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SUMMER 1967

WASHINGTON UNIVERSITY

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Magazine
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Graduate student Louis A. Reith points out the retractable landing gear on an American Airlines Electra to three Kinloch school children. The children were part of a group taken on a tour of the airport, with visits aboard an airliner and to the airport building. Reith is one of more than a hundred Washington University students who, under sponsorship of the Campus Y, regularly tutor underprivileged children in the St. Louis County community of Kinloch.

WASHINGTON UNIVERSITY *Magazine*

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SUMMER 1967

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COVER: Closeup of a delicate throat operation in the University's Department of Otolaryngology. For story of how Dr. Joseph H. Ogura and his staff have built the department into a world center of research, teaching, and service, see Page 2.

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Dr. Joseph H. Ogura, Lindburg Professor of Otolaryngology, and the men he has trained have successfully removed cancers of the larynx from hundreds of patients with a new technique that leaves the patient able to swallow normally and to speak with only a trace of hoarseness. As chairman of the University's Department of Otolaryngology, Dr. Ogura is pioneering in the scientific study of the output side of communication—the voice production system and its relationship to respiratory function.



Dr. Joseph H. Ogura, Lindburg Professor of Otolaryngology and chairman of Washington University's Department of Otolaryngology.

NEW APPROACH TO COMMUNICATION DISORDERS

THE STUDY OF COMMUNICATION disorders is a major and rapidly growing field of medical science. Exactly how vision, hearing, and speech operate, and what can be done to correct abnormalities or malfunctions in these areas are questions of crucial importance in medicine.

Nearly all medical research, however, has centered on the input side of communications: vision and hearing. Investigation here has been scientific and objective and sophisticated equipment and techniques have been evolved to provide quantitative data. The output side—speech—has belonged mainly in the domain of voice teachers, speech pathologists, and psychologists intent on tracking down the emotional and psychosocial problems underlying stuttering, verbal blocks, and speech defects. On the output side, the approach has been almost entirely subjective. There has been little medical, scientific attention paid to the problem until recently.

Dr. Joseph H. Ogura, Lindburg Professor of Otolaryngology and chairman of Washington University's Department of Otolaryngology, has been a pioneer in the study of the anatomy, physiology, and pathology of sound production and its relationship to respiratory function.

Dr. Ogura's interest in the basic nature of the voice production system and of its place in the broader area of respiration grew out of his pioneering work in the treatment of cancer of the larynx and his successful conservation of the swallowing and speech functions after injury to the larynx or surgical removal of tumors.

Cancers of the larynx have a higher natural cure rate than most other malignant tumors, but until recently the corrective and curative surgery exacted a heavy price: the patient was left with a hole in his throat and was forced to learn a laborious imitation of speech achieved by sucking air and expelling it. Some patients can achieve a closer simulation of natural speech with the help of an electronic amplifier, but the patient is forced to go through

life with an opening in his throat which renders him extremely vulnerable to respiratory infections.

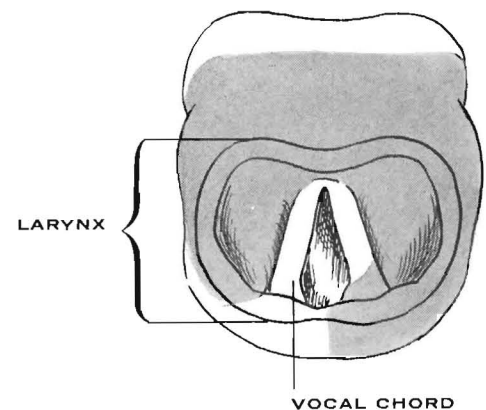
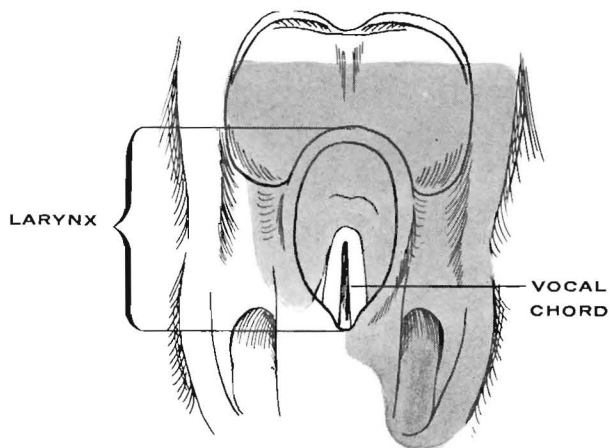
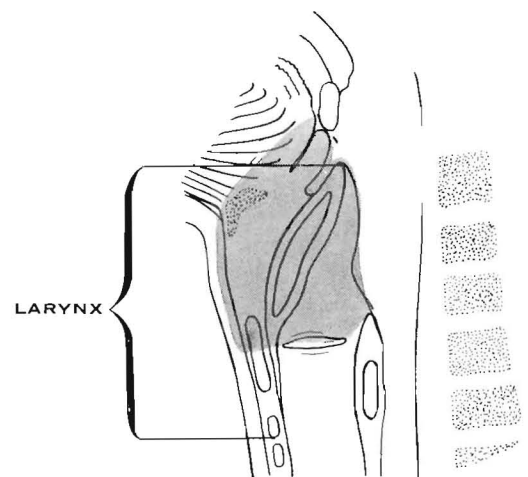
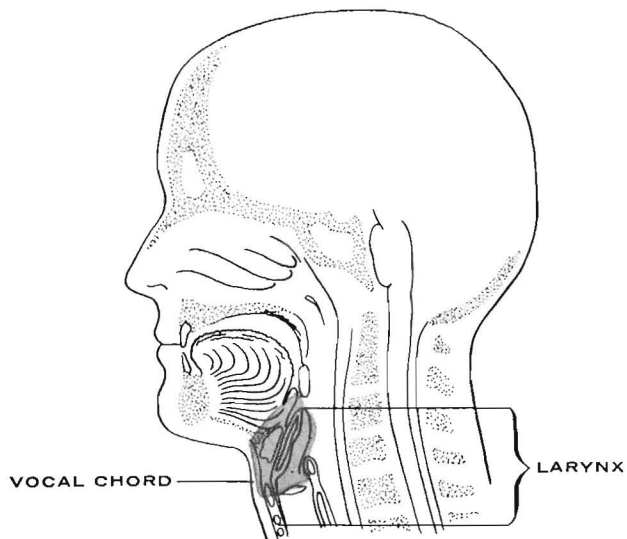
Today, Dr. Ogura, his associates, and the men he has trained are removing cancers of the larynx with a new technique which leaves the patient able to swallow and talk without a hole in his throat and without tubes or electronic voice aids. This result is being achieved even when it is necessary to remove all of the organs in the throat, leaving only part of one vocal chord. The cure rate averages about 75 per cent.

Most kinds of cancer of the larynx are naturally relatively highly curable. They are slow to grow and slow to spread, and because the vocal chords contain no lymphatics, they act as a natural boundary against the spread to adjacent areas. The larynx surgery procedure does not improve the cure rate, but it takes advantage of it by saving enough of the organs to permit normal swallowing and speech.

The larynx consists of a series of sphincters with the primary function of assisting swallowing and serving as a vibration organ for speech. It has been learned that this complex of trap doors, valves, channels, and chutes in the throat is not always necessary for swallowing food and speaking in a relatively normal manner. If only a very small portion of this mechanism is preserved, normal function can be maintained.

OVER THE PAST TWELVE YEARS, Dr. Ogura and his staff have successfully performed subtotal laryngectomies on several hundred patients. It has proved possible, in cases of cancer of the larynx or adjacent organs, to preserve the swallowing and speech functions while maintaining a cure rate equivalent to that achieved with a radical removal of the larynx, even when less than one half of the vocal chord is left intact.

There are two vocal chords in man. Dr. Ogura's tech-



Drawings show location of larynx and related organs in the throat. Upper sketches show side view; lower, closeup of larynx and vocal chords. Shaded areas, which include base of tongue and pharynx, show portions that can be removed and still leave patient able to swallow and to speak in a "normal" voice.

nique involves moving the remaining chord into the mid-line of the throat, sewing it into position, or building up a shelf of cartilage for the remaining chord to vibrate against. In some cases, the non-functioning chord must be built up to achieve sufficient thickness by injections of Teflon. This inert substance can provide the necessary bulk for the remaining functioning chord to close against the mobile chord without the risk of infection or adverse effects on the lung.

Essential to the operation is the technique of cutting the muscle at the opening of the esophagus to relieve spasm. The primary function of the larynx is protection. The simplified larynx moves up against the tongue, sealing it off from the lung so that food will enter the esophagus instead of the trachea.

As Dr. Ogura puts it, "It is like trying to pour water into the tiny opening of a perfume bottle. The air in the bottle prevents the fluid from entering. In much the same way, the air in the lungs prevents the aspiration and normal lung function essential to swallowing. Relaxation of the upper esophageal muscle permits ease of swallowing when the larynx has been subtotally removed."

In most cases, within ten to twelve days after the operation the patient can swallow "normally." At first he must concentrate consciously and exert effort in swallowing, but soon it becomes automatic and unconscious.

DR. OGURA BRINGS TO HIS WORK training in three medical specialties. Born in San Francisco, he received both his A.B. and M.D. degrees from the University of California. He took his first residency in pathology at California and continued that interest at Cincinnati General Hospital. However, while still in medical school he had done research on leukemia and later developed an interest in coronary disease. Gradually his interests shifted from pathology to medicine and he embarked on a new residency—this time in internal medicine at Cincinnati. Toward the end of his residency, he began to develop an

interest in otolaryngology and finally decided to make that field his life's work.

"Otolaryngology is a specialty that combines both surgery and medicine," he points out. Obviously, his early training in pathology and medicine has proved extremely valuable in his present work.

In 1945, Dr. Ogura came to the Washington University medical center as a resident in otolaryngology and he has been here ever since. Last year he was appointed chairman of the department, succeeding Dr. Theodore Walsh, now professor, and a short time later he was named to the endowed professorship of otolaryngology established by Arthur R. Lindburg, president of Lindburg Enterprises of St. Louis, who had been a patient of Dr. Ogura's.

At the time he endowed the chair, Mr. Lindburg said, "Were it not for dedicated scientists like Dr. Ogura and his predecessors and work made possible by previous donors, I would not be alive today."

THE PROGRESS DR. OGURA has made in larynx surgery has proceeded in slow and careful steps. Until 1955, the standard procedure everywhere was to remove all tissue within a wide radius of the tumor. Cancer surgery traditionally is based on the total removal of tissue surrounding tumors as insurance against possible recurrence.

"I operated on the same principle for many years," Dr. Ogura stated, "I would remove the larynx, the vocal chords, and even portions of the tongue and neck tissue."

In 1955, Dr. Ogura saw a case where all structure above the larynx had been burned out by X-rays and yet the patient could swallow. Dr. Ogura began to look harder into the whole problem and to question the assumptions on which larynx surgery had formerly operated. The fact that cancer of the larynx has a high cure rate meant that it might be possible to reduce the margin of safety around the tumor site and to try to preserve as much as possible of the organs necessary for swallowing and speech.

In his first attempt, he managed to salvage the necessary

COMMUNICATION DISORDERS

tissue, but the patient could not swallow efficiently. He learned that the problem was that the esophageal muscle was going into spasm because the nerve supply about the arteries that supplied the muscle fibres kept the muscle in spasm, preventing efficient swallowing. After considerable research into the neurophysiology and mechanics of swallowing, he decided to cut the muscle and relax the spasm. With the muscle relaxed, it was possible to shut off the airway and to achieve the closed respiratory system that permits swallowing and speech. This has become a standard part of the operation ever since.

Since those early operations, constant progress has been made. Increased efficiency in diagnosis and in surgical skills and a growing understanding of the basic mechanics of swallowing and speech have permitted more and more radical larynx-sparing operations. The technique has reached the stage today where the larynx functions can be saved in cancer cases with just a portion of one vocal chord intact. In automobile accident cases, where the organs have been crushed or cut but where no cancer is present, it is possible to reconstruct a functioning system from just fragments of the organs.

Of great importance in both the diagnosis and treatment of larynx cancer has been the development of new and sophisticated X-ray techniques. In early stages of larynx cancer, X-ray therapy is sometimes sufficient; in others it serves as a powerful adjunct to the surgery.

THE NEXT STAGE IN THE WAR ON cancer of the larynx, Dr. Ogura feels, will be the development of successful larynx transplants. How close this ideal is to reality is hard to predict at this time, but Dr. Ogura and his associates are exploring the possibilities in an intensive research program.

In 1964, Arthur Lindburg provided the funds for the establishment of the Lindburg Laryngeal Research Laboratory at Washington University. There, intensive research is being conducted into many areas, including larynx transplants. To date, Dr. Ogura and his staff have succeeded in transplanting larynxes in dogs. The surgical procedure for dogs has been technically nearly perfected and could be

applied successfully to human patients, except for the problem that has plagued all transplantation efforts: the tendency of the body to reject foreign tissues and the subsequent reinnervation of transplanted organs.

The experimental animals can tolerate the foreign tissue for short periods of time, but only with the help of constant dosages of immuno-suppressive drugs. Success of the transplant techniques will depend on basic advances in the science of immunology. When it is clearly understood exactly why and how the body rejects foreign tissue, it might be possible to overcome this rejection reaction and to help the body to accept and tolerate a transplanted organ indefinitely. Researchers in many fields are working on the problem and the day may come when every hospital will have a "parts bank" from which healthy organs will be drawn to replace diseased or injured parts.

RESearch by Dr. Ogura and his associates in the Department of Otolaryngology has gone far beyond the classic confines of ear, nose, and throat. In the Lindburg Research Laboratory, with support of the National Institutes of Health, medical scientists are investigating the basic nature of the entire respiratory function. One reason for this interest is that the larynx is located at the junction of the food and the airway passages. They are studying the nature and behavior of the whole system that extends from the nose and sinuses to the lungs as one functioning entity. With the use of computers, complex neurophysiological equipment, and electronic instruments of many kinds, they are arriving at a basic understanding of the entire respiratory-pulmonary system and its disorders, including the physiological relationship between nasal breathing and pulmonary function, upper airway obstruction and the mechanics of breathing, and the neurophysiological aspects of swallowing and speech.

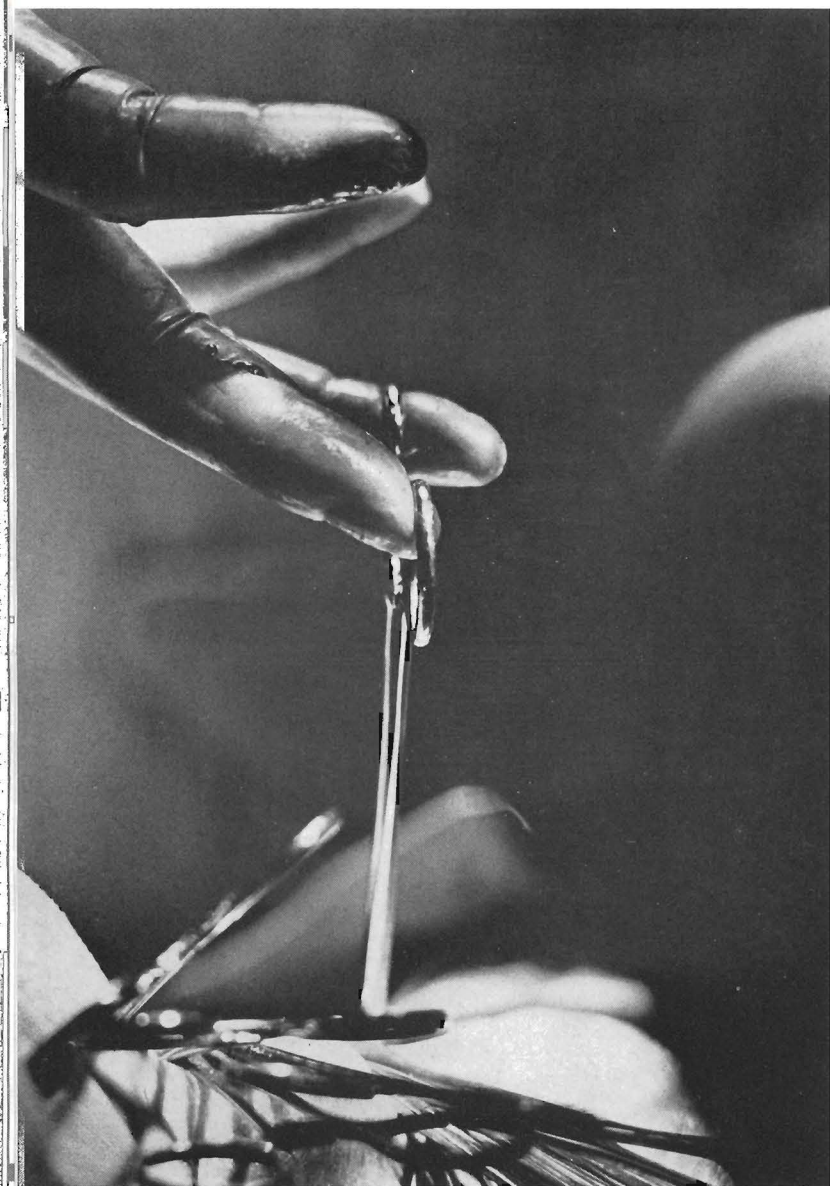
In all this work, Dr. Ogura continually stresses the vital importance of the nose and larynx in the entire respiratory function. He is convinced that nasal obstructions can alter the whole breathing cycle and that nasal obstructions are responsible for some of the upper respiratory-pulmonary



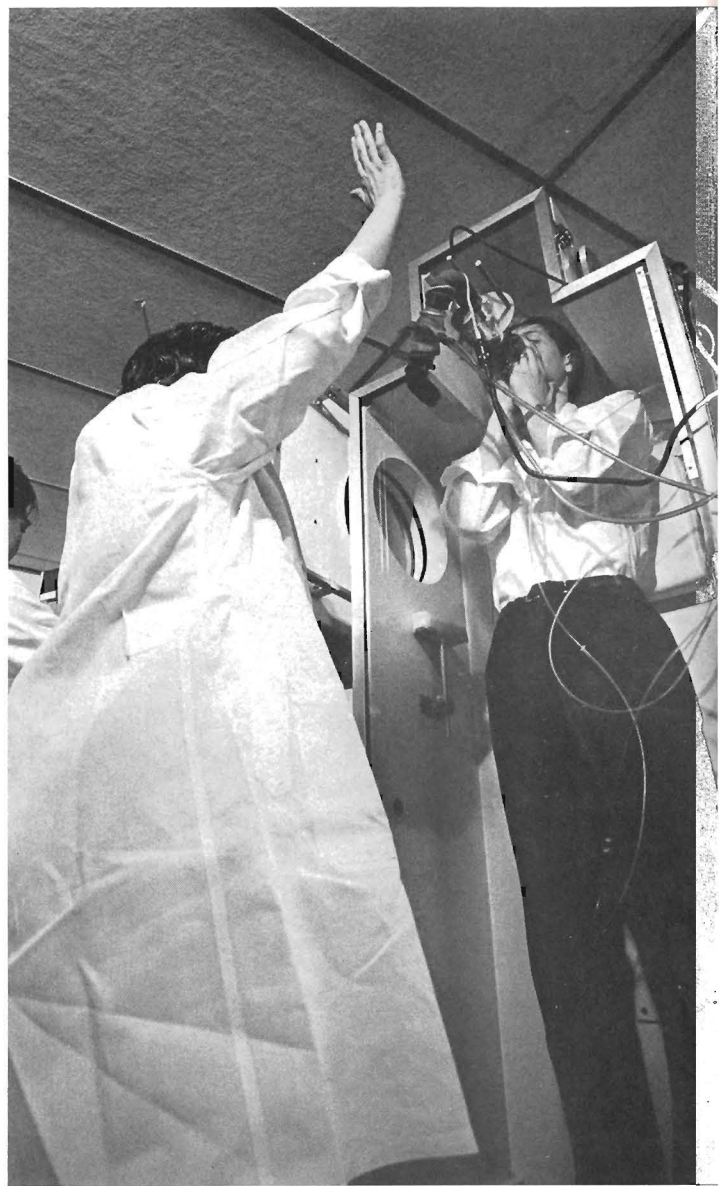
After an operation, Dr. Ogura discusses the procedures with young surgeons in the residency program he directs in the University's Department of Otolaryngology.



Dr. Ogura injects the inert substance Teflon into a non-functioning vocal chord to give it enough bulk to close the gap between it and the remaining mobile chord, permitting normal swallowing and adequate speech.



The surgical procedures involved in otolaryngology require utmost skill and precision and a five-year residency is required to master the techniques.



Studies of the entire respiratory function are being conducted with this equipment for measuring lung compliance and pulmonary resistance.

disorders, including recurrent bronchitis. Careful physical measurements have shown a definite decrease in lung compliance and an increase in pulmonary resistance in the presence of nasal obstructions.

Dr. Ogura points out that in addition to serving as the organ of smell, the nose has six important functions: altering the air currents in the airway on inspiration and expiration, protection of the lung in swallowing, self-cleansing and protection, humidification, heating, and filtration.

"Ninety per cent of the population has some degree of nasal obstruction," Dr. Ogura estimates. He and his associates are working with the latest techniques and tools to give a quantitative measurement of this condition and to attempt to understand it at its most basic level. In this research, University anatomists, computer scientists, and pulmonary physiologists are working with the otolaryngology staff in seeking answers to these basic problems.

ALL OF THESE MANY ACTIVITIES add up to an incredibly busy schedule for Dr. Ogura. As chairman of the Department of Otolaryngology, he is responsible for the administration and efficient functioning of a complex and rapidly growing organization involved in patient care, teaching, and research. As a surgeon, he performs from seven to nine major operations a week, as well as other minor surgical procedures concentrating on the larynx operation, but ranging many times into various other areas of tumors of the head and neck, ear, nose, throat, and face. Every Thursday morning, he conducts the Ear, Nose, and Throat Conference, discussing and analyzing cases and new developments in the field with staff men, interns, residents, and visiting physicians. He is responsible for the planning and operation of the department's five-year residency program and for training fellows in otolaryngology and he sees scores of patients every week, examining them, following up on surgery, and keeping track of their progress.

In addition, he oversees the research activities being conducted in the new center, pursues his own writings in the field, and keeps up with developments in his area throughout the world. He visits the University of Cali-

fornia annually and Yale University every two years to lecture, demonstrate, and hold training sessions for residents and doctors from other medical centers. He is a consultant to Jewish Hospital, St. Louis City Hospital, the local Veterans Administration Hospital, and Lackland Air Force Base Hospital. Today, men he has trained are working in the same field and at other medical centers all over the world. Under his leadership, Washington University has become a world center of research and training in otolaryngology.

PROFESSIONAL ACTIVITIES take a great deal of time. The list of professional organizations to which he belongs includes every scholarly and scientific body in his field and in many related areas. He is a past president of the American Society of Head and Neck Surgeons, a fellow of the American College of Surgeons, the American Laryngological Association, and the Triological Society, of which he was recently elected editor. He is also a member of the National Communicative Disorder Research Training Committee of the National Institutes of Health, and of the subcommittee of the Council on Human Communication and Its Disorders of the National Institute of Neurological Diseases and Blindness. In Montreal this spring, he received the American Laryngological Society's James E. Newcomb Award for distinguished accomplishment in laryngology and laryngological research.

Such a whirlwind life leaves little time for outside interests, but Dr. Ogura does manage to get in a little tennis and fishing now and then and enjoys amateur photography (although most of his pictures tend to be studies of the larynx and related subjects).

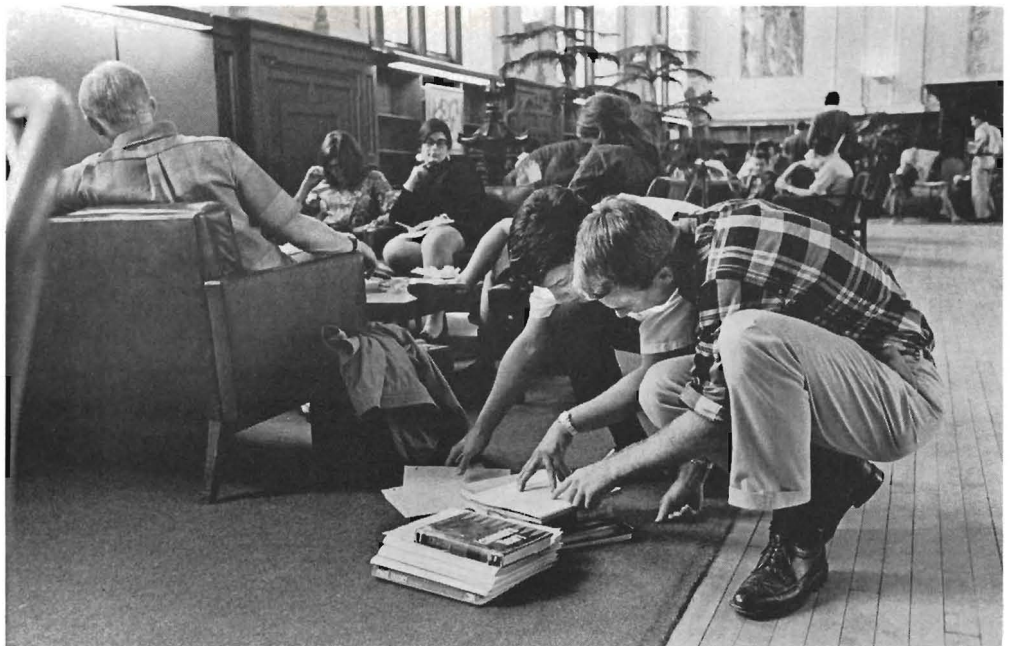
He lives in the St. Louis suburb of Ladue with his wife and two sons. His daughter is at Purdue University.

Dr. Ogura is deeply committed to his roles as physician, surgeon, department chairman, and research scientist, but most of all he looks upon himself as a teacher.

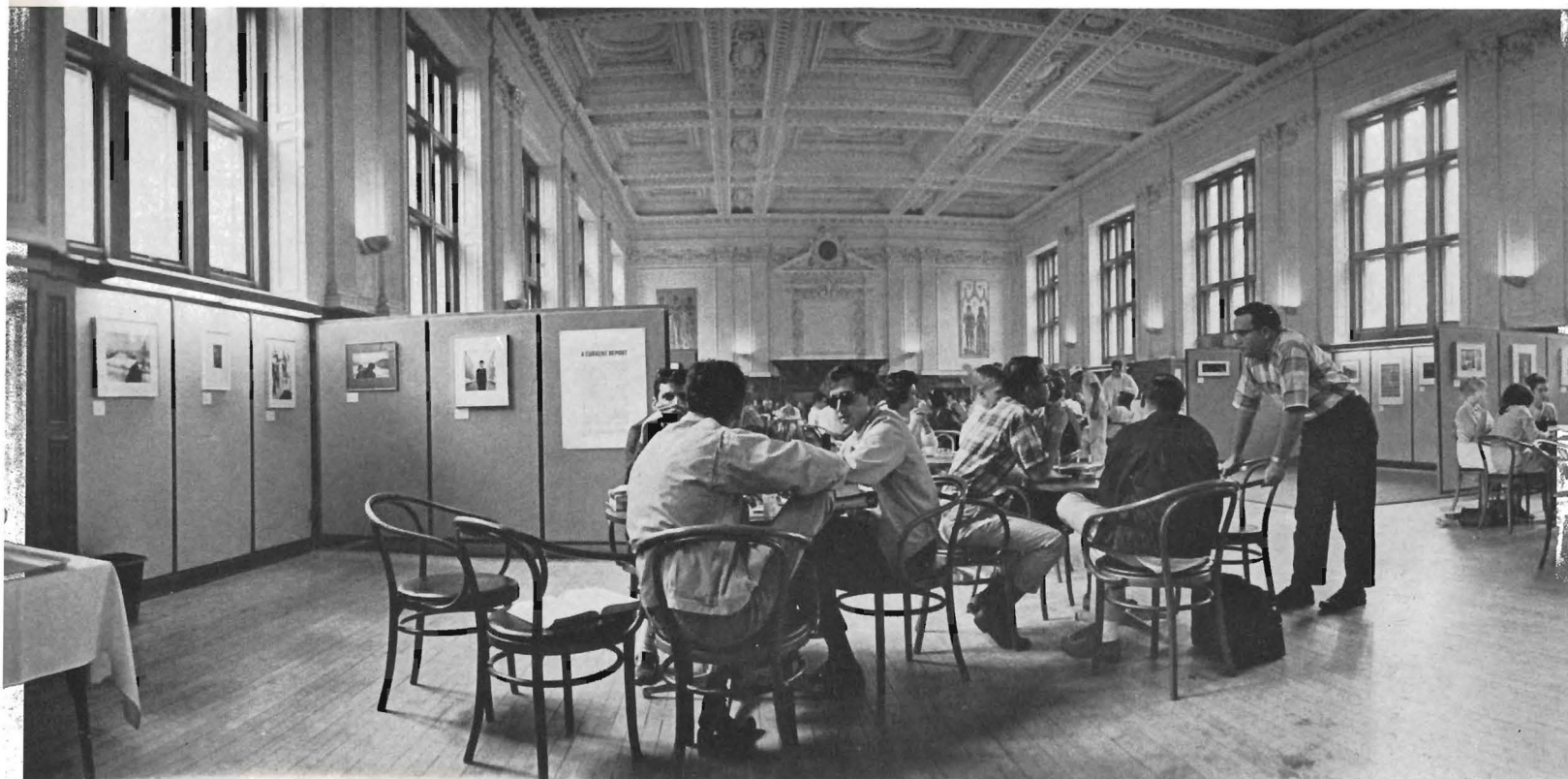
"Our true function as teachers," he says of himself and his colleagues, "is to try to produce people who will surpass us."



Wide windows and high ceilings have always been an integral part of the room's charm, even when it was the reading area in Ridgely Library. This view shows the room as it appeared in 1910.



The atmosphere in Holmes Lounge is strictly informal. When the tables are full, the floor becomes a convenient place to point out a pertinent fact about an upcoming test.



Mary Brooks Holmes Lounge today retains all of its architectural charm of yesteryear. Thanks to renovation, the detail of its highly-ornamented ceiling can be easily contemplated over a cup of the best coffee on campus.

HOLMES LOUNGE

READING ROOMS of libraries are by tradition good places for social contact. Perhaps it's the close proximity to books that makes one's approach to a stranger easier than in another locale. At Washington University, a former reading room has become the social center for students, faculty members, and all others with business on the campus.

The Mary Brooks Holmes Lounge, located in Ridgley Hall on the west side of Brookings Quadrangle, began life during the 1904 World's Fair as the Hall of International Congress. During the Fair, Ridgley housed a display of Queen Victoria's Diamond Jubilee gifts and was the site of a gala ball for the West Point cadet corps. In 1905, Washington University occupied the building, and the room that is now Holmes Lounge became the reading room of Ridgley Library.

Even in those early days, the room exuded a friendly, hospitable atmosphere. With the 1962 opening of the John M. Olin Library, the room was vacant for a period of two years. A gift of \$35,000 from the Mary Brooks Holmes Charitable Trust provided funds for renovation of the room and initial expenses of its operation. Since its official opening in March, 1964, Mary Brooks Holmes Lounge has been the unquestioned "living room" of the Hilltop Campus.

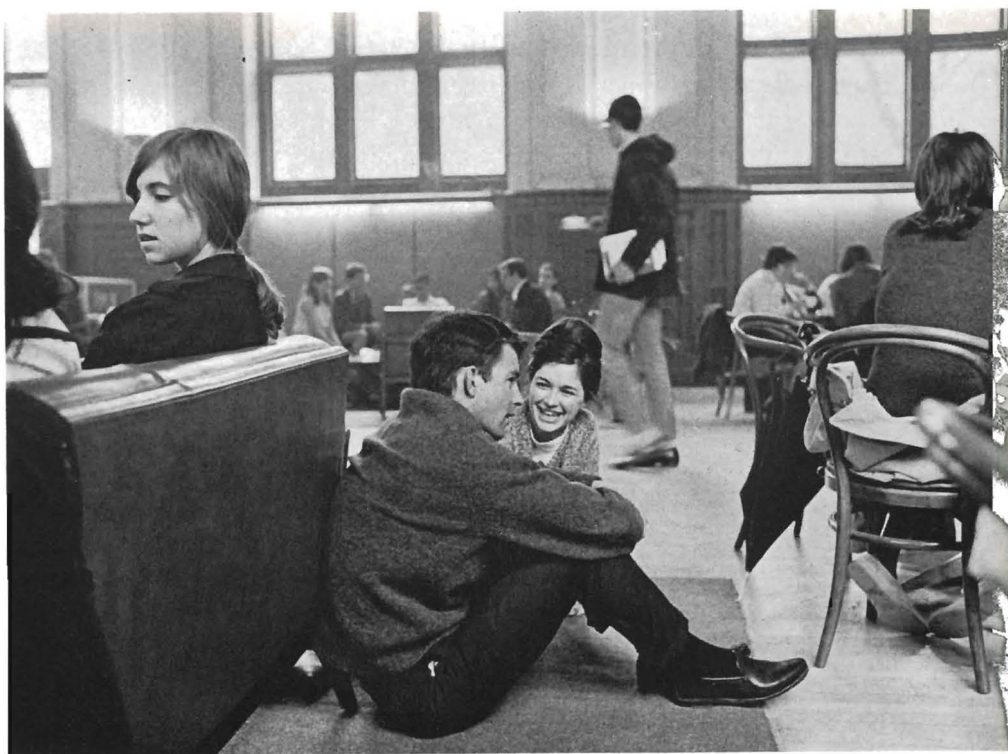
The comfortable chairs and couches offer seating for more than one hundred, and when these are filled, the floor serves just as well. The Holmes Lounge snack bar offers hot coffee and pastries that make the walk from anywhere on campus worth the effort. There is no way to measure the effectiveness of the contacts made in Holmes Lounge, but its atmosphere is stimulating, as this photo essay will bear out.



Talk is the main activity in Holmes Lounge and runs the gamut from idle chatter to fierce and diverse expressions of opinion.



The author of a girl-watcher's guide to Washington University would have to devote an entire chapter to the mini-skirt era as the "Golden Age of Mary Brooks Holmes Lounge."



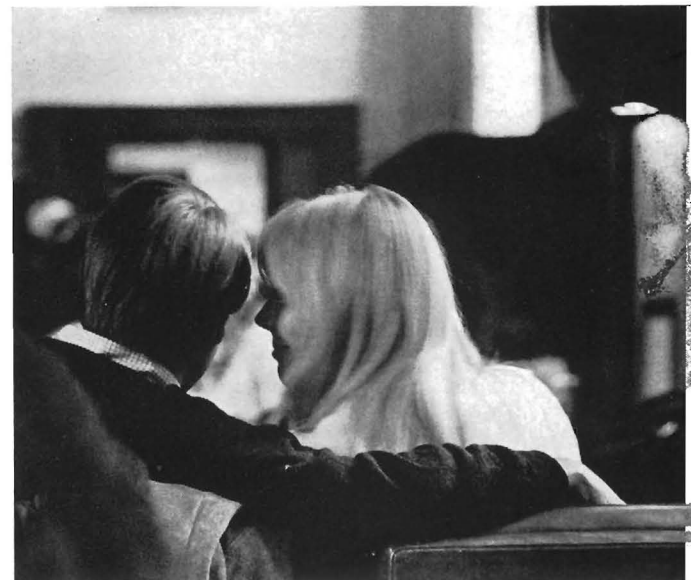
Much like any living room, the floor of Holmes Lounge becomes more comfortable—and is certainly socially acceptable—when all the chairs are occupied.



Holmes Lounge is a welcome campus oasis, where a cup of coffee quenches the dryness of a long, hard lecture for student and professor alike.



Rumors get their start. Facts get exchanged and modified. Theories get shot apart. Conversation is the room's chief product.



Above all, Holmes Lounge is a place where, despite the babble, hellos and goodbyes can be said in a little cove of tranquility.

HOLMES LOUNGE



A Danish and cup of coffee taste equally good, regardless of whether you've just stepped off a lecturer's podium or a painter's scaffold.



The Lounge is a good place to share a secret. Such confidences must make others yearn for a course in lip-reading to be added to the University curriculum.



The room provides food for the eye as well. Paintings are hung and temporary exhibitions are frequent. This one is *Photography: A Current Report*, from the Museum of Modern Art.



Lacking a faculty club or student center, the University turns to Mary Brooks Holmes Lounge as the best of all existing worlds.

Dr. George E. Pake, executive vice chancellor of Washington University and a former experimental physicist, has remarked: "It's unfortunate that most of what is written about science is only the final result of experimentation. Of course many of the high hopes and goals that scientists set may never be realized. But if our knowledge of science is restricted simply to the results, we miss the great excitement involved and the real flavor of research." This article is about a physicist, John Scandrett, who is in the thick of the battle. He is one of several scientists throughout the world working on an incredibly complex task: to make computers "see" subtle distinctions in photographs. Scandrett received his Ph.D. in high-energy physics from the University of Wisconsin. He paid a good part of his expenses in getting through Louisiana State University by playing the cello. He is second cellist in the St. Louis Philharmonic and he sometimes relaxes by practicing a bit in his office between classes and trips to the University's computer facilities.

By ROGER SIGNOR

MAKING COMPUTERS SEE

AT FIRST GLANCE, Sever 200, Washington University's central computer facility, is exactly what a casual visitor would expect it to be.

There are the familiar rows of vertical panels one sees in ads or cartoons about computers.

Then there is the constant clicking of automatic typewriters. A few technicians move quietly around the hardware, subdued by the mechanical clattering.

It doesn't look dramatic, certainly not like one of the sites of a scientific revolution.

But on a given day, if the taped questions and answers going in and out of the facility could be broadcast for visitors, parts of the revolution would be heard.

A physician requesting optimal radiation dosage for a patient with cancer.

Students in the engineering school and science departments using the computer as routinely as a slide rule for extremely rapid help in complex theoretical problems.

Another physician in the Ellis Fischel Cancer Hospital in Columbia, Missouri, checking data on an experiment.

A professor in the medical school calling for a detailed bibliography of literature on blood clotting.

Still, the human role in the drama is lost. The fact that students are having complicated procedures clarified in minutes, where it used to take months; that about 60 per cent of the University's *undergraduates* used the IBM 360 "shared time" system this year; that University researchers are now building a system that will outdate the third-generation IBM 360 system—the many facts about the revolution accumulate as fast as the "printout" of the output printer machines. Behind all the hardware, who are the men in the trenches, the people using their brains and hands to bring about this revolution?

A close look at Sever 200 reveals one of them.

At the rear of the large room is a tall metal housing that clashes with the slick exteriors of its IBM neighbors. It is obviously homemade. One side of it is completely open, showing the outline of an assembly wrapped in a black plastic cover.

An intent, lean young man looks anxiously at the contraption from his seat in front of a small IBM display station, a device for typing out instructions for the 360 computer.

The man, John Scandrett, is a physicist who built the motley looking machine with the help of three graduate students. Dr. Scandrett and his students take it apart occasionally, refine it, and put it back together. It is an



The atmosphere of Washington University's central computer facility, Sever 200, appears cold and calm; but it is the site of dramatic events and exciting work with an optical scanner.

optical scanner, an experimental device coupled to a computer. Scientists at many laboratories are working furiously with optical scanners for a variety of interesting reasons. For example, physicist Donald Glaser, who won a Nobel Prize in the field of high-energy physics, is now developing automatic scanning techniques for biophysical research. Also a high-energy physicist, Dr. Scandrett spends most of his time on development of his scanner system.

What makes them do it?

"It is the siren song of saving years of time in the analysis of experiments. It is luring dozens of physicists all over the world to work on automatic scanning systems," Scandrett said.

To put it loosely, the lure in Dr. Scandrett's case is the tremendously ambitious hope of making a computer "see" and identify the tracks of high-energy particles shown in photographs. Typically, after an experiment is done at a powerful accelerator, a year or more is spent in just searching through the film for pictures of significant tracks.

"An experiment for us consists of perhaps 100,000 stereo photographs of interactions of particles—meaning miles and miles of film with occasional star-like branches that indicate that a particle has scattered or interacted, possibly in an interesting way," Professor Scandrett explained.

When particles interact at high energies, new particles are generated. The known family of particles is far more complex than scientists had realized only ten or fifteen years ago. The really interesting tracks that add to our growing knowledge of the basic units of all matter are few and far between on those miles of film.

"The problem is sifting through a mountain of raw information to find often only a mole hill or like sifting through a large amount of dross to find a small amount of gold," Dr. Scandrett said.

"After the tracks are found, an experiment may take on the average of one to two years, even with the use of semi-automatic equipment.

"It's clear that machines must take over the routine aspects of these measurements. Many devices have been built that use machines to make the measurements on a track pattern once it has been found by a human observer. The brain and the eye have enormous parallel processing capabilities. That's a cold way of saying that a machine can't really compete with a human being in the fine discernment, discriminations, judgments, and coordinated nervous-plus-physical activity that corresponds to seeing," Dr. Scandrett continued.

"So it's a much larger problem to make a computer see in the sense that a person sees, to make it filter through a large amount of obfuscating background to find the lines and shapes you want it to find. So far we've developed equipment that enables us to study these problems and we hope we'll be able some day to do fully, or nearly fully, automatic scanning of photographs of tracks in bubble chambers."

IN EXPERIMENTS at large accelerators, a bubble chamber is one of the most useful devices for collecting data about the nature of particles. It is a container of liquid propane or hydrogen in which the collisions of high-energy particles leave streams of bubbles along the paths of damage they make. Careful analysis of photographs of the bubbles reveals the types of particles that passed through the chamber. A multitude of new "elementary particles" have been discovered in this way over the past few years.

Professor Scandrett explained that the scanner he has built feeds into the University's IBM 360 computer. He is able to make the computer-scanner system follow along lines in high contrast photographs, but only if he intervenes to direct the programming manually. The programming for such an immense task for a computer is incredibly complex, and a great deal of trial and error will be required before one simple line can be automatically sought out, followed, then displayed on an oscilloscope. The trick is in programming the computer to change its strategy when significant points are reached in the scan-



Dr. John Scandrett, physicist, declares that "the siren song of saving years of time in the analysis of experiments" is luring many scientists to develop optical scanners.

ning process, to by-pass unnecessary repetitive steps in the acres of useless background of a given series of photographs.

"The advantage our device has is its flexibility," Professor Scandrett said. "It doesn't have to stick to just one particular search strategy. It can randomly jump to any point you care to examine from any previous point." One scanner-computer system recently invented at Berkeley, for example, can indeed automatically scan a given area, but only in a spiral pattern once it is set on the center of the event to be measured.

Dr. Scandrett went to work on his system to show how it operates. Inside the black bag over his scanner is delicate optical equipment, so sensitive that it would burn out if exposed to normal room light. "You can imagine it as quite similar to your television picture tube, a very sensitive cathode ray tube with a point of light on its screen that can dance around to any point on the face of the tube that you want. You can imagine that the film we are measuring is plastered on the face of the tube and that we have a photo sensor that can measure whether the spot of light is behind a dark place or a clear space. The computer commands the spot of light to a point which you chose in the computer program. The sensor measures how much light comes through at that point and returns that number to the computer. The way we've connected our scanner to the computer makes it appear exactly like an addition to the computer's memory."

IN ONE 35-MILLIMETER frame of film there may be 40,000,000 bits of information, which is approximately equal to the largest computer memory capacities now available. It is in this context that the computer's speed is the key.

"The system we've built will move the spot of light to a new location in a few millionths of a second and then measure whether it's light or dark in about five millionths of a second," Dr. Scandrett continued.

"One means of finding lines in pictures goes something like this: you begin in nearly total ignorance with a systematic searching procedure until you find the first possible element of a line. This may be one black point. Maybe it's only a fly speck. But locating it says you should start looking around that point for further points on the line. You might, for example, program the spot of light to run around in a little circle. By the time you hit three points, you ought to change strategy to look ahead only along a narrow band in the general direction of the line as indicated by the three points. In other words, as you accumulate information, based on what you already know about lines, your strategy narrows down. It's sort of like playing twenty questions. You're trying to find the kinds of questions to ask, and in what order to ask them, to find the shortest route to the answer you seek."

Manual intervention in the computer programming is necessary for the considerable trial and error in programming new strategies, and Dr. Scandrett achieves this by flipping switches on a little metal box on top of his display oscilloscope. He smiled and said the day everyone is looking for will come when he can sit with his hands behind him and let the computer do it all. "But that will be the millennium of course," he said, pulling a switch on the box.

A bell jangled near the 360 master control panel to his rear. He craned his neck at the lights flickering out on the control panel, then looked over at a blonde technician who was hurrying to the control. "It wasn't me that time," he declared. She smiled and started pushing buttons on the control panel to get the 360 going again.

"She'll fix it right away. Happens about ten times a day. The computer's program determined that it had something wrong—self diagnosis—and it turned itself off. It will only take her a few seconds to get it going again. The harder part of her job will be answering the complaints from 'on-



line' people who are using the computer from various points around the campus and the city."

He explained that many people are hooked up directly, or "on-line" to the 360, which can switch back and forth between their problems in thousandths of a second, so that the effect is one of simultaneous, shared-time use. "Richard Dammkoehler, who directs the facility, has been of enormous assistance in figuring out how I could get hooked up to the 360. Probably very few administrators in the country would help, let alone permit you to do this sort of experimentation. But he's keenly interested in new applications."

THE UNIVERSITY'S Computer Laboratory located on the medical campus, he pointed out, has also been essential in setting up his experiment. "They've provided the greater part of the cost of this system, and I'm looking forward next year to a closer involvement with them. This group is one of the best in the business. Jerry Cox, Wes Clark, and Bill Papian have given me a lot of help and encouragement. They're interested in automatic scanning because of the many possible applications in medical problems."

An automatic scanning-computer system capable of searching out and identifying lines and shapes could, to give only two examples, revolutionize medical techniques in the measurement of chromosomes or in spotting an abnormal cell against a vast background of normal cells.

In one application of automatic scanning in another field, Dr. Raymond Kline of the University's Electrical Engineering Department has been successful in subtracting one X-ray picture from another. Using his own scanner-computer system at the Biomedical Computer Laboratory, he has measured the difference in density between two pictures, and then displayed a picture which represents visually what that difference is. This has important implications for the field of radiography.

"You often operate on pictures to get a more meaningful picture. As a matter of fact, that's what is being done with the photographs sent back from the moon," Dr. Scandrett added.

"What I'm doing is working on equipment and programs that will allow a computer to take in a picture and put out the numbers that you wanted from that picture. That would be the ultimate goal.

"Well, not really. There's no imagination in it when you put it that way. Great discoveries aren't usually made that way. Discoveries are often made by people seeing the subtle differences that couldn't be detected by an iron-clad procedure.

"That's really one of the problems with computers in general—the fact that once you have a running computer program, that means you have a detailed plan for what you want to do and how you want to do it. And, developing a program that can abstract photographic information in a certain way, to find and measure things that you postulated might be there; that might be the road to overlooking great discoveries."

He paused. "But on the other hand, you can make discoveries just by reaching new realms of statistical accuracy—just by developing ways for computers to digest larger amounts of information."

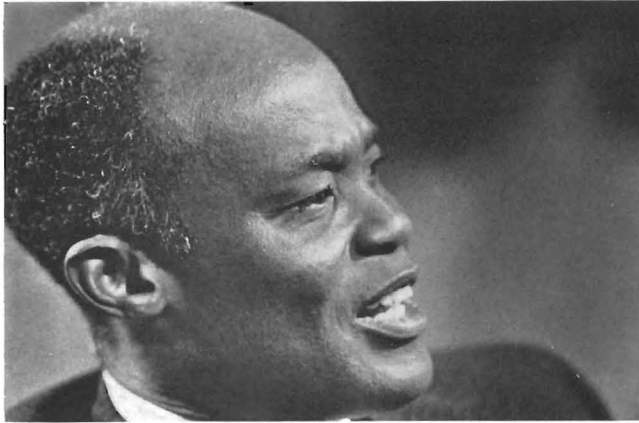
Again, the warning bell rang. Another technician, a young man, strode to the 360 control panel.

"Did you do that to me?" he asked Professor Scandrett.

"I'm afraid so," he replied, looking over his system. "It only had one chance in 200 of happening, but it did." But the technician had the system back in operation in a few seconds.

"It doesn't seem to bug the technicians at all," someone remarked to a researcher who was observing Dr. Scandrett work.

"Oh, no," the observer replied. "They know the experiment is one of the good reasons for the 360's existence."



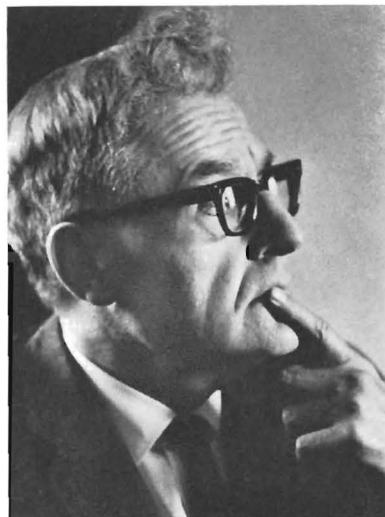
Frederick Arkhurst, Ambassador to the United Nations from Ghana, arrived on campus on the day an attempted coup was reported from his country. With an admitted lack of information on the action because of a Ghana communications blackout, Arkhurst deftly handled questions at a press conference, although the emergency forced him to cancel an evening speaking engagement.

"Democracies in Africa have a very bright future. Africans are acquiring more education and with it, more sophistication. They're not going to sit around and be ordered around by anybody. I feel the dictatorship in Africa will be a passing form of government very soon."



James Deakin, White House correspondent for the St. Louis *Post-Dispatch* and author, is an alumnus of Washington University. He appeared as an Assembly Series speaker in February, speaking on "The Presidency and the Truth." The 37-year-old reporter has covered three Presidents since he joined the *Post-Dispatch* Washington Bureau in 1954.

"The credibility gap is contributing to political alienation in America. It is adding a new and dangerous dimension to the ever-present problem of political withdrawal. In so doing, it is increasing the pressures that bear down constantly on the delicate structure known as democratic government."



Loren C. Eiseley is a special professor of anthropology and history of science at the University of Pennsylvania. In his free time he functions as an author, philosopher, fossil collector, naturalist, administrator and museum curator, and narrator of a prize-winning television science program for children. His March appearance on campus was highly successful and was sprinkled with Eiseleyisms about nearly everything.

"It's better, of course, that the United States and Russia explode their wealth into space as rockets than as hydrogen bombs that they fire at each other. But people forget that every time one of those giant rockets goes up, the price of a university goes up with it."

THE COMPANY WE KEEP

A UNIVERSITY IS A GATHERING place for shared knowledge and free exchange of ideas. This sharing and exchange goes on constantly, wherever two or more people gather for conversation. The exchange between professor and student is often taken for granted, for this is one of the main roles of the university.

Perhaps more prized is the exchange of knowledge with persons from beyond the confines of the campus. Through sponsored programs such as the Chapel Assembly Series, speakers from every walk of life come to Washington University to share their experiences, knowledge, and opinions with students, faculty, staff and residents of the community. Less formal programs, under the auspices of various campus organizations, bring to the University a

variety of speakers, performers, and persons involved with timely issues.

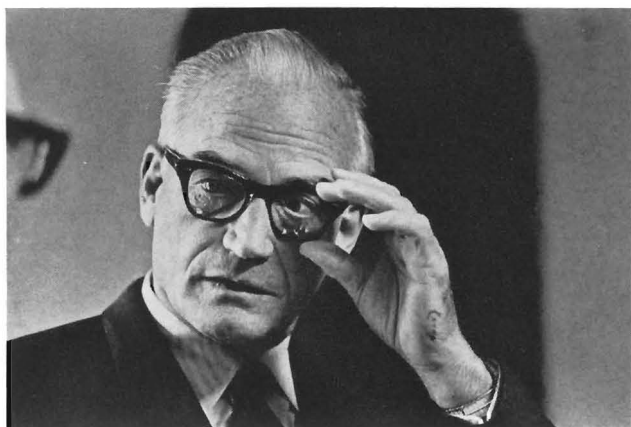
THE VISITING SPEAKER on a university campus must be courageous by nature. He must be prepared to field questions adroitly from his audience—questions that often reflect a great deal of homework on the part of the questioner. Let a speaker muff one well conceived question and the validity of all he has said before may be severely damaged in the eyes of his audience.

Here is a sampling of the variety of speakers, performers and personalities who have visited the University in the past year. Some were colorful, some were entertaining, nearly all were informative.



James Farmer, one of the founding members and a former national director of the Congress On Racial Equality (CORE), is now a faculty member of Lincoln University in Oxford, Pa. An internationally-known spokesman for civil rights, he discussed current race relations in a Graham Chapel speech.

"Now there is a crisis in this country and words cannot conceal or soften the fact that this crisis is real. The change has been evident in black communities in our country over the last few years. I applaud the change that is taking place because I now see people finding a deep pride, self-respect, and self-esteem, such as they've never had before."



Retired general, former senator from Arizona, 1964 presidential candidate, Republican party leader, and private citizen Barry Goldwater was an Assembly speaker in early May. A cordial crowd literally overflowed Graham Chapel and many heard Goldwater's talk on Vietnam by a loudspeaker system set up outside.

"There's a great feeling of unhappiness in this country about the abuses being done to the Constitution. Much of this feeling is emphasized in the many demonstrations taking place today. . . . But remember that our country is founded on dissent. Without dissent, democracy cannot survive."



Former Assistant Secretary of State for Far Eastern Affairs Roger Hilsman was a Graham Chapel Assembly speaker in February with a "Report on Asia." Hilsman, now professor of government at Columbia University, commanded a detachment of guerilla fighters in the Far East during World War II.

"Americans do not demand total military victory. As the world's most powerful nation, with our prestige and military force committed, defeat is unthinkable. It is naive to think we will let ourselves be pushed into the sea. But Americans will accept any honorable settlement."



Senator Jacob Javits of New York delivered an evening address in Graham Chapel in March, concerned with "The Fate of Our Cities." In advocating broad expansion of the Model Cities Act to include health, education, small business development, poverty programs, and air and water pollution, Javits said:

"The point is to channel needed funds from a variety of federal sources through the funnel of a single plan that will take into consideration all aspects of a city's problems. Government has, however, tended to see these issues in isolation from one another, rather than as a part of the living system."



Dr. Margaret Mead's appearance on the campus was sponsored by the University's Center for the Biology of Natural Systems. Dr. Mead, nationally-known writer and anthropologist, outlined the role of man as the major modifier of biological environment.

"We're killing off lakes and killing off bays. There is a lovely phrase now, 'beyond the capability of biological purification.' I don't think we quite know what that means, but it might mean that you can never get the fishes back. And if we're capable of destroying Lake Erie, which is a fairly large body of water, and we're doing quite well with that, we could destroy the whole United States."

THE COMPANY WE KEEP



A Democrat's concern for the future of our cities was expressed by Senator Edmund S. Muskie of Maine in an assembly address in December. Muskie, the backer of a number of bills to increase cooperation among various levels of government, spoke on the problems of America's growing urbanization.

"Federal, state, and local administrators don't always work well together. There is a tendency for the federal partner, depending upon the administrator or agency involved, to seek to become dominant. Many state and executive leaders recognize the challenge of urban problems. Unless they accept these challenges, they can claim only a junior partnership."



Dr. Gerald Oster, an exponent of "Op Art" and professor of polymer chemistry at the Polytechnic Institute of Brooklyn, entranced a Graham Chapel audience with his talk on "Art, Science—Science, Art." Oster's startling works have been shown in more than fifty galleries throughout the country.

"One critic described my work as 'totally devoid of emotion.' This is a very alarming statement since I have been using some of my designs to evoke responses in severe cases of schizophrenia—and with some success."



Not all guests to the campus are speakers. Carl "Doc" Severinsen, recognized as one of America's finest trumpet men, appeared with the University Concert Band in February. Severinsen appeared with the NBC "Tonight Show" orchestra as a featured artist and assistant conductor for several years.



Washington University's Law Enforcement Center is headed by a policeman-sociologist, the former director of the St. Louis Police Academy. The Center he directs is setting new patterns in police-community cooperation, as it attempts to focus the pooled skills and knowledge of police, social scientists, lawyers, and psychiatrists on broad social problems.

By DOROTHY BROCKHOFF

Office of Information

LAW ENFORCEMENT CENTER

THE IMAGE OF THE POLICEMAN in our society is a distorted one. From the time a child is big enough to tote a toy six-shooter, he is taught that "cops" always pursue "robbers." We are nurtured on the idea that the task of law enforcement officers is a heady, romantic, and glamorous pursuit of villains in our midst, and that all those who wear a badge lead lives of breathless excitement.

The folklore of our frontier days with its over-emphasis on swashbuckling sheriffs like Matt Dillon, the fairy tale deeds of comic strip heroes like Dick Tracy, and the myopic eye of television, which magnifies out of all proportion the exploits of Jack Webb as Sergeant Friday, leads us to believe that policemen do nothing but dodge bullets and apprehend outlaws.

Nothing could be further from the truth. Actually, 85 per cent of all calls for police service involve requests from citizens for aid in the solution of living, sanitation, management, and behavioral difficulties. Most of the time, then, the police are called upon to cope with the socially deviant and maladjusted among us whose acts endanger or conflict with the public well-being, as well as their own.

The skid row alcoholic is a case in point. Until recently

this chronic inebriate was caught up, as Dr. David J. Pittman, director of the Social Science Institute of Washington University, has written, in a "revolving door," in which he circulated between the gutter and the cell. The story of how this vicious cycle was broken in St. Louis, at least, thanks in large measure to the pioneering efforts of Dr. Pittman, has already been told in the *Washington University Magazine* and elsewhere.

But Dave Pittman was not satisfied. He was eager that other cities adopt the so-called "St. Louis Plan" in dealing with chronic inebriates, and he was concerned about other major behavioral problems in our society. Specifically, he felt that much could be done to improve the handling and treatment, not only of alcoholics but of narcotics addicts, sexual deviants, attempted suicides, and mentally sick persons as well. Very often such people are guilty of anti-social or community-disturbing behavior which falls within the province of the police, but the police, in many instances, neither understand nor know how to cope with them. The guidelines for dealing with those with such troubles are fuzzy and ill-defined. There is a crying need for established policies and procedures, and for more police training in these very broad areas.





Such was the reasoning which two years ago led Dr. Pittman to discuss his ideas with Victor Strecher, then director of the St. Louis Police Academy. They set their thoughts down on paper in what eventually turned out to be a proposal for a grant from the National Institute of Mental Health for funds to establish the Law Enforcement Study Center on the Washington University campus. Now one year old, this Center, which is unique in the country, operates under the protective wing of the University's Social Science Institute and is co-sponsored by the NIMH, the International Association of Chiefs of Police (IACP), and the Metropolitan Police Department of St. Louis.

FUNDED FOR THREE YEARS ON a \$171,000 budget, the Center really began functioning last August when Strecher accepted the job as its director. With Pittman away on sabbatical most of the time since, Strecher has guided the fledgling organization, and the experience, he says, "has been an education."

Expressed by someone else this might be dismissed as a cliché, but Strecher means what he says, for learning is a prime motivating force in his life. For the past six years, while holding down demanding jobs, first with the St. Louis Police Department and now at the University, he has been moonlighting as a scholar aiming toward a doctoral degree in sociology. All other outside interests, including golf and music, have been subordinated.

"Before I came to the University, I used to try and arrange my classes around a long lunch hour," Strecher said, "I'd hurry out from headquarters, grab a hot dog in Forest Park, and digest lunch and the lecture simultaneously."

"The commuting problem has eased up now that I'm on campus, but actually one of my problems is that I'm still too busy. It's hard to make an eight-hour day out of it—even leaving the office you think about the job and build models in your mind. I do my writing twenty-four hours a day. Even when I sleep I must have it on my mind, because very often I wake up with the answer to a problem that's been bothering me."

It is fortunate for Strecher that he has such a cooperative subconscious, for right now writing has top priority on his agenda. During whatever odd moments he can squeeze into his schedule he is working on a dissertation concerned

with police-community relations and on the job he and his assistant Hugh Donnelly are producing five booklets which will be distributed to police throughout the country. These publications, which will be issued either individually or as chapters in one volume, are the outgrowth of a series of program development conferences which the Law Enforcement Study Center sponsored this year.

These sessions, each concerned with one of the five broad areas of interest to the Center (alcoholism, attempted suicide, sex deviance, narcotics addiction and drug abuse, and mental illness) were convened because the leaders of the Law Enforcement Study Center were convinced that they needed to develop new and pertinent materials before launching an actual training program for policemen. To these consultative seminars came topflight police officials, lawyers, psychiatrists, sociologists, psychologists, and rehabilitative specialists from all parts of the country.

Persuading these experts in the various disciplines to sit down and talk with one another was a major achievement of the new Center, for over the years misunderstandings have tended to separate some of these practitioners. There has been, for example, a breach between psychiatrists and the police. "You might say there's been a kind of hiatus in any connection between law enforcement and mental health agencies," Strecher explained.

"For one thing they didn't talk each other's language. For another, the impression arose around the turn of the century and through the twenties that you could do almost anything with a little analysis and treatment." Such an erroneous belief, he said, led the police to accept experimental forms of treatment suggested by psychoanalysts and psychologists as blueprints for action, and to apply them literally and not at all cautiously. As a result, some law enforcement officers' encounters with potentially dangerous individuals turned out disastrously, resulting in an antagonism between police and psychiatrists which even today is aired in professional journals.

"Our project," Strecher continued, "was simply designed to outflank this tendency to fight and to do a little co-operating. This Center's aim is to bring these two disciplines and several others, incidentally, into some kind of coordinated action to deal with serious social problems. We

want to find out what common grounds exist in order to break the deadlock caused by each profession and discipline going it alone."

"Each person invited to our conferences understands a part of the problem," Strecher continued. One of the purposes of the Center is to pool all of this knowledge and focus it on these broad social problems. As moderator of these conferences, Strecher likens his role to that of a traffic manager. "What I try to do is see that every viewpoint gets expressed during the seminar and yet make sure that we maintain our perspective in order not to lose sight of the over-all problem," he said.

"... we are beginning about the same time that there is a nationwide awareness of the terrible need and paucity of resources for the socially deviant. We're simply moving in the same direction from different starting points."

Such work is not always easy but it is rewarding. Some participants in the conferences have started out actually hostile to each other and have come out of the meetings mutually respectful and clearly aware that in discussing problems of social deviance things are seldom, if ever, either black or white. The problems aren't that simple.

Philosophically, the Center is committed to treating social deviance and maladjustment from a sociological and ameliorative point of view. Such a policy, of course, can easily be misinterpreted by the layman and no one is more aware of this fact than Strecher, himself. "One of the basic problems that I anticipated in going into this work," he said, "was the tendency on the part of many people to think that if you're looking for a way to understand what these social deviance problems are all about you're seeking to mitigate or explain away their harmful effects. But some

of society's gut reactions to deviance tend to do more harm than good and perpetuate the disturbing behavior."

"Actually," he continued, "in attempting to understand these problems, what we are looking for is a means of providing true, long-term protection for the community." The Center is concerned because the old-fashioned, traditional approaches to many such problems have not worked. He explained that to book a person for attempted suicide and then release him does not solve anybody's problem. Yet this practice is common in many states. Similarly, to jail a person on a narcotics or drug abuse charge with no provision for treatment makes no sense.

In dealing with cases of social deviance, there are two courses of action. If the individual—a narcotics addict, for example—has committed a serious crime, Strecher does not foresee much change in the initial stages of criminal prosecution. "Such an individual must be arrested and prosecuted," he continued. "But what happens from that point on is very important," he added. "If nobody else is doing very much, law enforcement can do quite a bit through prosecution channels and through the courts to get him off the habit." New York State's new Commission on Narcotics Control was set up to achieve this very goal, and Strecher views it as a model which other states might well emulate.

UNDER THIS PROGRAM, the judges in New York may remand a drug addict to the custody of the Commission and it, in turn, can use any of the treatment programs available in the state. Strecher views this as a tremendous step forward. "In New York," he says, "they are not simply maintaining custody and throwing away the key on a type of indeterminate civil commitment."

But what of the person, the chronic inebriate, for example, who is guilty of no offense except vagrancy? How should the police deal with persons who do not commit serious crimes, but whose social conduct is contrary to the public good? The Law Enforcement Study Center proposes to write policy guidelines which would ask law enforcement officers to handle such cases as medical problems. "In a great many social deviance cases," Strecher explained, "what we are trying to achieve is medical attention *before* the prosecution and court phase. What the

police need is expert advice. They need to be able to call a doctor or take a person to a hospital to determine precisely what is wrong."

There, for example, police can find out whether an individual is a chronic inebriate or simply on a one-time binge which has resulted in anti-social or dangerous behavior. If the person is a confirmed alcoholic, appropriate treatment at a detoxification unit may be recommended. If, on the other hand, it is a case of driving while intoxicated after an office party, appropriate court action can be taken. "This is what we're looking for," Strecher concluded. "We're interested in devising ways of enabling the police to handle cases appropriately."

IN CHARGING THE POLICE with such responsibility, Strecher emphasized repeatedly that the Center was not seeking to *expand* their function. "The police are disturbed by such a tendency," he explained. "They are always worrying that someone is trying to make social workers out of them, when in reality they are doing a great deal of social service right now." He explained that nearly 50 per cent of all arrests made are connected in some way with the use of alcohol. "There are twice as many drunk arrests as there are for serious felonies. So we're not concerned about enlarging their function. The things we are talking about the police do every day. But what does trouble us is that this work takes up more police time than we believe is necessary."

Strecher attributes this to the fact that the whole policy of taking into custody and treating the socially deviant is ill-defined. In St. Louis, for example, he points out that since 1963, all individuals "picked up" off the streets, suspected of intoxication, are immediately taken to the emergency room of one of the two city hospitals for examination and evaluation before being moved either to a cell or a detoxification unit. Such a procedure requires about two hours of a policeman's time.

A much better procedure, Strecher argues, would be to take the individual to the hospital and leave him there. Even if the person involved has committed a crime, it would be more sensible to keep him in a secure area there than to take him to a cell. The police function in such cases would simply be to recognize and transport the per-

son to the proper institution for diagnosis and treatment.

Strecher applied this same rule of thumb to the other forms of social deviance. The police must be trained to determine the correct disposition of each case. "Many times," Strecher declared, "arrest is the only answer. And it will continue to be as far ahead as we can see. In other cases, it is commonly done, but it is totally inappropriate as a final disposition."

The Law Enforcement Study Center is also eager for policemen to develop more skill in handling the socially

"The problem of finding suitable treatment centers for the socially deviant will be a tremendous one. Many institutions are really nothing but holding areas which are inferior to our jails."

deviant. Law enforcement officers need, for example, to gain a better understanding of mental illness. "We have found through our discussions," Strecher explained, "that there are many areas, particularly in dealing with the mentally ill, in which training will help the policeman to avoid triggering violence."

To treat and rehabilitate many of the socially deviant requires money and expensive facilities. Fortunately, Strecher points out that there is a very good fit between the recommendations that the Center plans to make and certain programming at the state and federal level. He mentioned that the Public Health Service is now building a number of community health centers around the country which the police can use as referral agencies. "Our program," he continued, "is not something that we expect to accomplish overnight. It happens that we are beginning at about the same time that there is a nationwide awareness of the terrible need and paucity of resources for the socially deviant. We're all simply moving in the same direction from different starting points."

"Until these are completed, however, the problem of



finding suitable treatment centers for the socially deviant will be a tremendous one. Many institutions are really nothing but holding areas which are inferior to our jails," Strecher declared. "This may sound harsh, but it's true," he continued. Nor are there suitable facilities to bridge the step from confinement in an institution to freedom in society. Half-way houses, of all types, seem to offer the needed support, but here again Strecher noted that there are not nearly enough to meet the anticipated needs.

It is precisely because there are no easy solutions that Strecher finds the work of the Law Enforcement Study Center so absorbing. It is involved in charting new paths and discovering fresh approaches to some of the most perplexing problems of our society. What is needed are imagination and innovation—both Strecher characteristics. Not so many years ago, when he was a student at the University of Wisconsin, he thought of using them in chemistry. Then he changed his mind and yielded to a long-standing desire to study musical composition formally after many years of private tutoring.

Finally, he turned his attention and his talents to law enforcement because he chanced to live near the State Crime Laboratory in Madison. Passing by its doorway every day, he became curious about what went on inside, and went in one morning to inquire. He left determined to study laboratory criminalistics. This desire led him to Michigan State, where he quickly discovered that he was more interested in the general administration of law enforcement services than in working with a microscope.

Strecher earned his undergraduate degree in police administration and then went on to get a master's degree at Michigan State in political science, specializing in public administration. On the campus there where he taught for a few years, and in Viet Nam where he spent two years as a police advisor, he continued to pursue his musical interests. And that's a hobby he expects to resume once he has obtained his doctorate.

An ardent admirer of Stravinsky, he likes to explore the unconventional, but believes in control of the medium at all times. For this reason, he listens to but rejects the avant-garde electronic composers. "I'm a compulsive controller," he declared with a sudden grin. "That's the law enforcement side of me, I guess. My Hobbesian pre-

occupation with social control extends even to my music," he said wryly.

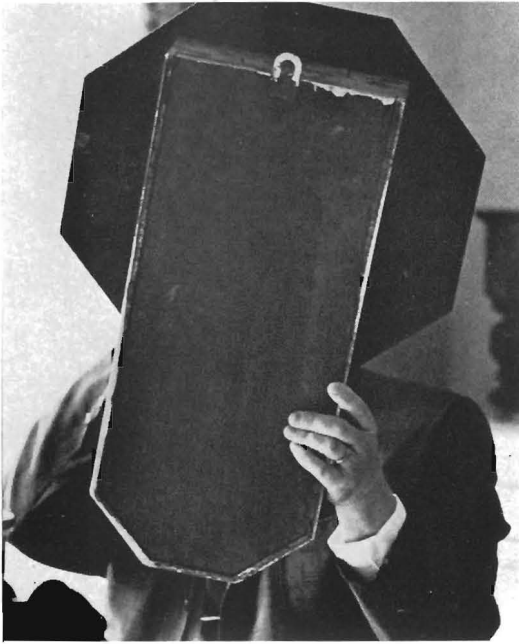
This philosophy shapes much of his thinking. For Strecher is a dedicated man who becomes eloquent when he talks about coming to grips with deviance and maladjustment in society. He foresees almost unlimited possibilities for the Law Enforcement Study Center which is committed "to turning the many encounters of the police with the mentally ill and the socially deviant to the general good of these persons and of society at large."

TO IMPLEMENT THIS lofty purpose, Strecher and his aides, in addition to preparing five informative pamphlets, are laying plans for a two-week training session for twenty-five leading police officials from all over the country. It will be held next spring at Bromwoods, the University's residence center. Meanwhile, he is working with directors of the Stone-Brandel Foundation in Chicago and its consultant, Dr. Karl Menninger, on an exciting project still in the formative stages. This foundation, formed about a year ago, hopes to train teachers, industrial supervisors, and pastors to spot incipient mental illness. Through cooperation with the Law Enforcement Study Center it also is considering enlisting the aid of policemen.

To explore this possibility, Strecher recently spent a day conferring with Dr. Menninger. He came away impressed with the large role that the great psychiatrist would "assign to police in being able to recognize abnormal behavior. But he is not naive about the dangers inherent in such an operation," Strecher observed. "He is concerned with trying to set up a system which has community resources aimed at early intervention in cases of mental illness and social deviance. At the same time, he is determined that safeguards be built into such a system in order that it does not become some sort of totalitarian operation which provides just another excuse for taking people off the streets."

With such programs in the formative stages, Strecher believes that the Law Enforcement Study Center has a bright future. A kind of vortex for the stimulation of creative new ideas for police-community cooperation, the ripples of its influence are spreading in ever widening circles across the country.





"GOKS" AND ANTIQUE CLOCKS

"WE HAD FIFTY CENT GOKs and three hundred dollar clocks," Mrs. Frederick W. Wehmiller recalled with a chuckle, as she talked of the special sale for students and faculty only which the Women's Society of Washington University sponsored this spring on campus. GOKs, freely translated by the WSWU (Women's Society of Washington University), means "God Only Knows what they're good for" objects.

"A good example of a GOK," Mrs. Wehmiller, chairman of the affair explained, "was a strangely-shaped object which a bearded patron identified matter-of-factly as a shelf-picker. And a shelf-picker is not something usually found around a house," she added, "but in a 'Gay-Nineties' grocery store where it was used to snare sassafras tea and other impossible-to-reach merchandise stored near the ceiling." Delighted with their erudite customer, the ladies offered to let him have this particular GOK for a half-dollar. "It's worth \$2.50," he retorted, and that's what this scholarly authority on shelf-pickers insisted on paying.

Officially, the WSWU called the affair they arranged in the Women's Building a "Fine Furniture Sale," but actually it was much more. For, in addition to beautiful pieces like solid mahogany sleigh beds, buyers who came early could find antiques of all kinds including a pill-roller, a rare music box, and vintage Waterford crystal. Carried away by the excitement of it all, a few bargain hunters scooped up everything in sight, including a lovely brass

samovar in the lounge adjacent to the quarters being used for the sale. To forestall such eager-beavers, Mrs. Wehmiller and her helpers hastily hand-lettered a sign "Nothing in this room for sale."

Even with prized Women's Building furnishings marked "out-of-bounds," however, buyers had a field day. One lucky young fellow found a silver bouquet holder with a monogram that matched his own, and promptly bought it. Another happily picked out Victorian treasures to furnish a home he had just purchased near historic Lafayette Park. Two boys carted off a "shimmy belt" and one comely housewife bought an antique inkwell.

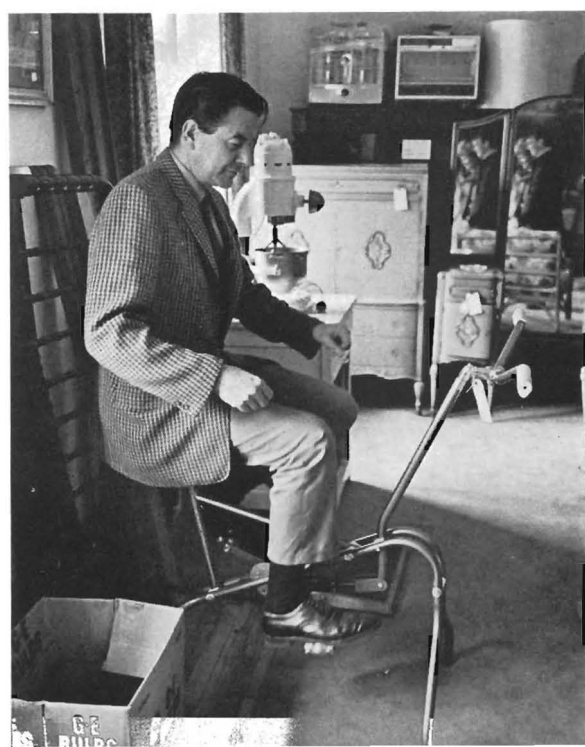
PROCEEDS FROM THE SALE totaled \$2,000. This money the Women's Society of Washington University, a non-profit organization, will use for operating expenses and to stock its Furniture Exchange, a shop that sells used household goods to students and faculty at low prices. Dedicated to "promoting and advancing the interests of Washington University," the Women's Society operates the "Bear Necessities" shop in Wohl Center and uses the proceeds to provide financial aid for students. It also originated the commemorative book fund for Washington University libraries, and a special tribute fund for those who want to give a tree or shrub in honor of, or in memory of, a friend or relative. In these and many other ways its volunteers serve the University and its students.



Getting down to the bottom of things, a curious customer doubles over to peer at a chest spacious enough to store a pirate's treasure.



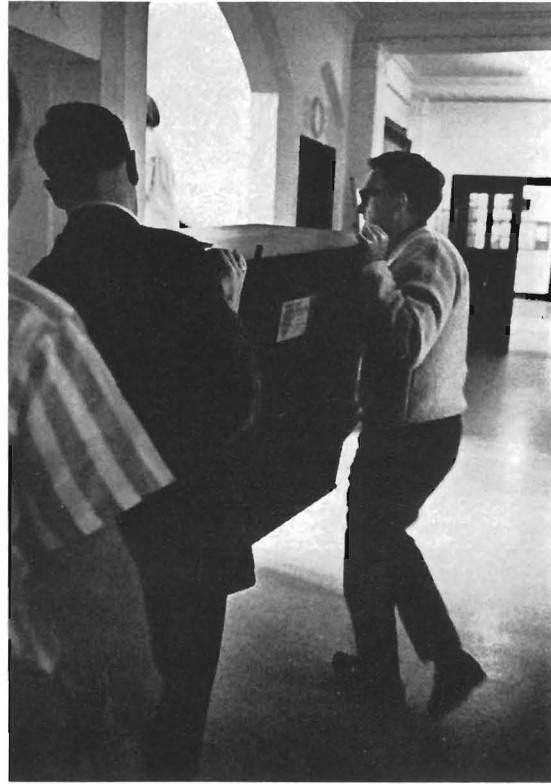
George Talbot, lecturer in anthropology and art director of *Trans-action* magazine, examines an elaborately ornate stand for a cut glass dish.



Fred Becker, professor of fine arts, appears in good shape as he balances precariously on an exercise bike.



Definitely "mod," this bell-shaped, claret-colored fixture makes an over-sized but pretty chapeau for Mrs. Dorothy Woolum of the Physics Department.



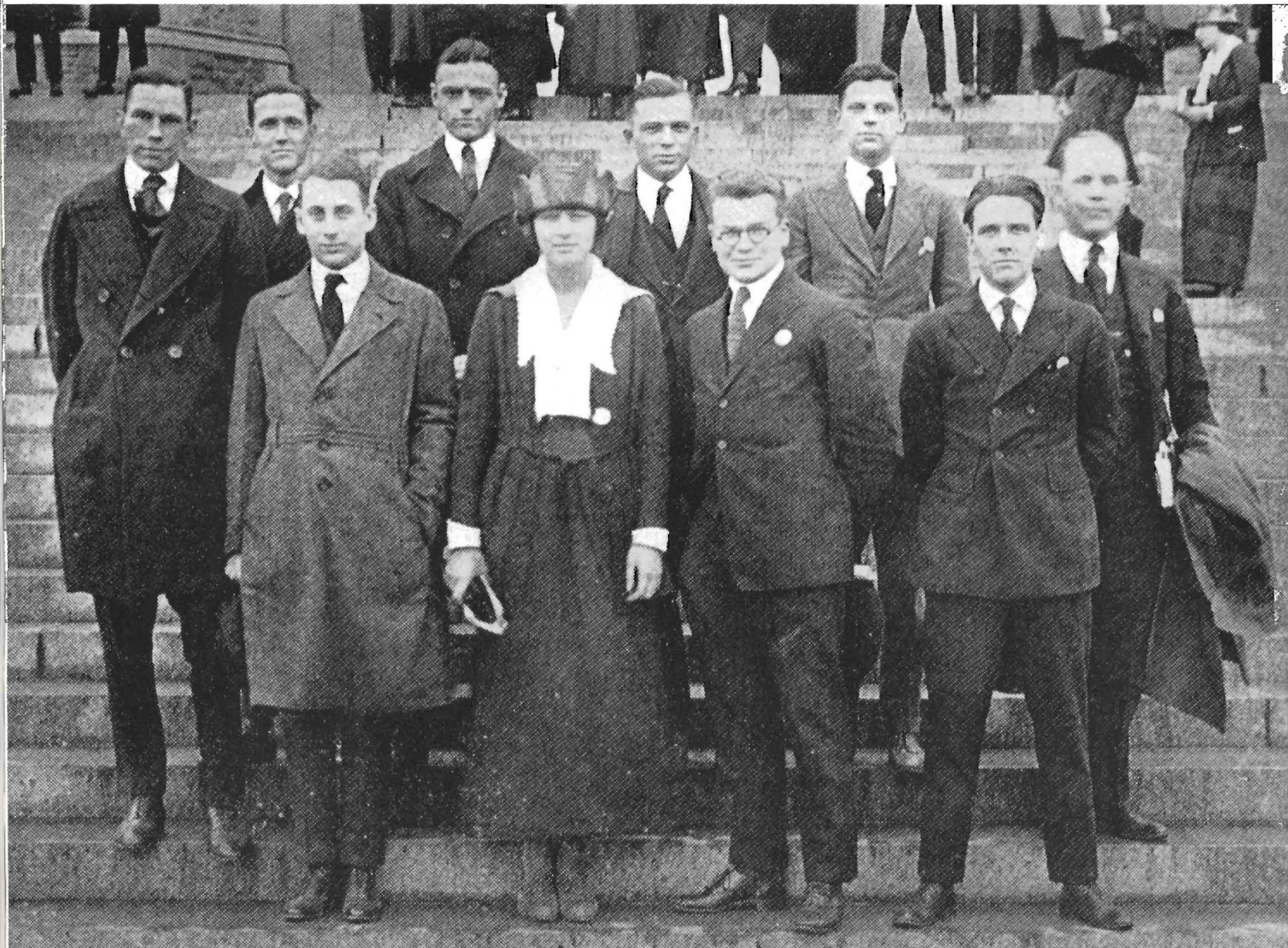
Many a scholarly husband and his best chum find themselves in the moving business as they cart off the "little woman's" bargains.



Of uncertain vintage, this rather homely mixer looks like a "camp" creation amid the period pieces. But a young woman, who carried it home, thought it beautiful.



First Business School Dean was William F. Gephart, professor of economics.



The first graduating class of the School of Commerce and Finance, which became the School of Business and Public Administration, gathers on the steps of Brookings Hall in 1921.

This year Washington University's School of Business and Public Administration is celebrating its Golden Anniversary

FIFTY YEARS IN BUSINESS

By GEORGE MONAGHAN

Office of Information

JAMES GATES WAS TALKING about business. Considering everything, he said, it was good. He was breaking even now, his service station in St. Louis's west end was carrying itself, and he was pumping twice as much gasoline as he did when he opened the station last November.

There was a new restaurant going up across the street and the neighborhood was active and flourishing. That wouldn't hurt. He was getting more customers and, what's more, they were coming back after the first time.

"Yes," he said, "I think I'm going to make it . . . yes."

He had an adding machine on the counter behind the desk and he pointed to a name plate on the desk. It read "Gloria J. Gates." "That's my daughter and my secretary. She does the bookkeeping when she isn't going to the junior college. We have to keep good books."

Then he went on to tell about things he hadn't heard of until about a year ago—accounts receivable, buying on discounts, depreciation, displaying products, credit, sales, and how some of the profits are not really his because they have to be put back into the business.

Twenty-six years ago James Gates, a robust Negro who likes to joke and talk, left his \$18-a-week job in a Jones-town, Miss., gas station to come to St. Louis. A few years later he opened a back-alley auto repair shop on Garrison Avenue. And he was in business.

It wasn't a bad business, either. But he felt a service station like the one he owns now at Sarah Avenue and Lindell Boulevard would be another step forward, and so he applied for a loan from the Small Business Development Center, an anti-poverty agency which was working with Washington University's School of Business and Public Administration.

Dr. J. George Robinson, associate dean of the school and head of a team of doctoral candidates, had spent months learning the problems of the small businessmen in blighted areas of the city. When the team finished its research, it set up a workshop designed to meet the specific needs of loan applicants and prospective small businessmen from these areas.

In effect, James Gates became a college student, and an eager one, in a business school that is reaching beyond its campus to problems ranging from the back-alley repair shop to some of the largest, most intricately organized corporations and government agencies, and as diverse as the effects of inflation on retired people and how Peruvians regard American corporations in their homeland.

From their offices in Prince Hall, a former dormitory that became the school's home in 1961, the professors of the Business School travel throughout the nation and to Africa, Asia, the Middle East, and South America to consult with foreign businessmen and to seek information.

Among the faculty members are engineers, economists, mathematicians, market specialists, and accountants. There are men trained in political science, sociology, psychology, the law. Most of them are consultants for businesses or business organizations. One has been a labor arbitrator for thirty-five years.

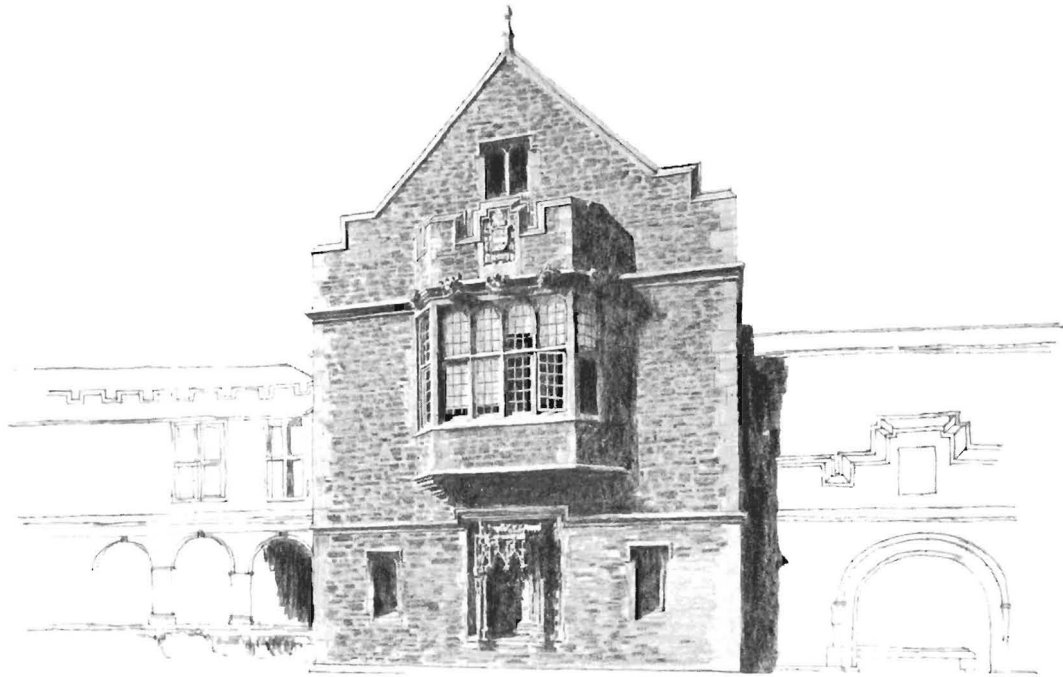
ALL THIS ACTIVITY in the Business School began rather quietly on March 30, 1917, when the Washington University Corporation established the School of Commerce and Finance and named William F. Gephart, a professor of economics with a reputation as a man who could get things done, as its first dean.

Most St. Louisans didn't get too excited about the news. These were the days when the nation was feeling the first shock waves from the war in Europe, and when the University took its action the papers were full of headlines like "Corporal Knocks Out Teeth of German Sympathizer," and "Salt Lake Germans Loyal."

Then, further back in the paper, a headline read:

"Washington U. Corporation Votes to Establish Course in Military Tactics."

The Business School was not mentioned. Another paper, however, let it slip. In the last paragraph of a six-paragraph story about the military tactics course, it told of "another department to be known as the School of Commerce and Finance. . . ."



Duncker Hall housed the School of Business from 1924 to 1960.

Dean Gephart had championed the idea of a business school and had secured support from many leading businessmen. Before he resigned in 1921 to become a banker, he had established a curriculum and set a policy for general training in business. He didn't want a trade school. It is a policy that is still maintained.

WHAT HAPPENED IN 1923—the establishment of the Graduate School of Economics and Government under the leadership of Robert S. Brookings—ultimately led the school into public administration and brought into it such disciplines as social work and political science.

Brookings wanted the graduate school to train students for doctoral degrees in economics and government. They would spend two years at Washington University and the third in Washington, D.C. The idea worked for a while, but when a lawyer pointed out that the University, as a Missouri corporation, could not operate outside the state and retain its tax exemption, the Brookings Institution was divorced from the University. But a course had been set.

Its direction became evident in 1925 when the University named a new dean of the Business School. He was Isidor Loeb, acting president of the University of Missouri. He was also a foremost constitutional lawyer, a skilled political scientist who knew politics from the inside and the outside, an expert on tax laws and Missouri history, a good card player with a quick sense of humor, and an articulate spokesman for social and economic reform.

Dean Loeb retained the broad base of the Business School, and he liked to think of administration as a common art that could be applied to organizations as varied as hospitals and government.

One of the men he brought to the University was Joseph M. Klamon, a 1921 graduate of the Washington University Law School who in two years at Yale qualified for three

degrees—master of arts, doctor of jurisprudence, and a Ph.D. in economics.

He came to the school in 1929, and his many students remember him as “Jumpin’ Joe.” But in the St. Louis community, in Jefferson City, in Congress, he was a reformer. He went to the defense of a pacifist arrested in Belleville for distributing literature to strikers, petitioned against the Hawley-Smoot tariff in 1932, and fought to give the consumer a better break in the price of coal, milk, butter, and eggs. He still has his guns trained on advocates of “fair trade” legislation. For thirty-five years Dr. Klamon has been a leading labor arbitrator.

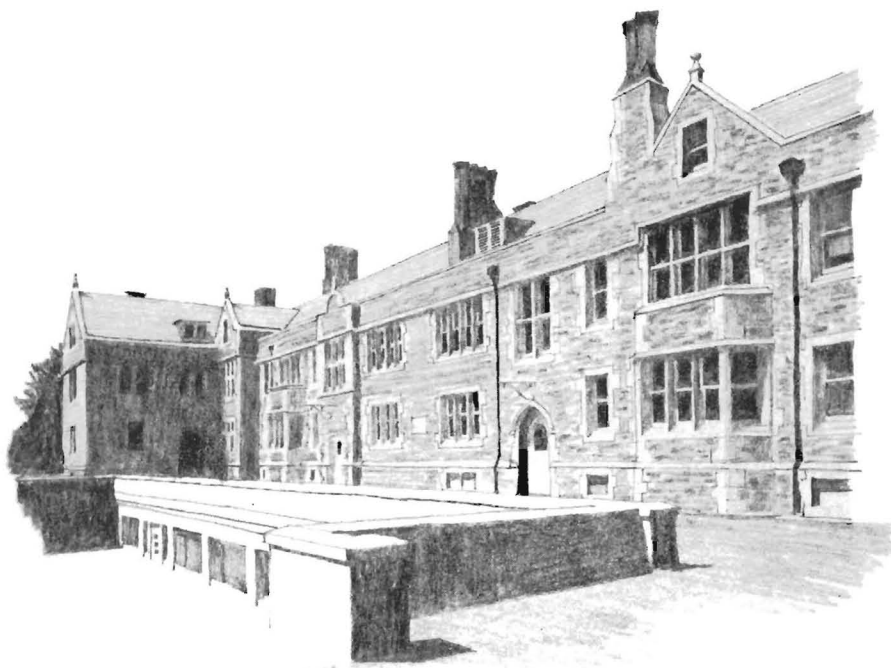
Dean Loeb retired in 1940 after serving longer than any other dean of the school to date, but it was a retirement in name only. He accepted the grueling job of OPA price administrator for the St. Louis area, served as a special investigator for the National War Labor Board, and got into the thick of the drive for a new state constitutional convention. He died in 1954 at age 85.

The Business School's advance toward professionalism, hindered and almost stopped in its tracks by the depression and World War II, picked up speed in the late 1940's and 1950's under the deanships of Leslie J. Buchan, now Distinguished Service Professor of Administration, and R. Miller Upton, later president of Beloit College.

Graduate education was strengthened, new ideas about the curriculum were developed, and, in 1950, a Master in Business Administration program was established for the student who might not have a business background.

Then, in 1958, Dean Ross M. Trump and a group of leading faculty members led the way to formation of the Graduate School of Business Administration. The school got off to an unimpressive start with three students. But the idea of a graduate school took hold rapidly and now there are 174 full-time and 150 part-time students.

Who are they? They are men and women, young and



Prince Hall, formerly a men's dormitory, was remodeled in 1960 to provide a new home for the school.

old. They are administrators, businessmen, chemists, engineers. Last year a physician whose practice was becoming big business enrolled in the program.

What do they get? First, an intensive examination of the business world, its concepts, problems, theories, trends, and practices. This means a study of "concept courses"—finance, accounting, marketing, personnel, production, followed by an "integrated course" designed to arm the students with the basic analytical tools.

Then the students are trained to use the tools to make decisions. They study actual cases of business problems. They question executives. Once a year they set up rival mythical companies with given data on assets, production, prices, advertising, and market conditions. Then they go into business, squeezing four years of business into a single day. During his final semester, the student's only required course is business research methods.

The whole idea is to train a manager who knows that a decision he makes could spread through the varying layers of an organization, create problems of its own, and give birth to a series of related decisions that in the long run could affect people—consumers—outside the business.

THAT IS ONE OF THE REASONS the school, although it puts heavy emphasis on the quantitative approach to business and economic problems, is stressing more and more the behavioral sciences—sociology and psychology, for instance—and is, for the first time, including a social psychologist on its faculty. It is why the school employs men like David Salmon, formerly of the Political Science Department and now research director for the Central Conference of the Teamsters Union, to teach freshmen.

Faculty members in the school will take on almost any problem that touches the business community.

Take Richard F. Wendel, assistant professor of marketing and one of the newer members of the faculty. He be-

came interested in the problems of the poor as a boy in the thirties, when the wandering homeless men of the depression years, with their bedrolls and unshaven faces, came to his home in Silvis, Ill., for handouts.

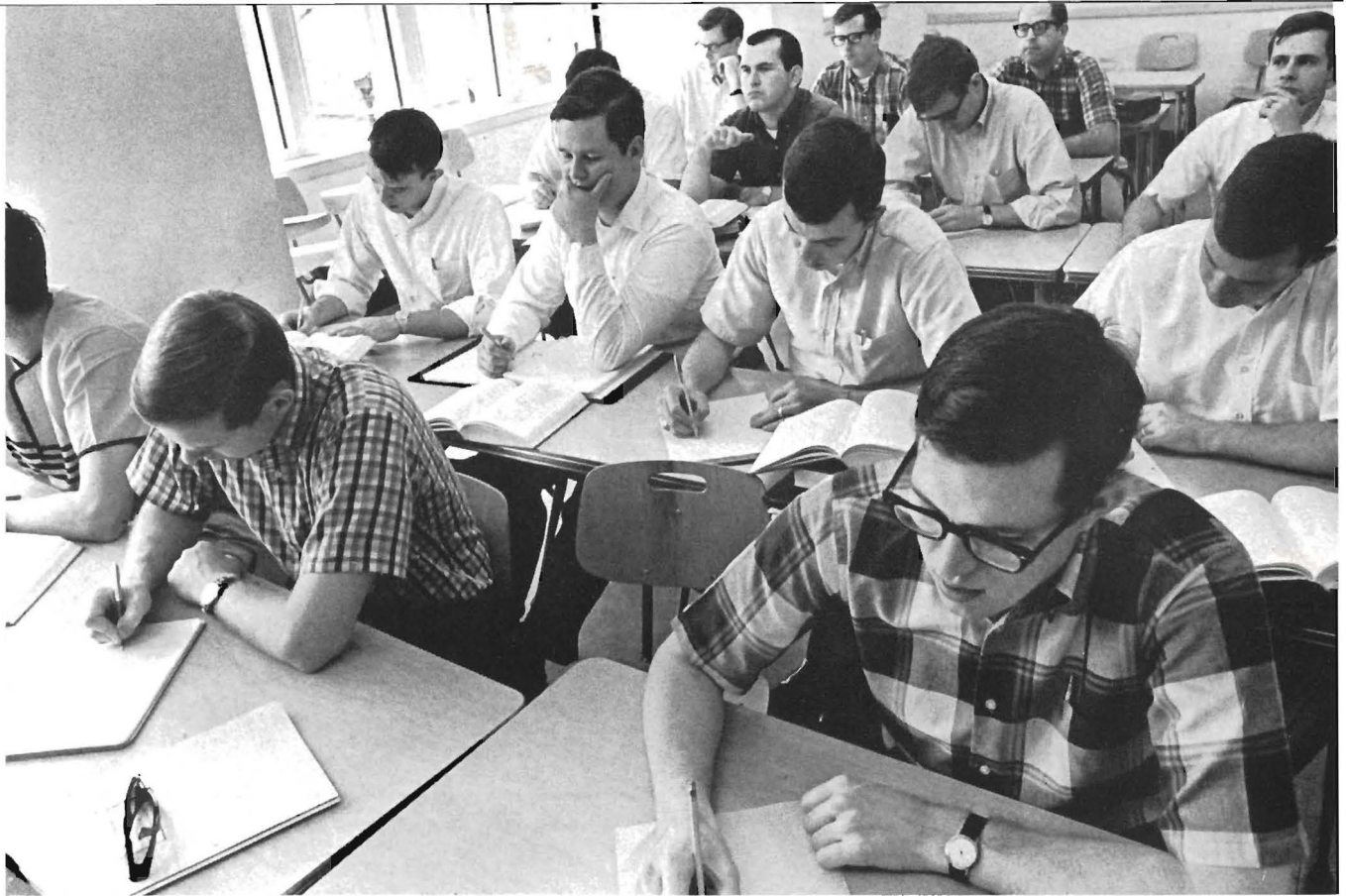
Now he is doing research on the ways an inflationary economy affects the retired persons who live chiefly on a fixed income. He is concerned mainly with the relative economic position of the aged since the passage of the Social Security Act, the changes in real income of the aged in relation to those experienced by the rest of the people, and the impact of technological change on the elderly.

Despite the American economic miracle since World War II, he says, the aged for the most part may have been short-changed. He asks: Have their incomes failed to move ahead as rapidly as the wages and salaries of those now employed? When you compare the position of the aged with those still at work, are they still as well off?

In another study being completed by Dr. Raymond L. Hilgert, associate professor of management, and Dr. Irvin Sobel, professor of economics, the prime interest is in the young of the St. Louis area. What factors, they asked, influence students to enter the St. Louis-St. Louis County Junior College District? What should the JCD do to meet the needs of the St. Louis community?

To find out, researchers analyzed student records and interviewed 300 students, along with parents, JCD faculty members, administrators, and high school and JCD counselors. A subsequent study will analyze the occupational needs of the St. Louis community.

Dr. Donald Brennecke, a professor of management who is an engineer and a specialist in operations research, is heading a team that is creating a statistical and mathematical simulation model of an entire support system that will help the Army Aviation Materiel Command predict the demand for aircraft repair parts. Dr. Brennecke is be-



Classroom scene in today's School of Business and Public Administration. The school offers a wide variety of courses in both undergraduate and graduate areas.

ing assisted by Professors Phillip May, Powell Niland, and John Walsh. Here is how the team works:

The Army needs parts—say rotor blades—for several helicopters in a combat theater. One area might need five, another ten. This is where Dr. Brennecke comes in. It is his job to learn why the parts are needed and why one area needs more than the other. Here a staggering number of variables come into the picture.

Dr. Walsh's part is to determine the time it takes to get the repair parts to the commanders. One part might take a week, another a month or even six months. Why? Sometimes bids must be submitted. How does this affect the time factor? And what is the effect of the government's policy to encourage small businesses to submit bids?

Meanwhile, Dr. May tries to learn who in the organization is making what decisions and why. Several decisions on procurement might be made at various levels in the organization, each taking different time periods and passing through different channels.

Eventually, all these interrelated bits of information reach Dr. Niland, who has developed a skeleton model of the entire support system. The others are putting meat on its bones.

Other projects have been completed or are under way on such varied subjects as the probable economic consequences in Missouri of federal highway beautification legislation, municipal debt financing, and the quality of state and local debt.

Through the years the school's research developed mainly from the interests of the individual professors. But in 1964 it was decided that a more formal approach should be taken and greater emphasis placed on research.

This led to the establishment of a director of research—a post held by Dr. C. William Emory, professor of marketing—to stimulate research interest, to assist in the development of research proposals and to hold secure financial support for research work.

The research program pushed the school further into the local and national business community. But other activities developed during Dean Trump's administration made the school's influence in the community even more extensive. Thousands of businessmen have attended a multitude of short-courses, workshops, and conferences.

This spring, for instance, the school held its thirteenth annual Management Development Conference at Pere Marquette Lodge in Grafton, Ill., for thirty-five middle management executives who for thirteen days reviewed new developments in management, developed their managerial skills, and exchanged ideas.

Dr. Joseph W. Towle, professor of management who heads the conference, is also the director of the Management Study Program initiated in 1960 for the experienced business manager. It opens with a three-day session at the University's conference center, Bromwoods, in Lonedell, Mo., in September and continues with two-day sessions every other week at Prince Hall. The program ends with a session at Bromwoods in January.

Last year the school held thirty-eight conferences and short-courses in cooperation with University College for businessmen, accountants, insurance men, personnel officers, advertising executives, and social workers.

For the past several years the school has conducted a

workshop for high school social studies teachers. This year, for the first time, the workshop is being supported by the National Defense Education Act.

If the school is involved in the business community, businessmen become just as involved in the school. In effect, the school has made teachers of business leaders. This came about through one of the school's more striking innovations—the use of the “living case,” in which students analyze actual business problems presented by executives of leading companies. It works this way:

Representatives of a company spend several hours a week for three or four weeks on the campus—sometimes longer—reviewing the firm's history, its operations and organization, its major policies. The students study the company's annual reports, policy manuals, employee handbooks, and other background material, visit the company's plants, and watch it in action.

That's not all. The students sit down with the executives to talk over specific problems. They exchange ideas. Then the students prepare a complete written report on the company's problems and what should be done about them. At the final meeting, the reports are reviewed.

IN 1958, WITH FUNDS SUPPLIED by the International Cooperation Agency, now the Agency for International Development, the school pushed beyond the borders of the American continent. With the cooperation of Yonsei and Korea Universities, a team of professors led by Dean Trump went to Korea to improve management training and management practices. As a result, management training in Korea has made surprising gains and, little by little, customs which had impeded growth for hundreds of years are disappearing.

While the school worked on its Korean project, the State Department and the Tunisian government launched another program designed to give potential business leaders in Tunisia an inside look at American business.

Dean Trump flew to Tunisia early in 1960 to help select forty-two students from the 300 who had applied. They came here in 1960 for two years of work. Under the leadership of Dr. Robinson, the students were trained in the business basics: economics, marketing, personnel, production, accounting, finance. They visited plants and questioned executives.

To give the students the chance to put their knowledge to work, the school developed an in-service training program. St. Louis firms responded with enthusiasm. The students sat in on production conferences, traveled with district salesmen, worked in advertising departments, attended management and sales schools with dealers, and, in general, saw how things operated from the inside.

Now, four of the students are working on doctorates and others have returned to Tunisia with fresh insights that could help stimulate the economy of that nation.

Each year, many of the professors work on business and economic problems overseas. Dr. John E. Walsh, for instance, will make his seventh trip to Korea this summer to work with Korean business schools on curriculum development. Later in the summer, he will go to Peru to teach in a graduate school of business operated by Stanford University for the Alliance for Progress.

In all, Dr. Walsh has traveled to fifty-two nations, most of them underdeveloped. He has kept up a steady correspondence with scholars and businessmen in these nations on modern management practices.

DR. ROBINSON IS ANOTHER globetrotter. In Ghana he worked on a project that led eventually to the establishment of business education. In Brazil he studied the effects of U.S. aid on family businesses and learned that the idea of “people's capitalism,” advocated by that country, was actually encouraging communist party members to buy into businesses and control them.

All of these activities all over the world ultimately focus on the students in Prince Hall, who become the beneficiaries of what the faculty members are learning.

In the same way, the students get practical knowledge from the work of Dr. Merle Welshans, finance professor, as the consulting economist for the National Association of Credit Management; from Dr. Klamon's arbitration cases; from Dr. Powell Niland's detailed written reports on Korean industries; from Dr. Charles Lapp's salesmanship conferences, and from Dr. Towle's management conferences for businessmen.

The emphasis on research has been gaining since World War II, but so has the emphasis on students, their quality, what they learn, and the impact they have on the business community once they leave the school.

This is one of the reasons the school has led the way in the development of a Master of Business Administration program for talented young Negroes.

The idea for the program came from Dr. Sterling Schoen, professor of management, more than a year ago. He discovered that out of 13,000 graduate business students he could find no more than fifty Negroes.

“If there is to be such a thing as integration,” Dr. Schoen says, “Negroes must move into the middle class and this can't be achieved without more Negroes moving into managerial positions in the business community.”

The idea crystallized into a specific proposal to Dr. Emory and Dean Trump, and together they got the Universities of Wisconsin and Indiana interested. Last December the three schools received a \$300,000 challenge grant from the Ford Foundation.

Four teams from the three schools were organized to recruit students in a nationwide talent hunt and to raise funds to be matched by the Ford Foundation. In effect, Dr. Schoen became a fund-raiser, a recruiter, and a salesman for the program.

For seven weeks Dr. Schoen traveled over the country, visiting companies for funds and campuses for bright young Negro students. Out of 300 applicants for the program, twenty-one were chosen. The students will attend a preliminary course at Washington University this summer and next fall will separate into groups of seven to attend the three universities.

The training they will get will not necessarily mean that the students will make a great leap forward. Progress may be slow and tedious.

But, like James Gates, the service station owner, they will be able to say: “Yes, I think I'm going to make it. . . .”

Graduate student Tom Early collects rock samples in Antarctica. Scientists in the research project were transported from base camp to the field in helicopters.



Spending the summer in Antarctica means going for months on end without seeing the sun set. Early and his fellow scientists had to pull down the shades to sleep because of the constant daylight.

Graduate Student Tom Early reports on a three-month sojourn at the bottom of the world

By KING McELROY

Office of Information

A Summer in Antarctica

IMAGINE A WORLD OF UNENDING DAYLIGHT in which your vision is obscured much of the time by clouds and fog. You walk on snow in temperatures that vary from zero to fifteen degrees above. You have to contend with blizzards that come without much warning and force you to halt work and seek cover. A howling wind may blow at sixty-mile-an-hour speeds for twenty-four hours. When it stops, you can go out to work again.

This is the kind of climate that Thomas O. Early, a 24-year-old graduate student at Washington University, faced when he landed in Antarctica.

Early, a research assistant to Dr. H. LeRoy Scharon, professor of earth sciences at Washington University, spent three months in Byrd Land in west Antarctica collecting igneous rocks (rocks formed by solidification of molten material) 70 million to 170 million years old. The eighty-three samples he collected will be analyzed at the University's rock magnetism laboratory.

Analysis of rock magnetism and other techniques will be used to seek answers to questions such as whether Africa, South America, and Antarctica, now far apart, were once part of the same continent, and whether western and eastern Antarctica are actually separate land masses which are now "locked" together by ice.

The research, sponsored by the National Science Foundation, was done from October 22 to January 27, which fortunately is summer in Antarctica.

"We worked whenever the weather permitted it," Early said. "Sometimes fourteen to sixteen hours at a stretch."

Early's tools were a compass, a rock hammer, a spirit level, and an assortment of chisels with which he broke off different-sized pieces of granite from various rock outcrops, mainly in the Edsel Ford mountain range. He knew where to go because aerial photographs, made on a previous expedition, outlined where the rock surfaces were exposed.

To endure the Antarctic atmosphere, Early wore thermal underwear, a thick wool shirt, a hooded parka, windbreakers over his work trousers, and gloves. His feet were covered with two pairs of slippers and finally mucklucks. "My feet never got cold," he said. He also wore sun glasses to prevent snow blindness.

Early, his fellow scientists, and an Army support detachment, about thirty persons in all, lived in quonset hut type housing. "We put up the three buildings ourselves," he said. "One was a dining area, and the other two were sleeping quarters for the scientists and the Army detachment."

Kerosene stoves kept the men warm indoors and the buildings were sturdy enough to weather the raging blizzards. For recreation, Early said, "We played volleyball outside when the weather allowed. When we couldn't go out, we watched movies, read books, and did a lot of sleeping."

The men had to pull down the shades over the windows to sleep because of the constant daylight. "I never saw a sunrise the whole time I was there," Early said.

One of Early's camp duties was to cut snow blocks with a saw. He hauled the blocks back to the camp on a sled. "When the snow melted, we had drinking water."

THE SCIENTISTS WERE TRANSPORTED from their camp to the field in helicopters. However, the helicopters couldn't fly when there was a cloud cover because it was too difficult to see the ground from the air. "If the clouds were scattered or if it was a clear day, we could fly," Early said.

The group started with three helicopters, but one was demolished in an accident during a blizzard. It was a day that Early will long remember.

Two scientists were caught on a mountain during a blizzard which struck without warning. Because of a com-

Celebrating New Years Eve near the South Pole required ingenuity. To mark the occasion, Early set a charge of explosives in the ice and discharged it at "midnight."



Early's role in the research project, sponsored by the National Science Foundation, was to gather samples of rocks estimated to be from 70 million to 170 million years old. Samples are now being analyzed in the rock magnetism laboratory of the University's Earth Sciences Department.



Early frolics with the research team's mascot, a seal that managed to get itself trapped far inland on an ice floe and was adopted by the scientists.

munication mixup, the blizzard closed in before a helicopter could get back to the mountain to pick up the two men.

"Although the men had survival kits, we couldn't tell whether or not they were all right," Early said. "The blizzard started at 11 o'clock in the morning and finally diminished about 9 o'clock at night."

When the weather improved, a helicopter went up to try to rescue the stranded scientists. The crew saw that they were all right but the wind was so strong that the pilot couldn't stabilize the helicopter. Fearing a crash, he headed back to the camp.

"When the pilot tried to land, he apparently couldn't see the ground and when the craft hit, the rotor blades snapped off," Early said. "A few members of the crew suffered minor injuries."

Although the helicopter had crashed only about two miles from the camp, the others at the camp couldn't rescue them at once for fear of being lost in the blizzard.

The injured crewmen were finally rescued in two motor toboggans. The rescue party pounded flags into the snow so that they could find their way back and the next morning another helicopter rescued the two scientists from the mountain top.

Early had written the details of the experience in a diary he had kept during the expedition. When asked if he planned to return to Antarctica, Early answered, "Sure, if I'm physically able, I'm planning to go back this fall. I'm eager to explore the rock outcrops on other mountain ranges. The more samples I get the better our experiments will be."

RUNNERS CARRYING THE OLYMPIC FLAME are as much a part of the Olympic Games as the famous athletes who have engraved their names in the record books. These intrepid runners have survived obstacles and mishaps of every kind in their specialized line of duty—running the Flame from Greece to the site of the Games.

Perhaps no obstacle has been more challenging than 1967 noontime traffic on St. Louis' Olive Street when Washington University's track team gave a big assist to the sixty-third anniversary of the 1904 Olympic Games.

Seven University runners relayed a symbolic torch from Francis Field to downtown St. Louis in late April.

Why the sixty-third anniversary? Why not? The event in reality was a program sponsored by the Downtown St. Louis Visitors' Bureau saluting the 1904 World's Fair. The torch run was an added bit of symbolism to kick off the one-day program.

Chancellor Thomas H. Eliot lighted the torch at the gate to Francis Field, using only a single match despite the windy day. A group of onlookers dressed in period costumes applauded vigorously as the first runner, John Miefert of Mansfield, Ohio, started the relay toward Brookings.

The first torch exchange between runners took place in the Brookings archway and from there the runners followed Lindell Boulevard and Olive Street to the downtown area. Mysteriously absent were the playful dogs which are usually the bane of existence for the cross-country runner. There were other hazards though. Television and newspaper photographers daringly cruised through traffic in an attempt to get a unique camera angle on the runners. Pedestrians, knowing full well their rights, crossed with the lights, disregarding the flashing red lights of the runners' police motorcycle escort.

Motorists in a hurry to reach some distant point crashed the cavalcade time after time, only to curse their luck at becoming an impromptu part of a long-distance run which averaged approximately 12 miles per hour.

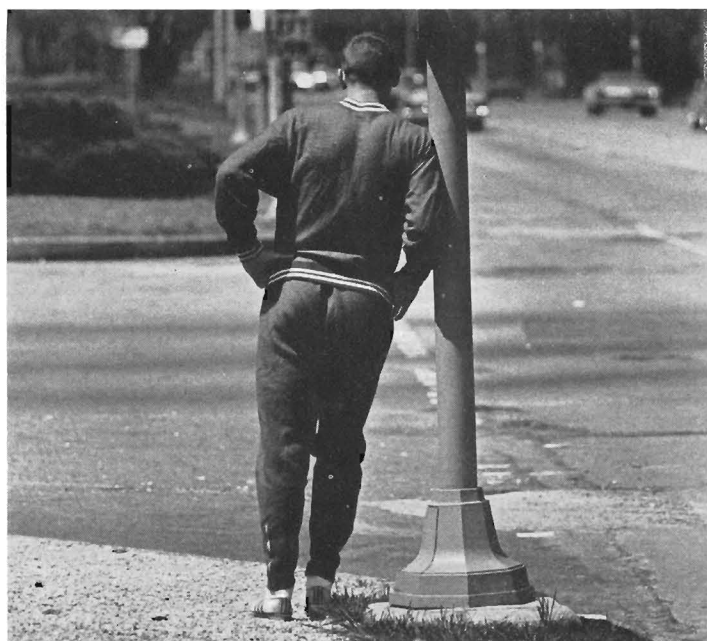
AS THE TORCH NEARED DOWNTOWN St. Louis, it became obvious that planners of the event had overlooked the intensity of the Olive Street traffic at high noon. As the runners made their way through St. Louis' canyon of commerce, numerous temporary halts were made, mostly to wait for the movement of a Bi-State bus. Finally, the police escort broke through traffic and the torch reached its first major station, the statue of "The Runner" located in a park near the Old Courthouse.

Here, Wilma Rudolph, double gold medal winner in the 1960 Rome Olympic Games, received the torch and led the University runners to the Old Post Office. A crowd of approximately 1,500 persons greeted the arrival of the torch with a rousing ovation. Miss Rudolph handed over the torch to Stan Musial, general manager of the St. Louis Cardinals baseball club, who used it to light a symbolic flame to open the program.

After covering more than seven miles, the Washington University runners were introduced to the appreciative crowd. Then they were escorted into the Downtown Visitors' Center where they had one last chore to accomplish before calling it a day.

They moved a piano!

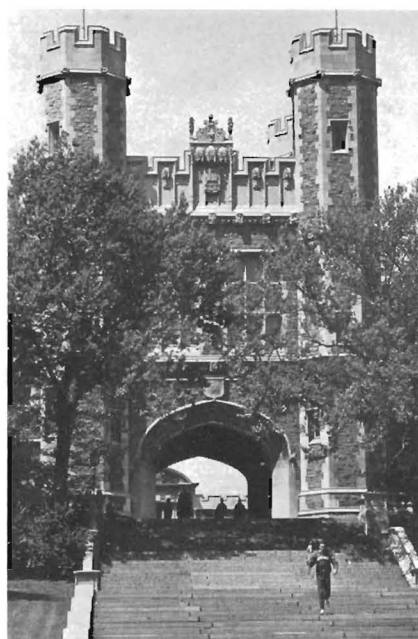
CARRYING THE TORCH



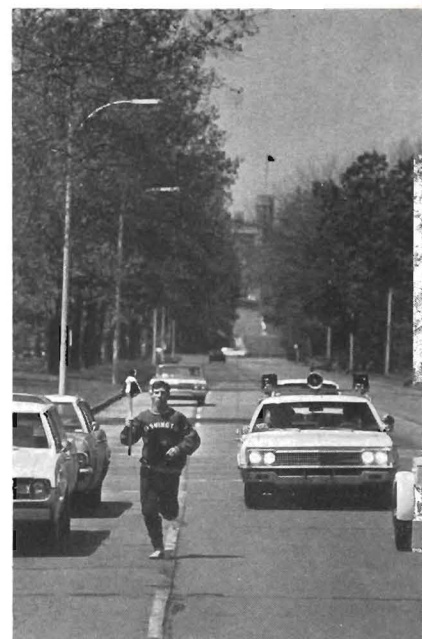
4 A resourceful runner found a street light a handy support as he waited for the torch to arrive at his station.



1 Chancellor Thomas H. Eliot (right) lighted the torch at the gate of Francis Field before a group of onlookers in period costumes.



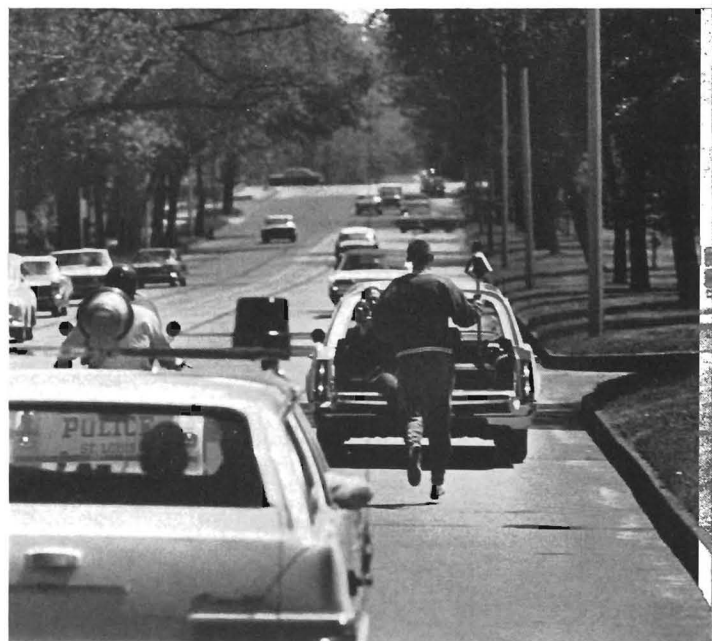
2 The Brookings archway was the scene of the first torch relay.



3 Brookings towers form a backdrop for the torch bearer as he jogs down Lindell Boulevard.



5 Jefferson Memorial on the north side of Forest Park was built originally for the 1904 World's Fair. Here, it serves as the background for a torch relay between two University torch carriers.



6 Traffic on Lindell was mild except for the television cameramen who sought a better angle. Here, a TV man rides the tailgate of his station wagon while the runner is surrounded by police escorts.



7 The police escort eliminated traffic problems at the intersection of Lindell and Kingshighway and the runner was chased only by his shadow.



10 Breaking out of the downtown traffic, the runner followed his escort to the statue of "The Runner" near Market Street.



11 Wilma Rudolph, double gold medal winner at the Rome Olympics, accepted the torch at the statue and led the University runners to the Old Post Office. Wilma is now a social worker in St. Louis.



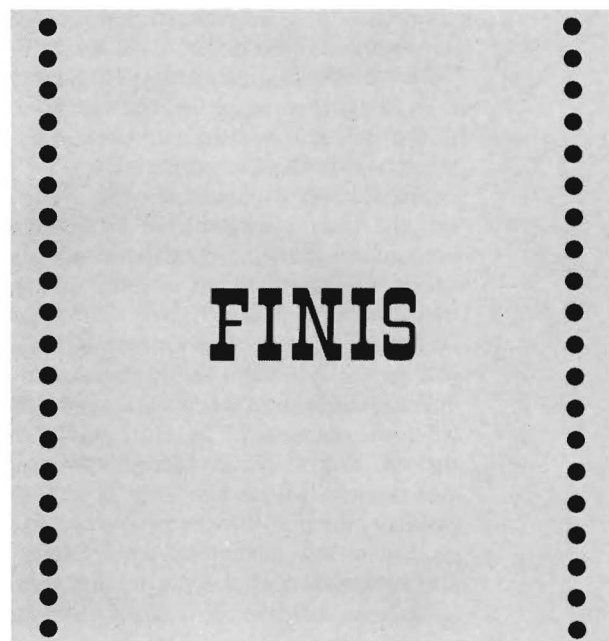
8 The runner bravely headed downtown, coasting on the downhill stretch of Olive Street and led by the motorcycle escort.



9 Still moving, a runner entered the heart of the business district as the clock moved to high noon. Heavy traffic forced several stops in this section.



12 The crowd gave the runners a warm welcome. Stan Musial accepted the torch and lighted a symbolic Olympic Flame with it, kicking off an extensive program commemorating the 1904 World's Fair in St. Louis.



FINIS

Sixty-three years ago this summer, Washington University's stadium was the scene of the first Olympic Games to be held in America

OLYMPICS

at FRANCIS FIELD

FRANCIS FIELD, WASHINGTON UNIVERSITY'S stadium, has had a long and colorful history. In the thirties, it was the scene of memorable clashes between the Bears and such big-time football powers as Notre Dame, Army, and Southern Methodist; in the early forties it saw Wilson "Bud" Schwenk set national passing records; most recently it witnessed the debut of the new "Battling Bears."

The stadium's greatest days of glory, however, were its first. Sixty-three years ago this summer, the newly completed stadium was the site of the first Olympic Games to be held in the United States.

The ancient Olympics were revived in 1896 at Athens and the Games were staged in Paris in 1900. After the tremendous showing American athletes made both in Athens and Paris, it was decided that the 1904 Olympics would be held in the United States. Competition for the honor among American cities was intense, with Chicago well in the lead from the beginning. In fact, the decision virtually had been made to hold the Games in Chicago when the sponsors of the St. Louis World's Fair got into the act. The St. Louis bidders threatened to run a rival athletic carnival at the Fair if the Olympics went to Chicago. Finally, the Olympic committee gave in, Chicago bowed out none too happily, and the World's Fair City was chosen as the site for the third Olympiad.

To accommodate the Games, the Fair authorities built a handsome stadium and gymnasium and laid out tracks and playing fields adjoining them. The site was the western end of the new Washington University campus, which University officials had leased to the Fair. After the Fair, the stadium and gymnasium were turned over to the University, which named the facilities after David R. Francis, president of the Louisiana Purchase Exposition Corporation. A statue of Mr. Francis, successful grain merchant, mayor of St. Louis, governor of Missouri, ambassador to Russia, stands today in the stadium.

More than nine thousand athletes participated in the contests and exhibitions during the St. Louis Olympics, which ran from August 19 to September 3. There were thirty-eight separate athletic contests that corresponded roughly to present-day Olympic competition, but there were dozens of other events never seen before or since at the Olympic Games, ancient or modern. Entry rules were flexible, regulations uncertain, and the World's Fair surroundings gave the affair a carnival atmosphere.

DESPITE THESE HANDICAPS, many first-rate performances were recorded in the standard events. Foreign nations represented at the Games included Greece, Germany, Ireland, Canada, Australia, Hungary, South Africa, and Cuba. Neither Britain nor France sent official delegations, but many Englishmen and Frenchmen competed under various banners. As they had at the two earlier Olympiads, the Americans ran off with most of the honors in the track and field events. There was little Archie Hahn, the Milwaukee Meteor, who won the 60-, 100-, and 200-meter dashes; Ray Ewry of the New York Athletic Club, who took three wins in the standing jump events; and Harry Hillman of the New York Athletic Club, who ran off with first place in the 200- and 400-meter hurdles and the 400-meter flat race. Another triple winner was the aptly-named James Lightbody of the Chicago Athletic Club, who won the 800-, 1500-, and 2500-meter events.

An awesome contest was the battle between two giant guardians of the law, Etienne Desmarteau, the gendarme from Montreal, and John J. Flanagan, one of "New York's Finest." Desmarteau won the 56-pound weight toss and Flanagan took the shotput title with a world's record heave of 48 feet, 7 inches.

Those truly Olympian performances took place in the midst of a whole circus of unorthodox events staged to attract the World's Fair crowds to the Games. The most un-



The gates of Francis Field. The Washington University stadium was erected by the sponsors of the St. Louis World's Fair of 1904 to accommodate the Olympic Games.

usual was an extravaganza called "Anthropology Days." A collection of what were billed as "aborigines," many recruited from the sideshows along the Pike, participated in a series of "athletic" events. The contestants included various tribesmen from Africa, Patagonians, Moros from the Philippines, Hairy Ainus from Japan, Cocopas from Mexico, and Sioux Indians.

The American Indians made a good showing and the Patagonian giants did well in the contests involving strength and muscle, but most of the events were parodies of athletic contests. The African pygmies established what must be all-time low marks for Olympic competition, although one member of the Ainus set some kind of record-in-reverse by heaving the 56-pound weight a total distance of one yard, three inches. Two truly unique events for the Olympic Games were the pole climb, won by an Igorot who shinnied up fifty feet in twenty seconds, and a spirited mud fight between pygmies.

THE MAJOR EVENT of the 1904 Olympics was the Marathon run. A 25-mile course was laid out, starting at the gates of Francis Field, going west on what is now Forsyth, returning by way of Manchester Road and Big Bend, and fairly approximating the distance from Marathon to Athens.

Thirty-one runners entered the race: seventeen Americans, ten Greeks, two Kaffirs, an Englishman from South Africa, and one Cuban.

The Cuban, a Havana postman named Felix Caraval, has become a legend in Olympic history. Standing barely five feet tall, completely inexperienced in track events,

Felix decided back in his native Havana that he would enter the Marathon for the glory of Cuba. He raised money by running around the town square in Havana to attract attention and then climbing on a soapbox to beg the amused crowd for passage money. He finally scraped together enough cash to take a freighter to New Orleans; from there he rode boxcars to St. Louis.

Fortunately, no official sponsorship was necessary to enter the race. Undernourished, knowing nothing about competitive racing, Felix lined up for the start wearing a long-sleeved shirt, long trousers, and heavy work shoes. After one look at him, the officials sent for a pair of shears and chopped off his sleeves and trouser legs to create some semblance of running togs.

When the starting gun went off, little Felix trotted merrily out of the gates and headed west. He was running against highly experienced athletes with trainers and handlers and expert knowledge of the finer points of pacing and road running, but it didn't bother Felix. Jogging tirelessly along, he chatted in broken English with spectators along the way, cracked jokes, and stopped to pick apples off trees enroute. Despite all his handicaps, the little Cuban came in fourth. He might have been the winner except that some of the apples he picked were green and he had to finish the race doubled up with cramps.

St. Louis County in August was a far cry from the cool plains of Attica. The temperature was in the nineties and the roads were unpaved. Helping the runners raise clouds of choking dust were dozens of 1904-era automobiles carrying officials, trainers, reporters, and kibitzers.

The two Kaffirs in the race had been working at one of the concessions at the Fair and decided at the last minute to enter the competition, despite a complete lack of experience or training. One of the Kaffirs came in ninth and the other twelfth. They too might have done better but they were chased a mile off course at one point by an irate dog.

FOURTEEN OF THE ORIGINAL FIELD of thirty-one managed to survive the heat and dust and the steep hills on Manchester to make it back to the stadium. The eventual winner was Thomas J. Hicks, an Englishman running under the colors of a Cambridge, Mass., athletic club. He managed to finish the last lap with his handlers beside him, administering doses of strychnine and brandy and sponging him down periodically with warm water from the boiler of their Stanley Steamer. Hicks, whose winning time was three hours and twenty-eight minutes, was so exhausted that he was unable to accept his prize. He was carried into the gymnasium, where four doctors worked over him for hours to get him into good enough shape to leave the grounds. He finally fell asleep in a trolley car on his way back downtown to the Missouri Athletic Club.

One peculiar incident occurred in the Great Race that threw the whole Olympics into a turmoil and caused a dispute that raged for years. One of the runners, Fred Lorz of the Mohawk Athletic Club, was about nine miles out when he was seized with cramps. Giving up the race, he hitched a ride on a passing car and spent most of the return trip lolling in the back seat waving at the other runners as he chugged past them. A few miles from the finish line, the car broke down and a rested, refreshed Lorz jumped to the road and began to run again.

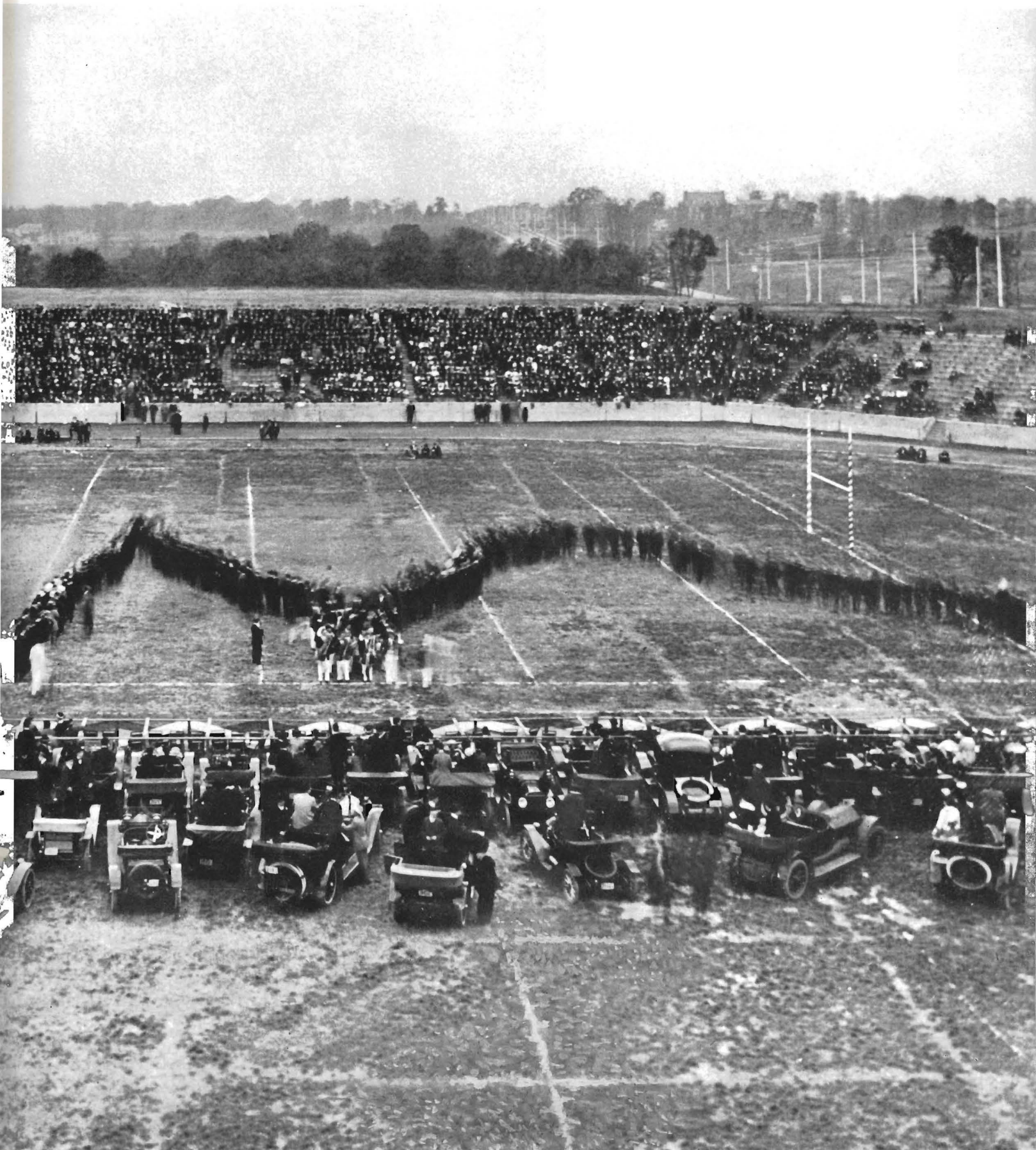
When he came into view, running easily and swiftly, the crowd went wild. The brass bands began to play, the photographers and reporters converged on him, and Alice Roosevelt rushed forward with a floral wreath to press around his neck. A few minutes later, the angry officials arrived and Lorz's brief triumph was ended. When the exhausted Hicks finally crept into view, the bands had to start up again, the crowd had to cheer again, and Alice Blue Gown had to present her flowers again.

Lorz maintained for years that he resumed running only to avoid catching cold and that he had no intention of claiming the victory. The fact that he waved openly to his competitors as he passed them in the car certainly lends support to his version of the story, but the officials took a different view and banned him from amateur athletics for life.

DESPITE THE WORLD'S FAIR background and the many irregular and unusual contests and contestants, the third Olympiad did focus world attention on the newly-revived Games. Almost all of the modern records set in Athens and Paris had been broken at Francis Field and the results have a permanent place in the official record books.

Francis Field has seen many other thrilling contests and historic events in the years since 1904, but nothing else has equalled its grand opening as the site of the international Olympic Games.

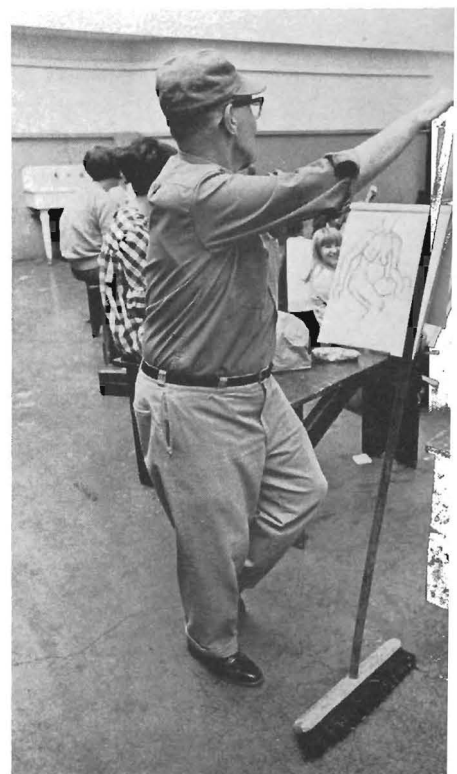




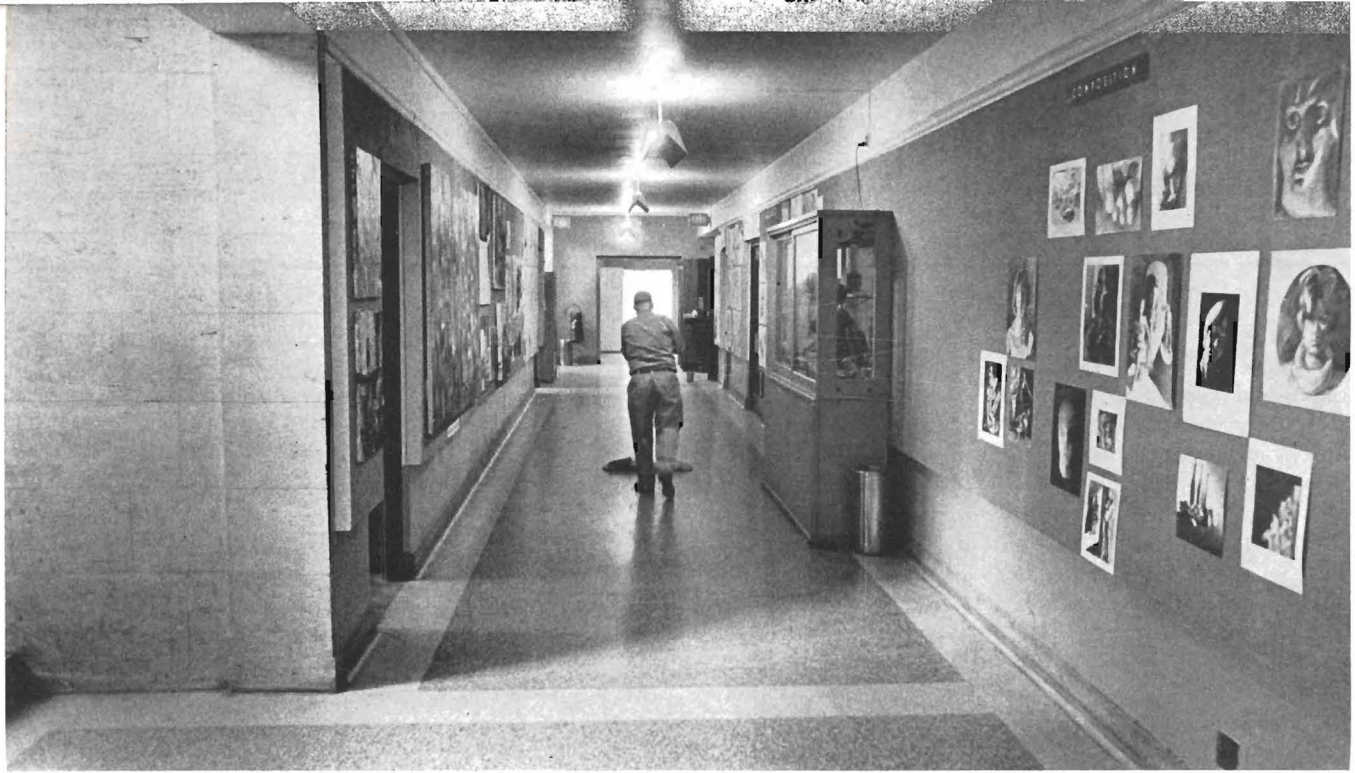
The 1904 Olympic Games get underway with a capacity crowd on hand. Judging from all the automobiles present, the campus had a parking problem even before it opened officially.



When Sandy retired, Art School faculty, students, and alumni joined forces to stage a farewell party. Here, Sandy and Dean Kenneth Hudson exchange reminiscences about their many years together.



Sandy at work and play in the School of Fine Arts. For forty years, Sandy kept the premises neat and clean, entertained the students, and observed the passing parade in classroom and studio.



SANDY

HE TALKS AS IF HE JUST stepped off a Brigadoon set—this canny Scotsman with the chestnut thatch, the ready grin, and the mellow voice that filled Bixby Hall with song. For forty years this troubadour with a broom was on campus—and for most of that time he spent his days looking after everything and everybody in the School of Fine Arts.

Officially, he was William Sorbie, janitor, but to all the staff and students who studied in the stately building that sits squarely on the corner of Skinker and Forsyth, he was “Sandy,” philosopher-in-residence, confidant, chaser of gloom-and-doom, and most of all, friend. Perhaps because he had been around so long that it seemed as if he had always been there, nobody could quite imagine the School of Fine Arts without him. But on the last day of March, just a few months before he was three score and ten, Sandy, “Mr. Chips” of the maintenance crew, retired.

The occasion quite obviously called for a party, and what a party! Over a thousand of his admirers were invited to “Sandy’s Night” at Alumni House on March 31, and even by exacting Art School standards, the affair turned out to be a “blast.”

The star of the show was “Sandy.” Unawed by all the attention, he said simply, “I’m glad to be here. But at my age,” he quipped, “I’m happy to be anywhere.” It was a

typical “Sandyism,” the kind that has made him, as the invitations to the affair stated, “an Institution.”

“Whenever we wanted something—food, money, an old paint rag, or just cheering up, we always went to Sandy,” a senior painting student recalled. “Sandy thought it was a waste of time to be depressed. He used to greet me with ‘Good morning. You’re ready for love and care. I’m ready for Medicare.’”

THE SOIRÉE WAS A TIME for such reminiscing and remembering—Sandy singing a ballad as he swept the Bixby corridors; doing the twist at a school frolic; spiking the late Dean Wuerpel’s buttermilk on a dare. But most of all it was a time for honoring the inimitable Sandy.

For weeks, checks, paper money, and coin of the realm had been tossed casually into an old turpentine can for Sandy. Appropriately enough, the battered tin, brimming with some \$400 in gifts, was presented to Sandy with Dean Kenneth Hudson’s blessing. He also received a portrait of himself done by senior Joe Pastor and Professor Fred Conway.

All this “pomp and circumstance” in honor of his leaving surprised some of his colleagues on the Hill, but not Sandy. “I always did tell them,” he recalled, “that the nicest people I ever knew were down in Bixby Hall.”

Comment / "Extremism in Defense of Freedom of Speech"

THIS PAST ACADEMIC YEAR, like every other year in the University's history, has seen a steady parade of distinguished visitors to the campus. This year alone, the University community has had the opportunity to hear dozens of speakers, covering widely varied topics and representing many and diverse viewpoints. The "Company We Keep" article in this issue gives just a sampling of this rich fare: Loren Eiseley and Margaret Mead, Republican Senator Jacob Javits and Democratic Senator Edmund Muskie, James Farmer and Barry Goldwater.

Barry Goldwater, former senator, retired Air Force general, ham radio operator, American Indian buff, amateur photographer, and the Republican candidate for the Presidency of the United States in 1964, concluded this season's regular Wednesday Assembly Series, a program which has through the years brought a whole galaxy of speaking stars to the campus.

Mr. Goldwater spoke to an overflow crowd of students, faculty, and friends from the community. As is the case with any speaker who says anything at all, some of the audience were in agreement with his viewpoints and some were not. The important point is that Mr. Goldwater, like every other speaker in the series, was given a courteous, attentive reception. The members of the audience were there, obviously, to listen, to learn, and to judge for themselves; not to heckle or harass, or to gain a hearing for *their* opinions.

Dr. Merle Kling, the University's dean of the faculty of arts and sciences, introduced Mr. Goldwater to the Graham Chapel audience. In his introduction, Dean Kling summed up most aptly the underlying philosophy of the Assembly series and of the whole University policy on campus speakers.

The Dean pointed out that Washington University has a firm commitment to freedom of speech. "It is a commitment to the pursuit of truth through freedom," he said. "It is a commitment of confidence that students and faculty and our friends in the community welcome the opportunity to hear diverse points of view on the campus of this institution. It is a commitment that extremism in defense of freedom of speech is not a vice, and that either extremism or moderation in the suppression of speech, whether by law or by violence or by calculated disorder, is not a virtue."

In his opening remarks, as quoted in "Company We Keep," Mr. Goldwater made the point that "... our country is founded on dissent. Without dissent, democracy cannot survive." He went on to say that "There is nothing wrong with disagreeing with what a person says, if you can do it without being disagreeable."

The 106th commencement of Washington University was the fourth to be held outdoors in recent University history. For the fourth straight time, the weather cooperated. The planning of outdoor ceremonies is a precarious business, requiring a great deal of built-in optimism on

the part of the planners. This year, the optimism payed off again. Of course, the optimists were hedging their bets: an alternate "rain-plan" had been worked out in advance and in detail to shift the whole affair to the Field House, if necessary. Fortunately, it wasn't.

It was a beautiful and impressive ceremony. The new Beaumont Pavilion provided the stage and the Quadrangle afforded room for some 8,000 participants and spectators. More than 1200 degrees were conferred, including seven honorary degrees to outstanding national figures.

HONORARY DEGREE RECIPIENTS this year were:

Sol Linowitz, present Ambassador to the Organization of American States and former chairman of the board of the Xerox Corporation, who was this year's principal Commencement speaker.

Dr. Warren H. Cole, emeritus professor of surgery and former head of the Department of Surgery at the University of Illinois College of Medicine. Dr. Cole did his internship and residency at the Washington University School of Medicine and was a member of the Department of Surgery here for ten years.

Edward Kennedy "Duke" Ellington, jazz musician, composer, arranger, and band leader. Duke Ellington has been a productive, prolific composer and a truly germinal influence in American music since 1927.

Myron P. Gilmore, director of Villa I Tatti, the Center of Italian Renaissance Studies in Florence. A distinguished member of the Harvard history faculty, Dr. Gilmore is a noted Renaissance scholar.

James Michener, famous American novelist. Among his best-known works are *Tales of the South Pacific*, for which he won the Pulitzer Prize, *Hawaii*, and *The Source*.

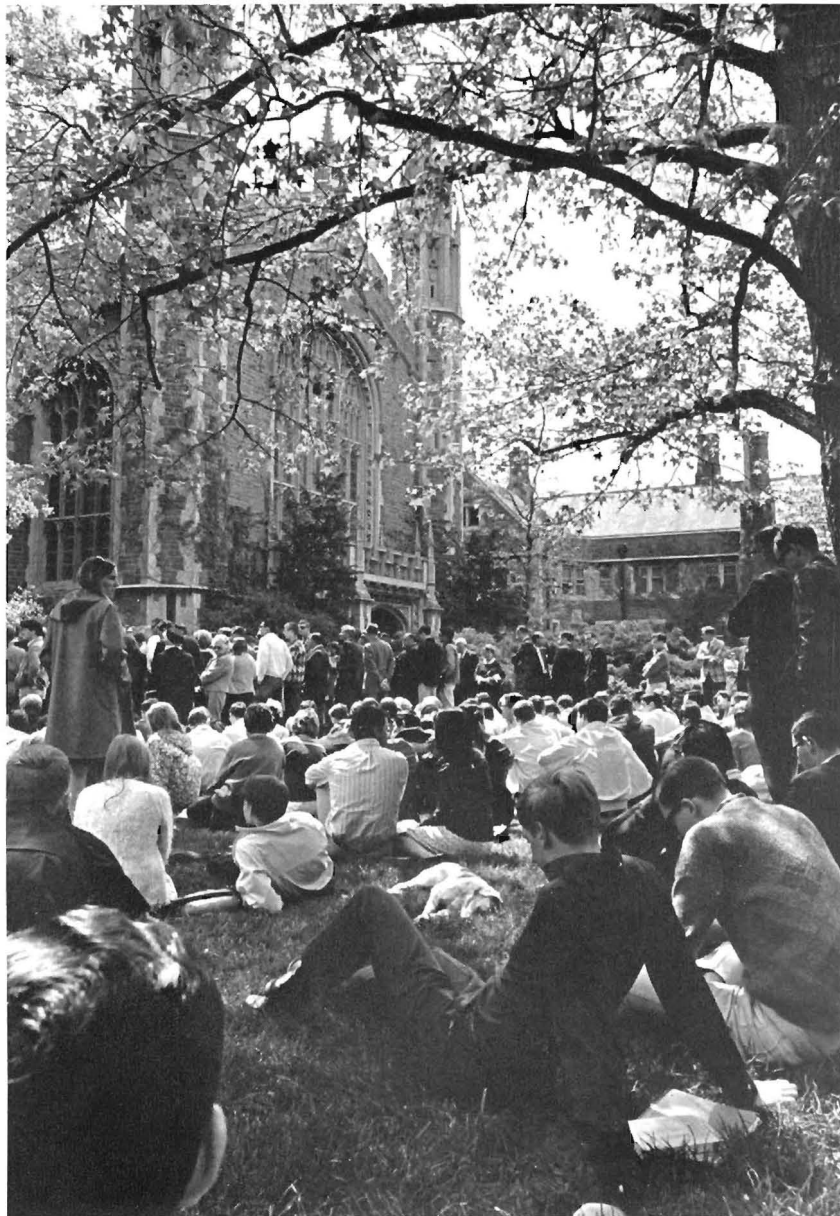
Marianne Moore, St. Louis-born poet, who has won international recognition, including the 1951 Pulitzer Prize in poetry, for her work.

Mrs. Mark C. Steinberg, a leading citizen and benefactor of St. Louis, whose philanthropy and taste have greatly enriched the life and culture of this city.

WE WERE DELIGHTED and honored to meet all of the honorary degree recipients, but seeing Duke Ellington again aroused a very special feeling of nostalgia. We first heard the great Duke Ellington orchestra twenty-seven years ago, when they played a concert in the outdoor dance pavilion at the old Forest Park Highlands. Even today, *The Black and Tan Fantasy* and *Take The A Train* seem incomplete without a roller coaster obbligato.

The Duke himself, at age 68, is still a creative innovator in his field, with little time for nostalgia. In recent years, when someone requests that he play one of the great old Ellington compositions like *Mood Indigo* or *Sophisticated Lady*, the Duke will remark, "Why that tune is before my time. You know I was born at the 1956 Newport Jazz Festival."

—FO'B



Despite the beautiful spring weather, the students and faculty members gathered before Graham Chapel aren't just lolling on the grass. They're part of the overflow crowd which showed up to hear Barry Goldwater deliver an Assembly Address. The talk was piped outside through speakers for the sitting-room-only crowd.

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