Dear Professor Hawkins:

I have just read your article, "The University as Myth," in the Fall 1967 issue of Rochester Review, and I wanted to write you to tell you what a fine paper I think it is. My father, John R. Slater, was head of the English Department for many years, and made many talks to the students in the same vein as yours. It almost seemed to me as I read your paper as if my father were speaking again. He, incidentally, wrote the inscriptions on the Rush Rhees Library, of which one was shown on the cover of this same issue of the Review.

Since you came to Rochester in 1965, you would not have had a chance to meet my father, who died in June of that year, at the age of 93. He had been very active until a few months before his death. I think you would enjoy some of his many essays and speeches. These are mostly unpublished, but typed copies of them are in the University Library. I have regretted that more of them were not published; many of them I think deserve it. A good many came out in earlier issues of Rochester Review or its predecessors, but many others were, for instance, papers delivered before the Fortnightly Club, of which he was a member for many years.

It is a real pleasure to me to realize that there is someone on the faculty at Rochester who thinks much as my father did. I have much the same point of view, and enjoyed your paper immensely.

Sincerely yours,

JOHN C. SLATER

Rochester, N.Y.

Please, for Heaven’s sake, don’t take my name off the mailing list for Rochester Review. I need it to counteract the effect of the Columbia University Forum and the other beguiling things they are sending me....

ETHEL A. SHIELDS, '14

Note: The message from Reader Shields is one of many that have been most gratefully received by the staff of Rochester Review in recent weeks. As noted in the Fall 1967 issue, the Review now is being sent only to those individuals who have indicated, via the card enclosed in that issue or similar notification, that they wished to be retained on the mailing list.
SOME INTERESTING DEPARTURES from tradition were initiated this year by the student committee for Freshman Week. For the first time, the committee invited a distinguished alumnus, rather than a University official, to address the opening-of-school convocation; their choice: J. Richard Goldstein, '32, vice president and a director of the Rand Corporation. And, in the belief that early exposure to a controversial speaker and subject would be a salutary experience for the 854 River Campus freshmen, the planning group sponsored a talk on racial problems by Floyd McKissick, executive director of the Congress of Racial Equality.

Excerpts from these talks—and from a Freshman Banquet address by Professor Bernard N. Schilling—appear on the following pages.
FROSH WEEK 1967

Bernard N. Schilling

This year's Freshman Week was the product of innumerable hours of work by some 625 upperclassmen. The Week's activities included banquets and bonfire fests, speeches and sports, and were climax ed by the traditional student-faculty convocation.
If you of the Class of '71 are to be envied for all the care lavished upon your members, all the provision made for your happiness and success, most of all you are to be envied for your possession of each other. Your associations, your developing relationships that may well last for the remainder of your lives, and especially your competition with each other are bound to create a certain spirit that will bring out the best in you.

It is important for you to know that you are essential to each other, that you cannot derive the most from your rare opportunities without each other. No one of you can become what he has it in him to be without the others as you join in the enterprise of your education, at once separate, individual, yet in the best sense an enterprise in common.

Those of us who care so passionately about your welfare and success hope that you will not miss anything of all this, that you will make each day as it passes yield its maximum of knowledge and experience.

The transition you now make is the most extreme of all your lives, at once difficult, not without its dangers, but also the most exciting in its possibilities. For, as after reading a great book you feel somehow that you are not quite the same person as before, so you will find as 1971 comes only too quickly that all the reading, writing, thinking, talking, listening, and playing that you have done in the company of each other will have greatly deepened and matured your human nature.

* * *

If you make certain that you miss nothing, that you make your time count, that you derive the most from your enviable opportunities, that you profit to the fullest extent from the University and from each other, then the Class of 1971 will not only have entered but will finally graduate as the greatest class in the history of the College. And why not?

Bernard N. Schilling, a UR faculty member for some 20 years, is Trevor Professor of English and Comparative Literature and chairman of the Department of Foreign and Comparative Literature.
Following Floyd McKissick's lecture, speaker and students took to the woods—specifically, those of Genesee Valley Park—for informal discussions.

We have said that the civil rights movement is dead. One reason is the misconception that all that black people wanted was integration... The drive to integrate the Hilton hotels was only a commencement, not a consummation.

The real problem is that of racism, which affects the total structure of society.

This is a struggle of survival—a struggle to abolish racism, exploitation, degradation, and humiliation... None of the civil rights acts that have been passed has touched the problem.

Very few black people seek integration—they seek the same things white people seek...

There is no such thing as "riots." To call them riots is to call black people criminals. The real criminals are those who exploit the black people every day and fold their tents every night and return to the suburbs and come back the next day to continue exploiting. These are rebellions, not riots, rebellion by people tired of procrastination and delay...

Let me tell you about "law and order." I've been beaten and humiliated in the name of law and order. I've seen my pregnant wife knocked down picketing in front of the A&P, demonstrating for a clerk's job. I've seen my daughter beaten while she was participating in a nonviolent demonstration. I was shot at six times while I was defending a black man being tried in a Southern court for killing a white man and I couldn't get protection from the law. Don't tell me about "law and order"...

The real problem is that we need to educate white people—to teach white people what the problem is all about... Our two worlds create different sets of values. We look at America in different ways. It's foolish for you to ask the black man to look at a problem the way you do, when most black men view whites as an enemy... White society cannot look down and say what black people ought to have to make them happy. We will decide what we want and how we will get it.

Floyd McKissick, executive director of the Congress of Racial Equality, also has served as CORE's national chairman. He was the first Negro admitted to the University of North Carolina.
The al fresco discussions among freshmen, upper-classmen, and faculty members turned out to be one of the most popular segments of the Freshman Week program.
Unlike previous opening-of-school convocations, last fall's gathering took place on Eastman Quadrangle. Following the formal ceremonies, President W. Allen Wallis and other officials joined with student leaders in welcoming new and returning faculty and undergraduates.
I can remember when things looked worse, or rather we thought so, from where I sit. Eight years ago I was asked to talk to a student body such as this, on a similar occasion, and I searched for some words that might convey my then current anxieties to those just entering college. As a sample of the depth of our gloom, here's what I was offered—and I used it: “If they work like dogs and if they’re lucky, they’ll have a chance to participate in history. If both these things don’t happen, it is likely their history will be finished before they are.”

Things are a little better now—I keep telling myself between riots and anti-war demonstrations. Even so, I am sure there are those among you who think my generation has failed and yours will have to find the way to world peace and to social and economic justice, if not equality. And if you, or at least some vocal groups among you, don’t have this feeling, something is really different in your generation.

Did your fathers leave the world in rather a mess for you?  
So did mine.

Did your fathers leave you a heritage of major and/or comparatively minor wars?  
So did mine.

Did your fathers enter into untenable international treaties and agreements out of sheer stupidity?  
So did mine.

Did your fathers leave you a political heritage which usurps individual freedom, is machine controlled, is many times a dirty game?  
So did mine.

Did your fathers create a society in which moral decay flourishes?  
So did mine.

Are you the generation that is aroused and that will find the opportunity and create the tools to sort out this mess and get the world back on its axis?  
Lots of luck! Have a go at it! •

J. Richard Goldstein, UR Class of '32, has been an officer of the Rand Corporation since 1946. He is vice chairman of the University's Trustees' Council of Alumni Advisors.
To High-Energy Physicists

HAPPINESS IS A ROCHESTER CONFERENCE

Elsa R. Efran

A UNDERGRADUATE physics textbook carries the maxim: "Physics is what physicists do late at night."
That was indeed the case on the Rochester campus a few months ago when more than 300 physicists from about 30 countries came to the University as delegates to a week-long International Theoretical Physics Conference on Particles and Fields.
They not only "did" physics at night—in the corridors and lounges of the Women's Residence Halls, where most of them stayed; they talked physics early in the morning, at mealtimes, on their way across the Quad, at coffee breaks, and, of course, during the formal conference sessions. Often there were as many physicists sitting and talking at the umbrella tables set up on the plaza outside Hoyt Hall as there were inside the building listening to the speakers.

In fact, the meeting—the first large international gathering devoted entirely to theoretical problems in particle physics—was much more of a "working" conference than a "listening" one. New theories were put forth, debated, attacked, or buttressed; old ones were modified or derided; new particles were proposed.

The conference delegates—the creme de la creme of the world's particle physicists—were hand-picked by an international advisory committee and conference chairman Robert E. Marshak, Distinguished University Professor of Physics at Rochester. Among them were six Nobel laureates, the heads of leading international physics institutes, and such "celebrities" as Dr. Edward Teller of H-bomb fame and Yuval Ne'eman, a member of Major General Moshe Dayan's staff in the Israeli Army. A handful of Eastern European physicists attended, along with seven Soviet scientists, including the director of Russia's giant new accelerator installation at Serpukhov.

The meeting was patterned after the so-called "Rochester conferences," the international conferences on high energy physics which Marshak organized in 1950. Held annually at the University until 1957, the meetings moved to Europe and the Soviet Union, returning to Rochester in 1960. Since then, they have been held biennially, rotating between Europe, the Soviet Union, and the United States.

The international high energy conferences are attended by both experimentalists and theoreticians. (Particle physicists, like most scientists, tend to align themselves in these categories. Experimental particle physicists use such instruments as accelerators to prove or disprove theoretical predictions; theoreticians base many of their calculations and predictions on the results of previ-
ous experiments.)

Last summer's "new Rochester Conference" concentrated on theoretical problems, with one exception. At the first session, three experimentalists brought the participants up to date on the latest experimental results—"to keep the theoreticians honest," Marshak said.

At one session, three Nobel prize-winners proposed alternatives or supplements to the theory that has served particle physicists for almost twenty years. Called "relativistic quantum field theory," it attempts to account for the interactions of particles within the atomic nucleus; however, far from being a panacea for all the problems of nuclear interactions, it has introduced some new difficulties. One of these is the problem of infinities—a messy concept for physicists to deal with since infinite answers do not exist in nature, and scientists prefer to construct theories that can be verified by experiments.

To avoid such problems, Nobel laureate Hideki Yukawa and his associate, Yasuhisa Katayama, both of Kyoto, Japan, proposed a new way of looking at the sub-nuclear particles themselves. Instead of considering each particle as a dimensionless point in space and time, they argued that particles might be better described as having extended shapes, which might explain some characteristics of particles that have been hard to account for.

In contrast, Richard P. Feynman of Cal Tech and Julian Schwinger of Harvard discussed some special aspects of the concept of field theory. (Feynman and Schwinger, along with S. Tomonaga, shared the 1965 Nobel prize for their independent studies of quantum field theory.)

Feynman called field theory "a guide" to the problems of the so-called strong interactions, such as the forces that hold the nucleus of an atom together. Schwinger suggested a still different way of dealing with the problems of field theory—the "phenomenological approach." In essence, this means that a theory in the concrete—one that relies primarily upon the results of experiments—is worth two in the abstract.

The scientists also discussed some indications that a new particle, called the "A sub-1" \( (A_1) \), would soon join the sub-nuclear "zoo,"* which already contains more than a hundred "elementary" particles. The discovery of such a particle could substantiate a number of recent theoretical developments and provide a deeper understanding of the substructure of the nucleus.

At the conference banquet, Nobel

*Also known to newspaper readers as the sub-nuclear "alphabet soup," since the particles are generally named by Greek or Roman letters, numbers, signs, and stars; e.g., the \( \Omega \) (omega-minus), the \( K \), or \( \Sigma \). Physicists also give intriguing names to some of their concepts, such as "quarks," "doubly-magic nuclei," and "The Eightfold Way."
Rochester Conference

laureate Glenn T. Seaborg, chairman of the U.S. Atomic Energy Commission, delivered a major address on "The Promise of the International Atomic Energy Agency," in which he proposed that the international agency provide effective safeguards against the spread of nuclear weapons under a non-proliferation treaty.

A tremendous amount of behind-the-scenes activity went into keeping all aspects of the conference—scientific and social—running smoothly. Car pools of graduate students shuttled back and forth to the airport to transport flying physicists. Since about 40 wives and 27 children (ranging in age from 4 months to 16 years) accompanied the scientists, Mrs. Marshak organized a daytime program of tours for the women; a nurse was hired to sit with the infants; and the Marshaks' teenage daughter Ann and some friends organized a nursery school for the toddlers.

The University's Conference Office manned registration desks at the Women's Residence Halls and valiantly attempted to handle such emergencies as lost luggage (one physicist ended up with his wife's clothing and baby's playpen; his wife, who had flown on to Texas, had his clothes).

A staff of engineers and graduate students set up an elaborate public address system in Hoyt Hall, with microphones placed every few seats apart to permit audience participation. Tapes of each session were transcribed almost immediately by a roomful of temporary-help secretaries who passed on the manuscripts to the scientific secretaries—young physicists who checked the transcriptions for accuracy and submitted them to the speakers for approval.

Such efficient organization meant that all the scientists approved their talks for publication before they left campus and the official conference proceedings were published in December—record time for such an opus. (Although scientists are usually conscientious about returning manuscripts, their mobility is such that often it is hard to reach them. The day after the conference, for example, Marshak left on the first lap of a two-month round-the-world trip to physics meetings and research centers; in addition, many of the visitors made other stops before returning home.)

Meanwhile, back in the press room (an astronomy laboratory converted for the duration), Vishnu S. Mathur, visiting senior research associate in physics, helped translate the sessions for local, national, and international newsmen. Among them were Brian Sullivan (a 1959 UR alumnus), who had covered previous high-energy conferences here for a Rochester paper and who is now with the Associated Press in New York; an editor from Scientific Research; a correspondent from the Japanese newspaper Mainichi; and a corps of local reporters.

Although most reportage was accurate, a slight goof marred one writer's story. Peeking in at the first morning's session, he noticed that only a few physicists were smoking; his story the next day was headlined "Scientists Spurn Tobacco." The story behind the headlines, however, was that the disposable foil ashtrays for the conference had been sent to the wrong building; when they arrived that afternoon, the lecture hall was smoky enough to suit any reporter's nose for news.

The conference came at a time when world attention was focussed on high energy and particle physics: The Russians were putting final touches on their 70-billion-electron-volt accelerator, which will be the world's largest "atom smasher" when it goes into operation; the United States had recently decided to build a 200-BEV instrument at Weston, Ill.; and the member nations of the European Center for Nuclear Research were discussing the feasibility of a 300-BEV machine. The willingness of governments to invest the many millions of dollars necessary to build such accelerators indicates the importance they attach to the basic research which the instruments will make possible.

That importance was summed up by Vice President Hubert Humphrey, who said in a telegram to the conferencees: "... high energy physics represents one of the great scientific frontiers of our time... Deep within the forces of matter lie not only mysteries but opportunities meriting (the) closest world-wide cooperation in exploration."
Moon-Man in Training

Among the first six men chosen by the National Aeronautics and Space Administration for training as scientist-astronauts was a Rochester alumnus, Edward G. Gibson, '59. One of 1,500 applicants—and the only scientist selected from industry—
Moon-Man in Training

Gibson was a senior scientist in the Applied Research Laboratories of Philco Corporation's Aeronutronic Division. (A mechanical engineering major at Rochester, he holds master's and Ph.D. degrees from California Institute of Technology.)

Since mid-1965, Gibson has been undergoing a rigorous round of training in preparation for future Apollo moon-flights and other space ventures. The training activities, tersely described by NASA as "academic, operational, and contingency," have already involved him in some 250 classroom hours of study on space-related topics such as geological processes, mineralogy and petrology, physics of the upper atmosphere and space, digital computers, astronomy, medical aspects of space flight, rocket propulsion, and communications.

Because Gibson and his colleagues must be able to perform scientific experiments during flight, they take courses in geology, geochemistry, and geophysics to strengthen their skill as scientific observers. By the time they actually explore the moon, they will have pretty well worked their way to a master's degree in geology, according to NASA. Among other things, they'll have studied the geology of such places as Katmai, Alaska; Valles Caldera, New Mexico; Grand Canyon; California's Medicine Lake; Pinacate, Mexico; and the volcanoes of Hawaii and Iceland.

Gibson's training already has turned him into a jet and helicopter pilot (astronauts must fly some 110 hours a year in both jet aircraft and helicopters); in addition, it has prepared him for landing and survival on varied types of terrain—including desert, jungle, and water.

For one exercise in jungle survival, Gibson joined other astronauts on a Panamanian expedition, during which he lived off the land for three days with nothing but his parachute, a spacecraft survival kit (without food), and a choice of such jungle fare as fried rat, boiled iguana, and palm hearts.

An equally taxing exercise placed him in the Washington desert, where he was equipped with only a survival kit, parachute, and three-and-a-half quarts of water for two days. (He converted part of the parachute into a flowing robe and other protective clothing, and used the rest for a tent to shield himself from the sun.)

At NASA's Manned Spacecraft Center at Houston, Gibson has spent a sizeable chunk of time under conditions simulating those in space: inside vacuum chambers, in special simulators designed to give him a "feel" for weightlessness, and in the Apollo mission simulator, which can reproduce every phase of a lunar flight except weightlessness and lunar touchdown.

Since even the most strenuous training program provides for an occasional break, Gibson was able to return briefly to the Rochester campus last fall for his first visit since he began his NASA stint. As the main speaker at the University's Alumni Homecoming, he talked on "Utilizing our Apollo Capabilities"; was the guest of honor at a reception and luncheon; and attended the Rochester-Amherst football game, in the course of which he crowned Rochester's Homecoming Queen.
Above, Gibson (right) learns about mapping from air photographs during a field trip on the island of Hawaii ... and climbs into a T-37 trainer after a pre-flight check during pilot training at Williams Air Force Base in Arizona.

A former quarterback at Rochester, Gibson starred in a new role when he crowned Homecoming Queen Ruth Stanton during the Homecoming football game with Amherst last fall. As an undergraduate, he was a member of engineering societies and was active in swimming, wrestling, and track.
The current use of hallucinogenic drugs by young people is being called “the biggest cop-out of all time.” It could be. But once this has been said to the small but increasing minority of young people who use drugs regularly, who use them occasionally, who do not rule out the possibility that they may try them, or who vigorously defend the rights of drug users, the dialogue too often is ended. To many educators and others deeply concerned with young people and their personal and social growth, the problem is not that simple. The dialogue must continue.

The problem of drugs on the college campus is a problem of ignorance—lack of knowledge about the action of chemical substances on the complex, delicately balanced chemical system that is the living organism (the functioning of which we are only on the threshold of understanding), lack of knowledge about the relationship of variations in this system to complex human behavior, lack of knowledge about complex human behavior itself. It is a problem of the tyranny of opinion, attitude, and belief in the absence of knowledge.

It is a problem of semantics—of trying to talk, think, and act rationally in an area in which almost every term and concept are entangled in so much myth and emotion and such a variety of im-

Helen H. Nowlis is research consultant for student affairs and professor of psychology at Rochester. Associated with the University since 1951, she was on leave last year as director of a national drug education program sponsored by the National Association of Student Personnel Administrators in cooperation with the Food and Drug Administration. This article was adapted by Professor Nowlis from her book Drugs on the College Campus, a publication of the project.
plicit assumptions, beliefs, and attitudes that futile argument replaces dialogue because the participants are neither talking the same language nor proceeding from the same assumptions.

It is a problem of communication—among scientists in different disciplines; between scientific and layman; between parents and children; between a generation brought up before automation, TV, jet travel, the bomb, megalopolis, versatility, and the affluent society and a generation that has known no other condition.

It is a problem of lack of understanding of scientific method and concepts—lack of understanding that there are no simple one-to-one relationships between cause and effect, that human behavior has multiple determinants, that there is a difference between correlation and causation, that the design and execution of experiments is open to bias, that the conclusion of an experiment is meaningless except in terms of the design and execution of that experiment, that individuals vary on an almost infinite number of dimensions and thus that statements about individuals, even at a biological level, are in terms of averages and probabilities.

It is a problem of living and learning and growing in an arena where change is the only constant and where the future is increasingly unpredictable.

It is a problem of philosophy of social control in a pluralistic society—of the individual's relationship to societal values and to these values as expressed in law.

It is a problem of education and its relationship to current societal values; a problem both of the relationship of the individual to the institution and of the institution to the needs of society.

It is a problem of a "pill society" that is increasingly buying the well-advertised proposition that there is a chemical solution to all unpleasantness and discomfort (from arthritis to anxiety, from indigestion to tension, from sleeplessness to lack of social and business success)—a society that spends more money on alcohol, tranquilizers, and sleeping pills than on education and the Great Society.

It is a problem of increasing retreat, in the face of complex problems, to "blob" thinking, to insisting that everything is all good or all bad—and defining good as "not bad" and bad as "not good."

It may be relevant to ask why this society reacts so violently to the use of the hallucinogens when there are from four to eight million alcoholics in the country, depending on one's definition of alcoholic. Why the uproar over the small minority of students using hallucinogens when self-prescribed use of stimulants and depressants is far more widespread? Why have Americans increased their consumption of cigarettes by nine billion (from 536 billion) during the past year despite sobering evidence strongly suggesting a relationship between smoking and both cancer and heart disease—meanwhile contributing millions to research aimed at finding a "cure" for them? Why does society promote the use of alcohol and nicotine while imposing heavy legal sanctions on the mere possession of other chemical agents?

Other questions might be asked. For example, why do so many gifted and privileged young people defend the right of their fellow students to use drugs and why do a few of them make the use of drugs and the culture that surrounds them a central, if temporary, factor in their lives? Our first impulse is to say they are sick—but who defines sick, and how? Our next impulse is to say they are rebelling—against what? Or to say they are immoral—according to what values? Miserable—why? Searching—for what?

Why do so many people think of student use of drugs as exclusively a medical or legal problem and delegate the responsibility for its solution to the physician, the legislator, the policeman? Is this a convenient way to avoid responsibility and to ignore other important social issues? Are health and pathology adequately defined in terms of medical science and practice or do these definitions necessarily reflect personal and social values?

Before these questions can be explored, we must define some terms and concepts. Equally important, we must be aware of what we do and do not know about the effects of chemicals on the human organism and about complex behavior and how it may be affected by chemicals.

The term drug has many meanings. One pharmacological definition that is both broad and objective states that "any substance that by its chemical nature alters structure or function in the living organism is a drug."

More limited definitions may be more useful, depending on the kinds of substances and effects being discussed. Such definitions usually are based on assumptions about certain kinds of effects. For example, in formulating a definition useful in writing a very good popularized book about drugs, one writer says, "For the purposes of this book, a drug is any chemical substance that alters mood,
PHYSICIANs think of drugs not only in terms of their pharmacological classification but in terms of their therapeutic effectiveness and safety. Drugs also may be classified according to their legal status or according to social usage. Alcohol and tobacco, for instance, have been so widely accepted for general use that governmental controls now are limited to what is acceptable to the public; peyote, although officially classed as a drug with potential for abuse, is legally available to the Native American Church, since this group has long used the substance ritually and has established what are considered appropriate social controls on its use.

Paradoxical attitudes and beliefs about specific drugs sometimes emerge from these complex classification systems. For example, in the United States ethyl alcohol and diluted ethyl alcohol currently are listed as official preparations; whisky, brandy, and sherry are not (society now prefers to think of alcohol as a beverage rather than as a drug). Marijuana, a term which has come to refer to all preparations containing parts or extracts of the common hemp plant, used to be listed as an official preparation; today its production, distribution, and possession are severely restricted in this and many other countries. Although it is not a narcotic drug, the laws for its control are similar to those for the control of narcotics; thus, most laymen consider it as such, although others regard it as a social drug similar to alcohol.

HOW DO DRUGS WORK ON THE BODY?
They are absorbed in many ways at a variety of sites, then distributed differentially through the body and sometimes stored in tissue or accumulated in the bloodstream for short or long periods; most important, they are usually transformed by organic processes into other substances and eventually excreted, primarily via the kidney or liver. During the transformation phase the drug or one of the substances to which it has been transformed may combine with one or more components of selected cells, and, as a result, alter the functioning of those cells.

It is a fundamental fact that drug action is not the action of the drug but the action of the living cell modified by the local presence of the drug. Thus, to understand such action requires prior understanding of the normal functioning of the cell. Although our knowledge of such matters is far from complete, it is currently assumed that many drugs act by combining with specialized functional components of cells, modifying the function of the component and thereby producing changes in biochemical and physiological systems. These changes, together with associated changes in behavior and experience, are what are known as "drug effects."

In one sense there is no such thing as a drug effect, as the term is generally used, in relation to behavior. In another sense drugs may have a very real effect. In large enough dosages (the amount varying from individual to individual) the assault on the organism is great enough to produce severe toxic reactions such as convulsions, hemorrhages, coma, death. In that sense virtually all drugs are dangerous. But at moderate dosages, for most people, the drugs that influence behavior do so by increasing or decreasing the probability that certain responses may occur or by modifying certain responses; this influence depends greatly on the presence or absence of non-drug factors, both physiological and environmental.

Few, if any, drugs have an effect on only one system of the body. In the initial assessment of a new or unfamiliar drug, it is not feasible to test the possible effects on the full spectrum of bodily functions and structures. If such a drug is adopted as safe and useful because of its effects on one function and its minimal effects on some others, only extensive and prolonged use in clinical practice may reveal important side effects—that is, effects other than those for which it was originally adopted.

A psychoactive drug does different things to different people and even to the same person, depending on external and internal circumstances. Thus, we may well ask whether an observed effect actually is a result of the drug or whether it is a result, partially or wholly, of some combination of non-drug factors known to influence that effect. This leads to the fascinating literature on the placebo, a substance known by the scientist or physician to be relatively inactive pharmacologically but believed by the subject or patient to be a drug—with effects that are considered interesting by the scientist or beneficial by the
physician. Under certain circumstances and with certain individuals (both administrator and taker), placebos may "relieve" pain, headache, motion sickness, hay fever, colds, and digestive complaints. They may also produce side effects such as sleepiness, headache, difficulties in concentrating, nausea, relaxation, and dry mouth. A similar effect is the well known "contact high" experienced by a person who drinks soda water at a congenial party in which others are enjoying more potent substances.

When a drug is administered at a dosage level so low that it is relatively inactive pharmacologically, it may be considered an "impure" placebo. Since many of the most interesting and desired effects obtained through psychoactive drugs are more likely to occur with relatively moderate doses, it is often difficult to distinguish between the effects of the drug as a placebo and the effects of the drug as a pharmacologically active substance. Some of the most thorough and brilliant experiments in psychopharmacology have been designed to confront this question; however, much progress remains to be made. This should lead to healthy skepticism about any drug as a major determinant of behavior and to the continued study of the individual drug user.

Some drugs, when taken repeatedly, produce long-term effects. Of most general interest are tolerance, physical dependence, and psychological dependence.

Tolerance refers to the phenomenon that, with repeated use of some drugs, larger amounts are required to produce some of the same effects. Tolerance may have important psychological and social consequences when the individual finds that increasingly large amounts of the drug are required to produce the desired or expected effect; nevertheless, it is not always accompanied by a psychological need for the drug. Interestingly, tolerance developed for one drug may also result in tolerance for others; for example, tolerance for alcohol may also be tolerance for a barbiturate, or vice versa.

Drug dependence, whether physical, psychological, or both, results from periodic or continued use of certain drugs. The nature of the dependence varies with the drug. Physical dependence refers to the state of the physiological systems which have been so modified by drug action that their functions are interfered with if the drug is withdrawn; withdrawal symptoms then appear in a pattern specific to the drug. Usually these symptoms are the only reliable evidence of physical dependence, and their intensity is taken as an index of the severity of such dependence.

Psychological dependence may develop independently of whether the drug has produced physical dependence and/or tolerance. The term refers to the fact that the individual has learned to rely on the drug for certain effects that give him a feeling of well-being. Psychological dependence may occur even in the absence of tolerance and physical dependence and may be mild, intense, or even compulsive.

One important question must be considered in any discussion of drugs: when is a fact a fact?

There are many reasons why the so-called facts invoked in nonscientific discussions of drugs often are not facts at all. For one thing, many people tend to accept as "scientific fact" any statement made by or attributed to someone labelled as a scientist—or whether the statement is based on research, on uncontrolled observation, or merely on personal opinion. The concepts "science" and "scientist" may be endowed either with an aura of uncritical awe or with outright suspicion and disdain. This further contributes to the controversy and confusion; moreover, it becomes critically important in encounters with students, who tend to question anything that is "unscientific," especially if it does not fit with something they believe—and to overrate anything that is "scientific," particularly if it supports something they do believe. In this, students are no different from most people. It would seem that we have educated them too well in some respects but not well enough in others.

Can science indeed provide facts? If one means "does science have all the answers?" the answer is incontrovertibly "no"; if, however, the question is "can science contribute to understanding and help to minimize errors of generalization?" the answer is just as surely "yes."

A major problem in translating a scientific fact into popular discourse arises from the common failure to understand the statistical methods which must be applied in the study of biological, behavioral, and social phenomena. Living organisms vary greatly in structure and function. Descriptive statistics such as averages and percentages enable us to make summary statements about a group of organisms; inferential statistics enable us to make properly qualified statements about the "generalizability" of data from a small sample to the general population and to identify and make explicit the various kinds of error inherent in the data. All of these statements can easily be misinterpreted when the essential facts about variability, about the specific nature of the sample, and about the limitations of generalizations and the presence of error are forgotten or ignored.

Two kinds of variability must be taken into account: the variability among individuals and the variability within an individual. Individuals vary on numerous physical, psychological, social, and cultural parameters; however, the relationships among these are understood only partially, if at all. Charts, tables, and generalized inferences are useful only to the extent that they recognize the many factors that influence the particular characteristic or function involved. At best they serve as a guide, a "best guess" for a given individual. Obviously, the more closely the individual resembles individuals in the group on which the measurements were made, the more useful a guide it will be for him. Unfortunately, in the
search for simplicity, these basic principles are often ignored, misinterpreted, or rejected outright, and erroneous conclusions result.

The second major source of variability is that which occurs within the same organism over relatively short or long periods. The scientist, clinician, and engineer know that in dealing with a dynamic system such as the living organism, one must recognize that a particular effect depends on the state of the system. A specific effect, no effect, or even a seemingly paradoxical, reversed effect may be observed in a system which may appear unmodified but in which subtle or obscure but important changes have occurred. Most laymen have learned that the effect of alcohol on an individual varies with fatigue, mood, illness, and other factors. Nevertheless, both scientist and layman frequently infer that the specific drug effect observed at one time will tend to be reproduced whenever the individual takes that drug again, thus ignoring the changing individual as an important source of variability of response.

**This account** may have aroused one of two reactions:

1. That the emphasis on the complexity of the subject is essentially an argument against attempting to do anything about a situation that is of increasing concern to an increasing number of people. *It is not meant to do this.*

2. That the real problem is not drugs, but the people who use drugs. It is increasingly evident that people with problems—personal, social, intellectual—use drugs, and it is the individual, together with his reasons for using drugs, that is the key to understanding drug use.

It has been demonstrated repeatedly that people who use drugs almost invariably use *many* drugs. If one drug becomes unavailable they usually turn to others, and there will be others, more potent and more controversial than any we now know. In testifying before a Senate subcommittee concerned with research and regulatory programs for LSD, Dr. Stanley Yolles, director of the National Institute of Mental Health, predicted that in the next five to ten years “one will see a hundredfold increase in the number and type of drugs capable of affecting the mind. It (LSD) is a prototype of the drugs that are being developed and the possible problems that may develop in connection with them.”

Certainly, there is no hope that these drugs will remain exclusively in the laboratory or the clinic until they have been thoroughly evaluated. The “right to know” will spread information about them long before they can be tied up in a neat package, wrapped in scientific and medical respectability, and stamped with government approval. Those which promise enough individuals something they “need” or which seem intriguing will be “used,” “misused,” or “abused,” depending on one’s point of view. It is unrealistic to assume that all new drugs will be exclusively and effectively controlled by present medical and legal regulations and practices. For example, who can predict the popular, the medical, and the legal responses to a substance with an appeal like that of “improving memory”?

Pandora’s box is open and its contents are as endless as the contents of the biblical bottle of oil. It is necessary to work at the general problem rather than deal with each new drug as it appears. The task is thus to educate, not about the evils of heroin, marijuana, LSD, and the dangers of specific stimulants and depressants, but about people, about social control, about the positive and negative consequences of drug use for the individual and for society—to the extent that we know rather than imagine them. We must help young people make informed decisions on the basis of broad general principles.

**Virtually all drugs** are dangerous at some dosage level for some people under some circumstances. Aspirin can be and has been fatal in excessive amounts on an empty stomach in a young child. No drug has a simple, predictable effect, either physiologically or behaviorally. Vast amounts of alcohol and of amphetamines, barbiturates, and tranquilizers are more or less indiscriminately used by many people, the majority of whom are adults; if one drug becomes unavailable, they use another. The basic fact seems to be that a sizeable portion of the population is anxious, bored, unhappy, or miserable and has accepted the proposition that there is a chemical cure for illness, discomfort, and unhappiness. It is not surprising that some young people search for new and old chemical answers for their “hang-ups.”

Prohibition has not and will not solve the problem. What is needed is more drug research, better drug education, and greater wisdom in the formulation of policies regarding drug use. We need greater understanding and respect for the human organism in all of its wonderful and sometimes exasperating complexity. We need to recognize that the increasing recourse to drugs—all drugs—indicates that misery is not restricted to the economically deprived and that ignorance and misinformation about drug use pervade our society. Finally, let us note that recourse to drugs is often a sincere if obscure signal that all is not well. The proper control of drug use lies in that which promotes the health and welfare of man.
To talk about The Impact of the Humanities on Contemporary Life implies knowledge of two very tricky phenomena: one, the Humanities; the other, contemporary life. One is more frightening than the other. But it is good, especially for a person like myself, to have to consider publicly and to think privately about the implications of such a title, because I represent what is most odious, I think, in American education: I have been until very recently a specialist. This was inevitable. Cut away from the rest of humanity, caught up in small problems, I spent most of my mature life, perhaps wasted my youth, dealing in often rather obscure questions in 17th-century French studies.

Not that I regret it; I recognize the necessity for attention to detail; the letter leads to the spirit. But the career of the so-called humanist, as he advances on the academic ladder, almost inevitably involves retrenchment and specialization. Success and rewards seem to be meted out not for concern with the general, vital questions, but often for preoccupation with quite irrelevant questions of historical or antiquarian interest.

In agreeing to consider the impact of the Humanities on contemporary life, I accepted a challenge: to think, really for the first time, about the implications of what I have been doing. And it is important for people in my profession to think about such things, today, in particular, when that profession has come into its own. There is great competition for our services; people want to hire us (even pay us a living wage), and this can bring a certain self-satisfaction and arrogance. Relative prosperity can in fact be our worst professional enemy; it can prevent us from thinking about the substance of what we do. We can be content, like so many other professionals, to become technicians; do our work, go home, buy the things we want, and come back the next day—without giving thought to the implications for humanity and ourselves of this discipline which we call the Humanities.

Since I don't know what the Humanities are—I don't think anybody does—I would like to play around a bit with the word itself; I would like to do what cowards and poets do and talk about the Humanities in terms of an image.

There are statistics to the effect that knowledge in our world doubles...
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every eight years. The kind of knowledge indicated in such a statement is obvious: it is the technical, quantifiable knowledge that makes our society tick. The physicists tell us that, in their discipline, knowledge is accumulated and outworn at such a pace that every four years they can fairly well discard that which has been their stock-in-trade until then. Thus, we may see those areas of knowledge that seem to be at the very center of our life in terms of an image: a point (research, scholarship, experimentation) from which radii, infinite in number and infinitely extensible, go out towards a horizon that cannot be circumscribed or limited. Now an altogether different metaphor applies to the Humanities. Here we have a tradition, something that is "handed down," like a piece of property, a heritage or legacy passed on from generation to generation. In this sense, we are much less good housekeepers than the physicists. They clean up all the time, throw out what is dusty and out-of-date, useless, parasitic. We, by contrast, are conservative. We hoard and accumulate; we save, we add to an existing bulk of knowledge.

And this is what our word "instruction" means. Latinists tell us that when we "instruct" we pile up, make heaps, construct mounds, masses, edifices. It is true that some selection and winnowing go into this process. The bulk bequeathed us by tradition is shaped in certain ways; we classify, we say: "This is better than that," or "This is less good than the other." Still, we throw nothing out; everything remains valuable in some small way. From this process of classification we have evolved the idea of "classics," certain indispensable first-class works by first-class minds, whose production we particularly prize. And so we have what looks like a hierarchy or a building with many levels. Rather than throw things away, we shuffle their position every once in a while; we shift the stage at which the various components of this mass will be lodged. And one of the biggest considerations in classifying, establishing, and adding to our classics is antiquity, venerability; for we who deal in the Humanities have an almost innate distrust of the new, the recent, the fashionable.

In this sense, we work in an area where new as opposed to old is not necessarily a sign of value. We are reluctant to include certain works in the canon of the Humanities (which I will equate for present purposes with the word "classics"), just as we are reluctant to admit certain books into the classroom—another word which contributes to the notion of "classics." A classic, in one of its functions, is a class text. We won't admit questionable works into the classroom, for we endow the classics with a very special status: these are works which may be indispensable to the education of a generation.

Now, let us look at the implications of this attitude and of this metaphor of the Humanities as a bulk, pulled not in the direction of the modern world (the brave new world with its wide-open horizon, the moon, space, other solar systems), but pulled back. In this sense we who deal in the Humanities are going counter to the advance of civilization. Perhaps unconsciously, we live in tension with the march of progress, with the assumptions that have governed the modern world since Descartes.

We can look at this tension as a tug-of-war between two lines of force which obey different dynamics. On the one hand, we have radii of knowledge, darting out at ever greater speed towards a limitless horizon; on the other, we have the Humanities, a heavy, colossal, monumental mass that will not move. If the Humanities are a kind of "instruction," a "construction," they are also an "obstruction," a bulk standing in the way of other forces; for one of the impulses native to the Humanities is to deny and oppose those forces which would leave the past behind, which aim exclusively or predominantly at the present or the future.

We cannot ask about the Humanities, as we do about physics, chemistry, or mathematics: "Where are they going?" We ask, rather: "Where have they been?" To put this question into some kind of perspective, I would like to turn to the three great periods of culture which are the wellsprings of the Humanities as we know them: fifth-century Athens, the European Renaissance, and 17th-century France. (The Enlightenment might be included, but this would take us too close to the modern world. And that is suspicious.)

Let us begin with a short text from Thucydides' version of Pericles' Funeral Oration:

I say that as a city we are the school of Greece. This is no mere boast thrown out for the occasion, but a plain matter of fact. For Athens alone of her contemporaries, when put to the test, is proved greater than her reputation. Her enemies have no cause to feel shame at being beaten by such an adversary, nor may her subjects question her proven right to rule. On the contrary, the admiration of the present and succeeding ages will be ours since we have not left our power without witness but have demonstrated it by mighty proofs.

This is an estimate of the eminence of Athenian civilization that has been documented and largely endorsed by posterity. But in another sense it is propaganda, image-making, national self-congratulation, the kind of thing with which we are sufficiently familiar to want to distrust it. This may be powerful prose, but is this the way Pericles' contemporaries looked at Athens? Is this the way Sophocles and Euripides viewed men and their institutions?

Some obvious examples come to mind. Oedipus the King—perhaps the most resourceful, intelligent, active, just, energetic man in all literature—was
brought to ruin and indescribable misery. The incarnation of human greatness and political skill, he is demolished before our eyes, not by assault or by a bomb, but by something vague and unexplainable in him and in the world. Or consider Creon in Sophocles' Antigone: a well-meaning ruler, who enforces the law of the land and, by a democratic, legal decision, refuses to bury his rebel nephew. A wonderful chorus occurs just after Creon's rejection of Antigone's plea to bury her dead brother. Notice that this chorus deals with something apparently unrelated to Creon's decree:

Chorus
Many the wonders but nothing walks stranger than man.
This thing crosses the sea in the winter's storm,
making his path through the roaring waves.
And she, the greatest of gods, the earthageless she is, and unwearied—he wears her away
as the ploughs go up and down from year to year
and his mules turn up the soil. . . .
Language, and thought like the wind
and the feelings that make the town,
he has taught himself, and shelter against the cold,
refuge from rain. . . .

Clever beyond all dreams
the inventive craft that he has
which may drive him one time or another to well or ill.
When he honors the laws of the land and
the gods' sworn right
high indeed is his city; but stateless the man
who dares to dwell with dishonor. Not by my fire,
ever to share my thoughts, who does these things.

Creon is all of the things which civilized men must be. And yet Sophocles makes it clear that there is a mystery—and a misery—implicit in his greatness. There are things about himself and the world which Creon does not and cannot understand, forces in himself which his gimmicks, his techniques, his craft, cannot reveal.

This is another view of Athenian society—quite different from that of Pericles. Sophocles shows the seamy side, the limitations, the dangers, and the arrogance implicit in the claim of having reached a peak of greatness beyond which no progress can be conceived. That was the hitch in Pericles' patriotic address over the fallen dead; a general speaking in wartime is very suspicious. Poets, whether in peace or war, speak differently. Let us remember that a hundred years later this same Athenian civilization was questioned radically by Socrates who, for this act, was executed. Socrates had said discursively, publicly, what Sophocles had said poetically. You can't get away with it when you say it on the public podium. They got Socrates. And the reasons why they got Socrates are implicit in the Antigone: there are mysterious, unsaid things in life that have to be said about human beings and their institutions. It is dangerous, it has always been dangerous to say them; it is painful to hear them said.

The Renaissance, the next period which added to the store of classics that constitute the Humanities, marks a retrogression typical of the dynamics of the Humanities; it marks the recovery of a legacy hidden from view during a 1500-year period of "darkness." The cycle was now complete; research had brought humanity back to the starting-point of culture.

In Europe, by and large, this was an age of ferment, rising capitalism, geographical discovery, commerce, wealth, splendor, glory, military prowess, all on a scale unknown before. These are the facts that the historians have recorded—and they are true. But look at the literature. How did perceptive, creative people view man's condition in that "modern" world? Cervantes looked back from the time of Spain's greatness, from an age which he implied, at least, was in moral decay, to a bygone time of idealism and courtesy. Montaigne left public life and holed himself up in a tower, where he wrote thousands of words about human frailty and the vanity of honor and power. Luther and Calvin rediscovered sin, the devil, and predestination; they pictured man as the uncomprehending and incomprehensible object of divine arbitrariness.

Shakespeare brought all of this together. He was just about obsessed with the dog beneath the skin, with the need to see and to show what humanity is really like when the conventions, the forms, the titles, and the rhetoric have been stripped away. And when reduced to the essential, Shakespeare's world appears to be what Hamlet said it was, "an unweeded garden that grows to seed; things rank and gross in nature possess
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it merely,” a “foul and pestilent congregation of vapors.” “Time is out of joint”; the world is out of joint. “Something is rotten” not only in Denmark, but in the wide, wide world. Hamlet is but one of Shakespeare’s heroes who buy with their felicity and their life this precious knowledge of . . . of what? Of the pervasive, corrupting power of evil. Hamlet learns through a feigned madness what Lear learns in real madness. And by a curious but profound irony we may see ourselves for what we are, as Lear eventually saw himself, only when we are bereft of that capacity, reason, which distinguishes men from animals. (This makes me think quite seriously about the notions of my colleague Norman O. Brown, who, in Love’s Body, suggests that schizophrenies have a true vision of the world and that we are the real madmen; they are sane because they see things as complicated and double, while we see them simply—a grievous error in perspective.)

With the age of Louis XIV, we reach the last period of the great classics, those at least about which there is no dispute. This is the golden age of the Sun-King, a pinnacle of civilization and harmony, reason, decorum, elegance, grace. And once again the literature offers the same contrast as between Pericles and Sophocles, between the official “image” and the poetic vision. Molière depicts a world coming apart at the seams—where a series of imposters, hypocrites, rebels, snobs, misers, and other assorted monomaniacs and neurotics are ready to wreck everything. These intruders are finally exorcised by the magic of comedy—by arbitrary, contrived, mechanical means, by outlandish turns of event, which in real life cannot be counted on to avert catastrophe. Racine portrays different kinds of neurotics: slaves to passion and illusion who are shown at a critical moment when the accumulated constraints of morality and civilization are thrown off, when hell breaks loose as they destroy violently whatever stands in the way of their frenzied pursuit of happiness.

This is an admittedly superficial, bird’s-eye view of three great ages of civilization which are also, and not surprisingly, the fountainhead of the Humanities. What interests me particularly is that these civilizations, which stand as monuments to human achievement, show in their literature a common theme: the inevitability of human misery, the insignificance, under the aspect of eternity, of human pretensions. Moreover, these are the only periods in history that have produced tragedy on any significant scale. And in each case, the literature that they have produced shows two worlds—the real and the apparent. The apparent world is the one which we take for real—the world of institutions, codes, morality, law, a world subject to multiple constraints and governed by immutable, sacred principles of order. The real world is the world of human beings, pictured in all their destructive, uncivilized, arrogant enterprises.

When we put all of this together with the words “liberal education,” what do we get? If the words have any meaning, a liberal education will be one that “liberates,” “frees” those who benefit from it. And “education” is that process by which people are “led out,” “led away.” Freed from what? Led away from what? If the Humanities are, in fact, a bulking, hulking, motionless monument, rooted in the past, weighing us down in our attempt to fly, to flee, perhaps, to new worlds, their impact on us and their involvement in the process of education must be to pull us back, to lead us away from life, to force us to look at our humanity in all its complexity, perhaps in all its horror.

To the extent that the Humanities “liberate” us, they re-“humanize” us, by obliterating the myth-making and self-glorification by which we live; they refuse us the facile pleasure of exalting our institutions and our achievements; they force us, ultimately, to question the very values to which Western civilization has devoted itself. The Humanities counter, oppose, pull us away, liberate us, finally, from the all-too-human urge to simplify. For, like men of times gone by, we “naturally” think of ourselves as having reached a level of achievement that promises lasting solutions to historic problems.

One day, when I quite perfunctorily asked a colleague: “How are things?” he said: “Well, things are all right; I don’t bother them and they don’t bother me. But it’s people who give me the trouble.” This reply, in its way, is profound; it is nice to have someone pick up a cliché and show what is implicit in it.

Well, how are things in this world about us, a world on which the Humanities are supposed to have, or to have had, their impact? That is to say, what has humanity, in the singular, been doing in the 20th century? The “20th century” is, by the way, a mythical and symbolic term. Think of its most ordinary uses: “In the 20th century this can’t happen.” “Do you think you are living in the 19th century?” “Do you
We can conceive of "progress" only as a function of what we are and of what we have done.

think you are living in the Middle Ages?" In our parlance the 20th century signifies the absolute end. We have arrived. There is no place else to go. We can conceive of “progress” only as a function of what we are and of what we have done. Well, Pericles said that and look at Greece today; one can’t really be persuaded that he had a handle on the truth. The “20th century” is one of those terms that seek to defy the process of history and to differentiate us from people who lived within the bounds of other periods of a hundred years (a magical figure in itself).

Now, what has this “20th century” been up to? We have had fifty years of uninterrupted war. This is not particular to us; we are merely in the tradition—we have not abandoned the pattern of what humanity has been doing for as long as its activities have been recorded. In recent times an advanced, Western, civilized, Christian people, living in the birthplace of Luther and Goethe—a cradle of religion and culture, the home of scholarship, learning, and music (it could have happened anywhere, perhaps, but it didn’t)—voted into power a madman who was to bring about the slaughter of at least ten million human beings. This is, perhaps, more spectacular but not different in kind from the events in 1946 on Formosa or in 1966 in Indonesia, where other millions of people were massacred in the name of right, civilization. They were killed, not by systematic extermination but by any means available, because they were members of a political opposition. This is a world in which half of the population is constantly prey to starvation and disease, a world in which the most advanced and civilized nation had to be bludgeoned and coerced into freeing its slaves—a nation (under God) in which, in the twentieth century of Christianity, it has just become barely possible to enforce the Sixth Commandment in the case of white men who kill Negroes. And who is to say that there is no relation between this domestic problem and the gasoline bombs being dropped daily on the pitiful huts of innocent Asiatic people?

In the light of all this—and I don’t think it is an unfair description of the world as it is and has always been—when we are asked about the impact of the Humanities, we must admit that it has not been overwhelmingly great. But then again, the impact of religion and political theory has not been very great either. We are in good, or at least respectable, company.

To pretend that the Humanities and all the high moral and ethical values which they represent have had a great civilizing influence borders on arrogance, a word which Senator Fulbright and Walter Lippmann have used to describe the posture and the policy which underlie America’s view of itself and the world. This is a useful word, but it should be extended beyond the present political context. (Vietnam is a symptom, not a disease.) I would rather view arrogance generally, through the lens of the Humanities. And in this perspective Senator Fulbright and Walter Lippmann do not have the right to say that America or Americans are arrogant. Texans and Yale men are no more arrogant than Bostonians and Harvard men—when they hold down great power. Sophocles, Shakespeare, Montaigne, and Racine have told us that men are arrogant, civilizations are arrogant, to the extent that they confidently replace the myths of the past with new ones in which they believe as fervently as if the world had just been born, as if great civilizations had not already matured and decayed.

When the classics of our age have been added to the bulk of the Humanities, what will their burden be? If there is any continuity to the tradition of the Humanities, the classics of the future will tell a tale of contradiction, of paradox; they will tell those for whom our petty antics will have become history what we in our infatuation can never believe; they will tell posterity that we and the great men who lead us, along with the monuments that we have erected to our own glory (scientific achievement, political systems, industrial complexes, universities) are part of the ritual reenactment of Oedipus the King, Hamlet, and Phèdre, in all their towering greatness and in all their abject misery. And if they can tell us this—and I submit that if they are to endure they can tell us only this—then Alexander Pope will be proven right: the Humanities will indeed be vindicated as “the proper study of mankind.” Man is a “riddle,” Pope tells us; “he hangs between.” So are some of the greatest books that men have written. They are complicated, obscure, evasive, perplexing, often impenetrable, just as obscure and impenetrable as their subject, Man.

The Humanities play their appointed role and have their appropriate impact in education, not primarily when they illuminate and inform; they do this, I think, only infrequently. Their “proper function” is, rather, to confuse and to unsettle us. And I think that they can best fulfill their role in education by remaining true to their distinguishing characteristic throughout the ages: that of cultivating relentlessly and of sustaining our sense of our own inadequacy.
Student Aid

Financial aid to River Campus undergraduates last year reached a record high of $1.5 million in funds administered by the University.

This represents an increase of approximately $272,000 over the previous year, and about $500,000 over 1964-65, when the present senior class entered as freshmen.

More than three out of every ten of the 3,100 River Campus undergraduates currently receive aid from the University in the form of scholarships, loans, jobs, or a combination of same. When aid from states, corporations, labor unions, and other sources is added, more than five out of every ten undergraduates receive some type of financial aid. (Almost all New York State students, for example, are receiving Scholar Incentive grants, and approximately eight out of ten New York State students are Regents Scholarship holders.)

Materials Meeting

The University, in cooperation with the National Science Foundation and the New York State Science and Technology Foundation, recently played host to some 200 scientists from ten countries. The occasion: the Second Conference on the Characterization of Materials.

Welcoming the delegates to the three-day meeting, Robert G. Loewy, dean of the University's College of Engineering and Applied Science, pointed out that developments in materials now hold the key to significant performance increases in aeronautical engineering, to the development of deep-submergence ocean vehicles, and to new advances in computer technology.

In aeronautics, for example, the use of new materials with increased strength-to-weight and stiffness-to-weight ratios and the use of new structural design concepts to capitalize on these new materials will be required before major performance improvements are possible, Loewy noted.

Several departments of the University currently are carrying on research in materials science, including studies of polymers and glasses (Department of Chemical Engineering), solid and fluid mechanics (Department of Mechanical and Aerospace Sciences), and optical properties of materials (Institute of Optics). A master's degree program in materials science has been under way for some years.

How To Succeed In Studying

A new book with a new approach may help reduce the number of future college failures. The book—Individualized Study: A New Approach to Succeeding In College, by Gerald A. Gladstein, associate professor of education at UR—is designed to help students troubled by poor concentration, lack of motivation, inability to prepare for exams, and other study problems.

Unlike many books aimed at helping college students, this one is not wedded to one method of studying. Instead, Gladstein assumes that individual differences among students are so important that each student must evolve a method appropriate for himself and his college.

Federal Funds

The University ranks 14th nationally among private colleges and universities and 29th among all universities (public and private) receiving federal support for research and development, facilities and equipment, fellowships, and other programs. According to a recent report by the National Science Foundation covering federal allocations to colleges and universities from 1963 to 1966, total federal funding of Rochester programs reached $23.6 million in 1966.

Among private universities the University ranked second only to Columbia University in attracting funds from the Atomic Energy Commission.

Postscripts

Something in the nature of a P.S. seems in order re: certain members of the University community whose activities have been reported in recent issues. Herewith:

That peripatetic little paperback The Nature of Statistics, co-authored by President W. Allen Wallis, has...
Hostile Humor

Music may have charms to soothe the savage breast, but anger does it better, according to a news release from the University's Office of Public Relations.

At any rate, that was the conclusion of a study by two Rochester psychologists whose report on "The Angered: Their Susceptibility to Varieties of Humor" has appeared in the Journal of Personality and Social Psychology.

Working with 50 undergraduate men, Earl Dworkin, a Ph.D. candidate, and Assistant Professor Jay S. Efran found that anger and anxiety are significantly reduced by exposure to humor—particularly when the jokes are hostile, sarcastic, and insulting—and that angered people respond better to hostile humor than other people do.

In the study, Dworkin angered 30 of the students by giving conflicting instructions about an assignment and then criticizing their performance. Their irritation was measured by a checklist on which they noted the adjectives that matched their moods.

Ten subjects were then asked to rate the humor of taped selections of non-hostile jokes; ten others rated samples of hostile humor; and ten rated the "interest level" of some documentary and musical tapes. Afterwards, the students again filled out the mood-measuring checklist.

Dworkin then gave the same tests to groups of students whom he had not angered.

The results: The angered students who heard both hostile and non-hostile humor reported significant decreases in their hostility and anxiety afterward, while their similarly irritated classmates who heard only the music and documentary tapes were as peeved as before. What's more, the angered students found the hostile humor significantly funnier than did the non-angered group.

For the record, the humorists, both hostile and otherwise, included Mike Nichols and Elaine May, Woody Allen, Bob Newhart, Bill Cosby, and Stan Freberg.

Roommates and Grades

Do college roommates affect each other's academic performance? For some groups of students, the answer is yes, according to a study conducted recently by Robert A. Pierce, instructor in psychiatry at the School of Medicine and Dentistry and clinical psychologist in the University Health Services.

On the basis of his findings, Pierce concludes that "among certain groups of students, school achievement correlates positively between roommates" and that "overachievement" probably accounts for a fair portion of this effect. (An overachiever was defined in the study as a student whose class standing was higher than his ability as measured by College Board scores.)

Some likely causes for such a correlation, Pierce suggests, are "competition, mutual aid, mutual goofing off, or some sort of homogenizing process whereby the brighter student underachieves and the less bright student overachieves."

"Some roommates may arrive at a common understanding, perhaps not explicitly stated, about the value of grades and of studying, and then study accordingly, thus overachieving or underachieving together," says Pierce.

Directory of Medical Deans: 1922-68

Pictured with President W. Allen Wallis (standing) are the three men who successively have headed UR's School of Medicine and Dentistry since its founding in 1922. They are (seated, left to right): Dr. Donald G. Anderson, dean from 1933 to 1966, who now is teaching full-time at the School; Dr. J. Lowell Orbison, named acting dean in 1966 and dean last fall; and Dr. George H. Whipple, Nobel Laureate and dean of the School through its first 32 years. Dr. Whipple maintains an office at the Medical Center, where he counsels students.
Focus on Frosh Week

Old customs and new blended pleasantly this fall as student sponsors of Freshman Week introduced some interesting variations on the Week's traditional themes. Above, President W. Allen Wallis—flanked by administrative, faculty, and student officials—greets campus newcomers at a reception following the opening-of-school convocation. An article highlighting this and other aspects of the Week starts on Page 3.