



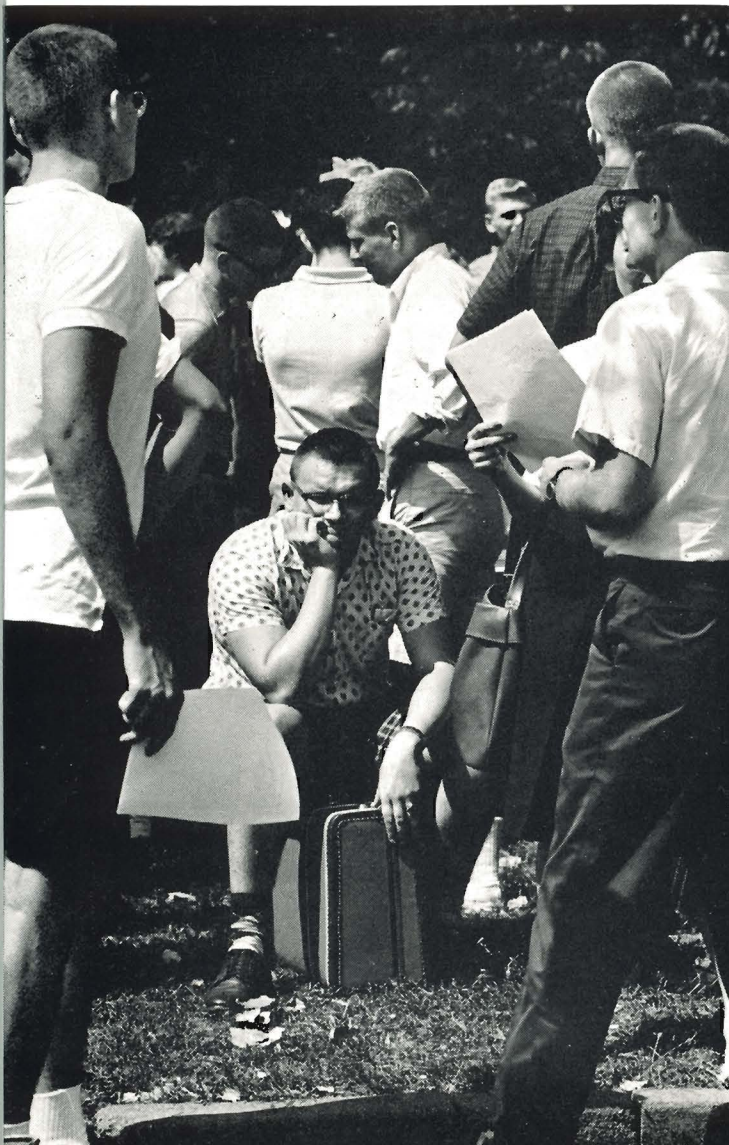
WASHINGTON UNIVERSITY

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Freshman Physics

NOVEMBER 1961

Freshman Camp



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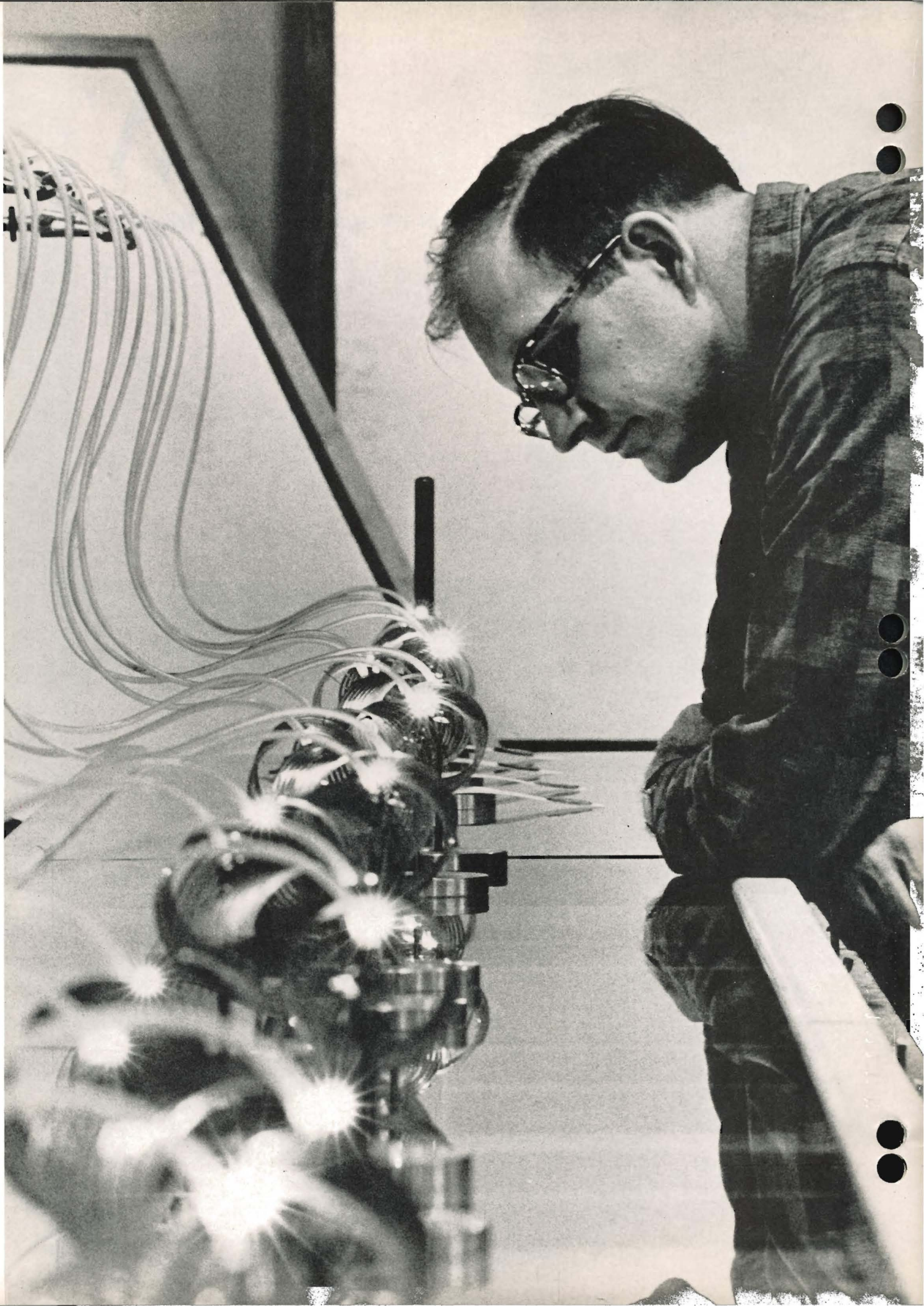
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By JOHN M. FOWLER
Associate Professor of Physics

Physics for Freshmen

Two years ago a new approach to teaching introductory physics at Washington University was taken. Here one of the originators of the new course reports on the thinking behind it and on the results so far.

IN 1902 Robert Andrews Millikan, an assistant professor of physics at the University of Chicago, secured a copyright on a text, *Mechanics, Molecular Physics and Heat*, and in 1908, with John Mills, an instructor at Western Reserve University, followed with a copyright on a second text, *Electricity, Sound, and Light*. Taken together, the two texts constituted a one-year general physics course. Robert Millikan had a distinguished career in physics, culminated by a Nobel prize in 1923 for his measurement of the charge on an electron. His books also played a prominent role in the teaching of physics.

In 1960, Robert Resnick, professor of physics at Rensselaer Polytechnic Institute, and David Halliday, chairman of the physics department at the University of Pittsburgh, published a two-volume introductory physics text, *Physics for Engineers and Scientists*, the first of which covered mechanics, sound, and heat; the second, electricity and light. Millikan and Mills produced 586 pages of text which cost \$4.50; Resnick and Halliday's 1025 pages cost \$12.00. Just as Millikan's books enjoyed tremendous sales for many years, the Resnick-Halliday books are already showing "best-seller" signs.

Other than the obvious inflation of work and cost, it seems of interest in the study of the evolution of the teaching of physics to see what else is different in the present-day books. It must be admitted at once that the similarities are more striking than the differences. The general

breakdown of the course into compartments (mechanics, heat, etc.) is a characteristic of both texts, and there is little difference in the order in which subjects appear. Because much of the physics covered by these titles was well understood by the end of the nineteenth century, the specific phenomena discussed are also very similar.

What *has* happened in physics since 1902? Has it changed as little as the similarities in these two introductory textbooks would indicate? In 1905 Einstein, accepting the constancy of the velocity of light as a fact of nature, began to build the theory of relativity, and the continued success of that theory has forced physicists to revise entirely their notions of space and time. Also in 1905, the ability of light waves to knock electrons from a metal surface (a discovery in which Millikan participated) was explained by Einstein as evidence for the association of the particle properties, mass, momentum, and spatial localization, with light waves. Thus began a way of thinking which culminated in the middle 1920's with the understanding of the atom through the quantum theory.

The growth of physics in the twentieth century has been explosive, spilling over into every field which can be called a science and profoundly influencing modern philosophy. The theory of relativity and the theory of the quantum must be counted as two of the greatest intellectual achievements of mankind. The first has afforded

understanding of a host of physical observations leading directly into speculation about the size, shape, and origin of the universe. The second has given a quantitative foundation to chemistry, provided deep insight into the nature of forces within the atom, and posed the provocative concept of uncertainty.

How are these exciting ideas represented in the typical introductory physics course today? Often they are treated as new and strange appendages to the body of physics itself and lumped into the vague classification of "modern physics" at the end of the course, material one hopes to cover but never quite reaches. In the Resnick-Halliday book, for instance, relativity is briefly mentioned in two pages, and the ideas of quantum mechanics occupy the last two chapters, a total of 37 pages out of 1025.

The area of understanding which physics claims has grown so since Millikan's time that the undergraduate curriculum for the physics major has become very full. The structure of physics for the specialist is programmed vertically in our universities, with modern physics as the dessert course at the senior level.

The two books by Resnick and Halliday are designed to begin this traditional four-year sequence and in this frame of reference serve admirably. It should be emphasized that I have chosen their book for comparison not because I think it badly written, but, on the contrary, because I think it one of the best of the standard texts.

However, a dissatisfaction with the introductory physics course has been growing among professional physicists, and in various places and various ways attempts are being made to change it. They are beginning to be concerned lest the pre-medical student, the architect, the liberal arts major, and even the engineer see as all of physics only the timeworn accomplishments of the nineteenth century. At Washington University we are in the third year of development of such a change.

The opportunity to try a unified course with a somewhat different approach was given to E. D. Lambe (now at State University of New York on Long Island) and me two years ago when the Physics Department decided to combine its two introductory courses. The almost insurmountable obstacle to a modification of the introductory course was the lack of a textbook. While it is possible to run a small course in advanced subject matter successfully by relying on student notetaking, it is our experience that printed material having the same general context as the lecture is needed in the large introductory course. Assisted in the first year by Professor Edward U. Condon, chairman of the department, Lambe and I prepared a set of lecture notes on the run in 1959-60, which we rewrote, again on the run, a year later. This year these notes are being used unrevised in class, while the revisions necessary to make them suitable for publication in textbook form are continuing.

The expressions of interest, criticism, and even praise that these efforts have aroused make it seem reasonable to outline the course and describe its goals, to mention

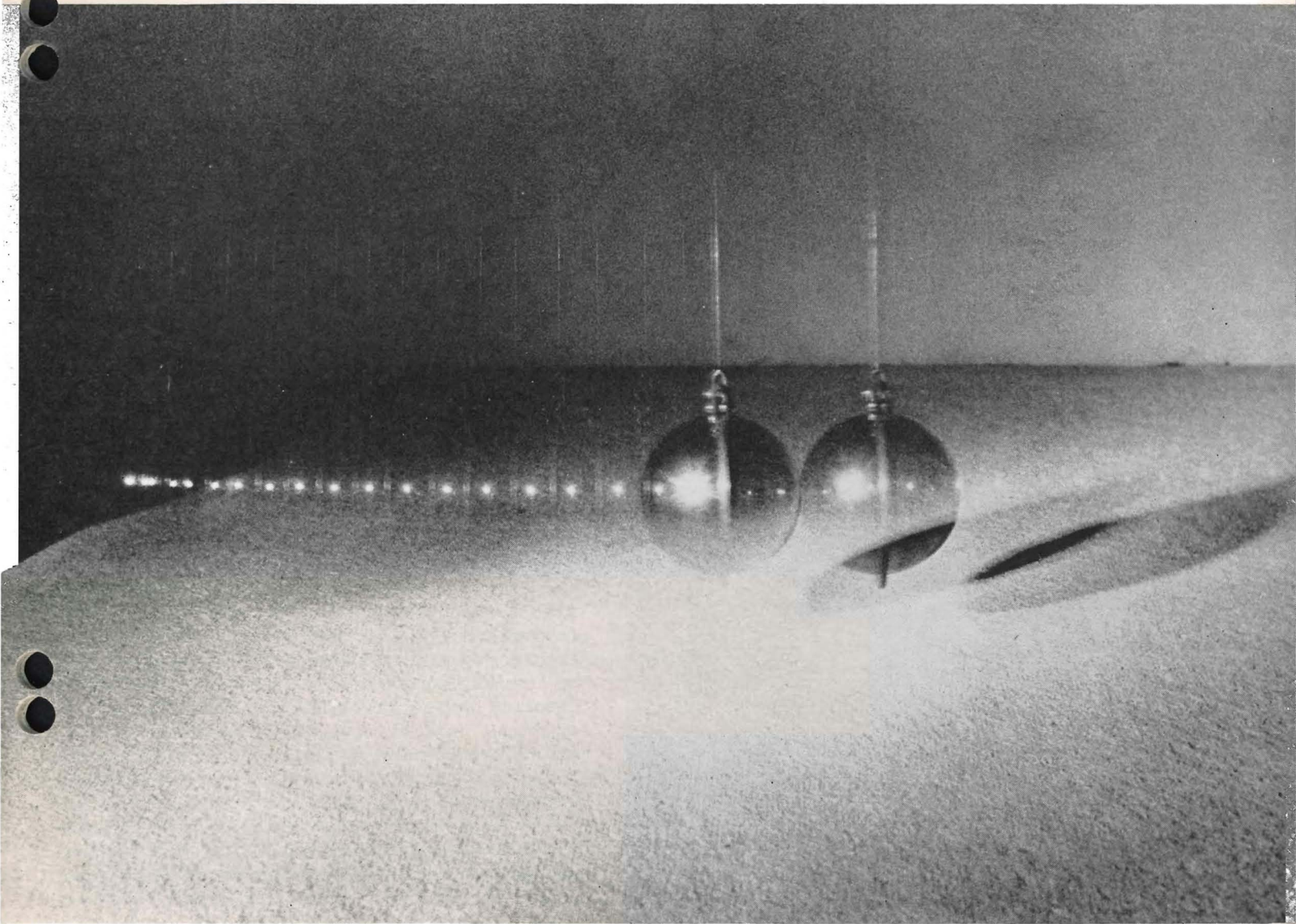
some of the new directions we have taken and the lecture demonstrations we have developed to underline these ideas visually.

How does one set the goals of an introductory physics course? Certainly the first thing to do is to look at the student population. But one looks at this population either as a priest or an entertainer: Either he has a vision of physics which he gives to all students or he seeks to find out what each group of students wants and gives it to them. What is the student population in the Washington University introductory physics course? As this is the only introductory course offered, it consists of all students wanting or required to take physics. We have physics majors, chemistry majors, and other beginning scientists. We have engineers, pre-medical students, pre-dental students, and architects. We would hope to have increasing numbers of students from liberal arts, who would be there because they feel that physics is an important building block in the foundation of their education.

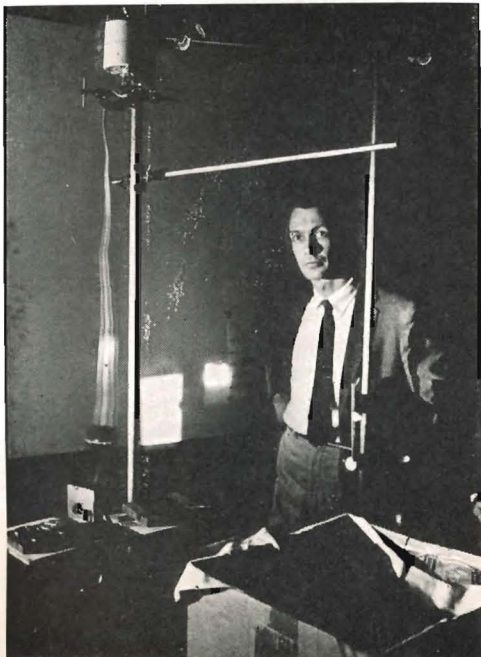
What are the needs of these various classes of students? If one took the view of physics as a "service course," he would defend the course or explain it in this way: The motivation of engineering students is easy. Engineering has become the applied side of science; the engineer implements the ideas of science in a way that furthers our civilization. Physics must stand at the base of the engineers' professional structure.

Why are the pre-meds there? Following again this "service course" idea, one would say that pre-meds are there because of the importance of the techniques of physics in the medical field; x-rays, radiation, all of the sensitive and wonderful devices of the physics laboratory are being used more and more in both medical research and practice. It is perhaps more difficult to apply this "service course" concept to the architectural students; however, they certainly need to be aware of the basic principles of mechanics if their buildings are not to collapse, and, to be at home in this technologically based civilization of ours, they need as much understanding of these principles as possible.

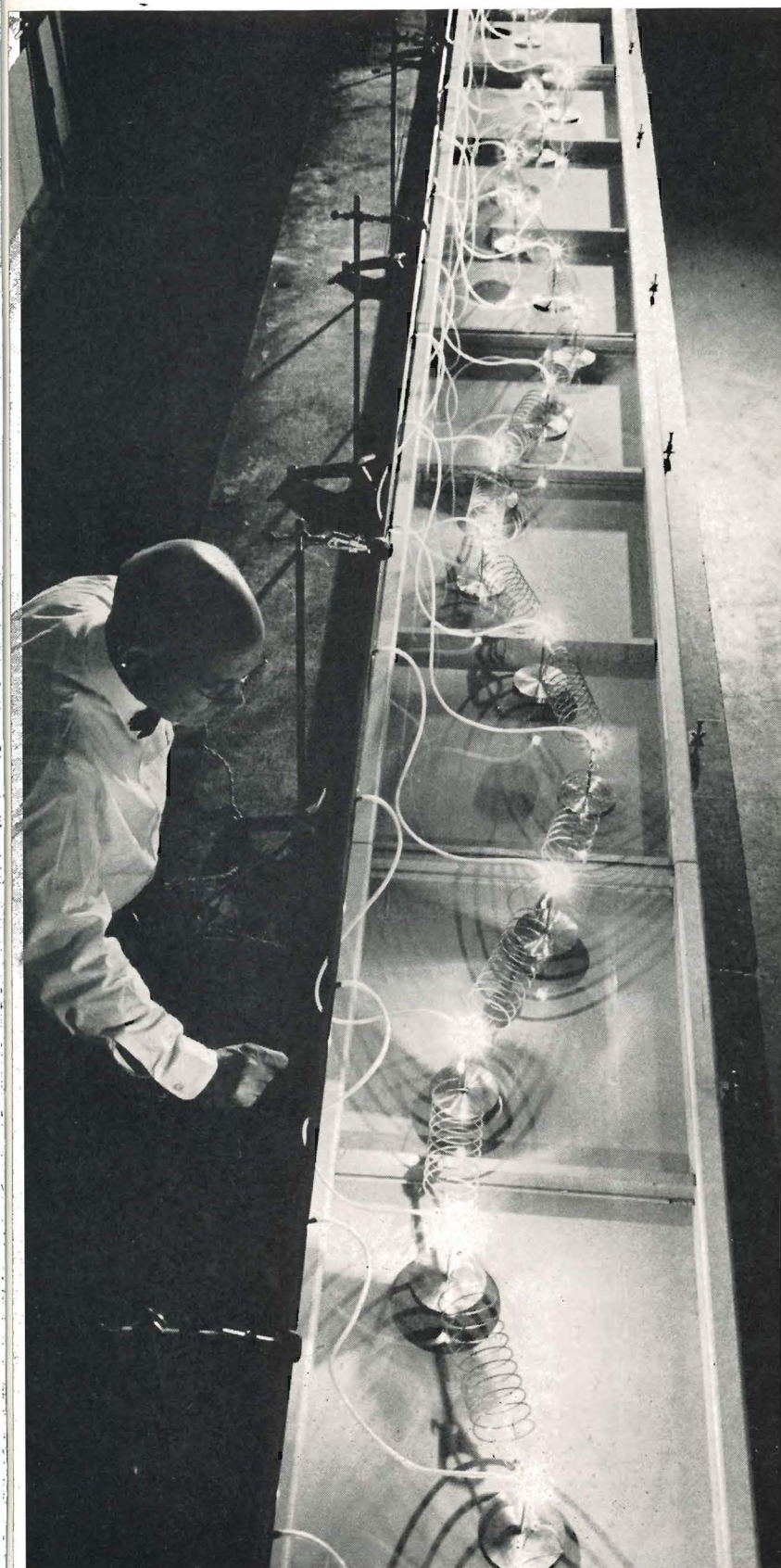
These narrow reasons do not guide us in the presentation of our course. We are told by educators in various professional fields that they *don't* want one physics course for medical students, another for engineers, and a third for architects, that they will teach the specialized applications of physics to their students themselves. What they want from us is an introduction to physics as an analytical discipline. They justify it on the same grounds as a course in history or philosophy. They ask for a course which gives as true a picture as possible of the discipline of physics as it appears to and is practiced by professional physicists. We have tried to design such a course. This course has two major goals, one qualitative, one quantitative. The qualitative goal is to give a coherent picture of the structure of physics as it is seen in the 1960's. Much academic breath has been spent discussing the relationships between research and teaching. The department



Collision of two metal spheres demonstrates two of the three dynamical conservation laws, which hold equally well for planets or for the submicroscopic particles of the atom.



Ball bearings are used to show that a stream of particles striking a surface exerts a force. Studying effect is Edward D. Lambe, who helped develop the new approach to freshman physics.



Important properties of wave motion can be demonstrated by this device being examined here by its builder, John Brooks, lecture demonstrator. Metal disks are supported above glass plate on a cushion of compressed air.

which prizes its research reputation defends it by insisting that there is an important interplay between research and teaching, that having found the frontier it is easier to show the path. If one concentrates his course on nineteenth-century physics, however, it is difficult to make this argument convincing; we have tried to make real the myth.

Selection must necessarily take place; we try to select for display to our students fundamental and important concepts, so that if a student takes with him from the course anything at all he takes with him something significant.

But a view of physics is not enough. We want to do more than talk about physics. We want to *do* physics. And so our second goal is to give a *quantitative* understanding of the subject. It is when we ask for this quantitative understanding of physics that we begin to lose our students, for this means numbers, algebra and computation, homework, long and sometimes tedious examinations. The desire for quantitative understanding forces us to use the mathematical language of physics in a non-trivial way. The statements that we wish to make about the universe must be mathematical statements. Answers to our questions will be numerical answers. Unfortunately, many of our students do not come prepared to speak this language, and so we try to develop not only an increasing sophistication in the physical ideas, but an increasing sophistication in the mathematical ideas. Our approach to mathematics is intuitive rather than rigorous, and while we try to be consistent with rigor, we leave the logical development of these ideas to the Mathematics Department.

The desire to present physics in a current form, in particular to say something quantitative about relativity and quantum mechanics, also shapes the early part of our course. The foundation upon which these theories rest must be built. Concepts and laws must be introduced in such a way as to point towards these later ideas whenever possible.

The traditional course in physics is oriented toward phenomena. The compartments which were mentioned earlier (mechanics, heat, light, sound) provide a convenient grouping of phenomena, and the students' goal becomes the understanding of each of these groups. The molecular physics that Millikan taught, for instance, grouped together the observations pertinent to the compartment that we call heat and kinetic theory. In this section of his course he provided the students with an understanding of pressure, temperature, and all the interesting and varied results that come from the confining of a group of fast-moving molecules to a specific region of space.

We prefer to use the physical examples in a different way and choose for mention only those phenomena which are useful in illuminating the basic concepts and laws to whose understanding our course is directed. Thus, to illustrate momentum conservation, we use examples from nuclear physics, ballistics, and chemistry.

For some time now the introductory physics course in large universities has been unable to afford the luxury of the small lecture section with intimate contact between instructor and student. It has turned instead to the large lecture presentation in which the instructor plays not only the role of teacher, but sometimes that of showman. To remove the feeling of too much abstraction and to put the student in touch with the rich variety of phenomena that make up the physicist's world, the demonstration experiment has been highly developed. We have found that redirecting our course has also caused us to re-examine thoroughly the demonstrations that go along with the lectures. In 1960-61 Professor Lambe and I were fortunate to receive a grant from the National Science Foundation which helped in this re-examination and provided funds for development of new demonstrations. One of the new demonstrations developed under this grant is the one-dimensional wave-train illustrated on the opposite page.

The trademark of the phenomena-oriented physics course is a full lecture bench, a lecture bench crowded with many demonstrations each making one point, quite often an exciting point, a beautiful point, and occasionally an important point. The master lecture-demonstrator plays upon this bench with virtuosity and easily holds his students' attention by first showing the magic and then using the logic of his science to draw back the veil. We have looked for a different kind of demonstration and find ourselves relying on relatively few demonstrations, but demonstrations of simplicity and great flexibility in which with one very simple piece of apparatus we can show many ideas, starting first with the simple and moving on to the more subtle. A scanning of these demonstrations provides a pictorial outline of the course.

The first experiment that we conduct for the student audience is not only one of the most simple but also one of historical significance. For the first five or six lectures the only apparatus on the lecture bench is a device which drops a metal sphere through a measured distance and a clock for timing the fall. This is Galileo's experiment, with some refinement of technique. With this apparatus we are able to introduce almost all of the truly fundamental concepts of physics.

The experiment is so simple that our students are somewhat taken back, at first, by our attention to it. It becomes apparent, however, when it is examined carefully, that there is much depth to even this straightforward experiment. After a few lectures on the falling ball last year, a student's comment was overheard: "When I entered this class I thought surely I understood at least something as simple as a falling ball, but now I don't understand that either."

Falling bodies in which the constant force of the earth's gravitation causes a constant acceleration lead naturally to instances in which the force may vary and thus to a more general study of the laws of motion. One of the great difficulties of the demonstration lecturer is that the

simple laws hold only in a world where there is no friction; such a world is easy to find for electrons, protons, satellites, and planets, but is a very difficult world to reproduce in the classroom.

John Brooks, our very clever lecture demonstrator, has created at least a limited friction-free region for us by building a glass-topped table on which to sail brass pucks suspended on a cushion of compressed air. This air is forced through a small hole in the puck's base. With these pucks it is possible to demonstrate with great accuracy the laws of physics which hold for neutrons and satellites and other particles moving in frictionless space.

Another simple and very useful piece of demonstration equipment is the pendulum. When two pendula collide at the very bottom of their swing they bounce apart, swing up, stop, come back down again and collide, and repeat this action in a cyclic way. From the collision itself can be shown the powerful conservation law which governs the transfer of momentum. From the cyclic nature of the collision it can be shown that the energy of motion is also conserved. These two laws govern most of physics. The colliding pendula are in reality large ball bearings, suspended by fine wires; however, the principles and concepts that we can deduce and demonstrate with them hold equally well for protons, molecules, atoms, automobiles, or football players.

Most of the early demonstrations, when boiled down, are studies of the motion of a single particle or at most of two particles: a falling ball, two pendula, two compressed air pucks, etc. We try to show as many of the simple interactions between two particles as we can. For instance, we have a puck which can fire from itself a slug and demonstrate the basic principle of a rocket. We have a pair of pucks which, coupled together by a spring, show in their vibratory motion many of the general features of a molecule.

In almost any field of science one makes great use of models, and physics is no exception. Our models are usually very simple, such as the particle model of the universe with atoms as the structural units, and the model of the atom itself constructed of electrons, protons, and neutrons. A model is useful only as long as deduction from it agrees with experience. One of the great successes of the particle model of the universe is its explanation of the many phenomena connected with gases, including pressure and temperature. A favorite demonstration is to show that a stream of steel balls dropping on a scale produces a steady force. In this way we show that gas molecules bombarding a surface would also be expected to produce a force, a force which is considerable in the case of the earth's atmosphere, as anyone who has seen a tin can evacuated and crushed will testify.

But, as successful as it has been, the particle model of the universe has turned out to be insufficient. Particles can carry energy and momentum from one place to another; energy and momentum can also be transferred by wave motion. In such motion, the tidal wave which

breaks with crushing violence on the beach may have traveled thousands of miles; the water in this wave has moved only a few yards. The sound of my voice which reaches the dozing student at the back of the lecture hall carries with it enough energy to awaken him—sometimes. The air molecules which carry this sound, however, have traveled only a few hundredths of a millimeter.

In our study of wave motion we again start with as simple a demonstration as possible. We use a chain of the compressed air-pucks linked together with springs. In our eyes, these could easily be atoms connected by electrical forces, reproducing in one dimension the structure, for instance, of a metal. By watching waves move down this chain of masses we can see all of the important parameters of wave motion, and, as is important to us, we can compute from the model what the velocity of the wave should be, and how it should be related to the length of the wave. We can make these measurements in class and see the extent of the agreement. With the understanding of wave motion gained in this most simple of experiments, we then consider two-dimensional waves in an arrangement called a ripple tank, a flat pan of water upon which we can set a regular wave pattern and project it on a screen or the ceiling. It is possible with this equipment to study the superposition of several waves, which gives rise to wave interference, seen most clearly when the crest of one wave meets the trough of another and produces a cancellation of the wave motion. Interference is the dominant feature of wave motion; it is the trademark of a wave.

Having used both the particle model and the wave model to explain separate sets of phenomena, we then look at some cases in which either or both models are indicated. An old TV tube has been modified, and a very thin piece of gold foil put in front of the beam of electrons, and we see with these electrons a distinctive interference pattern, indicating the presence of waves. And so we, and we hope our students with us, are forced to the conclusion that electrons show properties which must draw from both models, wave and particle, for their explanation.

We therefore have tried at every step of the way to present the demonstrations, the examples from nature, which support the conclusions of physics. Sometimes it has been very easy, and the students have shown little surprise. Other times, as when we demonstrate the wave properties of electrons, the students have found their senses and their intuition in conflict.

There is one large area in which we have found no useful demonstration as yet, the area of relativity, for experimental evidence to support this theory is found with particles moving with velocities near that of light. Even the talented John Brooks has been unable to make our pucks and pendula travel at such great velocities.

The bare-bench policy we have followed has cost the lectures some of their variety. We have been able to show only a pitiful few of the many wonderful demonstrations

of physical principles. We have tried to recover some of this loss in the laboratory, where we ask the student to perform for himself experiments in which these principles are demonstrated.

Physics is dependent always on observation; it is an experimental subject, and so we view the laboratory as an integral part of the course. To be successful, any modification of the lecture presentation must be extended to the laboratory, and so the last three years have seen modification also. In this we have benefited from the assistance of Professor Michael W. Friedlander, of the Washington University Department of Physics, and last year were fortunate also in having the energy and enthusiasm of Professor David Telfair, a National Science Foundation Fellow, on a year's leave of absence from Earlham College.

We use the laboratory in several different ways. I have mentioned one: as an extension of the course which allows us to increase the students' phenomenological background. We also use the laboratory in an independent way to teach some of the subject matter of physics which, though important, does not fit into the coherent story that we are trying to tell in the lectures. Examples of this are geometrical optics, in which by tracing rays of light and using the laws of geometry one can study image formation by lenses and mirrors, and electrical circuit theories, which, with the application of a few essential physical ideas, become practice with simultaneous equations.

We also use the laboratory whenever possible to investigate in greater depth some of the ideas demonstrated in the lecture. I will cite two examples: One of our useful experiments consists of a set of measurements made with colliding pendula; by allowing them to strike each other and measuring their deflections we can investigate collisions in which kinetic energy (the energy of motion) is not conserved, and momentum is still conserved. We thus gain insight into the relative importance of these two conservation principles. In the latter part of the course, where we have begun to investigate the necessity of particle and wave models for a complete description, we have an experiment in which light knocks electrons from a metal. The student is forced to conclude that light, which shows so many properties associated with the wave model, in some instances acts as if it were made up of particles. Ideas such as this do not spring full-grown from intuition; experimental familiarity with them is essential.

This, then, is Physics 117-118 as presented this year at Washington University. It is neither "modern" physics nor "classical" physics, liberal arts physics or engineering physics. It is our personal vision of the bone and muscle of the body of physics. As a personal vision it is bound to be distorted; as an imperfect vision it will change with time; at best it is but a step along the way.

The most carefully constructed course or the most brilliantly written textbook cannot teach physics. The study of physics grows out of man's wonder at the universe; true teaching will always be the sharing of this wonder.

By JOHN H. KAUTSKY
*Associate Professor
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NATIONALISM AND COMMUNISM IN UNDERDEVELOPED COUNTRIES

The frequently asked question whether men like Castro or Lumumba are "genuine" nationalists or "really" Communists is a meaningless one; such nationalists have come to be like Communists because Communists have come to be like them.

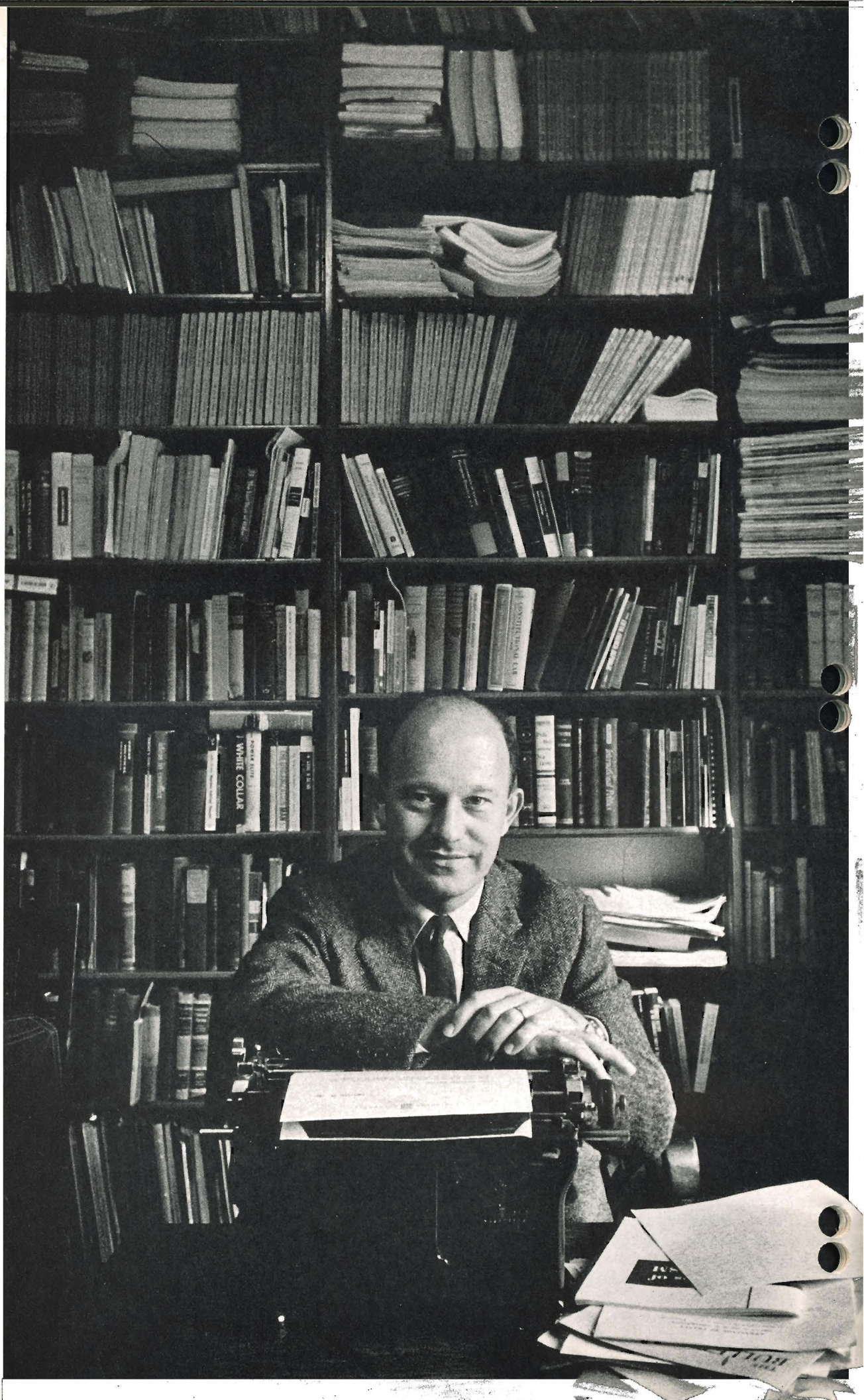
THE WORD NATIONALISM is constantly used with reference to underdeveloped countries, as if its meaning were entirely clear. In fact, it is not. In its original European context, nationalism may be defined as an ideology and a movement striving to unite in a single independent state and in loyalty to a single government all people speaking a single language and sharing various cultural characteristics. More loosely, and very frequently, nationalism has also been defined merely as loyalty and emotional attachment, regardless of language, to an existing government and state.

When we turn to a consideration of what is generally referred to as nationalism in underdeveloped areas, it becomes clear immediately that we are confronted with a phenomenon quite different in nature from European

nationalism. The definition of nationalism as loyalty to an existing state and government clearly cannot account for the nationalism of underdeveloped areas whose very essence it is to seek to create new independent states and governments where there were none before. However, the nationalism that did create new states in Europe proves to be a model equally irrelevant for the explanation of nationalism in underdeveloped countries, for in the growth of nationalism in Europe the language or nationality factor was a key element.

The common language, which in Europe often provided

Adapted from Professor Kautsky's "An Essay in the Politics of Development," to be published in his *Political Change in Underdeveloped Countries: Nationalism and Communism*, by John Wiley & Sons, New York, in spring, 1962.



the principal basis for unity, is missing in many underdeveloped countries with their multitude of languages and dialects. The fact that their nationalists have virtually nowhere sought to change the boundaries which were drawn by the colonial powers, regardless of the language of the local inhabitants, indicates that nationalism in underdeveloped countries is not a movement seeking to unite all people speaking a particular language. In some underdeveloped countries, religion and other cultural characteristics shared by all natives regardless of their language may have been a common element around which the countries' nationalism could have grown. Another important factor of unity setting the nationalists apart from their colonial rulers may be race. But in many underdeveloped areas there are vast religious, cultural, and racial differences among the natives who nevertheless have produced a single nationalist movement, even where the native nationalists are of the same religion or race as the colonialists.

In the absence of a common language, culture, religion, or race, what is it, then, that provides the focus for the unity among politically conscious elements from all strata of the population characteristic of nationalist movements in underdeveloped countries?

It would seem to be no positive factor at all, but rather dislike of a common enemy, the colonial power. Anti-colonialism must here be understood as opposition not merely to colonialism, narrowly defined, but also to a colonial economic status. This explains the nationalist movements in independent countries like China, Egypt, and Cuba, which stand in an economic colonial relationship to industrial countries, with the former serving as suppliers of raw materials, often made available by cheap native labor, and sometimes as markets for the industries of the latter.

It is opposition to colonialism that constitutes the essence of nationalism in underdeveloped countries. As such, nationalism can unite not only people of different language and cultural backgrounds, but can also attract people of all economic and social classes. The social tensions which modernization and industrialization produce everywhere and which in Europe were necessarily turned inward, resulting in social conflicts dividing nations, are, in underdeveloped areas, largely turned outward. Instead of blaming each other for the difficulties growing out of modernization, the various social strata all blame the colonial power, the result being not internal conflict, but internal, anti-colonial unity.

This may be illustrated in somewhat more detail by a quick survey of the effects of colonialism and what modernization it brings on the major social strata and hence on their attitude toward nationalism. Peasant communities, for ages unaffected by and indifferent to the outside world, are no longer the rule in most underdeveloped countries. Through the extension of colonial influence, the peasant becomes integrated into a wider money economy, dependent upon middle-men and money-lenders in order to transform his agricultural goods into money and then into products of foreign industry. His resentment against those who exploit his weak economic and political condition and the vast impersonal forces he can neither under-

stand nor control can easily be directed against the colonial power who brought the change from the secure life of the village to the precarious existence in the wider economy. While the peasants themselves are very unlikely to initiate any nationalist movements, they can become an important mass base for such a movement led by intellectuals.

A second of the pre-industrial classes are the tradesmen and craftsmen who are threatened wherever industry advances. These members of the old middle class cannot successfully meet the competition of large industrial and commercial organizations. As they face the end of their way of life and the loss of the relatively high status they enjoyed in the old society, they are likely to become embittered and desperate, a mood that fed fascism in Europe but contributes to nationalism in underdeveloped countries.

The third of the old classes, the aristocracy of native rulers and large landowners, is generally protected by colonialism acting as a conservative force through some arrangements of "indirect rule." At the same time, however, the modernizing aspects of colonialism undermine the traditional society on which the power of the aristocracy rests, and some of the aristocracy hence often leads the traditionalist wing of anti-colonialist nationalism.

Among the new social groups, the industrial workers, like labor everywhere in the early stages of industrialization, are a group with many grievances. The conflict between labor and capital, which in Europe gave rise to anarchism, syndicalism, and early socialism, in underdeveloped countries furnishes more recruits and an important mass base for anti-colonialist nationalism. It is not surprising that trade unions, such as they are in underdeveloped countries, have everywhere, under intellectual leadership, tended to become virtual adjuncts of the nationalist movement.

If labor is anti-colonialist, one might expect the opposite of the native capitalists in commerce and banking, who developed from the old traders and money lenders, and of the few native industrial capitalists who may also have emerged eventually. While many of them are so closely tied to the colonial economy that they favor its continuation, others may suffer from, and therefore resent, competition from banking, commercial, and industrial establishments in the "mother" country and may well feel that the removal of colonialism would enhance their own opportunities.

The third of the new groups produced by modernization are the intellectuals. We have in mind those natives in the underdeveloped countries who have, through the contacts afforded by colonialism, become aware of the world beyond their own culture area and obtained an advanced education, either in universities abroad or in those at home conducted according to Western standards.

In the universities, the intellectuals absorb professional knowledge and skills needed by an industrial civilization; they become lawyers and doctors, administrators and journalists, and increasingly also scientists and engineers. When they return from the universities, the intellectuals often find that in their old societies their newly acquired skills and knowledge are out of place. During their studies,

the intellectuals also absorb the values of an industrial civilization, above all the notion that continuing material improvement of the life of the mass of the population through continuing technological progress and popular participation in government is both possible and desirable. On their return, they discover that these values, too, are inappropriate to the old society. Hence, they want to change that society to accord with their own needs and values; in short, they want to industrialize and modernize it. Since they see colonialism, with its allies in the traditionalist aristocracy, as opposed to modernization, they, too, become nationalists. This helps explain the apparent paradox of intellectuals in underdeveloped countries who were trained in the West and came to admire it and yet turn against the West in their policies.

More and more the intellectuals, largely because there is no one in their society to compete for it, assume the leadership of the nationalist movement. Their peculiar form of nationalism, which looks at steel mills both as symbols and as instruments of anti-colonialism, becomes characteristic of nationalism in underdeveloped countries.

IF THE DOMINANT FORM of present-day nationalism in underdeveloped countries can be defined as the drive of a relatively thin stratum of Western-trained intellectuals toward rapid modernization in opposition to the aristocracy and independently of the colonial powers, then the Russian Revolution may be viewed as one of the most important manifestations of this form of nationalism, and by all odds the most successful.

At the beginning of this century, Russia was still an underdeveloped country where, as in other such countries, the aristocracy ruled and the bulk of the population consisted of peasants, poor, ignorant, illiterate, living in the isolation of their village communities and playing no role in national politics. Modernization, resulting from contact with Western Europe, was bringing significant changes. As in other underdeveloped countries, the new industry, owned largely by Western capital, produced few native capitalists, but, in some localities, a significant and deeply discontended labor movement. And, as in other underdeveloped countries, too, intellectuals who had absorbed values and ideologies that had grown out of an industrialized environment in the West played the leading role in the revolution to modernize the country, though in Russia it was the native aristocracy rather than foreign colonialism that appeared as the main obstacle to the realization of their goals.

One of the ideologies produced by Western industrialism that appealed to Russian intellectuals was Marxism. It taught that the socialist revolution presupposes a highly industrialized society which did not exist in underdeveloped Russia. Leninism is an adaptation of Marxism to the condition of an underdeveloped country. Lenin looked to an alliance of the workers and peasants, thereby significantly modifying Marxism in the light of a realistic assessment of conditions prevailing in Russia. But what mattered most to him was the role of the intellectuals and hence of the Party in the Revolution. Lenin always insisted that the Revolution must be led by the proletariat,

MORE and more the intellectuals, largely because there is no one in their society to compete for it, assume the leadership of the nationalist movement.

which, unable to understand its own interests, had to be led itself by intellectuals organized as its "vanguard," the Communist Party.

This insistence on the leading role of the intellectuals organized in the Party and their substitution for Marx's proletariat as the agents of history and the makers of revolution constitutes the core of Leninism. This is also the essence of Lenin's adaptation of Marxism to conditions in underdeveloped countries, where the proletariat is non-existent or small and weak, but the intellectuals are the chief group driving for revolution.

Lenin and most of his contemporaries, whether Communist or not, did not and probably could not see the Russian Revolution as a nationalist movement in an underdeveloped country. At a time when the socialist labor movement in the West was regarded by both its friends and its enemies as the chief agent of a future transformation of society and when nationalism in the underdeveloped countries was as yet hardly recognized as such, it is not surprising that the Russian Revolution of 1917 should have been very widely regarded as the first successful revolution by an industrial proletariat intent on introducing socialism, rather than as one of the first successful revolutions by intellectuals intent on industrializing a backward country independently of Western capital.

For at least thirty years after the Russian Revolution, the Communists suffered from their inability to make as complete a break with Marxism in their thought as they had in their actions. They could not, in their theory and propaganda, as they did in their practice, entirely replace the party of the proletariat with the party of the intellectuals, the class struggle and the revolution of the proletariat with the nationalist movement and the industrialization of the underdeveloped countries. Had they been able to see themselves for what they were, in fact, more and more becoming, the Communists could have presented themselves to their fellow intellectuals in other underdeveloped countries as the first ones to succeed in attaining their common goal—rapid industrialization and elimination of the aristocracy and Western domination. In fact, the appeal of Communism failed in the underdeveloped countries, where its achievements were highly relevant, because it obscured that relevance by insisting on the proletarian and hence Western nature of Communism.

Only the cold war between the United States and the Soviet Union compelled international Communism to develop a new strategy which was destined finally to bring the policies and propaganda of Communist parties throughout the world and particularly its underdeveloped parts into line with the modernizing, nationalist role Communism had played in the Soviet Union. It was a strategy which, in short, turned Communism from a professedly proletarian into a frankly nationalist movement. This new strategy was first developed by Mao Tse-tung during World War II in his battle against the Japanese, and it is for this reason that I call it the neo-Maoist strategy, but it was adopted by Moscow and the Communist parties in response to Soviet foreign policy needs beginning about 1947. These demanded that all possible forces, regardless of their class character, be mobilized against American foreign policy objectives.

Under the neo-Maoist strategy, the Communists' main enemy is identified not as capitalism but as "imperialism," and all classes are to be mobilized in opposition to it. The Communists now claim to represent the interests of all classes, including those of the capitalists.

With a strategy openly appealing to all classes, the Communists in underdeveloped countries are no longer tied to a non-existent or weak proletarian base, nor are they obliged to attack the native capitalists or any other native groups except those closely connected with "imperialist" interests. They can thus seek to draw strength from any group to whom their anti-colonialist program appeals. The main domestic plank of this program is the promise of rapid modernization and industrialization on the Soviet and Chinese Communist model. For the first time, the appeal of the Soviet success in achieving the goals of the intellectuals in underdeveloped countries—the elimination of aristocratic rule and quick industrialization without dependence on Western capital—can be exploited fully by the Communists.

In countries already industrialized, it is difficult to appreciate the power of this appeal and the depth and urgency of the intellectuals' concern with the problem of modernization. To them the appeal is hardly weakened by a knowledge of the sacrifices which the Communist path to modernization imposed on millions in the Soviet Union and China. As against the hope of future improvements, these

UNDER the neo-Maoist strategy the Communists' main enemy is identified not as capitalism but as "imperialism," and all classes are to be mobilized in opposition to it.

do not seem to weigh very heavily in the balance in countries where mass starvation was a common occurrence and where millions are still undernourished, sick, and illiterate and where there is no tradition of individualism and civil liberties.

If nationalists in underdeveloped countries are intellectuals appealing to all strata of the population in their drive for industrialization and against colonialism, and if Communists in underdeveloped countries are intellectuals appealing to all strata of the population in their drive for industrialization and against colonialism, then Communists are nationalists. This conclusion sums up the vital change that the neo-Maoist strategy brought to international Communism beginning in the late 1940's.

Communist policies and ideology had become nationalist, but Communist parties still opposed the older nationalist movements in underdeveloped countries as "stooges of imperialism." This, too, was soon to change, however. A generation after the Revolution, Soviet society and leadership had undergone profound changes. Lenin's "professional revolutionaries," who had dreamt of world revolution, had been replaced by a new bureaucratic and managerial elite whose objective is to consolidate its power through rapid technological progress at home and reduction of American influence abroad.

By the early 1950's it had become clear to Moscow that for this latter purpose nationalist parties and regimes in underdeveloped countries could be at least as useful as Communist parties. Hence the Soviet Union now began to act as the champion of the so-called neutralist countries and to push Communist parties to give up their domestic opposition to their governments. By now Communist parties in underdeveloped countries are expected to follow the leadership of the nationalist movements whether they like it or not—and there is much evidence that many do not like it and would prefer to follow the Chinese Communist line of continued neo-Maoist opposition to the non-Communist nationalist movements.

To Moscow, however, it is not revolutions but opposition to American foreign policy that matters. This goal can often be reached much better through an anti-Western nationalist regime in power than through a Communist party in opposition. If Communism, then, is defined not as some ideology of the past, whether Marx's or Lenin's, but as whatever movement abroad Moscow supports, then Communism has become more and more identical with nationalism in underdeveloped countries. It did not invent that nationalism any more than it had earlier invented proletarianism, but it is using it with vastly more success.

In terms of formal party membership it is still possible to distinguish between Communist and non-Communist nationalists. But in their policies, the Communist intellectuals driving for industrialization and independence and the non-Communist intellectuals driving for industrialization and independence have become virtually indistinguishable. The frequently asked question whether men like Castro or Lumumba are "genuine" nationalists or "really" Communists is hence a meaningless one; such nationalists have come to be like Communists because Communists have come to be like them.

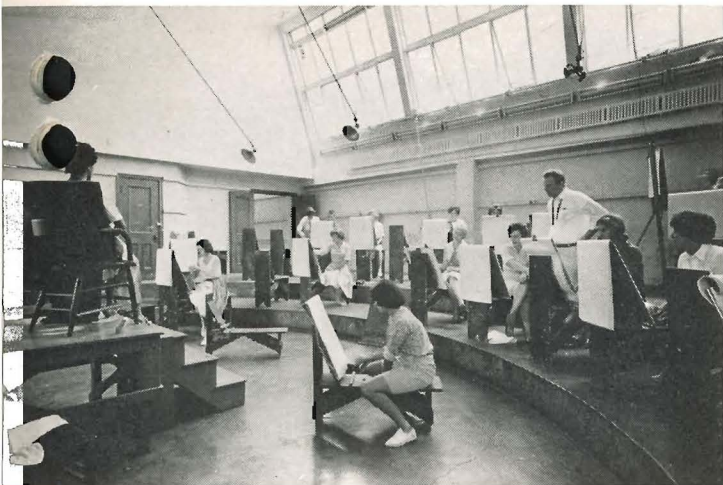
ART

IN THE SUMMER



Student listens while Instructor Edward Boccia makes a point.





A WIDE VARIETY of art experience, ranging from finger painting to intensive study of structure, was shared this summer by a wide variety of people, including teenagers, school teachers, housewives, matrons, a high school chemistry instructor, a doctor's receptionist, and a retired brewmaster.

This experience is offered every summer at the University's School of Fine Arts to accommodate people who can't attend classes during the academic year, who want to make up past work or prepare for future courses, or who just want to study art in the summer. For these students, the Summer School offers courses in both art and art education.



The basic drawing and painting course last year drew the most diverse group of students. The instructor was Edward Boccia, a regular faculty member and a painter of national reputation. Boccia insists that summer students measure up to the high standards required of regular art students, and, in turn, he gives them the same thorough instruction, individual attention, and thoughtful criticism he gives the regulars.

Despite these high standards, the course was so popular last year it had to be divided into two sections. John Wehmer of the art faculty of Lindenwood College took over the second section.

At the other end of the spectrum was a course in public school art for elementary school teachers. These earnest adults mastered the fine art of finger painting, that perennial pastime of first-graders; made colorful collages of paper and fabrics; constructed barnyard animals of papier-maché; and ended up with an art collection of which any kindergarten would be proud.



The drawing and painting course gave the summer students training in figure and still life studies, in oil and water color, in landscape and portraiture. They were free to work at whatever level of advancement was best suited to their experience and talents. The only prerequisite was a serious desire to learn. Said Boccia, "We tolerated no hangers-on."

At an art school, it is almost impossible to identify with confidence those applicants who are truly gifted and have the potential to become professionals. The summer session is a good place to uncover this potential. Many of the summer students are high school seniors or recent graduates, who take the course to find out for themselves if they have the kind of talent to profit from college art training. The sessions are summer tryouts for future art careers.

To most of the students, regardless of their backgrounds or motivations, learning to draw and paint and discover the underlying structure of visual art is a new experience—and an exciting one. The pictures on the following pages attempt to show the wide variety of people to be found in a summer art session and to capture some of the excitement they discover in the world of art.

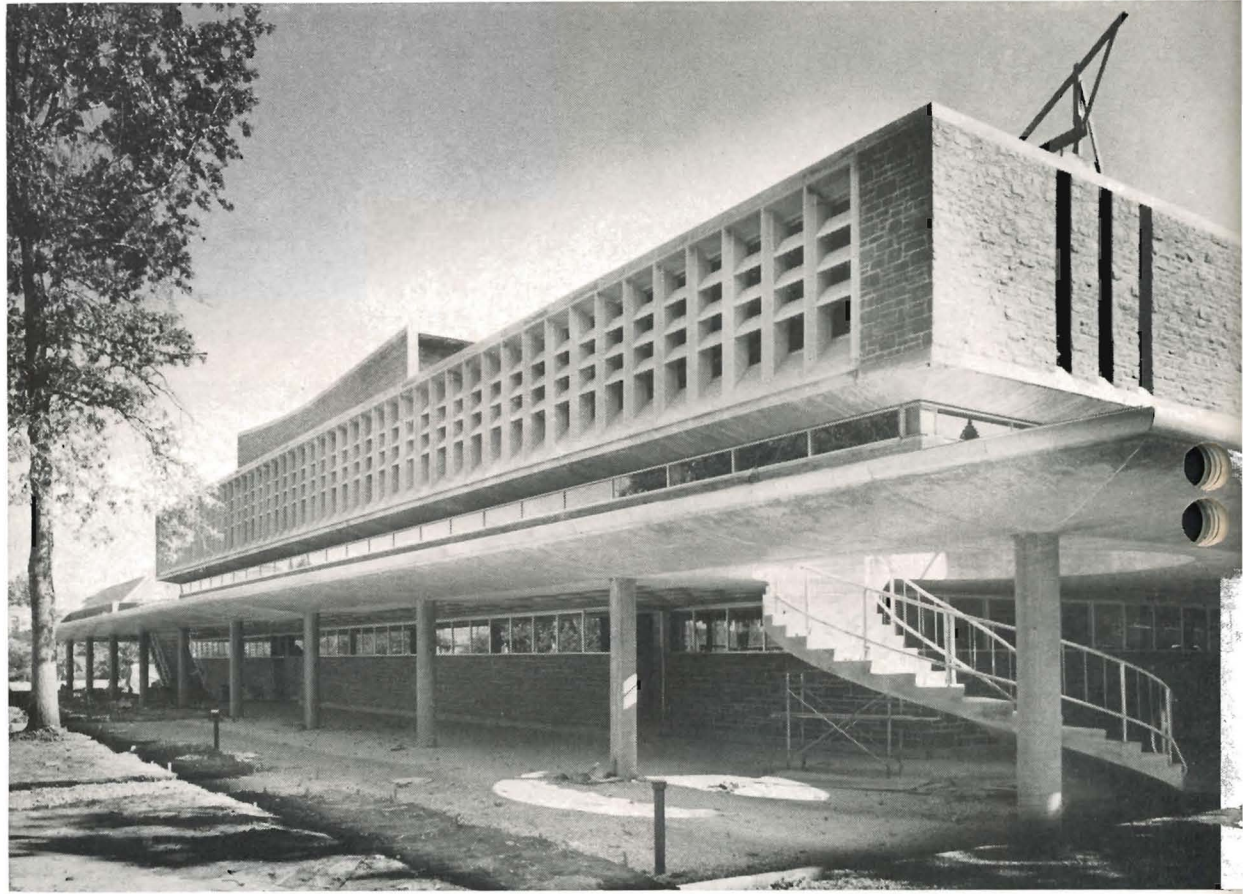


ART IN THE SUMMER

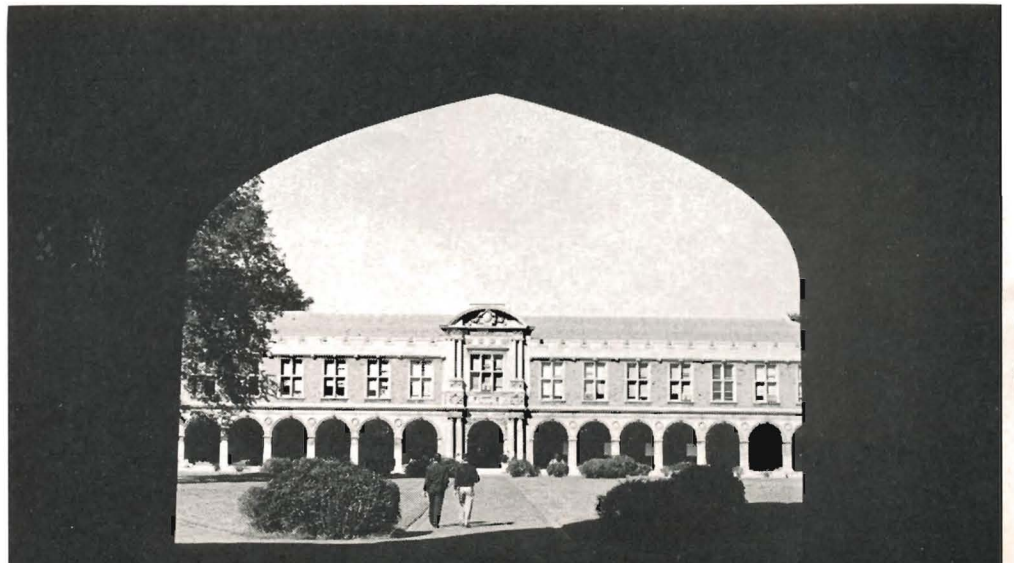


Instructor John Wehmer shows how it's done.





Above: The Olin Library will serve as a new symbol for the heart of the campus, harmonizing with the older buildings and giving form to the open space west of the original Bookings quadrangle, shown at right. Murphy & Mackey were the architects for Olin Library.



ARCHITECTURE AS THE SYMBOL

WITH THE COMPLETION OF THE OLIN LIBRARY and four more Forsyth residence halls in 1962, Washington University will have sixteen new buildings, buildings of modern design which may be evaluated collectively as symbols of the new educational aspirations at the University. Although the library is the latest of this group to be built, it was the first to be programmed (in 1954-55 by a faculty committee headed by Dean Thomas Hall); it was designed by distinguished local architects for a competition held in 1956. Following the library came the design and construction of Busch Biology Laboratory, the engineering laboratory, Blewett "B" classroom annex, the new Forsyth residence halls, Wohl Center, Steinberg Hall, and Gaylord Music Library.

Separately, these buildings may not appear to relate to each other, but taken together they present a clear architectural expression of the new intellectual ferment at Washington University. Several have already won recognition in national publications, and the library, when completed, will set a new standard both as a university library and as an example of integrating new with older campus buildings.

Whether one looks at the evolution of a country, a city, or a cultural institution, the kind of buildings it erects over a period of time reveals the changing character and stages of growth. Kings, councils, and faculties come and go, but the cumulative record of their aspirations in stone or steel remains to be read more clearly than hieroglyphics or minutes of meetings. Courage or conformity, sensitivity or insensitivity to order, respect for tradition or the parody of it—such things can be found in architecture seen within its historical context. Keeping in mind the long view, we might review the Washington University main campus, attempting to see in what way the recent architecture expresses, and even anticipated, the current revitalization of educational attitudes.

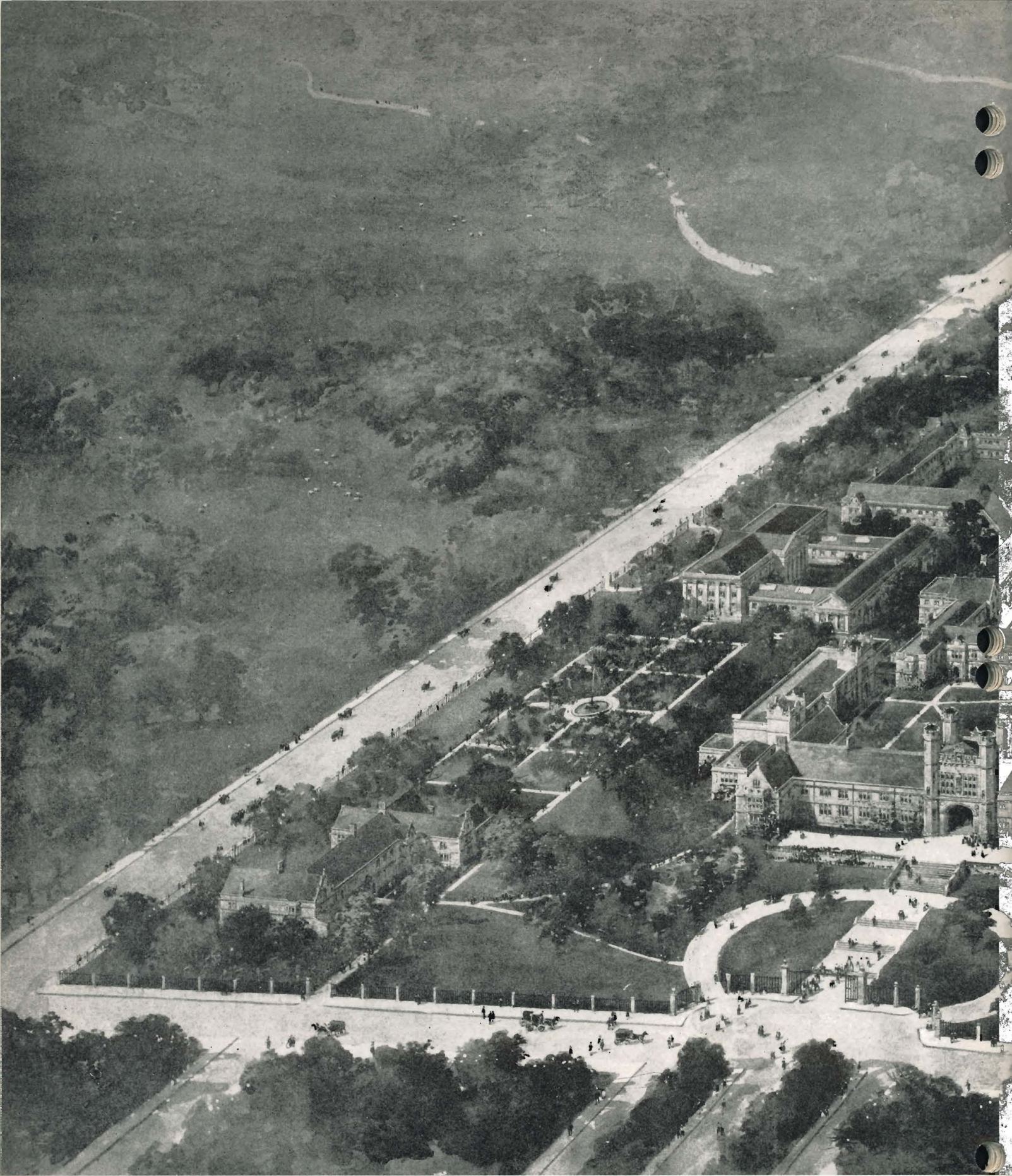
In terms of the relatively short life on campus of a student or even a faculty member, the conditioning tenure of buildings, spaces, and trees is a long period of time, indeed. One may argue that without an awareness of the qualitative aspects of campus physical environment, as with intellectual environment, neither student nor faculty fully responds. "To exist is nothing; to be known (and felt) is everything." This slightly altered aphorism applies particularly to the esthetics of environment in this insecure age, when so few are willing to trust their native sensibilities and when the only symbols easy to recognize are those associated with economic and social status. The

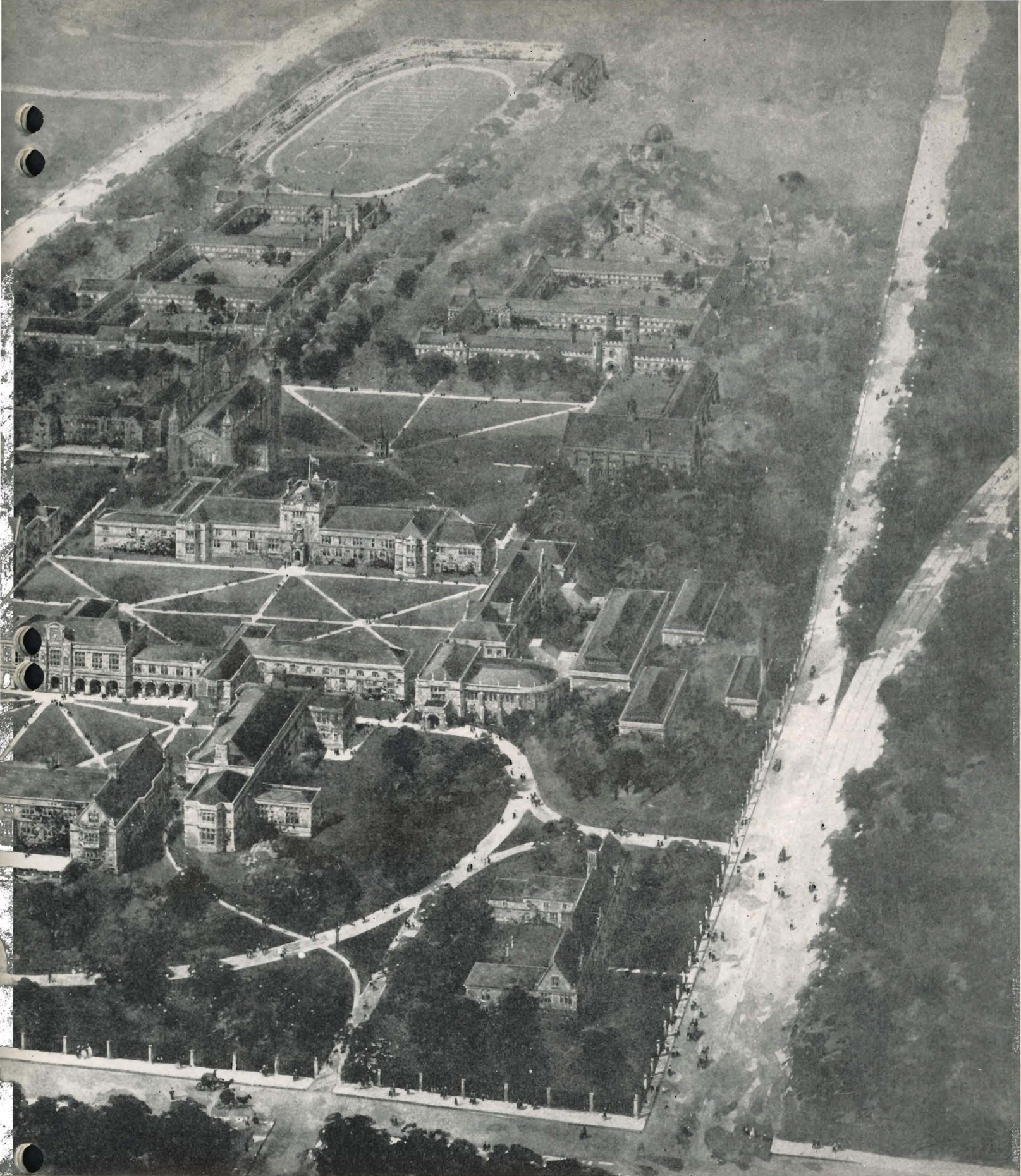
buildings, spaces, and planting of Washington University offer us symbols of another sort.

Unlike many colleges that just grow, the Washington University campus began with greatness built in. It was genius of foresight that, in the 1890's, selected a spacious hilltop site far enough away from the commercial and industrial areas of the city to be free from the noise and dirt, and yet close enough to serve the expanding metropolitan area. It was genius of quality that, in 1899, insisted on finding the best architects in the country through a national competition to design both master plan and a sufficient number of key buildings to establish a strong matrix for future growth; and it was architectural genius that based the plan of spaces and buildings upon the medieval courtyard tradition of Oxford and Cambridge Colleges, a tradition that had evolved successfully from the fortress-like gateway towers (Brookings) to the open round-arch, Renaissance loggia (Ridgley). The human scale, the dominate horizontality, the physical joining of one building unit to another, and the combination of a formal axis with varied informal spaces established a heritage of planning principles which could maintain unity without endless duplication of frozen forms.

Brookings quadrangle seems to say, "Enjoy my quiet and open space; toward the east from this secluded pedestrian sanctuary view the skyline of the city through the great arch; toward the west accept the hospitality of a rhythmic arcaded shelter." On the east the symbol of medieval beginnings of university tradition, on the west the symbol of the Renaissance which began in Italy and spread to England. (St. John's Colleges at both Oxford and Cambridge furnish the prototype for this confrontation.) The formality of the strong axis leading from the city directly to Brookings arch is marked by the powerful Gothic tower; quiet, informal passageways at the four corners of the quadrangle are carefully adjusted to changing ground level by steps and minor arches and accented by Renaissance cupolas at either end of Ridgley. One could point to many refinements: individually carved moldings, entrances, sundials, crests, and gargoyles, all of which relate the 1902 designer-craftsman closer to the work of his predecessor 400 years ago than to that of his industrialized successor now, 60 years later. A comparison of stone carving on the original buildings with that of more recent ones (such as Louderman) shows the futility of trying to imitate.

Leaving the quadrangle at the southwest corner, we proceed along the majestic avenue of pin oaks past Jan-





In 1899, this artist's rendering was submitted with the winning entry in the design competition for the Washington University campus. Many key elements of the present campus are shown, including the Brookings quadrangle and Graham Chapel. Even with all the heavy buggy traffic, nobody thought of parking lots.

uary, Wilson, and Rebstock to Graham Chapel and the old dormitory group, which at first housed the entire student body. Beyond is Francis Gym and the distinguished gateway to historic Francis Field, both part of the original group. From the northwest corner of the quadrangle one is led—almost marshalled—to the entrance of Olin Library beneath the angular crossed swords of the closely spaced ginkgo trees.

In the early thirties, Givens and Bixby were built in an attempt to establish a "lower, white campus" at the east end of the campus. This group was to be distinct from the quadrangle buildings in both scale and materials (Missouri pink granite changed to Indiana limestone), and an arbitrary formality was imposed. The buildings were placed in a straight line, but instead of uniting the School of Architecture with that of Fine Arts, they were separated like twin war memorials. Neither function nor structure was allowed to break the forced symmetry of the dignified beaux arts facades, and instead of educational philosophy they speak belatedly of the conservative "good taste" of the twenties. Givens and Bixby seemed to say, "Let architecture and the fine arts turn their backs to the rest of the University and their ends toward each other."

Louderman and Sever Halls, although post-World War II, demonstrate the fallacy of stylistic imitation without following abstract principles. Chemistry and engineering both acquired usable new interior space, but they lost the tradition of linked units established by the original buildings, and the flexibility and the distinction of either Wilson or Rebstock. Neither Sever nor Louderman is as well proportioned as its older neighbors, and they lack refinement in the execution of details. Sever, although pretending skin-deep kinship, introduces a whimsical new vocabulary of diagonal brickwork in the window spandrels and presents on the north a chopped-off facade which defies concealment.

IN A DESPERATE EFFORT to break away from architectural parodies, the program for Olin Library called for a positive change: It requested a new symbol for the heart of the campus that would at once harmonize with the older buildings and give form to the undefined open space immediately west of the Brookings quadrangle group. This the architects did with great talent, skill, and understanding. The enormous five-story building submerges its great bulk and sits lightly on the ground, allowing its columns, behind well-protected glass, to continue the theme established by the vertical trunks of trees on the surrounding lawn. The new library respects the tradition of quiet horizontal dominance, the human scale, the masonry pattern and color. Ridgley gave its arcade to one side; Olin extends its inviting covered terrace to all four sides in the eloquent language of its era.

By refusing to compromise its needed size and unified plan in a partial first stage, Olin Library was delayed five years. It rejected the handicap to its planning that would have come from imitation on the one hand of Gothic or Renaissance, and on the other of fashionable forms popularized in this country by contemporary European archi-

itects. Olin Library is a St. Louis original whose internal spaces and external form will do more to further the ideals for Washington University than any other building. It sets a new standard for others to follow.

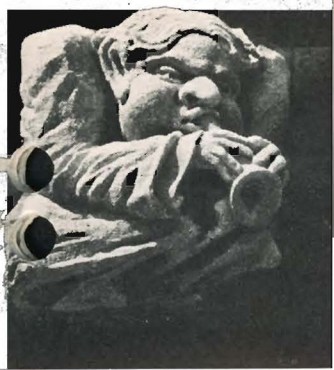
The Busch biology laboratory is a direct and economical link between its parent, Rebstock Hall, on the east and its own contiguous brood of greenhouses on the south. The unmitigated glass on the south wall of the lab and the mechanical panel walls, perhaps unwittingly, express pre-occupied scientists' rejection of the humanizing forms and architectural sun control. The engineering laboratory is a more sensitive kind of design of compact interior space, demonstrating the control of scale and materials to blend new with old and at the same time creating a new and pleasant courtyard on a difficult site where before there was only a confusing jumble of loose ends. Unfortunately, the isolation of the laboratory from its close engineering neighbors leaves the Sever arcade an unfinished link.

Gaylord Music Library and Blewett "B" classroom annex establish the form of the Music Department "campus in miniature" at human scale, with units clustered around an open court and conveniently away from neighbors for sound protection. In its own way, the Gaylord Library is as appropriate and distinguished a solution to its problems as Olin is to its. The architects have been cited for creative originality, and the study of musical literature on this campus has become as pleasant as it is popular.

Steinberg Hall, coming to the aid of Bixby and Givens after nearly thirty years of separation, brilliantly unites the fine arts group with common library, exhibition space, and auditorium. The program called for these elements to be arranged in such a way that access to the auditorium would be through the gallery. By projecting boldly along Forsyth Boulevard from the east-west alignment of Givens and Bixby, the new unit takes advantage of its axial potentials to dominate and control the flanking monumental blocks, at the same time harmonizing in scale, general color, and materials. The covered terraces on north and south, as well as the linking principle, continue a tradition established on the Hill. Function, structure, and the esthetic form interplay skillfully to give the fine arts group a symbol it sadly needed.

The Forsyth residence hall group is a dynamic sub-community wherein each new building phase alters the concept of living units, sometimes before the previous ones have been adequately tested. Diversity is thus assured within the controlled unity of the master plan for the total area. The attractiveness of the natural wooded site has been a great asset to the building units, which are distinguished, although not as original in concept as some on the main campus.

Washington University inherited the highest academic traditions from its founders, and these have been nurtured with deep roots here in St. Louis and the Midwest. "*Plus ça change, plus c'est la même chose.*" It is hardly a paradox that during a period of creativity the University, following its own traditions, will reject both conformity and imitation and will probe in search of its own educational and architectural forms.



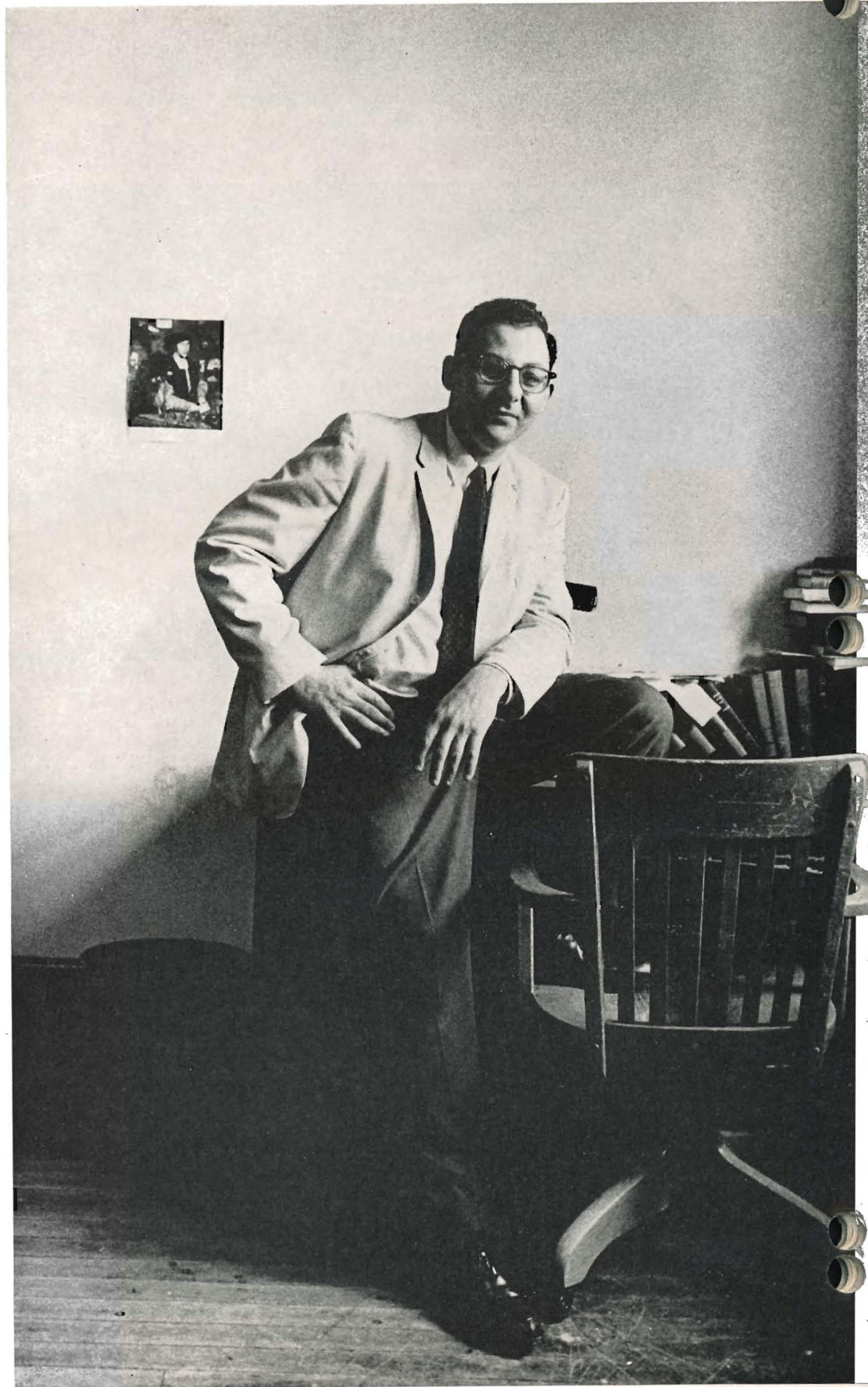
Gargoyle on Brookings arch (far left) bears a much closer resemblance to genuine Gothic work of 400 years ago than to the modern imitation adorning recently built Louderman Hall. The newer carving on Louderman is mechanically repeated in a mirror image on the same building; each gargoyle on the older buildings was individually designed and executed.



Two new buildings reflect originality and skillful blending of function to site. Above, the Gaylord Music Library, center of a "campus in miniature," designed by Fumihiko Maki, assistant professor at the School of Architecture. Architects were Smith and Entzeroth, design critics at the School. At left, Steinberg Hall, which brilliantly unites Givens and Bixby Halls in one unit; architects were Murphy and Mackey, both former professors at the School.

The Spoken Word

Stanley Elkin, instructor in English at the University, read his short story "On A Field Rampant." He received a Longview Foundation award last year for his short fiction.





Jarvis Thurston, professor of English, read two of his unpublished short stories. He and his wife Mona Van Duyn, are co-editors of the literary quarterly *Perspective*.

IN THIS MODERN WORLD of Flesch and the decibel, the audience for poetry and serious writing would appear to be somewhat limited. Yet at Washington University a venture into presenting live poets and real writers reading from their works has met with surprising success.

Seven readings are being given this year. Presented on Friday nights in Brown Hall lounge, they are free to one and all. Last year, five readings were offered and all five were well received, with attendance topping the hundred mark at most of them. What's more important, the attendance included more than just the campus literati. Represented were undergraduates, graduate students, faculty, high school kids, and the local citizenry.

The idea for the readings originated with Ted Reynolds, a senior last year and a Woodrow Wilson graduate student this year. Ted, who is also editor of the campus literary magazine *Reflections* and a poet himself, lined up the talent, hired the hall, raised the money for publicity and other expenses wherever he could find it, and enlisted the English Department as co-sponsor.

Last year six writers read from their own works. Both local and imported talent was heard. The imports were W. D. Snodgrass, winner of the 1960 Pulitzer Prize for poetry, and W. S. Merwin, who was selected as the Yale Younger Poet in 1952. The seven programs scheduled for this year are again presenting both hometown and visiting writers. The first reading this fall was by Theodore Weiss, editor of the *Quarterly Review of Literature* and poet-in-residence at Massachusetts Institute of Technology.

The readings have helped to prove that poetry is still a lively art, that audiences can be attracted by serious writing, and that the best way to encounter a literary creation is to hear it read by its creator—in the flesh.

*“MOTHER, is love God’s hobby?” At eight you don’t even
look up from your scab when you ask it. A kid’s squeak,
is that a fit instrument for such a question?*

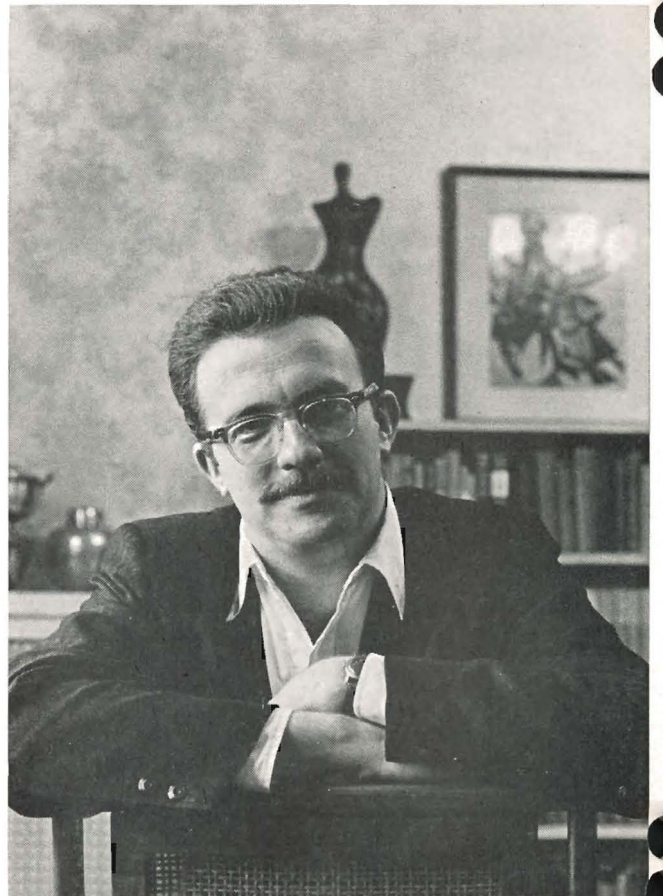
*Eight times the seasons turned and cold snow tricked
the earth to death, and still she hasn’t noticed.*

*Her friend has a mean Dad, a milkman always kicks
at the dog, but by some childish hocus-pocus
she blinks them away. She counts ten and sucks in her cheeks
and the globe moves under the green thumb of an Amateur,
the morning yelp, the crying at recess are gone.*

*In the freeness of time He gardens, and to His leisure
old stems entrust new leaves all winter long.*

*T*HESE TREES stand very tall under the heavens.
While they stand, if I walk, all stars traverse
This steep celestial gulf their branches chart.
Though lovers stand at sixes and at sevens
While civilizations come down with the curse,
Snodgrass is walking through the universe.

*I can’t make any world go around your house.
But note this moon. Recall how the night nurse
Goes ward-rounds, by the mild, reflective art
Of focusing her flashlight on her blouse.
Your name’s safe conduct into love or verse;
Snodgrass is walking through the universe.*

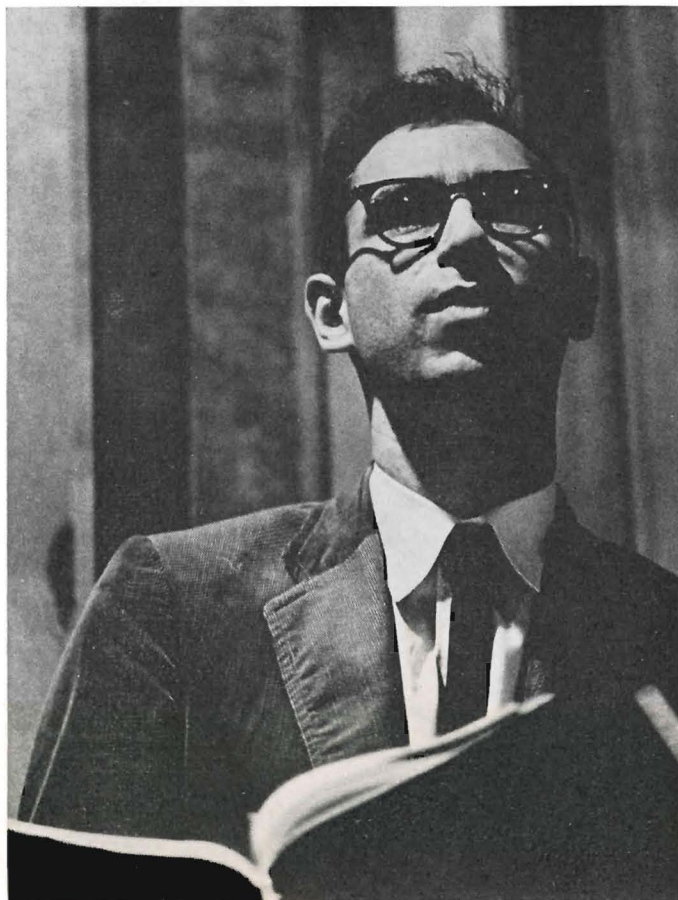


W. D. Snodgrass gave a reading from his works, including *Heart's Needle*, the winner of the 1960 Pulitzer Prize for poetry. He now teaches English at Wayne State University.



Mona Van Duyn read her poems. She teaches the modern novel in University College, has published poetry since 1940, and is both the wife and editorial associate of Jarvis Thurston.

Selections from "The Clothing's New Emperor" were read by poet Donald Finkel, who joined the faculty last year. He has published in *Accent*, *Discovery*, *Paris Review*, and other literary magazines.



SUCH AS IT IS. *Such as two men
Talking because there is nothing
Easier than to talk. All things
Momentary as that, as the flame*

*Between two mouths meeting
In simple speech, flame
Clothed in the commonest phrases,
Bent merely, as light bending*

*In water, and shaking. Such
As it is. Lips mouthing vowels
In a vacuum, as in a silent film,
Not empty, rather unheard speech,*

*Caught at the distance between
Two minds, talking because it is
Easy to talk. Nothing is
Given but the forms. They have seen*

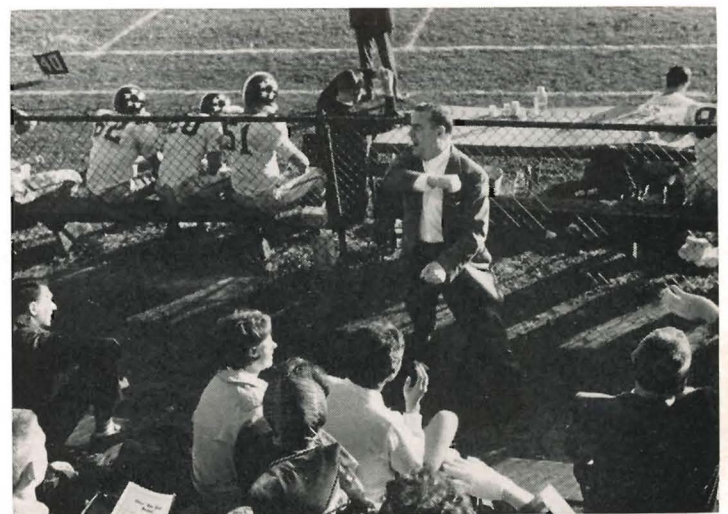
*The clothes without the emperor.
Deceived by fleas, they see flesh
Under the shirt, blood rushing
Inside the sleeves and out of the collar.*



With the success of the Friday night programs, the reading idea has spread. Here are Colin Reach and Marnie Cross, who gave a spirited, if somewhat irreverent, reading of Ionesco at last spring's Fine Arts Festival at Wohl Center.



Ted Reynolds, who organized the first readings on campus, is still the moving spirit behind the program. One of his major objectives in organizing the series has been to provide a wider audience for the many outstanding poets and other writers working in this area.

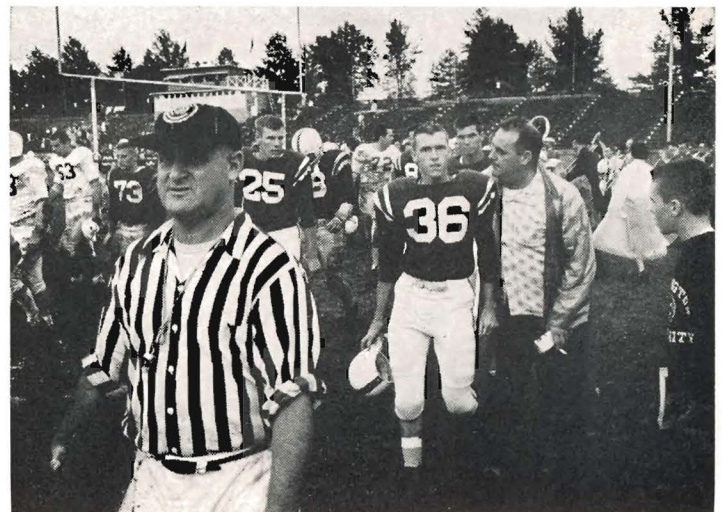


FOOTBALL FAN

FRANCIS JOHN MCGUIRE is a football fan. Francis Field might seem a strange place to find a real football fan these days, but McGuire is there for every game. He's not only there; he's *everywhere* there. He's there to give support, encouragement, and constructive criticism to the coaches, the players, the band, the cheerleaders, and his fellow-spectators. He gets there early, gives thunderous approval of the good plays and devastating disapproval of the bad, and sticks around after the game to praise, encourage, and console the team and to conduct a thorough post-mortem on each and every play.

While McGuire never attended the University, his son Don is a third-string quarterback on the team. So far, Don has seen little action on the field, but his dad is a sixty-minute man in the stands.

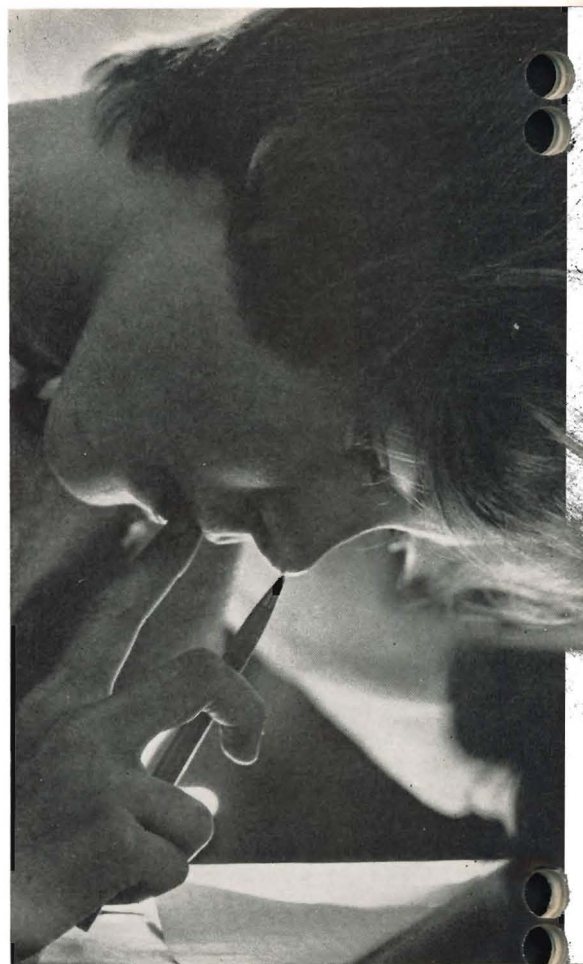
Washington University's simon-pure (and not exactly bowl-caliber) brand of football might discourage some fans, but not Francis John McGuire. His enthusiasm is boundless, unflagging—and contagious.



"We can't win 'em all," McGuire tells his son Don.

By EUGENE S. WILSON
Dean of Admission
Amherst College

YOUR CHILD
PREPARES
FOR
COLLEGE



In the April issue, Frank Bowles, president of the College Entrance Examination Board, analyzed your child's chances of acceptance at the right college. In this sequel, another leading authority points out the attitudes and actions parents can take throughout the early life of their child to help him become truly prepared for the college experience.

NOT LONG AGO, the head of a large testing agency told college-educated parents of college-bound students: "Enough is now known about evaluating individual abilities and achievements so that any parent who really wants to may view his child as the child will be viewed by the college."

Now this advice seems to be sound and simple. After all, you do receive regular reports from schools on your child's achievement in each subject. National agencies which offer standardized tests provide with the individual test results a manual of interpretation, so that you may know not only your child's scores, but how these compare with state or national groups of students.

You and your child can also discover through material in the school guidance office information on the range of test scores in freshman classes at many colleges.

In spite of all this information, you can't think as an Admission Committee thinks, you can't outguess an Admission Committee, and if you try, you may expose your child and yourself to needless disappointment.

This counsel about thinking as an Admission Committee thinks reminds me of the advice I received once in a deer hunting lodge on the night before the opening of the deer season, when a veteran deer hunter explained to me that "the way to get a deer is to think like a deer." His elaboration of this philosophy was so convincing that I asked and received permission to hunt with him the next day. What a time we had! He studied the wind, the ground, the trails, and then he explained to me how with such weather conditions the deer would probably do this. He stationed me on one old log and he went in another direction.

To make a long story short, I heard a lot of shooting

around me; I saw a few deer killed by other hunters, but the expert and I never saw a deer. Apparently some deer were thinking as humans think.

Here are some of the reasons you can't think as an Admission Committee thinks:

1. Admission committees act differently each year according to the quantity and "quality" of applicants and the needs of the institutions involved. The ever-swelling host of candidates has brought rapid changes in admission standards at every institution.

2. The weight given marks and test scores varies so much among institutions that even veteran school counselors hesitate to make firm predictions on individual cases. I have heard admission officers for Yale, Wellesley, and Harvard state that test scores do not have the importance they once had in selection procedures. The reason is that at the most popular institutions too many candidates look alike when measured by either marks or test scores.

3. You can't know from year to year how much weight admission committees will give to certain other factors: i.e., school and geographical distribution, extra-curricular achievement in art, music, drama, sports, or community service, and occupational choice (some institutions limit the number in a class who want medicine, engineering, mathematics, or science).

4. You may be able to understand the strengths and weaknesses of your college-bound child, but you can't know the quantity and quality of the other candidates at the college chosen by your child. At co-educational colleges girls often meet higher competitive admissions stand-

ards than boys—and within a university some schools have higher entrance requirements than others.

Whether your child is accepted or rejected at any college depends not only on his credentials, but even more on how his credentials compare with those of the other applicants.

There is only one safe workable program regardless of your child's test scores, his marks, or his other achievements. This is a program that introduces your child to the mysteries of the world and to the excitement of discovery. This program should be started as soon as your child begins to talk and read.

Most children are born with a full measure of curiosity. They want to know what is going on about them and, as you know, the early years are filled with "What?" and "Why?" and "Where?"

If you have the time and the patience to answer these questions, you will nourish this curiosity that is the tap root of all learning. Only the curious learn.

Your child won't be many years old before you will encounter the first question you can't answer. You can shrug your shoulders and say, "Go away and stop bothering me." Or "I don't know." Or "Let's find out."

If you have the time and patience to lead your child in his probe of the unknown, in his search for knowledge, you will encourage the maintenance of a habit of inquiry. You may also rediscover for yourself the fun of learning.

But this nourishment of curiosity means that a mother cannot be too occupied with community affairs, social

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teas or bridge parties, and that on some mornings she may have to leave the beds unmade or the dishes unwashed until naptime, and Dad may have to miss a golf game. Priorities must be established.

Today there are many forces working against the development and maintenance of curiosity in a child, forces like the radio, television, the automobile, and hundreds of sporting events. All too often curiosity is throttled by spectatoritis, by parents who are too busy, and even, alas, by the rigidities of the school system and the desire of teachers to cover a certain amount of material so that students will do well on their tests.

If you want to help your child get into a college, you will always be aware of what your child is studying in school and especially what he is reading. Your reading will supplement his reading and your learning will mesh with his so that you will be in a position to stimulate his further learning by your answers to his questions. Learning becomes even more fun when it is shared by all members of the family.

The child who is a natural reader presents no great problems. If your family includes a non-reader you have a special problem, but one which can sometimes be solved by introducing him to books which feed his natural interests. A librarian will help you select books which deal with baseball, with the mechanical world, with birds or animals, and, later on, books on electronics, chemistry, music, or art. Once your child has learned the fun of reading in the field of his special interest, there is a chance that he can be led into an exploration of other fields.

You may wonder at this point why I have said nothing about marks and test scores. The omission of these two tyrannies is intentional. When learning is in its rightful place, marks and test scores follow learning. Today so much emphasis is placed on the difficulty of winning admission to college and on the importance of tests and marks that all too often marks and tests have become the goals of learning rather than the by-products. When marks and test scores are made the primary target of learning, real learning is lost.

The school report cards give you an opportunity to

YOUR CHILD PREPARES FOR COLLEGE

place marks in proper perspective. Instead of asking "What did you get?" try "What have you learned?"

It is up to you to de-emphasize the marks and test scores and to help your child focus on reading, writing, and learning. An approach like this as preparation for college helps your child to understand that learning is something he does where he is and that all about him are people and books which will help him learn. Under such a program your child will see that his understanding of the world does not depend on whether he is in Boston, or in San Francisco, or in Yankton, but on how much advantage he takes of the opportunities around him. If your child is reared in this manner, neither he nor you will worry about whether he gets into Harprince, Dartale, or Calford, but only that he gets to a college where he can talk to teachers, where he can read books, where he can work in the laboratory.

And now you may want to say, "Yes, but he may not get into a good college. He may not get into the best college. He may not get into my college." Actually, no one knows what a good college is. No one knows which colleges are best. Harvard does have more graduates in *Who's Who* than any other institution, but considering the human material that has poured into Cambridge, Massachusetts, from all over the world for centuries, why doesn't Harvard have twice as many graduates in *Who's Who* as it does? Harvard could be doing a very poor job educationally and yet seem to be the top educational institution because of the intellectual drive and ability of the students who go there.

The head of the Department of Religion at Yale Uni-

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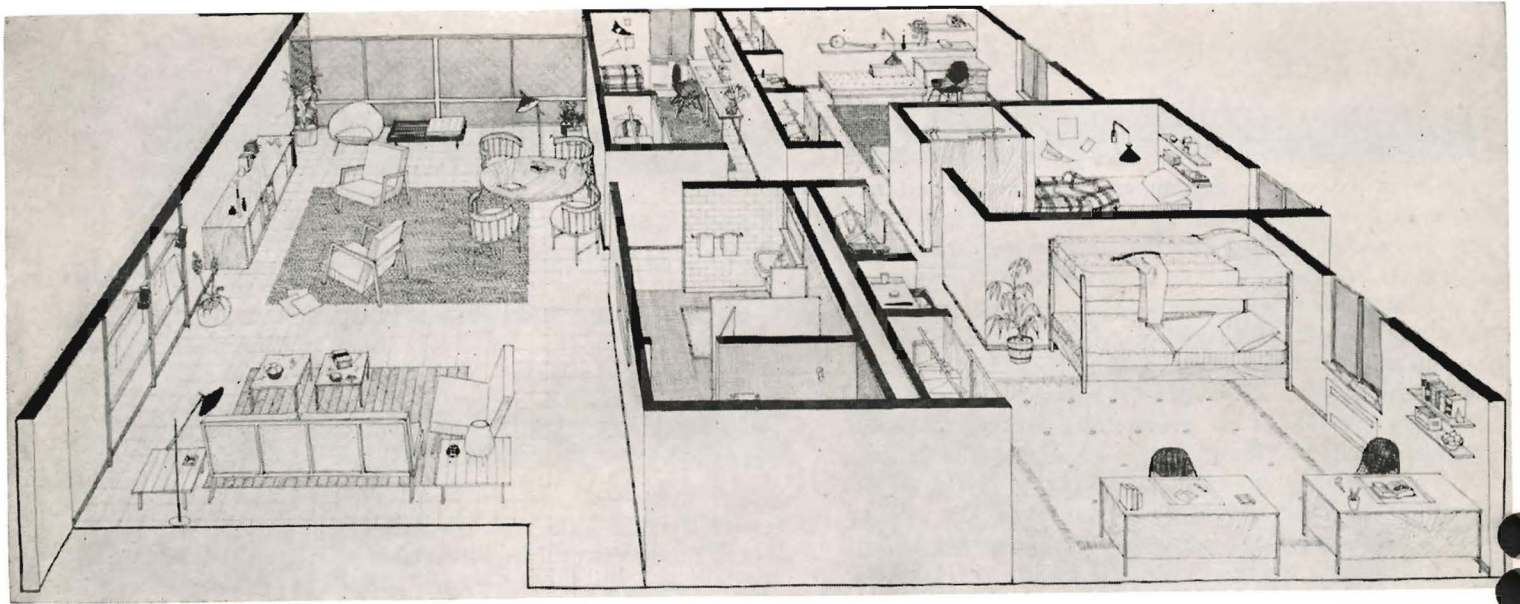
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versity is not a Yale man. He came from Dakota Wesleyan. The head of all health services at Harvard is not a Harvard man. He came from the University of West Virginia. The former president of Princeton was not a Princeton man, but a graduate of Grove City College in Pennsylvania. The misery and torture of today's college admission comes because parents have taught their children to think that learning is a matter of geography, that learning can take place only in certain institutions.

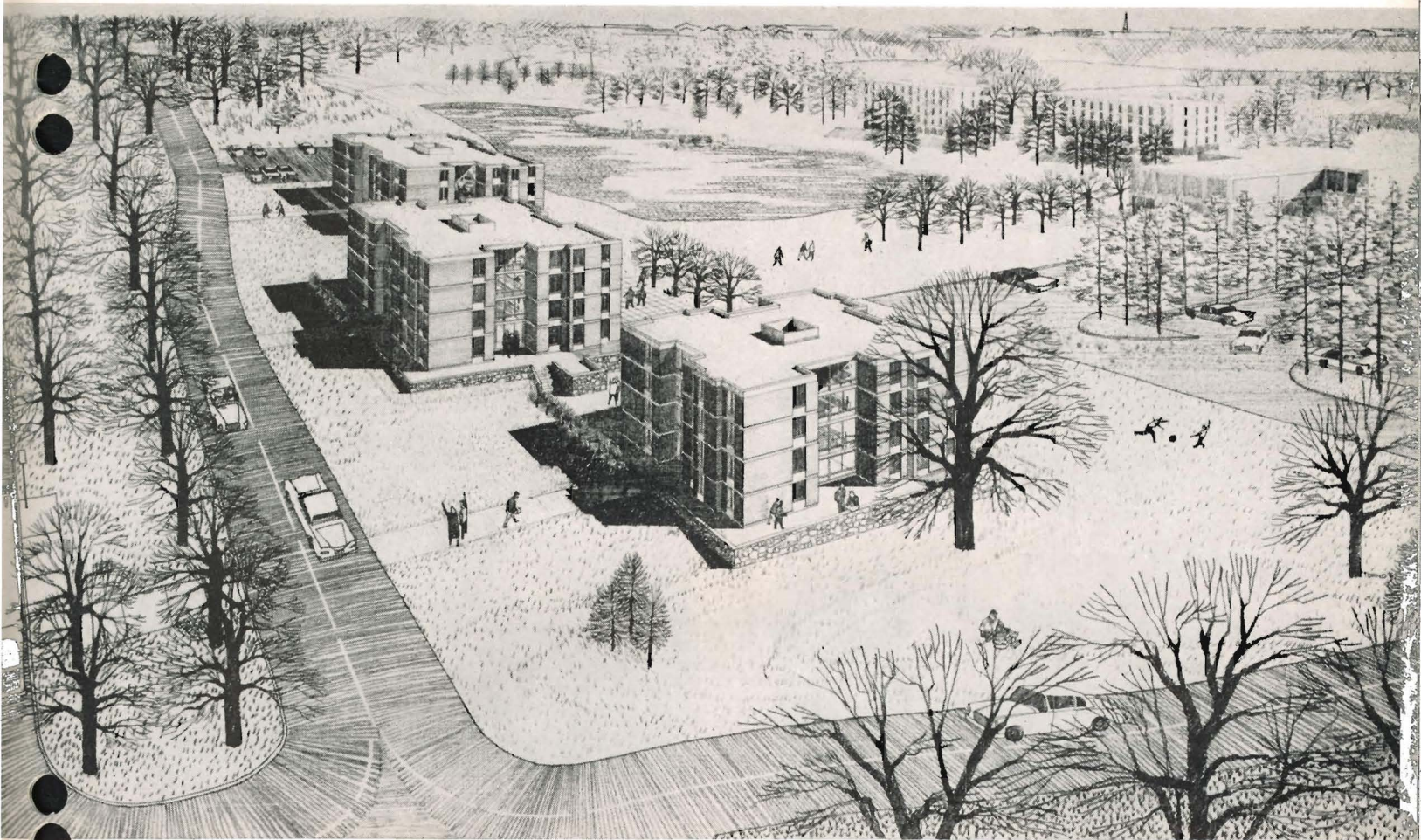
The wise parent who has created in his child a desire to learn will approach the whole problem of college admission with one philosophy: "Go where you can get in, my son, and know that a great opportunity awaits you to discover more about people, more about ideas, more about things—more knowledge than you will ever master in the four years you are in college."

When this approach to college admission is taken by an entire family there can be no heartbreaking letters in the mail, no crushed egos, nothing but delight at any letter that brings news of acceptance, news that an adventure in learning lies ahead.

Three new men's residence halls,
featuring student suites, are shown
in this rendering by architect
Hellmuth, Obata & Kassabaum.



Each student suite will include two
double bedrooms and two single
bedrooms, grouped around a lounge.



DESIGN FOR LIVING

IN A RADICAL DEPARTURE from standard student housing patterns, three new men's residence halls now under construction on the "south forty" will provide apartment-style accommodations, with six students to a self-contained suite.

Each suite will center on a 15-by-20-foot lounge with balcony. There will be four such suites grouped around a dual center stairway on each floor of the four-story buildings. Besides the lounge, each suite will contain two double bedrooms and two single bedrooms, shower and toilet facilities, and built-in closets and bookcases. Each bedroom will provide ample study space.

In addition to the three new men's buildings, a new women's residence hall is also under construction. All four are expected to be ready for occupancy by September, 1962. With the five existing halls, the new buildings will enable the University to house 1158 students in the residence area south of the main campus.

The three new men's residence halls will be located south of the existing buildings, near Wydown Boulevard. They will be approached from the

north residence halls and the main campus over two bridges and past a lake.

Because of the rolling nature of the site, ground level floors in the new men's halls will be exposed to the north, affording ready access to a common student court and to a view of the student center and other halls. All ground floor rooms are conceived as common rooms, with fireplaces, student lounges, a library, and several group meeting rooms. Kitchens, laundries, and service facilities will also be located within each building.

Completely air-conditioned, the new halls will be of fireproofed, reinforced concrete construction, with brick facing.

Particular stress in the new men's buildings has been laid upon the sequence of spaces: from the privacy of the student's sleeping and study room, to the lounge he shares with five other students, to the common house lounge and student court of the residence hall group, across to the cafeteria and student center, and finally to the main campus.



Bag & Baggage

It wasn't long ago that the only baggage most students brought to Washington University at the start of the school year was a streetcar pass.

Times have changed. Today more than half the students live on campus, and they show up in the fall with mountains of luggage that must be carried, shoved, and wrestled into the residence halls. They bring school clothes, sports clothes, and formal clothes; they bring radios, phonographs, sun lamps, and irons; the girls bring racks of dresses and staggering numbers of shoe boxes. Somehow, they get all of it stowed away, and the school year starts. When summer vacation arrives, the process is reversed, and an even greater tonnage of baggage is carted out of the residence halls and into waiting cars and buses and taxis.

All of this is a familiar story at most schools, but it's still a novelty at Washington U. You didn't need much luggage for a streetcar trip.



Comment / High Hat or Mortar Board?

THIS FALL, THE *Washington University Alumni News* was converted from a bulletin devoted mainly to class notes to a tabloid newspaper reporting on both alumni and University activities. The new publication fills a need that is not being met by *Washington University Magazine*. While the Magazine is published for everyone interested in the University, the News is designed specifically for alumni. In its pages will be found information about the University's alumni program, class notes, alumni club reports, and other news of importance to alumni but not of significant interest to other readers of the Magazine.

The new publication will also carry much of the material formerly run in the "Campus News" columns of the Magazine. *Alumni News* will perform two important functions: providing adequate coverage of alumni activities, and permitting the Magazine to become completely a University, rather than an alumni, publication.

The response to the new newspaper has been gratifying. Many alumni wrote to express their approval and to congratulate the staff. Among these messages, however, was one that gave us pause. It was from a law school graduate of 1912 now living in Muskogee, Oklahoma. Said the alumnus, in part:

"I want to add my stamp of approval to your new form of bulletin and in that connection will say that anything will be an improvement over what you have been putting out. I wrote you about this [before], complaining of what your new crowd of publishers were doing and received a silly reply from Robert L. Payton, editor. . . . The Bulletin reached its apex in years 1945-58, then personnel changed and [the] new crowd went 'high hat' for no apparent reason."

Apparently this alumnus thinks the new newspaper is replacing this magazine—and he likes the idea. We're glad he approves of the newspaper, but we find his opinion of the Magazine a bit disconcerting. We have heard complaints before that the Magazine's approach is too "academic" or too "intellectual," but this is the first time we've been accused of going "high hat."

Before 1958 the Magazine was a typical alumni publication. It reported on alumni activities, ran column after column of class notes, and helped promote the football team, Homecoming, and other campus events. It did a good job, but its function was narrow and its appeal restricted. Reading the old Magazine, you could learn a great deal about certain alumni but very little about the University as an institution.

IN 1958, THE MAGAZINE was taken over by Robert L. Payton, now vice chancellor for University development. Under Payton, the publication began rapidly to

change its appearance, its tone, and its purpose. In the years since 1958, its main function has been to reflect the University: to give as faithful a picture as possible of just what the University is, what it is doing, and where it is going. If the Magazine has become more "intellectual," it is because the University itself has become more intellectual, and the Magazine has been attempting to reflect that shift in emphasis.

We feel that the University is, as it should be, primarily an academic institution; teaching and research are its prime functions. The Magazine is trying to get that idea across, even at the risk of being considered "high hat."

Any examination of the approach and the style of the Magazine leads eventually to one vital question: Why does the University publish a magazine in the first place? While the Magazine is relatively inexpensive, it does cost money to produce—money that could be used for scholarships, faculty salaries, research, or other urgent needs. Does the Magazine really justify the cost of producing it? Naturally, we think it does. We feel that it serves a purpose that is vital to the University, and one that could be performed as effectively in no other way.

THE MAGAZINE is the only link many people have with Washington University. In addition to students and faculty, it goes to civic and business leaders in the community and to 34,000 alumni throughout the country and throughout the world. If the University is to succeed, these people must be kept informed about its activities, its needs, its aims. They must be kept a part of the University. It would be impossible at any cost to talk to all of these people; it would be more expensive and less effective to try to reach them regularly in some other way.

The Magazine exists not only to report on University activities but to convey if it can the nature of the institution: the direction it is going, the kind of faculty it is building, the type of students it is attracting. By printing articles by faculty members and discussing subjects with some measure of intellectual content, it is assuming that everyone associated with the University is interested in these matters and recognizes that they constitute the real business of the University.

Under a new editor the Magazine is certain to change gradually as time goes on. Every publication reflects the personality of its editor, and no two editors look at things in quite the same way. However, while the tone may change and the approach to many subjects may differ from past issues, the general conception of what this magazine is and what it is trying to do will continue. The editor doesn't wear a high hat, but he doesn't wear a freshman beanie, either.

—FO'B

