Like the nation, the University had expected an early return to normal in 1919 and hoped for opportunities to better its academic balance. Its quarter century of strenuous expansion, a matter of justifiable pride, was looked upon much as a past achievement which had been completed even when President James anticipated that the next fifty years would bring "an infinite number of departments" to an institution giving "light and life and leadership for the whole community in an ever-increasing number of directions." The galaxy of colleges, schools, and departments included many that had attained distinction, but it was also true that some others had not. The unevenness of the divisions was often overlooked, a fault deplored by many in the faculty. The race, the president had said, could not be run abreast; each would be helped in its time.

The expectation of bringing up the balance in the early post-war period was doomed, however, by the pressures of unexpected enrollments and strained finances. Preparations were made in the summer of 1919 for an increase of five or six hundred students, but the fall brought more than two thousand. Late pre-war enrollment totals exceeding six thousand had been difficult enough, but by the third year after the war nearly twice as many were here. Marked increases were seen in Liberal Arts and Sciences, Commerce, and the Graduate School; Agriculture, however,
1. "President's Report for the Year 1922-1923 (Urbana, 1924), 5."
bearing the brunt of the farm depression, found its early post-war increase to 1,215 students to be a temporary phenomenon, and fell nearly half in the next five years.

The doubling of collegiate enrollments in the post-war decade was a striking general phenomenon in the history of higher education. Though the general population remained relatively stationary, the number of resident college students rose from a half million to more than a million. The land grant colleges and universities, while numbering only one in ten among all institutions of higher learning, enrolled one of every five men and one of every eight women students who made up the million. For a time it was commonly thought that liberal provisions for returning veterans caused the rise. At Illinois, 1,342 students took advantage of military scholarships in 1919-1920, which paid their incidental (tuition) fees, and a few received the benefits of the federal vocational program in the College of Agriculture. Entrance requirements were relaxed for those who had seen war service or who might have seemed too mature to return to high school. These recipients of special benefits decreased in a few years to a negligible number, but the enrollment continued to mount. More than three thousand freshmen came in annually after 1919 and the indications were that the number would increase, since high school enrollments were going up too.

The post-war students more nearly represented the population than before. The influx of groups representing the later tides of immigration was especially noticeable. Dean Clark found that greater economic variations were represented. There were also differences suggesting the term "new student" applied to enough persons to lead to the generalization that the post-war students were less serious and not so well prepared for college. Prestige values and transferred parental ambitions brought many to the Illinois campus, as elsewhere. Among the earliest post-war

classes, deficiencies in high school training were noted; nearly a sixth of the freshmen of 1920 were reported as falling below standards. But whatever the nature of the student, he was by mere numbers a problem.

There were also the "new teachers," many of them inexperienced part-time graduate students employed to fill the gaps left by some fifty instructors of higher rank who were otherwise needed or who had not returned after the war. The use of assistants was not new, but with a shortage of experienced faculty the number with teaching responsibilities doubled after the war; by 1923 nearly four hundred, more than half the enrollment of the Graduate School, were thus employed. In the two most rapidly growing colleges, Liberal Arts and Commerce, instructional assistants outnumbered all other members of the staff in the year mentioned. The sectioning principle was extended, and prevailed in most required courses as well as in those normally chosen by freshmen and sophomores. The sections were large, too, some having as many as forty-five students, with resultant losses in teaching efficiency.

Writing to James, nominally still president, in April, 1920, Acting President Kinley said that the University would soon have to decide whether "to continue to expand along existing lines, taking all who come at the expense of advanced instruction and research,...or whether we shall try to influence students not to come here for freshman and sophomore work, and to confine ourselves to the upper-class and graduate work."

Though the latter possibility was not seriously entertained, it was by no means merely philosophical; sixty per cent of the enrollment was in the two lower classes. Barring them from the Urbana campus would have reduced the number there—including the Graduate School, Library Science, and Law—by nearly three-fourths. A policy of selective admissions, such as was being adopted more and more elsewhere, was rejected by Kinley as repugnant to the spirit of a state university, and he came slowly


to the acceptance of a requirement in 1921 demanding grades at least
ten per cent above passing for out-of-state students. As president
after 1920 he was equally opposed to dividing undergraduate instruction
either among other state colleges or by establishing branches. Increased
federal aid, as proposed in the Smith-Towner bill debated in Congress
of 1921, was even more vigorously resisted as an invasion of local auto-

Having turned from the plans of others, Kinley gave the University
one that was essentially his own. No general changes would be made,
and no students would be turned away. First outlined in a Senate com-
mittee's recommendations in April, 1920, the aim was to add no new
courses, to reduce courses of small enrollments to a minimum, to enforce
scholarship rules strictly, and to raise the fees, pending adequate
state appropriations. None of these changes could be accomplished
easily; each had its own set of obstacles. The suspension of students
for poor grades spoiled many a Thanksgiving dinner and brought outbursts
of criticism that were not calmed by the explanation that the
number affected was small—not more than four percent a semester—or
that the policy was really lenient. Half of more than a thousand stu-
dents who were dropped in the two years preceding an inquiry in late
1921 had been admitted again, and some a third and fourth time, only
to fail once more. Another investigation in 1925 showed no reason to
alter the policy.

Efforts to reduce the number of courses and to check ambitions for
further specialization ran counter to tendencies which had been encour-
egaged for twenty-five years. Though James had pictured unlimited usefulness
to which had been encouraged through expansion, Kinley would not venture beyond limits
which, one may suspect, he believed had already been reached. In an ad-
dress, "The Curriculum and Some of Its Consequences," to an assembly of


10. Subcommittee Report to Senate Committee on Educational Policy, May 3, 1922.
the National Association of State Universities he spoke out vigorously against the abuses of departmentalization and over-specialization, saying that in some fields the "devotees invented a terminology and then thought they had a science." Presumably to offset falling enrollments, he said, "we have agricultural economics, rural sociology, agricultural journalism, agricultural engineering, and I presume that in time we shall have agricultural athletics and agricultural finance, agricultural psychology...." He added that the integrated curriculum was fast disappearing. While the tide thus ran strong in the opposite direction, the number of courses was reduced to some degree. It was possible to combine some of them of small enrollment and to reduce the frequency of others. The School of Music ended its individual instruction for beginners in 1920 and five years later its remnant of sub-collegiate work. Retirements and resignations elsewhere in the faculty made possible the suspension of many of the courses that were eventually discontinued.

As these moves were made, and in the light of experimentation in other universities, fundamental questions relating to the efficiency of the University were raised, most of which focused on undergraduate teaching. Kinley deprecated the "survey," but a broad "inquiry" was planned in 1924 to increase effectiveness and, if possible, to cut down on specialized courses. Dean Thompson was made head of the committee; others on it were Professors Adams, Bogart, Cameron, McClure, Peace, Rusk, Scott, Willard, and Zeleny. The investigation of the Educational Inquiry Commission, when it got under way in 1925, was considerably narrower than first intended but was still broad enough to illuminate the nature of classroom instruction and courses. When completed two years later, the report totaled nearly a thousand pages on which was based the commission's conclusion affirming the competence of the instruction. Undue special-

12. ET, '20: 782-783; '26: 204.

ization and duplication of courses were at a minimum, it said, and it emphasized the values of guidance and counseling. It did not support arguments for significant curricular reorganization and recommended but few changes.

There was indeed unusually little enthusiasm for new ideas of this sort throughout the decade although other universities were engaging in an infinite variety of experiments. Yale, Columbia, Dartmouth, and later Chicago plans, to mention only a few, aimed variously to serve students better. There were new types of honors and tutorial courses, specially organized general curricula and orientation courses, none of which, however, elicited notable interest or visible support at Illinois. Kinley's respect for crying prophets was not high, and he refused to view the rising enrollment as a sign of crisis in higher education. "It is," he stated in a biennial report to the state superintendent of public instruction, "simply a raising of the level of education to a new minimum standard for the great mass of people and is parallel with the establishment of an American minimum standard in economic life." These were, as a result, little new in educational organization during the first post-war decade. In the final President's Report (1930) Kinley gave the principles which he said had been followed:

We have held to the belief that we have a double educational duty—to raise the general level of education of the people and to "train leaders." Holding these views, as I do, I have been a constant advocate of admitting all who could meet and maintain our standards...

We have constantly urged...the necessity for maintaining a judicial frame of mind, living in a sane atmosphere, keeping a balanced view of the pros and cons of all proposals for intellectual, physical, moral and spiritual changes.... We have endeavored to protect the immature students of the earlier years from the imposition of people who assume to be world authorities on matters of social, religious, and moral change... and to teach them to ask such prophets for a sign of their reliability....

We have regarded the development of character as part of our

duty as well as intellectual training....

We have encouraged open-mindedness, search for truth, interest in all research, and in propositions for change provided they were not on their face mere agitation and propaganda, balanced judgment, honesty and courage in examining and accepting new propositions and new truths—the rule of reason. This policy may not have satisfied those who confuse mere discontent with desire for improvement, mere agitation with progress, or mere rebellion with liberalism; but I believe it is sound, that it has met general approval, and that its wisdom is shown by the character of our student life and the record of our graduates and our faculty.

It was in the physical features of the education given by the University that the great changes were seen. Though there may well have been doubt about how to reshape the University to the conditions of the post-war period, there was no doubt as to the necessity for more buildings and equipment. Not without difficulty, this most obvious deficiency was met by an unparalleled building program. Classroom and laboratory facilities were brought to a high standard by spending some $10,500,000 before the 'twenties had ended, an amount more than doubling all previous similar expenditures. The Education building, to house a laboratory high school in the College of Education, and Smith Memorial Music Hall, providing a recital hall, eleven studios for instruction, and forty-seven practice rooms—the first adequate quarters for the School of Music—were completed early in the decade. Additions and much remodeling increased the usefulness of numerous older buildings, but relief in general came from the Ten Year Plan, under the provisions of which were built new horticulture laboratories, the New Agriculture building and its complement, Commerce; the three units of the new Library; new gymnasiums for men and women; a building for architecture and kindred subjects; the Materials Testing Laboratory; and an addition doubling the size of Lincoln Hall. All the new buildings had a suggestion of permanence which had been lacking before and were parts of a general plan...
that anticipated expansion more than ever. The Library, as one
example, was designed to permit additions for as many as five million
volumes, though the current number had not reached one million.

Not only were the old buildings being replaced, but more and more
familiar faculty figures were dropping out. Retirement and death, re-
moving personalities who had been important in the building of the re-
putation of the University, took a generation that included some of its
most illustrious names, and resignations following offers of unusual
opportunities in other universities and in business added to the toll.
In the College of Agriculture death removed in rapid succession C. G.
Hopkins, head of the agronomy department; J. G. Mosier, chief of the
soil survey, and W. F. Mandachin, chief of farm organization and manage-
ment. Walter C. Coffey, "the sheep man," one of the most widely known
professors of the able department of animal husbandry, was elected a
dean at the University of Minnesota, where he later became president.
The shadow grew longer when Miss Isabel Bevier, founder of the home
economics department, and Dean Davenport retired in 1921 and 1922. En-
gineering lost its dean when Lehigh University took G. R. Richards as
its president; and C. M. McConnell, the assistant to the president and for-
mer registrar, went with him. The long-time head of the mining engineer-
ing department, N. H. Stock, died suddenly in 1923, and in the previous
year I. O. Baker, a member of the faculty since 1874, had retired. In
1926 A. M. Talbot became professor emeritus, though the word retirement
could hardly be applied to him.

The College of Education lost its two leading members when Dean W.
W. Charters was attracted to a position at the Carnegie Institute of
Technology in 1919, and B. R. Buckingham, the director of the newly formed
Bureau of Educational Research, went to Ohio State University in 1921.
In the College of Liberal Arts and Sciences the resignations seemed—
an exodus; an unusually large number of outstanding scholars were lost.
There could be no doubt but that the University was seriously weakened
by the leaving of such men as Joel Stebbins, E. B. Greene, C. W. Alvord,
B. H. Bode, A. S. Pease, S. P. Sherman, Lew Sarett, F. W. Scott, H. P.
Harrington, and Kenneth McKenzie—the list is far from complete. Re-
tirements were deeply felt even if inevitable when they came to S. A.
Forbes, S. W. Parr, W. A. Hoyes, H. J. Barton, William Trelease, Frank
Smith, and Julius Goebel. Coming at a time when most departments had
difficulty in securing even relatively inexperienced teachers, the right
successors could not always be found. On the assumption that it was
wiser to encourage the work of younger men than to block their advance-
ment with appointments of the highest rank, most replacements and addi-
tions in the 'twenties were made at the level of the assistant professor.

Expansion, in terms of organisation, was kept at a minimum. Courses
in religious education sponsored by the Wesley Foundation and supported
by it were admitted as electives by the Senate in 1919 on the condition
that University standards of instruction must be maintained. Other
campus foundations soon organized similar courses, but they were largely
adjunct to the curriculum. Within the University itself four new de-
partments were organized, each, however, representing administrative ad-
justment rather than academic expansion. General engineering drawing,
attaining departmental status in 1920 with Professor Harvey H. Jordan
as head, had been in fact a department since the beginning of the cen-
tury. Astronomy, bacteriology, and farm mechanics, the three organ-
ized in 1921, had been relatively independent divisions in the depart-
ments of mathematics, botany, and agronomy. Proposals to establish
other departments, and a veterinary college, were rejected by Kimley.

Some of the pressures to create new departments were hard to resist.
The veterinary college idea was not new, but in 1919 the state legis-

18. BT, '20: 645-646.

19. Ibid., 740.

20. Ibid., '22: 6, 17.
lature had at the instance of veterinary and livestock growers' associations asked the University to consider plans for such facilities. Investigation showed, however, that the need could be better met by improving the existing facilities in animal pathology. Bee-Keepers and optometrists wanted their interests represented by departments or schools, and the state architects' society was vigorously urging the establishment of an independent school or college of architecture, to succeed the old department. To the latter request the Senate gave its assent in 1921 but action had to be delayed because of finances.

Greater co-ordination among the existing colleges and departments was stimulated by the creation of the office of provost in 1920, a position designed to become a kind of vice-presidency for better handling of the more common details of educational affairs. The place fell logically to Dean Babcock who held it in addition to his work as dean of the College of Liberal Arts and Sciences.

In 1919 Babcock was already senior among deans though he had come to the campus only six years before. Twice within those years departments of his college had been removed to form new colleges, yet Liberal Arts and Sciences grew at such a pace that it never had less than twice the enrollment of its nearest numerical competitor. In addition, the regular enrollment was matched annually by an influx of students from the other colleges who came in to meet requirements in English, languages, science, and "cultural" electives. Old University Hall was the main headquarters, but classes were scattered through more than a half dozen other buildings, the most important being Natural History, Lincoln Hall, and Chemistry. The curriculum, subject to minor changes from time to time, included the prescribed subjects of rhetoric, physical education, hygiene, and military science, which were general to all the University and which were normally completed by the end of the sophomore years. In the group


requirements were an English literature course, a foreign language, and a minimum number of studies in the social sciences, physical sciences, philosophy, psychology, and education. Concentration was provided for by the requirement of a major of at least twenty credit-hours in one of twenty-six subjects, supplemented by a minor of eight hours. The rest of the 130 hours required for graduation were to be met by free election.

Much of the post-1920 enrollment increase was in the social sciences, an experience confirmed elsewhere, and to a lesser extent in certain science departments which had recently attained prominence, one of these being bacteriology, which after its separation from botany was headed by Fred W. Tanner. Geology, another, had risen rapidly under Morris M. Leighton as head before he moved to another part of the campus in 1922 to head the State Geological Survey. A third was psychology, the province of Madison Bentley until 1928 and then of Herbert O. Woodrow, two recognized leaders. Among the social science departments, political science reflected the distinction of J. W. Garner and J. A. Fairlie, outstanding authorities in international law and public administration, respectively. Garner, known almost as widely in Europe as in America, often lectured in continental universities; in 1922 he was the Tagore lecturer at the University of Calcutta, India. He was a tireless writer and a popular teacher for both undergraduates and graduates. His principal associates, the low-voiced Fairlie and J. M. Mathews, the latter the author of widely used texts on government and foreign relations, were joined in the twenties by Clarence A. Berdahl and Charles M. Ansier.

Classics, though losing A. S. Pease and H. J. Barton during the decade, maintained distinction through the undiminishable energies of W. A. Oldfather, mattering little whether the combat was in the departmental library, a Senate meeting, or on the tennis court. The philosophy depart-
sent, far from being a realm of abstract speculation, was a source from which able administrators were drawn—in 1929, A. E. Daniels, to become dean of the Graduate School, leaving as department head M. T. McClure, who in turn was promoted in 1933 to become dean of the College of Liberal Arts and Sciences. The post-war period brought gargantuan size to the English department, for not only did its rhetoric division keep pace with the freshman enrollment but its journalism and speech divisions were each as large as an average department. Faculty members in English, from professors to assistants, numbered in the seventies prior to the establishment of the separate School of Journalism, an event of 1927; and the number of courses was even more numerous, including those in Norwegian and Swedish given by Professor Pinn. After Sherman's departure, the heads were, successively, Professors Scott, Bernbaum, Walter J. Graham, who was one of the few teachers of professorial rank to join the University staff during the Kinley administration; and after the middle-thirties, Harold N. Hillsbrand, and Kenneth Larson. Among other appointments, those of Thomas Whitfield Baldwin, Harris Francis Fletcher, and Bernard L. Jefferson must be mentioned; in the journalism division, Lawrence W. Murphy, who became the first director of the new school.

History, though losing Greene and Alvord early and A. T. Olmstead late in the decade, was strong in the ranks. L. N. Larson became Greene's successor as head, in the period when Larson's reputation for Scandinavian studies was largely established. A. H. Lybyer returned from the Peace conference to begin the courses in recent European history which attracted many undergraduates and graduates. Lybyer's 325, "Europe Since 1914," was the first classroom lecture to be broadcast by radio—February 11, 1931. W. S. Robertson and Olmstead, giving courses in Latin-American and ancient history, were in their prime. As successor to Alvord, T. J. Pease speeded the publication of the Collections of the state historical library, while James Garfield Randall, an appointee of
1920, began the studies of Lincoln for which he has become noted, and F. C. Dietz issued pioneer studies in the history of English governmental finance. In 1923 Marcus Lee Hansen became a member of the department and though he died just ten years later, won the Pulitzer prize for studies in immigration, published posthumously.

Though the pass from history to pre-history is not chronological, the University did so in 1921 when after the completion of the centennial history of the state, it turned to archeological investigations of the Cahokia mounds near East St. Louis. One of these, Monk's Mound, the largest in North America, had lent itself to fabulous tales of ancient civilizations rivaling Egypt. While such a contention no longer needed disproof, the mounds did yield to the University-subsidized diggings of Warren K. Moorehead, a pioneer American archeologist, much information about Illinois mound-building Indians. The interest thus stimulated resulted in further explorations in other parts of the state, and the establishment of instruction in anthropology by Arthur R. Kelley in the sociology department. Sociology had undergone a complete change of personnel in the twenties. Its principal members late in the decade and early in the next were Ernest T. Miller and Donald R. Taft. E. C. Hayes had died in 1928.

Changes were also going on in the language department. German and Romance Languages, with the leading position in German passing from Goebel, on his retirement, to Albert W. Aron, who came from Oberlin in 1928. Romance Languages, which had felt losses as keenly as the English department, was rebuilt by D. H. Carnahan, '96, who remained its head until the department was divided between French and Spanish on his retirement in 1939.

Among the science departments, mathematics was recognized as one of the ablest in the nation. Two of its members, G. A. Miller and A. B.
27. "Digging into History," *IAN*, 9 (December, 1930), 119.
Coble, were members of the National Academy of Science. The ranks were both strong and deep, for though mathematics was partly a service department, the demands were for advanced as well as elementary courses. The stability of the department was indicated by the long service of its principal members, among whom should be recognized—Professors Shaw, Ench, Grathorne, Haklett, and Lytle, naming only those in its highest ranks. When E. J. Townsend retired in 1929, R. D. Carmichael was head for the five years before he became dean of the Graduate School. He was succeeded by Professor Coble. The small astronomy department, to which Robert H. Baker came from the University of Missouri in 1922, gained new facilities for its research in stellar photometry when a specially-designed thirty-inch reflecting telescope was built. Entomology, another small department which sought a new head early in the 'twenties, found its successor to Forbes in Clell L. Metcalf. Botany, after Trelease's and Metcalf's retirements, was headed successively by Homer L. Shantz, whose two years' stay ended with his election to the presidency of the University of Arizona, and by John F. Buchholtz, a noted investigator in artificially accelerated mutations. Zoology, headed by R. B. Ward since 1909 and strong in a staff that included Charles Zeleny, V. E. Shelford, and H. J. Van Cleave, was strengthened by the appointment of Waldo Shumway, an able embryologist, in 1922.

When W. A. Noyes and S. W. Parr retired from chemistry in 1926, only B. Smith Hopkins had been on the staff as long as ten years, but the department was one of the country's most distinguished. Grouped around Roger Adams, the succeeding head, were many young and unusually able men, four of whom were to be honored by election to the National Academy of Science in the next fifteen years. Chemistry was, as it always had been, both popular and strong at Illinois, with research important in both the "pure" and applied branches. B. Smith Hopkins led investi-
30. IAM, 6 (February, 1928), 208.
gators to the identification of "Illinium," the rare element which he named for the state and University. William Cummings Rose was carrying on research in biochemistry, succeeding H. E. Lewis, equally distinguished, who had gone to the University of Michigan in 1922; Worth Huff Rodebush, in physical chemistry; Donald Babcock Keyes, chemical engineering; Carl Shipp Marvel, Ph.D. '20, organic chemistry with special interest in polymers, the basis of plastic materials; George Lindenberq Clark, X-ray chemistry; and Adams, the head, in structural and synthetic investigations of organic compounds. Of former students, many were regarded as outstanding chemists; among them, the late Wallace H. Carothers, Ph.D. '24, who invented nylon shortly after leaving the University, will not be forgotten.

In the College of Commerce the temporary organization under N. A. Weston came to an end with the appointment of C. M. Thompson, '09, as dean in 1919. One of his first acts was to establish a Bureau of Business Research, something like the experiment stations in agriculture and engineering. Although there were only two departments, headed by E. L. Bogart, and business organization and operation, by H. T. Sewell, '08, the college was highly organized, with twelve relatively distinct curricula and a comprehensive student advisory program. In 1932 a third department, public utilities and transportation, was added. Faculty additions to the college were necessarily numerous; soon in the post-war decade the enrollment rose from 1,112 in 1918-1919 to 2,065 in 1921-1922 before leveling off. Many of the names best known to the post-war students were of men who had been with the college before the war: Robinson, Weston, Bogart, Litman, and Russell. The 'thirties brought the retirement of all but Russell in this distinguished generation, bringing to the fore the names of Paul D. Converse, A. C. Littleton, '12, Arthur G. Anderson, Charles W. Schlatter, Essel R. Dillavou, '14, Mer-
31. Research leading toward the identification of the sixty-first element of the periodic table was begun in 1920 by Professor Hopkins in connection with a project to chart the spectra of the elements. The faint lines of the unidentified element were noticed. Attempts to isolate it met frequent failure but the work progressed until in early 1926 Hopkins' assistants, J. A. Harris and L. F. Intema, isolated a compound identifiable by x-ray analysis. "Illinium, the Metal of the Illinois--New Element Discovered by Professor Hopkins and his Associates," *JAN.* 4 (April, 1926), 241-242. BT, '26, 544. G. D. Beal, "Ten Years of Chemistry at Illinois (1916-1917)," *Special Circular of the Department of Chemistry, 1916-1927* (Urbana, 1927), 22.

32. Department of Chemistry, Developments During the Period 1927-1941 (Urbana, 1941).

33. President's Report 1922-1923, 78.

lin H. Hunter, and Frederic E. Lee, the last named coming in 1929 from a position as financial advisor in the American embassy at London.

Education, the second college to arise from Liberal Arts and Sciences, had been in existence only a year when C. E. Chadsey became dean in 1919. Growth was rapid, reflecting the increasing high school enrollments and the rising standards required of teachers. The undergraduate enrollment of the college rose from eighty-seven in 1919-1920 until the level of the pre-depression years, a little over a thousand, was reached in 1926. The curricula offered promising opportunities to graduates: a general teachers' and administrators' course and the Smith-Hughes courses for teachers of agriculture and home economics, open to juniors and seniors; industrial education, and physical education-athletic coaching, four-year courses. The physical education-coaching division, an outgrowth of the summer coaching school begun by G. Huff in 1914, and the first regular school of its kind in the country, was especially successful, attracting in some years as much as half the college's enrollment. As the organized research activities of the Bureau of Educational Research, directed after the first year by Walter S. Monroe, got under way, a wide variety of investigations were reported in its series of 35 Bulletins. Significant studies in the history of education by Robert F. Seybold, ranging from the medieval to the modern, have appeared in addition to the more usual type of investigation. In Edward H. Cameron (1920-1939), professor of educational psychology and after 1931 director of the summer session, the college had one of those rare personalities whose influence radiated beyond the classroom and office.

It is said that President James abandoned all hope for the College of Law when he found its faculty intended to teach law "as it existed" rather than "what it ought to be" and were wary of his ambition to make the University a center of legal reform. When war came the feeble ex-


37. Frederick Green, Law School Recollections, 46.
istence of the college had been almost snuffed out; its post-war renaissance was virtually a rebuilding from the very foundations. Albert J. Harne, who became dean in 1922, was the fourth in as many years, but he succeeded where others had failed. During the next years both courses and faculty were reconstituted, and when the University library was moved, the college for the first time had an adequate building. Of the older faculty, only Frederick Green remained after the retirement of Judge Marker in 1926; the new included Walter L. Sumner, noted for a comprehensive treatise on the law of gas and oil, appearing in 1927; George W. Goble, whose specialty was insurance; Francis S. Philbrick, a distinguished legal historian; William E. Britton, '14, Oliver L. McCaskill, George E. Weisiger, '23, and Sveinbjorn Johnson, from the supreme court of North Dakota in 1926. Judge Johnson was also University counsel and a scholar in early Scandinavian legal systems.

That the College of Law had found its place was evident in the enrollment, which rose from 109 in 1919-1920—its highest in five—to 444 in 1928-1929, while the record of its students in meeting the bar examinations was enviably high.

Days of brighter fortune were also ahead in the School of Music. The dropping of individual beginners' instruction in 1919 (and of all sub-collegiate instruction in applied music in 1925), the occupation of Smith Memorial Music Hall in 1920, and the appointment of Frederick B. Stiven as director in 1921 marked the successive steps toward a turning point in its history. Director Stiven at once began to reorient the curriculum. He established in 1922 a course for public school music teachers in conjunction with the College of Education, and in the next year expanded the courses in musical theory. He gave an opportunity to major in wind instruments as well as voice, piano, organ, and violin. These changes set the direction; theoretical courses and band and orchestral teaching were notably improved and standards were raised until
38. BT. '22: 286.
in 1939 the school was ready for graduate study.

Adequate special facilities in the new library building, entered in 1926, similarly revitalized the School of Library Science. The course was at once revised to enable the granting of a master's degree on completion of the second-year work, and a little later was accredited as a study for the doctorate, in accordance with the demand for librarians in large specialized libraries. In both schools the enrollments grew.

North of Green Street, the engineers were highly stabilized in enrollment and curriculum. The rank of the College of Engineering among others of its kind was of the highest and its courses were broader in outlook. Its policies, following patterns of twenty years earlier which had brought the college its reputation, were conservative reflections of the vocational outlook of the engineering professions. Dean Ket-chum devoted much attention to the improvement of teaching methods, firmly believing that professors influenced the character of their students as well as their vocational proficiency. But the technically-minded students, always finding opportunities in their specialties on graduation, were notoriously disdainful of the subjects taught south of Green Street. They preferred the concentrated curriculum prescribed by their own college. As a result, modifications in the post-war period were few, such as those concerning intensification of effort and other readjustments.

There were some changes in the faculty. The college was often drawn on for leaders by other institutions and suffered losses through retirements and deaths. Early in the 'Twenties the dean and half the department heads changed. A. C. Willard became head of mechanical engineering, and Clement C. Williams, '07, of civil engineering, though four years later he left to become dean at Iowa State University; Alfred Copeland

40. H. H. Jordan, "Ten Years of Progress in the College of Engineering," The Record of a Decade. Addresses...commemorating ten years of service by Dr. Milo Smith Ketchum..., May 25, 1932 (Urbana, 1932. Mimeographed), 7.

Callen, mining engineering, and Callen Warner Farmalee, ceramics. Except Professor Willard, all were drawn from other institutions. All were men of the highest reputation in their fields. Willard and Williams were future university presidents, the latter of Lehigh; Callen after 1939, dean of engineering at Lehigh. In 1936 he had been president of Kiwanis, an international businessman's organization. The departments were also strong in depth. Civil engineering, in which Whitney C. Huntington succeeded Williams as head in 1926, had Wilbur M. Wilson, Hardy Cross, and Harold E. Babbitt. Mechanical engineering had a staff that was built before the war—C. A. Goodenough, O. A. Leutwiler, '09, A. P. Kratz, and B. W. Benedict (died in 1927.) In theoretical and applied mechanics were M. L. Enger, '06, successor to Talbot in 1926; R. F. Moore, Fred B. Seely, Frank E. Richart, '14, and Harald M. Westergaard, the latter the choice of Harvard to head its Graduate School of Engineering in 1936. In physics, headed by A. P. Carman (after 1929, Francis Wheeler Loomis), were C. T. Knipp, Jacob Kuns, and F. H. Watson. One department, municipal and sanitary engineering, which had grown up with theoretical and applied mechanics, was closed when Talbot, the head of both, retired in 1926, but the change was purely administrative.

In the work of the Engineering Experiment Station there was a notable expansion in both volume and scope which eminently justified the erection of the unrivaled Materials Testing Laboratory later known as Talbot Laboratory. Research in co-operation with industrial organizations, begun before the war, was the most striking development, with the staff of the station making important contributions to problems as varied as water treatment in boiler use and ice manufacture, the failure of metals under stress, the perfection of enameling processes, and others which more than doubled the activity of the station. It was at this
42. The first public demonstration of the talking movie was given be­
fore the alumni (University) section of the American Institute
of Electrical Engineers, June 9, 1922, in Room 100, Physics
Building. A month or two previously a similar demonstration
had been presented to the Board of Trustees.

Tykociner had conceived the idea of sound recording on
film as early as 1896, three years after Edison invented mo­
tion pictures, but was unable for want of adequate equipment
and the press of other duties to carry out the idea. The in­
vention was widely publicized in the fall of 1922, eliciting
from DeForrest, the radio pioneer, an announcement that he was
working on the same problem in Germany and would soon demon­
strate his method. The University planned to patent Tykociner's
invention but complications arose which resulted in a reversal
of the decision. There wasn't much difference between the first
film strip and the modern except that in the first the sound
track was on the left margin while modern usage places it on
the right.

Tykociner also carried on investigations of model antennas
and ultra short-wave radio in two field laboratories he set up
in a pasture south of the Stadium. Cattle from the College of
Agriculture roamed about and got in the way generally, but Tyk­
ciner in observing the interference they set up demonstrated
what turned out later to be the technical means for television
and radar purposes. At the time, however, the cattle seemed
more of a nuisance than anything else.

43. "Fewer Students from Rural Districts," IAM, 2 (June, 1924), 269.
commemorating Dean Davenport's quarter century as dean was held, which was less to honor him than "to review the agriculture development of the state from the educational, scientific, and practical viewpoints..., and to try to frame, if possible, the main outlines of a general policy of agricultural development for the state in the next quarter of a century."

No specific plan came from the conference, held in January, 1922, but the course of action was made evident in several important addresses.

Dean Davenport himself stated the question and gave the answer: "Shall a state like Illinois drift into its new development, accepting what the accidental fates deal out, or shall we, by taking thought, control and direct this development to some definite ends? ... In all real development it is the thinking citizen and not his institutions that must take the lead."

In the sphere of the college the Smith-Hughes Act provided for teacher training in agriculture, industrial arts, and home economics, all of which was soon set up. The experiment station staff continued its experiments despite financial pressures. A five-year program of horticultural research was opened in 1923 in co-operation with the Illinois Canners' Association, and with several utilities associations a study of the possibilities of electrification. Robert Graham, the chief of the work in animal pathology, formerly veterinary science, reported in 1920 an important discovery in bejulism in domestic animals and a little later a remedy. The significant trend, however, was the annually increasing number of studies in farm organization and management, finance, marketing, and farm mechanics, fields in which H. C. M. Case, '12, Charles L. Stewart, Laurence J. Norton, and Emil W. Lehmann were leaders. To this new orientation of agriculture research the Purnell Act of 1925 gave both financial impetus and a classic expression of purpose, providing $60,000 a year for "such scientific researches as have for their purpose the establishment and maintenance of a permanent and

45. Ibid., 186.

46. BT, '30: 83.

47. See Ibid., '21: 186.
efficient agricultural industry, and such economic and sociological investigations as have for their purpose the development and improvement of the rural home and rural life."

In the work of the College of Agriculture there was an unbroken continuity of outlook that may be followed from the latter years of the nineteenth century to the agricultural "new deal" of the 1930's. That part of the "Illinois system of permanent fertility" devised by Hopkins which looked toward soil conservation became in the twenties the core of the long-range policies advocated by Deans Davenport and Mumford. Studies brought out the regional character of Illinois farming and the relation of the economy of the state and nation. The Farm Service—a Farm Bureau-Farm Management Service—was begun in 1925 to help farmers become more about the national agriculture in general and how to adapt their efforts to it. Both ideas were widely adopted by other states and appeared in federal programs.

In 1930 these efforts and others of the sort crystallized in an Agricultural Adjustment Conference called by Dean Mumford, bringing together a thousand farm men and women to discuss a voluntary program of action to be taken by them as individuals. The college staff provided data and analyses on which such plans could be based. After this general meeting and then county meetings were held. Thus a voluntary agricultural adjustment program was well under way five years before the federal system absorbed it in 1933. The Illinois plan, in many ways the inspiration of the federal plan, was a voluntary, co-operative, "grass roots" effort among farmers aided by the college to curtail uneconomical types of production, and to promote soil conservation.

President James had predicted unlimited usefulness to the University if it followed "sound, democratic self-governing lines." Yet a decade
48. 43 U. S. Statutes at Large, 971.


had not passed before President Kinley told the trustees that "the most fundamental point in our whole higher educational system seems still unsettled. We are not agreed about the aim of our colleges and universi-

ties." In ten years, issues which had seemed most definitely established became the most perplexing problems faced by the American university. It was perhaps inevitable that these should arise in a critical form in public universities; more than others they had been shaped largely by external forces. By responding to the "demands" of the constituency and the desire to be of service, the University now saw that the cross-currents which Gregory had been wise enough to note in 1868 had become a reality. With characteristic bluntness Kinley himself admitted shortly after his retirement that "broadly speaking, in education as in business, demand precedes supply and fixes its character and amount." But he and the faculty were perturbed nevertheless.

The first questioning of the purposes of the University arose with the problem of student numbers. Mass instruction suggesting factory methods was expected as an inevitable result. While the allusion to the factory was not absent at Illinois, the president and faculty firmly adhered to the principle that quality of instruction need not be in inverse proportion to quantity, and took steps to promote scholarship. One approach, made by Deans Clark and Leonard, was to raise the social prestige of academic distinction by forming honor societies. Phi Eta Sigma and Alpha Lambda Delta, for freshmen men and women, begun in the early twenties, became general among universities, and a large number of other groups catering to specialized interests were also established. More formally a new system of honors was established by the Senate in 1924, providing for an annual convocation at which recognition was given to the deserving. The ranking students in each class were listed in the program, the names of the highest three per cent of the seniors were per-

mamently inscribed on a bronze tablet, and the bachelor's degree was amended to include the grades "With Honor" and "With High Honor."

Scholarship awards and prizes, most of them of recent origin, were given increased emphasis. A specially important group of prizes was open to architectural students, notably the fellowships for foreign travel and study and the class prizes established by Francis J. Flynn, '97; the fund from Robert Allerton for the study of New England colonial buildings; and professional fraternity prizes. Several departments inscribed on plaques the names of those having the highest averages of the year. Civil Engineering honored its two ranking seniors with the monetary Ira O. Baker prizes. Funds from private donors also increased opportunities for financial aid, that were open to worthy students; many of these were scholarships, the stipends varying from modest sums to several hundred dollars. The Morava scholarships, endowed by Wensel Morava '76, and the Bates scholarships, of more recent date, were outstanding gifts of this kind.

Another effort concerned teaching procedures. Some departments extended the lecture and sections method while others abandoned it favor of sections independently taught. In freshman English and rhetoric the "star" section was begun on the basis of placement examinations. Most colleges devised systems of staff conferences or urged the department-to-department for the benefit of younger teachers, and after the Educational Inquiry Commission emphasized the importance of student guidance programs, an increase in counseling activities was noticed. But beyond recommending improved co-ordination between courses, the commission had not favored curricular reorganization in spite of the vogue of similar surveys elsewhere to proclaim the necessity of an educational revolution.

Outside the realms of specialized controversy, of which there was

much between those who championed plans, two general trends in higher education can be noted. One was broadly a reaction against professionalism and specialization, a tendency which had successfully, it was generally admitted, captured the stronghold of the "liberal" education, the colleges of liberal arts. The remedies for this disorder usually involved the revision of at least the elementary college courses, increasing or decreasing individualized study. The other trend was the emphasis on professionalism and specialization, a process of great momentum and especially characteristic of the land grant colleges. President Kinley spoke and wrote vigorously and often against this, but for the cures commonly suggested he had little favor, demolishing them sharply in his series of annual President's Reports.

The atmosphere was thus hardly favorable when the Senate considered in 1924 a proposal to begin non-departmental "general" courses in evolution and in current social problems. Only the first was adopted, bringing together lecturers from the departments of zoology, botany, geology, psychology, and astronomy in a semester course called "Zoology 7, Evolution." Some years later (1932) chemistry began a course giving a general view of the subject, but measured by enrollments it was not attractive. The College of Liberal Arts and Sciences undertook in 1929 its first notable curriculum change since 1913. Students were allowed greater freedom in choosing subjects, and exemption from elementary work was facilitated but there was no readiness to depart from the traditional organization of the courses.

The intensification of professional interests, on the other hand, is seen in the separation of the courses in journalism from the English department in 1927 to establish the School of Journalism. A junior-senior curriculum was arranged, and energetic direction by Lawrence W. Murphy at once attracted the support of enthusiastic students and of the
55. The philosophic introductions in this series and numerous printed addresses suggest that Kinley would have favored a conservative policy representing a "return" to a limited number of fundamental courses.

56. Senate, Minutes, June 4, 1923, 7: 51. First Report, Senate Committee on General Courses, June 1, 1923, Ibid., 52, appears favorable to a gradual adoption of a group of general courses. Dean Davenport had looked forward to such courses in agriculture in a letter to President Kinley in 1922. Aug. 28, 1922, p. 7, Pres. Corr., 1921-1922.

57. Annual Report, College of Liberal Arts and Sciences, 1931-1932. Illini, Sept. 21, 1933, 1, 4; Sept. 26, 1, 4.

58. Ibid., 146-148.

59. Ibid., 28; 562.
press associations active in Illinois, one of which, the Illinois Press
Association, established in 1930 on the campus an Editor’s Hall of Fame
for the inspiration of the students, and in other ways co-operated close-
ly with the faculty. Similar sentiments influenced the establishment
of the College of Fine and Applied Arts in 1931, another administrative
reorganization of courses already highly developed. In the background
of the agitation for the new college was a change of professional out-
look among architects best exemplified by the increasing emphasis on
design, taught by Samuel C. Dillenback, and also reflected in the impor-
tant history of architecture courses taught by Rexford Newcomb, '11,
and others. Arguments supporting the separation of the department from
the College of Engineering pointed out that architecture was no longer
associated with the carpenter and building mechanic; it had become an
art in which applied science was a tool and aesthetics the inspiration.
It was also apparent that to bring together the instruction in the arts
would be mutually beneficial. The organization of the college thus
served a dual purpose, having aims to which the selection of Professor
Newcomb as dean brought sympathetic leadership as well as the example
of scholarship.

Though the College of Fine and Applied Arts was the only one of its
kind in the country even after its first ten years’ existence, the wis-
dom of its organization was soon proved. Art study is no longer a "poor
relation" among the activities of the University, drawing on architec-
ture for teaching strength as it did before the first World War when Ricker,
Wells, and Charles Fabens Kelley (1908-1914), later curator of the Art
Institute in Chicago, were dividing their time between the departments.
In a decade under the new organization the staff trebled in number. Ed-
ward J. Lake, '95, who had succeeded Frank Forrest Frederick in 1908 as
the department’s leader, retired in 1927; a year later James Grote Van
Derpoel left his courses in the history of architecture to succeed Lake.
and in turn was succeeded in 1916 by Frank J. Ross, of Ohio State University. Two new curricula, commercial and industrial design, were added to the older painting and art education courses. When the Carnegie Foundation made possible the presence here of distinguished contemporary artists as resident painters, Illinois was fortunate in obtaining an annual succession of visiting professors that included, beginning in 1925, Dale Nichols, Robert Philipp, Frederic Tuten, and Jerry Farnsworth. A smaller department of landscape architecture formerly associated with horticulture in the College of Agriculture has been for many years headed by Otto G. Schaffer, '16, and is probably the best known department of its kind, while architecture, headed by Loring H. Provins, '08, has had a distinguished staff and a succession of unusually able students. Widely known among architects for their originality and merit in general are the unusual small house designs of George Fred Leck, '20, the bandshells of Henry Kaspehofer, '30, and the theaters and county sanitarium of William L. Pereira, '30. In the School of Music, the largest division within the college, especially favorable notice has come to the band and orchestral instruction.

Though one new major unit had been formed and the second was at the point of formation when President Kinley retired in 1920, the "fundamental issues" to which he so frequently referred were still to be solved. But he had made it possible for his successor to give less divided attention to educational objectives by meeting admirably the urgent need for buildings, equipment, and staff recruitment. It was thus to educational issues that President Chase immediately turned.

The leadership of President Chase contrasted strongly with that of his predecessor. Undoubtedly the Illinois Alumni News heralded his readiness to experiment as meaning "a new era of learning and light." In his early addresses Chase made clear a belief that Illinois and other
61. _I&N_, 9 (February, 1931), 186. The educational policies and philosophy of the former president were under bitter attack during the safety of his absence on a world tour in the spring of 1931. See _Illini_, February-March, 1931, passim.
universities would not be judged by their adherence to old aims but by their flexibility and creativeness in meeting constantly changing circumstances and objectives. He stressed the difference in purpose which set apart state universities from other higher educational institutions, both in America and Europe. And though he offered no patented solutions he gave notice that the University was to pioneer in serving a civilization that did not exist even as recently as ten years before. Plainly, only continual self-examination and an experimental attitude could guide the charting of the course.

The candor of the assertions, including one that improvements would be welcomed, won faculty support and enthusiasm to such an extent that the new administration was soon looked upon as a "new deal." Much that was done in Chase's early months looked like a reversal of policy. Giving psychological tests to freshmen in the fall of 1930 "to see what could be learned about them" to aid rational planning was indeed a kind of revolution. And though its objectives were mainly administrative, the Committee of Nine which met during the winter of 1930-1931 was looked on by many as the agent of the revolution.

The committee, charged to make a "comprehensive study of the general educational organization and administration," considered many facts. Subcommittees discussed numerous possible changes, including as but examples a new series of graduate "teaching" degrees other than the traditional "research" degrees, the Ph.D., M.A., and M.S.; general examinations at the end of the sophomore year; the quarter system; and a social science research organization comparable to the experiment stations. Changes of this type were not, however, taken very seriously; the objectives sought were largely procedural and to encourage thinking of the educational organization as a flexible tool in the accomplishment of its purpose. In educational organization the chief results were to give

63. Committee of Nine, Minutes and Reports, 2, passim.
the Senate the central control over the courses but to extend the powers of the colleges in the control of their own affairs.

Other changes reduced the hours of study required for graduation by as much as ten per cent. All allowed the admission of the highest tenth (later the upper quarter) of high school classes without regard to the distribution of their credits, and in 1940, during President Willard's administration, to the upper half of any high school graduating class. In the latter year the first restrictive measure was introduced, placing high school graduates of the lowest quarter of their class on probationary admission. The new requirements reflected the fact that the older system of subjects and credits had been left behind by the high schools, but no less that they were almost uniformly measuring up to the standards which the University's own High School Visitor's office had established by its successful accrediting system. The functions of the office had been reorganized in the 'twenties as a means of service as well as inspection. During the long administration of H. A. Hollister and after 1928 by Arthur W. Clevenger the standards found a wide voluntary acceptance throughout the country by both high schools and colleges.

Again while no new work was involved, two new divisions appearing in 1932 brought together for increased efficiency courses which had been divided. Thus came the School of Physical Education, formed by joining the departments of physical education for men and women, the teachers' and coaches' courses given in the College of Education, and the instruction in hygiene by the health department. After G. Huff's death in 1936 the direction of the new school passed into the hands of Seward C. Staley, with Miss Louise Freer continuing as head of the women's division, where she had been since 1915. Agricultural economics had been another example of scattered effort in the colleges of Agriculture and Commerce until a separate department was created in Agriculture under the direction...

65. BT, '52: 605.

of Professor Case. Yet at the time the depression was already being keenly felt, with reorganization limited to cases which promised not to increase expenses. Had not financial problems been so urgent, plans for a more systematic approach to educational adjustments might well have been laid. As it was, all thought had to be turned sharply toward retrenchment in 1932.

At the very depth of the economic crisis Chase was telling an assembly of the North Central Association of Colleges and Universities that "either we ourselves must make intelligent adjustments, or they will be made for us far less intelligently from without." The attacks from without came soon enough. There were attempts during the Illinois legislative session of 1933 to take away the local control of expenditures; attempts which, had they succeeded, would have meant an inexpert distribution of funds. A little later the Illinois Chamber of Commerce, bent on governmental economy, decided that "the maintenance of graduate work by the state university is a wasteful and unnecessary competition with endowed colleges," and was reportedly ready to lead a campaign.

Two misguided pamphleteers attacked the research program, charging that a zoology professor had spent University time and money in investigations which were of no direct benefit to the state. And though not directed against the University, bills before the legislature reported the menace of "Bolshevism, revolution, and red anarchy," for which the proposed remedy was the teacher's oath.

But the main difficulties were financial. Salaries were cut, equipment purchases postponed, and budgets were scrutinized and pared. A Central Committee on the Self-Survey of the University, consisting of Japata, Morey, Tuttle, Harno, Benner, Soovill, Willard, and Windsor assisted in the preparation of the biennial budget for 1935-1937. For 1936-1937 a special audit and survey of expenditures was made by an ac-
69. IAN, 13 (May, 1935), 285.
70. Circular, Chase to Heads of Academic and Administrative Departments, Mar. 14, 1933, Pres. Corr., 1932-1933. Chase to Central Committee on Self-Survey, Mar. 18, 1935, ibid. The committee was formed after deliberations of the Council on February 20; its members were council members and administrative officers. Consideration of the budget later became one of the chief functions of the Council.
counting firm and former dean W. W. Charters, director of the Bureau of Educational Research of Ohio State University. The information assembled was as enlightening on educational administration as on finance.

When Illinois' Bureau of Institutional Research was organized to carry on similar continuing investigations it was at once apparent to Director Griffith and Acting President Daniels that it could well be an agency of educational research. Conducting studies in "teaching, research, budgets, and other aspects of University operation, in their relation to one another, to educational policies and objectives, and to the social needs of the state," the bureau soon became a singularly effective planning agency, with far-reaching influence on educational policy and administration.

The depression was by no means an entire calamity. Enrollments fell sharply but rose again quickly to unexpected new heights. With the return of some prosperity to farmers and the growth in demand for trained men in the field, the number of College of Agriculture students doubled in 1932-1936, surpassing in the latter year even the previous peak of 1915. The College of Law drop in enrollment was due more to the sharp increases in admission and graduation requirements of 1929-1931 than to the depression, for by 1934 the losses had been regained. In other colleges the depression did keep some students away, and for these the Division of University Extension was created in 1933. To the applicants meeting freshman entrance requirements the division offered in its first year fifty-nine courses, almost all basic and adaptable to most curricula. Before the end of the second year Director Robert E. Browne reported that graduation had been made possible to twenty-five students. In addition to increasing the number of courses yearly, the division introduced extramural classes in 1936 under similar arrangements. Graduate courses of interest to teachers had a wide appeal; more than half
71. BT, '34: 122-123, 140-141, 150-151, 158. W. W. Charters, Detailed Analysis and Comments on Certain Areas of the Budget of the University of Illinois, Biennium 1935-1937, April, 1936, Memorandum 43a, BIR.


the extramural courses were applicable toward advanced degrees in education.

Many calls for special services were due to the organized recovery program. The Extension Service in Agriculture and Home Economics, like the experiment station directed by the dean of the college, spent much time for two years in carrying on for the Agricultural Adjustment Administration, as did members of every department in the college. Of the Commerce staff, Professors Edward Berman and Max J. Wasserman became permanent members of agencies in Washington; another, Professor Frank G. Dickinson, '21, widely known among sports fans for a football rating system, and Professor Goble of the College of Law helped rewrite the Illinois Insurance Code. Drafting legislation was also the contribution of other law faculty members, Dean Harno and Professors McCaskill and Johnson, the latter being also Illinois director of the National Emergency Council. One of the largest projects having faculty leadership and help was the rehabilitation of the stricken coal mining areas of the Big Muddy basin, for which much planning was done by specialists from several departments and the state surveys on the campus, with Professor Huntington of the civil engineering department as chairman. The Bureau of Community Planning also aided numerous Illinois cities in coordinating public improvement projects with long-range plans. It was estimated in 1935 that as many as 250 members of the faculty had been or were doing work of this kind.

Within the institution itself the colleges were intensifying the self-examination begun in 1930 by the Committee of Nine. From the studies of the Engineering group, three new courses reflecting the temper of the times were formed: engineering economics, industrial relations, and engineering law. Managerial problems entered several curricula, strictly vocational aspects of others were de-emphasized, and more flex-
75. "Faculty Assists with Relief Project," Illinois Technograph, 49 (February, 1935), 11.

76. Detailed Analyses and Comments on Certain Areas of the Budget of the University of Illinois, by W. W. Charters, April, 1935, BIR Memorandum 43a, 69.
iblity in the course arrangement was anticipated. Dean Thompson and Professor Horace M. Gray gave courses in business and society and social control of business for the first time in 1934. The trend toward a more socialized outlook was also evident in other colleges. Public law, commented Dean Harne in one of his reports, was gaining ascendency over business laws. "By necessity we are being drawn to look upon the law and to use it as a coordinating force and as an agency through which we can plan and execute social programs."

With such tendencies the new president, A. C. Willard, was wholly in accord. Education for social responsibility was the principal theme of his early expressions of policy. "We must develop," he told the School Masters' Club in Peoria, "in the individual a sense of citizenship if we are to have a well ordered society in which we may live and enjoy a richer life." Before many months President Willard also said he favored liberalizing the curriculum to promote a better "general" education. He wisely avoided sponsoring a definite plan, but it was clear by early 1935 that he would support efforts to devote the freshman and sophomore years to general courses in the sciences, arts, and literature, and the last two or more years to specialized technical training. Though by his own training he represented a field in which technical specialization was in the ascendency, President Willard emerged the champion of the broadly liberal education. He at once showed himself in sympathy with the objectives and methods of his predecessor.
Hardly any university subjected itself to a more intense self-scrutiny than did the University of Illinois during the Willard era. Between 1934 and 1943, the latter the year of the seventy-fifth anniversary, nearly three hundred investigations were conducted by the University's Bureau of Institutional Research, covering virtually every aspect of educational administration. It assembled a fund of information described by a commission of the American Council on Education as "probably the most comprehensive tabulation of institutional data that can be found in any university." An unusually large amount of it dealt with the social and economic forces that were conditioning the character of higher education in the country at large and more specifically in the midwest. The provost's office, to which Dean Harno succeeded on Babcock's retirement in 1931, encouraged experimenting in examination and teaching methods. With the appointment of an educational consultant, Edward F. Potthoff of the College of Education, this activity was extended in 1938, and later Potthoff succeeded Griffith when the latter became provost. Departments were aided in reorganizing their courses.

The objective was in each case to effect an efficient organization with due proportion of the cultural and vocational, the general and the special. This was also the work of Senate and college committees and of departmental groups. And while the processes under scrutiny mainly concerned the content and method of instruction, there were ramifications leading to the reorganization of student activities. In the administrative sphere several important studies suggested changes. A special committee of the American Association of University Professors found that Illinois ranked in a tie for second place among 228 colleges and Universities in the amount of self-government prevailing in the faculty. No period in the life of the University was as fruitful of important change
82. IAE, 19 (June 1, 1941), 2.
as the most recent ten of its first seventy-five years.

The earliest departure was taken by the College of Liberal Arts and Sciences. Assuming that superior students could profit by more individual study, a system of tutorial work was made available to juniors and seniors, and in the following year, 1936, they were permitted in some cases to arrange individualized curriculums. For probationers the assistant dean, Professor H. F. Fletcher of the English department, began a personnel and vocational guidance program in 1934, the success of which led to its extension to all students of the college in 1938, when it became at what time the function of a personnel bureau equipped to give psychometric tests. The departments assisted the program in various ways: special counselors were appointed, and the speech division of the English department opened a clinic directed by Severina Nelson, '18, to help students overcome speech defects.

Having proved its worth in the College of Liberal Arts and Sciences, the Personnel Bureau was soon made a general University service department. Its duties were extended to include a program of freshman testing, and in 1940 the administration of the Illinois High School Testing service, a program in which more than half of the state high schools took part. This extended to high schools the benefits of testing and guidance of students who enter the colleges of the state. In each of the first three years, information thus gained about some thirty thousand high school students a year was made available to forty-two colleges and universities in the state as well as to the high school groups which helped support the program.

Following a policy no less evolutionary, the College of LAS introduced a new pattern in its courses. Divisional organizations had brought the departments in groups representing the biological sciences, social sciences, and languages and literature together in 1934-1955.
This speech clinic was at first conducted wholly by Miss Nelson, whose idea it was, and she has built it up until the enrollment in the baccalaureate curriculum has reached seventy students in 1947, and 125 to 150 people with speech defects come in each semester for help. In the last three years the program has been expanded to include people who are hard of hearing; courses in lip reading are offered, and facilities for the testing and fitting of hearing aids are furnished. 

In late 1946 a four-year curriculum in speech correction was formed, and work for M. S. in the same subject is now available. Training is thus being furnished for speech correctionists, who are now in great demand in school systems.
85. Ibid., 152.
Until 1940 there was little more than consultation, but in that year the administration of the work toward a new master's degree in social sciences was turned over to the Social Sciences Division. A year later this sponsored undergraduate courses on Latin-American civilization and on the background and problems of the war. It was evident that the principle of divisional curricula and courses would find further application and development, providing, as they did, one approach to "general" education.

But the experiment watched with greatest interest was the General Division launched in 1940. Though it was the main result of President Willard's recommendations in 1935 to the Committee concerning common instruction for freshmen and sophomores, it was not the first. Acting on the same stimulus, the College of Commerce introduced in 1937 a plan whereby its first two years' teaching was made common in a "lower division," and the last two in an "upper division" given over to concentration in several fields: accountancy, banking and finance, commerce and law, commercial teaching, economics, management, and public affairs.

In effect it was a junior and senior college arrangement since standards for admission into the upper division were imposed. Common studies in the first two years were also made the rule in the four curricula in the art department. However, for Illinois the General Division was revolutionary, representing new content in courses and an entirely new course system.

Aiming to integrate broad fields of knowledge, the General Division was organized as a "college within a college." There were seven basic courses—verbal expression, history of civilization, biological science, physical science, literature and fine arts, and philosophy and psychology. Its tentatively-arranged junior-senior program of concentration was in the four fields of mathematics and physical sciences, biological
90. ET, '40; 803.

91. Seventh Annual Report, Division of Social Sciences, 1941-1942, 1-2.


science, social science, and the humanities. With the close cooperation of the Personnel Bureau and its testing and counseling services, it was expected that the operation of the General Division would be a carefully controlled experiment. Its success at the end of the first three years was at best qualified. Unfavorable to it were highly abnormal pre-war and war conditions, emphasizing technical skills and acceleration of the courses. The general values which had been aimed at were discounted in a war economy. For this and perhaps other reasons, the enrollment was about half as large as the expected 250. Yet the students of the division showed success as scholastic and general campus leaders wholly out of proportion to their small number. In view of these facts judgment was reserved. The return of more nearly normal conditions in the post-war period, it seemed, could only endorse the principles on which the program was based.

One of the objectives of the General Division was a course suitable for the many students who for whatever reasons failed to follow their chosen courses to completion and graduation. The "mortality," a term beloved by registrars, was for many years as high as seventy-five percent; more recently it has been about sixty. For these the General Division included in its basic program a two-year type of terminal instruction. But with the decline of the "mortality" rate, the growth in number of upper-class students has made possible more opportunities for advanced undergraduates. The marked increase in graduate students has also made possible better courses for juniors and seniors. Since 1920 the undergraduates increased by more than half, but the graduates trebled. There were 1,525 of the latter in 1939-1940. Summer session activities, in which the enrollment was usually more than half graduate, expanded as notably.

New types of graduate study, opened in every major division during
the Willard years, have been characterized by more variety in the degrees given. Except for some professional degrees in engineering, only the master's in arts and sciences and the doctorate in philosophy were granted by the Graduate School until 1938, when at the suggestion of the College of Commerce a five-year program of professional study leading to master of business administration was added. The policy of professional degrees having thus extended from engineering to commerce, other divisions prepared to do likewise. Two new degrees, the M. S. in music education and master of music, came in the following year when the School of Music set up its program of graduate study. A new course in social administration in Liberal Arts and Sciences brought the B. S. in social administration and a corresponding master's degree. Carrying the principle to a logical conclusion, the College of Education joined the Graduate School and sponsored for the first time in the summer of 1941 a new type of graduate curriculum leading to the doctorate as well as master of education degrees. Having distinctly professional objectives, the programs represented by the new degrees minimized or dispensed with language and research requirements.

Graduate study for most students, however, continued to mean studies in seminars, language and preliminary examinations, and the thesis leading to the M.A., M.S., or Ph.D. Graduate instruction, at least to the master's degree, is given in almost all departments. In many of these, liberal provisions for scholarships, fellowships, and other financial aid have been made. The value of the grants made by the University has increased from about $25,000 a year to $40,000 since 1930, but the most important increase has been in the grants for research made by individuals and industries. A noteworthy group available to the chemistry department included the Carr fellowship, and others from the Allied Chemical and Dye Corporation, DuPont de Nemours, Eastman Kodak, Eli Lilly, Monsanto Chemical, Rohm and Haas, Sherwin-Williams, G. Frederick Smith
95. BT, 38; 858-859.
96. Ibid., 40; 321.
97. Ibid., 321-325.
98. Ibid., 42; 123-125.
Company, Solvay Process, and several anonymous donors, with other funds were for research assistants.

Fellowships in fine arts, and in history and political science have close associations with President Kinley and Dean Babcock. The Babcock fellowships and funds for graduate research in the latter subjects are drawn from a trust of some $50,000 given by the dean on the eve of his retirement in 1931. The Kate Neal Kinley Memorial Fellowship in Fine Arts, established and endowed by President Kinley after the death of his wife in 1931, provides for home or foreign study in music and other fine arts.

The distribution of students in all departments comes very close to the totals in all graduate schools. By far the most graduate students in a single department are in chemistry. Others are, in descending order, education, economics, mathematics, history, sociology, physics, political science, English, etc. Evidently the Graduate School has strength in balance with the demand. Ranking within the first ten institutions in the country in the number of advanced degrees conferred, Illinois is also among the more cosmopolitan, drawing students from forty-seven states and twelve foreign countries in 1939-1940 when students from 360 undergraduate institutions contributed to the school's enrollment of 2,743.

The maintenance of the general University program of instruction, research, and extension required equipment which in the seventy-fifth year had an estimated value of over forty million dollars. Laboratories and libraries have been well equipped with a view to utility; there is little ostentation, but much which may be justly viewed with pride. During the thirty-one years of Director Windsor's administration of the library ending with his retirement in 1941, its rank in size among university libraries rose from twelfth to fifth and it has for many years
99. This list, from the Report of the Comptroller for the Year Ended June 30, 1941, 29-35, does not take into account a large number of annual variations.

100. BT, '32, 235-236.

101. Ibid., 410-412.


103. Annual Report, Graduate School, 1939-1940, 1.
been the largest in any state university. The millionth book was accessioned in 1935; some twelve thousand periodicals and serials are currently received. Noteworthy collections have attracted scholars from all parts of the country. Notable are the departmental libraries, bringing together related materials for students in most of the major divisions of the University and important as specialized research centers.

These departmental libraries are essentially "working" collections of frequent use. In them the freshman, the Ph.D. candidate, and professor may be working side by side in a way typical of the easy-going Illinois democracy. One of the oldest, the Ricker Library in Architecture and Art, serving art only since the formation of the College of Fine and Applied Arts, has unusual resources in architectural design and history, American history, and is expanding rapidly in the arts. A Corpus of American Architecture, with views, details, and structural data of historic buildings, which is being assembled promises to be a truly remarkable compilation on the practice of architecture in the United States. The Natural History Library, with sixty thousand volumes, has notable holdings in entomology, experimental zoology, and genetics; Engineering in foreign literature, periodicals, and reports and contains the J. A. Cockerson collection on river improvement. Having important collections are the chemistry library, for many years the domain of the late Miss Marion Sparks, '96; mathematics; and history and political science, in which is one of the most complete sets of League of Nations publications in America, as well an unrivaled collection of municipal government literature, and one of materials in English, Latin-American, and colonial American history.

The growth of several special collections has attracted wide interest among scholars. In the Rare Book Room books and manuscripts pertaining to the sixteenth and seventeenth century literary activities in the Eng-
"Collections Bring World Notice to University of Illinois Library." JAM, 17 (April, 1939), 3. Report for 1943-1944, Senate Committee on the Library, 6-7, indicates that the estimates have been on a conservative basis.
lish language have been brought together around nuclear collections of the works of Milton and Shakespeare, and "background" literature. Built up largely by Professors Fletcher and T. W. Baldwin of the English department, the holdings in both fields are without rival anywhere. The completeness of a collection of foreign language newspapers published in the United States as well as of the major papers of foreign countries, has distinguished the library's newspaper division. A body of German folksong texts of the fifteenth, sixteenth, and seventeenth centuries assembled under the direction of Professor Charles A. Williams of the German department is considered outstanding, and music, with a library recently organized, has exceptionally fine definitive editions of the works of the major composers, and periodical files. Among bibliographic aids, probably only the Library of Congress has a more comprehensive union catalogue.

As befits the ambitions of the University founders, museum materials for display and study are also well represented. Cultural museums maintained by the College of Liberal Arts and Sciences have well-selected objects and models tracing the development of western civilization, and the College of Engineering displays the historical and modern applications of its subjects with models and other illustrative materials, especially noteworthy in transportation, ceramics, and mining. Botany and entomology are represented by over 300,000 specimens, with the species native to Illinois virtually complete. An herbarium of parasitic fungi, the assembling of which recalls the names of Burrill and his students, F. S. Earle, '83, A. B. Seymour, '82, M. B. Waite, '87, J. P. Clinton, '90, and others, has become one of the most complete of its kind. Geology includes over 12,000 rock specimens, 5,000 thin sections for microscopic study, 100,000 fossils and, among the maps, some 2,000 ocean charts assembled and made available by Professor Francis P. Shepard. In fresh-water mollusca, representing the life-long labor of Frank C. Baker, the former
curator of the Natural History Museum, are more than a million specimens which were the source material for a monumental reference on shelled life. Embryological preparations and models represent the interests of Professor Shumway. Other collections that might be mentioned with equal propriety would make a long list, while similar ones made available to students by the state Natural History and Geological surveys supplement University materials. In recent years two large tracts of virgin woodland northeast of Urbana have been acquired; William Trelease Woods and Brownfield Woods. Forest life is studied here in its natural state.

Though space for display is still lacking, this fact has not prevented the growth of a collection representing the interests Regent Gregory took to heart in 1875 when he established the first Fine Arts Gallery. This has long since been scattered, but the nuclei around which a far better museum will be created have been donated in recent years. From the studio of Lorado Taft, '79, have come preliminary models, finished works, and a partially completed historical museum of sculpture. Oriental art is represented by gifts from Spencer Ewing of Bloomington and members of his family. Representative WPA art deposited by the federal government and purchases by the University have widened the variety of the holdings. The collection of most unusual interest which already contains more than thirty paintings of early masters has been given to the University by Merle Jay Trees, '07, and his wife, Emily Nichols Trees, '05, of Chicago. Included are works of Murillo, Jan Gossart (Mabuse), Pieter de Hooch, Holbein, Narcociss de Landi, Moretto da Brescia, Clouet, Cassin, Jacques, Daubigny, Diaz, Van Marake, Ribot, Romney, Copley, Jacob Maris, George Innes, Winslow Homer, A. H. Ryant, Homer Martin, R. A. Blake, Albert Ryder, Childe Hassam, Pushman, and others. To the original gift, Mr. and Mrs. Trees have made additions from time to time and plan to make still more. It is estimated that when completed the value of the gift will be in excess of $250,000.

Displays are provided from time to time in the gallery, and with the traveling exhibitions that have been brought to the campus there is no dearth of the inspiration that comes from great art. There is also a wide interest in student art, and in the work of the faculty which is exhibited annually.

With instruments of late invention necessary to research on the frontiers of the physical sciences, the departments have kept abreast of developments the world over and have made important contributions. A large cyclotron, an atom-smasher, is operated by Professor P. G. Kruger and a staff of collaborators in the physics department. One of the earliest electron microscopes was put to use in the chemistry department to study molecules, crystals, bacteria, viruses, and living tissues. Its magnification, a hundred times that of the best optical instruments, has given evidence of life processes and of details in molecular aggregates unsuspected before but which, now known, promise better understanding of such varied things as the burning of coal, the hardening of metals, the nature of bacterial action, and the morphology of cells. The chemistry department also has in its physical division one of the most complete sets of spectrographic equipment to be found in any university laboratory. No less can be said for the testing devices, one of which exerts pressures and tensions up to three million pounds, in the Materials Testing Laboratory named in honor of Illinois' premier engineer, A. E. Talbot. The illumination laboratory directed by J. O. Kraschenbuehl is considered the most complete in a college. Facilities for research in air conditioning, heating, summer cooling, ventilation, and more recently pressure and bacterial control—the work formerly done by President Willard but now by Professor A. P. Kratz and associates from the Colleges of both Engineering and Medicine—have made the University a foremost center of research in those fields. With the fulfillment of plans for instruction and investigation in aeronautical
One of the largest and most unusual gifts ever received by the University came from Robert Allerton of Monticello, just before President Willard retired from active duty on July 1, 1966. Mr. Allerton presented his home estate, "The Farms," of about six thousand and acres located twenty-five miles west of the campus. It includes English art objects, many art objects, a large Georgian mansion, a garden, prairie, and forest areas to be the "Robert Allerton Park," used for educational and research purposes, as a forest wildlife and plant reserve, as an example of landscape architectural gardening, and as a public park. The 4,500 acres of farm lands are for the endowment of the endowment and maintenance of the estate. Some of the standard installation exercises were held at the Allerton Park.
engineering, the first move toward which was the purchase and development of a large airport, the promise of leadership in another field of applied science was offered.

Much that is unusual may be seen in the University laboratories, though of course not all that is important is necessarily spectacular. The two qualities are sometimes combined, as in the betatron, an induction electron accelerator invented by Professor Donald W. Kerst of the physics department in 1940. A marvel of efficiency, the first small instrument produced X-rays of a type and quantity comparable to the output of $25,000 worth of radium. Whole hosts of uses in medicine, industry, and science were at once apparent. With a larger model built the following year, increasing the energy of the rays from 2.5 million volts to twenty million, several theories incapable of demonstration before were successfully proved, among them the exact amounts of energy necessary to disintegrate atomic nuclei. Having invented what is unquestionably a key instrument which will lead to many other discoveries, Kerst turned his thoughts to the possibility of building a two-hundred million-volt betatron, while under-the-vest of war-time secrecy his associates worked with the smaller instruments.

That well-equipped laboratories and reference collections are only tools in the advancement of knowledge, is recognized. The active agents, such as the abilities of teachers, research groups, and students, also count heavily and the effect of the combination has been shown in professional competitions. Professor Provine annually sees his architecture students well represented among the winners of societal competitions, and the department has twice since 1929 been awarded the gold medal of the Société des Architectes Diplômés par le Gouvernement Français.

In the first nine years of contests sponsored by the American Institute of Chemical Engineers, seniors of Professor Keyes' division of the chem-

109. [Record of] Prizes and Awards [1923-...], Department of Architecture.
istry department have won seven places, including two firsts and two seconds. In fact, awards and distinctions have come to the faculty in virtually all departments. Excellence in some, such as architecture, civil engineering, and chemistry, is a tradition that began in the first years of the University. At times recognition of merit means loss to the University, as when Professors Williams, Westergaard, and Goff of the College of Engineering were chosen to become deans at the University of Iowa, Harvard Graduate School of Engineering, and Towne Scientific School at the University of Pennsylvania. But with pride in its facilities and staff the University recognizes that the race is swift and that to relax efforts for even a short time is to fall behind.

Organized research in the experiment stations of agriculture and engineering, the bureaus of educational research, business research, and community planning, has expanded over three times in the number of staff members. Grants for research from private sources, amounting to only a few thousand dollars a year two decades or so ago, have increased to more than two hundred thousand dollars a year. Administered to ensure the maximum public benefit, such grants have been especially important in the Engineering Experiment Station and to lesser extent in medical, pharmaceutical, chemical, and agricultural investigations. Heating and ventilation research sponsored by the National Warm Air heating and Air Conditioning Association, the Institute of Boiler and Radiator Manufacturers, the American Society of Heating and Ventilating Engineers, and others, carried on over twenty years, has vastly increased the efficiency of home heating and has made possible an industry-wide code, giving home owners the benefits of the latest laboratory improvements and discoveries. Of scarcely less importance in heating is a type of furnace invented by Professor Julian R. Fellows which will allow householders to burn soft coal of Illinois smokelessly and more efficiently. Such
110. Department of Chemistry, Developments During the Period 1927-1941.


n furnace, and the coal treatment experiments of the campus laboratory of the State Geological Survey, will do much to make smoky Illinois coal suitable for city use. Kitchenware, electrical insulators, and many other products have been steadily improved as a result of tests of enamels by ceramists.

Professor W. M. Wilson and his associates have clarified and solved many of the problems of welding the large joints necessary in ship and bridge building. From such experiments much has been learned about the action of metals and of electric arcs. Other large-scale experiments have improved the safety and efficiency of railroads through studies of rail defects, car wheel construction, locomotive design and fuel consumption. The value of research in boiler plate embrittlement carried on by Professor Frederick G. Straub was said to be worth over two million dollars a year to the Chicago utilities group which sponsored it. Among engineers who use concrete construction the statistics on the strength of slabs for flooring and pavement and of arches which Professors Frank E. Richart, '14, and W. M. Wilson have provided are regarded as fundamental knowledge; the same is true of the information on the progressive failure or fatigue of metals furnished by Professor H. F. Moore and his associates.

Though on a smaller scale, the Bureau of Educational Research and of Business Research give comparable services to the teachers and business men whose interests they promote. No part of the state population, however, has benefited more from systematic research than the farmers on whom so large a part of the state's prosperity rests. Nearly three-fourths of the one million dollars reported by the comptroller as spent for organized research is the share of agriculture. In no field have more striking changes been brought to so many people. Their labor, once the burden of farm life, has been reduced by half and more in the years
113. IAN, 19 (February, 1941), 3.


115. Department of Chemistry, Developments During the Period 1927-1941, 36.
since 1914, and the productivity of their farms has been more or less proportionally increased. In this revolution the experiment stations the country over have led the way. Of the experiments at the Illinois station, mention of only a few must suffice.

One of the earliest series of these, and still in progress, has centered in the use of leguminous crops which build up the nitrogen in the soil and supply forage for stock. Encouraging the planting of legumes and finding means to overcome the depletion of nodulating bacteria have made unnecessary the use of commercial nitrogen-bearing fertilizers which would have cost as much as $33,000,000 a year. The breeding of corn, wheat, and other grains to varieties suited to various Illinois soils has guided both seed producers and individual farmers in securing desired types. Especially notable has been the breeding of new soybeans under the direction of Professor C. M. Woodworth and his associates who originated the outstanding Illany, Illini, Chief, Viking, and Lincoln varieties which are known as the best in the state. In little more than twenty years the soybean has risen to third in importance among Illinois field crops. In the same time, production rose from a few thousand acres to nearly two and a half million in 1941, until 1939 Illinois produced over half the national crop. As a problem of genetic science the soybean experiments have resulted in a series of highly important papers which have stimulated research throughout the country. In corn breeding, another activity for which the station is justly acclaimed, experiments continuing for more than forty years have shown that the protein and oil in kernels can be varied, while breeding along inbred lines, accelerated in 1921, laid a secure foundation for hybrid varieties. By making available the seed of carefully selected inbred lines, hybrid seed production has been encouraged. Illinois farmers have become important sources as well as users of seed corn. In vege-

tables, new varieties and even new species have been developed which are important in commercial and home gardening.

Insect and disease control experiments have done much to minimize the damage and losses from bacteria, fungi, and bugs. Two station bulletins on corn diseases and their control, mainly the work of Professor Benjamin Koehler and James R. Holbert, are widely recognized as standard references. Animal pathology has been an expanding field of inquiry to which many notable contributions have been made. Feeding methods continue to be one of the largest of the investigations in livestock. The changing consumer demand for pork products has led Professors W. E. Carroll, Sleeter Bull, and their associates to study types of swine and to encourage the production to more nearly ideal market specifications, with the hope of bringing together the quality and plumpness of an intermediate, the length of body of a rangy, and the early maturity of a chubby animal. The work of the division of animal nutrition headed by Harold Hanson Mitchell, '09, concerned improvements of nutritional methods, the nutritive requirements of farm animals, the energy metabolism of cattle, and the value of meats in the diet, but the most sustained inquiries were directed toward the chemical and biological evaluation of the proteins of animal and human foods, a series of experiments begun in 1915. Through its station activities, the home economies department has contributed basic data on vitamins in cereals and the proper use of Illinois-grown soft wheat and soybean flours.

But the story of agricultural research is not to be summed up in the activities of one experiment station, for the stations at various universities are interdependent and build on each other's work. To adapt the findings of other stations to local conditions is often as important as a discovery, and of this, Illinois has done much. Many experiments are of themselves seemingly small, but the cumulative effect has been

119. George A. Works and Barton Morgan, The Land-Grant Colleges, Staff Study No. 10 prepared for the Advisory Committee on Education (Washington, 1939), Table 11, p. 66.
to change agricultural industries radically. With the recent attention
given to agricultural economics and rural sociology, it is safe to say
that no other world population element has received more benefits from
intelligently directed research than have the American farmers; and the
Illinois farmer must count himself especially well favored.

A few weeks before his untimely death in 1938, Dean Mumford looked
out on the Morrow plots, the oldest and most famous of Illinois experi-
ments, which lay across the street from his window, and wrote: "They have
demonstrated that civilizations will not need to fall, as they are said
to have fallen in the past, because man does not know how to prevent
the exhaustion of fertile soil." On one-tenth of an acre, where corn
has been steadily grown since 1876, stands the visible proof that soils
can lose half their productive fertility in seventy years; but in the
same plot a few feet away is the equally visible proof that through
care the soil can be improved beyond its original fertility. This is
the hope and promise of all research—and its justification.

Most highly systematized in research, the College of Agriculture
is also most effectively organized for spreading the information thus
 gained. The Illinois Extension Service, financed co-operatively by fed-
eral funds under the Smith-Lever and later federal acts, the state, and
by farm organizations, is distinguished for the direct support it gets
from the farm men and women themselves; more than a third of the needed
funds come from their organizations. Among other states the nearest
approach to such direct support is only one-eighth. The figure re-
 

Working through county farm bureaus in every county, and through
In 1925 the Farm Organization and Management Department (predecessor of Agricultural Economics) organized the Farm Bureau Farm Management Service under which some 225 farmers contributed practically all the money to employ a field man to work with them on their accounts and business reorganization. Professor M.L. Mosher was the first man in this pioneer work, which has now expanded to include about 2,400 farmers in 58 counties, is being copied in several other states, and represents the annual expenditure of more than $80,000 a year, eighty per cent of which is contributed by the farmers themselves. This service is a good example of the farmers' response to the research work in agricultural economics and rural sociology.
120. See College of Agriculture, Annual Reports, for annual summaries.
mented with a pocket-sized quarterly magazine, Opinion and Comment, and a monthly Illinois Business Review. Several other research agencies utilize the general University of Illinois Bulletin series for their less regular publications. Since 1908 the Graduate School has sponsored the quarterly Journal of English and Germanic Philology which since its founder's death has been edited at various times by Professors Goe-bel, Flom, James, Aron, Graham, and Parry. The serials, Studies in Social Sciences, Biological Monographs, and Studies in Languages and Literature, also supported by the Graduate School, present studies by the faculty and occasional doctoral theses in the fields indicated by the titles. All these bear the imprimatur of the University and are issued by the University Press under the supervision of Director H. E. Cunningham, who in 1945 celebrated his twenty-fifth year in the office. Books of wide variety in subject matter are also published. Officially sponsored publications, however, account for only the lesser part of the impetus to learning given by the printed page; most by far is seen in the faculty contributions to journals and monographic studies and textbooks issued through outside publishers, the mere listing of which makes an imposing annual booklet.

Thus the mission of a modern state university is no longer to be stated in the simple series of purposes conventional to colleges of the traditional sense. Neither does the definition of a university as a community of scholars in search of truths delineate either bounds or character. It is far more than a cloister of teaching and learning. The modern state university is, as Illinois presidents have often said, an arm of society itself, promoting the cultural and material well-being of the commonwealth and nation through broad educational activities. The very comprehensiveness of function was the aim of its founders. To this conception of a university the English department's honored Professor Bernbaum gave felicitous expression in a widely known essay:
The purpose which animated the state universities from their inception was bold and magnanimous. For instead of aiming at the perfection of a few individuals, and of a few professions, the new type of university had in view nothing less than ultimately making every human occupation a learned one, in the sense of basing it upon knowledge and intelligence; and of opening to every man and woman the opportunity of bettering his condition of life.

So wide an aim keeps the University in direct touch with the multifold aspirations of nearly eight million people in Illinois alone, the diversity of whose activities has suggested comparison with empires.