A self-inflicted, and therefore small, dingbat to L.D.A. '47 for attributing the "milk strike" of 1943 to the Mendicants when the honor rightfully belongs to the Geneseeans—an organization now extinct although there is no connection between these two events. Details of the "milk strike" (when a group of students actively protested a rise in the price of milk in Todd Union cafeteria by selling it at the old price) and sundry observations are supplied to us by Dave Robinson '43, whose memory is better than ours. But then, he was on the handle end of the dipper, while we only drank the 7¢ milk.

"Re Page 2, Dec.-Jan. Rochester Review, the "milk strike." The group was largely Geneseeans of the classes of '43 and '44. Several days after the strike ended, the price of milk in the cafeteria was dropped to its former level. Although I was one of the prime movers in the strike, I now think that this is an excellent example of the failure of democracy without education.

"We were using milk directly from the farm or someone's family dairy or a similar source. We used the facilities of Todd Union to dispense it and even when we were forced to use paper cups which we bought, we still did not clean up the resulting mess, and of course the whole project used exclusively volunteer labor, yet we barely cleared expenses at the old price. I now think that even a bunch of engineers, let alone a bunch of arts students (we were mostly engineers), should have been able to figure out that Todd Union was losing money at the old price.

"After the strike was over, we were asked to vote on what the price would be. In fact that is what ended the strike. We voted for the old price. The authorities did not agree, but let us have our way, thereby contributing to the rising cost of education."

The Men's Glee Club, accustomed to packed houses at its home concerts and on tour, got one of its biggest thrills recently from an audience of one. The club, stopping in Washington during its annual spring concert circuit, had just finished a specially arranged tour of the White House when the lads, with youthful spontaneity, burst into song on the front steps of the President's mansion. When the sound of clapping drifted down from above, they looked up and spotted Caroline Kennedy applauding in an upper window. Whereupon the Glee Club Romes took a quick review of their repertoire and came up with an enthusiastic rendition of "Thank Heaven for Little Girls" with which to serenade their diminutive Juliet.

Springtime on a college campus brings about a feverish mixture of hand-holding and head-cramming. Sometimes these two activities are done simultaneously, which attests to the calibre of the students at the UR. However, this springtime there is a slight difference. The students are busy cramming their heads full of miscellaneous fact with little concern for context or course; instead of holding hands they are developing digital dexterity of the variety most useful in pressing buzzers.

The reason for this activity? The students are competing for places on the four-man team that will appear on the College Bowl, the General Electric-sponsored Sunday afternoon television quiz show that matches wits and fast recall of teams representing two colleges. The UR team is scheduled to appear on Sunday, June 3, with a return the following week if they are victorious.

Alumni in the New York City area may join the studio audience by writing to: GE College Bowl, CBS, 485 Madison Avenue, New York—L.D.A.
They are concentrated at centers of higher learning, where they form an important element in the university community. Groups of them can be found in earnest discussion in corridors, library lobbies, dining rooms, and in classrooms and laboratories. More often, they are found singly in library carrels and at laboratory benches, sifting facts in intense and lonely concentration. Although they mingle with the faculty, there is evidence of a teacher-student relationship, indicating that these scholars are not faculty members. They are obviously not undergraduates; they are somewhat older, more pressed for time, and are even more readily distinguishable because they are more formally dressed.

This group of serious scholars is the university’s graduate student body. At the University of Rochester there are some 1,200 young men and women actively working for advanced degrees on the master’s and doctoral level in some 40 different fields. They represent a variety of backgrounds and academic specialties, but they experience similar stresses, pressures, and satisfactions.

David Porter is one of these graduate students. Thirty-three years old, married, and the father of two children, he has nearly completed the requirements for the Ph.D. in English. Next year he will join the faculty of the University of Massachusetts as an instructor.

A little older than many of his fellows, Porter did not decide to work for his doctorate until several years after his graduation in 1950 from Hamilton College as a political science and economics major who was rapidly developing a greater interest in the field of literature. He spent the years between his college graduation and his enrollment at the University of Rochester sampling the life of a newspaper reporter, a farmer, a member of the armed forces and a teacher of English at Robert College in Istanbul. It was while he was teaching in Robert’s preparatory department that he decided he wanted to teach on the university level and in 1959 he began a new way of life—that of a graduate student.

During the last three years Porter has worked harder than he ever has before. There is no easy way to earn the Ph.D., one of the highest degrees in the academic world. To be admitted to the degree, a candidate must satisfy the faculty that he is well versed in the subject matter and research techniques of a specific discipline, at the same time demonstrating a breadth of interest and originality of outlook, and, adorning the whole, show promise of future success as an investigator.

Ninety hours of credit beyond the bachelor’s degree are required for those students who, like Porter, choose to eliminate the intermediate step of acquiring the mas-
Preparing for a career as a college teacher, David Porter works with an undergraduate class...

spends long hours studying in a library cubicle...

ter's degree. Porter earned 60 of them in his first two years, mostly through a variety of graduate seminars on the broad periods and major figures in English and American literature. During this period Porter lived with a feeling of constant pressure, of unrelenting deadlines, and a vague hope that some ingenious soul would invent a 36-hour day.

With his classroom work behind him, Porter was able to concentrate on the other requirements for the degree. Last June he passed his comprehensive written examination, and in the fall he survived the searching oral examination. A few weeks ago he spent a Saturday afternoon demonstrating his ability to read and translate into satisfactory English scholarly works in a foreign language—in Porter's case, French.

Since last fall, Porter has been working on his thesis, which will give him an additional 24 credit hours, a magnificent understatement of the actual number of hours of labor required to complete it.

The University's graduate studies bulletin stipulates that "the thesis must be an original critical or synthetic treatment of a fitting subject, an original contribution to creative art, or a report on independent research formulated in a manner worthy of publication." Heeding the
reiterated use of the word original, Porter elected to do his on the works of Emily Dickinson because the recent publication of the first complete editions of her poems and letters, along with a number of biographies, provided relatively untrampled fields for original investigation in his special interest, American literature. Directing his thesis is Dr. William H. Gilman, professor of English, a specialist in 19th century American writers and a distinguished author in his own right.

Porter is earning the remaining hours of credit he needs (and at the same time an equally useful stipend) through his work as a graduate assistant in the department of English. This semester he is leading a discussion section in a survey course in literature; last semester the course was in composition. Although he enjoys working with the undergraduates (he considers them in general superior to his own college generation), he finds the relentless procession of papers to be corrected a further drain on his time.

"For a graduate student, time is of the essence," says Porter, adding wryly, "and next to that is money." Graduate students do not go in for riotous living; they can't afford it. Like most of his fellows, Porter has been receiving financial assistance from the University. A scholar-
ship paid his tuition the first year; last year a fellowship afforded him a stipend as well. The stipend he gets this year as a graduate assistant is $1,500. He has made up the rest of what he needs from savings, help from the State under the scholarship incentive program, and summer jobs as a graduate research assistant at the University.

Diversion, for Porter, is very nearly a thing of the past, and the future. He’s too busy. He plays a little tennis in warm weather and hopefully keeps a racquet, which is acquiring a patina of dust, in his pint-sized office in Morey Hall. On the rare evenings which he and his friends, fellow graduate students, spend relaxing together, they relax by talking about their work.

In spite of, and in part because of, the great intensity of his efforts, these last three years have been happy ones for Porter. He has gained satisfaction in finding himself capable of accomplishing more than he thought possible. He admires the faculty in his department as interested and active people, engaged in publishing and research, who have generated enthusiasm among their students. And he has made solid friendships with other young men and women who have been undergoing the same experiences in search of a common goal.

Soon he will submit his completed thesis to the Council on Graduate Studies. In the fall he will return to Rochester to present an oral defense of the thesis. After that, there will be only one further formality: the donning of cap and gown the following June for the formal pronouncement that “David Porter has been admitted to the degree of Doctor of Philosophy and is entitled to all the honors, rights, and privileges to that degree appertaining.”

A Place to Live

David Porter, his wife, Lee, and their children, Thomas, 3½, and David, 2, have been living in a rented house a little over a mile from the River Campus. Although the house has its drawbacks—there is little place for the children to play out-of-doors and Porter brings them over to the campus frequently so they can romp on the lawns—the Porters consider themselves lucky to have found it through the assistance of the University’s housing coordinator. Adequate and inexpensive housing near university centers is by tradition a short commodity.

By July, 1964, this situation will have changed at the University of Rochester. At that time the University will open its first graduate living center, one of the major capital projects in the $49.9 million Greater University Program. It will be constructed with the aid of a $3 million low-interest federal loan approved in March by the Housing and Home Finance Agency of the Federal Housing Administration.

Described as “one of the few graduate apartment residences in the East to be built as an integrated part of a university community,” the multi-story building will be located south of the Medical Center, in the block which contains University Park. It will consist of approximately 180 one- and two-bedroom apartments. Some of them may be partially furnished, and, unlike undergraduate units, will be rented on a 12-month basis. Eligible to live there will be graduate students from all schools and colleges of the University.

The new graduate center will be the first step in a two or three-stage program to provide housing for the University’s growing population of graduate students and their families, which currently totals about 2,100. The University has been developing a long-range program for graduate housing facilities since 1958, when an extensive survey of graduate residence needs was conducted.
MAGNETOHYDRODYNAMICS—the term is hardly a household word, but it represents one of the most exciting, complex and hotly debated fields of modern engineering and science.

It is concerned with improving the efficiency of power plants, propelling space vehicles and controlling the energy released by a hydrogen bomb. It is the stuff of lightning bolts and neon lights.

Three hundred specialists in magnetohydrodynamics—known as MHD—gathered at the River Campus last month to participate in the Third Annual Symposium on the Engineering Aspects of MHD.

The University’s College of Engineering, along with the American Institute of Electrical Engineers, the Institute of Aerospace Sciences and the Institute of Radio Engineers, sponsored the meeting. Dr. Martin Lessen, chairman of the UR mechanical engineering department, was host.

The MHD experts, many of them young men signalling the age of the discipline, represented some of this country’s leading colleges and universities, Chile, Canada, Germany, England, major U.S. corporations, and the National Aeronautics and Space Administration.

They are concerned with the study of what is called a plasma—an extremely hot, charged gas contained in an electric or magnetic field. A lightning bolt is a plasma; the stuff inside a fluorescent light bulb is a very low temperature plasma.

The plasmas the MHD specialists work with reach fantastic temperatures—ranging anywhere from 10,000 degrees Kelvin to more than a million degrees Kelvin, hotter than the surface of the sun.

While all this may sound rather remote, the engineers have very practical goals in mind.

Elementary textbooks have for years told us that the supply of fossil fuels will eventually run out. The MHD-men are trying to do something about this. If the fusion reaction could be controlled, that is, the energy of the hydrogen bomb, man could utilize the readily available isotopes of hydrogen as the nuclear fuel—a much more permanent source of fuel.

The trouble, of course, is that the fusion reaction takes place at an intensely high temperature and there isn’t any material around strong enough to contain it. However, since elements involved in the reaction are almost completely ionized at those temperatures, it appears that they may be contained in magnetic fields.

This is the most dramatic aspect of MHD, a serious attempt to harness the fury of the most destructive thing ever made by man; harness it for good, not evil.

STRETCHING OUR DIMINISHING SUPPLY OF FOSSIL FUELS

MHD also is concerned with an interim step in the fossil fuel problem: How to get more “mileage” out of the fossil fuels we do have. Central power plants operate at only about 42 per cent efficiency, the problem being that the conventional boiler and turbine limit the temperature one can work with to produce electricity.

So, studies are being made to see if an MHD power generator can be built. The MHD generator would eliminate the boiler and turbine by extracting energy directly, either A.C. or D.C., from the rapidly moving ionized products of combustion, in the presence of a magnetic field.

A third area of MHD investigation is tied into this nation’s space exploration program. Specifically, the specialists are working on a plasma engine to provide the thrust to power space vehicles on long missions.

Officially, the engineers say that these studies indicate “feasibility and attractiveness,” but privately, they say the idea is “far out.”

But it’s not impossible.

In fact, the National Aeronautics and Space Administration has plans to test a related form of powering space vehicles this year. A NASA aerospace technologist at the UR meeting said the test will be of an ion engine.

Rather than use a plasma for thrust, he said, a rocket firing will test the use of charged particles—ions—for the thrust. The test will probably be at either Cape Canaveral or Wallops Island, Virginia.

NASA, and a number of other institutions and corporations, are interested in the plasma and ion engines as, again, a fuel conservation measure.

If such engines prove effective, they will be used to send space vehicles on long missions, after the vehicle has been put into a low orbit by conventional rocket power. In order to get a space ship up past the area of the earth’s strongest gravitational pull, tremendous amounts
of thrust are needed. The ion or plasma engine could not do this. But, once in a parking orbit, not as much thrust is needed to propel a vehicle in space. Thus, the ion or plasma engine would not consume as much fuel and much less fuel would have to be stored on the space ship, affording vital weight savings.

Although the ion engine research is fairly well along, most of MHD might be said to be in the "Kitty Hawk" stage of development. And, in order to progress, engineers at the symposium expressed concern about the number of available and potential engineers to do the job, as well as other aspects of modern engineering.

THE GREAT NEED: AN INCREASING NUMBER OF ENGINEERS

Dr. John W. Graham Jr., dean of the UR College of Engineering, and others, see trouble here. Dean Graham, taking note of a continuing shortage of engineers, argues that some of the shortage can be attributed to a misuse of words.

Science, he said, gets the credit; whether the discovery is of a new elementary particle in physics or the latest satellite launching. Today, he said, space work is largely engineering, not science, and if the words were used correctly, more of the magic would rub off in the direction of the engineers, with a resulting increase in the number of students turning toward an engineering education.

However, the nature of the education received by engineering students in the past also is at fault, Dr. Graham says. For some years recently, scientists were forced to play the role of the engineer "simply because engineers were not equipped by their previous education to play a leadership role in applying the dramatic new concepts of science."

Now, he continues, there is a new approach to engineering education—one designed to provide engineers who will not be outmoded by future scientific advances, one that pays more attention to basic training in science and engineering.

The "new engineer" may then point himself—or herself, for they want women, too—not just to the traditional aspects of engineering but, say, to taking the temperature of a lightning bolt.

This was one of the particular problems that arose at the MHD symposium. In order to work intelligently with a plasma, the engineers must know precisely its characteristics, including precise temperature.

And, just as there isn't anything around to contain a plasma, there isn't anything resembling a thermometer one can insert into the plasma without its being burned up, and altering the nature of the plasma.

The answers to this problem right now seem to be spectroscopy or the use of microwaves. Using spectroscopy, the MHD experts break down and study the electromagnetic radiation given off by the plasma in the same general way that astronomers study radiation from stars to learn about the makeup of the star itself. The microwave approach involves hurling a batch of microwaves of known properties through the plasma. Picked up on the other side, they will have been altered by the plasma. Knowing what causes given alterations, the engineers can infer the nature of the plasma.

Discussion on this and other aspects of MHD at the sessions was marked by lively disagreement and, between representatives of some companies, apparent competition.

DEVELOPMENT FROM EARLY STUDIES ON INTERSTELLAR GAS

The study of MHD came about through the study of interstellar gas around the turn of the century. The spiral arms of nebula have very strong magnetic fields. This early study was expanded by solar physicists who were investigating the formation of the sun and solar flares and also by geophysicists who were interested in the relationship between the molten core of the earth and the earth's magnetic field.

Another early theoretical and experimental study led to methods for diagnosing the properties of a plasma. This was done in connection with the problem of communications in the ionosphere, which affects radio waves. Radio waves of certain wave lengths pass through the ionosphere and others will be reflected. Working with differing radio waves led to an understanding of some of the properties of the upper atmosphere. The modern interest grew out of the problem of controlling the fusion reaction.

MHD hasn't gotten entirely away from the study of space phenomena. A team of physicists, studying highly charged sources of energy from the area of the planet Jupiter, told the symposium that they found Jupiter's rotation to be 11 seconds shorter than the astronomers had calculated. Jupiter now rotates officially in 9 hours, 55 minutes and 29.35 seconds.
"WILL MY CHILDREN GET INTO COLLEGE?"

The question haunts most parents. Here is the answer:

Yes . . .

- If they graduate from high school or preparatory school with something better than a "scrape-by" record.
- If they apply to the college or university that is right for them—aiming their sights (and their application forms) neither too high nor too low, but with an individuality and precision made possible by sound guidance both in school and in their home.
- If America's colleges and universities can find the resources to carry out their plans to meet the huge demand for higher education that is certain to exist in this country for years to come.

The if's surrounding your children and the college of tomorrow are matters of concern to everyone involved—to parents, to children, to alumni and alumnae (whatever their parental status), and to the nation's educators. But resolving them is by no means being left to chance.

- The colleges know what they must do, if they are to meet the needs of your children and others of your children's generation. Their planning is well beyond the hand-wringing stage.
- The colleges know the likely cost of putting their plans into effect. They know this cost, both in money and in manpower, will be staggering. But most of them are already embarked upon finding the means of meeting it.
- Governments—local, state, and federal—are also deeply involved in educational planning and financing. Some parts of the country are far ahead of others. But no region is without its planners and its doers in this field.

Public demand—not only for expanded facilities for higher education, but for ever-better quality in higher education—today is more insistent, more informed than ever before. With this growth of public sophistication about higher education, it is now clear to most intelligent parents that they themselves must take a leading role in guiding their children's educational careers—and in making certain that the college of tomorrow will be ready, and good, for them.
Where will your children go to college?

Last fall, more than one million students enrolled in the freshman classes of U.S. colleges and universities. They came from wealthy families, middle-income families, poor families; from all races, here and abroad; from virtually every religious faith.

Over the next ten years, the number of students will grow enormously. Around 1964 the long-predicted "tidal wave" of young people, born in the postwar era and steadily moving upward through the nation's school systems ever since, will engulf the college campuses. By 1970 the population between the ages of 18 and 21—now around 10.2 million—will have grown to 14.6 million. College enrollment, now less than 4 million, will be at least 6.4 million, and perhaps far more.

The character of the student bodies will also have changed. More than half of the full-time students in the country's four-year colleges are already coming from lower-middle and low income groups. With expanding scholarship, loan, and self-help programs, this trend will continue strong. Non-white college students—who in the past decade have more than doubled in number and now compose about 7 per cent of the total enrollment—will continue to increase. (Non-whites formed 11.4 per cent of the U.S. population in the 1960 census.) The number of married students will grow. The average age of students will continue its recent rise.

The sheer force of this great wave of students is enough to take one's breath away. Against this force, what chance has American higher education to stand strong, to maintain standards, to improve quality, to keep sight of the individual student?

And, as part of the gigantic population swell, what chances have your children?

To both questions, there are some encouraging answers. At the same time, the intelligent parent will not ignore some danger signals.

Finding room for everybody

Not every college or university in the country is able to expand its student capacity. A number have concluded that, for one persuasive reason or another, they must maintain their present enrollments. They are not blind to the need of American higher education, in the aggregate, to accommodate more students in the years ahead; indeed, they are keenly aware of it. But for reasons of finance, of faculty limitations, of space, of philosophy, of function, of geographic location—or of a combination of these and other restrictions—they cannot grow.

Many other institutions, public and private, are expanding their enrollment capacities and will continue to do so:

Private institutions: Currently, colleges and universities under independent auspices enroll around 1,500,000 students—some 40 per cent of the U.S. college population. In the future, many privately supported institutions will grow, but slowly in comparison with publicly supported institutions. Thus the total number of students at private institutions will rise, but their percentage of the total college population will become smaller.

Public institutions: State and locally supported colleges and universities are expanding their capacity steadily. In the years ahead they will carry by far the heaviest share of America's growing student population.

Despite their growth, many of them are already feeling the strain of the burden. Many state institutions, once committed to accepting any resident with a high-school diploma, are now imposing entrance requirements upon applicants. Others, required by law or long tradition not to turn away any high-school graduate who applies, resort in desperation to a high flunk-out rate in the freshman year in order to whittle down their student bodies to manageable size. In other states, coordinated systems of higher education are being devised to accommodate...
students of differing aptitudes, high-school academic records, and career goals.

**Two-year colleges:** Growing at a faster rate than any other segment of U.S. higher education is a group comprising both public and independently supported institutions: the two-year, or "junior," colleges. Approximately 600 now exist in the United States, and experts estimate that an average of at least 20 per year will be established in the coming decade. More than 400 of the two-year institutions are community colleges, located within commuting distance of their students.

These colleges provide three main services: education for students who will later transfer to four-year colleges or universities (studies show they often do as well as those who go directly from high school to a four-year institution, and sometimes better), terminal training for vocations (more and more important as jobs require higher technical skills), and adult education and community cultural activities.

Evidence of their importance: One out of every four students beginning higher education today does so in a two-year college. By 1975, the ratio is likely to be one in two.

**Branch campuses:** To meet local demands for educational institutions, some state universities have opened branches in population centers distant from their main campuses. The trend is likely to continue. On occasion, however, the "branch campus" concept may conflict with the "community college" concept. In Ohio, for example, proponents of community two-year colleges are currently arguing that locally controlled community institutions are the best answer to the state's college-enrollment problems. But Ohio State University, Ohio University, and Miami University, which operate off-campus centers and whose leaders advocate the establishment of more, say that taxpayers get better value at lower cost from a university-run branch-campus system.

**Coordinated systems:** To meet both present and future demands for higher education, a number of states are attempting to coordinate their existing colleges and universities and to lay long-range plans for developing new ones.

California, a leader in such efforts, has a "master plan" involving not only the three main types of publicly supported institutions—the state university, state colleges, and locally sponsored two-year colleges. Private institutions voluntarily take part in the master planning, also.

With at least 661,000 students expected in their colleges and universities by 1975, Californians have worked out a plan under which every high-school graduate will be eligible to attend a junior college; the top one-third will be eligible for admission to a state college; and the top one-eighth will be eligible to go directly from high school to the University of California. The plan is flexible: students who prove themselves in a junior college, for example, may transfer to the university. If past experience is a guide, many will—with notable academic success.

Thus it is likely that somewhere in America's nearly 2,000 colleges and universities there will be room for your children. How will you—and they—find it?

On the same day in late May of last year, 33,559 letters went out to young people who had applied for admission to the 1961 freshman class in one or more of the eight schools that compose the Ivy League. Of these letters, 20,248 were rejection notices.

Not all of the 20,248 had been misguided in applying. Admissions officers testify that the quality of the 1961 applicants was higher than ever before, that the competition was therefore intense, and that many applicants who might have been welcomed in other years had to be turned away in '61.

Even so, as in years past, a number of the applicants had been the victims of bad advice—from parents, teachers, and friends. Had they applied to other institutions, equally or better suited to their aptitudes and abilities, they would have been accepted gladly, avoiding the bitter disappointment, and the occasional tragedy, of a turnaround.

The Ivy League experience can be, and is, repeated in dozens of other colleges and universities every spring. Yet, while some institutions are rejecting more applications than they can accept, others (perhaps better qualified to meet the rejected students' needs) still have openings in their freshman classes on registration day.

Educators, both in the colleges and in the secondary schools, are aware of the problems in "marrying" the right students to the right colleges. An intensive effort is under way to relieve them. In the future, you may expect:

- Better guidance by high-school counselors, based on
improved testing methods and on improved understanding of individual colleges and their offerings.

- Better definitions, by individual colleges and universities, of their philosophies of admission, their criteria for choosing students, their strengths in meeting the needs of certain types of student and their weakness in meeting the needs of others.
- Less parental pressure on their offspring to attend: the college or university that mother or father attended; the college or university that "everybody else's children" are attending; the college or university that enjoys the greatest sports-page prestige, the greatest financial-page prestige, or the greatest society-page prestige in town.
- More awareness that children are different from one another, that colleges are different from one another, and that a happy match of children and institutions is within the reach of any parent (and student) who takes the pains to pursue it intelligently.
- Exploration—but probably, in the near future, no widespread adoption—of a central clearing-house for college applications, with students stating their choices of colleges in preferential order and colleges similarly listing their choices of students. The "clearing-house" would thereafter match students and institutions according to their preferences.

Despite the likely growth of these practices, applying to college may well continue to be part-chaos, part-panic, part-snobbishness for years to come. But with the aid of enlightened parents and educators, it will be less so, tomorrow, than it is today.

What will they find in college?

The college of tomorrow—the one your children will find when they get in—is likely to differ from the college you knew in your days as a student. The students themselves will be different. Curricula will be different. Extracurricular activities will be different, in many respects, from what they were in your day. The college year, as well as the college day, may be different. Modes of study will be different. With one or two conspicuous exceptions, the changes will be for the better. But for better or for worse, changes there will be.

The New Breed of Students

It will come as news to no parents that their children are different from themselves.

Academically, they are proving to be more serious than many of their predecessor generations. Too serious, some say. They enter college with an eye already set on the vocation they hope to pursue when they get out; college, to many, is simply the means to that end.

Many students plan to marry as soon as they can afford to, and some even before they can afford to. They want families, homes, a fair amount of leisure, good jobs, security. They dream not of a far-distant future; today's students are impatient to translate their dreams into reality, soon.

Like most generalizations, these should be qualified. There will be students who are quite far from the average, and this is as it should be. But with international tensions, recurrent war threats, military-service obligations, and talk of utter destruction of the race, the tendency is for the young to want to cram their lives full of living—with no unnecessary delays, please.

At the moment, there is little likelihood that the urge to pace one's life quickly and seriously will soon pass. This is the tempo the adult world has set for its young, and they will march double-time to it.

Economic backgrounds of students will continue to grow more diverse. In recent years, thanks to scholarships, student loans, and the spectacular growth of public educational institutions, higher education has become less and less the exclusive province of the sons and daughters of the well-to-do. The spread of scholarship and loan programs geared to family income levels will intensify this trend, not only in low-tuition public colleges and universities but in high-tuition private institutions.

Students from foreign countries will flock to the U.S. for college education, barring a totally deteriorated international situation. Last year 53,107 foreign students, from 143 countries and political areas, were enrolled in 1,666 American colleges and universities—almost a 10 per cent increase over the year before. Growing numbers of African and Asian students accounted for the rise; the growth is virtually certain to continue. The presence of
such students on U.S. campuses—50 per cent of them are undergraduates—has already contributed to a greater international awareness on the part of American students. The influence is bound to grow.

*Foreign study by U.S. students* is increasing. In 1959-60, the most recent year reported, 15,306 were enrolled in 63 foreign countries, a 12 per cent increase in a period of 12 months. Students traveling abroad during summer vacations add impressive numbers to this total.

**WHAT THEY’LL STUDY**

**Studies are** in the course of change, and the changes will affect your children. A new toughness in academic standards will reflect the great amount of knowledge that must be imparted in the college years.

**In the sciences**, changes are particularly obvious. Every decade, writes Thomas Stelson of Carnegie Tech, 25 per cent of the curriculum must be abandoned, due to obsolescence. J. Robert Oppenheimer puts it another way: nearly everything now known in science, he says, "was not in any book when most of us went to school."

There will be differences in the **social sciences and humanities**, as well. Language instruction, now getting new emphasis, is an example. The use of language laboratories, with tape recordings and other mechanical devices, is already popular and will spread. Schools once preoccupied almost entirely with science and technology (e.g., colleges of engineering, leading medical schools) have now integrated social and humanistic studies into their curricula, and the trend will spread to other institutions.

**International emphasis** also will grow. The big push will be related to nations and regions outside the Western World. For the first time on a large scale, the involvement of U.S. higher education will be truly global. This non-Western orientation, says one college president (who is seconded by many others) is "the new frontier in American higher education." For undergraduates, comparative studies in both the social sciences and the humanities are likely to be stressed. The hoped-for result: better understanding of the human experience in all cultures.

**Mechanics of teaching** will improve. "Teaching machines" will be used more and more, as educators assess their value and versatility (see *Who will teach them?* on the following pages). Closed-circuit television will carry a lecturer's voice and closeup views of his demonstrations to hundreds of students simultaneously. TV and microfilm will grow in usefulness as library tools, enabling institutions to duplicate, in small space, the resources of distant libraries and specialized rare-book collections. Tape recordings will put music and drama, performed by masters, on every campus. Computers, already becoming almost commonplace, will be used for more and more study and research purposes.

This availability of resources unheard-of in their parents' day will enable undergraduates to embark on extensive programs of independent study. Under careful faculty guidance, independent study will equip students with research ability, problem-solving techniques, and bibliographic savvy which should be of immense value to them throughout their lives. Many of yesterday's college graduates still don't know how to work creatively in unfamiliar intellectual territory: to pinpoint a problem, formulate intelligent questions, use a library, map a research project. There will be far fewer gaps of this sort in the training of tomorrow's students.

**Great new stress on quality** will be found at all institutions. Impending explosive growth of the college population has put the spotlight, for years, on handling large numbers of students; this has worried educators who feared that quality might be lost in a national preoccupation with quantity. Big institutions, particularly those with "growth situations," are now putting emphasis on maintaining high academic standards—and even raising them—while handling high enrollments, too. Honors programs, opportunities for undergraduate research, insistence on creditable scholastic achievement are symptomatic of the concern for academic excellence.

It's important to realize that this emphasis on quality will be found not only in four-year colleges and universities, but in two-year institutions, also. "Each [type of institution] shall strive for excellence in its sphere," is how the California master plan for higher education puts it; the same idea is pervading higher education at all levels throughout the nation.

**WHERE’S THE FUN?**

**Extra-curricular activity** has been undergoing subtle changes at colleges and universities for years and is likely...
to continue doing so. Student apathy toward some activities—political clubs, for example—is lessening. Toward other activities—the light, the frothy—apathy appears to be growing. There is less interest in spectator sports, more interest in participant sports that will be playable for most of a lifetime. Student newspapers, observes the dean of students at a college on the Eastern seaboard, no longer rant about band uniforms, closing hours for fraternity parties, and the need for bigger pep rallies. Sororities are disappearing from the campuses of women’s colleges. “Fun festivals” are granted less time and importance by students; at one big midwestern university, for example, the events of May Week—formerly a five-day wingding involving floats, honorary-fraternity initiations, faculty-student baseball, and crowning of the May Queen—are now crammed into one half-day. In spite of the well-publicized antics of a relatively few roof-raisers (e.g., student rioters at several summer resorts last Labor Day, student revelers at Florida resorts during spring-vacation periods), a new seriousness is the keynote of most student activities.

“The faculty and administration are more resistant to these changes than the students are,” jokes the president of a women’s college in Pittsburgh. "The typical student congress wants to abolish the junior prom; the dean is the one who feels nostalgic about it: ‘That’s the one event Mrs. Jones and I looked forward to each year.’”

A QUEST FOR ETHICAL VALUES

Education, more and more educators are saying, “should be much more than the mere retention of subject matter.” Here are three indications of how the thoughts of many educators are running:

“If [the student] enters college and purrsue either an intellectual smorgasbord, intellectual Teutonism, or the cash register,” says a midwestern educator, “his education will have advanced very little, if at all. The odds are quite good that he will simply have exchanged one form of barbarism for another... Certainly there is no incompatibility between being well-informed and being stupid; such a condition makes the student a danger to himself and society.”

Says another observer: “I prophesy that a more serious intention and mood will progressively characterize the campus... This means, most of all, commitment to the use of one’s learning in fruitful, creative, and noble ways.”

“The responsibility of the educated man,” says the provost of a state university in New England, “is that he make articulate to himself and to others what he is willing to bet his life on.”

K NOW THE QUALITY of the teaching that your children can look forward to, and you will know much about the effectiveness of the education they will receive. Teaching, tomorrow as in the past, is the heart of higher education.

It is no secret, by now, that college teaching has been on a plateau of crisis in the U.S. for some years. Much of the problem is traceable to money. Salaries paid to college teachers lagged far behind those paid elsewhere in jobs requiring similarly high talents. While real incomes, as well as dollar incomes, climbed for most other groups of Americans, the real incomes of college professors not merely stood still but dropped noticeably.

The financial pinch became so bad, for some teachers, that despite obvious devotion to their careers and obvious preference for this profession above all others, they had to leave for other jobs. Many bright young people, the sort who ordinarily would be attracted to teaching careers, took one look at the salary scales and decided to make their mark in another field.

Has the situation improved?

Will it be better when your children go to college?

Yes. At the moment, faculty salaries and fringe benefits (on the average) are rising. Since the rise started from an extremely disadvantageous level, however, no one is getting rich in the process. Indeed, on almost every campus the real income in every rank of the faculty is still considerably less than it once was. Nor have faculty salary scales, generally, caught up with the national scales in competitive areas such as business and government.

But the trend is encouraging. If it continues, the financial plight of teachers—and the serious threat to education which it has posed—should be substantially diminished by 1970.

None of this will happen automatically, of course. For evidence, check the appropriations for higher education made at your state legislature’s most recent session. If yours was like a number of recent legislatures, it “economized”—and professorial salaries suffered. The support which has enabled many colleges to correct the most glaring salary deficiencies must continue until the problem is fully solved. After that, it is essential to make sure that
the quality of our college teaching—a truly crucial element in fashioning the minds and attitudes of your children—is not jeopardized again by a failure to pay its practitioners adequately.

There are other angles to the question of attracting and retaining a good faculty besides money.

- The better the student body—the more challenging, the more lively its members—the more attractive is the job of teaching it. "Nothing is more certain to make teaching a dreadful task than the feeling that you are dealing with people who have no interest in what you are talking about," says an experienced professor at a small college in the Northwest.

"An appalling number of the students I have known were bright, tested high on their College Boards, and still lacked flair and drive and persistence," says another professor. "I have concluded that much of the difference between them and the students who are 'alive' must be traceable to their homes, their fathers, their mothers. Parents who themselves take the trouble to be interesting—and interested—seem to send us children who are interesting and interested."

- The better the library and laboratory facilities, the more likely is a college to be able to recruit and keep a good faculty. Even small colleges, devoted strictly to undergraduate studies, are finding ways to provide their faculty members with opportunities to do independent reading and research. They find it pays in many ways: the faculty teaches better, is more alert to changes in the subject matter, is less likely to leave for other fields.

- The better the public-opinion climate toward teachers in a community, the more likely is a faculty to be strong. Professors may grumble among themselves about all the invitations they receive to speak to women's clubs and alumni groups ("When am I supposed to find the time to check my lecture notes?"), but they take heart from the high regard for their profession which such invitations from the community represent.

- Part-time consultant jobs are an attraction to good faculty members. (Conversely, one of the principal checkpoints for many industries seeking new plant sites is, What faculty talent is nearby?) Such jobs provide teachers both with additional income and with enormously useful opportunities to base their classroom teachings on practical, current experience.

But colleges and universities must do more than hold on to their present good teachers and replace those who retire or resign. Over the next few years many institutions must add to their teaching staffs at a prodigious rate, in order to handle the vastly larger numbers of students who are already forming lines in the admissions office.

The ability to be a college teacher is not a skill that can be acquired overnight, or in a year or two. A Ph.D. degree takes at least four years to get, after one has earned his bachelor's degree. More often it takes six or seven years, and sometimes 10 to 15.

In every ten-year period since the turn of the century, as Bernard Berelson of Columbia University has pointed out, the production of doctorates in the U.S. has doubled. But only about 60 per cent of Ph.D.'s today go into academic life, compared with about 80 per cent at the turn of the century. And only 20 per cent wind up teaching undergraduates in liberal arts colleges.

Holders of lower degrees, therefore, will occupy many teaching positions on tomorrow's college faculties.

This is not necessarily bad. A teacher's ability is not always defined by the number of degrees he is entitled to
write after his name. Indeed, said the graduate dean of one great university several years ago, it is high time that universities have the courage... to select men very largely on the quality of work they have done and soft-pedal this matter of degrees."

In summary, salaries for teachers will be better, larger numbers of able young people will be attracted into the field (but their preparation will take time), and fewer able people will be lured away. In expanding their faculties, some colleges and universities will accept more holders of bachelor's and master's degrees than they have been accustomed to, but this may force them to focus attention on ability rather than to rely as unquestioningly as in the past on the magic of a doctor's degree.

Meanwhile, other developments provide grounds for cautious optimism about the effectiveness of the teaching your children will receive.

THE TV SCREEN

Television, not long ago found only in the lounges of dormitories and student unions, is now an accepted teaching tool on many campuses. Its use will grow. "To report on the use of television in teaching," says Arthur S. Adams, past president of the American Council on Education, "is like trying to catch a galloping horse."

For teaching closeup work in dentistry, surgery, and laboratory sciences, closed-circuit TV is unexcelled. The number of students who can gaze into a patient's gaping mouth while a teacher demonstrates how to fill a cavity is limited; when their place is taken by a TV camera and the students cluster around TV screens, scores can watch—and see more, too.

Television, at large schools, has the additional virtue of extending the effectiveness of a single teacher. Instead of giving the same lecture (replete with the same jokes) three times to students filling the campus's largest hall, a professor can now give it once—and be seen in as many auditoriums and classrooms as are needed to accommodate all registrants in his course. Both the professor and the jokes are fresher, as a result.

How effective is TV? Some carefully controlled studies show that students taught from the fluorescent screen do as well in some types of course (e.g., lectures) as those sitting in the teacher's presence, and sometimes better. But TV standardizes instruction to a degree that is not always desirable. And, reports Henry H. Cassirer of UNESCO, who has analyzed television teaching in the U.S., Canada, Great Britain, France, Italy, Russia, and Japan, students do not want to lose contact with their teachers. They want to be able to ask questions as instruction progresses. Mr. Cassirer found effective, on the other hand, the combination of a central TV lecturer with classroom instructors who prepare students for the lecture and then discuss it with them afterward.

TEACHING MACHINES

Holding great promise for the improvement of instruction at all levels of schooling, including college, are programs of learning presented through mechanical self-teaching devices, popularly called "teaching machines."

The most widely used machine, invented by Professor Frederick Skinner of Harvard, is a box-like device with three windows in its top. When the student turns a crank, an item of information, along with a question about it, appears in the left-hand window (A). The student writes his answer to the question on a paper strip exposed in another window (B). The student turns the crank again—and the correct answer appears at window A.

Simultaneously, this action moves the student's answer under a transparent shield covering window C, so that the student can see, but not change, what he has written. If the answer is correct, the student turns another crank, causing the tape to be notched; the machine will by-pass this item when the student goes through the series of questions again. Questions are arranged so that each item builds on previous information the machine has given.

Such self-teaching devices have these advantages:

▶ Each student can proceed at his own pace, whereas classroom lectures must be paced to the "average" student—too fast for some, too slow for others. "With a machine," comments a University of Rochester psychologist, "the brighter student could go ahead at a very fast pace."

▶ The machine makes examinations and testing a rewarding and learning experience, rather than a punishment. If his answer is correct, the student is rewarded with that knowledge instantly; this reinforces his memory of the right information. If the answer is incorrect, the machine provides the correct answer immediately. In large classes, no teacher can provide such frequent—and individual—rewards and immediate corrections.

▶ The machine smooths the ups and downs in the learn-
ing process by removing some external sources of anxieties, such as fear of falling behind.

If a student is having difficulty with a subject, the teacher can check back over his machine tapes and find the exact point at which the student began to go wrong. Correction of the difficulty can be made with precision, not gropingly as is usually necessary in machineless classes.

Not only do the machines give promise of accelerating the learning process; they introduce an individuality to learning which has previously been unknown. "Where television holds the danger of standardized instruction," said John W. Gardner, president of the Carnegie Corporation of New York, in a report to then-President Eisenhower, "the self-teaching device can individualize instruction in ways not now possible—and the student is always an active participant." Teaching machines are being tested, and used, on a number of college campuses and seem certain to figure prominently in the teaching of your children.

Will they graduate?

Said an administrator at a university in the South not long ago (he was the director of admissions, no less, and he spoke not entirely in jest):

"I'm happy I went to college back when I did, instead of now. Today, the admissions office probably wouldn't let me in. If they did, I doubt that I'd last more than a semester or two."

Getting into college is a problem, nowadays. Staying there, once in, can be even more difficult.

Here are some of the principal reasons why many students fail to finish:

Academic failure: For one reason or another—not always connected with a lack of aptitude or potential scholastic ability—many students fail to make the grade. Low entrance requirements, permitting students to enter college without sufficient aptitude or previous preparation, also play a big part. In schools where only a high-school diploma is required for admission, drop-outs and failures during the first two years average (nationally) between 60 and 70 per cent. Normally selective admissions procedures usually cut this rate down to between 20 and 40 per cent. Where admissions are based on keen competition, the attrition rate is 10 per cent or less.

Future outlook: High schools are tightening their academic standards, insisting upon greater effort by students, and teaching the techniques of note-taking, effective studying, and library use. Such measures will inevitably better the chances of students when they reach college. Better testing and counseling programs should help, by guiding less-able students away from institutions where they'll be beyond their depth and into institutions better suited to their abilities and needs. Growing popular acceptance of the two-year college concept will also help, as will the adoption of increasingly selective admissions procedures by four-year colleges and universities.

Parents can help by encouraging activities designed to find the right academic spot for their children; by recognizing their children's strengths and limitations; by creating an atmosphere in which children will be encouraged to read, to study, to develop curiosity, to accept new ideas.

Poor motivation: Students drop out of college "not only because they lack ability but because they do not have the motivation for serious study," say persons who have studied the attrition problem. This aspect of students' failure to finish college is attracting attention from educators and administrators both in colleges and in secondary schools.

Future outlook: Extensive research is under way to determine whether motivation can be measured. The "Personal Values Inventory," developed by scholars at Colgate University, is one promising yardstick, providing information about a student's long-range persistence, personal self-control, and deliberateness (as opposed to rashness). Many colleges and universities are participating in the study, in an effort to establish the efficacy of the tests. Thus far, report the Colgate researchers, "the tests have successfully differentiated between over- and under-achievers in every college included in the sample."

Parents can help by their own attitudes toward scholastic achievement and by encouraging their children to...
develop independence from adults. "This, coupled with the reflected image that a person acquires from his parents—an image relating to persistence and other traits and values—may have much to do with his orientation toward academic success," the Colgate investigators say.

Money: Most parents think they know the cost of sending a child to college. But, a recent survey shows, relatively few of them actually do. The average parent, the survey disclosed, underestimates college costs by roughly 40 per cent. In such a situation, parental savings for college purposes often run out quickly—and, unless the student can fill the gap with scholarship aid, a loan, or earnings from part-time employment, he drops out.

Future outlook: A surprisingly high proportion of financial dropouts are children of middle-income, not low-income, families. If parents would inform themselves fully about current college costs—and reinforce themselves periodically, since prices tend to go up—a substantial part of this problem could be solved in the future by realistic family savings programs.

Other probabilities: growing federal and state (as well as private) scholarship programs; growing private and governmental loan programs.

Jobs: Some students, anxious to strike out on their own, are lured from college by jobs requiring little skill but offering attractive starting salaries. Many such students may have hesitated about going to college in the first place and drop out at the first opportunity.

Future outlook: The lure of jobs will always tempt some students, but awareness of the value of completing college—for lifelong financial gain, if for no other reason—is increasing.

Emotional problems: Some students find themselves unable to adjust to college life and drop out as a result. Often such problems begin when a student chooses a college that’s "wrong" for him. It may accord him too much or too little freedom; its pace may be too swift for him, resulting in frustration, or too slow, resulting in boredom; it may be "too social" or "not social enough."

Future outlook: With expanding and more skillful guidance counseling and psychological testing, more students can expect to be steered to the "right" college environment. This won't entirely eliminate the emotional maladjustment problem, but it should ease it substantially.

Marriage: Many students marry while still in college but fully expect to continue their education. A number do go on (sometimes wives withdraw from college to earn money to pay their husbands' educational expenses). Others have children before graduating and must drop out of college in order to support their family.

Future outlook: The trend toward early marriage shows no signs of abating. Large numbers of parents openly or tacitly encourage children to go steady and to marry at an early age. More and more colleges are providing living quarters for married undergraduate students. Some even have day-care facilities for students' young children. Attitudes and customs in their "peer groups" will continue to influence young people on the question of marrying early; in some groups, it's frowned upon; in others, it's the thing to do.

Colleges and universities are deeply interested in finding solutions to the attrition problem in all its aspects. Today, at many institutions, enrollment resembles a pyramid: the freshman class, at the bottom, is big; the sophomore class is smaller, the junior class still smaller, and the senior class a mere fraction of the freshman group. Such pyramids are wasteful, expensive, inefficient. They represent hundreds, sometimes thousands, of personal tragedies: young people who didn't make it.

The goal of the colleges is to change the pyramid into a straight-sided figure, with as many people graduating as enter the freshman class. In the college of tomorrow, the sides will not yet have attained the perfect vertical, but—as a result of improved placement, admissions, and academic practices—they should slope considerably less than they do now.
What will college have done for them?

If your children are like about 33 per cent of today's college graduates, they will not end their formal education when they get their bachelor's degrees. On they'll go—to graduate school, to a professional school, or to an advanced technological institution.

There are good reasons for their continuing:
- In four years, nowadays, one can only begin to scratch the surface of the body of knowledge in his specialty. To teach, or to hold down a high-ranking job in industry or government, graduate study is becoming more and more useful and necessary.
- Automation, in addition to eliminating jobs in unskilled categories, will have an increasingly strong effect on persons holding jobs in middle management and middle technology. Competition for survival will be intense. Many students will decide that one way of competing advantageously is to take as much formal education beyond the baccalaureate as they can get.
- One way in which women can compete successfully with men for high-level positions is to be equipped with a graduate degree when they enter the job market.
- Students heading for school-teaching careers will increasingly be urged to concentrate on substantive studies in their undergraduate years and to take methodology courses in a postgraduate schooling period. The same will be true in many other fields.
- Shortages are developing in some professions, e.g., medicine. Intensive efforts will be made to woo more top undergraduates into professional schools, and opportunities in short-supplied professions will become increasingly attractive.
- "Skills," predicts a Presidential committee, "may become obsolete in our fast-moving industrial society. Sound education provides a basis for adjustment to constant and abrupt change—a base on which new skills may be built." The moral will not be lost on tomorrow's students.

In addition to having such practical motives, tomorrow's students will be influenced by a growing tendency to expose them to graduate-level work while they are still undergraduates. Independent study will give them a taste of the intellectual satisfaction to be derived from learning on their own. Graduate-style seminars, with their stimulating give-and-take of fact and opinion, will exert a strong appeal. As a result, for able students the distinction between undergraduate and graduate work will become blurred and meaningless. Instead of arbitrary insistence upon learning in two-year or four-year units, there will be more attention paid to the length of time a student requires—and desires—to immerse himself in the specialty that interests him.

And even with graduate or professional study, education is not likely to end for your children. Administrators in the field of adult education—or, more accurately, "continuing education"—expect that within a decade the number of students under their wing will exceed the number of undergraduates in American colleges and universities.

"Continuing education," says Paul A. McGhee, dean of New York University's Division of General Education (where annually some 17,000 persons enroll in around 1,200 non-credit courses) "is primarily the education of the already educated." The more education you have, the more you are likely to want. Since more and more people will go to college, it follows that more and more people will seek knowledge throughout their lives.

We are, say adult-education leaders, departing from the old notion that one works to live. In this day of automation and urbanization, a new concept is emerging: "time," not "work," is the paramount factor in people's lives. Leisure takes on a new meaning: along with golf, boating,
and partying, it now includes study. And he who forsakes gardening for studying is less and less likely to be regarded as the neighborhood oddball.

Certain to vanish are the last vestiges of the stigma that has long attached to "night school." Although the concept of night school as a place for educating only the illiterate has changed, many who have studied at night—either for credit or for fun and intellectual stimulation—have felt out of step, somehow. But such views are obsolescent and soon will be obsolete.

Thus far, American colleges and universities—with notable exceptions—have not led the way in providing continuing education for their alumni. Most alumni have been forced to rely on local boards of education and other civic and social groups to provide lectures, classes, discussion groups. These have been inadequate, and institutions of higher education can be expected to assume unprecedented roles in the continuing-education field.

Alumni and alumnae are certain to demand that they take such leadership. Wrote Clarence B. Randall in The New York Times Magazine: "At institution after institution there has come into being an organized and articulate group of devoted graduates who earnestly believe . . . that the college still has much to offer them."

When colleges and universities respond on a large scale to the growing demand for continuing education, the variety of courses is likely to be enormous. Already, in institutions where continuing education is an accepted role, the range is from space technology to existentialism to funeral direction. (When the University of California offered non-credit courses in the first-named subject to engineers and physicists, the combined enrollment reached 4,643.) "From the world of astronauts, to the highest of ivory towers, to six feet under," is how one wag has described the phenomenon.

**Some Other Likely Features of Your Children, after they are graduated from tomorrow's colleges:**

- They'll have considerably more political sophistication than did the average person who marched up to get a diploma in their parents' day. Political parties now have active student groups on many campuses and publish material beamed specifically at undergraduates. Student-government organizations are developing sophisticated procedures. Nonpartisan as well as partisan groups, operating on a national scale, are fanning student interest in current political affairs.
- They'll have an international orientation that many of their parents lacked when they left the campuses. The presence of more foreign students in their classes, the emphasis on courses dealing with global affairs, the front pages of their daily newspapers will all contribute to this change. They will find their international outlook useful: a recent government report predicts that "25 years from now, one college graduate in four will find at least part of his career abroad in such places as Rio de Janeiro, Dakar, Beirut, Leopoldville, Sydney, Melbourne, or Toronto."
- They'll have an awareness of unanswered questions, to an extent that their parents probably did not have. Principles that once were regarded (and taught) as incontrovertible fact are now regarded (and taught) as subject to constant alteration, thanks to the frequent toppling of long-held ideas in today's explosive sciences and technologies. Says one observer: "My student generation, if it looked at the world, didn't know it was 'loaded'. Today's student has no such ignorance."
- They'll possess a broad-based liberal education, but in their jobs many of them are likely to specialize more narrowly than did their elders. "It is a rare bird today who knows all about contemporary physics and all about modern mathematics," said one of the world's most distinguished scientists not long ago, "and if he exists, I haven't found him. Because of the rapid growth of science it has become impossible for one man to master any large part of it; therefore, we have the necessity of specialization."
- Your daughters are likely to be impatient with the prospect of devoting their lives solely to unskilled labor as housewives. Not only will more of tomorrow's women graduates embark upon careers when they receive their diplomas, but more of them will keep up their contacts with vocational interests even during their period of child-rearing. And even before the children are grown, more of them will return to the working force, either as paid employees or as highly skilled volunteers.

Depending upon their own outlook, parents of tomorrow's graduates will find some of the prospects good, some of them deplorable. In essence, however, the likely trends of tomorrow are only continuations of trends that are clearly established today, and moving inexorably.
Who will pay—and how?

Will you be able to afford a college education for your children? The tuition? The travel expense? The room rent? The board?

In addition: Will you be able to pay considerably more than is written on the price-tags for these items?

The stark truth is that you—or somebody—must pay, if your children are to go to college and get an education as good as the education you received.

Here is where colleges and universities get their money:

From taxes paid to governments at all levels: city, state, and federal. Governments now appropriate an estimated $2.9 billion in support of higher education every year. By 1970 government support will have grown to roughly $4 billion.

From private gifts and grants. These now provide nearly $1 billion annually. By 1970 they must provide about $2.019 billion. Here is where this money is likely to come from:

- **Alumni** $505,000,000 (25%)
- **Non-alumni individuals** $505,000,000 (25%)
- **Business corporations** $505,000,000 (25%)
- **Foundations** $262,000,000 (13%)
- **Religious denominations** $242,000,000 (12%)
- **Total voluntary support, 1970** $2,019,000,000

From endowment earnings. These now provide around $210 million a year. By 1970 endowment will produce around $333 million a year.

From tuition and fees. These now provide around $1.2 billion (about 21 per cent of college and university funds). By 1970 they must produce about $2.1 billion (about 23.5 per cent of all funds).

From other sources. Miscellaneous income now provides around $410 million annually. By 1970 the figure is expected to be around $585 million.

These estimates, made by the independent Council for Financial Aid to Education*, are based on the “best available” estimates of the expected growth in enrollment in America’s colleges and universities: from slightly less than 4 million this year to about 6.4 million in the academic year 1969-70. The total income that the colleges and universities will require in 1970 to handle this enrollment will be on the order of $9 billion—compared with the $5.6 billion that they received and spent in 1959-60.

Who pays?

Virtually every source of funds, of course—however it is labeled—boils down to you. Some of the money, you pay directly: tuition, fees, gifts to the colleges and universities that you support. Other funds pass, in a sense, through channels—your church, the several levels of government to which you pay taxes, the business corporations with which you deal or in which you own stock. But, in the last analysis, individual persons are the source of them all.

Hence, if you wished to reduce your support of higher education, you could do so. Conversely (as is presumably the case with most enlightened parents and with most college alumni and alumnae), if you wished to increase it, you could do that, also—with your vote and your checkbook. As is clearly evident in the figures above, it is essential that you substantially increase both your direct and your indirect support of higher education between now and 1970, if tomorrow’s colleges and universities are to give your children the education that you would wish for them.

The money you’ll need

Since it requires long-range planning and long-range voluntary saving, for most families the most difficult part of financing their children’s education is paying the direct costs: tuition, fees, room, board, travel expenses.

These costs vary widely from institution to institution. At government-subsidized colleges and universities, for
for many families, a scramble—a piecing-together of many sources of funds.

Is such scrambling necessary? The question can be answered only on a family-by-family basis. But these generalizations do seem valid:

- Many parents think they are putting aside enough money to pay most of the costs of sending their children to college. But most parents seriously underestimate what these costs will be. The only solution: Keep posted, by checking college costs periodically. What was true of college costs yesterday (and even of the figures in this report, as nearly current as they are) is not necessarily true of college costs today. It will be even less true of college costs tomorrow.

- If they knew what college costs really were, and what they are likely to be in the years when their children are likely to enroll, many parents could save enough money. They would start saving earlier and more persistently. They would gear their family budgets to the need. They would revise their savings programs from time to time, as they obtained new information about cost changes.

- Many parents count on scholarships to pay their children’s way. For upper-middle-income families, this reliance can be disastrous. By far the greatest number of scholarships are now awarded on the basis of financial need, largely determined by level of family income. (Colleges and other scholarship sources are seriously concerned about the fact, indicated by several studies, that at least 100,000 of the country’s high-school graduates each year are unable to attend college, primarily for financial reasons.) Upper-middle-income families are among those most seriously affected by this sudden realization that they have failed to save enough for their children’s education.

- Loan programs make sense. Since going to college sometimes costs as much as buying a house (which most families finance through long-term borrowing), long-term...
repayment of college costs, by students or their parents, strikes many people as highly logical.

Loans can be obtained from government and from private bankers. Just last spring, the most ambitious private loan program yet developed was put into operation: United Student Aid Funds, Inc., is the backer, with headquarters at 420 Lexington Avenue, New York 17, N.Y. It is raising sufficient capital to underwrite a reserve fund to endorse $500 million worth of long-term, low-interest bank loans to students. Affiliated state committees, established by citizen groups, will act as the direct contact agencies for students.

In the 1957-58 academic year, loans for educational purposes totaled only $115 million. Last year they totaled an estimated $430 million. By comparison, scholarships from all sources last year amounted to only $160 million.

IS THE COST TOO HIGH?

HIGH AS THEY SEEM, tuition rates are bargains, in this sense: They do not begin to pay the cost of providing a college education.

On the national average, colleges and universities must receive between three and four additional dollars for every one dollar that they collect from students, in order to provide their services. At public institutions, the ratio of non-tuition money to tuition money is greater than the average: the states typically spend more than $700 for every student enrolled.

Even the gross cost of higher education is low, when put in perspective. In terms of America’s total production of goods and services, the proportion of the gross national product spent for higher education is only 1.3 per cent, according to government statistics.

To put salaries and physical plant on a sound footing, colleges must spend more money, in relation to the gross national product, than they have been spending in the past. Before they can spend it, they must get it. From what sources?

Using the current and the 1970 figures that were cited earlier, tuition will probably have to carry, on the average, about 2 per cent more of the share of total educational costs than it now carries. Governmental support, although increasing by about a billion dollars, will actually carry about 7 per cent less of the total cost than it now does. Endowment income’s share will remain about the same as at present. Revenues in the category of “other sources” can be expected to decline by about .8 per cent, in terms of their share of the total load. Private gifts and grants—from alumni, non-alumni individuals, businesses and unions, philanthropic foundations, and religious denominations—must carry about 6 per cent more of the total cost in 1970, if higher education is not to founder.

Alumnae and alumni, to whom colleges and universities must look for an estimated 25 per cent ($505 million) of such gifts: please note.

CAN COLLEGES BE MORE EFFICIENT?

INDUSTRIAL COST ACCOUNTANTS—and, not infrequently, other business men—sometimes tear their hair over the “inefficiencies” they see in higher education. Physical facilities—classrooms, for example—are in use for only part of the 24-hour day, and sometimes they stand idle for three months in summertime. Teachers’ “work”—i.e., actually stand in the front of their classes—for only a fraction of industry’s 40-hour week. (The hours devoted to preparation and research, without which a teacher would soon become a purveyor of dangerously outdated misinformation, don’t show on formal teaching schedules and are thus sometimes overlooked by persons making a judgment in terms of business efficiency.) Some courses are given for only a handful of students. (What a waste of space and personnel, some cost analysts say.)

A few of these “inefficiencies” are capable of being curbed, at least partially. The use of physical facilities is being increased at some institutions through the provision of night lectures and lab courses. Summer schools and year-round schedules are raising the rate of plant utilization. But not all schools are so situated that they can avail themselves of even these economies.

The president of the Rochester (N.Y.) Chamber of Commerce observed not long ago: “The heart of the matter is simply this: To a great extent, the very thing which is often referred to as the ‘inefficient’ or ‘unbusinesslike’ phase of a liberal arts college’s operation is really but an accurate reflection of its true essential nature . . . [American business and industry] have to understand that much of liberal education which is urgently worth saving cannot be justified on a dollars-and-cents basis.”

In short, although educators have as much of an obligation as anyone else to use money wisely, you just can’t run a college like a railroad. Your children would be cheated, if anybody tried.
In sum:

When your children go to college, what will college be like? Their college will, in short, be ready for them. Its teaching staff will be competent and complete. Its courses will be good and, as you would wish them to be, demanding of the best talents that your children possess. Its physical facilities will surpass those you knew in your college years. The opportunities it will offer your children will be limitless.

If.

That is the important word.

Between now and 1970 (a date that the editors arbitrarily selected for most of their projections, although the date for your children may come sooner or it may come later), much must be done to build the strength of America's colleges and universities. For, between now and 1970, they will be carrying an increasingly heavy load in behalf of the nation.

They will need more money—considerably more than is now available to them—and they will need to obtain much of it from you.

They will need, as always, the understanding by thoughtful portions of the citizenry (particularly their own alumni and alumnae) of the subtleties, the sensitiveness, the fine balances of freedom and responsibility without which the mechanism of higher education cannot function.

They will need, if they are to be of highest service to your children, the best aid which you are capable of giving as a parent: the preparation of your children to value things of the mind, to know the joy of meeting and overcoming obstacles, and to develop their own personal independence.

Your children are members of the most promising American generation. (Every new generation, properly, is so regarded.) To help them realize their promise is a job to which the colleges and universities are dedicated. It is their supreme function. It is the job to which you, as parent, are also dedicated. It is your supreme function.

With your efforts and the efforts of the college of tomorrow, your children's future can be brilliant. If.
A distinguished succession of Canadian government officials, political leaders, university administrators and faculty members, and newspaper editors has been crossing the border this spring, bound for the University's River Campus. The visitors have been participants in a new facet of the expanding Canadian Studies program, a weekly graduate seminar on current Canadian affairs. The series includes seminars on Canadian natural resources, economy, and politics, in addition to an exploration of Canadian-American relations.

Recent new support has come to the Canadian Studies program in the form of a fellowship grant of $18,000 from the International Nickel Company, Inc. It will be used for research on topics of joint interest to Canada and the United States.

Antioch College, an early proponent of the educability of women (its first graduating class in 1857 included three members of the gentle sex), has, a century later, decided to carry the banner of academic equality for women one step further, and for the first time has invited a woman to be its Commencement speaker this June. Selected for the honor is Dr. Vera M. Dean, director of the non-western civilizations program at the University. Dr. Dean was singled out for another honor recently when she was named honorary consultant and adviser to the Indo-American Cultural Society of Madura, India. The society's aim is to promote cultural ties between India and the United States in art, literature and science.

The durable and distinguished Dr. John R. Slater, emeritus professor of English, observed his 90th birthday on March 14 at a reception given him by the department of English which he had guided as its chairman for 34 years. Dr. Slater in the 20 years since his retirement has remained an important figure in the University and the Rochester community. Although his physical strength, diminished somewhat in recent years, prevents him from getting about as much as in the past, his mind remains undimmed. His thoughtful essays on current books appear regularly in the Rochester Times-Union, and his keenly attentive figure is still prominent at all major University gatherings. In "A Gentleman in Overalls," a simple and beautiful tribute to a university janitor, Dr. Slater once wrote, "It has been an education to me to watch Mr. Craigie growing old gracefully." It has been an education to all who have been touched by his influence to watch Dr. Slater doing the same thing.

Dr. Arnold W. Ravin, dean of the College of Arts and Science and associate professor of biology, has been promoted to full professor. The promotion will take effect in September. A specialist in bacterial genetics, he spent the 1960-61 academic year in research in Brussels and Paris as a Guggenheim Fellow.

Paved with good intentions—which, we might add, have been realized—the road to Hull has been traveled regularly in the last ten years by a series of scholars from the University of Rochester and the University of Hull, England, under an exchange professorship between the two institutions.

Latest to be selected as an exchange professor is Norman B. Chapman, head of Hull’s department of chemistry, who will be R. T. French Professor of Chemistry at Rochester during the 1962-63 academic year. Chapman, known for his contributions in physical organic chemistry, is also a specialist in certain pharmacological researches, particularly in the influence of certain types of drugs in animal organisms.

The exchange was established through a grant from the R. T. French Company of Rochester and its English associate, Reckitt and Colman, Ltd. Visits from Rochester to Hull and from Hull to Rochester occur in alternate years. At Hull this year is Thomas Canning, assistant professor of composition at the Eastman School of Music, accompanied by his wife, Ruby Morgan Canning, ’43E, assistant director of alumni relations.

Missing from the campus next fall will be Roman L. (otherwise known as Speed) Speegle, guitar-strumming veteran of the physical education staff. Speegle will take a year's leave of absence after three decades as varsity swimming coach and 35 years of teaching physical education classes. He and his wife are building a home at Laguna Beach, Florida.
The head of the Air Force ROTC unit, Richard V. Collins, has been promoted to Lieutenant Colonel in the Air Force. A meteorologist, Colonel Collins has been at Rochester for the last year.

**COLLEGE OF EDUCATION**

A unique program aimed at improving teacher education and secondary school teaching is under way at four upstate New York universities. Participating in the inter-university program are the University of Rochester, the University of Buffalo, and Cornell and Syracuse universities. The project is supported by a five-year grant from the Ford Foundation.

As one phase of the program, the College of Education next fall will begin two new experimental projects to prepare high school social science teachers. One will begin in the college senior year, the second at the graduate level. Included will be a period of internship in five outstanding high schools selected as teaching centers for the inter-university project.

The University played host last month at the first educational conference sponsored by the inter-university program. Participants included approximately 200 high school teachers, administrators and specialists, and faculty members from the four universities. Keynote speaker was Lester W. Nelson of the Ford Foundation's education division.

**COLLEGE OF ENGINEERING**

Existing only in theory three years ago, and a laboratory curiosity a mere 18 months ago, the optical maser is today considered the most exciting development in the field of optics. Support for a research program in the optical maser has been given the Institute of Optics through a $180,000 grant from the U.S. Department of Defense. Actively engaged in the project are Dr. Robert E. Hopkins, director of the Institute, Dr. Carroll Alley, assistant professor, and Dr. Gordon G. Milne, associate professor.

Maser (rhymes loosely with “amaze her”) is an acronym for “microwave amplification by the stimulated emission of radiation.” It has opened a market for a variety of new devices and systems for military space and civil uses. Optical physicists and engineers are interested in the optical maser because it operates in or near the visible region of the spectrum. The powerful, narrow-field beam can be used for long-range communication either in space or through the atmosphere; such a communication link would be difficult to intercept or jam. The maser can also be used as a “super flashbulb” in high-speed photography.

For the first time in optics, it is possible to build a really good point source of light; an instrument now under construction at the Institute should permit an image one-half micron in diameter with intensity adequate for rapid interferometric and star testing. This may well revolutionize these classic methods of system evaluation.

Three ruby masers are now operating in the Institute of Optics, and plans for an infra-red gas maser are progressing. The program includes fundamental studies of spectral characteristics, power, coherence and spatial distribution of output of the ruby maser.

**COLLEGE OF BUSINESS ADMINISTRATION**

Motorists, particularly those who are driving around with a fuel gauge registering a perilous “E,” are well aware of the number of gasoline stations flaunting signs saying “closed” or “under new management.” To find out why there is so much turnover among gas station dealers, the Gulf Oil Company has made a $2500 grant to Dr. George Schwartz, assistant professor, to conduct a two-month study of the problem this summer. Dr. Schwartz will base his study on interviews with dealers who have given up, and will make recommendations on the ways in which the turnover can be cut down.

A Sloan post-doctoral fellowship in the school of Industrial Management, Massachusetts Institute of Technology, has been awarded Dr. Bertrand N. Horwitz, assistant professor of business administration and economics. The fellowship will run for one year, beginning in September.

**Eastman School of Music**

The gap between the contemporary composer and his audience is widening, noted Dr. Wayne Barlow in a recent issue of *Music Journal*, and the future of music constructed mechanically or “put together by accident” is rife with sour notes. Traditional values of melody, harmony, and rhythm have been replaced by a complex chain reaction of frenzied activity to which the lay listener with non-esoteric tastes turns a deaf and unsym-
pathetic ear. Such atonal confusion, writes Dr. Barlow, is created for a limited audience of other composers who like to create similar confusion, and for the sensation-seekers who “hope to be in on a scandale at a performance of avant-garde music.” However, Dr. Barlow concludes that there is hope for modern music, which might be nurtured by government subsidy of the performing arts.

The Eastman School of Music summer prospectus for 1962 includes a new institute for music executives. The two-week program, open to administrators and teachers, and graduate students at the doctoral level, will explore the various problems posed by the operation of an educational program in the field of music. Dr. Earl Moore, dean emeritus of the University of Michigan School of Music, is coordinator of the institute.

Also on the summertime agenda is an expanded program in composition. The resident faculty includes Dr. Wayne Barlow and Bernard Rogers, both regular members of the composition department.

The distinguished saxophonist Sigurd Rascher will direct the two-week-long saxophone institute which returns for its third year in more extensive form, and a harp workshop will make its debut in July under the tutelage of Eileen Malone, Eastman School faculty member.

Dr. Lyndol Mitchell, assistant professor of theory, has composed a work for male voices entitled “St. Mark’s Easter Gospel.” The work, commissioned by the Men’s Glee Club, is being featured on their spring tour. Scheduled for performance this summer is Dr. Mitchell’s new arrangement of “When Johnny Comes Marching Home.”

In March, Dr. Frederick Fennell conducted the Minneapolis Symphony Orchestra and a chorus of male voices in a Civil War Centennial presentation of the composer’s version of “Battle Hymn of the Republic” and “The Singing Sixties,” a collection of period songs.

The Eastman Wind Ensemble, directed by Dr. Frederick Fennell, has just released an album of 16th-century sacred music, “The Gabrieli’s of Venice,” for Mercury Records. First in a new series produced outside the Eastman Theater, the recording contains excerpts from Giovanni Gabrieli’s Sacrae Sinfoniae written for brass instruments.

Dr. Fennell’s quest of the authentic, which led him to record Civil War marches on the battlefields of Gettysburg, took the Ensemble to Christ Episcopal Church in Rochester, where high vaulting and hard stone surfaces registered a 16th-century brand of stereophony in contemporary timbre. Taking his cue from Gabrieli techniques, Dr. Fennell placed the musicians in various locations throughout the church where they stood, backs against the walls, throughout the performance.

MEDICAL CENTER

In the 32 years since it established an experimental dental training program, the department of dentistry and dental research has not taught a single dentist how to hold a drill, extract a tooth, or even how to murmur compassionately, “Rinse, please.” What it has done is to train outstanding young graduate dentists in the basic biological sciences to prepare them for careers in teaching and research.

Confidence in the program was heavily underscored last month by a grant approximating $1,000,000 from the U. S. Public Health Service for its expansion. The grant, covering a period of five years, is the largest committed support ever given by the National Institute of Dental Research, according to Dr. Philip Ross, assistant chief of the Institute’s training grant program.

The total of eight fellows currently in the training program will be increased to 14 and an additional faculty member will be appointed. Since its beginning, the program has trained 72 fellows, who have gone on to become dental school deans and faculty members and dental researchers. Only nine of them did not remain in academic dentistry.

In further support of Rochester training programs, the U. S. P. H. S. has awarded another grant to the Medical Center: $289,584 for a new project to train radiotherapists to help meet present and future needs for cancer therapy in this country.

The program is designed to attract men who will be able to direct radiation therapy facilities in other university centers, and to help bring the best radiation therapy possible to patients with curable cancer. It also will develop research interests and potential in radiobiologic problems as they apply to building a sound base for radiotherapy.

One man has already acted as “test pilot” of the program, the first in the country to undergo the full training in radiation therapy. He is Dr. Samuel S. Kurohara, who will receive his master’s degree in radiobiology in June. The U. S. P. H. S. has awarded only one other such grant to a university hospital, to Stanford University.

Head nurses from hospitals along the Eastern seaboard gathered at the Medical Center early in March to participate in a workshop on “Management in Nursing,” directed by Miss Esther M. Thompson, director of graduate studies for the Department of Nursing. Topics covered ranged from staffing, communications, and record keeping to accident prevention and continuity of patient care.

27
+ 1902 60th Class Reunion, June 8, 9, 10, 1962
+ 1907 35th Class Reunion, June 8, 9, 10, 1962
+ 1912 40th Class Reunion, June 8, 9, 10, 1962
+ 1917
+ 1918

Dorothy Cortess, librarian at the Laurel (Del.) Public Library, has been cited as outstanding librarian by Laurel citizens.

+ 1921
Dr. William J. Youden, a mathematical statistician at the National Bureau of Standards, has been awarded an Exceptional Service Gold Medal by the Department of Commerce.

+ 1922
PECK HARRIS has taken a position statistician at the National Bureau of Standards, has been awarded an Exceptional Service Gold Medal by the Department of Commerce.

+ 1925
Grace L. Murray, '32G, is regional chairman for the Future Scientists of America science awards program.

+ 1926
AUSTIN C. TAIT, former director of industrial relations at General Dynamics/Electronics, is the new adult education director of the Rochester Business Institute.

+ 1927
GRAHAM E. SHAW, president of New York State Education Association, has been appointed executive director of the New York State Association of School Supervisors.

+ 1928
CLIFFORD T. SMITH has left for Bombay, India, where he will continue work with Ebasco Services, Inc., designing and building power plants.

+ 1929
ALICE PECK HARRIS has taken a position with the University in the Admission Office. She is secretary to the director of admission and scholarship.

+ 1930
ANDREW F. HAYNES is the new superintendent of schools, Welleville, N. Y.

+ 1932
30th Class Reunion, June 8, 9, 10, 1962

GEORGE DYNELZ, for 25 years a minister in the Baptist Church, has started a new career as cashier in the treasury department at Automatic Electric Company of Northlake, Ill.

+ 1933
JAY BLAND has been appointed consulting welder engineer at the Knolls Atomic Power Laboratory, General Electric Company.

+ 1934
MAURICE F. KING has been appointed special representative for Europe for the International Trade Commission of the U.S. Department of Commerce. He will head the Paris office.

+ 1935
CHARLES N. GRIFFITHS was elected president of Cherry-Burrell Corporation in Cedar Rapids, Iowa.

+ 1936
JOHN H. BRINKER, Jh., is executive vice president of Cherry-Burrell Corporation in Cedar Rapids, Iowa.

DEAN FREDERICK and his wife, Esther, announce the birth of a son, William Arthur, on February 9, in Elberon, N. J.

CHARLES N. GRIFFITHS was elected president of the National Roofing Contractors Association.

CHARLES F. WICKS, Jr., is now an associate with the Alling Personnel Service, Rochester.

BACK IN THE PERIOD that the youth of today refers to as "pre-history" (i.e., when their elders were young), a couple of separate but equal traditions were flourishing coordinately on the Prince Street and River campuses—the annual Kaleidoscope and Quilting Club productions. Products of the students' own inventive imaginations from the opening intramural joke to the colossal chorus at the finale, these musical comedies consumed the energies of a good half of the student body every spring.

Nearly as old as the College for Women, Kaleidoscope dates back to 1910, when various campus organizations presented a series of skits for the benefit of the campus YWCA. In those innocent days, the thought that one of her young ladies might wear any garment that "had been or could be worn by a man" brought pallor to the cheek of the Dean and a certain amount of ingenuity was called for in the portrayal of male characters. Pirates were very popular; they looked quite authentic in gym bloomers. By the early 1930's K-Scope had adopted the musical comedy form which it retained during the next 30 years. Perhaps the most far-famed Kaleidoscope of all was 1939's On the Brink, a satire on the international situation, brashly publicized by a telegram to Adolf Hitler.

Begun in 1939, Quilting Club has, as its name implies, an equally colorful history. Nearly doomed as a tradition by its second production (which was, or was not, hilarious, depending on the broad-mindedness of its audience toward raw humor), Q-Club recovered with an unqualified success the following year. The club was forced to disband during World War II, when it kept losing its "leading ladies" to the armed services, but returned in 1945 with a show that can at best be called "improptu"—it was put together in a span of three hours. By the following year, Q-Club was back in business again, highlighted by the counterfeit chorus girls of incredible proportions that have characterized it ever since.

Although there was talk of combining the two shows as
1937
25th Class Reunion, June 8, 9, 10, 1962

1938
Dr. Myrtle C. Dineen has been appointed assistant director of the Kent State University Health Center.

1939
Neil Burgess has been named manager of the western region for General Electric's newly formed Defense Programs Operations.
Dr. John V. Forbes, '42G, professor of history and political science at Blackburn College, is the author of The Quaker Star Under Seven Flags, 1917-1927. It will be published by the Pennsylvania University Press and the Oxford University Press.

1940
Katharine Mac Lellan Reichel (G) will retire in June after 17 years in the Irondequoit (N.Y.) school system. She is planning a year's trip to Europe.

1942
20th Class Reunion, June 8, 9, 10, 1962
Dr. Ralph L. McCready (G) has been appointed manager of the Motorola Inc. Systems Research Laboratory in Riverside, Calif.

1944
Dr. Robert J. Hor, '31G, has been appointed manager of experimental engineering in the technical operation of the Knolls Atomic Power Laboratory.

1945
Rae A. Clark has become a partner in the Rochester law firm, Liebschutz, Sutton & De Leeuw.

1947
15th Class Reunion, June 8, 9, 10, 1962

1948
Robert L. Fay has been named chief of exploration operations for Shell Oil Company's Denver exploration and production area.
Daniel A. Isaacson, former city corporation counsel in Jamestown, N. Y., has formed a law partnership under the name Isaacson & Look.

1949

1950
Robert Brandow will assume the newly-created position of assistant administrator and business manager of Thompson Hospital in Canandaigua, N. Y.
John J. Bugay, Jr., has been re-elected president and director of the Presidio Savings and Loan Association of Santa Barbara, Calif.

Three novels by Fred N. Kimmel will be published this spring. The Robbery At Three Wells has been published by Macmillan Co.; The Silver Stallion and The Sierra Trail will be published by Avalon.

W. Brantly Miller, Jr., '50U, was elected president of the National Luggage Dealers Association. He is president of Libby's Inc. in Rochester.

1951
Donald E. Stocking has accepted the position of director of marketing for the Data Recorders Division, Consolidated Electro-dynamics Corp., Pasadena, Calif.
Dr. Paul Swartz (G) associate professor of psychology at Wichita University, is teaching an 18 week, non-credit course in psychology over Channel 3, KARD-TV, in Wichita.

1952
10th Class Reunion, June 8, 9, 10, 1962
Dr. Arnold K. Brown was recently granted an M.S. degree in otorhinology, laryngology and bronchoesophagology, at the 75th annual graduation exercises of Temple University, Philadelphia.
Dr. Norman P. Neurieiter, '57G, was promoted to senior research chemist in Humble Oil & Refining Company's research and development at Baytown, Tex.
A son, Kenneth Charles, was born to Miriam Seligman Ageloff and Dr. Andrew L. Ageloff, '56, on March 4 in Rochester.
Mr. and Mrs. Erwin Cherovsky announce the birth of a daughter, Debra Anne, on December 23, 1961, in New York City. Cherovsky has joined the law firm of Stam & Haft in New York.

long ago as the '40's, they remained staunchly separate right through the epidemic of coeducational activities brought about by the merger of the Men's and Women's Colleges in 1955.

It was not until this spring that the two organizations succumbed to the coeducational fever and joined in a new musical comedy group, The Jesters. Gone were the ex-footed dancing of Quilting Club's Cleopatras and the soprano voices of Kaleidoscope's University professors, but the other traditions remained unchanged. This year's production, The Ten Dollar Bill, featured the spritely songs and spectacular production numbers of the past along with the usual sly jabs and hearty whacks at contemporary life as viewed by the American college student.
Eastman School of Music

+ 1927
35th Class Reunion, June 8, 9, 10, 1962
Edward N. Waters, '28GE, has been awarded a Ford Foundation fellowship to further his study of the life and works of Franz Liszt. He is now assistant chief of the Music Division of the Library of Congress.

+ 1929
Louise Cv Tyler Moore, '48GE, is head of the department of music of the University of Michigan.

+ 1930
Gordon Kinney is on the faculty of the department of music at the University of Kentucky.

+ 1932
30th Class Reunion, June 8, 9, 10, 1962
Julian P. McCreary, '30GE, has been selected to conduct the Phoenix Piano Ensemble for the 10th successive year. He is director of music at the First Presbyterian Church in Phoenix.

+ 1933
Herman Berg is violinst with the Aeolian string trio of DePauw University. The trio is beginning a spring concert tour in Ohio. Dean A. Roeder, '45GE, will direct the Ohio Northern University chorus and choir in their spring concerts. He is professor of music education and chairman of the department of music at the university.

+ 1937
25th Class Reunion, June 8, 9, 10, 1962
Dr. Robert Hargreaves, '41GE, has been selected to appear in the 1962 Who's Who in America. Hargreaves heads the music department at Ball State College, Muncie, Ind.

Robert Ward is a consultant for the 18th annual convention of the Florida Composer's League at the University of Tampa.

+ 1940
Dr. Robert Maivel, '48GE, associate director of the music division at Fredonia's State College, has been selected president of the Eastern Division of the Music Educators National Conference.

+ 1942
20th Class Reunion, June 8, 9, 10, 1962
William Stark, '47GE, concertmaster of the Knoxville Symphony for the past 12 years, will appear as soloist with the symphony in its spring concert.

+ 1945
William Spring, '39GE, organist at Boston University, gave the dedication concert for the new organ at Trinity Methodist Church, Montpelier, Vt. Spring is a candidate for a doctorate in music at Boston University and hopes to resume his duties as associate professor and organist at Tufts College, Frederic, Md., this fall.

+ 1946
J. Robert King (GE) is assistant professor and director of instrumental music at the University of Delaware. In addition, he directs the university's concert band.

15th Class Reunion, June 8, 9, 10, 1962
A composition by Arthur R. Frackenpohl, '45GE, has been recorded by WNYC in New York City. He wrote the composition, "Theme and Variations," while he was a graduate student at Eastman.

Alice Artman Hagenah, '49GE, is conducting a seminar for teachers of music at the Schenectady Conservatory of Music.

Dorus O'Ginn Wailer has completed a composition especially commissioned by the music group of the University Women's Club, Ohio State University. It was presented at the university this spring. "Alleluia: Song for the Living" was scored for mezzo-contralto, baritone and chorus.

+ 1948
Walter R. Jones, '49GE, is director of the Radford College Highlanders, plays first trumpet with the Roanoke Symphony, and has appeared as guest soloist with Roanoke (Va.) area music groups.

Evian Whallon, '48GE, is beginning his sixth year as conductor of the Columbus Symphony Orchestra and a faculty member at Ohio State University.

+ 1949
Ethel McAlpin, '50 GE, will direct the Women's Glee Club of Michigan State University. She is an assistant professor of music at MSU, teaching voice, oratorio and art song classes.

Two compositions by Robert H. Lewis, '51GE, assistant professor of music at Goucher College and a member of the faculty of the Peabody Conservatory, have been performed in Town Hall, New York City.

+ 1950
Donald Johanos, '52GE, has been appointed music director and conductor of the Dallas Symphony Orchestra.

+ 1951

+ 1952
10th Class Reunion, June 8, 9, 10, 1962
Robert Elworthy (GE) is principal horn player with the Minneapolis Symphony Orchestra.

1953
Arnold Berleant, '55GE, received his Ph.D. from the University of Buffalo this winter. He is a lecturer in philosophy at the university.

Richard F. Norem, '58GE, is assistant professor of music at Louisiana State University. He is also a member of the LSU Resident Woodwind Quintet, solo French hornist with the Baton Rouge Civic Symphony Orchestra, and a member of the University Alumni Association's board of directors. He and his wife, Sally Jarvis Norem, are the parents of a son, Richard Frederick II. Mrs. Norem is soprano soloist at St. James Episcopal Church in Baton Rouge and has a sizable private piano class.

Blythe Owen (GE), voted a life fellow of the International Institute of Arts and Letters, Switzerland, has accepted a position as chairman of piano and composition at Walla Walla (Wash.) College.

+ 1954
Arno Drucker, '55GE, and Jon Engberg, '56GE, are beginning their third season as members of the faculty trio-in-residence at West Virginia University. Their extensive touring has included a series of concerts in West Germany under the sponsorship of the U.S. Information Agency.

+ 1956
David Burge (GE) has been elected to Who's Who in America. He is an associate professor of music at Whitman College, Walla Walla, Wash.

Don Mills (GE) is musical director of the Charleston (S.C.) Symphony Orchestra. He is founder of the Charleston Academy of Music. His article, "Music is Your Profession," appeared in the February issue of Instrumentalist.

1957
5th Class Reunion, June 8, 9, 10, 1962
Three musical compositions by Sydney P. Hookinson, '56GE, assistant professor of music at the University of Virginia, all entitled "Drawings," will be published shortly by Music Percussion in New York.

+ 1959
Jane Ginter has been awarded an Indiana University Graduate School Fellowship. She will work for her doctorate in musicology.

+ 1960
Ben Gayle Taylor was married to John Malloy, III, this winter in Columbus, Ohio.

+ 1961
School of Medicine & Dentistry

+ 1927
   DR. VINCENT DU VINEAUD (GM), of Cornell University Medical College and Nobel Prize winner in chemistry, was guest speaker at the Detroit Physiological Society.

+ 1941
   DR. CLAIRE VESPERMAN has been selected to present the George Richards Minot lecture at the American Medical Association's Annual Meeting in Chicago, June 24-28. He is currently serving as president of the American Society for Clinical Investigation and as consultant to the World Health Organization in the study of anemias among the underprivileged.

+ 1948
   DR. THOMAS W. MUR, associate professor of medicine at Western Reserve University Medical School, has been awarded a five-year Markle Scholarship of $30,000 from the Markle Foundation.

+ 1949
   DR. ALFRED S. KETCHAM has been appointed chief of the surgery branch of the National Cancer Institute, Bethesda, Md.

+ 1950
   DR. THOMAS MUIR is serving as associate professor in the department of preventive medicine at the State University Upstate Medical Center.

+ 1953
   DR. GLEN B. HAYDON will head the new division of experimental pathology which has been established at the Palo Alto division of experimental pathology which professor in the department of preventive medical research foundation in California.

+ 1955
   DR. RICHARD J. GLAVIN is the director of the newly created Division of Psychiatry, North Shore Hospital, Manhasset, N. Y. He will begin his duties in the summer. Currently Dr. Glavin is assistant to the director of psychiatry at St. Luke's Hospital, New York City, and an instructor in psychiatry at Columbia University.

   DR. WILLIAM A. LITTLE, assistant professor, University of Florida College of Medicine at Gainesville, has been named Markle Scholar in Medical Science by the Markle Foundation.

+ 1957
   DR. DAVID MAUDE has been appointed research fellow in bio-physics at Harvard Medical School.

   DR. WILLIAM D. MAYER, assistant professor and assistant dean, University of Missouri School of Medicine, Columbia, has been named a Markle Scholar in Medical Science by the Markle Foundation.

+ 1960
   DR. WILLIAM E. POWELL, '36, '60M, is currently serving with the Army Medical Corps at the Brooke Medical Center, Fort Sam Houston, Tex.

   DR. NORA D'EFERRANTE (GM) is joining the faculty of the University of Cincinnati College of Medicine as assistant professor of physiology.

   DR. ALAN F. DEAN married Miss Barbara Jeanne Smith this winter in Ann Arbor, Mich.

Nursing Division

+ 1932
   30th Class Reunion, June 9, 10, 1962
   CLARA LEEPER, '32, '32N, has left her position as evening supervisor of nurses at Strong Memorial Hospital to take up a missionary career in Liberia. She was commissioned a missionary at St. Paul's Lutheran Church in Pittsford, N. Y. Miss Leeper has completed 30 years on the staff at SMH.

+ 1937
   25th Class Reunion, June 9, 10, 1962
   MIRIAM WELTMAN, '40N, has announced her marriage to Marvin Davis on March 25, in Rochester.

+ 1940
   HELEN L. PFEIFNER, '27, died in Daytona Beach, Fla., on January 29.

+ 1942
   20th Class Reunion, June 9, 10, 1962

+ 1947
   15th Class Reunion, June 9, 10, 1962

+ 1952
   10th Class Reunion, June 9, 10, 1962
   CHARLES and NORMA GIBSON GRIFFITH, '51, '52N, announce the birth of a second daughter, Kathryn, on January 19.

+ 1953
   SALLY ARMSTRONG WELKER, '53N, and Robin L. Welker announce the birth of a son, Peter John, on February 2, in Reilland, Calif.

+ 1955
   SALLY SLAVTON, '54, '55N, was married to Captain Samuel P. Walker, III, U. S. Army Corps of Engineers, on February 20, in Chuyenne, Wyo. Mrs. Walker was formerly an instructor in nursing at UR, and currently is an assistant professor in the College of Nursing at the University of Wyoming.

+ 1956
   GLENN and JEANNINE TODE HAULE, '56N, announce the birth of a son, John Charles, on March 2, in South Miami, Fla.

+ 1957
   5th Class Reunion, June 9, 10, 1962
   VERA CORRIS POCHEL, '56, '57N, has moved to Poughkeepsie, N. Y., where her husband is now associated with IBM. She has joined the faculty of the Vassar Brothers Hospital School of Nursing.

+ 1958

+ 1959
   SUSAN Wiederbrand Coda, '58, '59N, and Robert L. Coda, '58M, announce the birth of their first child, a daughter, Susan Caroline, on November 7, 1961, in Salt Lake City.

+ 1961
   ANN E. HALL, '61N, is now attending Maryland University in Baltimore.

IN MEMORIAM

ALEXANDER M. STEWART, '00, one of Western New York's most famous historians and Baptist minister, died on February 25, at the age of 84.

CARO C. HORN, '06, died in St. Petersburg, Fla., on December 25, 1961. He had been a vice consul at Copenhagen, Denmark, and had spent the greater part of his service with the government in the U.S. Immigration and Naturalization Service.

INOA MARSHALL, '06, former teacher in the Rochester school system, died in Paris, Ill., on February 22.

JOHN A. BEARD, '14, for 41 years a teacher in the Rochester schools, died in Rochester on February 24.

BERTHA CUSCHEK, '14, retired librarian at the Niagara Falls Public Library, died on January 25.

JOHN D. ANDERSON, '16, teacher and administrator in the Pennsylvania school system, died in Harrisburg, Pa., on March 13.

CHARLES R. MOWINS, '16, operator of his own General Insurance Company in Rochester, died on February 26, in Rochester.

HARRY R. BRIGHTMAN, '21, died on February 4. He was owner of Brightman Brothers, a wholesale fur manufacturing business in Rochester.

HELEN L. PFITZNER, '27, died in Daytona Beach, Fla., on January 29.

CLAIR HUNTER PRESTON, '27, died on January 11, in Tucson, Ariz.

DONALD C. BARKER, '28, for 19 years professor of English at Manlius Military Academy, died on February 26 in Syracuse, N. Y.

FRANK E. MUNSON, '29, retired science teacher in the Newark (N.Y.) public schools, died on February 14.

CHARLES W. SVENSON, '30E, program director of the new Greene Valley Television Company, died March 3, in Rochester.

LEOTA DELL'ELY POWERS, '37N, '42, died in Rochester on February 17.

NORMAN W. BLAKE, '48, an associate in the Kodak research laboratories in Rochester, died March 6.

JUSTIN VERSACE, '57U, died on March 26, in Rochester.

NEW ADDRESS?
Let us know, too.

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1961! 1961! Wot's the matter, you some kind of a nut in a big black hat, or somethin'? Turn down your collar and you'll find out that it's spring 1962... and that the plans for this year's bigger and better Reunion-Commencement are free... FREE... FREE! Small note of qualification permitted, please. The plans are free—and so are most events—but some of the more gala doings will cost you a mere pittance. For instance—the dance is a measly 75c per person, and $2.75 will entitle you to seconds at the All-University Buffet (even thirds, if you can manage). If you did not receive the Reunion-Commencement mailer (or worse, if you've misplaced it) write, and we will mail you another copy—FREE.

Sing along or string along—whatever your mood, you'll enjoy open houses at fraternities, Eastman School, Nursing and Medical schools Saturday afternoon. At night, a glee club concert, and dancing until midnight in Todd Union.