1949
Alejandro Zaffaroni, GM, president of Syntex laboratories, was featured in a recent profile in Drug Trade News.

1953
Dr. Ernest N. Boettcher is director of the St. Louis University Hospitals.

1955
Dr. William L. Sutton, GM, is assistant medical director of Eastman Kodak Co.

1956
Walter L. Seibyl, GM, is midwest industrial manager of Picker X-Ray Corp.

1957
Elmer Nussbaum, GM, director of research and professor of physics at Taylor University, has been named the university's "Alumnus of the Year."

1958
Dr. Ronald F. Kaplan is practicing orthopaedic surgery in Brookline, Mass., after having completed a residency at the New York Orthopaedic Hospital, Columbia-Presbyterian Medical Center.

1960
Dr. John C. Thonard has recently accepted a chair in dental science at the University of Adelaide, South Australia, where he will become director of the division of oral biology and graduate programs.

Dr. Carl L. Hansen, Jr., GM, has been elected to the American International College board of trustees.

1961
Dr. Paul Kindling is a member of the staff of Detroit Receiving Hospital.

1962
Dr. William H. Knospe, assistant chief, department of hematology, Walter Reed Army Institute of Research, has been promoted to the rank of lieutenant colonel in the Medical Corps, U.S. Army.

1963
Marriages
Dr. Laura DeBose Storm Halstead to Joocelind Bergen Baer in May.

1964
Dr. Stanley C. Harris has been promoted to the rank of lieutenant colonel at Walter Reed Army Medical Center, where he is engaged in research in the division of nuclear medicine at the Walter Reed Army Institute of Research.

1965
Dr. James C. Dangel has begun postgraduate training at the Mary Hitchcock Memorial Hospital, Hanover, N.H.

Richard D. Farriss, GM, of the division of nuclear medicine at Walter Reed Army Institute of Research, has been promoted to the rank of major.

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Dr. James E. Mandell has begun postgraduate training at the Mary Hitchcock Memorial Hospital, Hanover, N.H.

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Dr. Richard E. McCall, a son, Patrick Joseph, March 1.

To Dr. Paul, '61M, and Nancy Hendriksen Kindling, a daughter, Ann, March 31.

To Edward and Sandra Gerring Riley, a son, Michael Eugene, April 5.

To Dr. Edwin, '56,48M, and Jean Kams Savlov, a son, Marc Haley, April 14.

1968
Dr. S. E. Mergenhagen, '57GM, Wins Dental Research Award

The International Association for Dental Research this year named a UR alumnus, Dr. Stephen E. Mergenhagen, as winner of its $1,000 Award for Basic Research in Oral Science. Dr. Mergenhagen was honored for his studies on host-parasite interactions in oral infection.

A microbiologist at the National Institute of Dental Health, he was named chief of the immunology section of the Institute's laboratory of microbiology last year.

Dr. Mergenhagen received his Ph.D. in bacteriology from Rochester in 1957 and served in its Department of Bacteriology from 1954 to 1958, when he joined the NIDH staff.

1944
Dr. Baldwin G. Lamson, associate dean of the University of California at Los Angeles Medical School, has been named director of hospitals and clinics at the UCLA Health Sciences Center.

Dr. John J. Butler, associate professor of medicine at New Jersey College of Medicine and a former director of medical education at St. Michael Hospital in Newark, is now director of medical affairs of the Catholic Hospital Association, St. Louis.

1949
Alejandro Zaffaroni, GM, president of Syntex laboratories, was featured in a recent profile in Drug Trade News.

1953
Dr. Ernest N. Boettcher is director of the St. Louis University Hospitals.

1955
Dr. William L. Sutton, GM, is assistant medical director of Eastman Kodak Co.

1956
Walter L. Seibyl, GM, is midwest industrial manager of Picker X-Ray Corp.

1957
Elmer Nussbaum, GM, director of research and professor of physics at Taylor University, has been named the university's "Alumnus of the Year."

1958
Dr. Ronald F. Kaplan is practicing orthopaedic surgery in Brookline, Mass., after having completed a residency at the New York Orthopaedic Hospital, Columbia-Presbyterian Medical Center.

1960
Dr. John C. Thonard has recently accepted a chair in dental science at the University of Adelaide, South Australia, where he will become director of the division of oral biology and graduate programs.

Dr. Carl L. Hansen, Jr., GM, has been elected to the American International College board of trustees.

1961
Dr. Paul Kindling is a member of the staff of Detroit Receiving Hospital.

1962
Dr. William H. Knospe, assistant chief, department of hematology, Walter Reed Army Institute of Research, has been promoted to the rank of lieutenant colonel in the Medical Corps, U.S. Army.

1963
Marriages
Dr. Laura DeBose Storm Halstead to Joocelind Bergen Baer in May.

1964
Dr. Stanley C. Harris has been promoted to the rank of lieutenant colonel at Walter Reed Army Medical Center, where he is engaged in research in the division of nuclear medicine at the Walter Reed Army Institute of Research.

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1968
Marriages
LYNNE E. BARBER to Dr. Alan Retik, May 22.

1969
NANCY J. WINK, '59, who received her master's degree in science for nursing from the University of Pennsylvania last December, has been appointed supervisor of the Out-Patient Department and Public Health Nurse Coordinator at the Graduate Hospital at the University of Pennsylvania.

1962 5th REUNION: 1967
ANN FENTON has been appointed instructor in nursing at UR.

1963
MARCIA HAMMOND McBRIDE has been named industrial nurse by the Goodwill Industries of Denver.

1964
Marriages
ELIZABETH HODGE to Robert A. Butler in April.

1965
Marriages

IN MEMORIAM

1960
GEORGE W. WINGAR, '98, Jan. 25.
HELEN WEIS SMITH, '01, June 1.
CHARLES F. MACON, '01, Mar. 20.
EMALAHINE HAFF, '07, April 10.
EDNA L. PARKER, '09, May 17.
CHERYL E. LAMB, '09, May 17.
HARVY W. FUNK, '11, June 9.
MABEL McCORD, '18, June 8.
MILTON R. WHITEMORE, '18.
BERNARD R. BROWN, '20, June 1.
ALLAN B. DRAPER, '21, June 3.
RICHARD B. DEMALLIE, '23, April 25.
Helen A. Young, '27, May 24.
MARGARET FITZ-GIBBON, '30, April 15.
DAVID W. BISHOP, '31, June 18.
MILTON A. ELLIS, '31, Mar. 28.
ELIZABETH KELLEHER MCGUIRE, '33E, April 17.
CHARLES M. CARPENTER, '33M, Mar. 22.
ALLEN M. HILL, '34M, May 19.
MORRIS CORNH VINT, '34, April 29.
GRACE POELMA, '35, April 30.
HARRIETT JULIA NAYLOR, '35,37G, last winter.
ELIZABETH FAIRBANKS RINKER, '36, May 15.
LOUISE FAIRBANKS JUMONVILLE, '40E, April 15.

Nursing
THE CHANGING FACE OF THE CAMPUS

Buildings and spaces . . . architectural designs and "happenings" . . . the campus of yesterday and tomorrow . . . are among the topics discussed herein by Judy Brown, editor of Rochester Review, and three people who have a more than casual interest in the changing face of the campus: Thomas R. Mason, the University’s director of planning; J. E. Robinson of the architectural consulting firm of Sasaki, Dawson, DeMay Associates; and Edward Mendelson, ’66 (summa cum laude), who, in his undergraduate years, wrote occasionally and not always admiringly of campus architecture and design.

The material that follows is a considerably condensed version of their two-hour dialogue.

Brown: Over the years the University has been developing its academic and extra-curricular programs, its faculty, student body, and so forth. Isn’t the physical environment of the campus important, too?

Mason: Well, strictly in terms of academic and research and service programs, an effective campus environment is simply one that provides an efficient shelter and communication system for the human activities that go on there. But the intangible quality, the feeling of the campus environment is tremendously important, too. Indeed, most alumni identify their college or university by their recollection of how it felt, what it was like, to be there.

Now people like me—who plan in terms of numbers and functions and programs—aren’t skilled in developing this quality, so we depend on experts who have the ability and training to see (which few laymen have) . . . men who can sense how people will feel when they’re living in, walking across, or visiting the campus.

Brown: Then you feel a university depends heavily on its campus to give it some kind of visual coherence and unity.

Mason: Yes, but because of the great diversity and multiplicity of its activities, this is difficult to achieve by administrative means. That’s why we’ve engaged a firm that combines several specialized talents in the visu-
Pictured, left to right, are Judy Brown, REVIEW editor; Tom Mason, UR director of planning; Ed Mendelson, '66; and Jack Robinson, architectural consultant.

g al arts and in the physical planning and design fields—Sasaki, Dawson, DeMay Associates—as master plan consultants on overall campus design.

Brown: I gather that this is the first time we've had a master planning firm of this kind—which would indicate that since the 1930's much of the campus has more or less 'just growed.'

Robinson: Except that the original River Campus plan was quite well thought-out. Much of it was built at one time, but over the years units such as the Men's Quadrangle were added with only minor modifications of this plan. Then the Women's Residence Halls were built—and these, in terms of location, architectural character, scale, and size, were a complete departure. But, in effect, the University did have some good master planning and follow-through—with pretty happy results in terms of the overall impact of the campus.

Now Tom spoke of the influence of the campus environment on its occupants. Of course, this is true of a city as well. Actually a campus is a very special kind of city, but not so special that it's a completely different breed of cat. It's a place where people live, work, and play. True, the work is a special kind, but it is work and people do live and play there, and the feeling of the whole environment is important.

Certainly alumni and students and visitors and faculty respond to this strongly—either positively or negatively—and this is true of the way people respond to cities. One reason a project in campus planning is so attractive to designers is that it offers a wide range of problems with which to work—including the requirement that space and facilities be highly integrated and that the totality be greater and more memorable than any single part.

Brown: Ed, as a very recent resident here, what do you think is needed in campus planning?

Mendelson: Let me speak first of what, by hindsight, seems wrong with today's campus. The original campus appears to have been designed as a combination of the Acropolis and a New England village. It's a series of monumental spaces that make excellent pictures, say, from River Boulevard, or from inside, but there is little of the feeling that people actually move, that they work in different scales—that a person may act as an individual in a library cubicle, or as one of two people in a dorm room, or among forty people in a classroom or a thousand at a basketball game.

The general air is that of a series of axes terminating in the Library tower, with a separation of functions—academic areas separated from living, dining, and recreational areas—on a generally monumental scale. We need to recognize that people move through the campus, do a lot of things in a lot of different places. And there should be a sense of connection between them.

Mason: From my point of view, Ed, those monumental axes initially were effective organizers of space. The original plan developed in 1927 by Gordon and Kaelber with the consulting services of the famous architect Charles Platt and the excellent landscape services of the Olmstead Brothers of Boston was strong and well organized, even though the paths may not have gone wherever everyone wanted and the sense of movement may not have been ideal. However, I do think that outside of the Quadrangle a chaos gradually developed. Certain buildings were added as originally intended, but some ad hoc departures from the original plan brought a sense of disorder. I think it was a recognition of this that led to the choice of our master planners as the appropriate instrument for reorganizing the physical environment of the campus in the process of expanding it.

Brown: What changes can you foresee?

Mason: Well, the general character of the campus will change somewhat because this is no longer a rural university. It's in the center of an increasingly lively small metropolis, a city that is undergoing great change.

Now we wanted the Sasaki firm as our planners because its members are extremely sensitive to what goes on in a university and highly skilled at solving the practical problems of pedestrian and automobile movement and the awful problem of servicing buildings without creating a chaos of trucks, cars, people, and so forth. This wasn't so important in the 1920's when the automobile had not yet become a dominant instrument of movement.

What we expect of our site planners and design consultants is that they will synthesize all of the University's

"the intangible quality, the feeling of the campus environment is tremendously important"
"the original campus appears to have been designed as a combination of the Acropolis and a New England village"

—MENDELSON

various parts and integrate them both with the varied patterns of human activity here and with the adjacent neighborhood and the city as a whole.

Brown: I suspect a lot of people don't think of the University as operating in an urban environment. This brings up a question: One of my colleagues (who, incidentally, lives close enough to the campus to walk to work) deplores the fact that the University is expected to provide parking facilities. He feels that the University (and local industry, too) is paying the price for bad community planning that hasn't developed an adequate mass transit system.

Mason: I think you have to face up to the automobile as something that exists. You're not going to force people to ride in a mass transit system even if it's free and lined with plush velvet, because an individual's independent control of his points of origin and destination apparently is so important to his psyche that he'll endure the most grueling and costly experience of getting to and from work in order to have the independence afforded by the automobile! This situation is intensified by the absence of adequate mass transportation; nevertheless, even in communities where it is available, it barely makes a dent in the problem. Therefore, instead of denying the automobile, we have to find a way of coping with it.

On the River Campus, we hope to resolve this with the proposed 2,400-car parking structure on the railroad right-of-way between Harkness Hall and the Women's Residence Halls close to the Library. Happily, this structure will be located in a deep cut that will substantially obscure it.

Brown: Incidentally, what's wrong with building a skyscraper on campus?

Robinson: We can't do it because of the presence of the airport and the flight patterns involved. Then, too, it's hard to fit certain kinds of facilities—large teaching labs, for example—into high-rise buildings.

One comment: I'm surprised at the use of words such as monumentality and chaos to describe the Rochester campus. One reason our firm was so interested in the University was that we feel its campus has such great potential for achieving almost the best of all possible worlds.

Here you have a city-within-a-city that's beautifully located—and when you see the handsome view of the downtown skyline looking down the river from the new residence halls, this will come across as never before. In addition, the University is well situated in terms of getting downtown, in and out of the city, and around to nearby campuses. Then, too, you have this magnificent Genesee River Valley, and the inheritance of Genesee Valley Park, and, to our minds, a handsome existing campus, and the great permanent green area of Mt. Hope Cemetery. All of this adds up to a great deal in the bank, a great many plus factors!

And, of course, there's the city's program for developing the Genesee River, in which the campus and Genesee Valley Park are important elements; and as we can develop appropriate landscaping, lighting, footpaths, bicycle paths, and additional park land along the river, the total campus environment will be immeasurably enhanced.

Brown: Then we are taking advantage of the river in our planning?

Robinson: Yes, indeed. We have suggested ways to open up views to and from the campus and to and from the river, to improve the quality of the planting and lighting, to make it possible to take a pleasant stroll along the river. Actually, the other sections of the river bank nearby and across the river, where the canoe clubs are, are quite nicely handled.

Mendelson: How about the possibility of a bridge?

Robinson: We'd like to see a foot bridge across the river so that you could walk to and from the Brooks Avenue Shopping area, which is the closest convenient

"what we're doing is addressing ourselves to the success of the campus as an entity"

—ROBINSON
shopping. I think it would help the University by bringing that kind of vitality a little closer to the campus—and it would be a plus in the development of the nearby neighborhood as well. Conceivably such accessibility would help to attract the kinds of shops that give distinction to places like Harvard Square.

Mason: Today 90 per cent of our full-time undergraduates live on campus. How do students feel about the relative isolation of our campus, Ed?

Mendelson: The student does feel cloistered and out of contact with the city. I'd say the most violent reaction comes every few Saturday nights when at least half of the student body feels trapped and moves either downtown or across the river—the foot paths across the ice every winter testify to this. Actually, weekends or evenings here are quite dull if you’re not studying. Most of the campus becomes darkened, although there’s a small coffee house in the Women’s Center—and that cramped snack bar in Todd Union. This isolation is advantageous when you’re studying, but on weekends the sense of tension, of feeling locked in on a small campus, is enormous.

Of course, the old dormitory rooms added to this feeling because they lacked individual lounge space. Today the Towers, with their suite arrangement, help considerably by making it possible to entertain in a private living area.

Brown: I guess we have to do two things: first, make the campus more attractive to students in the evening and on weekends; and second, provide for their rather natural feeling of wanting to get away occasionally.

Robinson: This matter of isolation is like the qualities of monumentality and chaos mentioned earlier: It may be true to some extent, but compared with the problems on other campuses, it’s pretty small potatoes!

Mason: Well, I do think there’s a real advantage to a campus located within walking distance of a lively town where students can get away, have a beer, go see an art movie, enjoy a few nice shops, and so forth.

Brown: And even though our situation isn’t as bad as at other places, there’s a tendency at Rochester, I think, always to want the best—whether it concerns students, faculty, academic programs, athletics, or whatever. I think this high aspiration for all aspects of the University is good.

Mendelson: Jack, I know you feel that there’s great strength here from which to work. What do you see as the areas most open to strengthening and straightening out?

Robinson: In the context of a city-within-a-city, I’d stress the circulation system. It’s really tremendously important; in fact, it’s one of the things most people are most conscious of in a campus. And it should include a pedestrian system, perhaps with your foot bridge across the river, Ed—plus a more efficient road system so that people can get to and from the campus readily by private car and by public transportation.

The second thing is the physical setting along the river and the need for continuing attention to the enhancement of the Genesee River Valley. This can be one of the really great and memorable complexes of parkway, park sys-

“one of the small pleasures of walking around the old part of the campus . . . is observing some of the architectural details”

—Mendelson
tern, and city design in this country, and so it's especially important to think about how this campus, this very special kind of a city, sits in relation to the larger city and to the other new campuses like Rochester Institute of Technology and Monroe Community College that will be its close neighbors.

And then there's the third aspect—the one that's easiest for us to focus on—the design within the campus itself. We've been talking about the River Campus, actually the old heart of the River Campus. But the same careful attention is important for the Medical Center and for the South Campus and for the newly acquired land along River Boulevard stretching toward McLean Street and for what we call the Mt. Hope Campus—the old Barry estate. Together, this land forms a large segment of the city of Rochester and has the potential for making a great contribution to it.

Now, when you talk about monumental structures, there's really only one such building on campus, Rush Rhees Library; and the space in front of it, the Eastman Quadrangle, is the only formal space. The most institutional building is the Women's Residence Halls; it leaves the most to be desired in terms of human scale and attractiveness. But generally the campus blends well into the pattern of present and future activities; what is needed is improved site development.

Mason: What kind of architectural feeling are you trying to achieve?

Robinson: Most people think of a campus as a collection of buildings, but actually the spaces are the memorable parts. When you think of the Rochester campus, you think of the Eastman Quadrangle; when you think of Cornell, you think of the old quadrangle and courtyard and the general campus setting; when you think of MIT, the great court; Harvard, the Harvard Yard. It's the space, it's the court, it's the yard that you give a name to and talk about; the buildings enclose and wall these spaces.

Nevertheless, buildings seem to get the most detailed attention, and, especially in master planning, this is unfortunate because buildings are likely to change as programs change and as architectural design progresses. So we try to establish an orderly system of circulation and a pattern of open spaces that will be a permanent organizing element. Rochester has been fortunate in having inherited not only the Eastman Quadrangle but the cross-axis that runs from Hoyt Hall through the arcades and the men's dorms, the handsome Fraternity Quadrangle, and some of the smaller, more incidental spaces. We need to carry on that system and give order to the rest of the campus—reclaiming and recapturing and improving the spaces towards the Women's Residence Halls and the Towers and extending the circulation system.

Now the configuration of the land and the river and the existing space requires a strongly structured system, but not a formal one. This is difficult to achieve because it's more subtle than a formal arrangement, but it can be done very handsomely here and we're eager to start.

The connection through the new science complex to the Medical Center, for instance, will be a very rich and
rewarding visual experience as you walk from Hoyt Hall through what we call an improved Gavett Court area (which has great potential for becoming a fine courtyard), then through a small opening between Hopeman and Gavett across Library Road, past the forthcoming Space Science building, through the plazas of the new science complex and a vastly improved area over the railroad and around the heating plant. This latter section will undergo a radical change; you'll be able to walk through a plaza near the Radiation Biology buildings (between those buildings and the heating plant), then across Elmwood Avenue into the Medical Center. And, incidentally, these changes will just about double the dimension you normally think of on the campus.

As you know, the University wants to further integrate medical and science education, and this physical link will contribute to that. Later, as the Lattimore Road area develops for housing, playing fields, and shuttle-bus parking lots supplementing the new parking structure, those areas, too, will be linked. Each area can make a major contribution to the structure and space and circulation system of the campus—so that what we're doing is addressing ourselves to the success of the campus as an entity and not just as a collection of good buildings, interesting as buildings themselves.

**Mendelson:** These seem to be exactly the changes we need, because while the old campus does have some subtle organization (for example, the Fraternity Quadrangle and the first court in the Men's Quadrangle echo the Eastman Quadrangle), the connections between them are distinctly unappealing. Today, to get from the main quad to the Men's Quadrangle you have to walk past the incredibly ugly and clumsy Men's Dining Center through a nondescript space covered with mud.

**Robinson:** You should be able to walk where the Brain Research building is—and you will, as soon as we can put Brain Research elsewhere. But you're right—the campus does have some readily definable precincts, and it's the connections between them that need attention. The potential is there—it's a matter of time and money.

**Mason:** What kinds of buildings are likely to emerge?

**Robinson:** First, let me say this: It's no problem simply to design a building for a specific program in a specific location and to proceed with this design in isolation—that's why our cities look the way they do! In general, our campuses look better than our cities (although there are some bad campuses, too). One reason is that people gave conscious attention—at Rochester, with considerable success—to the relationship between buildings and to overall unity and harmony. This doesn't always bring forth spectacular architectural quality, but it can bring forth spectacular campus design.

On the Rochester campus I think the programs and activities to be housed will force some changes in the appearance of buildings. But this is not a license for novelty-for-novelty's sake or drama-for-drama's sake, because as I've said, the campus must be successful as an entity—visually as well as functionally.

What we must do is achieve a balance between background buildings and foreground buildings, between buildings that are really walls enclosing spaces and buildings that are sculptural and that sit in spaces. Now the four classroom buildings around the Eastman Quadrangle are handsome walls for that space. On the other hand, Hoyt Hall is a very sculptural building and was very sensitively handled by its architects. It sits in space, it's attractive as you move around it (and with its rounded corners, its very design invites you to move around it) and it doesn't call attention to itself.

**Mendelson:** Architectural drama isn't necessary in order to provide visual pleasure on a campus. For example, one of the small pleasures of walking around the old part of the campus and Hoyt Hall is observing some of the architectural details—for example, the carved stone owls on the top of the Library. Students can spend four years here and continually find something new—a stone flowerpot carved around the base of the doors of Dewey Hall, or the two statues of Minerva on Morey Hall, small seals that now are covered with ivy, and details of carvings around the Library facade. I suppose these cost money and time; at any rate, you don't find them in some of the newer buildings. Hoyt has its pleasant wood detail and the wonderful lobby, which seems to me the most dramatic room on campus; and the Towers have some interesting details, too. I hope that in our planning we will think about details like lamp posts, which, on the old campus, are delightful, and lettering, which has degenerated entirely over the past few decades.

**Robinson:** These details are important, and they're among the things we're interested in improving and in maintaining where the quality is already high. Here, of course, you're talking about the classic design problem of achieving something that looks good from a considerable distance, has new interest as you move somewhat closer, and offers even greater interest of a
different kind as you get up quite close. The Eastman Quadrangle buildings were designed by men who were highly skilled at achieving this, and we hope to do the same sort of thing so that, for example, the new chemistry-biology building will be attractive as you view it from the Elmwood bridge or across the river, will have new elements to catch your eye and hold your attention as you move toward it, and, as you get very close, will have smaller-scaled detail that maintains this interest.

Mason: What kinds of detail does contemporary architectural expression involve?

Robinson: Normally this is found in the materials themselves and in the way they are used, as well as in subtleties of proportion, lighting, and so on.

The new Library addition will be uncompromisingly a building of this generation, yet it's been designed as a base for the present Library tower—to complete the part that was planned for the rear of the building. This is being well handled by Murphy & Mackey Architects with our firm as design consultants; however, the building achieves even more in that it enables us to do over the whole “backyard” of the Library so that it becomes a new and interesting entrance to the campus. As a result, the building will not only be successful in itself, but will be even more successful in terms of overall campus design—it will completely change the character of that man's-land between the Library and the Women's Residence Halls and will bring into focus the beautiful grove of trees down toward Fauver Stadium.

Similarly, the new dormitories on River Boulevard will be successful buildings in themselves, since the housing officers and planners have worked closely and carefully with students and administration to make certain that the kinds of rooms and the way they are organized are appropriate. And as we eventually construct additional buildings, students will have a number of choices. They'll be able to live in tall buildings, low buildings, suites, single rooms, double rooms, or whatever.

But as we see it, that group of new residence buildings will do something more. Grouped informally in a series of small courtyards overlooking the river and backed by Mt. Hope Cemetery, it will extend the dimension of the campus and make a major urban design contribution to the campus, the city, and the riverscape as well. And as you get up close, you will find interesting details to capture and hold your attention on a very pleasant human scale.

Mason: I think you can see the infinite range of detail that site planners have to organize in developing a sector of the campus in connection with a new building project, the revision of an undeveloped court, the improvement of circulation, and so forth. They have to start from our program—our functional requirements—but then they make us think about the problems of servicing, access, and so forth, and at the same time they add that very important dimension that we can't contribute: They see the totality of the environment, the whole structure, and they resolve these often conflicting aspects into a workable pattern.

Brown: From what Jack says, I gather there is increased emphasis on consulting with the people who actually use the buildings.

Mason: Well, you can't have a grand Roman forum to plan every facility, but we try to organize the process of decision-making that's involved in developing a building. And this process touches on every facet of operations, activities, and programs, and involves a whole range of people whose information, ideas, feelings, attitudes, and expectations must be drawn upon.

Now, none of us in our planning group pretends to know everything (although there are people who think we act that way!). And so, in the process of decision-making, we have tried to find ways of tapping responsible and meaningful reactions concerning what shall be done, how it shall be done, and so forth.

The new residence complex is a good example. The first question was: what kind of residence shall this be? The low-cost choice would have provided the ordinary gang-type dormitory, double rooms, gang baths and corridors—which obviously entails some severe sacrifices in living quality and environment. An alternative was something similar to the Towers arrangement of “living suites”—a more expensive proposition. Our first cue came from student groups whose members suggested that in this particular residence, which is primarily for juniors and seniors, single rooms would be of real value. But such a setup makes for an isolated situation unless the bedrooms are grouped in a suite, and so, in the first phase of the new housing, we will have suite-type living in the small-scale units that students seem to want. Before making our decision, we brought together groups of student teams to evaluate the various alternatives, not so much to get a consensus as to learn the intensity, the significance, and responsibility of their attitudes and preferences—and also how they study, how they live, and how they want various facilities to work. These decisions were actually built into the design of the residence units. Curiously enough, however, within a year, with different students and different staff involved, the same atti-
tudes weren’t precisely reflected!

Brown: I guess this is always a problem. One generation of students apparently wants certain things very intensely, fights for them, gets them—and the next generation may have quite different ideas.

Robinson: But a university builds for a long time. If you tailored buildings very closely to the needs of the people who are here now—you’d probably find the next generation would have different requirements.

Fortunately, our older buildings have lent themselves well to conversion and renovation over the years and they will continue to be converted and renovated. So we can’t concentrate simply on adding buildings; we have to plan for enhancing and renovating those we have.

Brown: Jack, when a new building goes up, your attention tends to focus on it, and if you don’t know what other structures will be built around it, you sometimes judge it unfairly. For example, it’s possible that the Graduate Living Center is better looking than most people seem to think; maybe it will eventually fit into the total campus more harmoniously than it does now. But today it looks bare and alone and out of proportion to buildings nearby. I wish that whenever a new building went up, we could make sketches available so people could see it in relation to future construction.

Robinson: That’s exactly what we’re trying to do. For example, when people ask about the new dormitories, we can show them that these buildings are only the first phase of a larger group that will be joined later on by other buildings—some taller, some lower—and a dining facility overlooking the river.

Mendelson: I hope our planning will take Rochester’s climate into account.

Robinson: We’re well aware of it, Ed. For example, the new Library wing will have a sheltering colonnade and will be connected to the tunnel system so that you can enter the east facade of the Library and proceed through the tunnel to any of the Quadrangle buildings.

Mendelson: In building the science complex, will we retain the duck pond?

Robinson: There will be a pond, and the area around it will remain open as a gateway to the campus. In fact, that area will be a major pedestrian gateway and an important visual attraction for passers-by on the Elmwood bridge and on River Boulevard. The configuration of the pond will be changed because of the construction of the science center, but we’ll improve the quality of the plantings to provide spring-flowering trees and so on, and it should be very attractive.

Mendelson: Some students have criticized the new dormitory complex, but the fact is that the arrangement of rooms and spaces is better than in any of our other dorms. For example, some have called the pitched roofs archaic, which is nonsense, because the slanted roof has its function in any place or time; in addition, it preserves a continuity with the old campus and gives the upper rooms a skylight.

Robinson: Yes, those rooms will resemble studios with their sloping ceilings and clerestory windows.

Brown: From everything you’ve said, Jack, I gather Rochester is not going to turn into an asphalt campus.

Robinson: Actually, the new parking structure will enable us to eliminate some parking lots so that much of the existing asphalt will become grass and trees. This will be one of the greatest improvements we can make.

I’d like to add that the projects we’ve been discussing won’t produce dramatic changes overnight. All of them—whether you’re talking about a building or significant land acquisition or major campus redevelopment—will happen gradually over a period of time.

Brown: That’s good, because it will give people an opportunity to adjust to change. Students often are surprisingly conservative in this respect.

Mendelson: I think that those students who have talked or worked in any way with Sasaki, Dawson and DeMay are impressed by the imagination and intelligence that’s going into their planning. Now, students being students, they will complain enough to keep anyone busy who listens! But I think the direction in which campus planning is moving today is much more impressive than anything I’ve seen since I’ve been here.
Hendl Reports on Moscow Piano Contest

Back from Moscow where he played a leading part in one of the world's most spectacular music-dramas—the international Tchaikovsky piano competition—is Eastman School Director Walter Hendl.

It was Hendl who, according to TIME Magazine, dissuaded his fellow judges from dividing the hotly contested first prize between 17-year-old Grigori Sokolov of Russia and Misha Dichter of the U.S. Wrote TIME's reporter: "When the Russians broached the idea of dividing the first prize... Hendl vetoed it on the grounds that dividing leading prizes weakened their impact. The jury voted, Sokolov won, and the crowd promptly went wild—for Dichter."

Despite popular enthusiasm for the young American, Hendl is convinced that the judges' vote for Sokolov was correct. "The Russian boy's performance in the final judging was simply phenomenal, not to be believed," he states flatly. Nevertheless, he predicts an even greater future for the American pianist.

During the intensive three-week competition, Hendl and his colleagues worked ten to twelve hours a day. "In the first week alone we listened to 58 different performers," he recalls. "By the time we were through, I'd heard the Tchaikovsky piano concerto 28 times!"

How did American talent stack up? "Many, but not all, of our performers were impressive—and those who were not did our country a disservice." One possible solution: "Maybe we should screen our performers at home the way other countries do. Then we could be sure of being represented in Moscow by only our best young artists. However, I'm not sure that this is feasible."

American and Russian pianists dominated the prestigious piano competition, Hendl reports, "although there were two highly gifted Frenchmen and an extraordinary girl from Czechoslovakia. Unfortunately, music students in some countries don't have opportunities to perform with orchestras as American and Russian students do, and this handicaps them. But they're good—no doubt about it. In fact, the calibre of playing I heard at Moscow has raised and raised my own standards of performance."

Moreover, says Hendl, "Russian audiences are the greatest I've ever seen—they should have gotten a first prize for their knowledgeability and responsiveness. Every performance was sold out... and the audiences were so sophisticated that when a pianist added a final flourish of his own to one composition, they practically jeered him out of the hall."

Will he pay a return visit to Russia? Yes, indeed—he's been invited to conduct Russia's three leading symphony orchestras in six concerts in 1968.

Loewy Succeeds Fenn In Space Science Post

Professor Robert G. Loewy, who was on leave last year as chief scientist of the U.S. Air Force, became director of the University's Space Science Center this fall.

Loewy, a member of the engineering faculty, succeeded Wallace O. Fenn, Distinguished University Professor of Physiology, who will continue his research in the Department of Physiology. One of the original faculty members of the School of Medicine and Dentistry, Professor Fenn served as chairman of the Department of Physiology from 1924 to 1959 and was named director of the Space Science Center shortly after it was established in 1962.

Loewy joined the Department of Mechanical and Aerospace Sciences in 1962, after serving as chief technical engineer at the Vertol Division, Boeing Co. An authority on helicopters and other vertical-take-off craft, he was chairman of a committee which recently studied helicopter development for the Advisory Group for Aerospace Research and Development of NATO.

He is an associate fellow of the American Institute of Astronautics and Aeronautics and an honorary fellow of the American Helicopter Society, and was the 1958 recipient of the Institute's Lawrence Sperry Award.

Center to Study Government Policies

The nation's first university-based Center for Research in Government Policy and Business is being established in the College of Business Administration. Its purpose: to undertake investigations into specific areas of public policy in order to determine their impact on the local or national economy.

The new unit, which is expected to provide a unique focus for the investigation of the interaction between government and business, will offer doctoral and master's programs.

In describing the new Center, Dean William H. Meckling said that "although there is a strong tendency to as-
sume that political actions such as government policy measures achieve the results desired by the authors, this is not always the case."

He cited the areas of urban redevelopment and public housing, "where there is evidence that the effects are the opposite of those intended in that the really impoverished are being displaced while subsidized housing is being provided to higher income groups."

"In the case of state and federal utility commissions," Meckling said, "economists have only recently initiated investigations to determine whether these agencies have been effective in their mission to regulate monopolies. Some economists have come to the conclusion that the commissions have really been protecting industries from competition that otherwise would have developed."

Initial funds supporting the Center have been received from a number of foundations.

**New Book by Norman O. Brown**

Norman O. Brown, Wilson Professor of Classics, whose *Life Against Death* (1959) has become one of the most hotly discussed intellectual works of recent years, is receiving widespread critical attention—mostly admiring—for his latest book, *Love's Body*.

The new work is described by its author as "the continuation of a voyage" begun with *Life Against Death*. The latter, an application of Freudian psychology to history and philosophy, initially attracted little notice, but over the years has established a wide following. Lionel Trilling, for example, termed it "one of the most interesting and valuable works of our time... far-ranging, thoroughgoing, extreme, and shocking." Initial reviews of *Love's Body* indicate that it will be accounted a worthy successor.

**NSF Grant Aids Science Complex**

The new River Campus science complex has moved a sizeable step closer to reality with the award of a $1.95 million National Science Foundation grant for the biology department under the federal government's "Centers of Excellence in Science" program. This brings to a total of $4.5 million the funds received by the University under the program.

About $1.72 million of the grant will go toward the construction of the $11.5 million chemistry-biology building in the science complex, one of the top-priority projects in the University's capital campaign. The remainder will be used for strengthening the biology department's faculty and programs.

Last year the University became one of the first institutions to receive a "Centers of Excellence" grant when it was awarded $2.55 million for the chemistry department.

**Chairman Named In Philosophy**

Professor Richard Taylor became chairman of the Department of Philosophy in September, succeeding Professor Lewis Beck, who has returned to full-time teaching and research at the University.

Taylor came to Rochester last fall and, after only five months, was one of 14 faculty members honored by undergraduates for "outstanding teaching." He is the author of two recent books, *Metaphysics*, and *Action and Purpose*, and many articles.

Beck has been professor and department chairman since 1949 and Bur-bank Professor of Intellectual and Moral Philosophy since 1962. He won UR's first Edward Peck Curtis Award for Excellence in Undergraduate Teaching.

The new department chairman holds degrees from the University of Illinois, Oberlin College, and Brown University. He joined the Brown faculty in 1951 and in 1959 was appointed Faunce Professor of Philosophy and director of graduate studies. In 1963 he became professor of philosophy at Columbia University.

One of UR's more highly visible faculty members (last year he was usually accompanied by a pair of giant dogs), Professor Taylor boasts two additional distinctions: during World War II he served as a lieutenant in the submarine service... and his hobbies include bee-keeping.

**At Work Abroad**

Twelve UR undergraduates held on-the-job traineeships in overseas firms last summer under the auspices of the International Association of Students in Economics and Commerce (AIESEC). During the same period Rochester-area firms provided summer-long work programs for 24 foreign students.

Now in its sixth year at UR, the student-run program has "exchanged" 60 Rochester students and 84 foreign students in a world-wide project embracing approximately 40 countries on six continents.

**New Faces**

The University's 1966-67 R. T. French Visiting Professor is John Shorter, senior lecturer in chemistry at the University of Hull, England. The exchange program has been sponsored since 1953 by the R. T. French Company of Rochester and its British associate, Reckitt and Colman, Ltd. Thomas R. Knapp, '52, associate professor of education at UR, held the professorship at Hull last year.

J. P. T. Pearson, secretary of several advisory committees of the Space Science Board of the National Academy of Sciences, has been appointed assistant chairman of the Department of Biology...

Newcomers at the Eastman School of Music include Samuel Adler, professor of composition, and Brooks Smith, who heads a new department designed to prepare pianists for the highly specialized art of the accompanist. Adler is the recipient of numerous honors, commissions, grants and awards—including teaching grants from the Rockefeller and Ford Foundations in 1965 and the 1963 Charles Ives Memorial Award of the University of Houston.

Smith, who has been associated with Jascha Heifetz for the last dozen years, has collaborated with many of the world's great soloists.

Not a new face at Eastman—but a welcome one—is that of former Metropolitan Opera soprano Josephine Antoine, who has rejoined the faculty after a seven-year absence.
First Professorship
In Dental Research

Dr. Erling Johansen, ’55GM, chairman of the Department of Dentistry and Dental Research, has been appointed to the new Margaret and Cy Welcher Professorship in Dental Research. The professorship is named for Dr. Cy Welcher, a retired oral surgeon, and Mrs. Welcher, who established a $1 million educational fund at the University last year.

Dr. Johansen’s extensive contributions to dental science include research on tooth decay and on the development of decay-preventing agents.

Ninth Masque Weathers Long Hot Summer

The Ninth Masque, UR’s resident summer theatre troupe, this year essayed its most ambitious season and, on balance, came off very nicely indeed.

For the first time, the three-year-old company was officially sponsored by the Summer Session administration. The troupe opened with a smashing production of “Who’s Afraid of Virginia Woolf?” in Strong Auditorium . . . then retreated to the steamy depths of the Todd Union Coffee House for Genet’s “The Maids,” Beckett’s “Krapp’s Last Tape,” and Schisgal’s “The Tiger” . . . and wound up with Osborne’s “Look Back in Anger.”

The Burrows Chair—Dunkel to Gilman

Wilbur D. Dunkel, Roswell S. Burrows Professor of English and a member of the faculty for 41 years, became professor emeritus this fall. He was succeeded as Burrows Professor by William H. Gilman. Chairman of the Department of English from 1958 to 1960, Professor Dunkel was the University’s first R. T. French Visiting Professor at the University of Hull.

Gilman, a member of the English faculty for 19 years, is an authority on Melville and Emerson.

The endowed professorship honors the late Roswell S. Burrows, one of the University’s original trustees.

Swoyer, ’61G, Heads Computing Center

Incent Swoyer, ’61G, has been promoted from associate director to director of the University Computing Center.

He succeeds Thomas A. Keenan, who has headed the Computing Center since its inception in 1956 and who was recently named information systems planning director at UR.

Choosing a College

How does a high school senior decide on the college of his choice? What factors—and people—influence his decision?

To learn some answers, specifically as they relate to UR, Frank W. Hetherington, ’54, assistant director of admissions, sent last year’s entering freshmen a questionnaire—on a no-signature-wanted basis.

The most significant findings of the survey, Hetherington reported recently, were its indication that Rochester is the first-choice college of the majority of its freshmen . . . that factors such as size, location, caliber of academic program, and coeducation tend to weigh most heavily with applicants . . . and that parents are still the most important influence on an applicant’s choice of a college.

Results of the questionnaire (to which about 68% of River Campus freshmen responded) showed, for example, that the most important factors influencing the decision to attend UR were the University’s size (mentioned by 89%); the fact that it is coeducational (75%); its programs of study (70%); and its location (55%).

The calibre of the Rochester faculty and the opportunity to use a New York State scholarship tied for fifth place (46%), followed by UR’s financial aid program (30%).

The most important people influencing the student’s decision to attend Rochester were parents (58%), high school guidance counselors (41%), friends (34%), UR students (31%), teachers (27%), admissions officers (19%), UR alumni (16%), and other relatives (16%).

Rochester was the first choice of nearly two-thirds of the group. Interestingly, of those for whom it was not, 14 per cent were accepted by their original first-choice institutions—but came to Rochester anyway.

Of those who applied elsewhere, over 90% were accepted—and many were offered scholarships—at other schools.

When asked why they selected UR over other colleges to which they were admitted, the largest group (21%) mentioned the high quality of education; 20%, financial aid; 17%, the University’s size; 16%, UR’s reputation; and 12%, its course offerings.

Other advantages cited were faculty, proximity to home, science programs, the city of Rochester, the University’s “atmosphere,” and distance from home.

Students also lauded UR’s summer orientation program for frosh and said UR interviewers “show more interest in applicants and are more congenial than at most other schools.”

Hetherington reported that the pattern of responses resembled that of a 1963 survey, except for a “rather dramatic” increase in the influence of coeducation and of high quality academic programs on students’ decision to choose Rochester.

Alumni Careers

What occupations are UR alumni engaged in?

According to a recent survey, the field of education claims the largest number. The other major fields are medicine, music, engineering, and nursing. Together, these account for about three-fifths of the alumni who reported on their careers. Another one-third hold posts in business and industry, primarily in sales and managerial work.

For men, the top three fields are medicine (including medical teaching), education (primarily college teaching), and engineering; for women, education (mainly at primary and secondary school levels), nursing (including teachers of nursing), and music (including teachers of music).

Nearly two-thirds of the alumni reported a total of some 200 different occupations. Of the remainder, it is assumed that many are married women not employed outside the home.
The largest number of alumni—well over 5,000—are engaged in teaching or educational administration, nearly half of them in college teaching. The 1,570 alumni who have followed careers in music are divided almost evenly between men and women. Of the 57 who list themselves as conductors, one-third are women (over 5,000—are engaged in teaching or of them in college teaching. Though conducting tends to be regarded as primarily a male occupation).

In addition to the 3,046 physicians reporting, there are 155 dentists—including 4 women. Of the 1,164 engineers, the largest number are industrial engineers, followed by mechanical, chemical, and electrical and electronic engineers respectively. The only mining engineer listed was a woman.

Among the 1,214 nursing graduates, 863 are active in the profession. Nearly 800 alumni are still enrolled full time in advanced study. Others reporting included 366 lawyers and judges...36 airline pilots and navigators...12 veterinarians...10 architects. The relatively new field of data processing has already attracted 64 women and 92 men.

New York, N. Y.
The piece by Mark Battle (Summer, 1966) is a remarkable contribution. It is too bad that it cannot get to the minds of the people of our Republic through the mass media. Unfortunately the mass media report only bad news and it seems quite unlikely that in the foreseeable future we will have any headline dealing with hope and goodness and reason.

MORRIS L. ERNST
Clearwater, Fla.

Now hear this: on this date, a teen-age son having gone to the movies, the big black and white dog lying peacefully at my feet, one husband draped on the long chair in the patio, and only the noise of the air conditioner to mar the gentle day student. Back in those dear dead days, I could attend City Normal School and did so, after graduation from West High. I am so glad I did, and later, when I began the long years of work on the extension plan to finally receive my B.S. and M.A. I found it well worth-while. Of course, in THOSE days, I had energy to burn and managed to teach day school, night school and go to college.

You, I suspect, are too young to know of Mack's corner store at Prince and Main Streets, but after classes, we gathered there for a quick meal—his peanut butter and pimiento sandwiches were noted, and his soup very good. Then we went our ways. Of course, that was in the day when we were on the Prince Street Campus.

Somewhere, I never managed to feel quite the same on the River Campus. It is beautiful, of course, but I wasn't used to it. The old buildings, those stairs that I huffed and puffed up and down, the classrooms I was in, all have memories, and most of them great ones.

I didn't go to college with any desire to make life-long friends of my teachers, but to learn, and the fact that I remember so many of my instructors to the present is a compliment to their ability. Those were halcyon days in many respects. I had some fine men and women teachers, and often think of the experiences we shared, my friends and I, all teachers wishing to better ourselves.

Some day, you might wish to get reactions from those who earned their degrees on the extension plan. It might give an interesting viewpoint.

Dean Munro planned our schedules and then we began the long trek. I recall Greek Master Thoughts with Professor Kendrick, the charm and true gentlemanly qualities of Professor Moore in languages, the fascinating summer with Dr. Pechstein, the delightful fun we had with Dr. Merrell, even though at that time I was not at all interested in science, and the countless times I came out of Dr. Perkins' class in a happy daze. He made history live for me.

Under the lofty trees of that campus, we sat and talked over our work... When I was struggling with my master's thesis, I remember the patience and encouragement that Dean Mills and Professor Marshall gave me so fully. One doesn't forget such generosity.

When I could take courses I liked, I turned to sociology, criminology, literature, and languages. Mr. Duvall was one of the instructors so many of us liked.

And Mack, God rest his soul, gave us lessons in the humanities, often without knowing it. His blue eyes and white hair were outstanding, and his advice was so sane and sensible we often took it, honor indeed.

Earl Taylor visualized the day when a Ph.D. would be granted to students on the extension plan. I think he knew what a struggle many of us had, economically.

A course given by Miss Blanche Thompson in children's literature helped me in day school, and the one given by Mr. Finch in teaching methods (English for the foreign-born) enabled me to work at night school for years in many happy classes.

Ibsen's and Bjornson's plays came back to life for me when we used them at night school here in a creative writing course.

We even studied population problems back in '27 and '28. Now why all these reminiscences? I suspect it is because of some of the things I read in the Review, and also because I'll be 64 next month.

Too, there is a joy in learning that I hope I'll never lose. This old grad still goes to school and would feel lost without it. I must keep my mind open and alert or I'll disintegrate like the famous one-ness shay. So—since we moved here, I've studied Spanish I and creative writing and basic typing—as if you couldn't guess! In the fall, I hope to take a course in Florida history.

I read the Review avidly and am so glad when I find names of those I knew or know.

It seems to me the magazine has become so fine in recent years, with very thought-provoking articles. It has grown with the University itself.

GRACE MCCARTHY KNITTER '28, '38G
(Mrs. William J. Knitter)
Is There Intelligent Extra-Terrestrial Life?

(continued from Page 14)

"The sun looks as though it might have planets, and some of them may support life. I will signal them to find out." The amount of time during which he could not have got positive results would have been 10^8 longer than the time he could get any positive results. Even celestial patience would have been exhausted.

Intelligence and social organization having once developed, and having produced an electromagnetic technology, two possibilities are open. One is that the lifetime of such a civilization is unlimited; the other, that it is strictly limited. If unlimited, then it is reasonable to suppose that it will move on from one technology to another; no one knows what the lifetime of an unspecified technology is within the history of a civilization, but it is reasonable to suppose from human experience that technologies would be replaced so that two substantially immortal civilizations would almost never have their technologies in phase. It would be the merest accident if one planet, using its best technology, would signal another during that short interval when the other's technology was in phase with its own, even assuming a like history of technology in different civilizations.

So what we have to deal with is not so much the instability of civilizations but the obsolescence of technologies. If a technique for radio communication were stable for a thousand years, the average density of such synchronous technologies in the galaxy, granted all our other conjectures, would be 10^4 square light years; to get a density high enough for them actually to signal to each other—i.e., to bring such technological civilizations to between ten and even a hundred light years—the longevity of this technology would have to be 10^8 years!

We do not know, of course, whether even the biological material can last that long.

The other possibility is that the lifetime of a technological society is self-limiting, and is, moreover, short. It may well be that the technology which produced radio telescopes and hydrogen bombs in the same decade is essentially suicidal. If that is the case, then any message we ever get from another solar system will have been sent by a society or even a species of organism which is extinct before we receive the message. And this is not merely because the message may have taken a hundred years to reach us, but because the society able to send it may have been intrinsically unstable. After all, it has taken mankind about a million years to produce a radio telescope and a bomb within a decade; and it can lose both capacities in an hour.

When I began the study of this question some years ago, I was most interested in the problem of how to recognize a signal should one be received by our radio telescopes, and how to decode the message should it be received. I felt for a time that the chances both of detecting and decoding the signal were quite good. I did not feel that the amount of information which could be sent was large, since we can cryptanalyze terrestrial messages only because we know something about what human messages are going to be about—battleships, or people, or other things which both the sender and the receiver are acquainted with. Extra-terrestrial messages, however, would not be about anything we knew anything about, except perhaps some truths of logic and arithmetic which are presumably invariant throughout the universe.

The popular notion that we could learn the more advanced technology of a supra-terrestrial civilization, or even that we could learn how it had solved the question of how to deal with the instability and suicidal tendency of a technological civilization, never impressed me. It seemed to me sufficient to learn that there was some other being in the universe who knew, and who knew how to tell us, that 2 + 2 = 4 and what the square root of 2 is. I gave a lot of thought to what kinds of messages could be sent with some good chance that they could be interpreted. (Professor Everett Hafner of the University's Department of Physics and Astronomy has made better suggestions about this than I have ever found in any published papers on the problem.)

But in my present mood, I am almost sure that this problem will never arise, and the linguistic problems of interplanetary communication, while interesting, do not seem to me of crash urgency. On the other hand, so long as there is any chance to answer this age-old question, we ought to try to detect signals from outer space and to become prepared to interpret them if they arrive. I would counsel patience, in the order of thousands of years, and without much hope of success; but the question is too important to be put aside because it is difficult and success is improbable.

I would not, however, advise an astronomer with a radio telescope to devote precious time on his instrument to chasing this will-o'-the-wisp, when there are so many astronomical problems which he can work on with considerable assurance of success. But if an international program of collaboration, like that recently proposed by the Russians, could be realized, I think it should be welcomed. If a hundred telescopes in various countries could share the time required, then no one observatory would fall behind others because it alone was spending, or wasting, time listening for messages which may never have been sent.
MISS ELAINE COGHAN
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