THE MEANING OF THE NEW INSTITUTION

I

THE FOUNDATION: ITS SOURCE

It is a common saying in drawing-room and market-place that we are living in a wonderful age. Perhaps no known period of the past towers up to it, unless it be the age of Pericles, or that in which the Roman Empire was consolidated, or that of the Reformation. No features of the age are more striking than the handsome foundations which have been provided by private donation for lengthening the days of man and enlarging the content of his spiritual life. Every child of ten years knows the names of Alfred Nobel and Cecil Rhodes, of Mr. Carnegie and Mr. Rockefeller, of Girard and Peabody, of Johns Hopkins, Leland Stanford, and Cornell: the names of these gentlemen are household words, and in thousands of American homes their bearers have become household gods.

In this charmed circle of immortal philanthropists the name of William Marsh Rice is permanently inscribed this day by the poet of Princeton, the jurist of Texas, and the bishop of Tennessee. Thanks to the inaugural lectures of those twelve prophets of the fundamental sciences, the liberal humanities, the progress of modern learning, Altamira of Madrid, Borel of Paris, Croce of Naples, De Vries of Amsterdam, Jones of Glasgow, Kikuchi of Tokyo, Mackail of Oxford, Ostwald of Leipsic, the lamented Poincaré of Paris, Ramsay of London, Størmer of Christiania, and Volterra of Rome, the good-will of Mr. Rice to open new
springs of inspiration and living fountains of knowledge in an institution of liberal and technical learning becomes known to the world of letters and science and art, to whose advancement he gave of his substance and of his life.

For this fair day we have worked and prayed and waited. In the faith of high adventure, in the joy of high endeavor, in the hope of high achievement, we have asked for strength, and with the strength a vision, and with the vision courage: the courage born of straight and clear thinking, the vision of enduring forms of human service, the strength in resolute and steadfast devotion to definite purpose. And to-day, by virtue of the founder's splendid gift to the people, by virtue of the public spirit of his early advisers, by virtue of the public service of those who defended his last will and testament and thereby protected the people's rights, by virtue of the covenant which his trustees have kept in all good faith and conscience, by virtue of the constant creative work of supervising architects and the arduous labors of constructive engineers, by virtue of the cheer and the criticism and the counsel of friends in the community and throughout the commonwealth, the Rice Institute which was to be, in this its modest beginning, now has come to be—the new foundation has accomplished in its own being the miracle of all living things: it has come to life, and from this day forth takes a place, let us hope of increasing influence and usefulness, among those institutions which have made possible the civilized life of men in communities of culture and restraint—the State, the Church, and the University.

There are men and men and men. There are men of millions and men of millions. William Marsh Rice was a man in a million, an inspired millionaire who caught the prospect of monumental service to Houston, to Texas, the South, and the Nation. With no resources other than soundness of
body and strength of will, from a New England home of English and Welsh forebears, he came to Texas in his youth to make his fortune. By temperate habits of industry and thrift he made a fortune in Texas. He left his fortune in Texas. He gave his fortune—the whole of it—to Texas, for the benefit of the youth of the land in all the years to come; thus writing in the history of Texas the first conspicuous example in this commonwealth of the complete dedication of a large private fortune to the public good. Moreover, resolutely living a simple life, he denied himself even the "durable satisfaction" of seeing his philanthropy's realization in order that he might give more abundantly of life to his fellows and their successors. Shrewd in foresight, strong in purpose, of stout courage and independent spirit, generation after generation will rise to call him blessed—"with honour, honour, honour, honour to him, eternal honour to his name."
II
THE FOUNDATION: ITS SITE

To his trustees, a self-perpetuating board of seven life members, the founder gave great freedom in the interpretation of his programme and corresponding discretion in the execution of its plans. The charter and testament under which these gentlemen discharge the obligations of their trusteeship are documents so liberal and comprehensive as to leave the institution under practically but one restriction, namely, its location must be in Houston, Texas. But therein lies what is perhaps its greatest opportunity. For men who are too busy doing the world's work to find time to talk about it would tell you that there never were more insistent challenges to constructive thinking than are confronting the South at the present time. Opportunity is written over the whole Southwest: opportunity commercial, opportunity political, opportunity educational, but educational opportunity is written larger than all the rest. We have problems to face, serious ones, that have been perplexing the South for a generation: but even to the most superficial observer it is daily becoming more and more apparent that any solution of these peculiar problems of the South calls for solutions of Southern educational problems in terms of educational opportunities for all the people. Furthermore, the agricultural and industrial transformation now in process of development offers manifold additional arguments to Southern men to prepare their sons for the possession of this land of plenty and progress. Though for nearly a generation the ambitious young Southerner may have seen larger possibilities
The Foundation: Its Site

ahead of him farther from home, to-day he finds conditions completely changed. Go South, young man! is the slogan in one section. Stay South, young man! is the answering call of opportunity in the other.

In the South and in the West, of the South and of the West, you find yourselves in an environment whose clear skies make men blandly or keenly observant of their powers, whose mild climate keeps men constantly human and neighborly and friendly in ways of living whose democracy recognizes no inequalities; in an environment which will have its way with us unless we have our way with it; an environment bristling with opportunities for creative and constructive effort. You find yourselves in a State which can know no provincialism, because it has lived under seven flags. You find yourselves in a section of that State which lives under a categorical imperative of progress, for we of the plains are drawn by irresistible lure of the prairie, impelled to advance by beckoning mirage quite as wonderful as mountain prospect. You find yourselves among men who live their lives in the open, under a making sun that does not rise but jumps from the horizon full-orbed in his noonday splendor.

And how you do get into your blood and bone the wine and spirit of this country! Speedily you absorb its patriotism and pride, and as speedily come to feel the fearlessness and freedom, the frankness and the faith, that characterize the life of this Texan empire. For this reason it is that in portraying its virtues modesty is not a sin which doth so easily beset us. Houston—heavenly Houston, as it has been happily named by a distinguished local editor of more than local fame—you will find in some ways a bit too close to New York, perhaps, but here you will also find many a heartening reminder of the memories and traditions of the South, and all the moving inspiration in the promise and adventure
The Meaning of the New Institution of the West. Here, in a cosmopolitan place, in a community shaking itself from the slow step of a country village to the self-conscious stature of a metropolitan town, completing a channel to the deep blue sea, growing a thousand acres of skyscrapers, building schools and factories and churches and homes, you will learn to talk about lumber and cotton and railroads and oil, but you will also find every ear turned ready to listen to you if you really have anything to say about literature or science or art. Of cities there are genera and species and types whose science is still to be written: cities of arms, cities of kings, cities of government, cities of commerce and industry, cities of pleasure and leisure, beautiful cities of art, holy cities of cathedrals and convents, university cities of letters and science. Houston at present may fail of qualifying for admission to certain of these classes, but there is great reason to rejoice in the commercial prosperity of the city and in the growing development of the community; for just as certainly as trade follows the flag, just so certainly does the patron of learning follow in the wake of the empire-builder. For builders of cities, great merchants and captains of industry, by the character of their work and the extent of their interests, are rendered alert, open-minded, hospitable to large ideas, accustomed to and tolerant of the widest divergencies of view. Thus it has come to be that great trading centers have often been conspicuous centers of vigorous intellectual life: Athens, Florence, Venice, and Amsterdam were cities great in commerce; but, inspired by the love of truth and beauty, they stimulated and sustained the finest aspirations of poets, scholars, and artists within their walls. It requires no prophet's eye to reach a similar vision for our own city. I have felt the spirit of greatness brooding over the city. I have heard her step at midnight, I have seen her face at dawn. I have lived under
The spell of the building of the city, and under the spell of
the building of the city I have come to believe in the larger
life ahead of us, in the house not made with hands which we
begin this day to build. However, in the exultation of the
moment in which we witness the dedication of the new uni-
versity, we must not forget that the organization which Wil-
liam Marsh Rice incorporated has already rendered the city
and State of his adoption considerable service. I need hardly
remind you that during recent years the Rice Institute has
contributed in a substantial manner to the upbuilding of
Greater Houston. On a conservative basis—always on a
conservative basis—certain of the foundation's funds have
been invested in various enterprises which have sustained in
no small measure the steady and continuous advance of the
city in industrial and commercial prosperity.

The epoch whose beginning we observe to-day with these
formal exercises marks the period in which even more pow-
erfully that same organization is to support the intellectual
and spiritual welfare of the community; and, finally, to touch
again upon the material side of progress, the very machinery
by which the stone age of the new university is about to be
transformed into its spiritual age will distribute the income
of the foundation through the several channels of Houston's
business, philanthropic, social, and religious life; and thus
we contemplate with some degree of satisfaction the slow
but sure evolution of a threefold influence on the material,
the intellectual, and the spiritual aspects of the life of the
city.
III
THE FOUNDATION: ITS HISTORY

It is now rather more than twenty years since several public-spirited citizens of the community asked Mr. Rice to bear the expense of building a new public high school for the city of Houston. This direct gift to the city's welfare Mr. Rice was unwilling to make, but a few months later, taking into his confidence a half-dozen friends, he made known to them his desire to found a much larger educational enterprise for the permanent benefit of the city and State of his adoption. These gentlemen were organized into a Board of Trustees for the new foundation, which was incorporated in 1891 under a broad charter granting the trustees large freedom in the future organization of a non-political and non-sectarian institution to be dedicated to the advancement of letters, science, and art. As a nucleus for an endowment fund, Mr. Rice at this time made over an interest-bearing note of two hundred thousand dollars to the original Board of Trustees, consisting of himself, the late Messrs. F. A. Rice and A. S. Richardson, and Messrs. James Addison Baker, James Everett McAshan, Emmanuel Raphael, and Cesar Maurice Lombardi. Under the terms of the charter, the board is a self-perpetuating body of seven members elected for life: vacancies since its organization have been filled by the election of Messrs. William Marsh Rice, Jr., Benjamin Botts Rice, and Edgar Odell Lovett.

It was the unalterable will of the founder that the development of the work which he had conceived should progress

1 In succession to the late Mr. Raphael, whose lamented death has occurred since the reading of this address, Mr. John Thaddeus Scott of Houston has been elected to membership on the Board of Trustees of the Institute.
The Foundation: Its History

no further during his lifetime. However, in the remaining days of his life he increased the endowment fund from time to time by transferring to the trustees the titles to certain of his properties, and in the end made the new foundation his residuary legatee. Upon the termination of the long years of litigation which followed Mr. Rice's death in 1900, the Board of Trustees found the Institute in possession of an estate whose present value is conservatively estimated at approximately ten million dollars, divided by the provisions of the founder's will into almost equal parts, available for equipment and endowment respectively. It may be remarked in passing that it is the determined policy of the trustees to build and maintain the institution out of the income, thus preserving intact the principal not only of the endowment fund but also that of the equipment fund. While proceeding to convert the non-productive properties of the estate into income-bearing investments, the trustees called a professor in Princeton University to assist them in developing the founder's far-reaching plans. Before taking up his residence in Houston, the future president visited the leading educational and scientific establishments of the world, returning in the summer of 1909 from a year's journey of study that extended from England to Japan. About this time negotiations were completed by which the Institute secured a campus of three hundred acres situated on the extension of Houston's main thoroughfare, three miles from the center of the city—a tract of ground universally regarded as the most appropriate within the vicinity of the city.

Another early decision of the trustees of the Institute was the determination that the new institution should be housed in noble architecture worthy of the founder's high aims; and upon this idea they entered with no lower ambition than to establish on the campus of the Institute a group of buildings
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conspicuous alike for their beauty and for their utility, which should stand not only as a worthy monument to the founder’s philanthropy, but also as a distinct contribution to the architecture of our country. With this end in view they determined to commit to Messrs. Cram, Goodhue, and Ferguson, of Boston and New York, the task of designing a general architectural plan to embody in the course of future years the realization of the educational programme which had been adopted for the Institute. Such a general plan, the work of Mr. Ralph Adams Cram, L.H.D., exhibiting in itself many attractive elements of the architecture of Italy, France, and Spain, was accepted by the board in the spring of 1910. Immediately thereafter plans and specifications for an administration building were prepared, and in the following July the contract for its construction was awarded; three months later the erection of a mechanical laboratory and power-house was begun, and by the next autumn the construction of two wings of the first residential hall for men was well under way. In the preparation of preliminary plans for these building operations the Institute enjoyed the cooperation of an advisory committee consisting of Professor Ames, director of the physical laboratory of Johns Hopkins University; Professor Conklin, director of the biological laboratory of Princeton University; Professor Richards, chairman of the department of chemistry, Harvard University; and Professor Stratton, director of the National Bureau of Standards. Among the additional buildings for which tentative studies have already been made are special laboratories for instruction and investigation in physics, chemistry, and biology.

Since this address was read the construction of the physics laboratories has been begun from plans prepared by Messrs. Cram and Ferguson under the direction of Mr. Harold Albert Wilson, D.Sc., F.R.S., resident professor of physics in the Institute. By the beginning of the next academic year (1914-15) these laboratories will be ready for occupancy, as will also the third wing of the first residential hall for men.
IV

THE UNIVERSITY: ITS STUDIES AND STANDARDS

That we have been making large plans is already a commonplace of our thinking and talking. In the proposed solutions of some of the problems confronting them the trustees have been moved by several considerations, which may appropriately be recapitulated at this time. In the first place, the financial resources of the institution, however handsome, are limited; for this reason it was determined to build and maintain the Institute out of the income, keeping the principal of all funds intact. In the second place, the new institution is located in a new and rapidly developing country. In the third place, the very problems pressing for resolution in the development of the environment seemed to call for a school of science, pure and applied, of the highest grade, looking, in its educational programme, quite as much to investigation as to instruction.

Accordingly, and in the spirit of the founder's dedication of the Institute, it was proposed that the new institution should enter upon a university programme, beginning at the science end. As regards the letters end of the threefold dedication, it was proposed to characterize the institution as one both of liberal and of technical learning, and to realize the larger characterization as rapidly as circumstances might permit. With respect to the art end, it was proposed to take architecture seriously in the preparation of all of its plans, and to see to it that the physical setting of the Institute be one of great beauty as well as of more immediate utility. This in a nutshell is the programme on which we have
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thought with great deliberation and wrought with even greater care. Its chronology to date consists of one year of preparatory study from England to Japan, one year in the making of preliminary plans, and two years in work of actual construction and organization.

The new institution thus aspires to university standing of the highest grade, and would achieve its earliest claims to this distinction in those regions of inquiry and investigation where the methods of modern science are more directly applicable. For the present it is proposed to assign no upper limit to its educational endeavor, and to place the lower limit no lower than the standard entrance requirements of the more conservative universities of the country. Moreover, all courses of instruction and investigation, graduate and undergraduate, will be open both to young men and to young women, and for the present, without tuition and without fees. These courses will be offered by a staff, initially organized for university and college work, ultimately to consist of three grand divisions, science, humanity, technology, each of which will break up into as many or more separate faculties. For these faculties the best available instructors and investigators are being sought wherever they may be found, in the hope of assembling a group of unusually able scientists and scholars through whose productive work the Institute should speedily take a place of considerable importance among established institutions. Friends of education in America would insist that the term "Institute" is too narrow in its connotation, friends of science in Europe would contend that it is too broad. However, in its dedication to the advancement of letters, science, and art, the educational programme of liberal and technical learning now being developed may justify the designation "Institute" as representing the functions of a teaching university of learning, and, at
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least in some of its departments, those of the more recent research institutions founded in this country and abroad.

The planning of universities is no new problem. The list of modern solutions under state initiative is a long one from the national universities of Japan at Tokyo and Kyoto down to the reconstruction of the University of Paris and the revival of the French provincial universities; the reorganization of the University of London and the founding of the newer English municipal universities at Durham, Manchester, Liverpool, Birmingham, Leeds, Sheffield, and Bristol; the newest members of the German system in the universities of Frankfort, Dresden, and Hamburg; and the conspicuous development of state institutions in our own country—to name but a few, in the new California under Wheeler, the new Illinois under Draper and James, the new Texas under Houston and Mezes, the new Virginia under Alderman, and the new Wisconsin under Van Hise. And at this very moment there are building two new universities in Hungary, three in Canada, and two in Japan, while plans are being formulated for new institutions in China, Australia, and South Africa. Within the memory of all of us there have arisen on the benefactions of American philanthropists the Johns Hopkins University under Gilman and Remsen, Cornell University under White and Adams and Schurman, the University of Chicago under Harper and Judson, Leland Stanford under Jordan, and Clark under Hall; while the same period of university building has witnessed equally striking evolutions in the older American private foundations, notably the new Harvard under Eliot and Lowell, the new Yale under Porter and Dwight and Hadley, the new Princeton under McCosh and Patton and Wilson and Hibben, the new Columbia under Low and Butler, and the new Pennsylvania under Harrison and Smith.
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It has been remarked that an inventory of present-day universities would reveal thirteenth-century universities, fifteenth-century universities, nineteenth-century universities, and twentieth-century universities in formidable array and considerable confusion. There are universities that swear by Plato, others by Euclid, and others by Adam Smith. Some uphold the Thirty-nine Articles, while others worship radium and helium. From glorified engineering shops to scholastic sanctuaries, they offer the widest possible choice of type.

Nevertheless, there has been evolving a composite conception of the university in some such characterization of its functions as follows:

First, from the persistent past, in which there are no dead, to embody within its walls the learning of the world in living exponents of scholarship, who shall maintain, in letters, science, and art, standards of truth and beauty, and canons of criticism and taste.

Second, for the living present and its persistence in the future, to enlarge the boundaries of human learning and to give powerful aid to the advancement of knowledge, as such, by developing creative capacity in those disciplines through which men seek for truth and strive after beauty.

Third, on call of State or Church or University, to convey to its community and commonwealth, in popular quite as much as in permanent form, the products of its own and other men's thinking on current problems of science and society, of government and public order, of knowledge and conduct.

Fourth, in support of all institutes of civilization and all instruments of progress, to contribute to the welfare of mankind in freedom, prosperity, and health, by sending forth constant streams of liberally educated men and women
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to be leaders of public opinion in the service of the people, constant streams of technically trained practitioners for all the brain-working professions of our time, not alone law, medicine, and theology, but also every department of service and learning, from engineering, architecture, commerce, and agriculture, to teaching, banking, journalism, and public administration.

As thus conceived, the university is a great storehouse of learning, a great bureau of standards, a great laboratory for the training of men of thought and men of action. Under this conception of its functions the university has to do with the preservation of knowledge, with the discovery and distribution of knowledge, with the applications of knowledge, and with the making of knowledge-makers. Singling out one line of its activities, the business of a university is to teach science, to create science, to apply science, to make scientists. To be even more specific, its objects in the department of chemistry are to teach chemistry, to create chemistry, to apply chemistry in all the arts of industry and commerce, and to make more creative chemists. This conception of the manifold function of a university in scholarship, in science, in social service, and in civilization corresponds point by point to the fourfold function of the career of a scholar or scientist: in scholarship, a conservator of knowledge; in science, a creator of knowledge; in citizenship, a contributor to public opinion; in service, a controller of the destiny of the cherished institutions of civilization.

However, even to those who recognize in patriotism, education, and religion supreme enterprises of the human spirit, education itself is proverbially a dull subject whose technical details are sometimes dry as dust. For instance, I am by no means convinced that a discussion of the metaphysics of the
optative mood in Greek would be especially edifying on this occasion. Then, too, mathematical studies are poems of a variety better appreciated when read in private than when declaimed in public. Nor are you likely moved at this time by any overpowering desire for relief from the perplexity of that dear old lady who said she could readily make out how astronomers determined the distances and dimensions, masses and motions, constitution and careers of the heavenly bodies, but for the life of her she never could understand how they found out their beautiful names.

But studies and standards, students and staff are elements of a university programme quite as important as are a machine-shop, a file of journals, a lively imagination, and a printing-press, its other constituent parts. If a university should take all knowledge for its province, it becomes necessary to undertake a classification of knowledge, a problem never yet done with satisfaction to any one except perhaps the last man attempting it. Nor is the problem rendered inordinately simple when restricted to a programme in science, for, to say nothing of more recent modifications up-heaving in character, the scientific thought of the nineteenth century has been made by Dr. J. Theodore Merz to align itself in a stately march of no fewer than ten views of nature: the astronomical, the atomic, the kinetic, the physical, the morphological, the genetic, the vitalistic, the psychophysical, the statistical, and the mathematical views.

Yet all would agree, I think, that in mathematics, physics, chemistry, biology, and psychology we have a logical series carefully co-ordinated in subject-matter and sequence, furnishing the theoretic foundations for the applied sciences of engineering, economics, eugenics, and education. Furthermore, there would also be agreement in the opinion that this co-ordinated series should be flanked both right and left by
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history and its interpretation, as a great laboratory in which to test all plans for political or social reform; by philosophy, as a clearing-house for all theories and methods of knowledge; by letters, as the record in "thoughts that breathe and words that burn" of all human striving after sweetness and light; and by art, the creative imagination's flowering product in the ennobling and enriching of the content of life. Our studies are thus to be centered in the fundamental branches of pure science with a view to solutions of problems of applied science in engineering, whose chief business is the development of the material resources of the world; in economics, whose cardinal problem is that of the distribution of the wealth thus produced; in eugenics as the newest of the sciences, but really in idea no younger than Plato, which by taking thought would add cubits to the stature of the race; and finally in the latest of the experimental sciences, namely, education itself, in whose philosophical, psychological, and physiological foundations are now being sought the surest means of training the intellects and stimulating the imaginations of men.
V

THE UNIVERSITY: ITS SAINTS AND SEERS

As thus projected on a background of philosophy, history, letters, and art, the programme of this university of science stands forth in the effigies and inscriptions which have been cut in the walls of this the first house of the home of its spirit.

On the caps of the cloister's granite columns appear the heads of sixteen founders, leaders, and pioneers in

Religion . . . . St. Paul
History . . . . Thucydides
Philosophy . . . . Immanuel Kant
Art . . . . Michelangelo

Jurisprudence . . . . Thomas Jefferson
Medicine . . . . Pasteur
Engineering . . . . De Lesseps
Commerce . . . . Christopher Columbus

Mathematics . . . . Sophus Lie
Physics . . . . Kelvin
Chemistry . . . . Mendeleeff
Biology . . . . Charles Darwin

Electric Oscillations . . . Heinrich Hertz
Aerodynamics . . . Samuel Langley
Radioactivity . . . Pierre Curie
Eugenics . . . . Richard Galton

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The obvious guiding call in this consistory of canonization was to pass from the ancient enterprises of humane learning to the modern endeavors of scientific exploration. An accident of considerable interest is the circumstance that in the first group are a Greek, a Hebrew, a Latin, and a Teuton, while in the last are representatives of America, England, France, and Germany.

On the exterior wall of the Faculty Chamber the threefold dedication is emblazoned in marble tablets to letters, science, and art. The Tablet to Letters bears the head of Homer, below which is inscribed Mackail’s translation of Pindar’s tribute to style:

“The thing that one says well goes forth with a voice unto everlasting.”

The Tablet to Science bears the profile of Isaac Newton together with Job’s anticipation of the method of scientific inquiry in his

“Speak to the earth and it shall teach thee!”

The Tablet to Art bears the head of Leonardo da Vinci, under which is inscribed:

“The chief function of art is to make gentle the life of the world.”

Adapted, after some modifications, from certain of Abbey’s mural decorations in the State Capitol of Pennsylvania, modeled by C. Percival Dietsch, and executed by Oswald Lassig, are the two life-size draped figures adjoining the court side of the arch of the sally-port on the left and right
respectively: one, symbolic of Science, screening her gaze under the cautious and somewhat uncertain lead of reason, proceeds under Aristotle's dictum:

“If we properly observe celestial phenomena we may demonstrate the laws which regulate them”;

the other, symbolic of Art, in an inspirational attitude, with neither fear in her face nor faltering in her step, emerges from the chiseled intuition of Plotinus that

“Love, beauty, joy, and worship are forever building, unbuilding, and rebuilding in each man’s soul.”

Again, under the shield of the State of Texas and the shield of the Rice Institute and the Flowering Magnolia of the City of Houston, the chief stone of this building bears what is perhaps the best expression of the Spirit of Science in any tongue: a Greek inscription in Byzantine lettering, from the Preparatio Evangelica of Eusebius Pamphili, the first historian of the Church, which, in the translation of the late Samuel H. Butcher, reads:

“'Rather,' said Democritus, 'would I discover the cause of one fact than become King of the Persians,'”

—a declaration made at a time when to be king of the Persians was to rule the world. In thus preserving in the twentieth century of our era this utterance of exultant enthusiasm for knowledge for its own sake, from a representative philosopher of that people who originated the highest standards in letters and in art, the trustees of the Institute have sought
to express that disinterested devotion both to science and to humanism which the founder desired when he dedicated the new institution to the advancement of literature, science, and art.

From inspiration out of the past we pass to the inspiration of the living, and in particular to the heartening hail of those savants who have come or stretched their hands across the seas to us on this occasion. Under sunny skies whose clear air makes clear minds blandly or keenly observant of the world, with winds fair, on the anniversary of Columbus's arrival, we too are setting out on a voyage of discovery in three small craft whose lines and keels and turrets you have had opportunity to examine and admire. We pledge your standards at the masthead and your spirit in the crew, but until we find our treasure island, where faith and promise brighten into performance and achievement, we have none but empty honors to offer you. Rather do we ask you to honor us still further by allowing us to place in the stateroom of the flagship the following tablets in commemoration of your visit to the fleet:

Professor Rafael Altamira y Crevea, of Madrid, Spain: late Professor of the History of Spanish Law in the University of Oviedo; Director of Elementary Education in the Spanish Ministry of Public Instruction; a scholar of recognized authority in the history of jurisprudence and politics, and a statesman whose public service has extended with increasing usefulness beyond the borders of his own country to the educational institutions of the Latin-American nations.

Professor Emile Borel, of Paris, France: Director of Scientific Studies at the Ecole Normale Supérieure; Editor-in-chief of La Revue du Mois; Professor of the Theory of
Functions at the University of Paris; successful in the discharge of exacting duties as administrator, educator, and editor, his studies in mathematical analysis worthily maintain the standards of scientific work established by the historic line of French analysts extending from Lagrange and Laplace to Hermite and Poincaré.

Senator Benedetto Croce, of Naples, Italy: Life Senator of the Italian Kingdom; Member of several Royal Commissions; Editor of *La Critica*; an original and profound thinker, both constructive and critical, whose philosophy of the spirit, and in particular its theory of aesthetics, has compelled world-wide attention on the part of artists, philosophers, and men of letters.

Professor Hugo de Vries, of Amsterdam, Holland: Director of the Hortus Botanicus and Professor of the Anatomy and Physiology of Plants in the University of Amsterdam; a careful observer and patient investigator of the phenomena of growth and change in living things, whose studies and experiments of a quarter of a century have resulted in capital contributions to the theories of heredity and the origin of species.

Professor Sir Henry Jones, of Glasgow, Scotland: Fellow of the British Academy; Professor of Moral Philosophy in the University of Glasgow; Hibbert Lecturer on Metaphysics at Manchester College, Oxford; an erudite editor and expositor of great movements of reflective thought in poetry and philosophy and religion, and himself a genial human philosopher who has elaborated a working faith for the social reformer and professed the doctrines of idealism as a practical creed.
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Privy Councilor Baron Dairoku Kikuchi, of Tokyo, Japan: late Japanese Minister of Education; formerly President of the University of Tokyo, and later of the University of Kyoto; recently Lecturer on Japanese Education at the University of London; a publicist of distinction and a close student of affairs, one of the pioneers in the introduction of Western learning into Japan, who has rendered his native land patriotic service in the organization and administration of its schools and universities.

Professor John William Mackail, of London, England: former Fellow of Balliol College and later Professor of Poetry in Oxford University; a critic who would interpret art as art interprets life, favorably known by his many published lectures on Latin literature and Greek poetry, and himself a poet whose English pure and undefiled is scarcely surpassed in our time.

Privy Councilor Professor Wilhelm Ostwald, of Gross-Bothen, Germany: late Professor of Chemistry in the University of Leipsic; Nobel Laureate in Chemistry, 1909; a versatile man of science whose interests and activities range from art through letters into metaphysics, he is justly celebrated as one of the founders of physical chemistry and equally well known as the chief propagandist of a new natural philosophy based on the theories of energetics.

The late Professor Henri Poincaré, of Paris, France: Member of the French Academy; Commander of the Legion of Honor; Professor of Mathematics and Astronomy at the University of Paris; distinguished for discoveries of far-reaching significance in pure mathematics, celestial mechanics, and mathematical physics, a varied intellectual activ-
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ity of extraordinary fertility has secured for him a place of eminence in letters, in science, and in philosophy.

Professor Sir William Ramsay, K.C.B., of London, England: late Professor of Chemistry at University College, London; Nobel Laureate in Chemistry, 1904; President of the Seventh International Congress of Applied Chemistry; a facile experimenter of boldness and ingenuity, who has devised new theories and revived outworn ones in a series of remarkable achievements which of themselves constitute an epoch in the history of the chemical elements and a permanent chapter in the annals of science.

Professor Carl Størmer, of Christiania, Norway: Member of the Norwegian Academy of Sciences; Associate Editor of the Acta Mathematica; Professor of Pure Mathematics in the University of Christiania; professorial successor of the illustrious Norse geometer, Marius Sophus Lie, and himself a master of the methods of reckoning who has drawn from the equations of mechanics a new theory of terrestrial magnetism revealing new explanations of the lights of the northern skies and kindred manifestations in the solar system.

Professor Vito Volterra, of Rome, Italy: Life Senator of the Italian Kingdom; Dean of the Faculty of Science and Professor of Mathematical Physics and Celestial Mechanics in the University of Rome; recently Lecturer in the Universities of Paris and Stockholm; an analyst of rare skill whose theories have found manifold applications both in pure and in applied science, he has served his country even more directly as an able organizer of educational and scientific undertakings national in scope and international in influence.
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THE UNIVERSITY: ITS STUDENTS AND STAFF

FROM the hands of these illustrious citizens of Amsterdam, Glasgow, Leipsic, London, Madrid, Naples, Oxford, Paris, Rome, and Tokyo, the torch of civilization’s great commission to think and to teach and to learn is this day passed on to the sons and daughters of the South and the scholars and scientists trained at the universities of Cambridge, Chicago, Harvard, Heidelberg, Leipsic, Michigan, Oxford, Pennsylvania, Yale, Virginia, Wisconsin,¹ who constitute the charter membership of the new institution’s academic guild, a company of students and fellows, lecturers and instructors, preceptors and professors, who in a common society would seek to realize a composite conception of the student-universities and the master-universities of earlier times; a voluntary association whose collective will for the present is to be executed by one of their number, who is to

¹ Since this address was written the staff of the new institution has grown to some thirty members who bring to its problems training, experience, or honors from the following universities and colleges: Adelphi, Auburn, Balliol (Oxford), Berlin, Bethany (West Virginia), Birmingham, Bonn, Cambridge, Centre, Chicago, Christiania, Clark, Columbia, Cornell, Davidson, Drake, Emmanuel (Cambridge), Georgia, Gottingen, Harvard, Heidelberg, Illinois, Johns Hopkins, King’s (London), Leeds, Lehigh, Leipsic, Liverpool, London, McGill, Michigan, Minnesota, Missouri, Munich, Northwestern, Oberlin, Oxford, Paris, Pennsylvania, Pittsburg, Princeton, Robert, Rome, Southwestern, Stanford, Trinity (Cambridge), Tulane, Union, Vermont, Virginia, Washington (College), Washington (University of), Wesleyan, Williams, Wisconsin, Wooster, Yale; and the student members of an academic community of about three hundred souls come from some seventy-five towns in Texas and fifteen States of the Union, among them holders of degrees from Austin, Georgetown, Missouri, Phillips, Robert, Union, and Vanderbilt, and former students of Austin, Baylor, Daniel Baker, Georgia School of Technology, Howard Payne, Illinois, Lehigh, Marion Institute, North Texas Normal, Oklahoma (Agricultural and Mechanical), Randolph Macon, St. Mary’s, Sam Houston Normal, Simmons (Texas), Smith, Sophie Newcomb, Southwestern, Sweet Briar, Texas (Agricultural and Mechanical), Texas (University of), Trinity (Texas), United States Military Academy.
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play the rôle of middleman between the public and the university, the trustees and the staff, the staff and the students, the students and their parents and guardians; a society of scholars which from the first aspires to be "a partnership in all science, a partnership in all art, a partnership in every virtue and in all perfection"; and "as the ends of such a partnership cannot be obtained in many generations," to appropriate still further Burke's conception of the state, "it becomes a partnership between those who are living, those who are dead, and those who are to be born."

Democracy of science and republic of letters, nowhere mere empty phrases, meet in this partnership an unusual opportunity for translation into living actualities. Except for the organization indispensable to the efficient discharge of business, subject only to limitations of character and intellect, here are leisure and work and liberty, freedom in initiative, freedom in invention, the freedom that alone invites inspiration to thought and action. As at the University of Virginia from the earliest days, and more lately at the University of Chicago, distinctions of academic rank and title will appear in official calendars but find no place in classroom or on the campus. For purposes of organization and administration each member of the university will naturally fall into one or more of three grand divisions: Science, Humanity, Technology. As has already been intimated, each of these divisions will eventually consist of several faculties: under Science we should have mathematics, physics, chemistry, biology, psychology, and so on, together with their applications in the fields of engineering, economics, education, and so forth; under Humanity would appear history, philosophy, letters, politics, and so on to art and religion; while Technology would embrace science, humanity, and technology as professions of teaching or research, the
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older learned professions of law, medicine, theology, and the newer ones from engineering, architecture, and agriculture on down to the more recent acquisitions of commerce, banking, and public administration.

The first larger divisions of the Staff of the new university to assume form will be a faculty of science and a faculty of letters. In the discharge of their functions these bodies will be aided by administrative committees constituted of their own members. To the duties of the officers of certain of these committees deans will succeed when the growth of the institution shall have called for more elaborate and more highly differentiated machinery of organization and administration. Administrative work, of increasing complexity in any modern university, is likely to make frequent calls on the time and judgment of its ablest and best trained members in the first days of a new one, but it is hoped to reduce the burden of these demands considerably by consistent and sharp differentiation between the constructive and critical, and the clerical. To meet the direct duties of administration in schools and departments, laboratories and museums, chairmen will be appointed annually and without regard to seniority. The Staff will assemble, and at regular intervals, in at least three different series of meetings: scientific, social, and business. Through the first of these the work of its members in the capacity of creator, critic, or censor will be assessed in its relations to productive scholarship; by the second, the university will be kept in intimate touch with the life of its community, and many a plan may trace its start to a bowl of punch or the pouring of tea; and finally, through the third of these series of meetings the Staff will consider, subject to the approval of the trustees, the conduct of the academic life of the university in respect of scholarship, research, teaching, and public service.
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In America the spirit of scientific investigation has, certainly until recently, found its best expression in the college and the university, and among the men of science associated with these foundations. To be sure, research institutions, as for example the Scientific Bureaus of the United States Government, the Carnegie Institution of Washington, the Rockefeller Institute in New York, and, earliest of all, the Smithsonian Institution in Washington, independent of universities, have abundantly justified their existence among us; but no university can live without the vitalizing reaction of original investigation. Even in the Rice Institute's days of hewing of wood and mixing of mortar, work of investigation is not to be allowed to suffer from any inconvenience due to inadequate provision of library and laboratory apparatus. The first investigators may feel their isolation and the absence of atmosphere, but in this day of rapid transit, speedy dissemination of intelligence, and manifold multiplicity of periodical scientific publications, isolation offers no excuse for inactivity, for one cannot spend half an hour in the perusal of a first-class scientific periodical without thinking of at least half a year's things to do.

To the privileges of research and the duties of administration must be added the pleasures of teaching and public lecturing, and if the last phase of this cycle of action is to be efficient the schedules of daily and weekly performances should not be too heavy. Moreover, the time-tables of lecture and laboratory arrangements in each subject of instruction or investigation will be so framed that the first-year students shall be brought directly under the tutelage of the senior members of the university: here again we are appropriating an idea of Thomas Jefferson's for the University of Virginia. Furthermore, this very work of teaching and public lecturing will itself be inspired by the temper of scientific
investigation; for, as it seems to me, the scientific movement of the nineteenth century has no more striking lesson for the twentieth than that an inquiring mind is the safest guide for an inquiring mind: that the best man to lead the learner from the unknown to the known is the man who is continually leading himself from the unknown to the known, not only in point of encyclopedic and specialized knowledge, but also in point of new knowledge contributed by himself to the store of learning. Was Burke not right when he said that "the method of teaching which approached most nearly to the method of investigation is incomparably the best, since, not content with serving up a few barren and lifeless truths, it leads to the stock out of which they grew; it tends to set the learner on the track of invention and to direct him into those paths in which the author has made his own discoveries"? And Burke said this half a century before the scientific renaissance. Nor was Burke an impractical dreamer, for, in his speech on the petition of the Unitarians, he also said: "No rational man ever did govern himself by abstractions and universals. . . . A statesman differs from a professor in a university. The latter has only the general view of society. . . . A statesman, never losing sight of principles, is to be guided by circumstances; and, judging contrary to the exigencies of the moment, he may ruin his country forever."

Finally, to the energy and invention of the planner, to the enthusiasm and initiative of the producer, to the erudition and imagination of the professor, must be added the energy and enthusiasm and erudition of the preceptor, whose power of summary statement in exposition, whose infinite capacity for details in explanation, whose persistent example and occasional exhortation in manners and morals, must conspire with strength of personality to win and guide the student's
interest in his reading and writing quite as much as in his thinking and in the meeting of his formal obligations to the university's standards and scheme of studies. This order of ideas goes back to a modification of the Oxford and Cambridge tutorial system which President Wilson introduced at Princeton University several years ago. And the finest thing about the introduction of President Wilson's preceptorial system at Princeton University was not the bringing of forty preceptors to Princeton at one blow, but rather the calling of every professor of the university to personal participation in the plan as preceptor. The success of that system at Princeton is to be attributed to this professorial participation no less than to the larger part taken in the execution of the plan by the specially appointed junior members of the staff.

Thus it appears that a professor's work is never done. Probably no expenditure of his time meets with smaller return than that employed on editorial duties. Moreover, in a time when the world is flooded with printing one should hesitate to increase the number of printed pages. Nevertheless, in order to facilitate the prompt publication and distribution of the products of its library, laboratory, and lecture activities, the new university proposes to maintain a few periodical publications of its own. Perhaps the most serious of these will be the *Annals of Letters, Science, and Art*, to appear ultimately in several series, carrying the contributions of its own and other scholars to knowledge. Simultaneously with these quarterly quartos there will appear *The Rice Institute Pamphlets*, in octavo form, at least four times a year, containing occasional addresses, courses of lectures, and smaller papers of current and timely interest. And finally, at least for the present, the *Circulars of Information* concerning the Rice Institute, in the numbers of which will be published the annual calendar, the programmes of study,
and other announcements of the undergraduate and graduate life of the institution.

'T is a bold man who would take upon himself the gift of prophecy, but from the birth of the science of the stars to the physics of the ether and the ion it has been the province of the professor to prophesy; sometimes, as the prophet of old, to "stand like a wall of bronze, and an iron pillar, against the whole land, against the kings of Judah and the princes thereof"; but always striving, in the spirit of a modern philosopher whose noble words might be turned into a command and written over the door of every library, laboratory, and lecture-hall as a motto for all seekers after truth, to "cherish as a vital principle an unbounded spirit of enquiry and ardency of expectation, unfetter the mind from prejudices of every kind, leave it open and free to every impression of higher nature which it is susceptible of receiving—guarding only against self-deception by a habit of strict investigation—encourage rather than suppress everything that can offer the prospect of a hope beyond the present obscure and unsatisfactory state. The character of the true philosopher is to hope all things not impossible and to believe all things not unreasonable. . . . Humility of pretension no less than confidence of hope is what best becomes his character." It is the business of the professor quite as much as it is the business of the successful promoter to get results out of the future by anticipating them through his knowledge of the past and his understanding of the present. On such an occasion as this it is hard not to prophesy. This academic festival provides the first alignment of the Rice Institute with other institutions. It is the placing of a new university on the map of the earlier universities. The new institution comes as a rival to none, as a competitor of none, but as a child hoping to grow in favor, to gain the confidence and to win the re-
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spect of older foundations. It is the advent of a man-child that we have witnessed, and some of us believe we have discovered in its form the features and bones of a giant. And I like to think that within ten or twenty years the staff and students of whom I am now speaking will have grown to be a residential community of at least a thousand souls—or, say a staff of a hundred members and a society of students a thousand strong. And the year that number, one thousand, has been reached—a graduate group of two hundred and an undergraduate group of eight hundred—we propose to say that in the year following only the best thousand among the applicants for admission, whether old or new, shall be received, and to persevere in this process of selection year by year for another score of years. This determination of ours has been accorded hearty support by many of our guests on this occasion; for if they have urged one thing above another upon us, that one thing has been to keep the standards up and the numbers down. It is through such standards in scholarship and service severely maintained, and by a process of selection through these standards of culture and character, that the exceptional man is likely to be discovered. And, after all, is not this last discovery one of the highest forms of service within our aim?

For the maintenance of these high standards we have promising material with which to begin. These first students who have come to us have come to us on faith; they have left the beaten paths to established institutions; they have left the company of their fellows to come to a new institution; and to this institution they have come unsolicited and unheralded; they have thus shown some independence of judgment, something of initiative, somewhat of the spirit of adventure, and these are the things by which men are judged and singled out from among their fellows at every stage of
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the game of life. For these reasons we believe that we make no mistake in banking on these young men and women and the future of the new university at their hands.

And if we hope that this academic community is to be distinguished by high standards in scholarship, we also hope that the student life of the community is to be equally distinguished for its system of self-government. The latter system is already assuming form through the constitution of an honor system for the conduct of examinations, and the institution of student government in the first halls of residence. With these two strong determinants of public opinion, the extension of student control to the entire campus should prove to be a comparatively simple undertaking. In the so-called honor system in examinations there is nothing novel to many American institutions. Two generations ago such a system grew into existence at the University of Virginia, and some years later found a congenial atmosphere at Princeton. Since these beginnings it has grown into the life of many other colleges. On the other hand, in some universities it has been tried without success. In the first days of a new one, however, when all traditions and customs are in the making, it promises well. And because of this same freedom—that is to say, freedom from tradition—the Rice Institute is pre-eminently fortunately situated to undertake the building of halls of residence as an integral part of its programme. As a matter of fact, the residential college idea is a prominent one in the plans of the new institution. At the time these plans were being made the idea was stirring in the air about many of the older universities. It was at Princeton

1 The Honor Council this year (1914–15) has representatives from three classes, and in another year will have become a permanent institution in the university. In the conduct of examinations during the first two years of the institution's existence, this council has been vigilant in its care. The government of the residential college is in the hands of an elective board of representatives, chosen one each from the ten or a dozen separate houses into which the hall of residence is divided.
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that President Wilson proposed to give the idea concrete form in the reorganization of the social life of that ancient seat of learning. The programme there suggested was an adaptation of the English residential college to American undergraduate life. A similar plan had been elaborated by Dean West some years earlier for a future school of graduate studies at Princeton, and the latter plan has come to realization in the Gothic halls and towers of the Princeton Graduate College about to be dedicated. From Oxford and Cambridge the idea goes back to the University of Paris, the mother university of all modern ones, which consisted originally of residential colleges. In the Paris of the present day the type reappears in the Ecole Normale Supérieure, founded by Napoleon, and in the more recent Fondation Thiers. Moreover, in Berlin an original suggestion of Fichte's in his scheme for a university has led lately to proposals for such a development at the university which bears the name of that city; while at the same time in our own country the University of Wisconsin has plans for residential halls already worked out and awaiting funds from the State; Cornell University has undertaken such a plan, the first buildings of which are soon to be constructed; and Harvard has planned for the freshmen of the university a group of such colleges to be ready for early occupancy.

The first of these experiments in college democracy at Rice finds its dedication on the corner-stone of its building, where, under the shield of the Institute, there appears the simple inscription: "To the freedom of sound learning and the fellowship of youth." Here is being realized an old seventeenth-century definition of education—William of Wykeham's "the making of a man." ¹ For here in the resi-

¹ This definition of education was made the subject of his inaugural discourse at Princeton University by President Hibben, at whose recent installa-
dential college men live in freedom, checked only by self-
mastery and gentle manners, a freedom of the kind that
Goethe meant when he said, "He alone attains to life and
freedom who daily conquers them anew"; here they grow in
wisdom, not alone in the wisdom of books but also in the
wisdom of work and service; here they find the incom-

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tion there appeared for the first time in an American academic procession
an official representative of the Rice Institute.

In many respects the present address is a chronicle of first things—first
either in point of time or in point of import.

The first scientific papers by a member of the Rice Institute were presented
to the American Mathematical Society and the American Philosophical
Society.

The first foreign reference to the new foundation was made by Dr. Henry
van Dyke in a public lecture at the Sorbonne in his course on "The Spirit
of America" as visiting professor at the University of Paris, in which,
speaking of the development of education in our country, he said: "Nor has
this process of assimilation been confined to American ideas and models.
European methods have been carefully studied and adapted to the needs
and conditions of the United States. I happen to know of a new institution
of learning which has been recently founded in Texas by a gift of ten mil-

The first printed scientific papers to be dated from the Rice Institute were
Philosophical Society, and "Science." The first address by a member of the
Institute was a vice-presidential address before the Baltimore meeting of the
American Association for the Advancement of Science, which included some
results of a paper presented previously at the Dublin meeting of the British
Association for the Advancement of Science. The first literary addresses
written at the Rice Institute were a Phi Beta Kappa address on the mind
and temper of science, delivered at the University of Virginia in June, 1910,
and a commencement address on the spirit of learning, delivered at the Uni-
versity of Texas in June, 1911.

The first scientific paper to go out from the laboratories of the Institute
was one by Mr. and Mrs. H. A. Wilson, published in the Proceedings of the
Royal Society of London; while the first scientific paper to be published by
a student of the Institute was one by Mr. Eric R. Lyon, an undergraduate,
which appeared in the "American Physical Review."

The first book to carry "Rice Institute" on its title-page was Mr. J. S.
Huxley's Cambridge manual on "The Individual in the Animal Kingdom." The
second such book was Mr. A. Ll. Hughes's "Photo-electricity," issued by
the Cambridge University Press, and now in process of translation into
German in Germany. Books from the pens of Mr. Guérard and of Mr. and
Mrs. Tsanoff, though prepared elsewhere, have appeared in print since their
authors came to Houston. Furthermore, Mr. Wilson has a new book in the
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parable fellowship, warm comradeship, and joyous companionships of college years; here they live in the unconquerable enthusiasm, the fearless courage, the boundless hope of youth. A faithful characterization of the spirit of the hall is found in the following lines from Wordsworth’s “Prelude”:

Nor was it least
Of many benefits, in later years
Derived from academic institutes
And rules, that they held something up to view
Of a Republic, where all stood thus far
Upon equal ground; that we were brothers all
In honour, as in one community,
Scholars and gentlemen; where, furthermore,
Distinction open lay to all that came,
And wealth and titles were in less esteem
Than talents, worth, and prosperous industry.
Add unto this, subservience from the first
To presences of God’s mysterious power
Made manifest in Nature’s sovereignty,
And fellowship with venerable books,
To sanction the proud workings of the soul,
And mountain liberty.

In this first residential hall students and staff are already living in a common society a common life under conditions
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the most democratic. They sit at a common table; they lounge in common club-rooms; they frequent the same cloisters; in games they meet again upon the same playing-fields. The quadrangle is self-governed, with no other machinery of government than is necessary to conduct a gentlemen’s club. To the quadrangle, as to the college, the only possible passports are intellect and character. In the quadrangle, as on the campus, the business of life is to be regulated by no other code than the common understanding by which gentlefolk determine their conduct of life, constantly under the good taste, the good manners, the enduring patience of gentle minds, among strong men who believe that he lives most who works most, labors longest, worries least. Each hall is to have its own literary and debating society, its own religious association, and its own musical and athletic organizations.¹ A little later in the history of the Institute similar colleges will be provided for the young women. It is hoped that ultimately all students of the Institute will be

¹ From the start the students of the Rice Institute, irrevocably committed to canons of clean sport, have participated, under the direction of Mr. Arbuckle, in all forms of intercollegiate athletic contests. Following the organization of the Rice Institute Athletic Association, the first society of students to be organized at the Rice Institute was the Young Men's Christian Association. This step on the part of the young men was speedily followed by a similar step on the part of the young women in the organization of their branch of the college Young Women's Christian Association. Each of these religious associations has held regular meetings continually since. Both have contributed to the social life and the religious spirit of the Institute. Regular classes in Bible study, meeting weekly throughout the year, are being conducted by Messrs. Johnson and Tsanoff. The college student, above all his kind, is a political animal, and, to a degree far beyond what some people think, a religious being. For this reason it is gratifying to say that the internal religious forces of the new institution have been constantly and consistently growing in strength. The founding of the religious societies was followed by the forming of three literary societies, one by the young women, bearing the name of Elizabeth Baldwin, wife of the founder of the Institute, and two by the young men, known respectively as "The Owl Literary Society" and the "Riceonian Literary and Debating Society." These societies have met weekly from the date of their organization, and have held occasional intersociety meetings in public debate. Though founded by student initiative, the literary and debating societies have called to their assistance in an advisory capacity a committee consisting of Messrs. Arbuckle, Axson, Daniell, Evans, Huxley, Hughes, and Watkin.
housed in such halls of residence. For example, the residential section for men calls for a great quadrangle of quadrangles, whose main axis terminates at one end by a great gymnasium and at the other by a great union club. In the gymnasium all students will receive systematic work in physical education, while the union will offer many opportunities open by competition to members of all colleges, for among these colleges there will arise the liveliest sort of rivalry in scholastic standing, in field sports, in musical, literary, and debating activities. To those students who for one reason or another are obliged to live in the city the union will afford many of the opportunities of the residential hall. By thus providing in the way of dwelling halls units larger than those provided heretofore in American institutions it is hoped to preserve and to maintain the present democratic conditions of life which obtain on the campus of the new university. And to that end, side by side with the building of great laboratories of investigation and halls of instruction is to proceed the building of these collegiate homes for human living. Each of these homes will have its roll of honor and hall of fame, and, even as the older colleges, will point with pride to men of initiative and achievement who were former members of the hall. Though these halls may not go as far as Balliol College went under Jowett's mastership and receive as students only those who are candidates for honors, yet, "scorning delights" and "living laborious days," may they not look forward to a time when their historian may say as does Mr. W. W. Rouse Ball of his college, Trinity, Cambridge—to name another English college represented in the first faculty of Rice: "This particular staircase, which I have taken as a typical one, contains one Fellow's set, five undergraduates' sets, one of which is now used by the porters, and an odd room. The rooms on the ground floor
on the right-hand side on entering the staircase were occupied by Thackeray, and later by the present Astronomer-Royal; those on the opposite side, by Macaulay; the rooms on the first floor next the gate were occupied by Isaac Newton, and later by Lightfoot, afterwards Bishop of Durham, and R. C. Jebb, the Greek scholar; and those on the opposite side by J. G. Frazer, who has done so much to investigate the habits of thought of primitive man. This is an interesting group of men, but in fact there are few rooms in the college which have not been inhabited at some time by those who have made their names famous."

A distinguished mathematician in Germany said very recently that American college spirit is the greatest need of the German university. To this academic audience college spirit is neither novel nor unreal. The boldness in commenting upon it may be pardoned when I remind you that it itself is freedom, courage, comradeship. It is the freedom of sound learning and the fellowship of youth; it is the spirit of solidarity, the spirit of co-operation, the collective spirit of corporate unity. It appears upon the rostrum, at the desk, and in the field, on the gridiron and the diamond and the track. Always it is the spirit of romance, occasionally of revelry, sometimes of reformation, and frequently, in its most serious and sober moments, bent on nothing more sober or serious than recreation. In manners it demands simplicity and sincerity; in morals, honesty and integrity. It laughs at pedantry, howls at the pompous, rebels at cant, exults in candor. In judgment merciless, if not always unerring; in action immediate, if sometimes unreflecting; of robust adventure "that buildeth in the cedars' tops and dallies with the wind and scorns the sun"; of virile sport that "greets the unknown with a cheer and bids him forward." It rings in the song after defeat as well as in the shoutings of victory.
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It is progress and purpose and pluck and prayer, though certain of these aspects reveal themselves only upon analysis somewhat refined. It owns the college, loves the college, runs the college. Let this be the spirit of Rice.

If I have adequately described this incense of college spirit as it rises from the college campus, all that I have said and a great deal more is necessary properly to characterize that informing spirit of the college itself whose sources are in conference, cloister, and council-chamber. This informing spirit is more than opinion and impulse and enthusiasm, though inspired and directed by each of them in turn. It is more than tradition and custom and law, though continually molded by all three. It is the spirit of science and the spirit of service. Sustained by such hard and homely supports as concentration of study, co-ordination of studies, co-operation of students, and capitalization of student activities, its life is continually renewed by the native and unceasing demands of the human spirit for the sweetness and light of culture, for the strength and charity of character, for the law and order and security of enlightened citizenship. It is the brain of the college, the heart of the college, the soul of the college. May this also be the spirit of Rice.

There is nothing unusual in insisting that the spirit of one's college is democratic. Every college in the country contends that it has the spirit of true democracy; the only difference, if any, is that here we do have it. It is equally true that every good thing in college life has been a subject of criticism, and this is well, for criticism is the way to health, while complacency may be on the way to stagnation. No feature of organized college life has been the subject of greater criticism than the organized devotion to athletic sports, both in the college and among the colleges. In climatic conditions where outdoor life is easily possible
throughout the year, the new institution will have to face its problems in athletics resolutely. This will be the more necessary because we believe to a man in outdoor sports; for quite as important to the student as his home and standards, as his habits and studies, are his hobbies and his sports. We used to advocate athletics to make the boy a man; we now advocate athletics to keep the man a boy. Youth! eternal youth! lived in a fountain of perpetual youth! This is one of the great compensations of the academic life. Generations of college men may come and generations go, but youth, joyous and eternal in its spirit, runs on through all these comings and goings. And this contagion has spread beyond the academic atmosphere, for everywhere there is the determination to die a hundred years young. This determination is best realized through systematic and regular physical exercise: it may be throwing the discus, hurling the hammer, putting the shot, wielding tennis racquet or golf stick, participating in football, baseball, and other sports in season, felling trees, driving a motor-car, or steering an airplane. Equally advantageous is a similar system of mental gymnastics to discipline the intellect and stimulate the imagination by some serious study wholly independent of one's vocation: for example, the Iliad or Euclid, the Principia or the Novum Organum. However, inasmuch as we do no less of our thinking with our hearts than with our heads, it becomes imperative that the springs of our impulses be kept strong and pure. That is to say, the emotions must be held sane and normal; this equilibrium is perhaps best maintained by interest or skill in art. A study and a sport and a song! Personal prejudice might lead me to suggest mathematics, meadow-running across country, and music. In conclusion, and on the mighty element of this triad, the great defense of college sports is that sane devotion to them which leads not
only to healthy living but to clean living. The dangers lie in over-training, in high specialization, in professional tendencies in the highly developed team, making sport for the few and spectators of the many. The problem is to get the student crowds off the bleachers and in the blazers. Some of these difficulties we hope to meet by giving athletic training a place in the curriculum, by encouraging class, club, and college competitions, by fostering the sportsman’s spirit of amateur sport in all meets—a temper which I can perhaps best express by quoting the following striking and appropriate lines from a short poem by Mr. Henry Newbolt, entitled “Clifton Chapel,” which appeared in the “Spectator” of September 10, 1898:

To set the cause above renown,
To love the game beyond the prize,
To honour while you strike him down
The foe that comes with fearless eyes.
To count the life of battle good,
And dear the land that gave you birth,
And dearer yet the brotherhood
That binds the brave of all the earth.

In thus writing about the students of Rice, I have written of their standards, their spirit, and their sports; I have yet to write, and as briefly as possible, of their studies, their shields, and their songs. I have told these students—these outriders of a host, these torch-bearers of the sun-dawn, these conquerors of a new day, these forerunners of a throng that is ultimately to be many thousand strong—these first students of the Rice Institute, I have told them that they are the Rice Institute. These beautiful buildings are its tenement of clay, but the staff and students its brain and heart, determining and regulating the flow of thought and the flow
of life in its being: in them its character and intellect, its standards in scholarship and sports, assume concrete form; in them its spirit and temper find a body; without their presence these quadrangles would be empty, these halls silent; without their co-operation these plans would become ineffective, these programmes unfulfilled. But with their help, which they have given heartily, and with their hopes, which well up constantly, the dry bones of an academic programme are coming to life, and these dry bones live. Probably the most joyous expression of that life will find itself in the songs of the students. These songs, inarticulate in our hearts, will one after another be called to vocal expression by the great days and crises of our life. We shall have our "Fair Harvard," "Old Nassau," "Hail, Pennsylvania," and "The Eyes of Texas are upon You." With Yale men we too shall sing of this "Mother of Men," and to "Alma Mater" with Stanford, Johns Hopkins, Chicago, and Cornell. Under the Lone Star of Texas and the Owls of Rice, under the Blue and Gray floating from their standards—a blue still deeper than the Oxford blue, and the gray of Confederate days warmed into life by a tinge of lavender—they shall sing their songs; sing of jasmine, magnolias, and roses, poinsettia and violets blue; they shall cheer their teams and their heroes for the deeds of valor they do in field or forum or class-room; for Rice and for Houston and Texas they shall cheer and shout and sing—sing of campanile stately and their college near the sea, sing of sunset on the prairie, of the moonrise through the pine-trees, of the Spanish moss and liveoak, of the Quad’s fair towers and cloisters, of undying loyalty; songs of sentiment and devotion giving rise to songs of service, inspired by the device on their banner, a Homeric device,

\begin{quote}
\text{Αἰὲν ἀριστεύειν καὶ ὑπείρωξον ἐμμεναι ἄλλων,}
\end{quote}
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a line appearing twice in the Iliad at vi, 208, and xi, 784, said to have been the favorite of Alexander the Great and used by him to exhort his men on the great expedition; a device borne also as *αιλήν ἄριστην* by the students of St. Andrews, who, in the days when we were laying the foundations of this building, were celebrating the five-hundredth anniversary of the founding of their own university. In the longer of Pope’s two translations the line reads:

*To win renown,*

*To stand the first in worth as in command;*

*To add new honours to my native land;*

*Before my eyes my mighty sires to place,*

*And emulate the glories of our race.*

And on the flag of these Rice students are two shields, a shield of the State of Texas and the shield of the Rice Institute. The latter heraldic device was designed by Mr. Pierre de Chaignon la Rose of Cambridge, Massachusetts, who has ingeniously combined the main elements of the arms of the several families bearing the names of Rice or Houston. The problem was simplified by the fact that the shields of some ten Rice armorial bearings were always divided by a chevron, always carried three charges, and when these charges were not crows they were ravens. Curiously enough, the shields of the half-dozen Houstons who bore arms were always divided by a chevron, while here again the three charges were birds, and these were always martlets. Accordingly it was decided to employ a double chevron, and since neither the crow nor the raven nor the martlet had any historical academic standing, owls of Athena were chosen for charges, and in the remarkable form in which they appeared on a small silver tetradrachmenon of the middle of the fifth
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century before Christ. The choice of colors was rather more difficult, and is a long story; but to make that long story short, among the several ends to be desired were, that the combination of colors should be stable, should not trespass upon the five or six hundred combinations already chosen by other institutions, should harmonize with State and national emblems for purposes of decoration on gala occasions, should be standard colors easily and economically procurable, and finally they should jump with local climatic conditions—that is to say, plenty of color and yet cool in the warm sun of summer, delicate and yet of sufficient life if days should perchance be dull. At least some of these ends were attained in the combination of blue and gray described in the preceding paragraph, namely, the Confederate gray enlivened by a tinge of lavender, with a blue still deeper than the Oxford blue.

In an earlier section of this address I have sketched in broad lines the scope of the new university's work and the range of its studies. I have implied our belief that the college and the professional school thrive best in a university atmosphere. I have also said that this university programme with us is to have no upper limit, and that its lower limit is to be no lower than that of the more conservative colleges and universities of the country; that is to say, the Rice Institute's programme will include within its schedules of studies no courses of grade lower than collegiate grade. The opportunity to found a great secondary school, as was the opportunity to devote the entire resources of the foundation to a single professional school, was tempting and equally promising. Neither of these courses, however, would have kept full faith with the will of the founder as expressed in the charter and testament, nor would either have served the city and the State quite as fully as the one finally adopted.
Accordingly it is as a university that the Institute proposes to begin, a university of liberal and technical learning, where liberal studies may be studied liberally or technically, where technical subjects may be pursued either technically or liberally, where whatever of professional training is offered is to be based as far as possible on a broad general education.

Candidates for admission to the Institute who present satisfactory testimonials as to their character will be accepted either upon successful examination in the entrance subjects or by certificate of graduation from an accredited public or private high school. The terms of admission to the Institute are based on the recommendations of the Carnegie Foundation for the Advancement of Teaching as expressed in the Documents of the College Entrance Examination Board. While seeking to develop its students in character, in culture, and in citizenship, the Rice Institute will reserve for scholarship its highest rewards, and in particular for evidences of creative capacity in productive scholarship. To encourage this devotion to learning a series of undergraduate scholarships and graduate fellowships will be devised, to be awarded preferably to those students who have been in residence at the Institute for at least one year. Moreover, the varied opportunities for self-help in a growing institution in a large city should aid in enabling any young man of determination to earn his education in a thoroughly democratic college community. There may thus be realized the founder's desire that the advantages which his philanthropy would make possible should be brought within the reach of the promising student of slender means.

Although it is the policy of the new institution to develop its university programme rather more seriously from the science end, there are also being provided facilities for elementary and advanced courses in the so-called humanities,
thereby enabling the Institute to offer both the advantages of a liberal general education and those of special and professional training. Extensive general courses in the various domains of scientific knowledge are available, but in the main the programme consists of subjects carefully co-ordinated and calling for considerable concentration of study. These programmes have been so arranged as to offer a variety of courses in arts, in science, in letters, and in their applications to the several fields of applied science, leading after four years of undergraduate work to the degree of bachelor of arts. Degrees will also be offered in architecture and in chemical, civil, electrical, and mechanical engineering. Furthermore, for the degrees of master of arts, doctor of philosophy, and doctor of engineering every facility will be afforded properly qualified graduate students to undertake lines of study and research under the direction of the Institute's resident and visiting professors. Thus it appears that Rice would interpret in a very large way its dedication to the advancement of letters, science, and art. It would look not only to the employment of these principles in the development of the life of the individual and in that of the race, but it would also play its part in the progress and enlargement of human knowledge by the contributions of its own resident professors and scholars. We believe that to this end there should be a constant and close association of undergraduate work and postgraduate work, that any proposals which would tend to their separation would be injurious to both. "A hard and fast line between the two is disadvantageous to the undergraduate, and diminishes the number who go on to advanced work. The most distinguished teachers must take their part in undergraduate teaching, and their spirit should dominate it all. The main advantage to the student is the personal influence of men of original mind. The main
advantage to the teachers is that they select their students for advanced work from a wider range, train them in their own methods, and are stimulated by association with them. Free intercourse with advanced students is inspiring and encouraging to undergraduates. The influence of the university as a whole upon teachers and students, and upon all departments of work within it, is lost if the higher work is separated from the lower.” Accordingly, there should always be associated with the staff of the Institute a group of advanced students in training for careers both as teachers and researchers: with this end in view, graduate fellowships will be awarded from time to time to degree-bearing students of the Institute or other educational foundations of similar standing. As a matter of fact, in the academic year 1914-15 there are in residence two fellows in mathematics, two in physics, and one in biology.

The academic schedules of study drawn up in the immediately succeeding sections of this address had not been prepared in detail when the address was being written. They have grown gradually into form out of the general and local experience of the faculty of the Institute. They are taken from preliminary announcements, to which they were contributed on recommendation of the staff after discussions of proposals submitted by a committee on studies and schedules consisting of Messrs. Axson, Evans, Guérard, Huxley, and Wilson, resident members of the faculty.

The programmes of courses leading to the degree of bachelor of arts after four years of study are of a common type for the first two years, but for the third and fourth years are differentiated into two forms: first, general courses leading to the degree of bachelor of arts, either with some grade of distinction or without special mention; second, honors courses leading to the same degree with first, second, or
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third class honors. These two types will be referred to in the sequel as general courses and honors courses, respectively. The general course leading to the degree of bachelor of arts has been arranged to give thorough training to those students who are seeking university instruction in literary and scientific subjects either as a part of a liberal education or as preliminary to entrance upon a business or professional career. The general course therefore involves the study of several subjects up to a high university standard, but does not include a highly detailed specialized study of any one subject such as is necessary before research work or university teaching can be profitably undertaken. Students wishing to specialize with a view to research work and university teaching may either take an honors course and then proceed by graduate study to the degrees of master of arts and doctor of philosophy, or they may first take a general bachelor of arts course and after completing it proceed by graduate study to the higher degrees.

The attention of students intending to enter the profession of engineering or architecture will be constantly called to the great advantages in first taking a general or honors course before beginning special study in engineering or architecture. As a matter of fact, the time is coming when in the South there will be demand for a place where a bachelor's degree will be required for admission to courses in engineering and other domains of applied science, and when that time comes the Rice Institute intends to occupy that place. However, in the face of present local conditions such a severe standard can only be reached through an evolutionary process that may occupy a score of years or a generation. For the present the Institute will not offer courses leading to professional degrees in law and medicine, but students looking forward to such careers will find in the earlier years of
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the bachelor of arts courses all the requirements for admission to many medical and law schools, provided suitable subjects are chosen. However, in view of the fact that several of the leading professional schools of law and medicine are now requiring a bachelor’s degree for admission, all such students are urged to proceed to this degree before entering upon specialized study preparatory to the practice of their profession.

To students of architecture the Institute offers a full course extending over five years, leading to the bachelor’s degree at the end of the fourth year and to an architectural degree at the end of the fifth year. It is the purpose of the course in architecture to lead men during their residence to a comprehensive understanding of the art of building; to acquaint them with the history of architecture from early civilization to the present age; and to develop within them an understanding and appreciation of those conceptions of beauty and utility which are fundamental to the cultivation of ability in the art of design. The course has been so arranged as to include certain indispensable elements of liberal education and also such engineering and technical subjects as are becoming more and more necessary to the general education of a practising architect. Of the more strictly architectural subjects, design is given by far the largest place. As a matter of fact, the courses in history and design and those in free-hand drawing, in water-color, in drawing from life, and in historic ornament have all a double object: to create in the student an appreciation of architectural dignity and refinement, and to increase constantly his ability to express conceptions of architectural forms. Accordingly the training of the student must not be limited to the training in draftsmanship alone, but all courses should conspire to the cultivation of creative and constructive ability in expression.
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and design. With a view to keeping in touch with the progress of his profession and with the daily routine and detail of its practice, it is strongly recommended that the student spend his summer vacations in the office of some practising architect.

Courses will be offered in chemical, civil, electrical, and mechanical engineering. A complete course in any one of these branches will extend over five years. A student who has successfully completed the first four years of a course will be awarded a bachelor's degree, and after successfully completing the remaining year of his course he will receive an engineering degree. The work of the first three years will be practically the same for all students, but in the last two years each student will be required to select one of the special branches mentioned above. The work of the first two years will consist chiefly of courses in pure and applied mathematics, physics, chemistry, and other subjects, an adequate knowledge of which is absolutely necessary before the more technical courses can be pursued with advantage. During the first two years, however, a considerable amount of time will be devoted to engineering drawing and the elements of surveying. Technical work will begin in the third year with courses of a general character in mechanical engineering, civil engineering, and electrical engineering, all three to be taken by all engineering students, including those in chemical engineering. These courses will form an introduction to the technical side of each branch, and should enable students intelligently to select a particular branch at the beginning of their fourth year. In the third year instruction will also be begun in shopwork. The classes in shopwork are intended

1 As a matter of fact, during the present academic year (1914-15) members of the junior class are receiving lecture and laboratory courses of general and introductory character in engineering and architecture at the hands of Messrs. Diamant, Hitch, Humphrey, Pound, Tidden, Van Sicklen, and Watkin.
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to give familiarity with shopwork methods. The object of
these classes is not primarily to train students to become
skilled mechanics, but to provide such knowledge of shop
methods as is desirable for those who may be expected as
engineers to employ mechanics and to superintend engineer-
ing shops. It is intended in the engineering courses to pay
special attention to the theoretical side, because experience
has shown that theoretical knowledge is difficult to obtain
after leaving the university, and without it a rapid rise in
the profession of engineering is almost impossible. On the
other hand, it is not intended to disregard practical instruc-
tion. For this reason the last three years will include, be-
sides shopwork, a variety of practical work in engineering
testing-laboratories. It is recommended that students obtain
employment in engineering work during the summer vaca-
tions, for it should be remembered that no amount of uni-
versity work can take the place of learning by practical ex-
perience in engineering establishments and in the field. The
courses in engineering are not intended to take the place of
learning by practical experience, but are designed to supply
a knowledge of the fundamental principles and scientific
methods on which the practice of engineering is based, and
without which it is difficult, if not impossible, to succeed in
the practice of the profession. Students who can afford the
time are recommended to devote three or four years to pre-
liminary work instead of two, taking the bachelor of arts
degree at the end of four years and an engineering degree
at the end of six years. Students proposing to do this are
advised to take a course devoted largely to mathematics,
physics, and chemistry, or an honors course in either math-
ematics, physics, or chemistry. The subjects taken during
the years of preparatory work must include those of the first
two years in the general engineering course, which may be
substituted for electives in the academic bachelor of arts course. The honors course in physics is strongly recommended for those who wish to become either electrical or mechanical engineers.

As has already been intimated, the course for the degree of bachelor of arts extends over four years. During the first two years a considerable part of the work is prescribed, while during the last two years each student is allowed, with certain restrictions, to select the subjects he studies. In the majority of the courses the formal instruction offered consists of three lectures a week, on alternate days, together with laboratory work in certain subjects.

The academic year is divided into three terms, but as a rule the year is the unit of the courses rather than the term. In addition to informal examinations held at irregular intervals, there are formal examinations at the end of each of the three terms. In determining the standing of a student in each class, both his work during the term and the record of his examinations are taken into account.

Of subjects included in the bachelor of arts course the following are now available:

Group A: English, French, German, Spanish, economics, education, history, philosophy, architecture.

Group B: pure mathematics, applied mathematics, physics, chemistry, biology, chemical engineering, civil engineering, electrical engineering, mechanical engineering.

Instruction in the classics is also offered on demand.

Candidates for the degree of bachelor of arts of the Rice Institute are required for the first two years of their course to select studies from the preceding groups according to the following yearly programmes. First year: pure mathematics, English, a modern language, a science, and one other subject. Second year: pure mathematics or a science, Eng-
lish, a modern language, and two other subjects. Students who enter with credit in two modern languages may substitute another subject for modern languages in the second year. At the beginning of the third year students may elect to take either a general course or an honors course. The third year general bachelor of arts course consists of four subjects, of which two must have been taken in the second year and one in both first and second. At least one subject from each of the groups A and B must be taken. Students will receive advice in the selection of their subjects. The fourth year general bachelor of arts course includes four subjects, two of which must have been taken in the third year and one in both second and third. At least one subject from each of the groups A and B must be taken. To students who have completed the general course the bachelor of arts degree will be awarded either with some grade of distinction or without special mention. The third and fourth year honors courses are intended for students who wish to specialize in particular branches of knowledge with a view to research work or teaching or later professional studies. In view of these special objects, the requirements in such courses will be more severe than in the general courses in the same subjects. For this reason it is recommended that students exercise due caution and seek advice before electing to take an honors course. Only those students who have shown in their first and second years that they are especially well qualified will be permitted to take an honors course. A student proposing to take such a course must satisfy the department concerned that he is qualified to proceed with the study of that subject. He will be required to take the lectures and practical work provided for honors students in that subject during each of the two years, and in addition certain courses in allied subjects. The degree of bachelor
of arts with first, second, or third class honors will be awarded, at the end of the fourth year, to students who have completed an honors course. Honors courses in mathematics and physics were given during the academic year 1913-14. In 1914-15 honors courses will be available in pure and applied mathematics, and theoretical and experimental physics. In addition to these, honors courses in modern languages and literatures and in biology will be offered in 1915-16.

A student who has completed a general or an honors course for the bachelor of arts degree may obtain the master of arts degree after the successful completion of one year of graduate work. A candidate for the degree of master of arts must select a principal subject and will be required to take such courses in that subject and allied subjects as may be determined for each individual case. He will also be expected to undertake research work under the direction of the department of his principal subject, and must submit a thesis embodying the results of his work. A student who has completed a general course for the bachelor of arts degree may obtain the degree of doctor of philosophy after not less than three years of graduate study and research work. A student who has obtained the bachelor of arts degree with first or second class honors may obtain the doctor of philosophy degree after not less than two years of graduate study and research work. Candidates for the degree of doctor of philosophy must submit a thesis and pass a public examination. For the year 1914-15 graduate courses will be given in biology, pure and applied mathematics, and theoretical and experimental physics.

From the preceding systematic schemes for academic and scientific work, it would appear that the Rice Institute aspires to university standing of the highest grade as an institution
of liberal and technical learning, dedicated to the advance-
ment of letters, science, and art, by instruction and by in-
vestigation, in the individual and in the race, its opportuni-
ties for study and research being open, without tuition and
without fees, both to young men and to young women.
Moreover, to recapitulate more broadly, the new university,
subject neither to political nor to sectarian affiliations, is gov-
erned by a self-perpetuating board of seven trustees, elected
for life. Under a definite educational policy and compre-
hensive architectural plan, it is being built and maintained
out of the income of its funds of approximately ten million
dollars for endowment and equipment. On its campus of
three hundred acres, in a half-dozen initial laboratory, lec-
ture, and residential buildings of extraordinary beauty, there
are at work in the academic session of 1914–15 a teaching
staff of some thirty members, all inspired by the spirit of
research, maintaining highest standards of entrance re-
quirements and of scholastic standing after admission, of-
fering university courses in liberal arts, pure and applied
science, architecture and engineering; a small group of
graduate students in mathematics, physics, and biology; a
self-governed democratic undergraduate body of freshmen,
sophomores, and juniors, of more than two hundred and
fifty members, from some seventy-five towns in Texas and
fifteen States of the Union, the first freshman class having
been received in September, 1912, to earn the first degrees,
which will be conferred in June, 1916.
VII

THE UNIVERSITY: ITS SHADES AND TOWERS

No sketch of the university’s programme, however slight, would be complete without some descriptive account of the general architectural plan, according to whose principles of beauty and utility students and staff are to be provided with theaters of action, groves for reflection, laboratories of discovery, libraries of knowledge, fields for sport, halls for speech and song, homes for complete living, and all dedicated to the freedom of sound learning and the fellowship of youth. At the risk of repetition, several details of this rather ambitious scheme will now be recited.

It is not difficult to plan for fifty years, nor is it difficult to plan for five years: difficulty enters only when it is necessary to plan at one and the same time for the immediate future and for the next hundred years. The problem is to design a scheme which is so flexible as to be capable of indefinite expansion along prescribed lines of educational policy and physical environment, and which at the same time is sufficiently compact and so closely articulated as to be comfortably and economically efficient in the earlier stages of its development. The plan about to be described briefly is an evolution out of some thirty-five or forty preliminary studies. In its final form it is believed to represent with fidelity the educational programme of the new institution, and to meet, with some measure of success, the demands of local geography, subsequent growth, initial harmony, and final unity.

Behold a campus of three hundred acres, a tract as irregular in form as if purchased in Boston, with four thousand
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feet frontage on the Main Street of Houston. Unfold the map we have made, for a great deal of the meaning of this new institution appears in its lanes and lawns, its walks and drives, its cloisters and retreats, its playing-fields and garden courts, its groups of residential halls for men, its halls of residence for women, its gymnasium, and stadium, and union, its several quadrangles of laboratories in science pure and applied, its schools of liberal arts, of fine arts, of mechanic arts, its chapel and choir, its lecture-halls and amphitheaters, its Greek playhouse and astronomical observatory, its great hall with library and museum wings, its graduate college of research and professional schools. Of the four main entrances to the three-hundred-acre campus, the principal one lies at the corner of the grounds nearest the city. From this entrance the approach to the Administration Building is a broad avenue several hundred yards long, ending in a fore-court, which will be bounded on the left by the School of Fine Arts, on the right by the Residential College for Women. The main avenue of approach coincides with the central axis of the block plan, and from the principal gateway opens up through the vaulted sally-port of the Administration Building a vista of more than a mile within the limits of the campus. After dividing at the fore-court the driveway circles the ends of the Administration Building and continues for half a mile in two heavily planted drives parallel to this axis and separated by a distance of seven hundred feet. Within the extended rectangle thus formed the pleasing effect of widening vistas has been realized. On passing through the sally-port from the fore-court, the future visitor to the Institute will enter upon an academic group consisting of five large buildings, which with their massive cloisters surround on three sides a richly gardened court measuring three hundred by five hundred feet, planted in
graceful cypresses. Beyond this group is another academic court of still greater dimensions planted in groves of live-oaks; this Great Court in turn opens into extensive Persian gardens beyond which the vista is closed at the extreme west by a great pool and the amphitheater of a Greek playhouse. The principal secondary axis of the general plan, starting from the boulevard and running north perpendicularly to the main axis, crosses the lawns and courts of the Liberal Arts and Science groups into the Mechanical Laboratory and the Power-house, the first buildings of the Engineering Group. The fourth entrance on Main Street leads to the athletic playing-fields and the Residential Colleges for Men. While each unit of the latter group has its own inner court, the several buildings themselves together inclose a long rectangular court bounded at the eastern end by a club-house, an adaptation of the Oxford Union, and on the west by the Gymnasium, which opens on the Athletic Stadium in the rear. North of the men's residential group and across the Great Court, lying between the Botanical Gardens and the Laboratories of Pure and Applied Science, appear the splendid quadrangles of the Graduate School and its professional departments; south and west of the latter quadrangles will rise the domes of the Great Hall with its Library and Museum wings, and the Astronomical Observatories, respectively.

Although designed to accommodate the executive and administrative offices when the Institute shall have grown to normal dimensions, the Administration Building will be used during the first few years to meet some of the needs of instruction as well as those of administration. The building is of absolutely fire-proof construction throughout; it is three stories high, three hundred feet long and fifty feet deep, with a basement running its entire length. Through a cen-
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central tower of four stories a vaulted sally-port thirty feet high, leading from the main approach and fore-garden to the academic court, gives entrance to the halls of the building and opens the way to the broad cloisters on the court side. On the first floor, besides offices of registration, there are lecture-rooms, class, study, and conference rooms. In the north wing of the second floor the temporary plans make adequate arrangements for library and reading-rooms; the second and third floors of the south wing are given to a public hall, which, with its balconies, extends to the height of two stories. A little later on in the history of the Institute this assembly hall will become the faculty chamber. The remaining part of the third floor provides additional space for recitation and seminar rooms, and offices for members of the teaching staff. The meeting-room of the Board of Trustees and the office of the President of the Institute are located in the tower.

In its architecture the Administration Building reveals the influence of the earliest periods of the Mediterranean countries: vaulted Byzantine cloisters, exquisite Dalmatian brickwork, together with Spanish and Italian elements in profusion; all in a richness of color permissible only in climates similar to our own. The dominant warm gray tone is established by the use of local pink brick, a delicately tinted marble from the Ozark Mountains, and Texas granite, though the color scheme undergoes considerable variation by the studied use of tiles and foreign marbles. To meet the local climatic conditions the building has been pierced by loggias and many windows, while its long shaded cloister opens to the prevailing winds. The corner-stone of this monumental structure was set in place by the trustees of the Institute on the seventy-fifth anniversary of Texas independence.

Two wings of the first building in the students' residen-
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tial group for men are now ready for occupancy. This
quadrangle, consisting of a dormitory and a commons, is
placed southwest of the Administration Building, its front
approach leading from the fourth campus entrance on the
Main Street boulevard. The residential wings are long three-
story fire-proof structures with towers of five stories, broad
cloisters on the front, and basements extending the entire
length. Each wing opens upon a garden on one side, and
on the other upon its own court. In arrangement and equip-
ment the buildings are modern and in every way attractive
and convenient. Accommodations for about two hundred
students are offered in single and double rooms and suites.
 Lodgings have been provided for several preceptors, and
two large halls have been set aside for the temporary use of
literary and debating societies. The floors of the wings are
so planned as to insure for every room perfect ventilation
and absolutely wholesome conditions. There are lavatories,
shower-baths, and sanitary connections adequate to the needs
of each floor; the power for both light and heat will be re-
ceived from the central plant. An arcade rather more than
one hundred feet in length leads from the dormitory wing
across the inner court to the commons which constitutes the
northern boundary of the quadrangle. The commons proper
includes every detail necessary for the perfect service of all
the men living in the residential group and at the same time
is of sufficient size and capacity to serve other members of
the student body. In addition to the dining-hall and its
equipment, this section of the building contains club and
reading rooms. It is graced also by a handsome clock-tower,
four stories high, surmounted by a belfry: the several floors
of the tower have been arranged in suites of rooms to be
reserved for the use of graduate students and instructors.
As has been intimated already, the other buildings under
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way propose to reveal in brick and marble some of the more subtle suggestions of the southern architecture of Europe and the East, and at the same time to realize the fundamental principles of their sources in a distinctive style of academic architecture for all the future buildings of the Institute. Consistent with the architectural style thus evolved, a pleasing and harmonious variation appears in the treatment of the first residential group, whose several towers and cloisters in brick and stucco are designed to produce an effect characteristically Venetian.

Located at the northern end of the principal secondary axis of the general architectural plan are groups of scientific and technical laboratories. The first buildings of this section of the campus, namely, the Mechanical Laboratory, Machine-shop, and Power-house, have been erected north of the Administration Building at the end of a long direct driveway from the third Main Street entrance. The Laboratory, a two-story fire-proof building two hundred feet long and forty feet deep, with a cloister extending the full length of its court side, is built of materials similar to those used in the construction of the Administration Building. The space of its floors will be given to scientific laboratories, lecture-halls, recitation-rooms, departmental libraries, and offices for instructors in charge, while its basement will afford additional room for further apparatus. Through the Machine-shop the Mechanical Laboratory connects with the Power-house, where is installed equipment for complete steam, refrigerating, and electric generating and distributing systems. The lofty campanile of this group, visible for miles in every direction, will probably be for many years the most conspicuous among the towers of the Institute.

Further improvements of the campus are being gradually effected. An extensive concrete water-proof tunnel has been
constructed to transmit power—water, steam, electricity, heating, and cooling—from the central plant to all the buildings on the grounds. With a diameter sufficient to admit a man standing erect, the tunnel has ample space for all wiring and piping in positions easy of access, thus insuring perfect care of the equipment and a resultant increase in efficiency. Progress has also been made in the installation of complete sanitary and drainage systems, which, with an unlimited supply of wholesome water, should give assurance of perfect physical conditions at the site of the Institute. The most important driveways, including the main approach to the Administration Building, the drives along the axes leading to the group of scientific laboratories and to the students' residential group, and the long roads inclosing the academic court, have been laid on deep foundations of gravel with surfacing of crushed granite. The planting of double rows of oaks, elms, and cypresses along these drives, and the assembling of hedges, shrubs, and flowers within the gardens and courts of the present groups, will subsequently impress even the casual visitor both with the magnitude and with the beauty of the general architectural plan.
"'Tis not the walls that make the city, but the men"; and the men in the day of Pericles were freemen who "pursued culture in a manly spirit, and beauty without extravagance." Such freemen are the men that build the university. The strength of this foundation lies in its freedom: the freedom to think independently of tradition; the freedom to deal directly with its problems without red tape; the freedom to plan and execute vouchsafed by the will of the founder and the charter of his foundation; the freedom of his seven trustees, seven freemen, who approach its problems of organization, policy, and aim, without educational prejudices to stultify, without partisan bias to hinder, without sectarian authority to satisfy, with open minds accustomed to large problems, with clear heads experienced in tracking the minutest details of business; seven men always ready to reason together, steady and conscientious in reaching conclusions, quick and decisive in action when through common counsel they have come to a common mind respecting any line of action. Indeed, in no circumstance has the new institution been more fortunate than in the circumstance that the foundation and its future are held in trust by a half-dozen Texans, men who have the blood of the pioneers in their veins, the purpose and courage of the pioneers in their hearts, themselves successful men of affairs, who with the characteristic mindedness imposed by the magnitude of the State itself, desire only the best, seek only the best, and think in none but large terms of any problem or enterprise.
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For this reason it is easy to dare and to do great things in Texas, for the men who have been winning this empire are to a man dominated by imperial ideas for it. The dominant idea of these trustees is that here in Texas there should arise an institution great for the future of Texas. Believing that the best is none too good for the sons and daughters of Texas, and determined to give to Texans a better Texas, these men have not hesitated to command the services of men and material and machinery whenever and wherever the best of such services was to be commanded. And in their freedom these trustees are building for the founder a university whose greatest strength likewise is in its freedom: in the freedom of its faculties of science, humanity, and technology, to teach and to search—each man a freeman to teach the truth as he finds it, each man a freeman to seek the truth wherever truth may lead: in the freedom to serve the State because entangled in no way with the government of the State, and the freedom to serve the Church because vexed by none of the sectarian differences that disturb the heart of the Church.

While we rejoice in our freedom from Church or State control, we rejoice none the less in the work of these fundamental and indispensable agencies of civilization, for we can conceive of no university in whose life there does not appear the energy and enthusiasm, the affection and the calm, that we associate in one way or another with reverence, patriotism, politics, and religion. Hence to us, quite as important as is a university's freedom from control by State or Church, are its right relations to each of these two institutions, because upon principles of order, conduct, and knowledge is based our faith in the capacity of the human spirit for progress, and without such basic faith all theories of education become either confused or futile. As a matter of fact, any
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civilized life of men in communities of culture and restraint does demand for its very existence the three great fundamental requirements I have just named—order, conduct, knowledge; and these three primary requisites find their expression in the forms of three great institutions—the State, the Church, and the University. These institutions themselves are not fixed and final but fluid and forming, constantly in the flow of change, in transition from good to better, to meet new requirements of a changing world and a growing humanity. In their present mutual relations, the State, the master of the sword and peace; the Church, the mistress of the soul and purity; the University, the servant of each of them in preserving to men the mastery of their spirits. The State guaranteeing to the University intellectual freedom, to the Church religious freedom; the University in freedom of thought and research constantly enriching the State with the theory of its own greatness, constantly recalling the Church to the theories of life wherein all men are made free; the Church in its turn sustaining the Nation and supporting the University in high ideals of progress and ultimate triumph. These three institutions constitute the triple alliance of civilization: the patriot, the priest, and the professor, the great triumvirate of progress, preserving to citizen, saint, and scholar political freedom, intellectual freedom, religious freedom, guaranteeing to all liberty in the pursuit of happiness, liberty in the pursuit of knowledge, liberty in the pursuit of heaven. This threefold freedom, this threefold liberty, brings to citizen, saint, and scholar corresponding obligations. Their greatest obligation, greatest service, individual and collective, to the State is to enlighten public opinion; to the Church, is to conserve faith; to the University, is to save the human race through universal education, universal but not necessarily uniform,
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voluntary where possible, compulsory when necessary, competitive and selective always.

These obligations the State and the Church have made noble efforts to meet in Texas. From the early days of the Republic the Church has been the founder of colleges and the State the patron of learning. Each is constantly seeking for its institutions the means for better equipment, for larger endowment, for greater efficiency in service.\textsuperscript{1} We honor the

\textsuperscript{1} In most recent days, on the initiative and faith of one man, Mr. Will C. Hogg of Houston, an alumnus of the University of Texas and son of a distinguished governor of this commonwealth, there has been formed and endowed, under the auspices of the University of Texas Alumni Association, of which Mr. Edwin B. Parker of Houston is president, an Organization for the Enlargement by the State of Texas of Its Higher Institutions of Learning. This so-called Hogg Organization is prosecuting its work under a Board of Control of which Dr. Sidney E. Mezes, president of the University of Texas, is chairman, Mr. F. M. Bralley, State superintendent of public instruction, is executive secretary, and Mr. Arthur Lefevre, formerly State superintendent of public instruction, is secretary for research. Among the objects of the present programme of this organization is the education of public opinion, from platform, press, and pulpit, by frank accounts of the present equipment of the educational institutions directly under the patronage of the State of Texas, and by comparative studies based on the history of the State institutions of other States of the Union. This movement has as its final object—and this final object is bound in time to be attained—the removal of all the State-supported educational institutions, namely, the Agricultural and Mechanical College of Texas, the College of Industrial Arts, the several State Normal Schools, and the University of Texas, entirely from the sphere of political influence, and their relief from the necessity of depending on appeals to the legislative bodies of the State government for periodical appropriations to meet expenses of maintenance and equipment.

And the denominational institutions are keeping pace. The Baptists, with the help of a donation from the General Education Board of the Rockefeller Foundation, are adding substantially to the endowment of Baylor University under the leadership of President Samuel P. Brooks; the Christians, burnt out at Waco, are building at Fort Worth a new Texas Christian University under the presidency of Dr. Frederick D. Kershner; the Methodists are adding to the resources of Southwestern University at Georgetown under President Charles M. Bishop, and with the assistance of an appropriation from the Rockefeller Foundation are building in Dallas a new institution to be called the Southern Methodist University, with Dr. Robert S. Hyer as president; while the Presbyterians are rebuilding Austin College at Sherman under President Thomas S. Clyce, are seeking increased endowment for Trinity University at Waxahachie under President Samuel L. Hornbeck, and, under the leadership of the president of their educational board, Dr. Robert E. Vinson of Austin, are proposing to add at least one new college to their list of institutions in Texas. Moreover, at the Rice Institute we have already felt the influence of the educational institutions maintained by the Catholic Church at Dallas, Galveston, Houston, San Antonio, and other points in Texas, and we have also felt a similar influence on the part of the Hebrew faith which has not been lacking in stimulating the development of education and the advancement of learning in Texas.
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State and the Church for the work they have done. Even more do we honor them for the greater work they are proposing to do, for education in Texas. We modestly but confidently hope to aid them in this work, for it would be pleasant to think that this new university in Texas is the best thing that could have happened to every other university of Texas. The pioneers believed in education for all the people as the surest safeguard of their free institutions. Said Sam Houston, "The benefits of education and of useful knowledge, generally diffused through a community, are essential to the preservation of a free government." Said Mirabeau B. Lamar, "Cultivated mind is the guardian genius of democracy. . . . It is the only dictator that freemen acknowledge and the only security that freemen desire." With these pioneers we their successors believe that in the character of the cultivated citizen lies the strength of the civilized State. In writing thus a cardinal article of our creed I have used the phrase "cultivated citizen" deliberately and advisedly. I am quick to take off my hat to the self-made man, and among people so democratic as is this people there will never come a time when any door of opportunity will be closed to him. But the race with the college-trained man the self-made man is finding a race severer and severer. Even as recently as a decade ago the college man was compelled to defend the course he had pursued, but more lately, in business as in professional life, his demonstrated and enduring potentialities have been steadily and surely placing him in the lead. Nor in public life has it come to pass by accident in our national history, that the leading candidates in the last two presidential campaigns should have been graduates of Harvard and Yale, respectively, and the three leading candidates in the present presidential campaign be graduates, respectively, of the oldest, the next oldest, and
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the next to the next oldest of American colleges, Theodore Roosevelt of Harvard, William Howard Taft of Yale, and Woodrow Wilson of Princeton. That our best trained men are showing a growing disposition to enter earnestly into political life, is a most encouraging sign for the future of our government. For an increasing number of our men of education are entering the field of public life to possess it for the common weal, and they are transforming it into a place where men may take up their residence, live honestly, and be held in honor. In disinterested public service they are transforming the politics of the professional politician, whose problems are sometimes mean, into the politics of the statesman and patriot, whose problems are always large. I believe in holding up careers in practical politics as inviting ones to vigorous young men of broad academic training, men of the same fiber and stuff and consecration as are those who turn their backs on remunerative callings and possible commercial success to enter the ministry and other humanitarian professions. Honor might come slowly, but honors are not the chief thing, though I know of no more inviting or promising field where a man might hope to gain the world of greatest opportunity and at the same time save his own soul in unselfish service to his fellow men. It was to just such disinterested active participation in public life that one of our great presidents, the late Grover Cleveland, called his fellow citizens at a notable academic celebration several years ago. "Of the many excellent speeches at the two hundred and fiftieth anniversary of Harvard College," wrote the late Mandell Creighton to the London "Times," "none was of more general interest than that of President Cleveland, who, with great modesty, deplored his lack of university education, and exhorted men of learning to take a greater part in public affairs. 'Any disinclination,' he said,
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'On the part of the most learned and cultured of our citizens to mingle in public affairs, and the consequent abandonment of political activity to those who have but little regard for the student and the scholar, are not favorable conditions under a government such as ours. And if they have existed to a damaging extent, recent events appear to indicate that the education and conservatism of the land are to be hereafter more plainly heard in the expression of the popular will.'

Texans have not been slow in responding to calls to public service from State or Nation. Such calls they have not infrequently answered with conspicuous public service. But if Texas has sent publicists to Washington, bankers, college executives, and railway presidents to San Francisco, St. Louis, Chicago, and New York, Texas has hardly held her own with the rest of the country in science and scholarship, whose service is equally important to State and society. Nor in this respect has the South as a whole held her own, but for that matter the country itself is just beginning to hold its own in science and scholarship with the rest of the world, and there are better days ahead of Texas and the South. These better days will call for leisure as well as learning, for the philosopher as well as the promoter, for men of daring to think as well as men of courage to act, for men whose thoughts are their deeds, men who can exclaim with Hegel, "Das Denken ist auch Gottesdienst." The call to the vocation of scholar or scientist this address makes a thousand times, from its initial line to its final paragraph. Where it is not a call it is a charge or a challenge, and appeal follows on appeal where argument does not follow argument. A great wave of agitation and enthusiasm for vocational education has been passing over the entire country. We have felt the force of this wave, but on the top
of the wave the Rice Institute would place vocational education for science, for scholarship, for citizenship, training for the vocation of scientist, training for the vocation of scholar, training for the vocation of citizen. There is not a man in this company to-day who does not envy the inventive scholar his idealism, his intellectual freedom, his fearless pursuit of truth, his persistent devotion to the things of the spirit. Nor is there a man within earshot who does not envy the practical philosopher his resourceful, practical sense. In these reactions we have one of the larger ends of education, for one of the great ends of education as a social work in our time is on the one hand to glorify the workaday world with the idealism of the poet and painter, the preacher and professor, and on the other hand to humanize and inform the world of science and art and letters with the practical purpose and poise of the calculating captains of industry and commerce. Perhaps I may combine the two orders of ideas on which I have touched in no better way than by saying that learning in our day is no longer an affair of the cloister and the clinic alone; it is also of the mill, the market-place, and the machine-shop. In fact, a not unfamiliar conception of the university itself is that of a mill for converting the youth of the commonwealth into citizens of the State. Its function is to transform mind into a higher order of mind; the mind of the individual, the mind of the community, the mind of the State, the mind of the race, into a higher order of mind. Its business is to train efficient thinking men for the business of life. In reality, the earliest mediæval universities were professional and technical schools. It was largely as a professional school for the training of the minister and the schoolmaster that the early American college flourished. The original learned professions were theology, medicine, and law. We are adding engineering to this original list by
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making its elemental doctrines the means of liberal culture as well as the groundwork for a profession which is fundamental to all industrial and commercial progress. Similarly we are adding architecture and education, and a little later agriculture. With us, men for these professions are to be scientifically equipped through special training based on a broad foundation of liberal education. And as regards this broad foundation of liberal education, our ideas of liberal and technical learning have been experiencing a transition from rather strict delimitation to bounds broader and broader. By liberal learning we no longer mean the so-called classical humanities alone, but also the new humanism constituted of modern civilization and modern culture, of modern letters and modern science. And by a foundation for technical training in applied science we now mean the great range of physical sciences which at one time could be subsumed under the term natural philosophy; the great range of active biological sciences which have developed from the ancient descriptive science of natural history; the great range of psychological and philosophical sciences which, under the influence of scientific method, have grown out of the older mental and moral philosophy; and finally, the larger range where men are still seeking science, in which the sciences of matter and of life and of mind are to be extended to the crowd, to the community, and to civilization itself as objects.

In the immediately preceding paragraphs of this section of my remarks I have spoken of the strength that the new university possesses in its freedom, in its faith, and in its faculties of science, humanity, and technology, as well as in the financial resources of its foundation. I have also pointed out several ways in which that strength is to issue in service to State and Church and society through science and schol-
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arship and citizenship. In the several concluding paragraphs I desire to call attention to certain other sources of strength and support—sources of human strength that support the university—and to some aspects of the larger relations of a university’s life.

Education does not begin with the university, nor does it end in the university. It is a matter of life, the whole span of life, and both before and after. The Church finds its continuance beyond the death of a man, and science has been teaching the State to look for its beginnings far in advance of the birth of the child. “Is it not strange,” asks Thomas Traherne, “that a little child should be heir to the whole world?” To secure that heritage for the child, man’s collective force and knowledge conspire, in a century “in which the care and love of children have taken their place as the first general solicitude of all civilized societies.” Ours has been called the century of the child. No known age of the world’s history before our own could have painted the picture of “the innumerable children all round the world trooping morning by morning to school, along the lanes of quiet villages, the streets of noisy cities, on sea-shore and lakeside, under the burning sun, and through the mists, in boats on canals, on horseback on the plains, in sledges on the snow, by hill and valley, through bush and stream, by lonely mountain path, singly, in pairs, in groups, in files, dressed in a thousand fashions, speaking a thousand tongues.” This panorama of the world repeats itself in Texas. In the schools for the children of Texas and the South lie the deeper roots of this new university’s life. The foundations on which we build are laid by these schools of the State and the Church. The upper limit of their work determines the lower limit of ours. On the religious side, the foundations are laid by the Sunday-schools and the private preparatory
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schools maintained by the churches; on the secular side, by the public schools maintained out of public funds, and by private secondary schools which may or may not be independent of religious control. In America the separation of State and Church is sharp and distinct in matters of government; this separation is also sharp and distinct in matters of education. Religious teaching thus excluded from the public day-schools is being systematically and thoroughly promoted in the Sunday-schools of the churches. Through steady and marked improvement in their teachers, their methods, their equipment, their curriculum, their grading, and their results, these Sunday-schools are becoming entitled to rank as a part of our national system of education. As regards the schools for secular education in the older States of the South, we find that, largely because of strong individualistic tendencies in those States, the private preparatory school has flourished. The oldest State university in the South, namely, the University of Virginia, was until recently fed almost exclusively by private schools all over the South, manned by University of Virginia men. But the wave of public education, from its earliest springs of source in Massachusetts and Virginia, has spread over the whole South, until now from Virginia to Texas each State is building from the moneys of its public chest an educational highway for all its children from kindergarten to university. This wave, however, has not submerged completely the private schools. Many of these private foundations still survive through providing advantages of small classes, individual instruction, personal supervision, and personal contact in smaller academic communities—advantages which the public schools are not yet able to offer in the same degree. Nor is this wave of public education beating in vain upon the lowlands and the highlands of Texas, for any inquiry into public
education in Texas would show steady growth and improvement, from earnest beginnings, in at least four things: the laws concerning education; the subjects of instruction and programmes of study; the organization of the teaching, including training and supervision; and the administration of the laws and of the departments created under them. This is neither the time nor the place to go into details concerning public education in Texas, but a few further general observations may perhaps be made with propriety. When the history of public education in Texas comes to be written, the chapter recording the history of our own time will show that the people who are taking thought for education in Texas realize that for State as for private education deliberate organization is necessary, inspired by an adequate theory of education—a theory distilled from the accumulated history of education, a spirit of conscientious striving to deal with three questions: Why is education undertaken? What to teach so as to achieve the ends of education? How to teach so as to educate? That same chapter of history will show that if, with the inevitable hospitality of a new country where all things are open to experiment, there has been a somewhat too ready acceptance of novelties in education, there has also been deep moral earnestness with its abhorrence of semblances and shams, for with us a thorough desire to bring all current opinions—for example, the educational doctrines of such earnest enthusiasts as Mr. Edmond G. A. Holmes of London, Dr. Georg Kerschensteiner of Munich, and Dr. Maria Montessori of Rome—to the test of experience and judgment by results, has always been accompanied by a feeling of the moral duty of spreading knowledge, of popularizing the results of study and making them known to all. It will show increasing desire of our people for a good race and good government, for the city beautiful and the country
beautiful, for good conscience in matters of truth and good conscience in things of taste—a desire remaining without rest and unsatisfied until all the children of the State shall be in school all the time for nine months of every calendar year. That same chapter will also show quick response to the present popular movements for social centers and play grounds, and more general recognition of the right of every child to live and grow up to the full stature of a man, and the right of every man that labors to some leisure for his own spiritual growth. It will show a growing knowledge on our part that democratic education is of all forms the most costly, and a generous determination on the part of the people to meet the cost through taxation. And, finally, that chapter of history will also record a growing disposition on the part of the people of Texas to provide at the expense of the State all things necessary in the way of education—physical, mental, moral, elementary, secondary, university, scientific, literary, artistic, liberal, technical, or professional—without restriction of subject or kind or grade; without limit of amount or cost; without distinction of class or race or creed or sex or age. This means money, money, money, and men, men, men—the men to assume the responsibilities, the money to pay the bills for the provision of all these opportunities. And in particular, as regards the high schools on which this and other universities and professional schools must lean, is not the thing most necessary for the welfare of university education in Texas to secure at all costs good teachers and plenty of them for these schools? Indeed, if the strongest and finest minds are to be prepared for the universities, should not the staff of the public high school be composed of men and women of very extensive culture in several branches of learning and intensive specialization in some one field: a few members of erudition in scholar-
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ship, a few of productive capacity in science, a great number of exceptional teaching ability? The prime obligation of this corps of teachers would be not to scholarship, nor to science, nor to study, nor to the school even, but to the students themselves: and to them not merely as mechanisms that can be taught to think, but to their whole selves as thinking, feeling, willing beings. The tutors, not taskmasters but fellow-workers; the students, not driven by discipline, but led by enthusiasm; the school, not an interruption in the normal life of the student, but the surest means to its complete realization. In a word, the school would be centered on the students. Their studies and their sports, their work and their play, would be so ordered as to feed and fire their enthusiasms, to stimulate and strengthen intellect in exact thinking and imagination in clear vision, to arouse to action their latent powers of mental acquisitiveness, to develop initiative and again initiative, to enable them to discover themselves and their relations to the great arena of service and opportunity, to train them for the duties of intelligent citizenship in the republic and fit them also to enjoy and perhaps later to advance the larger world of civilization in letters, science, and art.

Another source of unfailing strength to the new university exists ready to hand in the presence of the several hundred college men and women now resident in the city of Houston. While the coming of the new institution and contact with its life will serve to warm their loyalty to their own respective colleges, because of that very interest and devotion they will be quick to interpret sympathetically the aims and ideals of the Rice Institute to the people of its community. They will thus become one of the first of its human assets and one of the foremost of its living sources of strength. To renew and freshen the academic interests of these former colle-
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gians, to stimulate and sustain the intellectual life of the teachers of the city's schools, to tempt business and professional workers to at least occasional excursions into the academic atmosphere surrounding the university, to keep all the members of the Institute in a lively and appreciative sense of familiarity with fields of learning and investigation other than their own, to bring all the people of the city and community into more intimate touch with the academic life of the university, and to carry the influence of that life directly to many homes not represented on the rolls of its undergraduate or postgraduate students, regular series of public lectures, in the form of university extension lectures, will be offered without matriculation fee or other form of admission requirement. These performances are to be authoritative in character, but as non-technical and popular in treatment as their subjects will permit. From domains of literature, history, science, art, philosophy, and politics subjects will be chosen of current interest as well as those of assured and permanent value.¹

These various sources of strength and support which I have catalogued can hardly be measured quantitatively nor can they with any ease be arranged in series of greater or less, but I have no fear of exaggerating when I say that no

¹The present plan for university extension lectures at the Institute consists in giving each academic year two regular series of thirty-six lectures each, the first series running through three divisions of twelve lectures each on Mondays, Wednesdays, and Fridays, from the middle of November to the middle of February, and the second series running similarly from the middle of February to the middle of May. All these lectures are delivered in the lecture halls and amphitheaters of the Institute, each afternoon lecture beginning promptly at 4:30 and closing not later than 5:30. In addition to the afternoon lectures occasional Thursday evening lectures are being given. The plan has met with hearty response on the part of the people of Houston, the attendance on the lectures having ranged from some thirty to more than five hundred auditors at a single lecture. By the end of the present academic year (1914-15) an aggregate of rather more than twenty courses of from three to twenty-four lectures each will have been delivered by Messrs. Axson, Blaney, Caldwell, Dumble, Evans, Glascock, Guérard, Hitch, Hughes, Reinke, Tsanoff, Van Sicklen, Watkin, Weber, and Wilson.
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source of strength to the new university will be more permanent in its influence than that of the aspirations of the people themselves for their children; for, from the captain of industry on down to the most modest member of the firm, whether any or all had the advantages of a formal education, all are determined that their children shall have such advantages. And in this determination lies the basis for confident expectation that within a very few years there will be no family of five members in the city of Houston that will not have had one or more representatives on the rolls of the Institute. Furthermore, the time is not far distant when our citizens shall be coming to think of the city's university when writing their wills, and soon in Houston, as in Cambridge and Chicago and San Francisco, a man will leave a stain on his family history if he fail to remember the city's university in his last will and testament. Moreover, the endowing of scholarships and fellowships, the founding of memorial lectureships and professorships, the erecting and endowing

1 The day of public benefactions by Houston philanthropists has dawned, though still in its earliest morning. The late Mr. George H. Hermann, who shortly before his death handed Mayor Campbell a deed conveying to the city a tract of nearly three hundred acres of land lying just across the road from the Rice Institute, to be used perpetually for the purposes of a public park, has by his will given also to the city a site for a Charity Hospital, together with holdings that will yield an estimated endowment of three million dollars for the latter institution. With engaging frankness Mr. Hermann told me that he had been influenced in making this disposition of his property by the example of William Marsh Rice and the plans of the trustees of the Institute. Thus, in addition to a university for all the people, this city of homes and schools and churches is to have a great public park and a great public hospital. While the city's list of public institutions provided by private donation has been steadily growing, the city has not been waiting indifferently until such provision should have met all its needs. As a matter of very recent history the city itself built during the mayoralty of Mr. H. Baldwin Rice a magnificent municipal auditorium. It was in this auditorium that on the occasion of the formal opening of the Rice Institute there assembled, under the eloquent dedicatory sermon of the Reverend Dr. Charles Frederic Aked and an inspiring service of song and prayer led by the Reverend Dr. Henry van Dyke, an audience of some six thousand souls, including the clergymen and choirs of practically all the churches of the city, "solemnly to link themselves with joy and deep thanksgiving to the consecrating acts by which the new university was publicly dedicated to the high purpose set forth in the Founder's will."
of name-bearing buildings, the equipping of scientific expeditions, the maintaining of university publications, and a score of other ways opened up by the growth of this institution, will offer both to young and to old many avenues for making and perpetuating family history.

In the history of the public welfare in Texas many organized movements, local, State, and national, for educating public opinion, for elevating public morals, for inspiring public taste, for improving public health, have by their propaganda been assisting in preparing the way for a new university in Texas. Of such organizations Houston has a long and active list whose members are determined that their city shall be great and good and beautiful: an art league, a Carnegie library, a chamber of commerce, a Chautauqua circle, lecture and lyceum bureaus, a number of musical societies, a settlement association, a social service federation, a symphony orchestra, and several women's literary and political clubs and unions. In all their constructive undertakings these organizations have at all times enjoyed generous and hearty support on the part of the several local newspapers, which are maintaining the better traditions of American public prints in instantaneous seeking and supplying of information, in eternal vigilance of editorial comment and criticism, in wireless response to the social feeling and sympathy of the community, in the education of public opinion and the reflection of the public mind. With all these local associations the university would seek to co-operate, in no way would it compete with them, in all possible ways it would seek to avoid all unnecessary duplication of their work. Furthermore, we enter also into the results of years of labor for the common welfare which the people of Texas have been receiving at the hands of many voluntary State associations dedicated to the public service. Among the latter
there stand out prominently the Conference for Education in Texas, the State Federation of Women's Clubs in Texas, the State Teachers' Association, the Texas Welfare Commission, and the various patriotic associations for perpetuating relationships with the American Revolution, the Republic of Texas, the War between the States, and other periods of State and national history. These women—for the majority of such workers in Texas are women—have been showing enthusiasm, originality, statesmanship in their work; they have also been showing that these qualities are not the only ones which make men and women leaders when a new country is to be settled in the faith and fear of the Lord, for they have been showing that there is also potent and efficient force in gentleness, quietness, and confidence. These workers make their appeal to the university from the intellectual quite as much as from the moral side. The case for their propaganda may be set in famous words of Cromwell: "What liberty and prosperity depend upon are the souls of men and the spirits—which are the men. The mind is the man." And similarly, in a good passage from Mrs. Bosanquet's book, "The Strength of a People," which I should like to quote: "In all considerations of social work and social problems there is one main thing which it is important to remember—that the mind is the man. If we are clear about this great fact, we have an unfailing test to apply to any scheme of social reformation. Does it appeal to men's minds? Not merely to their momentary needs or appetites, or fancies, but to the higher powers of affection, thought, and reasonable action." Ever zealous to understand the aspirations of the popular will, ever zealous to help the people in their quest for enlightenment, ever zealous to lead the people to things above themselves, this university would, in the spirit of a passage from Spinoza, take its "best pains not
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to laugh at the actions of mankind, not to groan over them, not to be angry with them, but to understand them.” Testing any programme for better uses of life and leisure by a double criterion: Is it based on an understanding of the ways of men and the needs of humankind? and Does it appeal to the understandings of men? the university would seek, while preserving its own freedom and independence, to assist in the advancement of humanitarian movements in State or Nation or world. This humanitarian aspect of university service, as differentiated from the more strictly scholastic and scientific activities of university life, appearing under newer forms comparatively recently in the so-called university settlements and in the university extension movement, finds its latest phase in co-operative unions for world-wide programmes of scientific investigation on the one hand, and on the other, in the organized movements for improvement of good will and the promotion of peace among the nations. In such united efforts the new institution would participate, for if the university, though on private foundation, is in its first days what Bryce calls a municipal university, Haldane a civic university, Dabney an urban university, in its future days it is to be more than a university of Houston—it is to be a university of Texas, a university of the South, and later, let us hope, in reality as in aspiration, one among the national institutions, reflecting the national mind, one among the universities of the nations, fostering the international mind and spirit in cosmopolitan ways such as the mediæval universities enjoyed before the death of universal language and the divisions in a universal Church.
IX

THE UNIVERSITY: ITS SPIRIT AND SUMMONS

In thus endeavoring to write about the meaning of the new institution I have at some length written about its sources in the founder's philanthropy and its history in the public spirit of his friends; of its site, glorious in problems bristling with difficulties and joyous in possibilities of creative effort; of its scope in entering upon a university programme for the advancement of letters, science, and art, by investigation and by instruction, in the individual and in the race of all human kind; of its saints of the past and its seers of the present, pointing by exhortation and example to the highroad along which progress in these high purposes lies; of the shades and towers in which are to be undertaken the daring adventures of its life in deeds of thought and action; of its staff of professors, lecturers, and instructors, in whose personality and work of research and teaching are to be found combined the careers of citizen, scientist, scholar, and schoolmaster; of its students, through whose studies and standards in scholarship and sport constant contributions are to be made to the character, culture, and citizenship of the Republic; of its strength in its freedom from political and ecclesiastical affiliations, in its faith in the progress of the human spirit, in its faculties of science, humanity, and technology, in its self-governed student democracy, in a definite educational policy, and the driving power of ideas and ideals backed by material resources for their realization; of its support in the schools of the city, the county, and the commonwealth, in the college men and women of the community, in the captains of indus-
try and commerce, in all organized conferences for education, welfare, and uplift, in the resolute determination of the people who have been winning the West, now to win the best for the sons and daughters of the West. My further and final object is an attempted portrayal of the spirit which presides over the university; a presentation, more or less rough, of that breath and finer form of the spirit of learning which lends what is perhaps its chief glory to the life of reflection and gives what may be perhaps its final purpose to the life of action.¹

Twenty years ago it was specialization. Ten years ago it was specialization. To-day it is specialization still, whether in academic education or in professional training, but specialization on the broadest kind of general foundation. Preparatory to attacking the practical problems of the material world, men are coming to provide themselves with the most complete theoretical training yet devised in the world of mind. On the other hand, pure scientists are continually on the outlook for applications of their discoveries either to the ideal world in which they live or to the real world in which they find their livelihood. As a result the professor's desk is nearer the market-place, closer to the counting-house, within easier call of State and Church than ever before. The university is saying to its men of letters, "You must be leaders of men"; to its men of science, "You must be also men of affairs." The world in its turn is demanding that its engineers be cultivated men, and that its skilled artisans be skilled in the liberal arts as well.

Where theory and practice thus meet there must be rea-

¹ To bring within the time limits of the programme the reading of an address obviously too long to be read in its complete form in public on any occasion, only four sections of this address were actually delivered as a part of the formal exercises of the inauguration and dedication of the Rice Institute, and under the caption, "The Meaning of the New University: Its Source, Its Site, Its Scope, Its Spirit."
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son, and this reason is restoring to learning its unity, in whose spirit we read the strength and the vision of the university. This spirit appears to us under three aspects in those disciplines by which men seek for truth and strive after beauty in letters, in science, in art. Art was originally the handmaid of religion; science, at one time the servant of philosophy, has more lately become its master; letters, in the beginning the playfellow of poets and story-tellers, has grown to be humanity's recording angel. Science has its source in a sense of wonder, art in a sensitiveness to measure and proportion, while literature partakes of the substance of science and the form of art. Science consecrated to the conquest of truth would solve the universe; art would recreate it in the conservation of taste. Science progresses by inquiry, art under inspiration. Intuition dominates the artistic reason, while inference controls the scientific.

In other words, by the spirit of liberal and technical learning I understand that immortal spirit of inquiry or inspiration which has been clearing the pathway of mankind to intellectual and spiritual liberty, to the recognition of law and charm in nature, to the fearless pursuit of truth and the ceaseless worship of beauty. Its history is the history of the progress of the human spirit. Led by an instinct for knowledge, an instinct for harmony, an instinct for law, that spirit has brought the twentieth century its most precious possessions: the love of reason, the love of art, the love of freedom.

There abide these three: the spirit of science, the spirit of letters, the spirit of art, but the man has not arisen to say to us which is the greatest of the three. These are the faces of the spirit of learning, above which there hovers a halo called by the modern philosopher the spirit of service, and by the ancient seer the spirit of wisdom. Knowledge becomes
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power only when it is vitalized by reason; it becomes learn-
ing only when it lives in the personality of a man; it becomes wisdom on translation into human conduct. I know as well as you that the spirits of which I speak are ghosts who will themselves not speak until they have drunk blood. We pro-
pose to give them the blood of our hearts in the service of the new institution.¹

Ladies and Gentlemen of Houston: At your gates there have arisen for all time the walls and towers and men of the Rice Institute, whose life is to be an integral part of your life, whose service is to be local in the best sense, whose sig-
nificance, let us hope, may be State-wide, and even national, in its reach, on a foundation builted for Houston, for Texas, the South, and the Nation. A long avenue doubly lined with trees, at one end the captains of industry and commerce in factory and counting-house, at the other a college community in academic shades dedicated to liberal and technical learn-
ing, the happy homes of Houston lying in between! A uni-
versity devoted to the advancement of literature, science, and art; to the promotion of letters as the record of the achievements of the human spirit; to the promotion of sci-
ence as the revealer of the laws and the conqueror of the forces of nature; to the promotion of art as the sunshine and gilding of life. A society of scholars in whose company your children, and your children's children and their children, may spend formative years of their aspiring youth under the cultivating influences of humane letters and pure science, pursuing culture with forward-looking minds and far-seeing spirit before undertaking in the Institute's pro-
fessional schools special or technical training for the more sober business of life. A temple of wisdom and sanctuary

¹ It is to Professor von Wilamowitz-Moellendorff, I believe, that I owe this figure of speech.
of learning within whose courts and cloisters you yourselves may find an occasional retreat in which to think more quietly and more deeply; perhaps to worship more devoutly and more intelligently; certainly to contemplate the deeper things of patriotism and politics, of reverence and religion, of peace and progress; and mayhap to discover, if never before, that you may belong to the great community through which the Eternal has worked for ages, that you may have a share in the high privileges and solemn duties which belong to every member of that great community, that in the continuity of human history you may march forward, if you will, in a great pageant that moves from the living past through the living present into the living future.

Not long ago I stood on a great rock—a great living rock—within eyeshot of the birthplace of modern civilization. Upon it rose those incomparable ruins, mighty as the mind that conceived them, majestic as the mountains and sea that call to them. In their midst the gods of the Greeks still live. And of all those gods it was to her who typifies science that the Parthenon was dedicated; to that great goddess who sprang full-armed from the head of Zeus at the touch of fire and toil, to conquer the deep himself. It is no long flight of fancy from the Parthenon above the fields of Hellas to these towers that rise on the plains of Texas. Under her ancient promise, may Pallas Athena preside over these academic groves and guide men by the spirit of science and the spirit of art and the spirit of service in their search for the great, and the lovely, and the new, for solutions of the universe in terms of the good, the beautiful, and the true!

And I recalled the words of the wise man of another chosen people:

1 The idea and experience of the first part of this paragraph I am obliged to share with Professor Sir Ronald Ross, but I am unable to supply the appropriate citation.
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"Except the Lord doth build the house, they labor in vain that build it."

"I prayed, and understanding was given me; I called upon God, and the spirit of wisdom came unto me; I preferred her above sceptres and thrones, for she is unto men a treasure that never faileth."

"For wisdom is a breath of the power of God, and a pure effluence flowing from the glory of the Almighty. She is the reflection of the everlasting light, the unspotted mirror of the power of God and the image of his goodness. And in all ages, entering into holy souls, she maketh them friends of God, and prophets."

Wisdom hath builded her house,
She hath hewn out her seven pillars;
She hath mingled her wine;
She hath also furnished her table,
She hath sent forth her maidens; she crieth
Upon the highest places of the city,

"Whoso is simple, let him turn in hither";
As for him that is void of understanding, she saith to him,
"Come, eat ye of my bread,
And drink of the wine which I have mingled,
And walk in the way of understanding.

"Blessed is the man that heareth me,
Watching daily at my gates,
Waiting at the posts of my doors;
For whoso findeth me findeth life,
And shall obtain favor of the Lord." ¹

EDGAR ODELL LOVETT.

¹ These several passages, from the Book of Proverbs and the Book of Wisdom, in slightly abbreviated form have been distributed in the carving on the caps of the columns which support the arches in the cloisters of the North Wing of the first Residential Hall for men.