DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1917, No. 16

STUDIES IN HIGHER EDUCATION IN ENGLAND AND SCOTLAND

WITH SUGGESTIONS FOR UNIVERSITIES AND COLLEGES IN THE UNITED STATES

By GEORGE EDWIN MACLEAN
FORMERLY PRESIDENT OF THE STATE UNIVERSITY OF IOWA

WASHINGTON
GOVERNMENT PRINTING OFFICE
1917

ADDITIONAL COPIES
OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.
AT
25 CENTS PER COPY

CONTENTS.

LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, March 10, 1917.

SIR: Because the changes in tendencies and ideals in higher education in Great Britain and the consequent changes in the curriculum and the details of administration in colleges and universities within the last few years contained so much of general interest for higher education in the United States, in 1913 I commissioned Dr. George Edwin MacLean, formerly president of the State University of Iowa, to make a careful first-hand study of the newer features of these institutions, and to prepare a report on them for this bureau. This study was made by Dr. MacLean, with the generous cooperation of university and college officials between 1913 and 1915. The report thus includes an account of progress until the beginning of the present war. I recommend that these reports be published as bulletins of the Bureau of Education under the titles, "Studies in higher education in England and Scotland" and "Studies in higher education in Ireland and Wales."

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

PREFACE.

The object of this study, and of the preceding one devoted to Ireland and Wales, is to point out facts and tendencies in higher education in Great Britain by which American universities and colleges can profit. Since May, 1913, the compiler of the bulletin has visited 56 institutions, of which 18 have been universities, 14 university colleges, 24 colleges and technical and agricultural colleges and schools.[1]

The wide diversity in the institutions due to differences in age, type, and even race, may easily lead one astray in a comparative study of them. The differences in phraseology among the British institutions themselves, and in turn the differences between their usages and those current in the United States, must be constantly kept in mind to prevent confusion of thought.

Uniformly the officials and other members of the staffs of instruction of the institutions as well as prominent educationists in the national boards of education and eminent leaders in the world of politics and thought, have shown courtesies to the writer and have put at his disposal important documents, to all of whom he makes grateful acknowledgment.

[1] They are as follows: Universities—Oxford, Cambridge, London, Durham, St. Andrews, Glasgow, Aberdeen, Edinburgh, Wales, Dublin (Trinity College), National University of Ireland, Queen's University of Belfast, Victoria University of Manchester, Birmingham, Liverpool, Leeds, Sheffield, Bristol; university colleges, at London—University College, King's College, King's College for Women; at Newcastle—Armstrong College, Dundee, and the Department of Medicine; Cork, Galway, Dublin, Aberystwyth, Bangor, Cardiff, Reading, Exeter; colleges, technical and agricultural colleges and schools (outside the incorporated colleges), at Oxford—Ruskin College, Lady Margaret Hall, Somerville; at Cambridge—Girton, Newnham, Selwyn; at London—Imperial College of Science, Bedford College for Women, East London College, London School of Economics, Goldsmiths' College, Woolwich Polytechnic; at Manchester—the Municipal School of Technology; at Glasgow—Royal Technical College, West of Scotland Agricultural College; at Dundee—Technical College; at Aberdeen—City's Domestic Science School, Gordon's College; at Edinburgh—Heriot-Watt College; at Dublin—the Royal College of Science, the Albert Agricultural College, Glasnevin, Alexandra College; at Belfast—Royal Belfast Academical Institute, Municipal Technical Institute. The Irish and Welsh institutions mentioned above will be treated in the bulletin on Higher Education in Ireland and Wales.

STUDIES IN HIGHER EDUCATION IN ENGLAND AND SCOTLAND.

INTRODUCTION.

The present is a moment of the keenest interest for the study of institutions of higher learning, particularly of universities, in Great Britain. Before the war they were in a stage of such rapid evolution as to leave the question in the balance whether the outcome would be revolution or reform. The war heightens the interest. Will it arrest their development or accelerate it?

The agitation of a half century, which culminated in the parliamentary universities' acts of 1854, 1856, and 1858, largely shifted the English and Scotch universities from an Elizabethan to a Victorian administration and atmosphere. The last 60 years have seen continuous changes wrought within the universities, in part of their own motion, and in part by royal commissions and acts of Parliament. The report of the royal commission on university education in London in 1913, and rumors of further royal commissions, show the end is not yet. The universities are beginning to feel the effects of the educational era inaugurated in England for elementary education by the act of 1870, and continued by a series of educational acts. The aspiration for a national *system* of education, which matured early in Scotland, and was formulated in Wales to the extent of founding its national university in 1893, is strong in England, and would make the universities the coordinating centers. The people are beginning to look to the universities and colleges as the light and power stations for the "school power," which Dr. Sadler has put next in importance to "sea power" for the Island. The rise of the industrial age brought home to England as a world power, especially by the increased competition in trade and manufactures of the United States, and particularly of Germany, the need for the promotion of technical schools and of attention to modern languages and applied science in the higher institutions.

Imperialism has stimulated the universities to affiliate or recognize colleges throughout the Empire. In 1912 it became a conscious force in the university's sphere through the first congress of the universities of the Empire, and it seeks a permanent organ of expression in The Universities Bureau of the British Empire. The war has intensified the note of imperialism.

Romance surrounds the genesis and growth of English universities. After the evening and the morning of the twelfth and thirteenth centuries, when the light of Oxford and Cambridge dawned, there came six centuries of rest from the making of an English university by a people otherwise so active. At length religious reactions, science, industrialism, and nationalism brought a new creative day in the nineteenth century, in which appeared the three Universities of London, Durham, and the Federal Victoria University, together with various satellite university colleges and technical schools. The first decade of the twentieth century saw the organization in their present form of the six Universities of Birmingham, Manchester, Liverpool, Leeds, Sheffield, and Bristol, equaling the total number established during the preceding seven hundred years.

The romance of the history of British universities is unrivaled. On the one hand is the halo of antiquity, piety, and patriotism, which hangs about the ancient universities, with their kings and queens, martyrs, churchmen, statesmen, and scholars; and on the other hand, the modern institutions, with their tale of the munificence of captains of industry, of self-sacrificing women, of civic pride and of national and humanitarian service.

The oneness of the New World with the Old is found in the parallel story of the planting of American colleges along the Atlantic seaboard and by the western pioneers on the prairies and beyond the Rockies. Indeed, the similarities between the British and American institutions grow upon one who studies them. Knowing the descent of the American from the English college, one is prepared for the family likeness, and recognizes that the differences are largely superficial. Both are at work upon the same great problems. Each may learn from the other. The British commissions and delegations of teachers have not been slow in recent times to visit America and to profit by American educational experiments.

The subject of this bulletin has an immediate practical as well as a theoretical interest, in view of the considerable and increasing number of American students in the United Kingdom, in addition to the nearly 100 Rhodes scholars from the United States in residence at Oxford. A better understanding of the higher education of the two countries will cement the bond of common Anglo-Saxon institutions, language, literature, and international obligations.

The institutions in England and Scotland fall into eight groups, consisting of four types of universities and four kinds of colleges. They are, in the approximate order of their evolution: I. Oxford and Cambridge, with Durham as a modern variation. II. The Scotch universities, St. Andrews, Glasgow, Aberdeen, Edinburgh. III. London. IV. The new or provincial universities at Manchester (Victoria), Birmingham, Liverpool, Leeds, Sheffield, and Bristol.

V. The independent university colleges at Exeter, Nottingham, Reading, and Southampton. VI. Technical colleges and schools. VII. Agricultural colleges and schools. VIII. Women's colleges.

The older groups have been the direct or indirect progenitors of the younger. Over and above formal affiliations, all the groups are more closely interrelated than the public are aware of, by the presence on their faculties of the graduates of the different institutions, by joint examining boards, and by common representatives on their governing boards. On the other hand each institution of the same type has the most distinct individuality.

The first part (Chapters I–VIII) of the bulletin consists of studies of certain historical features of these groups, in order to understand present conditions and tendencies in true perspective, and with incidental suggestions interspersed. The second part (Chapters IX–XIX), based upon the studies of the first part, is an attempt to apply them to the solution of problems common on both sides of the Atlantic. The third part (Tables 1–15) contains statistical information, most of which was kindly furnished directly to me by the institutions and represents the normal conditions of the year before the war.

PART I.—HISTORICAL STUDIES AND SUGGESTIONS.

Chapter I.

FIRST GROUP OF UNIVERSITIES.[1]

Oxford, Cambridge, Durham.

The twin universities, Oxford and Cambridge, are unique among the world's universities. Solitary in their grandeur in England for six hundred years, their modern variant, Durham, appeared in the nineteenth century. Oxford and Cambridge, alone known still in England as "the Varsities," together with the Scotch universities, are the parents of all the universities and colleges in the English-speaking world. They are marvels of complexity, representing a luxuriant tangle and growth of centuries. It is not surprising that many half truths abound concerning them. The greatest surprise is to find that, amidst their outward medievalism and the popular notion of their ultraconservatism, they are permeated with the spirit of progress. In view of their historical leadership and relations to American institutions they can teach many lessons to the United States. All this is contrary to the ideas of many Americans and Englishmen. A professor at Oxford, when he learned the purpose of the author's visit, to gather hints for the improvement of American education, exclaimed, "Good heavens! We need that you should send missionaries to teach us." Whatever of truth there may be in this exclamation, an American must not forget that apostles from Oxford and Cambridge planted the colleges and universities of his land.

The home was the primordial germ of the university, with the teacher as its nucleus. The scholars gathered in the house of the teacher, the magister, who had come from Paris or Italy. As the scholar's fellowcraftsmen of different trades, when aliens in a foreign city, organized a guild, called a *universitas*, so the scholars' community springing from the home became the *universitas magistrorum et scholarium* (or *discipulorum*).[2] As early as 1190, the schools at Oxford are called the *commune studium litterarum*, a synonym, ap-

[1] See Table 1. [2] Article, "Universities," in Ency. Brit., 11th Ed.

parently, for *studium generale*, a common name for a school open to all comers from any nation.[1]

Next to the influence of the personality and home of the teacher the incipient university was shaped by the regulations of the guild, "the medieval trades union," with its close organization, oaths and laws of promotion. The regulations of the trades union were applied for admission and for the gradation of apprentices and master workmen with their degrees. Like the journeyman of any trade, the master of arts by producing his masterpiece proved himself competent to teach.[2]

The local ruling masters (*regentes*) in the schools, and the experienced teacher (*doctor*), or those applying their doctrine in the practice of the professions, might attain the grade or degree of doctor. The church, which in its cathedral schools and monasteries had kept learning alive, spread its blessing and authority over the rising schools. The chancellor of the neighboring bishop, the usual head of the cathedral school, became the natural head of the university. The teachers belonged to the clergy. The church lent to the young universities not only of its privileges and of its ecclesiastical organization but also of its spirituality. Men consecrated by holy church, not only in religious brotherhoods but also in a clergy devoted to secular subjects, imparted a spirit of consecration to university learning. They created a line of professors to be known as the priesthood of truth. Their institutions were for all time differentiated from trade schools; their true students had to be the chosen few, men of a vocation, not of an avocation.

In the latter half of the thirteenth century and in the early fourteenth century, the monasteries and orders, especially the Franciscans and Dominicans at Cambridge, contributed their influence. The foundation of the colleges at the same time preserved the independence of the university, aided by certain royal and ecclesiastical factors. Some of the colleges, like Merton, prohibited the admission of the "religious," or monastic, as contradistinguished from the secular clerics. The church and the orders in their first days of gospel fervor impregnated the universities with a religious spirit. The rise of the colleges, combining the idea of the family, consisting of the masters, fellows, and scholars, with that of the fraternity of the monastic orders with their vows of poverty, obedience, and celibacy, has made character building the fundamental aim of college life. Except for these essentials of Christian character and brotherhood, and the architectural feature of the cloister in the quadrangle or court of the college, contrary to the popular opinion, the college was not monastic

[1] Holland, T. E., "The Origin of the University of Oxford," Eng. Hist. Rev., Apr., 1891.

[2] Wells, J., "Oxford and Its Colleges," p. 11, Methuen & Co., 1910.

and even became antimonastic. The college provided instruction outside the curriculum of the monastic or cathedral schools. It must be added, however, that the orders stimulated scholasticism, which not only has entrenched theology in a central position as the highest faculty to the present day but has also given a fine predominance to philosophy.

The state became another godmother to the youthful universities, and with the growth of nationalism, not second to the church. Naturally, students from the same locality formed "nations" for mutual protection, after the analogy of the guilds of aliens in foreign cities. Oxford had its northern and its southern nation. The organized opposition of the students to the city authorities, due sometimes to the imposition by the citizens of high rents and prices for food, and sometimes to the misdemeanors of the students, resulted ultimately in the establishment of university courts, independent of local jurisdiction, by a series of royal charters. The magna charta of academic freedom at Oxford and Cambridge has been dated from 1231, when Henry III decreed for both the universities that the rents should be fixed, *secundum consuetudinem universitatis*, by two masters of the university and two citizens.[1] To this day Oxford appoints a clerk of the market, and both the universities are represented in the city councils. In general, popes and the church confirmed the privileges of the universities. Probably by the end of the fourteenth century the word "university" began to be used without qualification for a community of teachers and scholars whose corporate existence had been sanctioned by civil or ecclesiastical authority, or by both.[2] The universities owe their autonomy and national spirit primarily to the state. They attained recognition as national institutions when, under Elizabeth, an act of Parliament (1571) confirmed them in their possessions and privileges, and later when James I gave them representation in the House of Commons, which even the present proposed bill for the abolition of plural voting does not repeal. They have kept pace with the development of the nation into an Empire by the affiliation of the colonial universities. In congregation at Oxford a speaker declared that the university was not only national, but imperial and international. The leadership in church and state for 700 years has been in the small band of graduates of the two "varsities," an infinitesimal number in proportion to the population. A German is constrained to testify that, in the period just passing, the class which has ruled and been representative of England, to which England has owed essentially its fame and signifi-

[1] Minerva, "Handbuch der Gelehrten Welt," Strassburg, 1911, p. 216.
[2] Denifle, Heinrich Suso, "Die Universitaten des Mittelalters bis 1400," Berlin, 1885, Vol. I, pp. 1–29.

cance, was really the fruit of academic education, of academic studies, and academic life.[1]

There is something educative, as is commonly remarked, in the very antiquity of the universities. The passing stranger and the careless freshman have their horizon, at least momentarily, broadened by a glimpse of the monuments of many centuries, overtopping our self-conscious and boastful century.

"And strange enchantments of the past
And memories of the days of old"

steal over them. The American, with his at best "modern antiquities," can not transport these genuine antiquities, but he can import their historical associations, which are also his inheritance.

His institutions should gather and preserve in their historical perspective the spirit of the studies and truth of the movements which successively dominated the ancient universities. He must remember scholasticism, Catholicism, Wyclifism, humanism, Anglicanism, Puritanism, Neoplatonism, not to mention the revival of natural science at Cambridge by Isaac Newton, the beginnings of textual criticism by Bentley, or the modern religious movements at Oxford of the Wesleys, of Pusey, and of Maurice, and fresh impulses in history, economics, and art by Oxford men like Arnold, Froude, Freeman, Green, Ruskin, and Morris.

The coalescence of the above historical influences will enable us to approximate the idea of the older universities as something immeasurably higher than the common characteristics seized by the casual observer. The latter is represented by the American professor who summed up the characteristics of Oxford and Cambridge under the three heads of the collegiate system, the tutorial instruction, and the long vacations. The university is in its broadest sense a spiritual (as the Germans say, a *geistlich*) institution. The greatness of the difficulty in grasping the notion of Oxford so appeals to some American college presidents, troubled because there is not a larger number of candidates for Rhodes scholarships, that they have asked the Rhodes trust to set forth the advantages of Oxford in a way that will be comprehended by the American student. The task will be a hard one for the trust so long as the American student is reared without knowledge of foreign institutions and flooded with flambuoyant advertisement of home colleges promising him a short cut to education which will quickly pay him in dollars and cents. Perhaps the university idea can be caught through quotations from some English authorities. Dr. Tanner, testifying before the royal commission on the civil service, cites two short paragraphs as sum-

[1] Huber, "Die englischen Universitaten," vol. 2, p. 42.

ming up the opinion of the university senate on the general character and value of education given at Cambridge. One is:

> The principle of freedom of choice, the wide range of study, and the character of the teaching, both literary and scientific, which is accessible to the students provide for the excellence and variety of their intellectual training.

The other is:

> As regards the development of character, the conditions of life in the university and colleges are in a high degree favorable.[1]

The answer of the hebdomadal council of the University of Oxford was reflected in the opinion of the then Vice Chancellor Heberden:

> A university education teaches a man to think for himself, and I should like to add that that is an education which takes a long time. I think that you must have some years after a boy leaves school if you are really to develop his mind to the fullest extent, and in particular to teach him to think for himself. I think that combination of very big subjects, together with a great deal of very highly organized teaching, is what constitutes the benefits of a university education from an intellectual point of view.[2]

Lord Haldane in various ringing addresses brings out the thought of the corporate spirit of university life made manifest in "The Dedicated Life" of teacher and student and "the passion for excellence."[3]

Lord Bryce says:

> There has been created in Oxford and Cambridge that impalpable thing which we call "atmosphere," an intellectual and social tone which forms manners and refines taste and strengthens character by traditions inherited from a long and splendid past.[4]

A writer in the Edinburgh Review states:

> The idea of a university reaches far beyond a varied supply of professional training, the prodigal granting of degrees, the anxious encouragement of research and the politic performance of educational contracts. A university is something more than an engine of utility or a product of organization. The essence of a university is a spirit, a principle of life and energy, an influence. And that influence must be impoverished and robbed of efficacy if, owing to want of means, or want of ideas, or want of freedom, a university falls short of the great end of its being, that of caring for the spirit and mind of man regardless of considerations of utility.[5]

The same author adds:

> What is a university? Most men would perhaps face with a more tranquil courage the task of defining a dreadnaught, which baffles "The Times," or that of defining the duties of an archdeacon, which once baffled the House of Lords. We may hold with Cardinal Newman that the true function of a

[1] Royal commission on the civil service. Minutes of evidence, 1913, p. 87.
[2] Ibid., p. 47.
[3] "The Dedicated Life," address to students of University of Edinburgh, 1907.
[4] "University and Historical Addresses" delivered during a residence in the United States as ambassador of Great Britain. Macmillan, 1913, p. 159.
[5] Edinburgh Rev., Jan., 1911, p. 58.

university is to impart liberal culture, or with Huxley that a university should be a factory of new knowledge. But whatever our idea of a university may be, whatever theory of university education we adopt, whether we hold that it should aim at a complete training of the faculties or that it should prepare the student for the pursuits of later life, we shall no more conceive of a university in chains.[1]

The American inheritance of this idea of the English university appeared in the words of President Wilson, when at Princeton: "I believe general training, with no particular training in view, to be the very heart and essence of university training." Instead of a university department store, where each student came to purchase a certain definite commodity, he pictured as his ideal one with the twofold object of "the production of a great body of informed and thoughtful men and the production of a small body of trained scholars and investigators," and these two functions were "not to be performed separately but side by side and informed with one spirit, the spirit of enlightenment."[2]

The two important points in the history of Oxford and Cambridge, the foci which have determined the ellipses of their peculiar orbits, are the sole degree-conferring power of the university proper, and the foundation of the corporate residential colleges. By the beginning of the fourteenth century jurists recognized as the essence of a university the privilege of conferring through its degrees the right of teaching not only in its own jurisdiction, but everywhere (*jus ubicunque docendi*). From that time no new university could acquire the right without a papal bull or a royal charter. One of the glories of these universities commonly overlooked is that they sprang from the people. Without bull or royal charter the jurists were forced to recognize them as *studia generalia ex consuetudine*. Lord Bryce puts it well:

> These universities were not founded by any public authority, but founded themselves, springing up naturally out of the desire for knowledge; and hence we in England describe our two universities of Oxford and Cambridge as being "corporations at common law," i. e., deriving their legal quality as corporate bodies from ancient custom which antedates the time of legal memory.[3]

The retention of the power by the university only[4] to confer degrees preserved it alive during the dominance of the colleges from the seventeenth to the nineteenth centuries, and has been the point of departure for the recent vigorous development of the university in contradistinction to the colleges. If this tradition had been followed in the United States, how many abuses and degree-spawning institutions might have been escaped.

---

[1] Edinburgh Rev., Jan., 1911, p. 68.
[2] World's Work, Jan., 1908, p. 9795.
[3] University and Hist. Addresses, *supra*, p. 154.
[4] One or two colleges at Oxford and Cambridge are said to have a dormant right to confer degrees. The affiliated college of St. David's, Lampeter, may confer the degrees of B. A. and B. D.

In the thirteenth century the number and poverty of teachers and students, improperly housed and supported, appealed to pious benefactors like Walter de Merton. His tomb in Rochester Cathedral reads, "Founder by example *Omnium quot-quot Collegiorum.*" He had the first real idea of a college as an endowed self-governing and self-disciplining community of scholars in their own house. The statutes (1264) of Merton College became the model for colleges in both Oxford and Cambridge. In time the colleges decentralized the universities and indeed changed their system of education. They have brought about the idea that a university is merely a multiplication of colleges and its definition as a "collection of institutions of learning at a common center."[1]

The intricacy in scope of organization and operation of Oxford and Cambridge may be represented by seven concentrate spheres. At the center the specific university with its own funds and property, professors, readers, lecturers, examiners, boards of studies, certain powers of discipline, and the sole power of conferring degrees. It awards certain university scholarships, studentships, and prizes. It administers some 30 libraries, museums, laboratories, and workshops, and observatories in each.[2]

The second sphere consists of the autonomous colleges, with their own property and government, which are incorporated in the university. The 21 of these colleges at Oxford and the 17 at Cambridge, with imposing buildings and old-world gardens, make the few university structures inconspicuous, and become the visible university to the casual observer.

The third sphere consists of colleges, halls, and hostels, not incorporated in the university, some with semiofficial and others with scarcely a recognized relation to the university.[3]

The fourth sphere is represented by the University Press, an important and profitable agency at each university, managed by the university with even pecuniary profit, though its prime object is the promotion and diffusion of learning. Despite jealous attacks in the sixteenth century and after, from the newly incorporated stationers company in London,[4] and the vigorous competition of the great publishing houses of the present day, the University Press, at Oxford

[1] Cf. Ch. IX, "Organization and Administration of Universities," p. 159.

[2] In the university, apart from similar institutions in the colleges, there are approximately at Oxford 9 libraries, 2 large museums, 14 laboratories, and 2 observatories; at Cambridge 14 libraries, 2 large museums, 13 laboratories, and 2 observatories.

[3] Of these there are 18 at Oxford: St. Edmund Hall, 3 private hostels, group of noncollege students, group of training college students, the 5 theological institutions (Wycliffe Hall, Pusey House, St. Stephen's House, Mansfield College, Manchester College), 6 women's colleges and societies, and Ruskin College (Cf. Ch. XIX, pp. 251–52). At Cambridge there are 11: Selwyn College, Fitzwilliam Hall for noncollegiates, 1 training college for men and 1 for women, 5 theological institutions (Ridley Hall, Westcott House, Westminster College, Cheshunt College, St. Edmund's House), 2 women's colleges.

[4] "A Short Note on the Cambridge University Press," 1911, p. 8.

through the gift of Clarendon, and at Cambridge of Pitt and others, has been kept independent of mercenary motives and maintained scholarly standards. They have made a university press a mark of a first-class university as distinguished from a collegiate institution, and herein are teaching a valuable lesson to their American sisters. The stimulation in the teaching staff of the spirit of research and publication rounds out the fourfold function of a university to preserve knowledge, to teach men, to advance truth, and to diffuse it.

The first four spheres are intramural or at least local. The press connects them with the three extramural spheres of the university's activities.

The first is that of the examinations, local and higher and school, conducted outside the university, and the inspection of schools.[1] Herein the universities recognize their obligation to the entire field of education, and in the inspection of schools their natural position as the apex of a school system still in the process of formation.

The second extramural sphere is that of university extension recently notably varied in the formation of tutorial classes.[2] In this direct instruction of the populace in immediate cooperation with the industrial classes the universities respond to the demands of modern democracy. Herein is popular proof of their nationalism.

The seventh concentric sphere, the third extramural one, is that of affiliated universities throughout the Empire and of certain recognized institutions beyond its bounds. The Universities of Oxford, Cambridge, and Dublin have the most intimate relationship, by which the members of these universities have the privilege of "incorporation," i. e., under certain conditions they may be admitted to the same status and degree which they hold in their own university.[3] Affiliated institutions are the universities and some university colleges in the United Kingdom and certain Indian, colonial, and foreign institutions, including some 20 in the United States. Members of these institutions may be admitted to the universities with exemption from admission, and on certain conditions from some advanced, examinations and with the privilege of proceeding to the B. A. degree in two years.[4] In this sphere one sees the imperial and the international outreach which the Empire builder, Rhodes, recognized. By his scholarships at Oxford he sought to strengthen these features, and by awarding them to Germany as well as to America he hoped to promote a Teutonic university leadership for the federation of the world.[5]

[1] Cf. Ch. XVI, "Examinations," p. 228.
[2] Cf. Ch. XIX, "University Extension Teaching," p. 249.
[3] Oxford University Handbook, Clarendon Press, 1912, p. 22; the Student's Handbook to the University and Colleges of Cambridge, University Press, 1912, p. 42.
[4] Oxford Handbook, supra, Ch. XI; Cambridge Handbook, supra, pp. 306, 312.
[5] Cf., p. 40.

The vast network of the organized activities of the universities that have been depicted may give some idea of their extent and content but fails in expressing their influence. The positions of influence their graduates occupy in church, state, and society are reinforced by the practical ramifications of the universities in their representation in the governing boards and faculties of schools, colleges, and universities, and boards of education. They may be said to leaven the educational lump.

This conception of the ancient universities, "so historical in their character and so majestic in their influence," runs counter to a widely spread American and English notion of them as decrepit and retrograde, a notion not without some basis in fact, as a long line of university reformers testifies. The lofty conception, however, has well been made the point of departure for the latest campaign of reform by Lord Curzon, of Kedleston, the present chancellor of Oxford.[1] He writes:

A fourfold duty lies upon it [Oxford]: To provide the best teaching over the entire field of knowledge of which its own resources and the progress of science may admit; to offer this teaching to the widest range of students; to mold and shape them not merely by the training of intellect, but by the discipline of spirit, so that, wherever they go, they may be worthy citizens or worthy servants of the state; and to extend by original inquiry the frontiers of learning. In other words, we desire that Oxford should supply a focus of culture, a school of character, and a nursery of thought. Always a responsible, this has become a doubly momentous task since, by the endowment of the late Cecil Rhodes, Oxford has opened its gates to the Empire and to the world, as well as to the nation; and since whole classes of the nation hitherto excluded or dormant are now themselves knocking for admission. At such a time we may well review our own position, endeavor to sweep away any obstacles that impede our progress, and start again, reinvigorated, upon our path.

Lord Curzon summarizes his main objects of reform as follows:

(1) To strengthen and popularize the internal government of the university; (2) to fortify the authority of the latter in the control of its own teachers and teaching, with due regard to the rights and interests of the colleges; (3) to remodel the conditions of entrance, so as at the same time to furnish a moderate test of educational fitness, and yet not to exclude those who are unable to pursue the study of Greek;[2] (4) to provide for the distribution of academic endowments with relation to the requirements of the university; (5) the encouragement of advanced study; (6) and the needs of poor men; (7) to facilitate by all reasonable means the admission of the last-named class to Oxford; (8) and to create a better system of financial accounts and financial control.[3]

[1] Curzon, Lord, of Kedleston, chancellor of the university, "Principles and Methods of University Reform," Clarendon Press, 1909, p. 210.

[2] Cf. Ch. XVI, "Examinations," pp. 230–231.

[3] Principles and Methods of University Reform, being a letter addressed to the University of Oxford, report of the hebdomadal council, with an introduction submitted on behalf of the council by Lord Curzon, of Kedleston, chancellor of the university, Clarendon Press, 1910, p. vii.

During the 16 months succeeding Lord Curzon's "letter," at Oxford facetiously called "the scarlet letter," as it was bound in red, the hebdomadal council, or committees of it, held 128 sittings, over many of which the chancellor presided in person, and brought in nine reports along the lines of the chancellor's recommendations. After five years the objects of two or three of these reports have been accomplished. Congregation has been converted from a body of resident graduates in Oxford into one consisting of the teaching and administrative elements in the university and the colleges. The next step restoring to the administrative and teaching staff powers in educational matters was the constitution of a general board of faculties. Other important educational advances have been provisions for the granting of certificates in letters and science to women, for certificates in French and German, and establishing a school in modern history. The setting up of the finance board is a powerful instrument for the unifying and development of the central university. Its duties are to review annually the published accounts of the university and of all its institutions, including the public accounts of the several colleges; to prepare annually a statement for council showing total receipts and expenditures; and especially to exercise advisory powers for the council and governing bodies even of the colleges.

There has been a distinct defeat of the scheme for the substitution of an entrance examination for "responsions" or a modification of "responsions" and the abolition of compulsory Greek and of a measure for a diploma in commerce. No changes have been effected with reference to the admission of poor students to college scholarships, exhibitions, and fellowships, or the lengthening of the academical year. The chancellor's suggestion for what he called "the final emancipation of the theological faculty and degrees," by the abolition of the last survival of the ecclesiastical test requiring membership in the established church, was carried through council and congregation. Its rejection by convocation created such a sensation that the question was raised in the House of Commons of the appointment of a royal commission on the universities. At that time the prime minister stated that he greatly deplored the recent decision of convocation. "He had, though reluctantly, come to the conclusion that in the existing circumstances the setting up of such an inquiry might lead to delay in the prosecution of necessary reforms, and not be likely to be productive of fruitful consequences."[1] The strength of feeling behind the admission that there are "necessary reforms" may be gathered from vehement expressions from widely different sources. Lord Curzon had written:

> We are told that Oxford is a place where the standard of living is high, and that of learning low; that it is the resort of idlers and loafers; that its

[1] The Times, May 6 and 8, 1913.

endowments, intended for the poor, are wasted upon those who do not require them; that it is out of touch with the main system of national education, of which it ought to be the apex and crown; and that it is in fact the university of the leisured classes instead of the nation. Even Bishop Gore did not shrink from describing it in the House of Lords as "a playground for the sons of the wealthier classes," and as not in any serious sense a place of study at all.[1]

At a conference of trades unions and other societies opinions were expressed to the following effect: Little faith is put in the educational program of the Government so long as it refuses the request of the parliamentary committee of the trades union congress to call a royal commission for the purpose of inquiring into the question of university endowment.[2] The necessity was urged to push forward two reforms simultaneously; on the one hand to open the universities equally to all classes, on the other to reform the curriculum so as to make the benefits of a university education as great as possible. The question was asked if the university endowment had not been robbed from the working class, and it was answered that the ancient endowments for education to some extent had been plundered at the time of the Reformation, and subsequently the benefit that remained had been almost entirely monopolized by the wealthy class.[3]

The feeling for the necessity of reform has been intensified in academic circles by the defeat in congregation at Oxford (June 16, 1914) of a form of statutes extending the option of subjects which may be offered in "responsions," and providing that the examinations should be conducted by the delegates for the inspection and examination of the schools.[3] The attempt to deal with the urgent problem of correlating the universities with the secondary schools and to broaden the avenue of approach to the university for all classes of students is involved. The hint is given looking to a royal commission that "if the universities can not do this of themselves it is likely that it will be done for them. In any case, the matter can not be left where it stands."[4] The present is the culmination of the large powers given to the universities to reform themselves from within by the parliamentary act of 1877 and its commission of 1882. The slowness with which the universities have moved has stirred up groups of reformers in each of them. Doubtless they have been the occasion of the recent movements. Lord Curzon, when a new chancellor visiting Oxford in 1907, testified that hearing many opinions in the university he was led to think that he might be of some use in coordinating the plans that were in the air.[5] This reference

[1] Curson, Lord, "Principles and Methods of University Reform," p. 42.
[2] Report of the conference of trades unions, etc., held at Newcastle on Tyne, Apr. [illegible], 1913. Co-op. Printing Soc. (Ltd.) London, pp. 6–9.
[3] Cf. Ch. XVI, "Examinations," p. 280.
[4] Daily Telegraph, June 30, 1914.
[5] Curson, Lord, "Principles and Methods of University Reform," supra, p. 11.

is doubtless suggestive even of organized clubs for reform at both of the universities, and perhaps particularly of the club of which we learn in the Life of F. York Powell,[1] then student of Christ Church, and afterward regius professor of modern history. At a meeting held in Exeter College in 1889, he presented the main points of the program for the the society to maintain the character of the university as a home of learning and science. The members were to take the professorial as distinct from the tutorial view, and the university as distinct from the college, in questions of education. They were to aim to have the examination system kept within limits rather than extended; to have the Bodleian Library managed as a place of study and research; to act on academical, not on purely political, grounds in voting for council, etc. In 1905 the immediate program for the club dwelt upon consideration of steps to coordinate university and college claims, especially in respect of science teaching and laboratories, in accordance with suggestions by Prof. Gotch. When Bishop Gore, in the House of Lords, moved for a new university commission, to the surprise of the universities, a letter appeared in The Times (July 24, 1907) declaring that many senior members of the university as well as younger graduates held the following opinions:

(1) That the constitution and machinery of Oxford, both legislative and executive, need revision. (2) That the relations between the university and the colleges, both constitutional and financial, require modification. (3) That a central direction of our studies is required, enabling the faculties to have the authority assigned to them in other seats of learning. (4) That the studies of the university are themselves too narrow in scope, and that fresh endowments of various branches of study are necessary, and especially that a greater encouragement should be given to research, which at Oxford is probably to a larger extent divorced from teaching than in any other university.

They assert:

Attempts to reform from within have again and again proved abortive, owing to our present constitution, which can only be modified by legislation. We therefore consider that either a fresh commission or, if that suffices, legislation by the King in council, as contemplated by the last commission, are the only practical ways of carrying out the necessary changes.

Despite the focussing of the agitation for reform by the chancellor's letter of 1909 and the reports of the council in 1910, the progress was so slow that, according to The Times, a memorial was presented to the chancellor in May, 1912, in favor of a royal commission. The general argument appeared to be that the inquiry which the university had conducted prepared the way for one of a more systematic and comprehensive character. An "outside" as compared with an "inside" commission might be more impartial, though naturally the

[1] Nettleship, Henry, "Life of York Powell," with preface by Farnell; cf. Ch. XIX, "University Extension Teaching," p. 251.

reference of such a commission should be limited. The argument was pursued that the university is not a single corporation, but in many important points only an aggregate of some 20 more or less independent corporations, and in fact a university of colleges. That the university in order to be master in its own house would need to have a voice in the award of college fellowships and scholarships, in the adjustment of the action of the colleges to the needs of the university as a whole, and control over the admission and the residence of students.[1] Absolute power for the university was not sought. The college system was to be preserved as a characteristic and valuable asset of the university. But it was urged that the system had "the defects of its qualities," and that it could not be expected that the colleges would be able to systematize themselves. The failure to come to an agreement with reference to fellowships and the rotation of scholarship examinations was proclaimed without exaggeration to leave little less than a state of open war in the competition between Oxford and Cambridge colleges, and among the Oxford colleges themselves. It was said the freedom of the colleges was one thing, their anarchy was another. The waste and inefficiency were complained of, due to the duplication by the colleges of their equipment and laboratories without consideration of the needs of the university as a whole. Finally, in the view of the petitioners, the cumbrous and piecemeal machinery of university legislation needed to be complemented by a royal commission which could deal simultaneously with every part of the university as an organic whole.

No attempt will be made to review the recent agitations for reform at Cambridge, dealing largely with the same problems as those at Oxford but not so publicly organized. In truth the modern history of university reform may be dated from the year 1800. In this year at Oxford was initiated the raising of standards of scholarship by the adoption of the new examination statute under the leadership of a great disciplinarian, Dean Jackson, of Christ Church, and at Cambridge the founding of Downing College, giving new emphasis to useful knowledge in conjunction with university culture. The literary revolution in England, the correlative of the French revolution, followed by the political reform issuing in the reform bill of 1832, resulted in various actions and reactions in the universities. They were stirred by criticisms beginning in the Edinburgh Review in 1808. Throughout the nineteenth century, and especially after the royal commissions of the middle of the century, the universities have slowly but surely adjusted themselves to the demands of the reformers. Indeed, it has been characteristic of them, when they did not lead an age, to conform to the demands of every age throughout

[1] Cf. Ch. XVII, "Curricula," pp. 282–283.

their long history, excepting in their period of stagnation in the seventeenth and eighteenth centuries, when they were dominated by the wealthy and aristocratic colleges. We have gone thus far into the subject of university reform because of the sidelights it throws upon our present-day problems, many of which are ever old and ever new. The excursion may also give us a better interpretation of the universities and their scope. It is clear a wider meaning must be given to the phrase "university reform" than that of "making the universities as efficient teaching institutions as possible."[1]

While it may be conceded that the universities as they now exist are primarily teaching institutions, the long line of prophets of university reform have given it a broader meaning. They have seen the vision of an all-round university adding to the teaching and character training of the college, learning, research, the application and diffusion of knowledge, the service without distinction of class, of humanity, in all its units of social organization. The point of university reform is to correlate and coordinate in the central university the seven spheres of activity to which we have earlier referred in the interest of the greatest economy and efficiency.

The lessons for us are obvious—a university is different from a college not only in degree but in kind.[2] A college in its sphere is no whit inferior to a university, and being of a different genus it should not attempt to be a miniature university. Its prime function is instruction and still, standing in loco parentis, character training in an atmosphere of generous culture. The original New England college, planted by Cambridge and Oxford graduates upon the model of the English college, then dominant in the university, with its vigorous offshoots in the Middle and Western States, perpetuated the best features of this type and has become a glorious characteristic of American education. Like its first parents, it has well maintained its independence. It now needs to learn from them that it should become a unit in an educational system related to the schools below it and federated with the universities above it.

In the newer States, where it is still practicable, the independent colleges might well follow the Oxford and Cambridge model and plant themselves in the same town with the university. Where it is too late to do this, the spirit of the Oxford and Cambridge plan may be preserved not only by the colleges grouping themselves in college unions, according to their church or similar interests, but also by direct affiliation with universities. The isolated independent college is an expensive and uneducational anomaly. If the American college can not be locally a part of the university, it needs, and the university needs, that it should be spiritually embodied with it.

[1] Tillyard, A. I., "A History of University Reform," Cambridge, 1913, p. 292.
[2] Cf. Ch. V, "Independent University Colleges," p. 180.

The ideal of a liberal education for which the American college stands is enforced by the example of all the British universities new and old in requiring the incorporation in the university of a liberal arts college. A university consisting only of professional schools would be a violation of the fundamental idea and unbroken tradition of a British university. The so-called superior faculties of theology, law, and medicine do not segregate themselves, but sit together with the various schools of the arts faculty in council and congregation. Their courses of study and their students are interspersed with those of the arts. The arts faculty does not deem itself inferior to the faculties superior in order of the time of their work. Its work is not demeaned by following its historical mission inter alia of being preparatory to professional studies. It rejoices to lay the broad foundation upon which rest the rising platforms of the pyramid of professional learning.

The college as an essential part of the university in Oxford, Cambridge, and Durham, impresses the lesson that many American universities departing from the English tradition under the influence of continental institutions need to learn, namely, that character building is an aim of education to the very end. Maturity and citizenship in the university do not absolve from law, but like every other citizenship must develop its manhood code of law and have a discipline to enforce it.[1] The college shows that the best means to this end, which is reenforced by the prominence to-day of the social element in education, is the provision of halls of residence.[2]

For any fair understanding, however, of the universities, two remarks must be made. First, contrary to the general notion, the relative poverty of the universities and their colleges as a whole hampers their advance. The productivity of their capital has decreased with the depreciation of their real estate investments and the increase of taxes. They are not able to redistribute their funds, locked up in trusts and earmarked for special purposes, so as to meet the changing demands in education. Herein is a warning for the boards of investment of our newer institutions, and particularly for their benefactors, not to tie up their gifts without giving discretion to governing boards. It is a surprise to find in Britain that pecuniary needs induce a competition between universities and among colleges, and a fear of being undersold, which prevent an advance of standards of examinations. Notably the universities give the M. A. degree without any academic requirements, because they feel they can not afford the loss of income from fees. Likewise the need of the charges to keep the names of graduates on the university books and the college boards halts the changes widely advocated in convocation.

[1] Cf. Ch. XVIII, "Student Life," pp. 240–242.
[2] Ibid., pp. 244–46.

Second, the source of the student constituency affects the entire complexion of the universities. For several centuries the nobility, the professional, and upper-middle classes through the training of the famous "public schools" supplied the undergraduates. The peculiar glory of English education and the dominant factor in the undergraduate life of the universities has been the "public school," with its classical and character training, modeled from the close of the fourteenth century upon William of Wykeham's college at Winchester, which was specifically to train for the university. The spirit of Wykeham's motto, "Manners makyth man," has taken possession of all the "public schools," and through them of the university colleges.

There are about 600 of these schools, of three or four different types, in the incorporated Association of Head Masters. Some hundred of the great and older "public schools," like Winchester and Eton, because they send so many boys to the older universities, group themselves in the Head Masters' Conference. Of the remaining 500 schools, some are ancient grammar schools, some are smaller boarding schools of more modern foundation, and some are great day schools, like St. Paul's. In addition to the continuance of the customs and friendships of these schools among the undergraduates in the universities, there is the influence of their head masters upon the policies of the universities. The long period of study in these schools and the selection of sons of parents of social standing able to bear the considerable expense establish a corresponding and costly style of living in the university. This fact gave ground for comment like that of the late Dr. Draper:

> American universities can not follow the British university with its narrow, purely classical, and purely English scholarship, which is studiously prevented from being broadened by that fatuous policy of the ruling classes which stubbornly refuses the organization of all secondary schools through which the only people who can broaden it may come to the university at all.[1]

The grounds upon which Dr. Draper's remarks rested have been rapidly shifting under the pressure of the series of educational acts, beginning with that for elementary education in 1870. Recent legislation, parliamentary and local, especially since the report of Lord Bryce's commission in 1895, has revivified certain ancient foundations, particularly "in grammar schools" as dual schools, and developed municipal secondary schools. Thomas Arnold, at Rugby, in the first half of the nineteenth century had begun the reform of the "public schools" in morale, and in informing the instruction with the modern historical spirit. Further impelled by the advances of the material sciences these schools have added the modern to the ancient

[1] Draper, Andrew S., commissioner of education of State of New York, "American Education," Houghton, Mifflin Co., 1909, p. 192.

classical side. Before the act of 1870, Matthew Arnold, having caught in Germany the vision of the importance of the secondary school, was preparing the way for its spread in England. As a sequence of the above movements we have in 1912 on the roll of the "Incorporated Association of Head Masters" 552 head masters of secondary schools, in the broad sense of a school administered under a definite form of public or corporate control recognized by the board of education under regulations for secondary schools.[1]

The pupils of these schools are becoming a force second only to those of the "public schools" in their effect on the undergraduate life of the universities.[2] Their modern traditions and their increasing numbers must tell. Of the total of 220 scholars and exhibitioners entering Cambridge in 1911–12, only 84 came from the great "public schools," as compared with about 100 from the great day and various kinds of secondary schools.[3] Other student movements changing the complexion of the universities, and tending to develop the university independent of the incorporated colleges, are the attendance of women,[4] the admission of Rhodes scholars by passing "responsions" apart from college examinations, and the increase of the sons of artisans, due to the agitation for the higher education of workingmen.[5]

At this point one is confronted by a standard view of the older universities that they are to remain unique to educate gentlemen in the sense of those of the leisured classes. They are not to be popular. They are to minister not only to "the quality," but to care chiefly for quality of scholarship and mind and not for average ability.[6]

In short, as contrasted with the newer universities, they are not to be cheap, popular, or industrial. This view is fortified by the existence of classes in England and is diffused ordinarily by foreign writers on English universities. Whatever element of truth is in these statements, which in certain aspects are certainly un-American, may they not contain a hint for the American college against excess of zeal in stimulating the attendance of inferior minds and the production of an educated proletariat?

It must be noted, however, that the two universities have presented evidence to the royal commission on the civil service that the sons of toil and poverty, with ability, have means provided to attend the university. They refer to assistance made by the local authority to the boy of real ability in the secondary school, and to the numerous

[1] Royal commission on the civil service, 1913, p. 128.
[2] Cf. Ch. XVIII, "Student Life," p. 240; Ch. XVII, "Curricula," p. 233.
[3] Royal commission on the civil service, 1913, p. 116.
[4] Cf. Ch. VIII, "Women's Colleges," pp. 152–64.
[5] Cf. Chs. XII, "State Aid and Visitation:" XIV, "Applied Science and Professional Education;" XIX, "University Extension Teaching.
[6] Cf. Ch. XVII, "Curricula," p. 236.

scholarships and exhibitions available in the universities, to the amount of about $300,000 at Oxford and $235,000 at Cambridge, annually. Oxford awarded to students beginning residence in October, 1911, entrance scholarships and exhibitions to the value of $118,360, and Cambridge to the value of $100,890. In addition, various helps are offered to men of slender means. The colleges reserve some cheaply rented rooms for poor men. Some colleges make reduced inclusive charges and by confidential arrangements gain reduced subscriptions to the more important undergraduate clubs. It is emphasized that at most colleges the tutors have a private fund to use at their discretion for loans to students who need help.[1] The provision of discretionary funds to be dispensed in a confidential way to deserving and needy students, not by governing boards, but by heads of colleges or teachers in personal contact with the students, is a practice that should be greatly enlarged in the United States. Brasenose College, at Oxford, furnishes an illustration of the care as well as the confidential way with which these funds should be dispensed. When men apply for certain valuable scholarships of $500 a year which are confined to men of limited means, a paper of questions is sent to the parent asking, "What is your professional income?" "What is your private income?" "How many children have you?" Strong emphasis is put upon having a fund in addition to scholarships from which grants of money are made privately—at any rate not after advertisement—to students in need of assistance.[2]

Amongst various changes proposed for scholarships, it is clear that at neither university will anything receive general favor that would make distinctions between classes resting solely on wealth. While these scholarships may be won by rich men, the majority of scholars are the sons of professional men usually of limited incomes. These points should commend some form of scholarship system to objectors against scholarships in American colleges. Despite some of the evils of competitive examinations and of rivalries between both schools and colleges the problem is the same on both sides of the Atlantic. This is a case in which Americans may perhaps wait upon the experiments made in England. The commission of 1850 thought that they had solved the difficulty by substituting open, with certain exceptions, for the close scholarships and exhibitions conferred from medieval times upon students from particular schools, localities, or families connected with the founders. The commission of 1877, retaining the open competition, moved in the direction of the equalization of the value of scholarships and of making exhibitions

[1] Royal commission on the civil service, 1913, pp. 114, 127. Cf. Ch. XVIII, "Student Life," p. 244.

[2] Royal commission on the civil service, 1913, pp. 48, 49.

on the whole eleemosynary. Various experiments are being tried and propositions considered by some colleges in conference. Success from the nature of the case will fully come only when there is concerted action among the colleges and by the universities. American universities and colleges may well profit by this same suggestion of conference and agreement with reference to a scheme of scholarships.

American donors of scholarships may well be taught not to tie up their funds too specifically by the freedom with which parliamentary commissions have redistributed the gifts of benefactors to meet the changing conditions of different ages. Nevertheless, at this moment complaints are made of the predominance of scholarships for the Greek and Latin classics and the meager provision for other subjects. In 1907–8 at Oxford, out of a total of 504 scholarships 300 were for classics, and of a total of 230 exhibitions 120 were for classics.[1]

One of the oldest and most characteristic features of Oxford and Cambridge is the system of fellowships.[2] The fellows were the graduates, just as the scholars were the undergraduates, of the almost monastic medieval colleges. The founders of the fellowships intended them primarily for the advancement of learning and only incidentally for teaching. The royal commission in the middle of the nineteenth century found about 550 fellows at Oxford and about 400 at Cambridge, appointed largely by favor, all necessarily celibates and in holy orders with a life tenure and mostly absentees from the university. They opened the fellowships to general competition, but the clerical and celibate restrictions and the life tenure remained until the reform of the commission of 1877 prevailed in the statutes of 1882.

The last commission established four classes of fellowships: "Official or tutorial," held ex officio by members of the teaching and administrative staffs of the colleges; "professorial," held ex officio by professors of the university; "research," tenable for seven years, but generally renewable on condition of undertaking some prescribed work of research, study, or service to the college or university, the stipend of these to be $1,000 annually, with certain college privileges; "prize" fellowships, awarded after examination, free from any condition of work, tenable for seven years, and of the same value as the last class. The commissioners' statutes limited the number of the first three classes and intended that about 170 "prize" fellowships should ultimately be provided at a cost of something like $175,000 per annum at Oxford.[3] The "prize" fellowships were

[1] Curson, Lord, of Kedleston, "Principles and Methods, etc.," 1909, p. 77.
[2] Cf. Ch. XV, "Advanced Study and Research Without Graduate Schools," pp. 215–16.
[3] Report of the hebdomadal council (Principles and Methods of University Reform), 1910, pp. 76, 77.

to be in fact, Lord Curzon says, "as the name indicates, the apotheosis of the theory that a fellowship is a reward of ability rather than a condition of service," and further a link, as Jowett believed, between the residents of Oxford and the outside world. The expectations concerning the "prize" fellowships it is generally agreed have failed of realization. The colleges have never begun to fill up the number, and on the whole the fellowships have become unfruitful sinecures. Substitutes for "prize" fellowships were recommended by the hebdomadal council in 1910, but they have not yet been adopted.[1]

For the general scheme and the bearing of the whole subject of fellowships we must refer to our chapter upon "Universities and Research" (p. 214). The lesson for Americans of the story of "prize" fellowships is that good and learned men, alas! yield to the temptation of indolence without the pressure of some supervision, and that some residential requirements in and service of a university are desirable. By this inference it is not meant to say that there is not, in exceptional cases, room outside the universities for foundations to reward and employ ability in investigation and research, as in the Rockefeller Institute for Medical Research, or in the Carnegie Institution of Washington, or State and municipal institutes and research laboratories. These establishments furnish the element of supervision lacking in prize fellowships. Fellowships, an essential part in the ancient foundations of the colleges, strictly applied to the promotion of specific subjects, services, or persons, have undergone changes to meet the demands of the times. They have been shifted not only to make prize fellowships but to serve for pensions (see p. 186), for research, and very largely for part payment of teaching or other college work. The radical suggestion has even been made to abolish fellowships, retaining the title of fellow because of its historical associations and commercial value in the outside world.[2] There is little likelihood of such a proposition being entertained in responsible quarters, but continued readjustments and coordinations of the fellowships may be anticipated.[3] Fellowships are the core of the colleges, not only historically and governmentally but at present actually, numbering approximately 400 at each of the universities and having an annual income apart from fees and other stipends estimated at each university as between $300,000 and $350,000.[4] The history of fellowships at the two universities justifies the widespread creation of fellowships in the newer universities of the English-speaking world. But warned by that same history, these universities

[1] Report of the hebdomadal council, 1910. pp. 84–88. Also cf. Tillyard, p. 335.
[2] Tillyard, p. 339.
[3] Cf. Curzon, pp. 93–100; also report of hebdomadal council, pp. 78–88.
[4] Cf. Curzon, p. 96. Hillyard, p. 331.

have felt the need to safeguard against favoritism in methods of appointment, to limit the tenure of office, to fix a just emolument, and to appeal to a love of learning and of public service while courting a reasonable degree of supervision.

Thus far the two older universities have been treated in common. Nor is it desired now to any extent to differentiate them. Up to the last century Dollinger's remark held true:

> England, pursuing throughout its whole history the twofold aim of practical activity and political freedom and hostile to all centralization, has confined itself to two universities, two learned corporations which have preserved down to this day their republican constitution and autonomy. A single university would have become too exclusive, too much of a monopoly, and ultimately would have gone to sleep on the pillow of its privileges and traditionary honors. But the two watched each other and stimulated each other, and each of them specially cherished one of the two main tendencies of the English mind—Oxford the ecclesiastical and the disciplines subserving this, Cambridge the mathematical and more practical aims.[1]

Attempts to differentiate Oxford and Cambridge by means of broad generalizations have been made by numerous writers as well as in current popular stories and phrases. Matthew Arnold named Cambridge the mother of great men, and Oxford of great movements. George Eliot said that at Cambridge everybody spoke well of everybody else; at Oxford everybody criticized everybody. Lord Roseberry expressed it:

> Oxford and Cambridge impart, or did impart, a distinctive character to their men; they had a marked division in politics as well as in learning. Oxford had the traditional and reverential, Cambridge the inquiring or testing spirit.[2]

President Thwing[3] approaches the distinction by making Oxford and Cambridge one of the four classes into which he boldly divides the universities of the world, with the saving clause that the characteristics of all four classes are more or less in every university. In his first class he places the German universities devoted to the discovery and publication of truth, to learning and scholarship, with libraries and laboratories as tools, and observation as their method. The universities in Scotland and the United States constitute the second class, whose primary purpose is the development of character through the power of thinking. Scholarship has a less dominant place. The aim is rather intellectual and ethical. In the third class are Oxford and Cambridge and certain American colleges. The real purpose, though not the object of public proclamation, is the making

[1] Dollinger's "Universitäten Jetzt und Sonst," in S. S. Laurie "Rise and Constitution of Universities," 1886, pp. 244–245.

[2] Rosebery, Lord, "Chancellor's Address, University of Glasgow, 1908," MacLehose & Sons, Glasgow, p. 16.

[3] Thwing, Charles Franklin, "Universities of the World," Macmillan, 1911, p. xi.

of a gentleman in whom intellect, heart, conscience, will, and the æsthetic faculty are so blended that he becomes at home in any society. The universities of the Far East represent the fourth class, and here President Thwing would probably have inserted the newer universities which train men of efficiency, graduates able to earn a living. This efficiency is like that of professional schools and schools of engineering, but of a liberalized sort, touched by the thought of living in large relations. President Thwing[1] notes some of the popular remarks. Oxford says, in depreciation, Cambridge is democratic, but Cambridge takes it as a compliment. Cambridge says, deprecatingly, Oxford is ineffective, but Oxford takes it as a compliment. Oxford hugs Greek grammar closer than Cambridge, and Cambridge points to its Cavendish laboratory as the most significant place in scientific discipline in Britain. He adds the Oxford colleges are governed more by their heads and the Cambridge colleges by their fellows.

The universities are hit off by many facetious remarks, such as, "The Oxford man acts as if all the world belongs to him; the Cambridge man as if he belonged to all the world." One Cambridge student shouted to another striding somewhat loftily across the court of Trinity, "Hi, where did you get that Oxford manner?" If one were to yield to the fascinating practice of making generalizations, he might add many to the above. He might say Oxford is progressive-conservative, Cambridge is conservative-progressive. Oxford is preeminently classical, Cambridge is preeminently scientific. Oxford is philosophical, Cambridge is poetical. Oxford tends to make statesmen, Cambridge to make scholars. Oxford contributes leaders at home, Cambridge pioneers abroad. An American perhaps feels more at home in Cambridge, because it may be more democratic or because it is the mother of American colleges through the New England Cambridge. He can not forget, however, when in New England in the seventeenth century there was the highest proportion of university graduates to the population the world has ever known, besides Cambridge men there were "Oxford men not a few." An American visiting the universities back and forth, if asked which he likes the better, may well reply, "The one I was at the last."

The universities are the closest of friends, with a community of interests and of teachers consisting of graduates of the one or the other, rarely taking any step without consideration of its effect on both institutions. There is a good-natured competition of the Christian sort urged in the text, "Provoke one another to good works." There is care upon the part of one not to express an opinion about the other. Their independence through endowments, their self-gov-

[1] Thwing, Charles Franklin, "Universities of the World," Macmillan, 1911, pp. 10–12.

ernment, their representation in Parliament, and weight of influence generally have made them almost a fourth estate in the realm. They make it clear that endowed and autonomous colleges have a place as counterweights to State institutions. Nor should it be forgotten in the States how influence has been heightened not only by the cooperation between the two universities, but also contrary to their earlier policies by association with the newer State-aided universities.

Evidence is not lacking that Cambridge is conservative-progressive with progressive-conservative Oxford as a close second. The terms are used in a much broader sense than politically, though for years in parliamentary representation Oxford was predominantly Tory, and Cambridge Whig. Generally Cambridge has antedated Oxford in the introduction of new subjects of study, or the stressing of them in triposes known at Oxford as honor schools.[1] Cambridge rounds out its dozen of triposes with the establishment of an anthropological tripos in 1913, this doubling the number of triposes since 1875. Oxford has nine more or less correspondent honor schools, not counting as separate schools the eight subdivisions of the natural science schools.[2] The sole tripos at Cambridge until 1815 was the mathematical, and the honor school at Oxford still significantly known as "Greats" was *Litterae humaniores*. In the beginning at Cambridge the ancient quadrivium seems to have had the upper hand, naturally preparing the way for the mathematical, natural, and applied sciences triposes. At Oxford the trivium similarly held sway, naturally tending to produce, as grammar largely meant Latin, the *Litterae humaniores* school and possibly the conservative spirit characterized in Browning's Grammarian. The multiplication of studies and the recognition of them in honors demonstrates the steady advance of the universities with the times, but ordinarily with Cambridge as the path-finder.[3]

The sensation of the year 1913 at the universities was the abolition of the last relic of ecclesiastical tests by the opening of the divinity degrees to all denominations at Cambridge and the defeat of a similar measure at Oxford. While Cambridge has given the highest

[1] Cf. Ch. XVII, "Curricula," p. 234.

[2] (1) Physics, (2) chemistry, (3) animal physiology, (4) zoology, (5) botany, (6) geology, (7) astronomy, (8) engineering science.

[3] Omitting the original tripos or honors school, and taking them in their present form, their dates and succession would be approximately as they are here given: 1815, law, Cambridge; 1900, Oxford; 1824, classical, Cambridge (N. B., following the original mathematical as conversely at Oxford the mathematical followed the *Litterae humaniores*); 1851–1856, moral sciences, natural sciences, and the theological, Cambridge; natural science, 1853, law and modern history, 1873, modern history separate, 1870, theological, Oxford; 1875, historical, Cambridge; 1878, Semitic languages, 1879, Indian languages, 1895, amalgamated in the oriental languages, Cambridge; 1895, oriental studies uniting (earlier 1887) Indian and Semitic, Oxford; 1886, mediæval and modern languages, Cambridge; 1896, English language and literature separate, Oxford; 1894, mechanical sciences, Cambridge; 1903, modern European languages, Oxford; 1905, economics, Cambridge; 1913, anthropological, Cambridge.

recognition to applied science, culminating in a mechanical sciences tripos since 1894, Oxford made engineering science the last of the eight subdivisions of the natural science honor school only three years ago.[1] The preeminence of Oxford in Greek and Latin classics, philosophy and history is due to the dignity and distinction attached to the final classical school as compared with those given to the mathematical tripos in Cambridge. Cecil Rhodes furnishes an example of the fruits of the Oxford course in attributing the keynote of his life and the inspiration of his founding of his scholarships to the maxims of the Greek philosophers with which Oxford had imbued him. The Oxford record in no sense derogates from Cambridge's contribution to textual criticism and philology from the days of Bentley or to modern philosophy from the days of her great sons, Francis Bacon and Isaac Newton, and its school of neoplatonists.

Oxford, more than once the royal capital and on the great high road to the north, possibly was better located to breed statesmen than Cambridge on a by-way into the fen country. If so, the quiet and dreamy horizon of the fens might bring a compensation favoring the rearing of poets. The fame of Spenser, Milton, Wordsworth, and Tennyson so adds to the luster of Cambridge that injustice may be done to Oxford, with its meadows, hills, and Matthew Arnold's and Clough's tree on the hill.

The location of both the "rus-urban" university towns, of about 50,000 inhabitants each, wonderfully picturesque with their meandering river banks and gardens, favors the leisure so desirable for the scholar and offers the beauty which appeals to the poet. A sense of the importance of picturesqueness of location with landscape, waterscape, and academic shade has so been conveyed to the most fortunate universities and colleges in the New World that an institution without a river, sea, or lake is almost inconceivable; and an institution can not rest until at least an artificial lake is made, as at Princeton. Even an Iowa farmer once said there could be no real university without the picturesque surrounding of hill, river, or wood, no matter how grand the expanse of prairie.

Both universities in every generation have shown themselves "nests of singing birds." Let our American institutions in this age of science mark that science demands the creative imagination and poetry has its permanent place. Among the latest products of the universities are volumes of verse[2] of sufficient merit to vindicate the existence of a chair of poetry at Oxford. A critic says:

> Taking the Oxford and Cambridge volumes together, we feel that those persons who are anticipating a new renascence of poetry in England may take

[1] Cf. Ch. XIV, "Applied Science and Professional Education," p. 205.

[2] Oxford Poetry (1910–1913), with an introduction by Gilbert Murray, Oxford, Blackwell. Cambridge Poets (1900–1913), chosen by Alfrida Tillyard, Cambridge, Heffer.

courage from what they find in them. The Oxford poets bring evidence that the power of song is still alive among us; and the Cambridge poets, who are more mature, show further that their wings are capable of sustained flight, while both bear striking witness that the motive influencing our young poets is a desire to express some mood or thought with sincerity, rather than to imitate any fashionable style.[1]

The critic credits the Oxford poets with more singing quality than those of Cambridge, though with less sense of form. The critic attributes the greater sense of form to the maturity of the Cambridge writers, but one may well query if it is not due to the predominance there of philological and scientific studies.

The pioneering spirit of Cambridge appears in its antedating Oxford in most of the extramural movements making for the nationalization of university influence. Both universities instituted local examinations in 1858.[2] The Oxford and Cambridge schools examinations board followed in 1873. University extension was formally launched by Cambridge in 1873 and taken up by the London society for university teaching in 1876 and by Oxford in 1878.[3] Corresponding to Cambridge's leadership in attention given to the education of the masses is the recognition of women by the universities.[4] The Cambridge local examiners began the informal examination of girls in 1863, and the local examinations were opened to them in 1865. Edinburgh and Durham followed in 1866, but Oxford waited till 1870. Girton, the first college for women at a university, settled itself at Cambridge in 1873, followed by Newnham Hall in 1875, both preceding the opening at Oxford in 1879 of Lady Margaret Hall and Somerville Hall. While both universities still withhold the degrees from women, Cambridge admitted them to degree examinations in honors in 1881–82, while it took Oxford from 1884–1890 to admit to all final honors schools.

This slow but sure approach to coeducation may not only illustrate the characteristics of the two universities, but may indicate a safe method of procedure for the solution of the same problem by the older American foundations.

In the language of the economist one of the greatest of the modern questions for universities is the distribution of their products. "Oxford and Cambridge have already their labor bureaus, but they dignify them by the name of 'appointments boards.'"[5] This field was first entered by Cambridge in 1884 by the establishment of the scholastic agency to provide Cambridge men in search of scholastic appointments with a convenient and inexpensive means of obtaining

[1] The Times literary supplement, Jan. 15, 1914.
[2] Cf. Ch. XVI, "Examinations," p. 228; 'Schools Examinations," pp. 224–225.
[3] Cf. Ch. XIX, "University Extension Teaching," p. 249.
[4] Cf. Ch. VIII, "Women's Colleges," pp. 151–153.
[5] Brereton, Cloudesley, "Cooperation between School and Employer," Contemporary Rev., Feb., 1914.

them. It has also opened its register to other applicants without restriction of degree or place of education. Since its commencement it has received upon its books over 5,500 candidates. The business is conducted by a director and secretary under the control of a committee of university officials and members of the staffs of the principal colleges. With the object of promoting a scheme of life assurance for schoolmasters and clergymen, the agency in 1891 registered as a company under the Company's Act. The Cambridge University appointments board in 1902 took over the work of the appointments association and is administered by a secretary and an assistant secretary. Past and present members of the university are eligible for registration. No candidate is accepted without a nomination either from a member of the board or from a tutor of his college, and personal interviews with the secretary are deemed essential. Without excluding scholastic appointments, the board has mainly in view appointments in the military, diplomatic, and civil services at home, in India, and in the colonies; in the professions of law, medicine, engineering, journalism, and literature; and in businesses, agricultural, commercial, and industrial. A noteworthy feature anticipating vocational training is a series of special articles on various employments which may help the reader to realize something of the extent of ground which the board tries to cover, published in its annual *Appointments Gazette*.

The appointments board's report for 1912 shows rapid and steady progress. The number of appointments obtained by graduates on the introduction of the board was 315, as compared with 146 in 1907. The board already finds places for more than a quarter of the men who leave Cambridge annually.

At Oxford it was not until 1907 that the university officially recognized the appointments committee, which was founded in 1892. One of its most suggestive features for Americans is its consultative committee, consisting not only of representatives of all the colleges and of the noncollegiate delegacy, but also of co-opted members, nonresident representatives of some of the larger business interests. The committee states that there is an increasing number of men who are anxious to take work outside the learned professions, and who appear to be qualified for such work, either by the possession of general ability or by interest in subjects closely connected with business and administration. Several business men of eminence and public spirit are serving on the committee. The importance attached to the committee and a point to be marked by the corresponding American bureau is the selection of an experienced secretary. He is a mature graduate of one of the strongest colleges, with school and business experience, and for years private secretary of one of the most distinguished lords and cabinet ministers. From October to

May, inclusive, 1912–13, the committee registered 671 candidates. The secretary received above 800 visitors, of whom 330 were candidates to whom special interviews were given. The appointments filled in 1912 were 179, of which 45 were in the civil service at home and abroad. The committee receives grants from the university and the colleges and charges only a nominal fee for registration and a small commission on appointments secured.[1]

Especially should the attention of the Federal and State Governments and the universities and colleges be called to the intimate relations between the universities and the public services, to which entire chapters are given in the Handbooks of both universities. The royal commission on the civil service (1913) gave particular heed to the testimony of the representatives of the universities, with the design of correlating the civil-service examinations and the studies and examinations of the universities still more closely. For the higher civil services open competition, the civil-service commissioners and the universities cooperate in a scheme of subjects and marks. Both universities make provision for instruction in the subjects accepted by the civil-service commissioners not only in the arrangement of their tripos or honor school courses but in special lectures. The board of Indian civil-service studies at Cambridge makes provision for those selected candidates for the Indian civil service who pass their probationary year at Cambridge. The syllabus of the civil-service commissioners still applies the principles enunciated by Lord Macaulay's committee in 1854, viz, "that the object of the competition should be to secure for the Indian civil-service officers who 'have received the best, the most liberal, the most finished education that their native country affords.'"

Adding a list of public departments, not under the heading of the "higher civil service," which by some form of nomination or selection send students to the universities at least for some part of their training, an American is made to realise the service of the universities to the Empire.[2] If his universities are not to be provincial, and if the United States is to play its part among the world powers, the

[1] On registration, 50 cts. On appointments (*a*) for two months or less, 3 per cent on salary received; (*b*) for more than two months but less than a year, 1½ per cent on the whole salary; (*c*) for more than a year, 1½ per cent on the first year's salary; (*d*) for all appointments up to $2,000 per annum in Government service abroad, a special fee of $15.75.

[2] The higher and other civil service include departments like the home and Indian civil services and the following suggestive list: Eastern cadetship in the colonial service clerkships in the Houses of Parliament; foreign office and diplomatic service; student interpreterships for the Levant, Persia, Greece, Morocco, China, Japan, and Siam; consular service; colonial service in Africa, Egyptian and Soudanese civil services; Indian appointments in forestry, education, police, State railways, and customs; colonial police for Ceylon, Hong Kong, Straits Settlements, Malay Straits, British Guiana, Trinidad, and Jamaica; the permanent service of Sarawak; British North Borneo Co.; the board of education; the British and other museums; the Geological Survey; Ireland ecclesiastical commission and inland revenue, etc.

National and State Governments and the universities and colleges must come into a closer cooperation in the training of public servants.

At Oxford the information was vouchsafed that at the present moment not less than 100 of the graduates under 30 years of age had gone directly from the university to administrative positions in the Crown colonies, and that the Government testified to their success in managing men.

No wonder Corbin wrote, "The colleges of England have manned the British Empire." With this in view, it is easier to appreciate Cecil Rhodes's suggestions for the selection of scholars, whereby scholarship was to weigh only one-fourth in the marks, the other three-fourths being distributed among the possession of certain virtues, the power of leadership, and athletics, the latter as much a test of the spirit of fair play as of physical fitness. He distilled in his suggestions the essence of Oxford and Cambridge, with which he had been infused, and he proposed to diffuse it throughout the academic life of Anglo-Saxondom, in which he included Germany, to prepare for the leadership of the world.[1]

Prolonged study of the older universities has been made necessary not only by what they are in themselves and what they have to teach, but also because they are the fountainhead of much of the university life yet to be taken up. Further, light has been gained upon a disputed question as to whether the universities are and ought to be stationary, as their enemies would put it, reactionary, devoted to a certain form of culture, or progressive, participating in modern movements.

The record justifies the strong commendatory phrases the severe critics have been constrained to make on the universities. Lord Curzon says:

> A greater injustice could not be done to modern Oxford than to represent it as the home of stationary forces or ideas * * *. Oxford is as capable now as ever—nay, more so—of fulfilling its traditional part as the focus of the best educational activities, the highest civic aspirations, and the most advanced thought of the age and the race.[2]

Mr. Tillyard writes:

> It is not that Cambridge has gone back to the slumbers of the eighteenth century. On the contrary, it has made persistent and courageous efforts to adapt itself to modern conditions. The last 50 years, and especially the last 25 years, show a great increase in the number of subjects taught and of people to teach them.[3]

He emphasizes that men can be trained practically as physicians and surgeons, as engineers, as farmers, as teachers, and for the army,

[1] Cf. p. 20.

[2] Curzon, Lord, "Principles and Methods of University Reform," supra, p. 13.

[3] Tillyard, A. I., "A History of University Reform," Cambridge, 1913, p. 352. Cf. Ch. XVII, "Curricula," p 235.

and for the civil service at home and abroad, and that opportunity is given for research students. He dwells upon the increase since 1870 of the combined teaching staff of the university and colleges to about 380, or about 1 teacher for every 10 undergraduates. He points out the multiplication of buildings and the expenditures upon them since 1882. He summarizes by saying, "Cambridge strives to teach all that a complicated modern society can demand to know."

In conclusion, the ancient universities have been found to be not static but dynamic. They reveal that it is the nature of a university not only to preserve but to focus the truth of all the ages on the problems of the present.

DURHAM.

Several Englishmen have been surprised that Durham should be grouped with Oxford and Cambridge, rather than with the newer English universities, since it was founded in 1832. In fact, in its Durham division it is an inchoate Oxford or Cambridge, the third of the ancient universities in England, brought forth after an interval of 700 years as one born out of due time. In its Newcastle division it is an inchoate newer university, anticipating all the other new universities. Probably it has the most to teach America in its pioneering in modern federalism resulting in integral coordination of colleges in separate places.[1]

In its origin it is of the ancient type. There was a combination of religious and scholarly traditions, with a quasi national feeling. Durham, like Oxford, connects us with Anglo-Saxon times. The latter had its nucleus in the nunnery of St. Frideswide of the eighth century, the site of the present cathedral, the chapel of Christ Church. The former is within the precincts of, and uses as its chapel, the cathedral with its shrines of St. Cuthbert and the Venerable Bede. The founding of University College, the senior college at Oxford, in the thirteenth century, one of the centers of the "northern nation," by William of Durham, is an early intimation that the "north countree" would one day have universities of its own.

By 1640 Manchester and York were seeking to be the seat of a new university, but Cromwell, with his eye upon the endowments of the cathedral, decided upon Durham. After the Restoration the matter rested until the political agitation which culminated in the reform bill of 1832, uniting with the example of the wealthy bishops of the earlier centuries, persuaded the astute Bishop of Durham, Van Mildert, to devote $15,000 a year of the cathedral's princely revenues to the founding of the university. Like the older universities from the times of Queen Elizabeth and Archbishop Laud, it was to be the

[1] Cf. Ch. XIII, "Coordination of Institutions," pp. 195–197.

assured handmaid of the Church of England. The charter of 1837 constituted a corporation by the name of "The Warden, Masters, and Scholars of the University of Durham," the admission to membership of the university to be in accordance with regulations established by the dean and chapter of Durham, with the consent of the lord bishop. From that day to this the University at Durham, as befits its location so well alluded to in its coat of arms, *Fundamenta ejus super montibus sanctus*, has been a Zion of the Anglican church, especially resorted to by theological students. Though religious tests have been abolished except for theological degrees, the Bishop of Durham has been retained as visitor and the dean and members of the cathedral chapter as members of the senate, and the professorships of divinity and Greek continue annexed to the canonries. Ecclesiasticism has not prevented a broad administration by which the university antedates the newer universities in the recognition of applied science by the affiliation of the colleges at Newcastle, and marks its departure from its Oxford and Cambridge pattern by its admission of women to degrees, excepting theological, in 1895. It made the signal event of the year 1914 the giving of the vote to women in convocation.[1] In kinship with the Oxford and Cambridge collegiate system, University College was founded with the university where it is still housed in the castle with the baronial hall of the Palatine Prince-Bishops. The collegiate system, however, in the nineteenth century appears to be a survival. It did not develop at Durham except in an adaptation which preserves the social and residential element in the halls and hostels. The latter have multiplied, but have shown no tendency to develop into colleges.[2]

Clearly the literal reproduction of the Oxford and Cambridge College plan is not fitted, save in its essence, to modern times. The air of antiquity and the picturesqueness which Sir Walter Scott celebrates in his lines to the "grey towers of Durham" unite it from its heights on the Weir to its sisters on the Cam and the Isis. Again we are reminded of the advantage of a river for university scenery and events. The traditions of English oarsmanship have been kept alive since the first regatta at Durham on the Weir in 1834.

A visitor at Durham is impressed by the absence of laboratories, and herein is a likeness to Oxford and Cambridge in the first half of the ninteenth century, when Durham was founded. The B. A. degree is preserved in its pristine purity as representing Greek, Latin, mathematics, and religious knowledge, and it is still possible to take

[1] Cf. Ch. VIII, "Women's Colleges," p. 148.

[2] Bp. Hatfield's Hall, opened in 1846 for students in any faculty; Bp. Cosin's Hall, opened 1851, closed 1864; S. Chad's Hall, opened 1904 primarily for candidates for holy orders; likewise S. John's Hall in 1909; a women's hostel in 1899. Noncollegiate or unattached students under a censor in approved lodgings first admitted in 1871.

the degree in two years. With the incoming of modern subjects and the alliance with Armstrong College to keep the original B. A. with compulsory Latin and Greek the Durham division gives a degree of B. A. *in litteris antiquis*. Warrant from the above may well be found for the recognition in the United States of the small classical college, if it will bravely delimit its range of studies.

One of the most interesting things is the blending of the ancient and modern in education and the extension of the principle of the federation of colleges in one city to those in another city. After a half century of experiments in various forms of affiliation, what appears to be a final solution of the problem was accomplished by the statutes approved by King Edward VII in council in 1909 under the University of Durham parliamentary act of 1908. These statutes created two divisions of the university to be called respectively "the Durham division" and "the Newcastle division." The Durham division comprises the colleges in Durham, and the Newcastle division comprises the college of medicine and Armstrong College. Thus all the colleges became integral parts of the tripartite university, each retaining its local faculties, governing boards, and property, and all under the one chancellor, vice chancellor and other university officers, and represented in and subject to the university's senate as the supreme governing and executive body of the university.[1] Thus disconcerting rivalries have been done away with, and Durham University has become the crown of the educational system of Newcastle, the county of Durham, and its adjacent area. One burgeoning university seems assured in place of two, which 10 years ago it was feared would be erected—one of them representing classical and the other an industrial extreme—one in Durham, the capital of the county with only 15,000 inhabitants, the old ecclesiastical, political, and historic center, and the other in Newcastle-upon-Tyne, only a dozen miles away, with its growing population of 270,000, a center of coal fields, of iron and shipbuilding industries. The evolution of three institutions into one university is instructive. It grew from the loosest amination.[2]

The University of Durham College of Medicine continues as a corporation under the Company's Act, and with articles of association registered by the board of trade. It is controlled by a court of governors and an executive council. The constitution of the council of 21 members supplements the statutes of the university in interweaving all the institutions concerned, without sacrificing local autonomy. Seven of the council are elected by the court of governors, seven by the members of the academic board, i. e., the faculty, three

[1] Cf. Ch. IX, "Organization and Administration of Universities," p. 159.
[2] Cf. Ch. XIII, "Coordination of Institutions," p. 195.

by the senate of the university, two by the house committee of the Royal Victoria Infirmary, and two by the council of Armstrong College. There is afforded herein an early and happy illustration of the fact that a medical school can not well be isolated from a university.

Equally instructive is the story of the relations of Armstrong College with the university. The faculty of science in the university is still seated entirely in Armstrong College, in which alone are held the classes and examinations requisite for the degree of B. Sc. Early in its career the college recognized the importance of the literary side of university education, in virtue of which the university admitted its students to the degrees in letters, though not at that time to the degrees in arts. Through the benefactions of a number of local donors and of the municipality, the college met the standard of the board of education for a university college. In 1904 it opened a new wing of its extensive and fine college buildings, and in honor of one of its patrons, the late Lord Armstrong, took his name. In 1909 it became an integral part of the university, with full representation on the new senate and with admission to university degrees in arts as well as in letters and science. It now has the five faculties of pure science, of applied science, of arts, of letters, and of commerce just instituted. Applied science includes civil, mechanical, and electrical engineering, mining, metallurgy, naval architecture, and agricultural science. Like the independent university colleges,[1] it also has departments like agriculture and evening classes below university grades, and it recognizes the shorter courses with diplomas. By these courses the college closely interlocks itself with the demands of a great industrial center and enforces its appeal for immediate public support. Principal Hadow recognizes to the full that each modern university has to serve as the educating center of the district in which it is situated. Yet he contends that the modern universities are not in any bad sense utilitarian. He says:[2]

> There are at the present day in England some persons who call themselves utilitarians—mainly, I think, because they misconceive the meaning of usefulness—and who take what they regard as a utilitarian view of education. According to them its whole object is to provide a man with such information and method as may be needed to equip him for his career in after life; so many facts in return for so many fees.

A university in its lower and most practical range is not a trade school. Principal Hadow believes that the university inculcates the virtues of discipline, of self-restrain, of a single-hearted devotion to truth; they rest upon a nobler ground than the fact that they benefit their possessor. He adds:

---

[1] Cf. Ch. V, "Independent University Colleges," p. 130, passim.

[2] Hadow, Principal W. H., address, "The Old and New Universities," official report of church congress, Middlesbrough, 1912, George Allen & Co., London, pp. 243–245

The university investigates principles rather than practice, but it bases its principles on an exhaustive survey of the facts, and it so formulates them that they can illuminate practice at every point of application. *Quod in sciendo verissimum id in operando utilissimum:* Let a man desire to know because knowledge is good, and he will soon learn to work because work is serviceable.

The remarkable thing in Armstrong College and its sister colleges in the newer universities so often called utilitarian, is the reinforcement of the sentiments of Principal Hadow by the fact of the increase of the liberal arts faculties and students in the midst of institutions largely founded and supported in the interests of applied science. The principal's annual reports from 1910 on referred to the development of the faculty of arts in Armstrong College, as a result of the admission of its students to the degree in arts at the University of Durham. Even the corporation of Newcastle made an additional grant of $45,000 per annum for five years to this faculty. The spirit of the older universities has descended upon the newer in Durham. The professional and practical impulses of the newer in the Newcastle branches have revivified the older in Durham.

The most original contribution Durham has to make to our subject is its well wrought out scheme of a genuine federation in a central university of really autonomous colleges of different types in separate localities.[1] A district with a population of 2,400,000[2] will rally to the support of a many-sided united institution in place of fragmentary and competing ones.

Our position is confirmed by opinions gathered from interviews in various quarters as well as by published statements like the following:

> There are those who from time to time urge that the Armstrong College would make a yet stronger appeal to local patriotism if it broke away and established itself as the University of Newcastle. That, however, is but the echo of a controversy now happily buried. Whatever may have been the experience elsewhere, the federal tie at Newcastle and Durham has operated to the mutual advantage of all the partners. The Armstrong College retains a sufficient measure of independence to stir the civic pride of every good citizen.

[1] Cf. Ch. XIII, "Coordination of Institutions," pp. 195–197.

[2] The Counties of Durham, Northumberland, Cumberland, and Westmorland.

Chapter II.

SCOTCH UNIVERSITIES.

St. Andrews, Glasgow, Aberdeen, Edinburgh.

The Scotch universities[1] are as unique in their way as are Oxford and Cambridge, from which they are distinctly different. Lord Rosebery presents a scholar's as well as a Scotsman's view when he says:

> Our systems of religion, of law, and of education are all essentially and outwardly different from those which prevail in England. The church and the law we kept strenuously and purposely; the universities remained not by special effort, but because of their fitness for the work. The universities will continue, not merely because of their present powers and usefulness, but because of their constant readiness to adapt themselves to the shifting conditions of human requirement and intellectual effort.[2]

Lord Bryce elaborates the same thought and brings it to bear upon American, especially State, universities:

> The four universities of Scotland are very different from the English and rather resemble the universities of Germany. Though far less completely equipped than are the latter, for Scotland has been a comparatively poor country, they have always given a high quality of instruction and produced a large number of remarkable men. There are no residential colleges like those of England, so the undergraduates live in lodgings where they please, and thus there is less of social student life. But the instruction is stimulating; and the undergraduates, being mostly poor men and coming of a diligent and aspiring stock, are more generally studious and hard working and self-reliant than those of Oxford and Cambridge. Within the last 20 years women have been admitted to the classes, and that which was deemed an experiment is pronounced a success. Last I come to your own [American State] universities. Whereas the universities of Germany have been popular, but not free, and those of England free, but not popular, yours, like those of Scotland, are both popular and free. Their doors are open to every one, and every one enters.[3]

From the beginning the Scotch universities have been preeminently national and in recent times increasingly State institutions. The charter of the oldest Scotch university, St. Andrews, given by Pope Benedict XIII, states expressly that the university was founded after

[1] See Tables 2 and 8.

[2] Rosebery, Lord, rectorial address University of Edinburgh, 1882. (David Douglas.) p. 22.

[3] "University and Historical Addresses," supra, p. 160.

full discussion and by the advice and with the consent of the three estates of Scotland:

The Scottish universities are not private corporations—they are national seats of learning, existing for the nation, and controlled by the Parliament of the nation. And the universities have no wish to become independent of the State or to be removed from the control of the State.[1]

The second oldest university, Glasgow, was established by Pope Nicholas V by a bull dated January 7, 1450–51, at the instigation of King James II, as well as of Bishop Turnbull, and was modeled after Bologna, one of the oldest and most democratic of universities. The next two universities at Aberdeen, although also at an ecclesiastical center, start with a distinctly national impress. At the instance of King James IV, Elphinstone, Bishop of Aberdeen, obtained in 1494–95 the authority of a papal bull to found the university. Within the university the college of St. Mary was called King's College because of royal patronage and is styled in acts of Scots Parliament, "Our Sovereine Lord, His College and University." The other Aberdeen foundation, Marischal College, was emphatically Scottish, established in 1593 by the Earl Marischal, George Keith, under a charter ratified by act of the Scots Parliament.

The youngest of the universities, Edinburgh, placed at the royal capital, in contrast to the oldest, St. Andrews, at the ecclesiastical capital, was established as the "Town's College" in 1583 by the town council of Edinburgh, under powers granted by King James VI. Gradually in acts of the general assembly, of the town council, and of Parliament, "The College of James VI," which from the beginning possessed the privilege of conferring degrees, came to be styled the "University of Edinburgh." Remaining under the patronage and control of the town council down to 1858, it was not only intensely national but also the forerunner of the great municipal universities in England.[2]

These institutions considered from the beginning as national corporations, unlike the view taken of Oxford and Cambridge as private trusts, became after the Reformation with the plans for a national system of education practically State universities. From that day to this there has been a constant support and supervision of the universities, first by the church and then by the state.[3] The first book of discipline (1560) of the Kirk undertakes to make certain arrangements for the three universities. Fundamental changes have been made repeatedly. "A Nova Erectio," or new charter, was given to the University of Glasgow in 1577, largely through the influence of

[1] Donaldson, Sir James, "Addresses Delivered in the University of St. Andrews, 1886–1910," T. and A. Constable, 1911, p. 47.
[2] Cf. Ch. IV, "The New or Provincial Universities," p. 102.
[3] Cf. Ch. XII, "State Aid and Visitation," p. 190.

Principal Melville, who brought from the University of Paris the revolt against the supremacy of Aristotle. Under the same influence in 1583 at Aberdeen there was a "Nova Fundatio" prepared by a commission appointed partly by the King and partly by the assembly.[1]

The early Scotch belief that it is the duty of the State to maintain a national system of education by taxation—a system including primary, secondary, and university education—has resulted in frequent legislation by Parliaments on the universities. The Scottish universities acts of 1858 and 1889 have effected little less than a revolution in the constitution,[2] standards, curricula, State aid, and coordination of the universities. They constitute the four universities "The academic quadrilateral," as the crowning citadel in Scotland's educational system. Since 1901 this citadel has been strengthened by private gift as well as by the doubling of the public grant. In that year the great Scotch-American created the "Carnegie Trust" for the universities of Scotland by the donation of $10,000,000. The hospitality and heart of the giver followed his treasure in the annual invitation to Skibo Castle of the four principals of the universities for conference with each other, and other distinguished Scotsmen interested in the universities. On one of these occasions Lord Haldane (at that time Mr. Haldane, and not a member of the Government) urged an appeal to the Government for a large sum to meet the needs of the universities.[3] The result was, in addition to the sums of $150,000 a year under the education and local taxation account (Scotland) act 1892, and $210,000 annually under the universities (Scotland) act, 1889, the grant of $200,000 a year to Scottish universities and, still more important, the provision of a way of adding to the grants in the education (Scotland) act of 1908.[4]

The age-long State supervision and State aid are manifestations of the fundamentally national character of the Scotch universities. In early days as isolated people, in a picturesque but infertile land tending to breed poverty and necessitating thrift, with little distinction of classes, with the cherishing of a sense of equality and individuality by clan and by church, there was generated what came to be known later—particularly in New England and the West—as a "passion for education." The New England mother's charge to her son would have fitted the Scotch mother equally well, "Child, if God make thee a Christian and a scholar, thou hast all I ever asked for thee."

In the absence of modern opportunities and the temptations of wealth, education opened the most eligible pathway for a career.

[1] Rait, Robert Sangster, "The Universities of Aberdeen," Bissett, 1895, pp. 106–110.
[2] Cf. Chs. IX, "Organization and Administration of Universities," p. 159; XIII, "Coordination of Institutions."
[3] Donaldson, Sir James, addresses, supra.
[4] Cf. Ch. XII, "State Aid and Visitation," p. 190.

Education from the lowest to the highest was a necessity before the age of coal and steel for Scotland's greatest export—educated brains. The Scotch could not, like the nation of landlords and shopkeepers south of them, dream that because of their prosperity in agriculture, manufactures, and commerce a national system was little worth while. So Scotch sentiment and practice were the constant source of their educational legislation, and anticipated by centuries the Prussian scheme of 1817 of the organization of State education, crowned by universities and the present movement of their English brethren in the same direction.

The notion in the outline for an American State system of education embodied in the Ordinance of 1787 for the government of the Northwest Territory may be traced to the same Scotch source, coming from the pen of an American Presbyterian minister with a Scotch name.

Vigorous as has been the development of the American State university, it may yet profit by paying attention to the Scotch example. The teacher in the school preparing for the university must be a university man imbued with the spirit of the old-time parochial teacher, so lovingly depicted by "Ian MacLaren" in "Domsie," ever alert to discover the "laddie o' pairts who must awa' to the university."

Until after the first quarter of the nineteenth century these teachers were sent out from the universities. With the incoming of instruction in newer subjects like geography, training colleges, the first of which in Britain was the Glasgow Normal Seminary, opened in 1827, began to supplant the universities in the preparation of these teachers.[1] The universities are recovering their primal function of training teachers and regaining their leavening influence in the schools by cooperation with the provincial committees for the training of teachers. Professional training may be conjoined with the university course in a way similar to that which has obtained in the case of normal school and local committee schools or it may be taken as a postgraduate course.[1] Full warrant is thus given for the establishment of schools or colleges of education as in American universities.

Thus happily have the Scotch coordinated the training schools or colleges with the universities and set an example for the solution of what has been made a difficult problem in the United States in relating the normal schools to the colleges and universities. The linking up of the Scotch educational system is further seen in the making

[1] Cf. "Glasgow Provincial Committee for the Training of Teachers, report, April, 1913," pp. 5, 7, 8, "The number of education students with a university training is a fairly constant quantity at the Glasgow Center, being about 500 in each year." Cf. Ch XIV, "Applied Science and Professional Education," pp. 210–212.

of the universities the coordinating centers, conjointly with the separate agricultural colleges, in defined areas for lower and higher agricultural education,[1] and in the recent agreements for cooperation with the great technical schools. The unification of the universities with the preservation of their individual autonomy, secured by the parliamentary act of 1889, and the impulse given to modern subjects further developed by the conferences and joint boards of the universities themselves has been stimulated by the Carnegie Trust. The Trust, with its $500,000 a year to distribute, has become an influence second only to the Government. We are confronted with a recent phenomenon of great interest in the history of education on both sides of the Atlantic—the administration of vast educational funds and the influence upon institutions by extraneous perpetual corporations. Without entering into the merits of the discussion, we can not therefore pass by the bare facts of the Carnegie Trust and some of the criticisms of it. In 1901 Mr. Carnegie conveyed to trustees $10,000,000 in bonds of the United States Steel Corporation, bearing interest at 5 per cent. He directed that one-half of the net income should be applied toward the improvement and expansion of the universities of Scotland in the faculties of science and medicine, also for improving and extending the opportunities of scientific study and research, and for increasing the facilities for acquiring knowledge of history, economics, English literature, modern languages, and technical or commercial education. The other half of the income was to be devoted to assisting students of Scottish birth or extraction in the payment of university class fees. Of the 22 trustees, 4 are elected by the universities, each university choosing its representative for a period of four years. Of the executive committee of 9 members, 2 are of the 4 trustees elected by the universities, alternating every two years. This direct representation of the universities is reinforced by the fact that other members of the Trust are often from the governing bodies of the institutions. Four ex officio members relate the trust more widely, His Majesty's Secretary for Scotland and the provosts of Edinburgh, Glasgow, and Dunfermline.

The Trust instituted a quinquennial scheme of distribution of grants to the four university centers. The total grants for the 11 academic years from October 1, 1902, till September 30, 1913, amounted to $2,270,000, of which there were allocated to libraries $217,500, to buildings and permanent equipment $1,016,775, and to teaching $1,036,220. In the four universities in this period 3 chairs and 25 lectureships have been partially or completely endowed.[2] The

[1] Cf. Ch. VII, "Agricultural Colleges and Schools," p. 142.
[2] "The Carnegie Trust for the Universities of Scotland, Twelfth Ann. Rept." (1912–13); Edinburgh University Press, 1914, pp. 7, 8.

policy of the Trust in making additions to the capital endowments of the universities rather than relief to income has been justified. To the institutions has been left the sole responsibility in the matter of their annual ways and means. In the new and additional buildings, lectureships, and chairs the Trust without intermeddling with internal administration has added to the permanent equipment and enrichment of the institutions. The Trust is of the opinion that it must not be bound to anything of the nature of a fixed proportion to the respective university centers. "The Trust must always be in a position to determine its action from the point of view of Scotland and Scottish university education as a whole."[1]

The second great work of the Trust appears in its research scheme intended to reach all classes of workers from students who have just graduated to graduates who have already entered on professional careers. Provision is made for scholarships of the annual value of $500, fellowships of $750, and grants in aid of research. Selection is not made by competitive examination but on the evidence of experts regarding the applicants' special fitness. In the case of applications for grants from members of the staffs of the institutions the Trust, which had been making the grants without consultation with the governing bodies of the institutions concerned, now requires that the application should be made through the governing bodies and with their advice. The scholarships and fellowships are limited to subjects in science, and medicine, in history, economics, and modern languages and literature. With all the above operations of the Trust there has been general satisfaction. The testimony is that there has been stimulated a spirit of research such as did not previously exist in Scotland. In the wider field also of the British universities the spirit of research is being propagated, inasmuch as the Scotch Carnegie fellows and scholars have been permitted to work in other British universities, including Montreal. The total of the grants for this postgraduate and research scheme for the 10 years to 1913 was $3,152,260. Contributions to knowledge have resulted in nearly every branch of experimental science.

The report of the Trust alleges that "many of the English and some of the colonial universities now rival those of the Continent in the provision which they make for research especially in the subjects of radioactivity and molecular physics and in the repute of their teachers."[2] The success and economy of the Trust in the promotion of graduate study and of research by leaving the work in the university and extending their libraries, laboratories, and publications, rather than by setting up a separate institution for investigation and re-

[1] "The Carnegie Trust for the Universities of Scotland, Twelfth Ann. Rept." (1912–13); Edinburgh University Press, 1914, p. 10.

[2] Ibid., p. 17. Cf. Ch. XV, "Advanced Study and Research without Graduate Schools," p. 216.

search, make against the establishment of independent institutions for the purpose.

The happy and far-reaching effects of the two lines of operation of the Trust in the "endowment of postgraduate study and research" and "grants for universities and extramural colleges" have been acknowledged by the critics who attack the Trust's third line of operations in "assistance in the payment of class fees." The regulations require that the applicants must be of Scottish birth or extraction and should hold ordinarily the leaving certificate of the Scotch Education Department bearing evidence of such preliminary education as is required by the universities for their respective graduating curricula. The applicants must have had their courses of study for each academic year approved by the university adviser of studies. They are not eligible for assistance in the payment of fees of classes belonging to a further stage of their curriculum until they have passed the graduation examinations belonging to a previous stage. The annual allowances toward payment of class fees are for the ordinary degree in arts $45 a year for three years, or for honors $45 a year for four years; in science, $60 a year for three years; in medicine, $75 a year for five years; in law, divinity, and music, $30 a year for three years.

In the period from the institution of the Trust in 1901 to September 30, 1913, the Trust paid $2,670,045 to 13,382 beneficiaries, of whom 4,000 were women. In the same period 117 beneficiaries have voluntarily refunded advances for class fees to the amount of $14,065.

Mr. Carnegie, when making the gift in 1901, wrote:

> My desire throughout has been that no capable student should be debarred from attending the university on account of the payment of fees. * * * I hope that the honest pride for which my countrymen are distinguished will prevent claims from those who do not require assistance, and that the invidious task of inquiring into the circumstances of each candidate need not be imposed upon the trustees. * * * The donor, believing that some students in after life may value the privilege of repaying advances received from the trustees, although these are free gifts, hopes the trustees will gladly welcome repayments from such students as prefer to consider the payments made on their account merely as advances, and that this will protect and foster the spirit of manly independence so dear to the Scot.

In the face of this, "Mr. Carnegie has been much blamed for lowering the independence of the Scottish people," says one of the ablest critics of the methods of the Trust in the payment of fees. He adds "whatever blame there be must rest with the Trust."[1]

The aim of the criticisms is to preserve the universities from what may tend to be undue influence upon them of the Trust and to have put into their hands the distribution of the funds in aid of students.

[1] "Memoranda by Principal Sir James Donaldson on the Carnegie Trust and Its Administration." St Andrews, 1913, p. 8, passim.

The arguments used are that the annual income of over $125,000 in bursaries independent of the trust made it unnecessary to institute the payment of fees of students in arts, science, and theology. It is admitted that these bursaries are thrown open to public competition and often obtained by rich students, otherwise it is estimated they would be sufficient to care for every poor student in Scotland.

The increase of 25 per cent in the attendance of students since the inauguration of the Trust is attributed largely to the increase in the attendance of women, partly induced by the payment of the fees. The students are subject to no investigations of their pecuniary needs or the receipt of a bursary and are dealt with independent of their parents, so it is believed that rich and poor students accept the payment of fees as a gift to add to their pleasures and comfort. In the case of professional students, in engineering, medicine, and law, it is urged that the policy of the Trust tempts men into a career where they have to face poverty, and that discrimination should be made in favor of the poor young man of rare capacity by grants for both maintenance and payment of fees. The remedy proposed for these evils is the management of this portion of the trust funds by the universities with the facilities they have at first hand to treat each individual case. In the background of these arguments appear certain general regulations of the Trust which it is deemed impinge at least indirectly upon the freedom of the universities. Various actions are cited, such as the resolution "that there should be equality of class fees among the Scottish universities in regard at least to the degree-qualifying classes."

The stress put by the Trust upon the leaving certificate of the Scotch Education Department, rather than upon the preliminary examinations of the universities, resulting in 87 per cent of the new beneficiaries for the winter session 1912–13 entering by a full leaving certificate, threatens seemingly the system of admission to the universities.[1] The universities feel the strictness of the provisions of the Trust that their beneficiaries must pass examinations required for the degree proper to their curricula precedent to the further payment of class fees, and that beneficiaries must proceed to a degree. The effects of these regulations seem too stringent, and were indeed far-reaching, to a community accustomed to the matriculation of students who had not passed the admission examination and who were permitted to go on with their university studies without passing class examinations or being candidates for a degree. The Trust also, before renewing its annual payment of fees for its beneficiaries, follows them up by means of reports and thus has brought it about that

[1] Cf. Ch. XVI, "Examinations," pp. 220–227.

the universities have appointed student advisers, who not only make reports but are also supposed to guide the student in the choice and order of the subjects of his curriculum.

The choice of studies was further effected by the adoption of the inclusive in place of the class fee. The Trust began to agitate in 1907 for this change. The State treasury sought in 1911 to make it a condition for receiving its grant to the universities. The Trust contended the class fee tempted the teacher as well as the student to put financial considerations above educational ones in the arrangement and choice of classes. In addition the Trust, to prevent one university from underselling another, resolved "that there should be equality of class fees among the Scottish universities in regard, at least, to the degree-qualifying classes."[1] In view of the above facts, a vigorous objector exclaims, "The Scottish Education Department, in alliance with the Trust, has succeeded in driving a broad highway through the universities, a way over which Parliament, courts, councils, and senatuses have neither veto nor control."[2]

It is evident that the Trust has become incidentally and almost necessarily a standardizing agency in the universities and certain central institutions whose work is recognized as of "university level," and even indirectly in the secondary schools.[3] Sir William McCormick testifies that over 20 years ago, when the parliamentary commissioners set up a preliminary education standard for the Scottish universities, there was no entrance standard, but it has been the compelling force that has raised secondary education. The raising of the standard has eliminated what was practically a secondary school department in the university. He ventures to compare the Scotch university now in this respect as follows:

> In Germany they do their secondary education all in school. In America they have a different arrangement because they have what they call a college, which is a buffer between the secondary school and the university, and it is hard to say what it represents on our standards, but I should say that on the whole it is half-and-half.

Thus the Trust illustrates anew that influence may be as great a power as authority. In any case the power of the purse is felt. The

[1] Under protest the universities adopted the inclusive fee except in the faculties of medicine and applied science, where, inter alia, the great expense of instruction in certain necessary subjects, arrangements with extramural institutions, and the number of non-Scottish students led to complications. In 1914 the University of Edinburgh had not yet arranged with the treasury an inclusive fee in medicine and applied science.

[2] The Aberdeen Univ. Rev., Nov., 1913, p. 68. Cf. pp. 73, 74, 75. Oxford Mag., May 15, 23, 1913. University of Glasgow General Council Reports, Apr. 24, 1912, pp. 15–23; Apr. 30, 1913, pp. 21–24, 39–41.

[3] Royal commission on the civil service, minutes of evidence, 1913, Sir William S. McCormick, secretary of the trust, pp. 19–21. He states the whole case of the trust, pp. 15–24, 106–111.

Trust professes to push forward ideals advanced by the commissioners under the act of 1889 and to be cooperant with the Scottish Education Department and the Treasury. It is not surprising that there is some concern in some quarters for the autonomy of the universities.

The Treasury in not enforcing the demand for the inclusive fee in applied science and medicine; and the Trust, relying more and more upon student advisers and the recommendation of the staffs in research appointments, shows respect for that autonomy. The thought is brought home that for coordination and standardizing purposes an influence outside university faculties may be desirable, and that there may be advantages in securing the cooperation of the State and organized private benevolence with the universities. A threefold cord is not soon broken, but in this case care must be had that the educational strand is strengthened and not weakened by the financial one.

The Scotch universities, intertwined with the imperial treasury, with the Scottish education department and national school system, with the Trust, and touched by a cosmopolitanism due to an international attendance in medicine and applied science, and the scattering of their alumni through all lands, may well be declared by Maurice Hewlett "fiercely modern." Paradoxically he maintains that they have a "medieval character, while Oxford and Cambridge have completely lost it."[1]

They are medieval in that colleges never choked the strong central government of the universities, the dominance of the professoriate was never lost, the professorial class lecture was not supplanted by the collegiate tutorial instruction, and the sacred seven subjects of the trivium and quadrivium have retained their prominence almost till to-day. Although since the royal commission (1889) not less than 22 chairs and 146 lectureships in scientific and modern subjects have been added, there is no full chair in the modern languages, and the political, economic, and social sciences are largely represented only by lectureships. As the assistant professoriate in America has agitated for the faculty franchise and proportionate salaries, so are the lecturers in Scotland inclined to do, and from some such sources the Scotch universities have been called "reactionary." The survival of the best of medievalism in respect for antiquity and the continuity of a sturdy authority, imbued with a democratic spirit which embraces in the membership of the university, and with representation in the Government, the graduates and the students, and all in close alliance with the State and nation, certainly enriches the modernity which has also been noted in the Scotch universities.

[1] Glasgow University Students' Handbook, 1913–14, p. xix.

ST. ANDREWS.

St. Andrews stands as an example to the American advocate of the small, rural, secluded, inexpensive institution, immovable from its original site, appreciating the work of unbroken historic associations. The Pope's bull at the founding of the university reads, "Considering the peace and quietness which flourish in the said city of St. Andrews." Dean Stanley, impressed by the university's site, upon its high sea-girt promontory and its background of the ruins of cathedral and castle, says of it:

> This secluded sanctuary of ancient wisdom, with the foamflakes of the northern ocean driving through its streets, with the skeleton of its antique magnificence lifting up its gaunt arms into the sky, still carries on the tradition of its first beginnings. It may still be said of the local genius of St. Andrews that, through all the manifold changes * * *, its spiritual identity has never been altogether broken, its historical grandeur never wholly forfeited.

St. Andrews is a demonstration of the practical impossibility of extinguishing or removing a college once planted and having generations of graduates. On account of the location of the university, in a town of scarce 10,000 inhabitants, and its small number of students and poverty, compared with its three sister universities in great urban centers, between 1870 and 1890 various propositions for change were made. One was to distribute both professors and students among the other universities; another was to alter the university into another kind of educational institution. The proposal to dissolve the oldest university of Scotland aroused keen protest. The outcome was the union of the university with the medical college and University College in Dundee.[1] Thus the addition of a fifth Scottish university was stayed, and the ancient university developed its faculty of science and its faculty of medicine with its first two years at St. Andrews, a notable experiment along the line of the American attempts at a bipedal college of medicine.

Possibly the record of the university in the production of political leaders, philosophers, and poets, indicates something characteristic which led it to see a great way off the movement for the higher education of women and to go out to meet it. Responding to the Edinburgh Association for University Education of Women, formed in 1869, in 1876 St. Andrews instituted examinations for the diploma for women, with the title of L. L. A. (Lady Literate in Arts). The title was the first formal precursor of a degree for women. It was a recognition of external examinations on a standard practically equivalent to that for the ordinary M. A. degree. Liberty was given to take up the subjects in any order and to spread the examinations over any length of time. As a semiuniversity extension and a semi-

[1] Cf. p. 57 and Ch. XIII, "Coordination of Institutions," pp. 197-198.

correspondence school movement, it was sometimes ridiculed "as a sham." It has justified itself at least as a transitory movement and has been strengthened by provisions for obtaining honors in certain branches and for a special diploma for teachers.[1]

St. Andrews tends to become the Scotch Mecca for the higher education of women. It has by far the highest percentage of women in attendance of all the British universities (41 per cent, 1912–13). The location, as well as the policy of the university, encourages the attendance of women and suggests that where there are competing institutions one of them might more or less specialize for women. St. Andrews, with Edinburgh, first established a chair of education, while the other two universities still have only lectureships begun nearly 20 years later. Provision is made *in the university* for courses in methods of teaching for students, largely women, training for secondary school teacherships. The Scotch education department, through the St. Andrews provincial committee for the training of teachers, constituted in 1905, provides for full courses of instruction at St. Andrews and Dundee, and even makes maintenance allowances. In 1896 one of the finest stone halls of residence for women students, so planned that it could be extended from time to time, was opened and a warden of women appointed. The grounds, about 3½ acres, contain the women students' pavilion and lawn tennis courts and adjoin the extensive university athletic field given by Mr. Carnegie. Through the kindness of Mrs. Carnegie a permanent union for women students has been opened near the center of the university.

ST. ANDREWS AND DUNDEE.

St. Andrews and Dundee, together with Durham and Newcastle, are unique in the union by incorporation of institutions in different localities.[2] In the early seventies Sir David Baxter left a bequest for the founding of a mechanics' or technical institute in Dundee. As a result of a subscription of $600,000 by Miss Baxter in 1881, University College in Dundee was founded, to have the same aims as Owens College, Manchester. The college authorities were empowered to amalgamate or cooperate with the inchoate technical institute. The latter institution was continued under separate management in a building adjoining the college, undertaking "grant-

[1] University of St. Andrews. "The L. L. A. Examination, Diploma, and Title for Women," 1914, p. 11. Total number of candidates entered from 1877–1912, inclusive, 25,551, of whom 8,492 received the title. The number of candidates in 1912 was 978, and titles received 125. The number of centers and places of examination in 1913 throughout Great Britain and Ireland and a few over-sea places was 52.

[2] Cf. Chs. I, "Oxford, Cambridge, Durham" p. 43; XIII, "Coordination of Institutions," pp. 197–198.

earning" instruction below university grade. The institute flourishes with an enrollment (1913) of 1,260 students.[1]

By public subscription and by grants from the Scotch education department a site, buildings, and equipment costing about $400,000 were accepted by the technical institute trustees. The technical college keeps to "those branches of learning necessary or useful for working mechanics or other craftsmen," and recognizes the special needs of the locality by instruction in jute and linen manufacture and by a navigation and marine engineering department.[2]

GLASGOW.

Glasgow University, only a half century the junior of St. Andrews, was founded in a little place of less than 3,000 inhabitants, insignificant then compared with the important and populous port of St. Andrews. It is now emphatically the urban university of Scotland, in its metropolis of a million, the second city in population of Great Britain and Ireland. "The smell of the Agora mingles with that of calfskin and midnight oil." More than once it has changed its site. It teaches the courage and virtues necessary for an urban university to escape from the coils of a rapidly enveloping city to a position where it can dominate the city, being in it but not of it. The imposing front of the new vast buildings designed by the late Sir G. Gilbert Scott, towering from the extensive grounds of Gilmorehill occupied by the university in 1870, convey two warnings: Architectural features should be subordinated to scholastic requirements in collegiate buildings, and one huge structure should not be erected in place of a series of harmonizing groups of buildings with units that may be extended. The building, opened in 1870 and expected to afford accommodation for the increase of years to come, despite heterogeneous additions, soon proved inadequate. The 25 professors making a total staff of 35 teachers in 1870 increased to 36 professors, a total staff of 203 in 1914. The extension of laboratory instruction has required new buildings of a different type, which have been planted here and there as best they could be.

The earlier location of the university, in the heart of the city, affording facilities for the lodging of students, may have contributed to the disappearance of residential colleges, of which there is a dim

[1] The Dundee Technical College and School of Art is a happy illustration of the clear cleavage made by the Scotch education department's regulations and by university influence between school work and work of university grade. The demand of an industrial age for technical and art instruction below university standards (too often frustrated in the United States by the ambition of lower institutions to do university work) is successfully met by the Dundee Technical College taking over the evening technical classes of the technical institution and likewise the technical work of the high school and also of the Young Men's Christian Association.

[2] Cf. Ch. VI, "Technical Colleges and Schools," p. 188.

tradition, and the nonappearance of hostels until the founding of Queen Margaret College (1883). It is instructive to observe that this provision for women, as has not infrequently been the case in Britain and the United States, has introduced a movement for residential halls for men. In the face of the habit of centuries not to inspect or approve of students lodgings, Glasgow University announces that further developments of hostels are contemplated.[1]

Glasgow illustrates the well-known advantages of an urban university. Wealthy citizens make voluntary contributions for buildings and endowments. Their cosmopolitanism and interests broaden and stimulate the subjects of instruction and research in the university. The prominence and political weight of the community attract students and governmental favor and grants. Eighteen professorships were founded during the nineteenth century, chiefly in applied sciences, including medicine under this head.

As early as 1840 Queen Victoria instituted a professorship of civil engineering and mechanics, later supplemented by gifts from Glasgow citizens. Even earlier (1823) the citizens had established the mechanics' institute apart from the university. The other branches of engineering have developed, and quite naturally Glasgow has the only chair of mining and the only university chair of naval architecture, including marine engineering, in Scotland. The latest happy step for applied science is the affiliation of the Royal Technical College, Glasgow, with the university.[2] The response of the university to its environment gives it a preeminence in industrial education. By a wise provision also it has an arrangement with the West of Scotland Agricultural College by which the degree of bachelor of science in agriculture is given without unnecessary duplication of work.[3]

Glasgow, ever since the establishment of its first engineering chair, for three-quarters of a century has favored the "sandwich system," made possible by the limitation of the university session for study to half of each year and the proximity to the university of workshops, offices, and shipyards for practical work the other half year. In recent discussions under the auspices in London of the Institution of Naval Architects, the Institution of Mechanical Engineers, and the Institution of Civil Engineers the preponderance of opinion has favored a full collegiate technical education with the sandwich system.[4] Glasgow has been true to the combination of the theoretical and practical, associated with the beginning of the steam age by the

[1] Cf. Ch. XVIII, "Student Life."

[2] Cf. Chs. XIV, "Applied Science and Professional Education," p. 205; XIII, "Coordination of Institutions," p. 199.

[3] Cf. Ch. VII, "Agricultural Colleges and Schools," p. 139.

[4] The Institution of Civil Engineers, report of special committee on practical training of engineers, adopted July, 1914, W. Clowes & Sons, London.

name of James Watt, mathematical instrument maker to the university, and that of the electrical age by the name of Lord Kelvin professor of natural philosophy and chancellor. A similar combination of theory and practice is required for the degrees of B. Sc. and D. Sc. in Public Health and of B. Sc. in Pharmacy.

For the former degree after graduation in medicine at least six months must be given to acquiring a practical knowledge in public health administration. For the latter degree, in addition to their academic courses, they must be either chemists or druggists registered under the pharmacy act or graduates in medicine. In like manner in chemistry a union of training in theory and laboratories with practical experience is advocated, as might be expected in an institution numbering among its graduates a chemist like Sir William Ramsay.[1] In the field of the political, economic, and social sciences this urban university suggests the value of the use of the community as a laboratory in these subjects. A combined course in political philosophy and social economics and a lectureship in economic history reinforce the chairs of moral philosophy, of political economy, and of history. The Glasgow University students' settlement society with its residence, founded in 1889, is the only *students'* settlement in Great Britain, although there are many conducted by graduates. There is also the Queen Margaret College settlement association, founded in 1897, with a settlement house.

The closeness of the university to the Scotch Nation is indicated by the recent endowment of the chair of Scottish history and literature. About $100,000 was given from the receipts of the Scottish Exhibition of National History, Art, and Industry (Glasgow, 1911) and from contributions by the Merchants' House, Glasgow, and by a citizens' committee. While cheerfully yielding to a popular movement, the university "would remove any tendencies to parochialism, picturesqueness, and defective perspective which might arise if Scottish history were accepted as an isolated independent course" by requiring that the course for graduation purposes shall be preceded by or accompanied by a course in history. The wisdom, not to say canniness, of the Scotch university in preserving popular interest and not sacrificing university standards may be commended to Irish and certain colleges in the United States subject to national zeal.[2]

The participation of students in the government of the university, a common characteristic of the Scotch universities, is perhaps par-

[1] The university court has sent the draft of a new ordinance to the general council which provides that a degree of bachelor of science in applied chemistry may be conferred by the university (Oct. 14, 1914).

[2] A case in point would be compulsory Irish in the universities of Ireland or instruction in the language and literature of a considerable settlement of a given nationality in one of the States.

ticularly prominent in Glasgow, "from its foundation endowed with the privileges, liberties, honors, and immunities of Bologna." It has been peculiarly the students' university. Here and in Aberdeen alone survives the division of the matriculated students into four nations for the purpose of electing the rector.[1] The "liberties and immunities" of the students sometimes assert themselves spectacularly, especially in graduation ceremonies. The Times reports a recent example.[2] When the Lord Provost of Glasgow, an ex officio member of the university court, being unpopular with the students on account of his attitude toward Lord Robert's campaign for compulsory military training, appeared upon the stage in company with the principal, he was greeted with cries of "Put out the Lord Provost." Several professors left the platform and mixed among the undergraduates to restore order, but the students armed themselves with soda-water siphons and squirted the contents about. The capping ceremony was carried out practically in dumb show.

ABERDEEN.

The University of Aberdeen has a peculiarly Scottish flavor, standing in the granite-built city at the heart of the Province of Moray, well called the Scotland of Scotland. The visitor is constrained to join in the words of William Watson:

> Hoary thy countenance and thy mien severe,
> And built of the bones of Mother Earth thou wast,
> But on thy heart hath fall'n no touch of frost,
> O city of the pallid brow austere.
> Grey, wintry-featured, sea-throned Aberdeen,
> Thee and the towers of learning and of peace
> That brood benignant on the northern foam.

And one who has been within the university hastens to add the lines of Thomas Hardy:

> Behind thy granite mien
> Lurks the imposing beauty of a Queen.

The university in its early days had a district all its own, almost inaccessible from the south, from which it was separated by moor, mountain, and firth. It had and has largely preserved the virtues attributed to the pioneer American college. It was small and inexpensive. Its students were homogeneous, coming from plain and God-fearing homes. Relatives cheerfully sacrificed to send the student of the family through college. Parents actually supplied oatmeal and other provisions from home as late as 1870.[3] No wonder

[1] Cf. Ch. X, "University Officers," pp. 174–176.
[2] The Times, June 21, 1913.
[3] "The homes of the rural students, 1866–1870," Aberdeen Univ. Rev., vol. 1, No. 1, pp. 36–41.

its alumni are said to be cast in a stoic mold and to add grit to granite. They are scattered throughout the world, marked with an individuality all their own, and abounding in a loyalty to their alma mater. They have shown the value for more than thirty years of organizing university clubs at different centers, from Edinburgh and London to South Africa, to maintain a close fellowship between Aberdeen men and to promote the interests of the university.

A spirit of universality and progress has characterized this, by location, provincial university. Its original charter empowered it to establish any and all lawful faculties and to confer degrees with all the rights and privileges of those of the Universities of Paris and Bologna. Moreover, Parliament, in 1670, not content with confirming these privileges derived from the Pope, added those which might be possessed by "any other university whatsomever." We hear of a "Mediciner" in 1505, his chair being the most ancient foundation for medical instruction in Great Britain. A succession of fundamental changes has kept alive a notion of progress.[1] In 1583 there was a *Nova Fundatio*. In 1593 the founding of Mareschal College and University began a stimulating and sometimes stultifying rivalry, lasting for 267 years, making Aberdeen a unique double-star university. It narrowly escaped having a satellite in a third university.[2]

An attempt to unite the two universities in King Charles University in 1641 failed, but the successful union effected in 1860 has begun a new era. The very buildings proclaim the happy combination of the old and the new. In the union of the universities they did not, in American fashion, abandon the old group of buildings of King's College "unique in Scotland" and concentrate in the new granite quadrangles of Mareschal College, a mile or more away. With appreciation of architecture and historical associations, they preserved the old buildings and made them the center for the faculties of art and divinity for which they were appropriate. The chapel's ancient double-crowned tower, surmounted by ball and cross, signifying royal patronage, peals the message of the best of the old to the modern, Mitchell Tower of Mareschal College ringing in the new.

The modern tendencies of Aberdeen are shown in the opening in 1914 of the new building at King's College devoted to English and modern languages, and the housing in Mareschal of the Strathcona-Fordyce chair of agriculture, established in 1912, through the generosity of Lord Strathcona.[3]

[1] Rait, Robert Sangster, "The Universities of Aberdeen," James Gordon Bassett, Aberdeen, 1895.

[2] Rait, supra, p. 268, the University of Fraserburg, erected 1592, closed 1605.

[3] For the modern movement in the happy correlation of universities and agricultural colleges, cf. Ch. VII, "Agricultural Colleges and Schools," pp. 139–143.

Lord Strathcona's active rectorship and his chancellorship to the time of his death set the name of Aberdeen in the forefront of the movement, that agricultural and modern subjects should be taught in the old universities. This is one instance of putting into practice the theory that higher educational institutions should not only be homes of knowledge, but also be leaders of thought, adapting themselves to modern requirements. This theory, advanced in his prophetic rectorial address in 1899 on "Imperialism and the Unity of the Empire," has been brought to bear on all Scotch institutions by another well-known Scotch-American and later rector of St. Andrews and of Aberdeen.[1] Thus begins the fulfillment of Bain's vision of 1882. "The university stands or falls with its arts faculty. The university exists because the professions would stagnate without it, and to enlarge knowledge at all points. Its watchword is progress."[2]

EDINBURGH.

Edinburgh, the only post-Reformation university in Scotland, the youngest and largest of the Scotch university sisterhood, stands nearer in several respects than any of the others to American institutions. Like most of the State universities, it evolved from an arts faculty under State patronage and without any attempts at a residential college system. It was the resort of the American students who went abroad to study, up to the time of the American Revolution. It is still in its clientele the most cosmopolitan of Scotch, if not of British, universities. Only a little more than one-half of its students are Scotch. The number of medical students from many countries is greater than that of any medical school in the British Empire. The city in its picturesqueness and literary fame, "the Athens of the north," has contributed to attract students. Almost naturally this is the only Scotch university having a professor of fine art and a faculty of music. It was the first British university to take up the study of English literature by the establishment (1760) of the professorship of rhetoric and English literature, made famous by its first occupant, Hugh Blair. The influence of this in American colleges has been great. The recognition of English among the classic disciplines inaugurated the "new education," introduced into Yale College under the elder President Dwight at the close of the eighteenth century, and Blair's Rhetoric was the standard textbook for 100 years in the colleges.

Edinburgh has been ready to recognize newer subjects of instruction perhaps because the creation of chairs was in the hands of a lay body, the town council, until 1858, and since then they appoint

[1] Carnegie, Andrew.
[2] Bain, Alexander, rectorial address, Aberdeen, 1882, p. 27.

four out of the seven "curators of patronage" for many chairs. The multiplication of and specialization in subjects doomed "regenting," by which each "regent" taught every subject in the curriculum, and developed a genuine professoriate. The system was first finally changed by Edinburgh in 1708.[1]

From 1889 to 1913, inclusive, not less than 21 professorships and 156 lectureships have been added to the staffs of instruction in the four universities. Most of these additions have been in modern subjects, in applied science, and more particularly in medicine. The few professorships compared with lectureships, and the consequent inferior representation of the latter in the councils of the university, is a cause of complaint.[2] A lecturer in French feelingly voices it, saying, "The Scottish universities find themselves to-day in the position of not possessing a single chair of modern languages or literature." He makes the sweeping induction that the Carnegie trustees, despite Mr. Carnegie's wish, have done little for modern education, having "allowed themselves to be overruled and dictated to by the Scottish universities, which are the most conservative, and, in the opinion of many, the most reactionary bodies in the United Kingdom."[3] The disproportion between the addition of 4 professorships to 86 lectureships in the last 25 years at Edinburgh may convey one of two lessons to American colleges. Some institutions need to learn the virtue of thrift and of not creating improperly paid chairs, others not to multiply subjects of instruction before they are able to give them efficiently.

In 1876 Edinburgh and St. Andrews established each a chair of education, still the only full chairs in Scotland. Edinburgh has just instituted a faculty of education.[4] A fresh advance is being pressed upon the universities and is under consideration in the university councils. The teachers, through resolutions by the Educational Institute and the Secondary Education Association, wish not merely the recognition of "education" as a university subject but also provision for "education" as a profession. They call for a postgraduate degree analogous to that in divinity, law, and engineering. Glasgow has regulations for a general diploma in education, also for a diploma with distinction open to graduates who satisfy certain requirements as to professional training and practical skill. Aberdeen announces

[1] Glasgow followed, 1727; St. Andrews, 1747; Mareschal College, 1753; and King's Aberdeen not till 1798, Bain, supra, p. 20.

[2] Cf. Ch. XI, "Provisions for the Faculty," pp. 184–185.

[3] Sarolea, Charles, Edinburgh University, "How the Carnegie Millions are Mismanaged in Scotland," "Everyman," July 25, 1913, pp. 465, 466. In 1913 bequests are announced in Edinburgh and Glasgow toward the endowment of chairs in French and German.

[4] Edinburgh's requirements for B. Educ., a postgraduate degree, succeeding the Scotch first (M. A.) degree, are a diploma of education of Edinburgh, at least one year's further training in educational subjects, and a complete course of not less than five years.

a higher course, qualifying for a degree in education, will be given if required. These steps, corresponding to the certificate in education offered in connection with the first degree in many American colleges, do not go far enough to satisfy the recent demand, which hopes that education will come to its own as a profession with graduate study and degree. Many would go beyond an M. A. degree with honors in education and institute a doctorate in education, corresponding with the Ph. D. and D. Litt., and thus greatly enhance the status of the teaching profession.[1]

There is here a confirmation of the usage of the American Ph. D. for teachers and a possible hint for the more specialized degree of doctor in education as a high degree for outstanding representatives of the teaching profession in lieu of the indiscriminate conferring of the LL. D.

Edinburgh has the honor of the first chair of agriculture (1790) and of being the first institution in Britain to give a degree in agriculture.[2] As the university had the wisdom to round out its department of agriculture by associating itself with the Edinburgh School of Agriculture, so it has regulations and a curriculum for the degrees of B. Sc. and D. Sc. in Veterinary Science by association with the "Royal (Dick) Veterinary College." Similarly, the university has rounded out its engineering department for the degrees of civil, mechanical, and electrical engineering in conjunction with the Heriot-Watt College.[3]

Among the most modern movements, the university instituted in 1905 the diploma in tropical medicine and hygiene open to graduates in medicine and surgery, and under certain conditions to registered practitioners. A special certificate in diseases of tropical climates is also obtainable. Regulations for a diploma in psychiatry represent one of the latest advances which should encourage the few institutions in the United States undertaking this work. A happy hint of combination courses in arts and law is contained in the three chairs common to both the faculties, constitutional law and constitutional history (1719), commercial and political economy, and mercantile law (1871), and ancient history and paleography (1901). The faculty of science, embracing also applied science with 13 chairs, has 2 chairs in common with the faculty of arts and 7 with the faculty of medicine. This interlocking of faculties preserves the common university spirit in an age of intense specilization.

[1] University of Glasgow, Gen. Council Reports, Apr. 29, 1914, pp. 34, 36; Oct. 27, 1915, pp. 24–27. Cf. Ch. XIV, "Applied Science and Professional Education," pp. 210–211.
[2] Cf. Ch. VII, "Agricultural Colleges and Schools," p. 139.
[3] Cf. Ch. XIII, "Coordination of Institutions," pp. 198–199.

The university old building of stone, "simple and dignified," with its great quadrangle dating from the early nineteenth century, illustrates a common mistake of urban universities in not providing for extension and ample grounds. The new buildings therefore are scattered through the city. The importance of an outward sign of the unity of the university and of a common meeting place and academic ceremonial is taught by "an architectural monument not excelled by any academic building in the country." This is not saying too much of the university hall, named after its donor "M'Ewan Hall," in a land abounding with spacious and dignified university halls and considered one of the first necessities by every university.[1]

The prominence of the university in medicine has led the Carnegie Trust to set aside $50,000 toward the joint scheme for the creation of an institute of medical research as a memorial to Lord Lister—another recent example to schools of medicine of the value of research in connection with universities rather than in separate institutes.

Edinburgh has instituted means for preserving and extending the cosmopolitan atmosphere characteristic of every university. It has international academic committees, one of the senatus and the other of the students' representative council, to give information to foreigners desirous of studying in the university and to Edinburgh University students intending to study in foreign universities.

The students' committee maintains a unique system of international academic consuls at the chief European universities, to whom it issues letters of introduction. In accordance with ancient Scottish traditions of close relations with France there is also a Franco-Scottish society to assist French students in Scotland and Scottish students in France. The university is just receiving a bequest, the annual income of which is to be applied to the establishment of scholarships for research in the history and development of the religions of eastern peoples, which is another significant recognition of cosmopolitanism in Scotland.

[1] The hall of theater form, and of the early Italian renaissance style harmonizing with the other university new buildings, seating 2,600 people, was finished in 1897, at a cost of about $575,000.

Chapter III.

UNIVERSITY OF LONDON.[1]

The University of London is sui generis, and still in the making. Despite an attempt in the sixteenth[2] century, London is almost the last of world capitals to found a university, and it is still in the hands of a departmental committee following the royal commission. During the four-score years of its existence it has been repeatedly reconstituted and has tried manifold experiments, making it prolific of suggestions. It was the first of modern universities in the Empire, and more specifically of the newer or civic universities. In its primordial germ, University College, may be traced the Scotch influence of the Universities of Edinburgh and Glasgow. In 1825 Thomas Campbell, the poet, wrote a letter to Mr. Henry Brougham, lord rector of the University of Glasgow, urging the foundation of a great London University. A number of prominent Protestant nonconformists, who were considering the establishment of a college without religious tests then required at Oxford and Cambridge, became subscribers with Campbell and his friends to form an "association, or institution, by and under the name of The Proprietors of the University of London," and by 1827 had raised the capital sum of $800,000. Oxford and Cambridge were successful in opposing the granting of a charter. Nevertheless, University College, under the title The University of London, was opened in 1828 without a charter.[3] University College was the first to open English university education to students of all religions, races, and nationalities. At that time, naturally, a rival institution was founded in King's College, "as a college in which instruction in the doctrines and duties of Christianity as taught by the Church of England should be forever combined with other branches of useful education." Excepting for their distrust of a purely secular education, the found-

[1] See tables 4 and 5.

[2] In 1548 Sir Thomas Gresham endowed seven professorships and gave his mansion for those unable to go to Oxford and Cambridge, and we still have Gresham College. Stowe's "Annales," 1615, refers to the three famous Universities of Oxford, Cambridge, and London. In 1647 an anonymous "Lover of his Nation" proposed a University of London teaching not only Latin and Greek and Hebrew, but also the modern languages by the conversational method. "The Beginnings of the Teaching of Modern Subjects in England," by Foster Watson, London, 1909, p. 482.

[3] Cf. pp. 72–76.

ers of King's represented the same progressive movements as those of University College, to widen the range of subjects taught in the universities and to reduce the expense of a university education. King's under royal and State-church patronage had little difficulty in securing a charter in 1829, while its earlier proprietary nonsectarian rival suffered delays. In the end the Government patched up a compromise which has had unexpected and far-reaching results.

The same day on which University College received its charter, a third body politic by the name of the University of London was sealed with power to examine and confer degrees on certificated students from University and King's Colleges and other institutions. Naturally the university exercised widely its power of recognizing institutions which sought the privilege of granting certificates to students seeking degrees. The senate had no visitorial authority and could only test the efficiency of the institutions by the examinations of their students.[1] Thus the university became known as the Examining Body of students from numerous and unequal schools privileged to grant certificates of attendance. The result was the charter of 1858, practically abolishing the exclusive connection of the university with the affiliated institutions and opening its degrees to all males able to pass its examination, excepting that in the case of medical degrees evidence of attendance and clinical practice at some medical institution was still required. The abolition of required collegiate attendance made it desirable "to seek other guarantees for continuous study." Intermediate examinations were added to the final and the tests made more severe, exalting on the scholastic side the value of a London degree in the eyes of the public. An era of expansion immediately followed. Candidates for matriculation rapidly increased. The university, which from the beginning had required English in addition to Latin and Greek for matriculation, now included English philology and literature in the examinations for degrees and honors in arts. It was the first to confer the degree of doctor of literature. It organized for the first time in England a faculty of science, and in 1860 began to hold examinations for the degrees of bachelor and doctor in that faculty. Degrees were instituted in laws in 1867, in music in 1877. The university also instituted special examinations as early as 1839 in the Hebrew text of the Old Testament, the Greek text of the New Testament, the evidences of the Christian religion and scripture history, in subjects relating to Public Health (1876), and in the art, theory, and history of teaching. A charter of 1863 empowered the senate to confer the degrees of bachelor and master in surgery. In 1867 a supplementary charter gave the power to institute special

[1] Cf. Ch. XVI, "Examinations," p. 228.

examinations for women, and the reform act of the same year gave the graduates the right to send one representative to Parliament.

In 1878, under another supplemental charter, the university became the first academic body in the United Kingdom to admit women as candidates for degrees. Despite these changes, there was constant agitation for further reforms in the university. The Royal Colleges of Physicians and Surgeons, realizing the opportunities for clinical teaching in London and the small number of university degrees obtained in proportion to the number of students, sought power to grant degrees in medicine and surgery. The association for the promotion of a teaching university for London, formed in 1884, inspired a petition of University and King's Colleges for a charter incorporating a body of persons with power to grant degrees. The general view was that the professoriate in the colleges was hampered by the syllabuses and examinations prescribed by outside authority and lost in a measure *lehrfreiheit*. It was believed also that "students working under varied conditions" suffered from "the necessary want of elasticity in regulations." Moreover, it was strongly felt that a university should not only examine and confer degrees, but also teach and advance research. A visible university was sought commensurate with the capital of the Empire. Some of the advocates of reform believed in the—

> establishment in London of a second university composed of colleges only and recognizing none but bona fide students in those colleges, the present university remaining an imperial institution granting degrees and honors to all comers on condition of examination only.

Others objected to two universities on the ground of confusion and overlapping and urged the establishment of a teaching university in connection with the existing examining one. The Government referred the whole question to a royal commission.[1] They reported in favor of combining a teaching with an examining university and that there should be one, not two universities, and limited to institutions in or near London. They saw no reason why the university should not continue to admit students to its examinations and degrees, irrespective of the place or manner of their education. The scheme was finally rejected by convocation. A new royal commission[2] reported in 1894 that there should be one, not two, universities and that teaching and external examinations could be combined without injury to the students. They decided that the problem was still that stated by the commissioners of 1888, viz, how to coordinate the

[1] The commission, under the presidency of the late Lord Selborne, was appointed, and made its report in 1886.

[2] The commission appointed in 1891 reported in 1894. It was known as the "Cowper commission," from the name of its chairman, or the "Gresham commission," because of the reference to it of the petition of the colleges for a separate teaching institution to be known as the Gresham University.

recognized teaching institutions of London under a central university. After four years of further discussion in 1898 Parliament passed an act for the complete reconstitution of the university in general harmony with the recommendations of the last commission. The act was put into effect in 1900. But the problem of coordination was only partially solved. The two pioneer and great colleges, University and King's, desiring to strengthen the university, especially the teaching side, and to secure "unity of aim and interest in all that relates to advanced education and the promotion of original research" proposed the incorporation of the colleges into the university. University College led the way and was transferred to the university in 1907 and King's in 1910. At the same time the Women's Department of King's College, founded in 1881, was incorporated into the University as King's College for Women.

Thus the close of the first decade of the reconstituted university saw an approximation to the ideals of the founders of University College in the nucleus, through the incorporation of several colleges, of a single teaching university, and that essentially a Federal one. In the same decade the new constitution had been experimentally tested in a period of rapid expansion. The old complexity of the university problem was increased by the extension of the curricula to cover general, professional, and technical education in a vast agglomeration of heterogeneous institutions, teachers, and students, as a brief glance at the outstanding features will show.

The highest governing and the executive body is the senate, consisting of 56 members, inclusive of the chancellor and the chairman of convocation.[1] Four are appointed by the King in council, 16 are elected by the convocation, 16 by the teachers in the respective faculties, and the others, 2 each, by the incorporated colleges and by bodies representative of the medical, legal, and technical professions and also of the City of London and of the London County Council. Within the senate are three standing committees or councils from whom it is bound to receive reports before coming to any determination upon the matters specifically within the province of the committees. One of these is the Academic Council.[2] The council for external students advises upon all matters relating to them. The board to promote the extension of university teaching advises concerning arrangements for that work and its students and for the examination and inspection of secondary schools. The convocation consists of the graduates of the university of three years' standing and the members of the three councils named. It elects, besides its quota of members in the senate, the member of Parliament for the

[1] Cf. Ch. IX, "Organisation and Administration of Universities," p. 162.
[2] Cf. Ibid., p. 165.

university and the chancellor of the university. The convocation may discuss university affairs and lay their conclusions before the senate. The eight faculties consist of the "appointed teachers" and other teachers of the university admitted by the senate.[1]

The teachers are assigned to their respective faculties by the senate and may be assigned to more than one faculty. Each faculty elects its own dean for a term of two years, reeligible for a second term. A faculty reports to the senate on any matter referred to it by that body and also upon courses of study, teaching, and degrees pertaining to that faculty, and elects its representatives in the senate. The boards of studies, numbering 37 in 1913, are appointed by the senate and may include persons other than teachers in the university not exceeding one-fourth of the total number of a board. Each board may report to the senate direct, transmitting a copy to the dean of the faculty concerned. The academic council and the council for external students, before advising the senate upon matters within the province of the boards, are to invite and receive reports from them. The staff of instruction of the university consists of three categories. First are "the appointed teachers," professors, assistant professors, readers, and lecturers appointed as officers of the university by the senate and paid by the university. "Recognized teachers"[2] are those recognized by the senate among members of the teaching staffs of public educational institutions within the university's appointed radius of 30 miles, whether schools of the university or not. "Nonrecognized teachers" are those in schools of the university teaching in courses of study approved by the university.

The teaching of the university is carried on in three groups of institutions. In the first group are those belonging to the university and controlled by it, either directly or through a committee; in the second group are "schools of the university," each controlled by its own governing body. They must be public educational institutions, not conducted for private profit, situated within the administrative County of London, and providing education of university standard. The senate may admit the whole of such an institution or only a department or branch of it. The third group consists of other public educational institutions within the appointed radius having "recognized teachers." These more than threescore institutions of different types and kinds of connection with the university afford some concept of the institutional complexity of the university.[3]

[1] The faculties are theology, arts, laws, music, medicine, science, engineering, economics, and political science (including commerce and industry).

[2] At the beginning of the session 1914 the number of "appointed teachers" was 99; of "recognised teachers," 775.

[3] Cf. table on pp. 264–265.

The institutions described form an organic center which, by a system for "external students" and examinations, reaches throughout the Empire. "Internal students" are those who have matriculated at the university and who are pursuing a course of study approved by the university, under the direct control of the university, or in one or more schools of it, or under one or more of its recognized teachers. "External students" are all other matriculated students. They may pursue their studies where and how they please. This gives an opportunity not only to "university colleges" but also to private institutions and individuals far and near to prepare their students for London University examinations and degrees. Not only have coaching or tutorial centers sprung up but what are now widely known as correspondence schools.

An unlimited number of unaffiliated institutions is brought within the shadow of the university by the provincial and colonial examinations. A provincial institution requesting it may be named as a local center for one or more examinations to be carried on simultaneously with examinations in London under the supervision of subexaminers appointed by the senate. Similarly examinations are held in any colony upon application of its authorities. The influence of the university is consciously extended to the utmost bounds of the Empire. The hugeness of the university may be measured by the number of candidates and passes for matriculation for the several degrees and for diplomas in pedagogy since the foundation of the university. From 1838 to 1912, inclusive, the number of candidates was 262,452, of whom 137,855 passed. The annual number of all examinees (1913–14) was 11,920, of whom 6,343 were successful. To the extramural activities of the university, with their ramifications throughout the Empire, one must add the work of university extension carried on in the metropolitan area, with 120 courses, and 100 or more school examinations or inspections.[1]

UNIVERSITY COLLEGE.

For the purposes of the present study the sketch of the evolution of the university must be supplemented by a glance at three or four of the institutions which have been prominent factors in its development. The first of these is the University College, London, the original teaching institution of the university.[2] It surrendered its previous title of the University of London to the new examining body in 1836 upon the condition that it should be one of the schools named in the charter of the university as entitled to send up candi-

[1] Cf. Ch. XIX, "University Extension Teaching," p. 249.

[2] Cf. "Notes and Materials for the History of University College, London, Faculties of Arts and Science." Edited, W. P. Ker, 1898 (London).

dates for degrees. It remained a proprietary corporation with its own charter in a "practical connection, not an organic or constitutional connection." The college had legally the constitution of a joint stock commercial company. The proprietors originally elected from among their number a council of 24 persons to have the management and control of the university and its property, the appointment of professors, "and to regulate the whole plan or course of education." By 1842 shares that had lapsed or had been ceded to the council were bestowed upon former students of the college who had graduated with honors, making those upon whom shares were thus conferred proprietors for life, with the title of "Fellows of University College, London." Nevertheless, the number of proprietors naturally diminished in time. To provide for the permanent existence of the college as a public educational institution the council obtained an act of Parliament in 1869 reincorporating the college and divesting it of its proprietary character.

It is important to note that the council continued as the executive, and provision was made for a succession of fellows. It is still more important to note that in 1886 for the first time three professors of the college were elected members of the council and the number increased in 1888 to six, at which number it has remained. The important development of the principal and practice of the representation of the teaching staff upon the governing board of an institution is illustrated by the constitution of the college committee. When (1907) the college was incorporated into the University of London,[1] while the power and property of the college corporation were transferred to the university senate, there was constituted a college committee to advise the senate and to superintend the work carried on upon the college premises. One-quarter of the college committee of 24 members, elected annually by the senate, were members of the "professorial board,"[2] elected after a report of the board. The preservation of the lay element was insured by the provision that of the remaining three-fourths of the committee not more than one-third should be teachers of the university. The further representation of the university is secured by the right of the vice chancellor, the principal of the university, and the provost of the college appointed by the senate to attend and speak, but not to vote at meetings of the committee. The treasurer of the college is appointed by the senate from the membership of the college committee. The college committee submits to the senate a financial estimate for each ensuing year, and the senate allocates to the committee funds, the expenditure of which it controls for the purposes of the college. The committee of the college has conferred upon it by the senate the

[1] Cf. Ch. XIII, "Coordination of Institutions," p. 195. [2] Cf. p. 74.

powers usually exercised by the governing body of a school of the university. The senate must take into consideration a report of the college committee before changing any statute or regulation relating to the management of the college.

The representation of the college on the senate was provided for by the co-option by the senate of two representatives of the college after consideration of a report from the college committee. The college committee became the nexus between the senate and the teaching staff by the establishment of a professorial board for the purposes of the statutes and of advising and making suggestions to the college committee on all academical matters and on the general management of the college. The professorial board consists of the provost, the librarian, the professors and all persons appointed as readers, lecturers, assistant professors, or granted the title of assistant professor, nominated to be members of the board by the senate upon report from the professorial board. The professorial board is represented on any board of advisors of the senate in the election of professors, readers, or lecturers to teach exclusively in the college buildings. The professorial board also reports to the college committee on any proposal to appoint an assistant professor, reader, or teacher other than an assistant or demonstrator. The professorial board is divided into college faculties by the senate upon a report from the college committee. The provost has the right to attend and speak at the meetings of any faculty. Each faculty elects annually, by ballot, one of its members as dean. Communications from the college committee to the faculties are made through their respective deans.

Especially noteworthy is the care taken for the appointment of the teaching staff upon merit and the ingenious coordination of all the bodies concerned. A board of advisers is constituted when professors, assistant professors, and readers are to be appointed. The board consists of the vice chancellor, the principal of the university, the provost, and six persons, of whom three are "external experts," chosen by the senate of the university, and three appointed by the senate on the nomination of the professorial board. The three appointed by the senate on the nomination of the professorial board are selected with reference to the post to be filled. The advisory board in nominating a candidate are bound to have regard to his contribution by research to the advancement of science or learning, his powers as a teacher, and generally his eminence in his subject or his profession. The report of the board is sent simultaneously to the academic council and to the professorial board. The academic council, after receiving a report from the professorial board, forward the report of the board of advisers, with the council's comments, to the senate, who make the appointment. The senate, however, may appoint an

assistant professor after receiving a report from the college committee through the academic council. Every proposal for appointing an assistant professor in any department must originate with the head of the department, he having submitted the question for consideration to the professorial board. In like manner the college committee may recommend to the senate to institute or to discontinue any professorship, assistant professorship, or readership.

The governmental devices by which the college preserved its continuity and increased its influence in the bosom of the university are only less suggestive than the realization of the scope of the college "as a place of teaching and research in which wide academic culture may be secured by the variety of the subjects taught in different faculties, including preliminary and intermediate medical studies." It has been the pathfinder of modern colleges in the Empire, and together with King's College has leavened the lump of the university. It has developed the professoriate, organized with departments as units and with representation of the entire teaching staff even in the supreme governing body. It is modern in its range of instruction, recognizing the newer subjects as upon an equality with the older and organizing professional and technical faculties side by side with the arts faculty. It has been the model of the newer nonsectarian, nonpartisan, nonresidential, and coeducational semi-State institutions. It has cherished the spirit of modern research[1] so that in 1913-14 it had 450 postgraduate and research students, the largest number in any institution in the Empire. This may not be attributed chiefly to the college's happy location, but to its spirit, conduct, and increased means, especially since 1902. The spirit descends from the founders, who laid great stress upon the possibility of ascertaining the "conditions of human happiness and well-being" by special studies. The multiplication and subdivision, with increased specialization in subjects of study, have developed chairs into departments equipped with departmental libraries and research laboratories and museums. Reference to some subjects will illustrate.

With the introduction of the latest studies, the humanities have not been forgotten. They have been strengthened by chairs or lectureships in archeology, comparative philology, Sanskrit, architecture, the fine arts, and incidentally by Germanic and romance philology. English was a required subject from the earliest days of the institution and has had a line of famous teachers. In addition to the modern European languages an echo of the imperial note is caught from the list of modern oriental languages.[2] The attempt to keep

[1] Cf. Ch. XV, "Advanced Study and Research without Graduate Schools."

[2] The list includes Arabic, Bengali, Burmese, Gujarati, Hindi, Hindustani, Marathi, Pali, and Buddhist literature, Persian, Tamil and Telugu, and Tibetan. The list is supplemented by notice of instruction at King's College in the following languages: Japanese, Chinese, Russian, Turkish, Swahili, Malay, Hausa, and Zulu.

up with the progress of the times in the introduction of new disciplines may be culled from the provost's annual report.[1] An experimental phonetics laboratory has been opened for the department of phonetics. This department acts as an auxiliary to all the language departments and includes instruction in spoken English. The work of the department of history will be extended this year by the institution of a lectureship in American and colonial history—the first permanent provision for instruction in this subject in Great Britain.[2]

The purchase of the Flinders-Petrie collection for the college's famous department of Egyptology, of which Prof. Flinders-Petrie is the head, also brings to light the value of fieldwork associated with a college department. A staff of as many as 10 workers has been maintained in Egypt, making collections and contributions to publications possible. Somewhat analogous for purposes of research is the increased attention given to fieldwork in the sciences, an instance of which is the establishment of a field laboratory for the department of botany.

The college maintains its policy of welcoming modern subjects to its curriculum. In the department of applied statistics and eugenics, equipped by its biometric laboratory, applied statistics will be recognized as one of the subjects for a bachelor of science degree. Military science also is one of the subjects for a pass degree. The latest departure is the institution of the department of heating and ventilating engineering.[3]

The college's policy of expansion, the necessity that it should be free from debt in order to be incorporated into the university, and its faith in the State shown by this act, have not only secured State aid, but also enlarged support from private munificence; $1,000,000 have been raised in the fund for the advancement of university education and research, inaugurated in 1902 with a view to the incorporation of the college and followed by gifts from individuals and city companies.[4]

The event of the twenty-first anniversary of the Student's Union Society was the occasion of the provost's report taking up the social and athletic side of the college activities, which brings to mind the rise of the problem of corporate life in nonresidential colleges, treated in the chapter on student life.[5]

---

[1] July 2, 1914.

[2] The first professor of town-planning is about to be appointed.

[3] At the end of 1912 the equipment and endowment fund appeal committee reported total receipts of $2,092,050 expended to pay a debt and for the medical and boys' schools as well as for the college. In addition are increases in annual grants for terms of years for $50,000. They now appeal for $669,810 as urgently needed. The London County Council has just made a grant of $150,000 toward this.

[4] Cf. pp. 289–248.

KING'S COLLEGE.

King's College, the second college incorporated in the university, shared with University College in the movement for the creation of a teaching university between the years 1880 and 1900. Thus the way was prepared for the substitution of cooperation in place of competition between the colleges after 80 years of rivalry. The organization of King's before its incorporation in the University of London, effected in 1910, and its administration since then are essentially the same as in University College.[1] The theological department of the college was not incorporated in the University of London, but was constituted a school of the university, remaining under the government of the council of the college, of which it forms a part for certain purposes. All students of the college have the right to attend the chapel. An act of 1903 had abolished, except in the faculty of theology, the obligation for the teaching staff and members of the council to be members of the Church of England. When King's abolished the religious test the original point of difference between the two colleges largely disappeared. The passing of a theological age has brought home to King's the worth of freedom with a religious atmosphere and to University College the worth of reverential faith with freedom.

It should be noted, however, that the university itself, though nonsectarian, acknowledges religion. It has its faculty of theology, not supported by the State but by the different denominations. On presentation days a service under the auspices of the students is held in Westminster Abbey, attended by the officials of the university, the teachers, and those taking their degrees, attendance being voluntary.

King's College has always been a multiform institution. Originally it consisted of a "senior department" and "junior department," and almost immediately a medical department was added. The institution was responsive to popular demands. "In 1838, owing largely to the development in engineering caused by the growth of the railway system, an engineering department was founded." This was enlarged into a department of applied sciences. In 1839 the first hospital was built. In 1847 the theological department was added. In 1856 evening classes were formed and became one of the largest departments of the college, until cut down by the rise of polytechnic schools. Naturally King's, with its church relationship, entered upon this work. The movement for metropolitan evening classes originated with a clergyman of the Church of England, who announced in 1848 classes in Crosby Hall. The purpose of a committee of clergymen in opening evening classes "where instruction

[1] Cf. Ch. XIII, "Coordination of Institutions," p. 195.

in the languages, arts, and sciences may be given in a familiar form at an easy rate" was "to improve the moral, intellectual, and spiritual condition of young men in the metropolis." The City of London College, acting in conjunction with the London Chamber of Commerce, continues as a monument of their movement.

King's College went to the length of forming classes to prepare for the examination for the home civil service, and ultimately the Strand School was organized for the purpose. In 1861 an oriental section was started and temporarily prepared for the examination for the Indian civil service. In 1877 classes held for women in Kensington originated the movement which resulted in the establishment in 1885 of the "ladies' department," in 1892 known as the "women's department," now King's College for Women, with its latest development of a household and social science department. The last is the first university department of its kind in this country. The statement of the college is justified in saying that it is—

> distinguished for the readiness with which it adopted new developments. The engineering school is one of the oldest in the United Kingdom. King's College was the first institution in London to develop evening teaching of an advanced type. The Wheatstone laboratory of physics is older than any students' laboratory of the kind in England or Germany. The laboratories of comparative pathology and bacteriology and the William Siemens laboratory of electrical engineering were among the first in these subjects to be started in London.

Though the large attendance at the college was reduced by the act of incorporation, setting up the standard of university level for students and resulting in the separation of King's College school, the Strand School, and the civil-service department from the college, it continues its popular character by the retention of evening classes, its department for the training of teachers, and its provision for "occasional" students. The spirit of the original foundation by the church may survive in the terminal reports sent to the parents or guardians of students and "the collections"[1] at the end of each term. Herein it has one of the best features of a college, while, like University College, with its various faculties and schools, it is a germinal or collegiate university. The scheme for intercollegiate classes among these colleges and the school of economics is a proof of new cooperation and a promise of the growth of the university.

IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY.

The nucleus of the university on the teaching side has been greatly enlarged by the 31 "schools of the university" related to it since its reconstruction in 1900. Especially has it been stimulated by the

[1] "Collections" are gatherings at which every student is required to be present and be individually interviewed by the principal and staff as to his progress. This old practice of some Oxford colleges was introduced at King's by Principal Headlam.

Imperial College of Science and Technology, a "school of the university," in science and engineering. This strong independent foundation in the opinion of some should be made a separate "technical university." On the other hand, the article in its charter of incorporation in 1907 establishing it "in the first instance as a school of the university pending the settlement of the question of the incorporation" looks forward to its becoming a college within the university. The article provides that the governing body "shall enter into communication with the University of London with regard to the coordination of the work of the Imperial College with the work of the university and its other schools."

The history of the Imperial College and its present organization are a fine example of the process of coordination of London institutions. The Imperial College is really a group of associated colleges under a common board of governors. The integral parts are the Royal College of Science, the Royal School of Mines, and the City and Guilds (Engineering) College. The governing body consists of 40 members representing the Crown, the board of education, the University of London, the London County Council, the City and Guilds of London Institute, the royal commissioners of the exhibition of 1851, the Royal Society, the professorial staff of the Imperial College, and representatives of learned societies connected with industries. A delegacy of 19 members administers the City and Guilds (Engineering) College.

The Royal College of Science and Royal School of Mines are results of the great exhibition of 1851, which awakened England to the importance of technical and art education. Chameleon-like, the original institutions have undergone a succession of changes responsive to their progressive environment. It started in 1851, known as the Government school of mines and science applied to the arts, and located in connection with the museum of practical geology. In 1853, at the time of the foundation of the Government department of science and art, to meet a demand for widening the scope of the schools, it having also taken over the "Royal College of Chemistry," earlier founded by private enterprise, it was renamed the "Metropolitan School of Science applied to Mining and the Arts." In 1859 the general and technical divisions of the school were abolished, and the title was altered to "the Government school of mines," in 1863 changed to the Royal School of Mines. In 1864, at the request of the board of admiralty, a "Royal School of Naval Architecture and Marine Engineering" was established at South Kensington in connection with the Royal School of Mines, which was transferred to the Royal Naval College at Greenwich in 1873. In 1869 summer courses for teachers were commenced. By 1873 the expenses even of teachers were paid, and a free education was given

them at the school. By 1881 a training school for science teachers was established, and the title of the institution was changed to "The Normal School of Science and Royal School of Mines." In 1882 a department of agriculture was added and existed till 1897, by which time it appeared that this work should be in agricultural colleges located on the land. In 1890 the title of the Normal School of Science was changed to that of the "Royal College of Science," and under this name was incorporated with the Royal School of Mines. The third associated college, "The City and Guilds (Engineering) College," is the offspring of the "City and Guilds of London Institute for the Advancement of Technical Education," formed in 1878 by the livery companies of the city of London in conjunction with the corporation. The institute was founded and housed in 1884 in South Kensington, as a "central technical college," to provide more advanced courses in engineering and technical chemistry applied to productive industry than those offered by the city and guilds college at Finsbury. In 1889 it was included as a school of the university in engineering and became the engineering section of the Imperial College, under the name of "The City and Guilds (Engineering) College."

The charter of the Imperial College contemplated a central institution of the highest rank and capable, like the university of standardizing and affiliating technical colleges. It reads:

> The purposes of the Imperial College are to give the highest specialized instruction and to provide the fullest equipment for the most advanced training and research in various branches of science, especially in its application to industry.

The governing body is empowered to "establish colleges or other institutions or departments of instruction" which "shall be integral parts of the Imperial College." In 1909, under power given by the charter, the governing body of the Imperial College recognized the metallurgical department of the University of Sheffield as being in association with the Imperial College for the advanced metallurgy of iron and steel, and the recognition was allowed by the King in council. In 1912 the governing body, moved by a request from the Huddersfield Technical College, determined to adopt the policy of visiting an institution applying for the recognition of its courses of study, and of approving the desired courses and accepting them in lieu of first or second year Imperial College courses. The provision of the charter calling for communication with the University of London with regard to the coordination of the work of the college with the work of the university and its other schools has borne fruit in the establishment of a joint committee in engineering of the university and of the college, and a program of work has

been accepted by the university and the college to avoid unnecessary overlapping.

Similarly, annual conferences have been arranged among the heads of the departments of science, other than engineering, in University, Kings, and Imperial Colleges, and such other schools of the university as may be willing to cooperate to consider the proposals with regard to the work of such departments. Intercollegiate arrangements have also been made among the above-named institutions, and students may be admitted on the recommendation of the professor under whom they are working to any corresponding special course at any other of the above colleges. It is reported the above schemes do not work very perfectly. The difficulty of the coordination of curricula is heightened by a characteristic feature of the Imperial College to have a student engaged in one subject of study during a complete half session. Coordination is sought by the college by concentrating there the advanced and postgraduate courses. This policy is favored by the traditions of the college, with its Huxley laboratory of research, founded in memory of him as the first dean of the college, and by the provision of a research laboratory in each department. The college has unparalleled conveniences for investigation in its proximity to the science division of the Victoria and Albert Museum, the Natural History Museum, and the Imperial Institute. In its scientific laboratories, equipment and buildings, the Imperial College excels any of the other institutions in London and is one of the greatest in the world.[1] In conclusion, one may infer that the imperial multiform college, as yet only a school of the university, in contrast with the incorporated University and King's Colleges, may become one of the greatest unifying or disruptive factors for the university, and therefore it is specifically mentioned next to the incorporated colleges in the terms of reference to the royal commission of 1909.

The commission in its report recommends that the Imperial College be made a constituent college of the university, and the establishment of a self-governing faculty of technology, with representatives from the different colleges, as well as of experts outside the colleges.[2] Sir Alfred Keogh, rector of the Imperial College, commented favorably upon the report. It gave to the masters of industry a direct voice in the education of scientific men. It imposed upon the university the duty of developing science in relation to industry. It would compensate the Imperial College for giving up the idea of becoming a great "technical university" by the

[1] The capital value of the lands and buildings available for the college is estimated to exceed five million dollars.

[2] Cf. Ch. XIV, "Applied Science and Professional Education."

establishment of their principles and the extension of their influence within a future single multi-college university in a city of 7,000,000 inhabitants, and thus make the largest university in the world.[1]

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE.

The London School of Economics and Political Science, although one of the newest schools in the university, has had such a rapid development that the royal commission has recommended that it be among the first "constituent colleges" in the reconstituted university. It is incorporated as a company, limited by guarantee, and without power of taking profits. The members of the corporation, limited to the total number of 100, constitute the court of governors and administer the school through a council of management numbering 20 members. The head of the school is a director in whom very large powers have been vested. To this fact "the smooth working and progress of the school are largely due."[2] The regular staff of lecturers at the school serve on the "professorial council," under the presidency of the director, in order to advise the governors on any matters connected with the school curriculum and students.

The school was purposely not given a fixed and inelastic constitution in order that it might keep in close touch with the needs of the professional and business classes and be able easily to adjust itself to the changing conditions of the University of London. In this manner the small committee formed in 1894 has grown into the present court of governors, and the school opened in 1895 was admitted as a school of the university in 1900. The origin and progress of the school are due to the response to a long-felt need vigorously voiced in 1894. The Gresham University commissioners in that year pointed out "the imperative and urgent need for supplying to the students in the London University" the kind of education provided in France by the *École Libre des Sciences Politiques*. The same year a committee of the economic science and statistics section of the British Association reported that they "could not but regard the condition of economic studies at the universities and colleges as unsatisfactory. As contrasted with continental countries and also with the United States, the United Kingdom possesses no regular system." In the absence of any system of commercial education of a university type, the founders planned for—

> a system of higher education which stands in the same relation to the life and calling of the manufacturer, the merchant, and other men of business as the

[1] Sir A. Keogh's inaugural address as president of the Association of Technical Institutions. The Times, London, Jan. 31, 1914.

[2] Report to the senate on the organisation and administration of the schools of the university with reference to the London School of Economics and Political Science, Jan., 1914, p. 4.

medical schools of the universities to that of the doctor; a system, that is, which provides a scientific training in the structure and organization of modern history and commerce and the general causes and criteria of prosperity as they are illustrated and explained in the policy and experience of the British Empire and foreign countries.

It is a school of the university in the faculty of economics only, but certain courses of lectures are recognized in the faculties of arts, laws, and science. The work of the school extends over political science (including commerce and industry). In addition to these departments, several special branches of instruction have sprung up. There is a course of lectures in administrative subjects to equip officers for the higher appointments on the administrative staff of the Army and for the charge of departmental services. The officers are selected for the purpose by the War Office. Special lectures have been added in order to provide the teaching required by candidates for the degree of B. Sc. in the faculty of economics and political science with honors in *Transport*. These lectures are also attended by some 400 students drawn from the staffs of the great railway companies. In connection with the extensive library, lectures have been added in the subject of librarianship. The method of utilizing the British Museum, the public record office, and other collections is explained, and brief bibliographies are supplied and opportunities afforded for the source method of the study of history. The breadth of the school, both on the lower practical and the higher research side, is displayed by the addition to the staff of lecturers of British and foreign economists and professors, who supplement the courses at the school with short courses on their subjects. Lectures by distinguished men engaged in public life or administration are also secured. Besides the matriculants of the University of London, for whom courses are given leading to degrees, the school is open to those who have not matriculated and do not wish to pursue a full university course. The nonmatriculants are young bankers, accountants, railway administrators, business men, social workers, civil servants, municipal officials, journalists and librarians, candidates for the consular service, factory inspectorships, and board of trade appointments.

The world fame of the school rests upon its facilities for investigation and research. It has 29 research studentships. The greatest attraction for the research student is its library of some 300,000 items, confined to the school's field of study, and unique in the world. It seeks to have a complete collection of governmental publications and official reports of all civilized countries. The Congressional Library of the United States has made it a library of deposit for congressional documents in London, and various departments of American States have done the same. Its collection of

municipal documents, presented by more than 300 municipalities throughout the world, is unequaled in any other country. It is also unique in its special collection made by experts of material illustrating particular subjects, like trades-unionism, transportation, and socialism. The proximity of one of the greatest libraries in the world in the British Museum is another advantage of the school. Research is encouraged by individual supervision of students and by seminars. Original work is furthered, for example, under the auspices of the committee of the advanced historical teaching fund by lectures on "sources" and the compilation of classified lists. Another stimulus to advanced work is the publication by the school of "Studies in Economics and Political Science."

We can now understand why professors and teachers from universities in many lands, especially from Germany and the United States, have resorted from time to time to this modestly housed school in a corner of Clare Market, and why it was next to the largest in the number of graduate students among the institutions of the Empire in 1913.[1] The school is continuing its rapid development. A school of sociology and social economics which had been carried on by itself for nine years was merged in the school of economics and political science in 1912. In 1912–13 a chair of ethnology was created in the University of London, tenable in the school of economics. This fulfills a wish of the Haldane commission that a department of ethnology should be established as a necessary adjunct to the school of oriental studies, it being almost as important that officials in parts of the Empire inhabited by non-European races should have a knowledge of their racial characteristics as that they should be acquainted with their speech. One of the latest developments is the arrangement of the school with University and King's Colleges for intercollegiate courses in subjects of imperial interest.

If the recommendations of the Haldane commission were carried out to make the school of economics the only constituent college in the faculty of economics with an adequate enlargement of its funds, staff, buildings, and equipment, and with the removal to it of the 40,000 books and tracts of the unparalleled Goldsmiths' Library of Economic Literature, it would certainly be the world's model institution of the kind. It could hardly be surpassed, having in addition to its full university connection and libraries all London as a laboratory for its practical work. It certainly makes it clear that at least every great urban university should have some school of the kind.

[1] Members of the teaching staff of the following universities in the United States have attended the school: Bryn Mawr, California, Chicago, Columbia, Cornell, Dartmouth, Harvard, Illinois, Johns Hopkins, Nebraska, New York, Ohio, Pennsylvania, Princeton, Radcliffe, Leland Stanford, Syracuse, Washington, Wisconsin, Yale. Of the 304 graduate students (1912–13) of the school, there were, from Oxford, 33; Cambridge, 34; London, 143; Scotland, 10; Ireland, 9; Wales, 13. These 304 students constitute nearly 15 per cent of the total attendance.

A GROUP OF INSTITUTIONS BELONGING TO THE UNIVERSITY.

1. Brown Animal Sanatory Institution. 2. Physiological Laboratory. 3. Francis Galton Laboratory for National Eugenics. 4. Goldsmiths' College.

1. *The Brown Animal Sanatory Institution* was the only department connected with research possessed by the old examining University of London. It was established in 1871, through the first noteworthy bequest to the university, made in 1852. Up to 1900, during the 64 years' existence of the university as a mere examining body, it was the great exception for it to receive a gift. By the terms of the bequest it was to be "an institution for investigating, studying, and, without charge beyond immediate expenses, endeavoring to cure maladies, distempers, and injuries any quadrupeds or birds useful to man may be found subject to." The institution has proved true the declaration of the master of the rolls "that this is a good charity, a gift peculiarly connected with what is useful, and for the advantage of mankind." The hospital from the beginning to 1913 has treated a total number of about 169,000 patients, the great majority of which were horses, dogs, and cats. About 6,000 patients are now treated annually. Incidentally, the institution became a fountainhead of postgraduate study and research in the university. In the laboratory researches tending to throw light on the diseases of animals are conducted systematically, and a long line of distinguished workers in pathology and physiology have availed themselves of the opportunities of the laboratories. Provisions are made for the admission of clinical students to the hospital and research students to the laboratory. Valuable investigations are carried out for public bodies and governmental departments. The university commission recommends that the institution and the Royal Veterinary College[1] be brought into close promixity in a central site, and into cooperation under the educational and financial control of the university. This would be a confirmation of the recent general recognition of the importance of university training in veterinary science and research.

2. *The Physiological Laboratory*, established by the senate of the university in 1902, is one of the first fruits of the reconstituted university and of the stream of private gifts stimulated by the appearance of a concrete teaching and research institution in place of an abstract examining body. It has been said to be the "only example in London" of an institute devoted solely to research. The external side of the university has the declared policy of making it the first example of a series of special institutes. The university commis-

[1] Founded in 1791 by a private union, recognised as the Royal Veterinary College in 1875, and having "recognised teachers" after the reconstitution of the university.

sion on the other hand argue that special research institutes should not be maintained out of university funds, although there may be room for independent research institutes in great cities like London. They recommend the development of one great department of physiology in a constituent college, which in this case would be University College, with its new building for the institutes of physiology and of pharmacology and of anatomy. The statement of the purposes for which the laboratory was established reads as follows:

1. To afford to the lecturers of the University of London and other duly accredited physiologists a place in which the results of current research can be presented by lectures and by demonstrations.

2. To provide for advanced students of physiology opportunity for the prosecution of research.

The blending in the statement of the work of teaching with research would seem to differentiate the physiological laboratory from independent trusts purely for the advancement of knowledge like the Carnegie Institution of Washington. The sound doctrine of the statement and the successful work of the laboratory have given a needed impulse to research in the University of London and may afford an example to other universities.[1]

3. *The Francis Galton Laboratory for National Eugenics*, founded in 1904, by gift, forms, with the Drapers' Company Biometric Laboratory, another benefaction, a department of applied statistics. The department, one of the first of the kind in the world, is a research department "for the study of those agencies under social control that may improve or impair the racial qualities of future generations, either physically or mentally." In addition to the work of its laboratories, the department collects statistical material bearing on its subjects and seeks to extend the knowledge of eugenics by professional instruction, publications, public lectures, and experimental or observational work. By an appeal to the public and the generosity of a donor, a building with proper equipment is just being completed for this department at University College. This will fulfill a recommendation of the royal commission to keep departments primarily for research "in close touch with and proximity to one of the university teaching centers." This is the latest act enforcing the considered policy of not separating research institutes from teaching institutions or segregating a graduate faculty from other faculties.

4. *Goldsmiths' College* is another gift to the reconstituted university. The Worshipful Company of Goldsmiths founded it in 1891 as the Goldsmiths' Company's Technical and Recreative Institute. The extensive buildings and grounds were presented to the university in 1904. The college is managed by a delegacy appointed

[1] Cf. Ch. XV, "Advanced Study and Research, etc."

annually by the senate and consisting of 18 members representing the senate, the Goldsmiths' company, and the county councils contributing to its support. There are five departments in the college—teachers' training, science, engineering, building, and art. The first and last departments only carry on day work. The training college is the largest in the country, but its work is not ordinarily to extend beyond the standard of the pass degree. It was originally intended to give only a two years' course to those who had passed the matriculation or an equivalent entrance test. In view of the size and location of the day training college, the royal commission recommended that it should be continued for elementary school teachers and also the school of art. The commission enunciated the principle that "a great university may quite properly endeavor to show how elementary school teachers can best be prepared for their profession on the basis of a good general education by instruction which, though of university standard, does not involve the expenditure of time and the strain which a full course for a university degree entails."

In this connection the London day training college comes into view. It was founded in 1902 under the auspices of the London County Council, and admitted, in 1909, as a school of the university in the faculty of arts in pedagogy. It is a fine example of a strictly professional or normal school only, doing work preparing for the teaching profession. Under the regulations of the board of education, it trains teachers for the elementary and secondary schools and also admits other advanced students and those preparing for the university higher diploma in pedagogy. The latter are advanced students and those making a special study of some branch of educational method, history, or organization. Undergraduates of the University of London must have passed the matriculation examination or an equivalent and be "four year students." Graduates of a university or persons with equivalent qualifications may become "one-year students." Postgraduate students devoting their whole time to the work of the college during the year of training receive instruction in the theory, history, and practice of education in preparation for the teacher's diploma of the university. Well-equipped London secondary schools are used for practical instruction, in addition to the two demonstration schools attached to the college.

The course of instruction in the college is limited to the normal-school courses in the theory and practice of education and classes in nature study, clay modeling, drawing, music, physical training, handicraft instruction, and needlework. Undergraduates taking a four years' course to satisfy the requirements of the board of educa-

tion and those of the university for bachelors' degrees attend all other colleges of the university for their degree courses.[1] The royal commission recommend the elevation of the training college from a "school of the university" to become the "university department of education," with the possible representation of the county council in the government of the school, and the preservation of the privileges of the students within the tax-paying area. The principles recognized and the governmental arrangements proposed throw light on the difficult problem of coordinating colleges, normal schools, and universities in the United States.

A cursory survey of the university, beginning at its center, and of the institutions belonging to it, does not need for the present purposes to cover the numerous institutions in the outer circles of the university, grouped as "schools of the university" and "institutions having recognized teachers."[2] Enough has been said to show the characteristic features of a modern urban university and the principal lessons it has to teach. It is more than a storehouse of knowledge accumulated in the past. It is a central power house connected with all the substations in which are generating the varied forces of our complex civilization. Responsive to every demand of society, it records and, in turn, endeavors to direct all great social movements. What an imprint of the nineteenth century, and after, is the University of London! The European revolution of the latter part of the eighteenth century, developing in France in a political revolution and in England resulting in a literary and religious revolution, in no small degree originates the university. It breathes the spirit that brought forth the reform bill of 1832, which was also the period of the birth of the university. It bears the mark in the time of the introduction of the newer studies and of its various organizations of each successive important movement in thought and society. Our review has already pointed out a number of the coincidences of the development of the university's activities in connection with those of the times.

The advance in the material sciences in the early part of the nineteenth century, as well as of certain social and political philosophies, was immediately recognized in the curriculum. The age of steam and the railroad caused applied science to follow pure science. The exhibition of 1851 turned attention to fine arts and a wider application of the sciences. The increasing predominance of the industrial age, with the progress of invention and the competition of Germany, multiplied technical institutions. Renewed attention to the social, economic, and political sciences followed in the wake of the social era succeeding the industrial age, toward the end of the nineteenth

[1] Cf. Ch. XIV, "Applied Science and Professional Education," pp. 211–212. [2] Cf. Table 6.

century. The heralding of the advent of a national system of education by the parliamentary educational acts from 1870 on is reflected by the planting of training schools and the university's provision for teaching as a profession. The admission of women to degrees in 1878 and university coeducation are among the first successes of the woman's movement. Greater London realized by the constitution of the London County Council in 1888 hastened the reconstitution of the university with "the main purpose of strengthening the ties between the university and the institutions engaged in higher education within the appointed radius of 80 miles." The national propaganda of imperialism, especially after the Boer War, led to the advance of the spirit of imperialism pari passu with the municipal spirit within the university. The holding of university examinations throughout the Empire had prepared the way for this. It has recently reached the point of the arrangement of intercollegiate lectures upon imperial subjects. The strength of these two developments has so impressed some of the parties now discussing university reforms that they deal with it as a twofold institution—municipal and imperial.

The features attributed to a modern or civic university and aimed at by the University of London are summed up in common parlance by the phrase, the democratization of education. This includes much more than widening the range of subjects taught and attempting to put the modern disciplines upon an equality with the ancient ones. It calls for a university government upon a widely representative basis, including the classes and interests involved, and even the beneficiaries in the form of the student and graduate bodies, known as the "students representative council and convocation."[1] The University of London has followed the principle to such lengths that the complaint is common concerning the cumbersomeness of legislation and the inefficiency in the executive with a senate of 56 members. The essence of freedom in the *lehrfreiheit* and *lernfreiheit* of the ancient universities is extended in practice in London as a modern university in the abolition of distinctions on account of race, of religion, of politics, of class, or of sex. Further extension of freedom is loudly called for to allow the teacher to make his own syllabus and set his own examinations and to give the student opportunity to be judged by his whole record instead of by one or two formal examinations. This would be to attain the freedom of an American university.

A note of the civic university has been the intermingling of general, professional, and technical education. This has been carried to such an extent in London, in part due to the ramification of the university through institutions of all kinds, that it is asserted there is a tendency to a looseness of educational standard and a loss of university ideals.

[1] Cf. Ch. IX, "Organization and Administration of Universities," p. 159.

The University of London announced at the beginning, what almost of necessity has become a sign of a civic university, the reduction to a minimum of the cost of education to the student, approximating a free education. Over against this, the laboratory methods of instruction insisted upon in these institutions greatly increased the cost of teaching. The natural outcome is that State aid for the scale of expenditure adopted is a necessity, and private benevolence must also be increased. State aid as a chief means of support has intensified in the civic university the sense of obligation belonging to all universities to serve the State.[1] For this purpose, specialized courses and schools have been organized, investigations and research undertaken within the college walls, and extramural activities to serve the public promoted in various forms of university extension. The University of London brings out the characteristic features of a civic university on a magnificent scale. Since its reorganization in 1900 it has become the greatest aggregation on earth of State, municipal, church, and private "not-conducted-for-profit" foundations. An American university president referred to it as the *disjecta membra* of a giant, and in consequence weak and powerless. If he had studied deeper, he would have alluded to the *disjecta membra* as gathered in superabundance and united by ligaments, and in some cases by wires, and only lacking, with some sloughing off, a unifying and vivifying nervous system to make a veritable giant in strength and power.

To accomplish this was the aim of the royal commission appointed in 1909 and reporting in 1913,[2] after four years of gathering of evidence from scores of eminent authorities. In addition, the commission held 72 sittings for deliberation. The reconstitution of the university in 1900 was a half-way measure based upon compromise. It gave a great impetus to the growth of the university, but soon the operation of the new constitution made its defects apparent. By 1908 the university senate petitioned for another royal commission, especially to consider the relations of the university and the Imperial College of Science and Technology. The amalgamation in the latter institution in 1907 as a result of another royal commission of important scientific colleges made it appear as a nucleus of a possible second university, and the apex of technological instruction in the Kingdom. The threatened development of expensive duplications and the schism in the field of education precipitated the petition of the senate. The jealousies of the smaller institutions against the larger, aroused by the pending incorporation into the university of University and King's Colleges, accentuated the difficulties between the external and internal sides of the university.

[1] Cf. Ch. XII, "State Aid and Visitation."

[2] Royal commission on university education in London, Lord Haldane, chairman, code 6719.

In short, the progress of the university in the first decade of the twentieth century made London and the Empire conscious of the university. It was ready for a new stage of development, in which it should avail itself of the many valuable experiments it had made.

The review of these experiments and an extensive study of present-day university problems, inspired by the high purpose of recommending principles and plans for inaugurating the fourth and possibly permanent stage of the university, in the final report of the commissioners deserve to be summarized and commented upon. Under the heading, "The Essentials of University Education," the report lays down five principles susceptible of universal application. The first is "that students should work in constant association with their fellow students, of their own and other faculties, in close contact with their teachers; and that they should pursue their work when young and able to devote their whole time to it." At the beginning this revives the ideal of the ancient universities, in danger of being lost in the modern, of a community of youthful students and teachers wholly devoted to learning, and favors if possible a residential and tutorial system. The second essential is that "in the university, knowledge is pursued not only for the sake of information, but always with reference to the attainment of truth."

This differentiates university work in its nature and aim from that of a secondary school in which definite tasks are prescribed, and pupils with plastic minds are mentally and morally trained by the orderly exercise of all their activities; also from that of the technical or professional schools in which theoretical teaching is largely directed by the application of ascertained facts to practical purposes.

This sets up as a standard of admission to a university college the completing of a secondary school course and recognizes the touch of liberal education in a university. Thirdly, it is asserted that "there should be close association of undergraudate and postgraduate work." It will surprise many Americans that this point is elevated into an essential, but it represents almost a universal Old World practice.[1] "A superuniversity" is an American development repugnant to European notions. Fourthly, "special research institutes should not form part of the university organization." It is contended that the recent continental establishment of independent research institutes is in the experimental stage, and is intended to undertake work in branches of knowledge outside the ordinary scope of a university, and to pursue longer and more elaborate investigations than the time of university students and teachers would permit. The Carnegie Institution, of Washington, is mentioned as an independent trust for the advancement of knowledge having no

[1] Cf. Ch. XV, "Advanced Study and Research without Graduate Schools," pp. 218–219.

relation to the university problem. Fifthly, "the establishment of a university press under full university control is an essential function of the university." Sixthly, "technological instruction should be included among the functions of a university, but it should not be of a narrow utilitarian kind. From the practical point of view of industrial progress the university treatment of technology as based upon a thorough grounding in pure science is of the highest value and importance."

In the preceding sentence the commission run a line of demarcation between university technological instruction and that for strictly trade purposes carried on in polytechnics and trade schools. The principle is given which might well be applied in the coordination of professional or higher engineering as taught in the university, and mechanic arts as taught in the college of agriculture and mechanic arts.[1]

Seventhly, "a degree should signify that a university education has been received." This involves some form of tests or examinations.[2] While the report regards the granting of degrees as one of the chief characteristics of a university, it safeguards against the view that the giving and taking of degrees is the real end of the university's existence. A pronouncement revolutionary and counter to English practice is made against external examinations and the award of degrees upon examination alone.[2]

The report adds other things which, though not essential to the nature of a university, are desirable in a city university. For example, the urban university "should offer as good education to its evening as to its day students." It should provide locally for university extension. In particular, it should maintain a special center for work done in conjunction with the Workers' Education Association.[3]

The report enumerates seven conditions necessary for the realization of the foregoing aims.

1. The basis of university work must be a preparatory "general education in a wide range of study, giving the power of accurate expression and orderly thought, together with moral training." Several inferences follow, extremely suggestive for colleges in the United States. Secondary school work should be completed before entering college; though, owing to the increased number of departments of study, the college may teach the elements of some subsidiary subjects. The secondary school is the primary place for a general education. Specialization in schools is desirable after the age of 16. It would then be well for pupils to remain in school for two additional years, intending university students making some definite preparation for

[1] Cf. Ch. XIV, "Applied Science and Professional Education, p. 205, passim.
[2] Cf. Ch. XVI, "Examinations," p. 228.
[3] Cf. Ch. XIX, "University Extension Teaching," p. 252.

the faculty they propose to enter. Herein certainly room is made for the American junior college. The opinion is advanced, still startling to many in the United States, that any sound general education should be sufficient to secure admission to college and that a school-leaving certificate as in Scotland (and we may add in the Western States) in lieu of an entrance examination should be accepted.

2. "Homogeneity of university classes" is requisite. Students must not be combined in the same classes unless they are qualified to work together by having met equivalent standards for admission as candidates for degrees.

3. "A university quarter" is advocated in the interests of economy and efficiency and to make visible to the public a great seat of learning. The first essential of corporate life in a university and the felt disadvantages of the present wide dispersal of university institutions in London call for a policy of centralization.

4. The establishment of residential hostels and the promotion of university societies and their accommodation in central university buildings are sequels to the fundamental fraternal idea of a university.[1]

5. The creation of a proper university professoriate requires that the university appoint, pay, pension, and dismiss its teachers.[2] This is proved by the inadequate results of the experiment of the University of London in dividing the responsibility for the selection of teachers with other bodies.

6. "The teachers should, under certain safeguards, have control of the education and examinations of their students." It is hard for an American professor to appreciate the force of this recommendation, since he makes the syllabus of his own courses and sets his own examinations. In London the teacher is bound by a hard and fast syllabus largely made by others and submits his students to external examiners.

7. "The university must have complete financial control of all the institutions within it. This control should be vested in a small council or senate, acting as the supreme executive body of the university." This condition is a great keynote of the report, scarcely second to the keynote struck in the first essential of any university, namely, that of a corporate life of students and teachers. While the condition is a sound one for any university, it is a necessity for the coordination of institutions in London, and may well be applied in the coordination of institutions in different localities in American States.[3]

[1] Cf. Ch. XVIII, "Student Life," pp. 244–245.
[2] Cf. Ch. XI, "Provisions for the Faculty."
[3] Cf. Ch. XIII, "Coordination of Institutions."

The essentials of a university and the conditions necessary for the realization of them require fundamental changes in the constitution of the university.[1] The report proposes a less cumbersome and more centralized and at the same time widely representative government than the present one. It would differentiate legislative and executive functions, educational and financial administration, and coordinate them by advisory bodies. The report would substitute for the existing senate[2] of 56 members representing various interests two bodies, the court, a widely representative body consisting of about 200 members, which would include a minority representation of the teachers and of the graduates, and a majority of distinguished laymen appointed by outside governmental and professional bodies concerned. This would be the supreme governing body of the university, and it alone would have legislative functions. The small senate of 15 members, including the chancellor, the vice chancellor, the chairman of convocation, and 2 representatives of the teachers, would be the executive body, with full financial power. It would have full powers as to educational policies, except for the reservation to the faculties of statutory control over courses of study, examinations, and qualifications for degrees, etc. It would have the power of appointment of university officers and teachers, and of administrative business generally. It is contemplated that a majority of the senate will be prominent laymen and business experts, 5 appointed by the Crown, 2 by the court, 2 by the London County Council, and 1 by the corporation of the city of London for terms of years.

The report proposes that but one of the three existing standing committees should survive, namely, the academic council; the council for external students and the university extension board being dropped in the interests of unification. The new academic council would consist of the vice chancellor as chairman, the deans of the faculties, 8 members of the faculties elected by the faculties in common session, and 1 teacher appointed by the senate to represent each group of studies in respect of which schools of the university have been recognized, but for which no faculty has been constituted. The academic council would be a small body in the first instance of 16 members, including at least 1 member of each of the faculties, but not constituted on the basis of proportional representation. The functions of the council would be mainly advisory, to insure that the senate should have before it the opinion of the professoriate upon educational questions affecting the university as a whole. Executive functions as regards educational matters might be delegated to the council by the senate. The report mentions a—

committee for technology, an executive committee of the senate intrusted with the administration of all matters connected with the faculty of technology, ex-

[1] Cf. Ch. IX, "Organization and Administration of Universities," pp. 159–169.
[2] Cf. p. 70.

cepting finance and the appointment of professors and readers, in respect of which its powers would be advisory.

It is easy to infer that this committee is proposed as a matter of expediency for the time being, as it is not logically, like the first three bodies, a consistent part of the proposed governmental scheme. Strong objection has been made to this item of the report by friends of the report.

The convocation would be continued substantially as it exists. It would elect the chancellor for life and the chairman of convocation (who would be members both of the court and the senate), as well as 20 members of the court. The proposed discontinuance of the council for external students leaves the convocation without an organized representation of the external side of the university among the governing bodies. This is believed to be the cause of a large part of the agitation against the report. The majority of the convocation having been external students looks with suspicion upon the shifting of the center of gravity of the university from the external to the internal side.

The report would continue the students' representative council, giving it power to appoint two representatives on the court, in addition to the right of access to the university authorities by petition.

THE ORGANIZATION OF THE UNIVERSITY.

Strictly speaking, the convocation, the students' representative council, and the faculties do not belong to the government of the university, but represent its threefold constituency, graduates, students, and teachers, of which from the nature of the case the teachers are the chief body. Accordingly a striking part of the report is the emphasis laid upon the faculties as the basis of university organization. The report reads:

> The faculty should consist either wholly or in the main of the university professors (including honorary and associate professors) of the subjects comprised within the faculty; of the university readers (including honorary and associate readers) in subjects for which the university has not provided professorships; and of such other teachers and officers appointed by the university as the faculty may co-opt. The vice chancellor should be a member ex officio of every faculty. A faculty is not confined to a single institution, but embraces properly qualified teachers of subjects who have been appointed by the university.

The report proposes the organization of departments as the units in the faculty. It says:

> In the same way as the faculty, which consists of the principal teachers of the group of subjects comprised within it, is thought of as extending beyond the lines of individual constituent colleges, so the several subjects within the faculty should be organized into departments, which may, if necessary, extend

beyond an individual college. Any two colleges between which a department is divided should be in such proximity as to allow of effective supervision by a single head.

One can not fail to note the skill with which the commission makes the faculties a fundamental factor toward the unification of the university.

Under the powers of faculties the report treats "professorial examinations," a reform previously referred to.

The head of each department, and under his direction the other teachers in his department, will be the examiners in the department, but in the public examinations one or two assessors appointed by the faculty will be conjoined with him.

To safeguard the standard of a degree amidst the varying examinations allowed, the report, in addition to the provisions for standards of admission and instruction, provides that—

the faculties shall be assured by reports from boards of studies that the range of study in a subject as treated by different teachers shall broadly be the same, and from its assessors that the standard of the examinations and other tests shall broadly be the same.

Turning from the instructional to the institutional organization of the university, the report recommends the establishment of constituent colleges and university departments.

The constituent colleges will be educational institutions which are either established by the university or which are strong enough in one or more faculties to comply with the conditions for incorporation, and which transfer to the university the financial and educational control of their work in one or more of those faculties.

No institution shall be considered strong enough to become a constituent college in any faculty unless it is able to provide a full course for the first and higher degrees awarded in that faculty. Each constituent college will be managed by a delegacy similar to those already appointed for University and King's Colleges. The university departments will be departments dealing with a single subject of study, or with a group of studies of less range than a faculty, whether established by the university or placed under its financial and educational control.

Each university department will be managed by a delegacy similar to those already appointed for University and King's Colleges. Constituent colleges and university departments will have a departmental organization according to subjects of study.

The summary of the report up to this point will enable one to catch the scheme of the commission. The nucleus of the university is the coordination of faculties and of "constituent colleges" and of "university departments" through a central administration and financial control, reenforced by a central site for buildings to accommodate the administration, and certain institutions alike in kind. Outside the site of the "university quarter" to be built, it would be expected to strengthen university centers in connection with existing

institutions for specific purposes and to concentrate the area of the university for "constituent colleges" and "university departments" within the administrative county of London.

Bloomsbury, the seat of University College and of the British Museum, is recommended by the commission as the most suitable place in which "to create a university quarter, which would probably do more than anything else to convince the London public that the university was a reality." The Imperial College of Science, surrounded by the scientific collections of the Government at South Kensington, would remain undisturbed, according to the report. This recommendation has proved no exception to the rule that discussions are apt to rage about sites, local interests being involved. If an impartial jury of scholars from abroad were impaneled to decide the case, it is altogether likely that they would sustain the report in this matter.

The report in theory, having established a unified central teaching university, faces the problem how best to link up with the university, without lowering its standard, the remaining provision for higher education in London and the home counties. The answer is to continue the present regulations and make them more strict for recognizing schools of the university. These would be reckoned as independent university centers which would in time become constituent colleges if within the administrative county of London, or parts of a new university for southeast England if outside that area.

When institutions are not devoted exclusively or almost exclusively to university work, groups of departments in university work may be recognized as schools. This recognition of schools in "mixed" institutions should be limited to those which may ultimately become independent university centers. To insure the application of the principles of the report the following new conditions are to be imposed upon the schools of the university: The university should be represented on the governing board of each school. The principal teachers should form an advisory board on academic matters. The university should have some voice in the appointment of teachers, and the title of "professor" or "reader," except in theological schools, is to be conferred only by the university.

The additional conditions for the recognition of schools in "mixed" institutions give the university a power to require the coordination of the work of the center with the work elsewhere, to satisfy itself that the staffing and laboratories are adequate, and that there is a group of qualified teachers fitted to give instruction covering all the subjects of a degree course in some one faculty. These conditions lead to the conclusion that the present system of recognizing teachers in institutions otherwise unconnected with the university should

cease, and that as a rule polytechnics should not attempt to become schools of the university. These logical conclusions have been naturally a source of opposition to the report. The proposed abandonment of the interesting experiment of the university recognition of individual teachers, an experiment which has been received with favor in some quarters in the United States, should be especially noted. The practice is an outcome of extreme individualism, as over against the cooperative and institutional ideas of the present.

Consistent with the doctrine of exalting the professoriate within the university, the report urges that the principal teachers in the "schools" should be grouped with reference to the faculties to which their subjects of study belong, but should not unless appointed by the university be members of the university faculties. These groups of teachers should constitute boards of studies in their respective faculties. These boards, with the assistance of committees they might appoint under the approval of the senate, would prepare the curricula and syllabuses of the courses for degrees. The continuance is urged of the present practice of the inclusion on the committees of "other persons" who are not teachers in the "schools."

It is noteworthy that the commission approves of the experiment of connecting in the faculty councils of the university, professors with practitioners, the theoretical expert in the university with the prominent expert in the professions, sciences, and arts at work in the outside world.

The commission approached the subject of external degrees as one "which has aroused in the past the most acute and bitter controversy." They look forward to the time when the demand for them will decrease or disappear with the multiplication and accessibility of universities, and with the "better understanding of the value of a university training." They conclude since the University of London was their originator that external degrees must be retained for the present. External students should be known as "unattached." External candidates, however, are to be excluded from examinations in medicine and engineering, as these subjects require in practice something more than a mere test of knowledge afforded by an examination.

The pronouncement of the commission on external degrees after the many years of experience in the University of London should stay the tendency in the United States on the part of some institutions to grant degrees for what they call university extension work. They may acknowledge the value of proper correspondence schools and their certificates for certain persons and purposes, but they should teach the public the sharp distinction between this external work and certificates and the college training and degrees.

Pursuing their policy of concentration, the commission would end the practice of holding examinations for degrees of the university in the colonies. This practice discourages the establishment of teaching universities in those countries and imposes curricula planned for the needs of students at home, instead of those for the needs of candidates in the colonies. The university having been a model on which universities had been founded in India, in South Africa, and in New Zealand, in reforming itself wishes to set an example for them to substitute teaching for examining universities. It is intended that the university shall fulfill imperial functions of more real value than handing out syllabuses, examination papers, and degrees in distant countries. It is hoped that the university will be a center to which students from the whole Empire will come in larger numbers. The university at the capital of the Empire, in close touch with the colonial office and the board of education, could help colonial governments with its advice and by the issuance of certificates which might be accepted in lieu of the tests required of English students.

No space can be given here to the application of the principles of the report elaborated by the commission in the proposed treatment and reorganization of the faculties. The report labors patiently and judiciously to set up models which may be generally and gradually adopted, giving time for the many vested interests to adjust themselves to the changes. The main lesson of this section of the report teaches legislators in the United States, who are coordinating and reorganizing educational institutions, to act upon the advice of educators and to effect reforms by evolution instead of by revolution. Incidentally the American systems and standards of university, legal, and medical education recently established are confirmed.

The report estimates that an additional income of not less than $495,000 a year will be needed to inaugurate the reforms proposed, and evidently expects the Government to provide that sum. The commissioners believe that the unlimited possibilities of the reformed university will so appeal to the liberality of the private benefactor that he will, in the future even more than in the past, supplement the public contributions from imperial and local funds by the gift of buildings and endowments. English experience has shown that the way to secure the coordination of independent institutions is to give them Government grants.[1] The commission seek, beyond the coordination of the institutions, their stimulation by enlarged support to pay higher salaries and to raise their standards and ideals. While giving precedence to these aims they do not forget the need for the reduction of the fees of the students and

[1] Cf. Ch. XII, "State Aid and Visitation."

of the cost of duplication in the institutions. The Americans legislating for the coordination of their State institutions might well catch the spirit and wisdom of the royal commissioners and put the motive of the improvement and efficiency of their institutions above that of economy.

In the autumn of 1913 the Government appointed a departmental committee to prepare a bill for an act of Parliament based upon the recommendations of the commissioners. During 1914 the committee invited and received representations from the institutions and parties concerned, and before the outbreak of the war it was hoped that a bill might be passed before the expiration of the present Parliament. Now a long delay is inevitable.

This chapter on the University of London and the report of the royal commission make patent three general suggestions:

1. While no one could desire to repeat anywhere the position of things in London, a great urban university and institutions near it should feel an obligation by conferences, mutual recognition, and "intercollegiate lectures" to link up and promote higher education within an area of a given radius. President Lowell pointed out, at the time of his inauguration, what economy, efficiency, and consciousness of power could be obtained by the association or affiliation under the ægis of Harvard of the institutions of higher learning within rapid-transit distance of Boston. Yale might propose something similar for Connecticut. Other prominent universities having naturally extended areas by means of interurbans and railways could effect the same thing.

2. Following the example of London, as practically a State university, grouping about it independently endowed, and even church institutions, as well as sister State institutions, State universities by similar means ought to find a way to be centers for the coordination of State institutions and of cooperation with independent colleges.

3. London, in its aspects as an imperial university, may throw light upon the question of a University of the United States, precipitated by George Washington and his bequest for the purpose. Though London was the latest among the great capitals to have a university, it has made it plain that a capital is naturally more than a political center. Governmental activities necessitate, especially in modern times, the gathering there of experts in all the arts, sciences, and professions, and the equipment they need in libraries, laboratories, and collections. Officials and citizens constantly going to and fro from the capital to the utmost bounds of a country find in the capital a unifying influence and spread it broadcast. The political forces need the touch at the capital of

an organized university that intellectual and spiritual elements may be brought to bear upon them and be radiated with them throughout the life of the Nation. The report of the commissioners intimates that the imperial university is in London not only because of the advantages to a university of the material there but because the Government needs at its own doors a university to serve it and to propagate the national life throughout the Empire. Every true university, whether it be with or without State aid, is truly national and international. The British Government now renders aid to every university and almost every university college in Great Britain and Ireland, and they are in a high sense national, but they are not governmental and imperial like London.

A university at the capital of the Government, by the Government, for the Government, in virtue of its being a university, is more than a Government department. It must have the virtues and freedom of the sisterhood of universities. It has in addition a governmental mission which in no wise derogates from other universities. From its situation it supplements them, and in the long run must bring a reaction in their favor. The University of London is not a competitor in its imperial aspects of the other British universities, but a variation of type to suit the capital in which it is. Not only London but the other world's capitals teach that there should be a Federal university at Washington. London also teaches how a government by progressive appropriations may gradually grow a university out of heterogeneous institutions at hand.[1]

[1] The following authorities have been used in this chapter: Calendars, 1913–14; annual reports of the heads of the institutions; board of education reports (1912–13) from universities and university colleges in receipt of grant from the board (code 7615); royal commission on university education in London, final report, 1913 (code 6717), appendix (code 6718); The Times Edu. Supplement, Jan. 5, 1915; articles and communications in public press and reviews, 1913–14, e. g., The Lancet weekly articles from Apr. 26, 1913; British Medical Journal, May 17, 1913, and personal interviews.

Chapter IV.

THE NEW OR PROVINCIAL UNIVERSITIES.[1]

Manchester (Victoria), Birmingham, Liverpool, Leeds, Sheffield, Bristol.

The new or provincial universities, says a writer,—

present a composite picture in which progress and poverty are the prevailing hues * * * Not since the monastic revival of the twelfth century or the scholastic revolution of the sixteenth has England known an educational movement so rich in romance, in courage, in devotion, and in promise. The dreamer has dreamed, the founder has given land and gold, the public have subscribed, civic pride has been stirred, and the cry and need for knowledge have justified them all * * * They have heretofore devoted their efforts to the tasks of proving themselves necessary to the community, and worthy of public and private support.[2]

This they have clearly succeeded in doing in the first decade and a half of the twentieth century. They might well be named twentieth century universities, in which century they have all taken their present form. A variety of baptismal names has been proposed which may in part reveal their character. Observers at a distance and those within the centers yielding to or flattering local pride have described them as municipal universities. But the leaders in them know the incongruity in the name. From its nature a university transcends the limitations of a locality in which it may have a local habitation and name. They are ready to protest against the municipalization of the institutions. The city at most is only a part owner and contributor and may justly have its representation in the government of the university. True to university traditions, these institutions are organized so as not to be subject to official municipal control. Each one has representatives in its government of an extended area of country of which the city is only the center. For example, the University of Birmingham looks upon itself as the University of the Midlands.

While, as in the case of most of the American universities, the majority of the students live within a radius of 30 miles from the seat of

[1] See Tables 7 and 8, pp. 266–267. [2] Edinburgh Rev., Jan., 1911, pp. 57, 58.

the university, there is a considerable representation from other parts of the United Kingdom and from abroad. The activities of these universities, their attendance, and the contributions to their support cover something like the ground of a province of which the city is only a center; and if a name is to be taken from their location, would justify the term "provincial" rather than "municipal." Indeed in the reports of the board of education they are alluded to as the provincial universities, a term of convenience in classifying them with the London and Welsh colleges. This is not intended as an official designation of these universities, but is descriptive in accordance with the usage by which anything in England outside London is said to be in the provinces. Provincial is inapplicable as a title for these universities, because, in fact, there are no provinces by which they are circumscribed, nor are they characterized by provincialism. They might more fitly be denominated "national," in view of their large grants from Government, their national services, and the spirit of the new nationalism which fills them. But "national" is not a term which may be appropriated by any one type of university.

The use of the phrase "modern" universities, as contradistinguished from "ancient," has met with considerable favor, but also with objections from both sides. The term "modern" may be used as a two-edged sword cutting off the "ancient" university from the modern side, and the "modern" university from the ancient side, which would be fatal to both. The defenders of the "ancient" universities resent the insinuation that they are not also modern, and point to the new movements they have inaugurated and the new subjects taught since they ceased to divide the "realm of knowledge into two provinces which they used to call classics and mathematics." On the other hand, one of the "modern" university leaders has said:

> The modern university is not limited to the study of things modern. On the contrary, one of the most characteristic notes of the modern spirit is that it goes back to the origins of things, and studies them in the light of their history.[1]

The title "civic" university, attributed to Lord Haldane, has been gaining ground. It is a broader title than "municipal," and escapes the thought conveyed in the latter of being limited to functioning for a city and subject to direct ownership and control by a city. "Civic" acknowledges a city relationship, but may be interpreted as reaching beyond the body politic to the citizens composing it and the State. The "civic" universities are peculiarly the people's institutions and reflect in part the spirit of some of their precursors in the nineteenth century, the so-called people's colleges.[2] In their origin and support by the gifts of private citizens combined with city and

[1] Sonnenschein, Prof. E. A., Birmingham Daily Post, May 8, 1890.

[2] Cf. p. 125.

State aid, and in prominent purposes, they are "civic." The scope of the word may be gathered from what Lord Haldane wrote:

> What we most lack in this country is the penetration of the mass of our people by the spirit of the higher education. Alike in our peace and in our war organizations there is wanting the survey based on science. * * * We handicap ourselves by want of the higher training. * * * The standard of knowledge is rising, and I think that with it the moral standard is rising. * * * For the training of the necessary leaders the higher education is essential, and the universities are its only reliable source. One of the satisfactory features of our times is the large increase in the number of our universities within the last ten years and the generous endowment of them from private sources. That the State ought to do more than it does in the way of endowment I agree with the writer of this book. But I am not sure that I wish to see the burden transferred to the State in a wholesale fashion, sometimes suggested.[1]

"Civic" is a name growing in popularity for this group of universities and fits certain aspects of their origin, maintenance, and purposes, but historically another name has precedence which is more characteristic and gives no ground for criticism. The "new" universities was the title proclaimed to meet the history, the facts of the case, and the wants of the new times. In 1887 Prof. Seeley prophesied of the name and thing:[2]

> The new university which exists for study and research aims especially at comprehensiveness and universality. It neglects no subject and tries to do justice to all. * * * Modern civilization needs a vast quantity of science; the demand for trustworthy knowledge, scientific, sanitary, technical, economical, political, historical, moral, and religious, rises with urgency from these great towns. * * * It is a demand for knowledge, not for training. It is not made in the interest of the young. It calls for institutions by which the whole science of the age may be brought within the reach of all, young and old alike; in short, it calls not for new schools or new colleges, in the Oxford and Cambridge sense, but in the strictest sense of the word for new universities.
>
> I have watched the growth of this demand and the various attempts which have been made to satisfy it from the time Maurice set up his Working Men's College on. The sense that true and pure knowledge is not nearly enough diffused among us has taken many forms. Various, too, have been the remedies proposed: Colleges of science, university colleges, working men's colleges, Queen's colleges, Newnham and Girton, university extension, teaching of politics, impartial discussion of politics, university settlements, and Toynbee Hall. * * * We have not formed the habit of expecting from universities what it might be supposed they were capable of giving, abundant knowledge on all the most important subjects. * * * There has always been some interested company regulating the supply. On the Continent it has been the state, here in old times it was the church, and more recently it has been the caprice of founders putting a money value upon the subjects they liked best. In this way the teaching of the universities has been regulated. * * * We begin to

[1] Haldane, R. B., K. C., M. P., Introduction to "Education and National Progress," by Sir Norman Lockyer. Macmillan & Co., London, 1906, pp. v, vi.

[2] Seeley, Prof. J. R., "A Midland University; an address delivered in the Town Hall, Birmingham, on the 10th Oct., 1887." Davies Bros., Livery Street, Birmingham, pp. 13–15.

touch a thing for which we have as yet no name, but which is larger and grander than the world has yet seen, a sort of universal university. We are forming a great teaching order which shall have its fixed lecture rooms in every great town and shall send out missions to smaller towns.[1] This order shall be in touch with the people and shall furnish the knowledge which is wanted and as it is wanted. But it shall also be in touch with science, shall never lose the pure reverence for truth, the conscientious thoroughness and accuracy which has been the boast of the older universities, and shall never corrupt truth to gratify the likings or the party rancors of its vast popular audience.

Prof. Seeley even ventured to prophesy in detail, "England, which till lately has had but two universities in the proper sense of the word, will have a dozen and perhaps the United Kingdom will have a score." Similar dreams to those of Prof. Seeley had been told. In 1879 Canon Lightfoot, in an address delivered before the council of education in Liverpool, drew a vivid picture of such a university, and the Rev. Charles Beard, with others, had drawn up a scheme for the establishment of a proposed college in that city. In 1880, at the opening of Mason's Scientific College in Birmingham, Huxley referred to those who would have looked upon such a college as a "piece of chimercial absurdity." Indeed, the realization of the dream had already begun in Manchester, in Owens College and Victoria University, and the colleges in Leeds, Sheffield, Newcastle, Bristol, and Nottingham.

The universities that have grown in the twentieth century out of the Victorian era were not manufactured at a single stroke, but, after the British fashion, were a growth from some form of pre-existent local school or college and the amalgamation of several under some external influence. With the exception of Leeds and Sheffield, there was the inspiration of a medieval endowed classical school shedding abroad in the city the spirit of higher education. Likewise the spirit of professional education had been nourished by local medical colleges. Technical schools and science colleges were naturally taproots of the universities located in large cities which had grown rapidly through the spread of industry and commerce. The municipalities induced by the endowments given by citizens came to the support of technical institutions devoted to the training of skill in local industries. This led to the rapid development of a local complete educational system crowned by its university. The base of the system is the public elementary schools succeeding the act of 1870. Upon this base rest the secondary schools reared by later acts and bearing up the university. The university fits itself closely into the system by evening schools of classes, or by arrange-

[1] Cf. Ch. XIX, "University Extension," p. 249.

ments for part-time students in industrial, commercial, or domestic subjects, and oftentimes with a correlation as far as possible of work with the evening continuation classes. The system is further cemented together by city and county council scholarships and exhibitions, which, in connection with the low fees of the university, enable the laboring and artisan, as well as the "black-coated" and commercial, classes to secure a higher education. It is not strange that the new universities, teaching so many industrial subjects, with so many students from the industrial classes, and located in industrial centers, were at first subject to misconceptions and were called industrial universities. They were ridiculed as no longer "schools of high studies," but "schools of high chimneys." Prof. Sonnenschein replied:

> But it may be fairly contended that a university situated in the heart of a manufacturing district should make a special feature of those studies which stand in an intimate relation to technical pursuits. In this sense the new university will be in Mr. Chamberlain's phrase "redolent of the soil."[1]

Prof. Sonnenschein pleaded for a central position of the faculty of arts in these universities. First, he took up the standard argument in a way to appeal to the public. He wrote:

> There was a young man of these parts,
> Who said, "What the dickens is Arts?"
> Your Science I know, and your Medicine ditto;
> But what's all this fuss about Arts?

> The fuss is due to the fact that it is necessary to utter a protest against the attitude * * * of treating the faculty of arts as a mere handmaid of the faculty of science, as though its raison d'etre were to provide students of science with a little light recreation and enable them to read a scientific dissertation in German or French. *Litteræ humaniores*, humanizing letters, to use the dear old Oxford term in its broadest sense, can never become antiquated so long as man is man. No one pleads for making Greek and Latin the staple of instruction in a modern university; but a faculty of letters has an indefeasible claim to existence in its own right.[2]

The professor in passing reprobated a statement, evidently rising from the organization of English society in classes and the traditions of the old universities, that Greek and Latin would be out of place in the new university, those studies being fitted for the "sons of the landed gentry." From the familiar argument of the importance of a faculty of arts in the new university to create an atmosphere of liberal education, the professor advanced the fresher argument of the necessity in such an institution of the faculty of arts on its "professional side." This faculty is mainly concerned with the training of teachers and with preparing men for those callings in which literary skill plays the chief part. The faculty of arts

[1] Sonnenschein, Prof. E. A., Birmingham Daily Post, May 1, 1899.
[2] Sonnenschein, Prof. E. A., "The Proposed University of Birmingham," read before the university graduate's club in Birmingham, Nov. 15, 1898.

is to be more broadly based for technical education widened to include all those special studies which prepare men for earning their bread in a profession. Technical education would thus rise to be professional education in professional schools or colleges, above the level of secondary school work, in connection with the faculty of liberal arts and the other faculties of the new university.

The occasional opponent in the United States of maintaining a college of liberal arts at the heart of a large university with many professional colleges would do well to note that the soundness of the above arguments is confirmed by the fact that all the new universities have established faculties of arts which have been constantly increasing in strength and influence. The friends, too, of Greek and Latin and of other classic literatures, even including Hebrew, though these subjects are not compulsory, may take heart that these studies hold their own in the new universities. These studies do not have the preeminence, of course, that they had in the old universities, but they are not belittled, and their departments are making contributions to knowledge.

Several influences outside those of the locality entered into the genesis of the new universities. Of course, the agitations we have seen operating to bring about reforms in the older universities were not without effect upon the newer. The university extension movement proceeding from Cambridge and Oxford stimulated the local beginnings to flower into the new universities, not without some fragrance of the old.[1] The life of the older universities still breathes in the newer, for it is roughly estimated that not less than 75 per cent of the heads of departments in the newer universities are graduates of Oxford, Cambridge, and the Scotch universities.

A substantial impetus to the development of these universities came from acts of Parliament at first incorporating older schools as university colleges and increasing treasury grants in aid for universities.[2] The Government grants magnified the duty of the universities in the direct service of the State. Some of the grants were for specific purposes leading to investigations. These fostered the spirit of research which leaders of thought had been urging as a central object of universities, and which had been stimulated by the example of German and American universities. The implantation of research, the promotion of postgraduate study, and the requirement of it for advanced degrees, and notably for the master's degree, as over against the Oxford and Cambridge conferment of it for a mere fee, served to counterbalance the popular activities of these institutions, which otherwise might have led to superficiality. The University of London, that had been of service to the university colleges

[1] Cf. Ch. XIX, "University Extension," p. 249, passim.
[2] Cf. Ch. XII, "State Aid and Visitation," p. 190.

by giving its degrees to their students, became an external influence, not as an example but as a warning. After their experience with a mere examining university, by reaction they established themselves as fundamentally teaching institutions. In 1899 Prof. Sonnenschein stated the case:

> But it is quite a mistake to regard the right of granting degrees as the be-all and end-all of a university. Such a perversion of the truth has only become possible in recent times, since the foundation of an institution in London which avowedly aims at nothing more than this. And it is sometimes forgotten that the degrees of the University of London have come to bear a new meaning; they no longer denote membership of a corporation of learning, but are simply and solely labels * * *. Useful as the work has been which it has done in the past, it has become clear that the time has come to replace it by something better * * *. It is not enough to provide means whereby knowledge, however acquired, may be tested and hall marked; it is necessary to provide the means of acquiring that knowledge.[1]

Before the local and general creative forces could bring the new universities to full birth, certain traditional political and legal difficulties had to be overcome. Battles had to be fought for charters. In 1877 after 25 years of successful life, Owens College petitioned the Privy Council to grant a charter converting the college into the University of Manchester. Opposition to the project was raised in various quarters, particularly in Manchester's rival neighboring cities, Leeds and Liverpool. Yorkshire College, Leeds, sent up a memorial praying, if a new university was to be created, that it should be a new corporation with powers to incorporate Owens College and other institutions, and that the university should not bear the name of a town or of any person that would give it a purely local aspect. The result was a charter in 1880 constituting Victoria University at Manchester, with Owens College as a constituent college, and with powers to admit other colleges in different localities.[2] In 1884 the University College, Liverpool, was admitted, and the Yorkshire College, Leeds, in 1887. Victoria University was helped to overcome resistance by the vague notion that it was in some sense a federation of colleges, remotely analagous to Oxford and Cambridge, and the university of the north of England. The idea of a "single-college university" had yet to make its way. Victoria as the university of the north of England was suggestive of the thought of a university for the Midlands.

The new departure was really made when, in 1900, a charter was granted to the University of Birmingham, due to the brilliant leadership of the late Joseph Chamberlain. Encouraged by this precedent, University College, Liverpool, the corporation of the city, and

[1] Supra, Birmingham Daily Post, Apr. 24, 1899. N. B., written before the reconstitution of the University of London.

[2] Cf. Ch. XIII, "Coordination of Institutions," p. 195.

other corporations of large and important towns in the district petitioned the King to grant a charter incorporating a University in Liverpool. This involved secession from Victoria University and its probable dissolution. The petition was referred by the crown to a committee of the Privy Council. Counter petitions and memorials were presented by those in favor of continuing Victoria University. Leeds and some advocates of the external examination system strongly opposed the policy of "what were nicknamed Lilliputian universities." After an extended hearing of experts and deliberations by the committee, on February 10, 1903, an order in council pronounced that a case had been made out for a grant of university charters to Liverpool and Manchester. It was added that the step involved issues of great moment and that "cooperation was expedient between universities of a common type and with cognate aims." Lord Haldane has well said:

> The date of this order in council is, I think, a memorable one. It gave State recognition to a new policy. * * * The principle was accepted that the number of the English universities was to be increased and their headquarters were to be in cities.[1]

Victoria University, for certain legal and historical purposes, remains as a name at Manchester.

A review of the objects set out in almost identical language in the charters of the half dozen new universities and the prominent features they have in common will elucidate their characteristics. Their charters define the universities as both teaching and examining bodies and as designed to further the prosecution of original research in all branches of knowledge. More particularly they are to confer degrees, diplomas, and certificates on persons of either sex. They may provide instruction in every faculty, in all branches of education. They are to have regard to the instruction that may be of service to persons engaged in the pursuits—commercial, manufacturing, industrial, or artistic—of the locality. They are to have facilities for the prosecution of original research. They may establish fellowships, scholarships, exhibitions, prizes, and rewards to encourage scholarship and aid students. They may examine and inspect schools and provide extension lectures and affiliate other colleges or institutions.[2]

---

[1] Haldane, Viscount. "The Civic University," an address delivered to the citizens of Bristol (reprint from the Hibbert Journal, Jan., 1913), p. 4. For the record of the case in the Privy Council Dec. 17–19, 1902, cf. "Victoria University, Petition of University College, Liverpool, for charter as an independent university and the further petitions, statements, and testimony in the case." This battle royal, with the reconstitution of university of London in 1900 laying the foundations for a teaching university there, marks a turning point in the history of university education in England.

[2] Cf. Chs. XIII, "Coordination of Institutions," p. 203; XIX, "University Extension," p. 249, passim.

The plan of government for these universities is practically the same[1] and thoroughly representative. Their buildings are, of course, new. They are substantial, compact, with architectural features and modern equipment, and located generally near the heart of the cities. The institutions from which they sprang were planted in the center of the cities upon small sites. Birmingham has inaugurated a departure in erecting the inevitable additional buildings upon 45 acres of ground 3 miles from the center of the city.

All the six universities have faculties of arts, of science, of medicine, and departments for the training of teachers. With the exception of Birmingham,[2] they have a faculty of applied science or engineering or technology. Manchester, Liverpool, and Sheffield have faculties of law, which is included in the faculty of arts in Leeds. Manchester alone has a faculty of theology and one of music. Birmingham and Manchester have faculties of commerce and Leeds and Liverpool departments.

Taking the departments together in all these universities, they cover broadly modern languages and literatures, historical, economic, and social sciences, and the physical and biological sciences and their applications. The enumeration of the degrees, diplomas, and certificates which may be secured in one or more of these universities makes conspicuous the range of subjects taught.[3]

The academic year for residence at the older universities, nominally 24 weeks, has been lengthened by the newer universities to 32 weeks.

---

[1] Cf. Chs. IX. "The Organization and Administration of Universities," p. 159, passim; X, "University Officers," p. 180.

[2] In Birmingham the faculty of science includes chairs in engineering, and gives B. Sc. degrees in pure science and in applied science.

[3] Degrees and diplomas: Bachelor of arts (B. A.); bachelor of architecture (B. Arch.); bachelor of commerce (B. Com.); master of arts (M. A.); master of commerce (M. Com.); doctor of letters (Litt. D.) not hon.; bachelor of science (B. Sc., and in Applied Sci.); master of science (M Sc.); doctor of science (D. Sc.), not hon.; bachelor of laws (LL. B.); master of laws (LL. M.); doctor of laws (LL. D.), not hon.; bachelor of medicine and bachelor of surgery (M. B., Ch. B.); doctor of medicine (M. D.); master of hygiene (M. H.); bachelor of dental surgery (B. D. S.); master of dental surgery (M. D. S.); bachelor of divinity (B. D.); doctor of divinity (D. D.); bachelor of engineering (B. Eng.) or bachelor of technical science (B. Sc. Tech.); B. Sc. in Agriculture; B. Sc. in Public Health; master of engineering (M. Eng.) or master of technical science (M. Sc. Tech.); doctor of engineering (D. Eng.), not hon.; bachelor of music (Mus. B.); master of music (Mus. M.); bachelor of metallurgy (B. Met.); master of metallurgy (M. Met.); doctor of metallurgy (D. Met.), not hon.; doctor philosophiæ (D. Phil.). The following diplomas are granted by one or more of the universities: Diploma in architecture; in civic design; in commerce; in civil engineering; in education; in electrical engineering; in domestic science; in coal mining; in dyeing; in dentistry; in fuel and metallurgy; in gas engineering; in leather manufacture and textile industries; in mining; in modern language teaching; in public health (D. P. H.); in tropical medicine (D. T. M.); in psychological medicine; in social organization and public service; in ophthalmic surgery (D. Ch. O.); in veterinary State medicine or veterinary hygiene (D. V. H.); in anatomy; in bacteriology; in biochemistry; in parasitology.

Certificates are granted in architecture; in biblical knowledge; in civic design; in commercial sciences; in applied chemistry; in separate arts subjects; in separate engineering and technical subjects; in factory hygiene; in school hygiene; in sanitary inspection; in social work; for teachers; for works pupils in engineering.

The conditions of admission tend to be more stringent than at the older universities. In general, no man student may be admitted who is less than 16 years and no woman student who is less than 17 years of age. The practice of some Oxford and Cambridge colleges of admitting students to membership before they have passed responsions or the previous examination is not paralleled, since for all degree courses the matriculation examination or an equivalent must be passed at entrance. Oxford responsions is only considered an equivalent to the matriculation examination when it includes both geometry and algebra and an additional subject. Likewise the Cambridge previous examination must include the passing of Parts I and II and an additional subject.[1] The standard of admission is safeguarded by means of a joint matriculation board[2] of the Universities of Manchester, Liverpool, Leeds, and Sheffield, provided for in their charters. The arrangement is a trace of the earlier Victoria University. This stiffening of entrance requirements by the younger universities, as has often been the case in America, springs from the desire to retain the respect of the older universities, to avoid "underselling" by competing universities, and to counteract the influence of the lower standards for certain courses and part-time students within the universities. In the lack of strict collegiate or residential supervision these universities tend toward a strict requirement of attendance upon courses of study, and the weighing of the whole record of the student and not simply of his intermediate and final examinations for his degree.

These universities have clearly added a fifth type to the previous types of British universities. There were the intercollegiate residential type of Oxford and Cambridge, the continuation of the original university teaching type of Scotland, the nonteaching and examination type of the older University of London, and the Federal type of the earlier Victoria, Welsh, and Irish universities. Sir Alfred Hopkinson has urged that there is not a difference of a higher and lower type, nor of subjects of instruction, but that the point of difference lies in State aid.[3]

While this is a point of difference, inasmuch as the State or the municipality does not affect ownership and direct control, they are not properly State institutions, and this factor may not give the name to the type. While not a lower, they may be said to be a wider, type than the old universities. They are, in fact, a composite type. They derive and combine features from the four preceding types, stress activities which had been unstressed, and take the broadest

[1] Cf. Chs. XVI, "Examinations," and XVII, "Curricula."
[2] Cf. Ch. XIII, "Coordination of Institutions," pp. 200–201.
[3] Hopkinson, Sir Alfred, "Address, Sec. L., British Assoc. for the Advancement of Science," 1913. Cf. Ch. XII, "State Aid and Visitation."

views of the scope of a university, so that they are nothing less than a new type. They are, in fact, the nearest type in the Old World to the American university and particularly the State university. The development of the professional and scientific schools in the nineteenth century in Harvard, Yale, Columbia, Pennsylvania, and the leading State universities, with an added impulse to special service of the State in the latter, the appearance of Cornell, a halfway State institution, of Johns Hopkins, emphasizing research, and of municipal universities like Pittsburgh and Cincinnati, are tokens of the type. Indeed, Mr. Carnegie made the suggestion to Mr. Chamberlain, in offering to contribute to the foundation of the University of Birmingham, that it should take Cornell as a model at least on the science side.

The brief but brilliant history of the new English universities is confirmatory of the wisdom of the older American universities in branching out to meet modern demands, and of the wisdom of planting State universities.

MANCHESTER.

Despite their likeness to one another, each one of the new universities has not only an atmosphere, but an individuality of its own. Manchester is not only the first in time, but in size and strength and variety of activity. It is a slow growth of individual origin representative of the north of England. The first attempt to secure a university in Manchester for the north of England failed in the Parliament of 1640. Near the close of the eighteenth century, a paper, "A plan for improvement and extension of liberal education in Manchester," was published. It proposed a "connection between liberal science and commercial industry."

The Manchester Mechanic's Institution, founded in 1824, resulted in the development of the Municipal School of Technology, which has not been without effect upon the university, and is now in happy cooperation with it in a faculty of technology.[1]

The immediate origin of the university is due to the bequest of one of Manchester's merchant princes, John Owens, who died in 1846. He provided that instruction should be "in such branches of learning and science as are usually taught in the English universities." He laid down the principle that there should be no theological tests for either teachers or students, and that nothing must "be introduced in the matter or mode of education in reference to any religious or theological subject which shall be reasonably offensive to the conscience of any student." Here is the modern founder succeeding the old-

[1] Cf. Chs. XIII, "Coordination of Institutions;" XIV, "Applied Science and Professional Education."

time pious founder. True to university ideals and substituting religious toleration for religious tests, he represented the spirit of Manchester. Its ancient grammar school had kept alive some notion of the classics in the center of the "workshop of the world." The vigorous controversy of churchmen and nonconformists had made Manchester as famous for freedom of thought as had its political school for free trade. It is at least a noteworthy coincidence that when, in 1851, Owens College was opened, it was housed in what was formerly the residence of Richard Cobden. One of the valuable contributions of this institution is that it has shown, without violating Owens's rule, how a secular university may happily have a faculty of theology.[1] It is surprising how simply and effectively this has been done. Theological schools of seven different denominations have been recognized by the university for external lectures of the faculty. The courses of lectures in the faculty fall into three classes. Firstly, are the courses, which are delivered within the university buildings by professors and lecturers of the university in the faculties of arts and science, in noncontroversial subjects like Hellenistic Greek, Hebrew, and comparative religion. Secondly, are courses by lecturers of the university which are delivered elsewhere than in the university buildings, open to members of the colleges in which the lectures are delivered on conditions approved by the colleges in question, and open to other students of the university on payment of fees. Thirdly, are external courses recognized by the university given by others than lecturers of the university.

A milestone in the pathway of Owens College to become a university was marked by the incorporation with it in 1872 of the old Manchester Royal College of Medicine and the opening of new buildings in 1873.

The policy of establishing a public-health laboratory as an integral part of a university naturally followed in due time and has been vindicated by Manchester. Under the public-health act, 1875, England was divided into sanitary districts. Every district council had to appoint a medical officer of health. Beginning in 1892, in districts of 50,000 or more inhabitants the officer was obliged to be the holder of a diploma in sanitary science, public health, or State medicine. When this regulation came into force the teaching of public health was fully organized at Owens College, and the newly appointed professor of pathology secured by 1894 a well-fitted laboratory. The university placed the pathological department at the service of public authorities upon the payment of fees toward the expenses of investigations carried out for them. The movement thus

[1] Cf. Ch. XIV, "Applied Science and Professional Education," p. 207.

started in Manchester in 1892 has resulted in the adoption of a similar system by many authorities in the Kingdom. The extensive public-health laboratories of the university, opened in 1905, are one of the evidences of the direct benefit to a university of immediate service of the public. The investigations demanded by the public have stimulated the teaching and led to postgraduate study and research, and to the publication of valuable contributions to knowledge.[1]

The department of public health is but a specimen of the opportunities for research offered by Manchester. It has given such attention to its facilities for advanced studies in the faculties of arts, of science, of medicine, and of technology that it has drawn by far the largest number of graduate students of any of the six universities. It instituted research degrees, open to graduates or persons who have passed the degree examination of other approved universities and, under certain conditions, to candidates not so qualified. From the beginning Owens College was fortunate in securing professors who became known internationally as authorities in their subjects. The libraries of the university are supplemented by some of the largest and rarest libraries in the Kingdom, like the John Rylands and the Chetham Libraries. There is a series of new laboratories, as well as of old ones with new extensions, made famous by the investigations carried on in them by distinguished men of science. There is an especial equipment of research laboratories open not only to the staff and advanced students, but also, under certain conditions, to outside investigators. A valuable adjunct for research is found in the Manchester Museum, established for the promotion of natural science.

The synthetic chronological arrangement of the museum helped to introduce the present era of wide attention to the reform of the administration and classification of museums for the benefit both of the public and colleges. The museum is an example of the alignment of the forces of a locality with its university. The nucleus of the museum consists of the specimens which the Manchester Natural History and Geological Societies deposited in trust with the authorities of Owens Trust. The museum is under the management of a joint committee representing the university, the Manchester corporation, and the subscribers.

Manchester has one of the strongest dental departments, which in accordance with the British practice forms an integral part of the faculty of medicine.[2] Here we have another happy illustration

[1] "Report of the Advisory Committee on the Building and Opening of the new Laboratory at York Place and Directors' Report for the Session 1904–5."

[2] Cf. Ch. XIV, "Applied Science and Professional Education," p. 268.

of the association with the university of private and of city foundations. The dental hospital of Manchester, founded in 1884, for the purposes of charity and also of a dental school, with a fine new dental hospital opened in 1909 in proximity to the university, is for practical purposes the dental hospital of the university department. The dental student, like the medical student, has the use of the new Manchester Royal Infirmary, which was relocated near the university, and is another case of association with it.

One of the latest illustrations of the convergence of educational forces in the university is the establishment of the Fielden School near the college for the special purpose of demonstration and practice in connection with the university courses in child study, school hygiene, and class teaching. The school is conveyed to the university under a trust deed providing for a special committee of management. Investigations into problems of class teaching are conducted in the Fielden demonstration school, where some 200 scholars attend, distributed into 10 classes and ranging in age from 5 to 15 years. The investigations are reviewed in a graduate seminar in which the demonstrators in the department and the staff of teachers in the school participate.[1] In addition to the demonstration school the department has the benefit of association with a large number of schools, both elementary and secondary, and with special institutions in Manchester and the neighborhood.

In 1914 the university instituted the new faculty of education, to deal with the higher degree of master in education.[2] This makes it possible for the day-training students, in the first instance, to prepare for the bachelor's degree either in arts or in science, and subsequently, if they desire to specialize in education, to take the master's degree in education. It is intended to give the students in the department of education equal facilities with students in arts and science in obtaining the higher degree. This is one of the latest steps in the recognition of education as deserving a graduate professional school like the other professions.

In addition to the 9 faculties[3] and the departments mentioned, the activities of the university include departments of pharmacy, the seven divisions of technology,[4] the school of architecture, special popular and evening courses, university extension lectures, agriculture, and a university press.

Manchester has brought into—

line all types of higher education which a great community requires. * * * This epoch of comprehension and amalgamation is now fairly complete; the

[1] Findlay, J. J., M. A., Ph. D., Sarah Fielden Prof. of Education, "The Demonstration Schools Record." Sadler, M. E., LL. D., "The Department of Education in the University of Manchester, 1890–1911." Manchester Univ. Publications.

[2] Cf. Ch. XIV, "Applied Science and Professional Education," pp. 210–212.

[3] Arts, science, theology, law, medicine, music, technology, commerce, education.

[4] Mechanical, electrical, sanitary engineering, applied chemistry, mining, architecture, textile manufactures.

process has involved not so much an increase in the number of students and the size of classes as a really astounding complexity in the provision for higher teaching.[1]

Manchester stands for an extensive development of the type of the new university. We shall treat the other five specimens of the type more briefly, it being understood that they have essentially the same features. We shall endeavor merely to take up points specially characteristic of each one which may be suggestive for us.

BIRMINGHAM.

As already noted, the University of Birmingham stands as the pioneer in England of the "single college university."[2] It comes the nearest to being a purely municipal university because of its origin, forged out of long-standing local institutions through the zeal of a group of city men under the leadership of an idol of the municipality—Joseph Chamberlain. The city had long been known as a center of progressive educational policy, the home of the founder of the National Education League and a friend of the act of 1870 and of succeeding educational reforms. The city is practically without a rival in the extensive territory of the Midlands tributary to it. "Birmingham is the supreme of industrial individualism" according to one of its inhabitants.[3]

The university is in one sense isolated, not being a member of any joint matriculation or examining board. It sets its own standards.

To appreciate the independence and the atmosphere of the university, we must go back of the movement resulting in its organization in 1900 to its origin in the Mason's Science College, and further to the personality of Sir Josiah Mason, its founder. In 1875, on his eightieth birthday, in laying the first stone of the college building, he states the motive and purpose of his gift. A son of poverty, he had made a fortune by the manufacture of split rings and steel pens, having begun business in gilt toy-making, then one of the staple trades of Birmingham. He said:

> When I was a young man there were no means of scientific teaching open to the artisan classes of our manufacturing town. * * * My wish is to give all classes in Birmingham and in the district * * * the means of carrying on in the Midlands district their scientific studies as completely and thoroughly as they can be prosecuted in the great science schools of this country and the Continent, for I am persuaded that in this way alone—by the acquirement of sound, extensive, and practical scientific knowledge—can England hope to maintain her position as the manufacturing center of the world.[4]

---

[1] The Times Educational Supplement, Jan. 6, 1914. Cf. ibid., Feb. 3, 1914.
[2] Cf. p. 108.
[3] The Times Educational Supplement, Apr. 7, 1914.
[4] Bunce, John Thackray, "Josiah Mason. A Biography," 1882, pp. 99, 101.

In his original deed of trust he declared his intention to found a college for the "study of practical science," to the exclusion of mere literary education and of all teaching of theology. By subsequent deeds he empowered the trustees to enlarge the scope of the college to qualify it for admission as a constituent member of the London or the Victoria or any other university with a complete course in arts. He only excluded theology and politics. The breadth of the institution, a gift at that time without parallel in the annals of modern education in England, was due to Sir Josiah's wisdom, unlike that of the ordinary self-made man, in seeking the advice of experts. He selected as trustees a Cambridge graduate and distinguished representatives of the professions. In its origin the university was not without influence from the King Edward VI Grammar School, with its classical traditions, and, on its popular side, from the Birmingham and Midland Institute, incorporated in 1854. The thought of grafting his college upon the latter had even passed through the mind of Sir Josiah. The institute prepared the way for the Birmingham Technical School, opened in 1891, the school of art, the municipal school of commerce, and numerous evening classes. In the light of the above facts it is easy to see why the University of Birmingham has not evening classes and was organized with only three faculties, those of science, of arts, of medicine, and the faculty of science, including engineering, placed before the faculty of arts.

The erection and equipment of the extensive new buildings for science and engineering of the university, 2¼ miles from the old Mason College, have given a prominence to engineering, metallurgy, and mining. The metal industries of Birmingham encouraged the endowment of a chair of metallurgy, and the mines of the neighborhood have led to special attention to coal and metal mining. The faculty of arts has made special provision for training for public and social service, in cooperation with organizations in the city, like the women's settlement, the Woodbrooke settlement, founded by the Society of Friends, the Diocesan Training Home, the City of Birmingham Aid Society, the Birmingham Charity Organization Society, and various unions. The social study diplomas are awarded for success in certain university courses requiring visits of observation and practical work.

There is no faculty of music, but a professor of music in the faculty of arts. The degree of D. Mus. is given to those passing in the matriculation examination and an examination in the rudiments of music and, in addition to the three years' courses in music, three courses in the faculty of arts, one of which must be English literature, and another a course in modern foreign language.

A specialty of the university is the department of biology and chemistry of fermentation and a brewing school. In addition to the

degree courses, there are diploma courses, a special diploma course for graduates, and certificate and shorter courses for brewers and maltsters.

In 1903 Birmingham led the way in establishing a fourth faculty, the faculty of commerce, and called to be its dean an Oxford man, who had been a professor at both Toronto and Harvard. The influence of departments of higher commercial education in modern democratic universities in America, and of the commercial colleges in Germany, recognized by the Government as of university rank, has been felt.[1] The courses of instruction have two objects in view, the combination of liberal culture with utility, and a due regard for the different requirements of different branches of commercial life.

The curriculum for candidates for the degree of B. Com. covers three years. Certain specifically commercial courses are required of all candidates. One modern language is prescribed for three years. A noteworthy choice is given to two classes of students, those expecting to be engaged in the *commercial* conduct of *manufacturing*, and those who expect to be *merchants* in the narrower sense of the term. The first group may devote about one-third of their time to work in applied science.

The options also include subjects likely to be useful to those who propose to enter upon the commercial management of collieries and other mines, or of agricultural undertakings, or business life in the colonies. A similar freedom of choice of studies in the faculty of arts is given to those intending to enter upon railway or shipping management, or looking forward to service in consular or municipal departments, in chambers of commerce, in stockbroking or financial houses.

The faculty of commerce has taken under its wing a scheme for a course for journalists until such time as a full degree course in one of the faculties, with the technicalities of journalism as one of the subsidiary subjects, can be instituted.[2] A certificate is proposed for journalists of the neighborhood who attend university lectures for five hours a week for two years and pass the examination. The group of subjects recommended centers about literary and historical topics and includes certain commercial, economic, and social courses.

The faculty of medicine, like that of Manchester, includes dental courses organized by the university in association with the dental hospital. The medical faculty, after the fashion of many American universities, offers a combined course of six years, instead of five, by which university students may obtain the B. Sc. in addition to the medical degree.

[1] Edwards, Allen, F. C. A., "What the Birmingham University is doing in the interests of higher commercial education." Revised and reprinted from "The Jeweller and Metal-worker," June 15, 1906, Unwin, London.

[2] Cf. Ch. XIV, "Applied Science and Professional Education," p. 212.

The university has a scheme for vacation reading by which books are named for a course of reading preliminary or supplementary to the courses given in the university.

The university is beginning to use its powers of affiliating other institutions in affiliating the Midland Institute. It is even arranging a quasi affiliation of two theological colleges. Forbidden itself to teach theological subjects, it is yet able to make arrangements to enable theological students in approved colleges to take one or two years for the B. A. degree in these colleges. The university has temporarily loaned some of its lecture rooms and laboratories to the municipal technical college for evening classes, another illustration of the way in which it has been cooperative with surrounding institutions.

Birmingham may be compared in its aggressive spirit and activities to an American town full of manufactures of Yankee notions. Keen mental activity issues in an interest in education and particularly in the branches advantageous for the products of the place. Institutions founded by private enterprise are sustained, if not actually supported, by the pride of the city.[1] Of the six civic universities, Birmingham has the largest annual contribution from the city treasury, and the most valuable grounds, buildings, and equipment. It is a monument to local education and patriotism.

LIVERPOOL.

The rivalry between the cities and the Universities of Manchester and Liverpool, places and institutions in proximity and almost of equal size, has resulted in universities quite alike in extent, but with marked contrast in details due to differences in the history of the localities. Owens College gave Manchester an apparent start of 30 years. But preparatory movements had long been at work in Liverpool. The Athenæum, founded in 1799, and the Royal Institution, in 1817, fostered the humanities. The medical school established in connection with the Royal Infirmary in 1834, realizing the necessity of the scientific training preliminary to the study of medicine, became the primal germ of the university. In 1836 a member of the town council urged in the meeting of the council that a university was the chief need of the town. After 1857 an attempt was made to organize evening courses to prepare for the degrees of the university of London, in a so-called Queen's College. In the late seventies university extension lectures conducted from Cambridge

[1] Cf. The Birmingham School of Art, founded by private subscription, taken over by the municipality and largely sustained by a direct city tax levy; also a school of jewelers and silversmiths taken over by the city council. (Report of Consul Albert Halstead. "Artistic Education in Birmingham." Daily consular and trade reports. Washington, Dec. 3, 1910, p. 845.)

and the example of the founding of university colleges in other great towns stimulated the local movement to establish such a college. In 1878 town meetings were convened by the mayor in the interest of the proposed college. Public-spirited citizens continued the agitation, made special appeals to men concerned with literature or science, secured subscriptions amounting to $500,000, and in 1881 a charter for the college.

Liverpool lies near enough to Ireland to have the usual religious differences in England accentuated by the division between Roman Catholic and Protestant. The usual provision in the charter that there should be no religious tests was ironclad, with the addition that no gift or endowment should be accepted to which any theological condition was attached. The competition with Owens College, constituted a college in the new Victoria University in 1880, became acute in 1883, when by a supplementary charter Victoria University was empowered to confer medical degrees in addition to others. Driven by this circumstance, the Liverpool Royal Infirmary School of Medicine became incorporated with the new University College, and the college sought and gained admission as a constituent college of Victoria University in 1894. After this date the rapid growth of the college, the inconvenience of doing business at Manchester, the seat of Victoria University, and the success of Birmingham in 1900 in gaining a charter for an independent or unfederated university, precipitated an appeal to the privy council for the dissolution of the ties with Victoria University, which ended in the granting of the Liverpool University charter in 1903. The increased expenditure entailed by the establishment of the university has been met by public subscription, and by increased grants from His Majesty's treasury, from the city of Liverpool, and from the councils of adjacent counties and other corporations.

The college and the university extended their range of activity and adopted the policy of cooperation with authorities and organizations outside the institution. There is a suggestive list of such undertakings. The Day Training College for teachers in elementary schools was opened in 1891 with a board of management of lay as well as of academic members.

The school of hygiene is conducted in conjunction with the health committee of the corporation for the systematic instruction of inspectors and others in matters of public health.

The school of commerce was originated in 1899 under the direction of a committee representing the college, the municipal authorities, and the leaders of commerce.

The school of tropical medicine, founded in 1898, and incorporated in 1905, is governed by a committee representing the university, the

Royal Southern Hospital, and the merchants and shipowners of Liverpool. It and its twin school in London[1] sprang from the imperial thinking of Mr. Joseph Chamberlain when in the office of colonial secretary.

The school of veterinary medicine, established in 1904 under a board of veterinary studies, makes use of university buildings, corporation veterinary hospitals, and public abattoirs.

The school of dental surgery under the board of dental studies is one of the largest of the kind and has an attendance of nearly 100 students. As early as 1893 a school of architecture and applied arts was started. Later the art classes were incorporated with a municipal art school. The school of architecture was continued in the university as a professional school for architects, at a university standard, on a level with other professional schools. The teaching staff in purely architectural subjects is supplemented by teachers of cognate subjects in the faculties of arts, science, and engineering.

The school of civic design, or of town planning and landscape architecture, was added in 1909 as a department of the school of architecture. It is the only school in this country exclusively designed to meet the needs of students who wish to study town planning.

The school of social science and of training for social work is the outcome of arrangements by the university with the central relief society, the Victoria settlement for women, and the university settlement for men.

The school of local history and records furnishes systematic training in the study and editing of the history of records of the city of Liverpool and adjoining counties. Courses are given in paleography, diplomatics, English numismatics, and the bibliography and sources of English mediaeval history.

The school of Russian studies was initiated in 1907 by the mayor of Liverpool and the chamber of commerce. The subject is recognized for the university degree or for a certificate. Attention is given to the qualifying of Englishmen for posts in connection with Russian trade. The school issues "The Russian Review," containing results of researches in Russia and translations.

There is a school of pharmacy. Research fellowships and scholarships, chiefly for research in medical or other scientific subjects, include some open to members of colonial universities and medical schools and to members of universities and medical schools in the United States.

The number of postgraduate students at the university testifies that it has not forgotten, amidst its wide activities, to reserve strength

[1] Cf. Ch. XV, "Advanced Study and Research without Graduate Schools," p. 217.

for research. Another evidence to the value it places on the work of the faculty of arts as well as research is the Institute of Archæology, founded in 1904.

The world-wide environment of the University of Liverpool, situated at one of the world's greatest ports, gives the university a peculiarly imperial and international aspect. "Liverpool is the Venice of our times and has its Padua within its own borders."[1]

LEEDS.

The University of Leeds, imbued with the strenuous and democratic spirit of Yorkshire, is perhaps the nearest like a Western State university of any university in England. Under the recent leadership of a cosmopolitan student of education,[2] it has had a vigorous administration, extending its activities, and not fearing to embark upon experiments. As a constituent college in Victoria University from 1887 to 1904 with Owens College, Manchester, and University College, Liverpool, it bears a close resemblance to them. In proportion to the population of the cities, Leeds receives larger local support than its sisters. As Yorkshire College, the name by which it was known as a constituent of Victoria University, it stoutly opposed the dissolution of the Federal university. The event, however, caused a rally of Leeds to its renewed support. The enlivened competition of Manchester, Liverpool, and Sheffield may have further redounded to its good. Like the other universities, it shows traces of its earlier origin. Yorkshire College, founded as Yorkshire College of Science in 1874, rose in the period of the introduction of modern science into education and of Huxley's influence. The older Leeds School of Medicine, begun in 1831, was driven, in view of the empowering of Manchester to grant degrees in medicine, to amalgamate with the Yorkshire College in 1884.

As in the case of the Mason College of Science, Birmingham, the traditions of Oxford, Cambridge, and Scotch universities permeated the college of science, and in 1877 the faculty of arts was implanted in the Yorkshire College of Science. This faculty has flourished amidst a predominance of scientific courses. It has been modernized and includes a department of economics and commerce, of education, and of law. Departments of Greek and Latin have doubled their staffs and practically the number of students since the inauguration of the university, at which time the honors school of classics was instituted. These departments are contributing to classical

[1] The Times Edu. Supplement, Feb. 8, 1914.
Cf. University College and the University of Liverpool, 1882–1907 (Univ. Press of Liverpool, 1907); Muir, Ramsay, "The University of Liverpool. Its present state." Liverpool. 1907.

[2] Vice Chancellor M. E. Sadler, LL. D., Litt. D., C. B.

knowledge, local history, and making an opportunity for research by conducting excavations of Roman sites in Yorkshire. One of the classical lecturers is devoting himself particularly to the study of Roman Yorkshire, and the other to that of Greek inscriptions. The university has endeavored to interest the general public in classical life and literature by the performances of Greek plays in English verse translation. The lure of the locality has added to the zest of investigations in the department of English language and literature. In this region famous for dialect, dialectal research has been pursued by the university and the Yorkshire Dialects Society. Records of the speech are being made by means of a dictaphone.

The faculty of technology looms large in Leeds.[1] Chemistry in its various aspects is the central study in this university. There is a cooperative group of teachers and researchers in organic; inorganic physical, and biological chemistry, in chemistry of agriculture, color chemistry, chemistry of gases and fuel, and chemistry of the leather industries. The doctrine of the synthesis of departments is preached and practiced. The vice chancellor expresses it:

> A great work of science at this time is the breaking down of division between the compartments of it. The growing lines of new thought are [illegible]ng the edges which mark what were once the separation of one branch [illegible]ience from another. The fact that the departments of economics, the departments of education, and the departments of geography in our universities are all growing is an indication of this tendency toward intellectual synthesis—a synthesis which brings into the common stock, and which is able to focus on some common problem, knowledge drawn from many branches of investigation. In spite of this a good deal of our university training is departmentalized.[2]

The doctrine is admirably illustrated in the department of leather industries, with which there is nothing to compare except at Lyon.[3] The department, in addition to teaching and research, freely serves the leather trade and is assisted by the Skinners Co., of the city of London, and by members of the leather trade. The department makes a great point of trying new things and the applications of science in practical work, in shop, and laboratory run together. Physics, chemistry, technical microscopy, bacteriology, and mycology are applied to leather manufacture. Within a dozen years revolutionary changes have been made in tanning. The age-long use of animal manures has been supplanted by artificials and hygienic "bates." Bacteriological cultures and coal tars have given us "synthetic tannins"—a triumph of the synthesis of departments.

---

[1] It includes, in a series of buildings, agriculture, coal gas and fuel industries with metallurgy, engineering, leather industries, mining, tinctorial chemistry, and dyeing and textile industries. There are advisory committees (university and lay members) of council for the several departments.

[2] Sadler, Dr. M. E., vice chancellor of the University of Leeds, "The Official Report of the Church Congress held at Middlesburgh, 1912," p. 254.

[3] École Francaise de Tannerie, founded 1890, as a section of École de Chimie Industrielle, an annexe in 1883 of the Université de Lyon.

A further practice of the doctrine of departmental synthesis is the weekly meeting of the science staff in a colloquium, to compare the points of view of all the departments with reference to a research in progress. The fruit of such cooperation is yielding original contributions to knowledge.[1]

In view of Leeds as a great center of woolen manufacture, the Cloth Workers Co. of the city of London established the two departments of textile industries and of tinctorial chemistry and dyeing, which constituted an important part of the original Yorkshire College. They have continued the erection and equipment of the buildings and given a permanent endowment for the work. In addition to instruction, provision has been made for experimental studies and research.

A recent significant event is a reciprocal agreement between the university and the Bradford Technical College, under which students of the university make use of the practical dyehouse of the college, while Bradford students may attend certain lecture courses in the university. Members of the university and of the college have begun to collaborate in investigations made at the instance of the textile institute. Such cooperation in teaching and research between the close neighbors, Leeds and Bradford, both candidates formerly for the seat of the university, it is hoped will lead to a new era, which will be of advantage both to the university and the college.[2]

The department of agriculture has its roots in every part of Yorkshire, and, in connection with the recent establishment by the Government of the Animal Nutrition Research Institution and other steps, is becoming a great research station.[3] The American example is not without effect in this field.

In 1913 the city of Leeds new training college was opened by the president of the board of education. He alluded to the nationalization of the training colleges and the increasing cooperation of local education committees working with one another and with the provincial universities.[4] This broad hint from the minister of education, reinforced by the liberal Government grants to the university and to the training college, may hasten the day of the coordination of the two institutions. The strong department of education in the university and the university's expansive policy and desire to serve the public, combined with the Yorkshire thrift of the local education authority, may be trusted to work out the problem in a way that will be instructive.

[1] Cf. Bragg, W. H. and W. L., "The Reflection of X-Rays by Crystals," Proc. of the Royal Society, A. Vol. 89, p. 246; "The Structure of Some Crystals, as Indicated by Their Diffraction of X-Rays," ibid., p. 248; 'The Structure of the Diamond," ibid., p. 277; "The Reflection of X-Rays by Crystals," ibid., vol. 88, p. 428.

[2] Cf. Ch. XIII, "Coordination of Institutions."

[3] Cf. Ch. VII, "Agricultural Colleges and Schools," pp. 139–147.

[4] Cf. Ch. XIV, "Applied Science and Professional Education," pp. 211–212.

SHEFFIELD.

The University of Sheffield perhaps comes the nearest of all to being a purely municipal university. This is true of its origin, conflict for recognition, the district it serves, its support, its attendance, and its immediate purposes. As usual, in the order of time, a medical institution was the beginning. But a popular rather than a professional need was really the origin which formulated itself in a so-called "People's College." In 1842 a Congregational minister, dissatisfied with the results of what he thought to be the too utilitarian education of the popular Mechanic's Institutes, opened practically by himself a college chiefly devoted to language and literature. It was the period of Chartism. It is a striking fact that in the year of revolutions (1848) the citizens of Sheffield held a public meeting to approve a scheme for the reorganization of the People's College.[1] It was to be self-supporting and governed by the students. The foundation and success of the Sheffield People's College has more than a local interest. The Working Men's College of Great Ormond Street, London, owed its existence to the pioneer work of the Sheffield institution. Frederic Dennison Maurice stated, "We were plagiarists from the Sheffield people."[2] The People's College was closed in 1879. Having fulfilled its mission, it gave way to the university extension movement. The first series of extension lectures in connection with the University of Cambridge was begun in 1875. The local enthusiasm was so great that the mayor, Mr. Mark Firth, donated a building for this work. Firth College was opened in 1879, the year before Owens College secured the charter for Victoria University. The idea of a university for the northern counties was in the air, and Sheffield was astir in the rivalry with Manchester and Leeds.

There had been an increasing demand for some form of technical education. It began among apprentices at evening classes connected with the South Kensington science and art department organization. These classes were also started in the old Sheffield Mechanics Institution. By 1883 the City and Guilds of London Institute granted an annual sum to found a professorship of mechanical engineering. The outcome was the founding of a technical school to provide instruction in iron and steel metallurgy and in engineering, at first opened as a branch of Firth College. By 1897 a university college charter was obtained under which all interests were united. Sheffield had failed to be admitted to Victoria University.

[1] In this same period a colony of Congregationalists founded a "People's College," now known as Grinnell College, in Iowa, and the new State University of Iowa was housed in a Mechanics' Institute.

[2] Cf., Green, Prof. J. A., "The University of Sheffield." British Association Handbook and Guide to Sheffield, 1910, pp. 135–152, passim.

At the time of the break-up of the Victoria University, the suggestion that the University College of Leeds should become the university of Yorkshire stimulated Sheffield to raise funds for a university of its own. The city council passed a resolution approving of an application for a charter for a university in Sheffield, and pledging a large annual grant. Grants were also promised from the County Councils of Derbyshire and the West Riding of Yorkshire and several town councils. An endowment fund of $500,000 was subscribed, and the charter was granted in 1905. Thus happily ended the struggle for recognition.

The location of Sheffield, only just within the borders of Yorkshire, and the proximity of Leeds, Manchester, Liverpool, and Nottingham, with their institutions, give the university a rather circumscribed but thickly populated district. Its municipal area, however, is the largest in the country, and it is sustained by the enterprise of a homogeneous and growing manufacturing center.[1] Sheffield has the largest percentage of total income from annual grants, from local authorities, of any of the six universities (29.2 per cent). Sheffield has a much larger attendance from the locality than the other universities, due in part to its numerous evening classes as well as to its situation.

The charter of the university gives the usual unlimited scope to the university, but has the following suggestive section:

> To provide for such instruction, whether theoretical, technical, artistic, or otherwise, as may be of service to persons engaged in or about to engage in education, commerce, engineering, metallurgy, mining, or other industries or artistic pursuits of the city of Sheffield and the adjacent counties and districts; and to provide for the prosecution of original research in arts, pure science, applied science, medicine, surgery, law, and especially the applications of science.

The world-wide fame of Sheffield as a center of iron and steel industries, of engineering and "the heavy trades," of armor and ordnance, the United States Government even placing orders there, of cutlery, and of silver plate, may well account for the preeminence given in the university to the departments of engineering, and of metallurgy, of iron, steel, and nonferrous metals.

The dean of the faculty of applied science approved of the title "Applied Science"[2] as contradistinguished from technology, which deals with the application of science to trades. Applied science takes hold of advanced work not that of secondary schools. Applied science relates the trade school to the highest branches of science and passes over to the industries the ripest fruits of science. The engineering departments have extensive buildings by themselves,

[1] In the census of 1911 Sheffield showed the largest percentage of increase of population of any of the university cities, 11.1 per cent.

[2] Cf. Ch. XIV, "Applied Science and Professional Education," p. 205.

built upon the unit plan and recently enlarged. The metallurgical department, so far as iron and steel metallurgy is concerned, has unique laboratories. There is also a complete new suite of rooms and laboratories for the departments of nonferrous metallurgy, mining, and applied chemistry.

The war has brought to the flourishing industries of Sheffield an increased impetus. The recently appointed vice chancellor,[1] an Oxford man of classical and historical attainments, in a speech since the beginning of the war, has held up the ideal that British universities should rise to the opportunity of opening their facilities more widely for research, so as to bring a migration of students from all the world, as has been done in the past by the German universities.[2]

BRISTOL.

The University of Bristol, the youngest of all British universities, only half a dozen years old, has endeavored to cover the good points of its five elder sisters. Like the others, though so new it is a growth of years. The Bristol grammar school, chartered in 1532, and later numerous foundations of divergent type within the city and the western counties furnish a broad preparatory school basis for a university. Within the circle are famous public schools like Clifton, Cheltenham, and Marlborough. A vigorous University College founded in 1886, which incorporated with itself in 1893 a medical school was the taproot of the university. When through Government grants and the generosity of Bristol merchant princes the University was chartered, it was able to ally with itself the Merchant Venturers' Technical College to serve as an engineering faculty. This college is one of the monuments of the generosity of the Society of Merchant Venturers, a body like the great city companies of London, and a reminder of the ancient glories of Bristol as one of the chief ports of commerce. The charter of the university recognizes that it is not to be merely a municipal university, but virtually the institution of the great west country. Provision is made for representation in the supreme governing body of the counties of Cornwall, Devon, Dorset, Gloucester, Somerset, and Wilts. Indeed, the stretch of country from Salisbury to Truro is covered by ex officio members of the court. Representatives within the district of various denominations are also members of the court, which is quite in accordance with the religious spirit of the west country. By the charter the university is empowered to affiliate other institutions

[1] Fisher, H. A. L., LL. D., F. B. A.; now (1917) minister of education.

[2] One difficulty is the British requirement of not less than two years of residence for a degree, whatever the preparation of the candidate may have been.

or to admit the members thereof to any of its privileges. The university has adopted an ordinance for the—

Association of Institutions to supplement the teaching of the university in such branches of professional or technical knowledge as it may deem fit, institutions in which teaching of a specialized character is given, or in which facilities of research in specialized directions are afforded.

Pursuant to this ordinance the Bristol Baptist College, the Western College, Bristol, and the Theological College, Salisbury, have been associated with the university to offer a curriculum, in part, of a theological character for the B. A. degree. Under the same ordinance the Royal Agricultural College, Cirencester, and the National Fruit and Cider Institute have been associated with the university. The latter has just been equipped as a research station for agriculture and horticulture.

The university has provided for a "testamur in social study," requiring a curriculum of two years, and a "testamur in journalism," with a curriculum of three years. There is also a testamur course of two years for engineering apprentices. Over against these short courses the university offers work for honor and advanced degrees. It has some special funds for research and advice. It is leading in a departure in offering degrees for original research for candidates previously declared by the senate to be qualified for such research, the research being accepted in lieu of the pursuance of a curriculum of study. The candidates have to submit a satisfactory dissertation in the subject concerned, and they may be examined in the subjects of the dissertations. The university has the advantage of new buildings and modern laboratories.[1] The chemical laboratory is one of the best examples and has even been held up as a model for German laboratories to follow by visiting German professors. The structure is of steel concrete and stone, so designed that nearly all the internal walls may be altered or removed. It is constructed upon the unit system, so that it may be extended by wings or the addition of another story. The professors' private rooms and laboratories are centrally situated, and supervision is aided by the introduction of glass windows in the wall between the rooms. Private experimental rooms off the laboratories are similarly provided. Evidently one of the points of specialization in Bristol is to be chemistry.

The University of Bristol is passing through the struggles of youth and has the promise of youth. It will be specially near to the younger universities in America. Lord Haldane, at his installation as chancellor of the university, said:

[1] In 1915 it is announced that $200,000 has been added to a previous benefaction of $900,000 for buildings, given by one family.

The awakening has come to the old universities late. They are now doing very fine work, but they ought to have been able to develop it much sooner. * * * If the new English universities can keep their level high, they may be able to develop a certain advantage over the older English universities. * * * It is to the production by the civic university of the quality of alertness in the average as well as in the exceptional student that I look with hope for the future. * * * I can see no limit to what may be the development of the civic university within the next hundred years. I look to its becoming the dominant and shaping power in our system of national education.[1]

[1] Haldane, Viscount, "The Civic University," reprint, 1913, pp. 15, 16.

Chapter V.

INDEPENDENT UNIVERSITY COLLEGES.[1]

Exeter, Nottingham, Reading, Southampton.

The meaning of the term "college" is still so indefinite and without legal definition in England that it is desirable to use an adjective with it. Otherwise it may stand for any kind of a corporation of colleagues in business as well as in education. Private schools for girls or boys much affect the term. It has a standard meaning for preparatory and older "public schools" like Winchester and Eton. The ancient colleges in Oxford and Cambridge have given the world its highest meaning, hence the adoption of the name "university college" by modern institutions having a curriculum preparing for university degrees.[2] The first of these colleges, outside Oxford and Cambridge, but without their tutorial and residential features, was University College, London, incorporated under this name in 1836.[3] It has been the model for most of its successors. "University college" has come to have a more sharply defined meaning and to be a standard college since the Government began to give grants in aid for universities and university colleges.[4]

The objects of these institutions in general are to supply higher literary, scientific, and technical education qualifying for degrees at any university in the United Kingdom. They also give preliminary legal, medical, and engineering courses, and special instruction in commercial, industrial, or art subjects of interest to the locality. They maintain courses for teachers of elementary and of secondary schools. For their degree courses they have what might be called a modern curriculum with a wide range of subjects. For admission they require the passing of the matriculation examination of the University of London or its equivalent. They also furnish some facilities for research and preparation for advanced degrees. They do some extension work chiefly by popular lectures in the vicinage. The college proper, with its full-time day students, has also part-time and evening students in short courses. Not being able to give

[1] See Tables 9 and 10.
[2] Cf. Chs. I, "Oxford, Cambridge, Durham," p. 26; II, "Scotch Universities," p. 54.
[3] Cf. Ch. III, "University of London," pp. 67, 72-76.
[4] Cf. Ch. XII, "State Aid and Visitation," p. 190.

degrees, it gives diplomas of associateship in the college, and certificates for the completion of the shorter courses. The colleges, like the newer universities, are growths from private foundations, aided by local and State appropriations. For example, Hartley College, Southampton, was founded in 1850, but was not able to meet the requirements of the board of education and to become a recognized university college until 1902.

The colleges have a common plan of government. The supreme governing body of considerable size is the court of governors, except in the case of Nottingham, a mixed body of representatives of the many interests from which the colleges sprung. In Nottingham the court of governors consists only of the president, the vice presidents, and the mayor, aldermen, and citizens of the city of Nottingham, acting by the city council. The second and executive governing body, consisting of a small number of persons, is the council. The third body, dealing with purely academic matters, is called an academic board or senate.[1]

The four independent university colleges in England are the Royal Albert Memorial University College, Exeter (at present not meeting the financial requirements of the board of education); the Nottingham University College; the University College, Reading; and the Hartley University College, Southampton. In 1913 an appeal for subscriptions toward the endowment of a proposed university college for Sussex was issued. Not less than $250,000 would be required for an endowment fund. It was hoped that the town council of the Brighton Technical College would join in the scheme and thus would supply modern and well-equipped buildings which would answer for some years to come. It was also hoped that the agricultural college at Uckfield might be included. If this fifth university college were to be established as a university center for southeast England, it would complete geographically a distribution of institutions convenient of access for university study throughout all England. The royal commission on university education in London anticipated the rounding out of the new university and university-college movement in some such way, in the meantime empowering the University of London to recognize public educational institutions within its extended area as schools of the university.[2]

The ideal is involved of university colleges of high enough standards to become constituent colleges in universities of the highest grade. Present experience proves "that it is impossible to conduct an efficient university college, including teaching both for day and evening students in the faculties of arts, science, and engineering.

[1] Cf. Ch. IX, "Organization and Administration of Universities," p. 159.
[2] Final Report of the Commissioners, 1913 (Cd. 6717), pp. 168, 175.

unless an income of $100,000 a year is assured." It is pointed out that the annual cost would much exceed this figure in an ideal university college, organizing the groups of departments devoted to university work separately from those doing work of a lower kind.

The following points, among others emphasized by the board of education in recognizing courses in university institutions, will complete the general idea of a standard university college.[1] The board takes into account the circumstances and characteristics differentiating the work and function of the university institution from other institutions not of university rank. The board puts into the forefront the standing and efficiency of the teaching staff and the extent to which both the staff and advanced students are active in research. The board lays weight upon a high standard of admission. Not only must the matriculation examination have been passed, but the entrant should have been in attendance at a secondary school for at least 4 years subsequent to the age of 12 and be over 17 at the time of his admission. To safeguard the university character of the instruction the—

grants of the board are not available in respect of courses in preparation for a matriculation examination, nor in respect of courses in religious subjects; nor will they ordinarily be available in aid of a university institution which gives day instruction of a lower standard than that of diploma courses. A diploma course is one of not less than two years' duration, fitted for students educated in secondary schools up to the age of 17 at least.

Ordinarily a university institution has a department for the training of teachers for elementary and secondary schools. The board recognizes a four years' course, of which the first three years are devoted mainly to study in preparation for a degree and the fourth to professional training.

Despite the new and numerous separate local training colleges, this encouragement by State grants in aid of departments in connection with university colleges for the training even of elementary teachers is significant. We have confirmation of the wisdom of the recent development of teachers' colleges in American universities and of departments of education with possible State subsidies in American colleges.[2]

The study of the English university college supports the vigorous efforts in the United States during the last decade to standardize the college. The tendency in the United States to develop a college into a university and to multiply universities might well be checked by the conservatism of the English in these matters. Their famous "public schools," which come the nearest to our older type of American colleges, resist any thought of expansion into university col-

[1] "Board of Education; Statement of Grants Available, etc." (Cd. 6794), 1913, passim.
[2] Cf. Chs. IV, "The New or Provincial Universities," p. 124; XIV, "Applied Science and Professional Education," pp. 210–212.

leges, though they may add a "modern side." There is a strong feeling that the 15 universities and university colleges at present existing in England, giving one institution to each three millions of inhabitants, is enough. Severe tests, at least, will be applied to any new claimant to the title of "university."

The University College, Reading, is a case in hand. It has announced that it expects to become a university and will welcome the application of the highest standards for admission to the sisterhood, and willingly prolongs its period of preparation. It is a university in the making. "Indeed, it is claimed that a university is rising in Reading such as England has not seen before."[1] It proposes to be the one modern English university, with a residential and tutorial system at half the expense of Oxford. Outsiders say in pleasantry, "Reading is becoming a cheap Oxford."

It repeats the story of gradual growth and amalgamation of various enterprises. The germ was the art classes inaugurated in 1860 in connection with the science and art department of the nation, one of the fruits of the exposition of 1851. In 1885 Oxford opened university extension lectures in Reading. These were so successful that, with the substantial encouragement of Christ Church, Oxford, by 1893 we have the university extension college, Reading, the schools of science and art being departments of the college. In 1893 a department of agriculture was initiated. In 1895 the British Dairy Farmers' Association agreed to move to Reading the Dairy Institute and to associate it with the college. In 1902 a department of horticulture was organized. In the same year, upon the favorable report of the commissioners of the Treasury, the college was recommended for the receipt of Treasury grants as doing work of university college rank, and therefore the title was changed to "University College." By 1909 a college committee began to investigate the question of the development of the college into a university. A deputation visited centers of agricultural education and research in Canada and the United States and reported in 1911.[2] In that year the college decided to apply at an early date for a charter as an independent university.

The character of the proposed university was delineated in a summary paragraph: "A university moderate in size and exercising the power of selection and rejection in regard to its students; a university self-governing and well organized; a university providing education at a moderate cost; a university distinguished by resi-

[1] University College, Reading. Twenty-First Anniversary, Michaelmas Day, 1918, p. 7.
[2] "Agricultural Education, in America and in England. Report of a Deputation Appointed by the Council of University College, Reading, to Visit Selected Centers of Agricultural Education and Research in Canada and in the United States." (Reading, 1910.)

dential halls, care of the individual student, and exceptional facilities for agricultural instruction and research."[1]

The affirmation that "the only sure basis for a university is endowment" was sustained by the announcement of the gift of an endownment fund of $1,000,000.

Preparatory to becoming a university the teaching staff of the college has changed its organization from a series of departments into three faculties of letters, science, and agriculture. During the four years since 1911 the college has patiently, through committees, studied the preliminary questions relating to the proposed university policies in constitution, curriculum, buildings, and finance, but it has not yet applied for a charter. Such is the patience of the British in the preparations for a university and their recognition of the great difference between a college and a university.

A deeper motive impelling a university college to attempt its transformation into a university is the reservation to the university alone of the power to confer degrees. The university college is limited by the syllabus of studies and examinations set by an external body for an external degree. Even if it is affiliated, three years' work gains exemption from but one year of residence in the university. Every university requires not less than two years of residence for its degree. One is led to understand the feeling in the statement from Reading:

> A college which is preparing to be a university can not fail to respond to the idea of freedom and responsibility. It wishes to be a university just because it wishes to gain freedom for its teaching. A university college is an institution doing university work without university independence * * *. We resemble a body of private tutors doing piecework under the direction of external authority * * *. The spring of educational vigor is freedom; and without freedom the best university work is impossible. Sooner or later a self-respecting body of teachers of university standing will insist upon having it.[2]

Fortunately the independent American college with the power to confer its own degrees has had no occasion to make Reading's plea for freedom. On the other hand, it is without Reading's excuse for expanding into a university. Reading vindicates the great place the independent strong American college has to fill with its modernized curriculum and expanded activities.

The other new universities are "great-town" universities in industrial centers. Reading urges the need of a university of the new type in a comparatively small town, with space for lawns and gardens, hostels, and athletic grounds. The advocates of Reading claim that "a new university is not necessarily urban; and the university is to stand in relation to the population of half a dozen counties as

[1] "University College Reading," supra, pp. 16–18. Cf. Ch. VII, "Agricultural Colleges and Schools."

[2] "The Reading University College Review," Mar., 1913, p. 95.

well as to a town of 80,000 people." It has long been conceded that the ideal site for a college is in the country. In the dispute between the advantages of rural and urban universities, colored by the interests of the disputants, Reading takes the broad view that both types of universities are needed.

Reading, as a semirural university, hopes to become a leader of a new order of universities in Great Britain by having a rounded-out faculty of agriculture, coordinate with the faculties of arts and of science, and with the instruction given in the centralized institution and an adjacent farm. They are giving special attention to the problem of university agricultural education. The deputation from the college which visited Canada and the United States in 1910 to gain hints upon this subject were greatly impressed by the example of Cornell and Wisconsin Universities.[1] It may be said broadly that they find a model in these institutions, and they confirm the policy of concentration in one university of all faculties, including that of agriculture.

[1] "The Times Educational Supplement," Nov. 8, 1914.

Chapter VI.

TECHNICAL COLLEGES AND SCHOOLS.[1]

The use of the term "college" for a technical or agricultural institution parallel in rank with a university college is gaining ground despite the continued loose use of the name. The title "Provincial technical colleges" is prefixed to a list of above 80 of of these institutions in the United Kingdom, though but 17 of them lay claim to the name, and not more that half of the 17 deserve the name.[2] Some well deserving it do not use it. It is interchanged with "school" and "institute," which, as a rule, are of lower grade. The increasing influence of these "provincial technical colleges" and their congeners in London, the Imperial College of Science and the Polytechnics, upon the universities is approximating that of the "great public schools." The too little noticed movement from which they sprang, antedating that in Germany and the German influence in England and America, follows hard upon the beginning of the age of modern invention and science at the close of the eighteenth century, for which the inventions of Watt and Whitney prepared the way.

John Anderson, professor of natural philosophy in the University of Glasgow, bequeathed his property in 1795 to found Anderson's University. The father of the new movement was Dr. George Birkbeck, between 1799 and 1804 the professor of natural philosophy and chemistry in the Andersonian institution, which is now embodied in the Royal Technical College, Glasgow. In 1800 Dr. Birkbeck began popular lectures to mechanics, out of which originated the Mechanics' Institution in 1823. By that year Dr. Birkbeck, with the encouragement of Lord Brougham, one of the movers for forming University College, London, established the London Mechanics' Institute, now known as Birkbeck College. In the meantime, in 1821, in Edinburgh, "the School of Arts was opened for the better education of the mechanics of Edinburgh in such branches of physical science as are of practical application in their several trades." The origin of the school is traced to an accidental conversation between a fellow of the Royal Society and a watchmaker upon the

[1] See Tables 11 and 12. [2] Whitaker's Almanac, 1915.

lack of opportunity for young men taking up the latter's trade to secure teaching in mathematics owing to the conflict of working hours with school hours. With the exception of Dr. Birkbeck's class conducted incidentally in connection with Anderson's University in Glasgow, the Edinburgh School of Arts claims to be the—

first institution in Great Britain to provide evening instruction of a practical kind for artisans, and to be the first institution in Great Britain which was founded for the express purpose of giving education in the principles of science to the industrial classes.[1]

From this school has risen the present Heriot-Watt College.

The Mechanics' Institute movement took a deep hold of Manchester with the founding of an institution there in 1824. It was a fine example of these institutions, which were rapidly established throughout the Kingdom and were especially successful in manufacturing districts, particularly in Lancashire and Yorkshire. These institutes were pioneers in promoting popular lectures and industrial and fine art exhibitions, and in a measure supplied the deficiency in opportunity for elementary and secondary education. By the help of the City and Guilds of London Institute, in 1883, the Manchester institution developed into the Manchester Technical School, extended in 1886 to include a junior technical school. The latter "was the first serious attempt made in this country to provide, for boys between 13 and 15 years of age, a department for manual training on the lines of the American manual training schools."[2]

The distribution of nearly $4,000,000 a year out of the "Whisky money" (act 1890) by the Government for the promotion of technical instruction throughout the country resulted in a new development of mechanics and similar institutions, and in Manchester in the transformation of the technical school into the Municipal School of Technology. The city has sought to make the school one of the best in the world, and has profited by committees of inquiry sent to the Continent and the United States. Finally, by the cooperation of the school with the University of Manchester in forming a faculty of technology such a stage of development was attained that the reports of the board of education in 1912 for the first time included the school of technology among the university institutions of the country. Thus we have the well-known quartette of British university institutions which are primarily concerned with technology—the Royal Technical College, Glasgow; the Heriot-Watt College, Edinburgh; the Manchester Municipal School of Technology; and the Imperial College of Science and Technology, London.[3] The first three repre-

[1] "Heriot-Watt College. Edinburgh, calendar," 1913–14, p. 14.
[2] "Prospectus of University Courses in the Municipal School of Technology, Manchester," 1913–14, p. 6.
[3] Garnett, Prin. J. C. Maxwell, "An inaugural address delivered to the students in the School of Technology, Manchester, 1912," pp. 11, 18.

sent the fullest outcome of the Mechanics' Institute movement. The last, as we have seen,[1] that of the great exposition of 1851, a movement strengthened by German competition and influence. The development of these representative technological colleges and their recent association with universities would seem to make an exception to the dictum that all great educational movements come from above. This upward movement, including the pressure of the numerous technical schools of lower grade demanding recognition of their preparation of students for the universities, has opened or extended technological curricula in every British university. On the other hand, the technical colleges of university standing and the technical schools that might be ranged as secondary schools both carry a great amount of work, and with a majority of their students in the lower grades. The number of pupils and the amount of work below university level fill the eye of the casual observer to the neglect of higher technical education.

The upward development of the Mechanics' Institute movement issues in the technical colleges, and in the prominence of technology in the universities.

One discovers in unabated strength the spread of the original institute idea in a no less valuable way, first in Birkbeck College, and then in the numerous polytechnics and evening classes of which it was a precursor.[2] Primarily the polytechnics were intended to train the industrial classes at small expense, and to produce skilled craftsmen or artisans, and not to prepare students for the universities. The rapid growth of polytechnics and the success of technical evening classes, throughout the country, are no less conspicuous than the development of higher technological education. The foreign observer, impressed by the achievements in technological education in Germany, has been apt to overlook what has been accomplished in Great Britain and the promise in the alliance of technological faculties and schools with universities.[3]

[1] Cf. p. 79, passim.
[2] Cf. Ch. II, "Scotch Universities," p. 58, footnote on Dundee Technical College.
[3] Cf. Ch. XIV, "Applied Science and Professional Education."

Chapter VII.

AGRICULTURAL COLLEGES AND SCHOOLS.[1]

There is some reason for thinking that the tardy evolution of agricultural education in Great Britain has been educationally a gain. The subject has been taken up since agriculture has been recognized as the application of many sciences and not merely the teaching of the craft of farm work. The spread for a generation of the study of the sciences and the victories of science have prepared the way for the immediate admission of agriculture to the rank of a university discipline. It profits by many crude experiments in agricultural education made earlier and in America. It is classified as an extension of technical and professional education.[2] It is fitted in to the general educational system and not organized separately in the elementary or university grade of instruction. There is little or no attempt to infuse it into the elementary schools, and there is no thought of segregating it from the universities. On the contrary, the scheme is to ally it with the universities.[3] Agricultural colleges or schools are set up as technical schools, the colleges in a general way correlative with the older technical colleges, and the lower schools with polytechnic institutes.

It may be said without offense that America has not much to learn in agricultural education from Great Britain.[4] Some hints, however, may be gained, especially in view of recent movements, since agricultural education was transferred from the board of agriculture in Scotland to the board of education, and, curiously enough, the process reversed in England by its transfer from the board of education to the board of agriculture and fisheries.

Historically, Scotland has the priority over England in this field. Though Sir Humphrey Davy lectured in London on the application of chemistry to agriculture, and published the first well-known English work on agricultural chemistry at the beginning of the nineteenth century, a chair of agriculture was established in the University of Edinburgh in 1790, and two years later Sir William Fordyce, M. D., bequeathed to Mareschal College, of Aberdeen, $5,000, to

[1] See Tables 11 and 12.
[2] Cf. Ch. XIV, "Applied Science and Professional Education," p. 205, passim.
[3] Cf. Chs. II, "Scotch Universities"; XIII, "Coordination of Institutions."
[4] Cf. p. 138.

found a lectureship in chemistry, natural history, and agriculture. The first lecturer on this foundation was appointed in 1840. About this date a widespread interest in agricultural science, under the influence of Liebig's writings on chemistry and agriculture, and the rise of the industry in artificial fertilizers, brought a revival in agricultural education in Europe which reached America by the next decade. There the movement persisted, speedily recognized in the sixties by the Federal Government through the Morrill Act. Thereafter it went forward by leaps and bounds. In England, the Royal Agricultural College at Cirencester, and the earliest of the world's agricultural research stations at Rothamsted, privately founded and supported by Mr. Lawes, afterwards Sir John Lawes, are the notable monuments of the period.[1]

The movement languished in Great Britain without national recognition and aid. It had to wait for a series of parliamentary acts looking toward the development of a national system of education.[2] Not until 1885 was the first school for higher agricultural education organized in Britain. This was the Edinburgh School of Agriculture. In 1886 the University of Edinburgh became the first British institution to institute a bachelor-of-science degree in agriculture.

In 1886 the Glasgow and West of Scotland Technical College, now the Royal Technical College, instituted an agricultural department. In 1899 this was amalgamated with the Scottish Dairy Institute, Kilmarnock, and set off, under a separate board of governors with representatives of the technical college, as the West of Scotland Agricultural College.

In 1900–1901 the Edinburgh school, supported by the southeast counties, became the Edinburgh and East of Scotland College of Agriculture. The University of Aberdeen developed about the Fordyce lectureship an agricultural department and instituted a degree in agriculture. The Scotch education department, having taken over the educational work formerly carried on by the Scotch board of agriculture, secured the cooperation of all the counties north of the areas organized under the Edinburgh and Glasgow colleges in support of a college centered in Aberdeen, namely the North of Scotland College of Agriculture, founded in 1904. Scotland therefore has now its own national system of agricultural education. The country is divided into three provinces, each of which has as its center a college of agriculture, at the seat of a university, with which it is associated, and through which degrees are conferred. In addi-

[1] Hendrick, James, first Strathcona-Fordyce professor of agriculture, University of Aberdeen, "Inaugural Address. The Progress of Agricultural Education in Scotland." 1912, passim.

[2] Acts like that of 1889 organizing the board of agriculture, the excise and customs act ("beer or whisky money"), 1890, the appointment of the royal commission on Scottish universities, 1889, the development and road improvement funds act, 1909, etc.

tion to the central class work done in the university or in the college of agriculture, and the training of teachers of agriculture, there are various kinds of extension work through all the counties. This work consists of field experiments carried on by the college with the aid of advisory committees and farmers, school and demonstration gardens used by the college staff of county organizers as demonstration centers for teachers, lectures, demonstrations, systematic courses of extension instruction, and visiting for advice with individual farmers. The Scotch higher agricultural education rejoices in an organization which reaches every part of the country. It is now studying how to develop further a graded, coordinated system crowned by experimental stations or institutes for research. The ideal is not that of a big college of agriculture with an extensive curriculum for a general education. They hold that only a comparatively limited number really need higher agricultural education. Prof. Hendrick says:

> It is the province of the central classes of the agricultural colleges to train those who are to be teachers and experts in agricultural science, those who are to be the leaders and captains in agricultural industry in its many ramifications, and those who are to have the control and management of the land.[1]

For those who do not require these higher courses, shorter and simpler courses are supplied, chiefly in some form of college extension. He holds true to the thought of a college of agriculture as a strictly technical and professional institution, analogous to a medical or engineering college. Like every college, it should train brains and character, but it supplies this training chiefly through those sciences which bear on agriculture. Neither is it a prime aim of the college to teach the practice of agriculture. The practice is best learned by work on a real farm, for which no model or school farm can well be substituted. So strongly are the British colleges opposed to the popular misapprehension that the colleges exist to make farmers by their instruction that most of them insist upon at least a year's work upon a farm as a condition of admission. They are there not to make but to teach farmers what can not be learned in practice. The mission of the college in practice is in its extension work, by demonstration of improved methods on demonstration farms or in experiment stations.

In England and Wales the board of agriculture aided by the development commission funds has laid down a scheme for the coordination of the work of agricultural education largely along the lines of the Scotch plan but upon a vastly larger scale.[2]

---

[1] Hendrick, supra, p. 17.

[2] Bd. of Agric. and Fisheries and Bd. of Education. Sixth Rep. of the Rural Educ. Conf. "Coordination of Agricultural Education, 1912" (Cd. 6273), pp. 3, 4, 8, 11. Cf. Departmental Committee on Agric. Educ. in England and Wales, Rep. (Cd. 4206); Evidence (Cd. 4207), 1908; Rep. Bd. of Agric. and Fisheries on the Distribution of Grants for Agric. Educ. and Research in 1908-9, 1909-10 (Cd. 5388), 1910.

At the beginning of 1912 the first step toward coordination was taken by the board of education in transferring the responsibility for farm institutes as well as for the agricultural work of universities and colleges to the board of agriculture for the purposes of the development fund.[1] The scheme divides England and Wales into 12 educational provinces, 11 of which are already in operation. Each province has an agricultural college or a department of agriculture of a university or university college as its educational center. The province consisting of a group of counties is the unit. In each of the provinces is established an advisory council composed of representatives of the university or college, of the local education authorities, and of the board of agriculture, linking together the different institutions and bodies concerned. The board also intrusts the general supervision of the live-stock improvement schemes to the advisory councils.[2]

In Commissioner Hall's[3] outline of the scheme on the educational side, he places research at the top in the ten or dozen research institutes, generally attached to a university, and each with a subject allotted to it. Their results are to be communicated to the farmers through the colleges. The colleges give the long courses of instruction suitable for future land owners, large farmers, land agents, teachers, and other officials. Farm institutes are being set up for small farmers and their sons. Demonstrations and advice are brought to their doors by itinerant instructors and organizers.

Between the farm institute and the primary school Mr. Hall found a notable deficiency in rural education. He would fill it by the rural continuation school for the boy between the ages of 14 and 18. Below the continuation school, in the elementary school, Mr. Hall felt agricultural education had little place, though nature study was a step in the right direction. "The less the schoolmaster meddled with agriculture the better." This coincides with the Scotch experiment of some years ago, when a large number of rural teachers with a certain amount of training in the elements of agricultural science started many agricultural classes in their schools. The effect was disappointing or worse, leading to hostility toward or contempt for agricultural education, according to Prof. Hendrick.[4] On the other hand he commends the incoming continuation classes conducted by the county staff of the agricultural colleges.

[1] Memorandum of revised arrangements between the board of agriculture and fisheries and the board of education in regard to agricultural education in England and Wales. Cf. Memorandum of arrangements between the boards in 1909 (Cd. 4886).

[2] Bd. of Agric. and Fisheries An. Rep. on the Distribution of Grants for Agric. Educ. and Research (Cd. 7179), p. X.

[3] Hall, A. D., Commissioner of the Development Commission. Paper before the Teachers' Guild of Great Britain and Ireland. The Times, Jan. 7, 1914.

[4] Hendrick, supra, pp. 12, 16.

The scheme of the board of agriculture under research includes two minor proposals, namely, the award of research scholarships of which the main object is to provide trained men for the research institutes, and the provision to assist special pieces of research work outside the scope of the research institutes.[1]

This complete scheme, still in its formative period, for agricultural education in England and Wales, while a native growth adapted to the peculiar needs of the country, reflects the influence of the study of continental and American agricultural systems of education. It is strongly confirmatory of the main features of Federal Government aid and inspection, cooperating with State and local control.

The use made by the board of agriculture and fisheries of organized bodies to give official advice and to aid in coordinating all interests, raises the query, might not something more be done in a similar way by our Federal Department of Agriculture, the Bureau of Education, and our State educational authorities.

The board of agriculture has constituted an agricultural education conference of 44 members, of whom 6 are nominated by the board, and the others are representatives of the provincial councils, of the universities, of university and agricultural colleges, and of national agricultural societies, to discuss and to advise the board upon questions connected with agricultural education.[2]

The scheme includes advisory councils for agricultural education in each of the 12 areas or provinces. These advisory councils, established in 1912–13, consist of representatives of each county council in the area of the central university or college and of the board of agriculture. The functions of an advisory council are to consider the needs of the area as a whole and to advise the local education authorities thereon, in order to coordinate the work of agricultural education in the counties and the work of the collegiate centers and to advise the board on the state of agricultural education in the area.[3] Might

[1] Fourth Report of the Development Commissioners, 1913–14 (441), pp. 7, 8. The research institutes and the subjects assigned to them at present are as follows: (*a*) Plant Physiology.—Imperial College of Science and Technology. (*b*) Plant Pathology.—Royal Botanic Gardens, Kew. (*c*) Plant Breeding.—Cambridge University. (*d*) Fruit Growing.—The University of Bristol (with which has been associated the National Fruit and Cider Institute at Long Ashton), and a subsidiary station in Kent in connection with the Southeastern Agricultural College. (*e*) Plant Nutrition and Soil Problems.—Rothamsted. (*f*) Animal Nutrition.—Cambridge University and Leeds, by cooperative scheme. (*g*) Animal Pathology.—The Royal Veterinary College and the veterinary laboratory of the board of agriculture and fisheries. (*h*) Dairy Investigation.—University College, Reading. (*i*) Agricultural Zoology.—The Universities of Manchester and Birmingham—the former taking economic entomology, and the latter helminthology. (*j*) Economics of Agriculture.—The University of Oxford.

[2] Bd. of Agric. and Fisheries Ann. Rept. of the Educ Branch, 1913–14 (Cd. 7450), p. 189.

[3] Bd. of agriculture and fisheries memorandum as to the constitution of the advisory councils, etc. (Cd. 7118), 1913.

not something analogous to these advisory councils be found serviceable to State and Nation in the United States?

The annual report of the education branch of the board of agriculture and fisheries for the year 1913–14 shows some 500 persons engaged in teaching agriculture or investigating agricultural questions in England and Wales. Grants amounting to $95,000 were paid to 20 colleges and other institutions.[1] The number of students at these institutions in 1912–13 was 1,839, of whom 570 were in short courses. These figures are indeed small, compared with corresponding figures in the United States. One must remember the very recent national organization of higher agricultural education in the island, and the predominance of commerce and manufactures, and be encouraged by the soundness and promise of the plans proposed. There are yet several items which may have profitable lessons for us.

Superintending inspectors of the education branch of the board visit the institutions receiving grants and make full reports upon them. Might not the Department of Agriculture and the Department of the Interior, through the Bureau of Education, well have a more regular inspection of the institutions receiving moneys from the United States Government? The board makes grants for the provision of technical advice for farmers and the investigation of local problems through a special advisory staff at selected colleges. Might not the American colleges well give more attention to this feature?

The board last year tried an educational experiment in the form of a temporary residential farm school. A month's training and lectures were given to 20 selected lads between the ages of 16 and 21, in a hired house with a village hall for a classroom. This makes an inexpensive and movable educational feast with the benefits of residential school life accessible to the farm boy who could not afford to attend the short courses at the college. In addition to research institutes, the board from year to year makes special research grants to individuals in aid of the investigation of specific problems. The English habit of recognizing individuals outside of institutions and associating them with the institutions deserves notice amidst the tendency to intense institutionalism in America.

The specialization of institutions recommended to the board by the rural education conference[2] is a point to be pressed home on the American agricultural colleges. Every institution should give special attention to the particular branch of agriculture, e. g., dairying,

[1] Ann. Rept., supra (Cd. 7450). The institutions were: *Universities and university colleges*—Aberystwith, Bangor, Cambridge, Leeds, Manchester, Newcastle-on-Tyne, Oxford, Reading. *Agricultural colleges*—Cirencester, Holmes Chapel, Kingston, Newport, Swanley, Uckfield, Wye. *Special institutions*—British Dairy Institute, Reading; Harris Institute, Preston; National Fruit and Cider Institute, Long Ashton; Royal Horticultural Society's School, Wisley; Royal Veterinary College, London.

[2] Bd. of Agric. and Fisheries and Bd. of Educ. Fifth Rep. of the Rural Educ. Conf. Courses in Agric. Colleges (Cd. 6151), 1912, pp. 6–8.

horticulture, forestry, chiefly practiced in the district. Moreover, it should be recognized that there should be agricultural colleges of different types ministering to the class of students in their constituency. An English example is the University of Cambridge department of agriculture. Prof. Wood testified there is—

> a great difference between the Cambridge school and a residential agricultural college * * *. Intending farmers and land agents formed only a small proportion, say one-tenth of the total number of students attending the school * * * Broadly speaking, the school is attended by two classes of students: (1) Future landowners who came to Cambridge to finish their education and took advantage of the existence of a school of agriculture to attend the lectures provided there; and (2) men who had taken the natural sciences tripos and then decided to study for Part II of the diploma in agriculture.[1]

Quite a different type of agricultural college is represented by the agricultural department in Leeds. Prof. Seton says all branches of the work are provided for by the university, and the staff not only are concerned in the in-university instruction, but also in the instruction given in the county. At the university there are three courses of study—one for the degree of B. Sc. (Agriculture), one for the national diploma in agriculture, and a general course designed without any reference to the requirements of an examining body. Outside the university, county lectures are given. Training courses in the subjects of experimental plant physiology and horticulture have been conducted for the benefit of teachers introducing the subject of gardening in the elementary and other schools. At the university farm there are experiments and demonstrations for university students and parties of farmers. There are experiments with crops on demonstration plats at selected centers in the county. Members of the staff give technical advice to farmers. There is provision for the testing of seeds and milk. The college is cooperating with the farm institute and improvement of live-stock schemes of the board of agriculture. The university has been recognized by the board as an institution for research in animal nutrition, as well as the University of Cambridge.

Leeds and the University College, Reading (which has converted the department of agriculture into a faculty), represent what might be known as the all-round type of agricultural college, not unlike the common American pattern. The more common type of English agricultural college represented by the Royal Agricultural College, Cirencester, and the college at Wye, might be described as intensive colleges with three-year courses to prepare students for estate management and forestry or for farming on a large scale or in the colonies. They also have short courses. A third type, represented by the Harper Adams Agricultural College, is intended primarily

[1] Supra (Cd. 6151), p. 19.

to educate farmers' sons and to make farmers. They have certificate courses of two years, diploma courses of a more advanced character, and short courses. Only six of the institutions aided by the board prepare for the degree of B. Sc. It is evident that there is room for at least these three types of agricultural colleges, of equal value in their way, and that the university college type should be at the seat of a university.

It is especially noteworthy that none of the agricultural colleges embrace any extended courses in engineering. They only take up farm machinery and surveying. So high and wide to their minds is the scope of agriculture that they feel compelled to concentrate their studies upon the sciences pertaining to it and the applications in their field. They see the wisdom of maintaining a strictly technical school instead of a polytechnic.

The latest item of interest in agricultural education, just before the outbreak of the war, was the holding of the International Congress of Tropical Agriculture in London (June, 1914). Attention was called to the need of educating Europeans to fill responsible positions in the Tropics. The founding of an agricultural college in the Tropics is advocated, to which men with the diploma of an agricultural college at home could proceed. Such a college should also become a most important center of tropical agricultural research. Ceylon and the West Indies were suggested as sites for the college. The opportunity for such a tropical college, at least for the Western Hemisphere, ought not to be lost sight of by American agricultural colleges and experiment stations and the governments, especially in the Southern States and possessions.

One of the first fruits of the war is a realization of the necessity of making more of instruction in forestry.[1] The almost prohibitive prices of wood and timber have brought home the practically complete dependence of the country on foreign supplies, despite the fact that with proper afforestation the nation could almost meet its own demands. The attention hitherto given to the Indian and colonial forest services, particularly in the Cambridge and Oxford schools of forestry, is likely to be extended to home service. The new buildings for forestry recently erected at Cambridge and Edinburgh, aided by appropriation from the development commissioners and a grant for a forest garden, portend further contributions. The diplomas in forestry at Cambridge and Oxford and the institution of the degree of B. Sc. in Forestry in 1906 by Edinburgh, now followed by Aberdeen, give promise for the future.

The courses in forestry at Bangor, Newcastle, and Cirencester, like those in the schools of forestry, recognize the economic as well

[1] Cf. the Times Ed. Sup., "Schools of Forestry," July 6, 1915.

as the technical aspects of the subject. In like manner the war has emphasized the importance of increasing the supplies of home-grown food, which redounds in favor of agricultural education. The board of agriculture is seeking to organize local committees to give advice to farmers. Local farmers are persuaded to give experimental courses in rural schools, e. g., milking, poultry farming, etc. Cooperative societies of farmers are increasing. County education committees assist in all these things, even to providing demonstration plats and training agricultural workers, including women, in the lighter forms of work. School kitchen gardens are being made an adjunct to cookery classes.

Among the points emerging worthy of American consideration are that the management is local; the instruction is in the practice or art of agriculture, given not by schoolmasters but by actual farmers, and tending to create a universal interest at little expense and in time to increase the support of the work of the agricultural colleges.

Chapter VIII.

WOMEN'S COLLEGES.[1]

The story of the higher education of women in Great Britain is relatively that of the "short and simple annals of the poor," but illustrative of one of the greatest Victorian movements. It may throw some light on questions in debate with reference to collegiate education in the United States. There are five types of institutions for the collegiate education of women in the Island. In the order of time they are, first, the independent college, using the word "college" as it is used in England, to cover various grades of education above the elementary, represented by Queen's College, London, the first college founded for women in Great Britain. Second, the university college, represented by Bedford College, London, the first of the present university colleges opened for women. Third, the university annex college, the first of which was Girton, Cambridge. Fourth, the college incorporated in the university, represented by Queen Margaret College, Glasgow, or King's College for Women, London. Fifth, the unrestricted coeducational institution, the first of which was University College, London, and represented also by the Scotch and new universities.

The founding of Queen's College in 1848 marks the first stage in the higher education of women in Britain. The finishing schools, which gave the fashionable education of girls which Charles Lamb called "the female garniture which passeth by the name of accomplishments," could not satisfy the rising thought and activities of the early Victorian period. A woman was on the throne. It was the year of revolutions in Europe. Further reforms than those of the Reform Bill of 1832 were impending in England. The refrain was, "the old order changeth, yielding place to new." It was the time of the rich aftermath of the literary revolution of the beginning of the century in England, and of a new literary era. Tennyson was about to succeed Wordsworth as poet laureate. "The Princess" had just staged the "college woman," since then a perennial character in tragedy and comedy. The full advent of woman in literature was come. Elizabeth Barrett Browning, Mrs. Gaskell, and the Brontës were writ-

[1] See Tables 13 and 14.

ing. The education of girls carried on chiefly in the home, in the three R's and the accomplishments, by governesses, began to call for a better educated governess. In 1848 the Governess's Benevolent Institution made arrangements with "professors of high talent and standing in society to open classes in all branches of female education." They got permission to give this branch of their work the name of Queen's College. The spirit of the age was brought to bear upon them by helpers like Charles Kingsley, one of their teachers, and F. D. Maurice. The latter gave the inaugural address for the college. "At that date even the name of 'college,' as associated with women, seemed to require apology."[1]

> It is proposed to open a college in London for the education of females. The word "college" in this connection has to English ears a novel and ambitious sound. I wish we could have found a simpler one which would have described our object as well. * * * We are not devising a scheme to realize some favorite theory, but are seeking by humble and practical methods to supply an acknowledged deficiency.

In the characteristic English way, though it was an epoch of agitation and theories, the college, like its successors, had a practical and not a theoretical origin.

Cheltenham Ladies' College, founded in 1854, is another college of this type. They represent the transition from instruction by governesses or the old-time "finishing school" to the school seeking to preserve the accomplishments in combination with the elements of a modern scholastic discipline. Incidentally they may prepare students for university matriculation or degree examinations. The word "ladies" in the title is significant of the purpose they would specially fulfill and the class they would serve. Candidates for admission have "to give references in regard to social standing." Cheltenham covers the work of every grade of instruction. It has a kindergarten for boys and girls under 8; a lower school for pupils from 8 to 12; a middle school for pupils from 12 to 15; an upper school for pupils from 15 to 18; university classes for those working for degrees of the University of London or for the Cambridge higher local examinations. There are also post-school classes in home science, music, and art.

The first women's colleges were meant to be grammar and "public schools" for girls, corresponding to those for boys. Their continued success justifies them, though over 300 girls' secondary schools, and notably those of the girls' public day school trust, have risen since they were founded. They may well show that there is also a place in the United States for the best type of girls general and preparatory boarding school outside the public school system.

[1] Davies, Emily, LL. D., "Thoughts on Some Questions relating to Women," 1860–1908, with prefatory note by E. E. Constance Jones, mistress of Girton College, Cambridge, 1910, p. 159.

Bedford College, founded in 1849, only a year later than Queen's, has been mentioned as now a representative of the university college. There is no evidence that at that time it was consciously preparing the way to open universities to women. Its aim was to offer opportunities of higher education. From the beginning its curriculum included Latin, mathematics, and natural science, and from 1875 Greek. Bedford College is a monument to the first foundress of a college for women in England, though for centuries women had been founders and benefactors of institutions for men. The generosity of Elizabeth Jesser Reid enabled the college to open. The aims and atmosphere of the school may be gathered from the name of Erasmus Darwin among the promoters, and of Anna Swanwick, "George Eliot," and Jane Martineau among the first students. George Eliot, then 30 years old, like others of mature age, availed herself of this first opportunity for higher education. It is suggested also they may have desired to set an example to help others to overcome the prejudice of the time against a woman's going to college.

The college, first cradled in a private residence, was housed in a series of residences, until, by gifts amounting to $650,000, and the aid of the lease of a site in Regents Park from the Crown, the event of 1913 in the world of woman's education was the opening of the commodious buildings of the college by Queen Mary. The event in the same world in 1914 was the gift to the endowment fund of $525,000. In 1900 the college was recognized as a school of the University of London. In 1913 it was recommended by the royal commission as worthy of becoming a "constituent college" of the university. It has been recognized as a university college by the board of education, and receives the largest grants from the treasury of any woman's institution, and also a grant from the county council. Its students are working for degrees "with a definite purpose and post in view." The college holds before them the demand for better-trained women not only for teaching, but for the 80 other professions for women scheduled in the "English Woman's Year-Book."

The Royal Holloway College, opened in 1886 by Queen Victoria, the gift of Thomas Holloway, at a total cost of $4,000,000, belongs in the group of independent university colleges. The founder designed "to provide education of a university character for women of the middle and upper-middle classes." It is recognized as a school of the University of London in the faculties of arts and science. It is intended for resident students and has complete accommodation for about 200 of them. In a suburban location, 19 miles from London, and receiving no State aid, it fills a not uncommon American ideal for such a college. The success of the colleges of this type in reincarnating the medieval benefactor, in attaining university stand-

ards, and in retaining the best features of the corporate or ancient collegiate life, as well as the work of their graduates, vindicates their existence among the other types of the separate women's college.[1]

The university annex type of college stands at the end of a long and tortuous path of agitation and effort. The bold idea of opening the university to women was not entertained at first by the originators of the two groups of colleges we have described. The question was first raised in 1856 by a brave woman who applied for admission to the examination of the University of London, then only an examining body. It was decided that it was not legally possible to admit a woman under the charter. In 1862 a proposal to obtain a modification of the charter of the university to make it possible to admit women was rejected by the casting vote of the chancellor. It was followed by the formation of a committee for obtaining the admission of women to university examinations. In 1864 the report of the royal schools inquiry commission referred with approval to the proposal for the establishment of a new college "designed to hold, in relation to girls' schools and home teaching, a position analogous to that occupied by the universities towards the public schools for boys."[2]

The committee first succeeded in securing a private or unofficial examination of girls simultaneously with that for boys by the Cambridge local examinations syndicate in 1863. At the same time the committee corresponded with the secretary of the Oxford local examination delegacy, but were discouraged from making any formal application.[3] By 1866 the local examinations of Cambridge, Edinburgh, and Durham were opened to girls.

Under powers given in the supplemental charter of 1867 to the University of London, women were not rendered admissible to the ordinary examination, but two forms of certificate were offered to female students, the one of general and the other of higher proficiency.[4]

The scheme was not successful. Associations in various parts of the country for improving the education of women were active in seeking the admission of women to the universities as candidates for degrees. The University of London in 1878 received a supplemental charter empowering it to make every degree, honor, and prize of the university accessible to women on equal terms with those to men. It

[1] The London (Royal Free Hospital) School of Medicine for Women belongs in this group. Founded in 1874, it deserves mention as the first medical school for women. It provides for the full training of women for the medical profession and is recognised as a school of the University of London. In 1912–13 the number of students was 168. The only other semiindependent medical school for women is in Edinburgh. Queen Margaret College, Glasgow, continues a segregated college incorporated in the University of Glasgow.

[2] Davies, Emily, supra, p. 90.

[3] Davies, supra, p. 164.

[4] University of London Calendar, 1913–14, p. 22.

was thus the first academical body in the United Kingdom to admit women as candidates for degrees. And so it came about that University College of the University of London was the first institution of university rank to open its doors to women upon the same terms as to men with the exception of the departments of anatomy and engineering.

The siege of the women against the old universities proceeded by slow approaches, eventually gaining the annex colleges at Cambridge and Oxford.[1] The first move, beyond securing the privilege of the Cambridge local examinations, was the opening of a college of instruction in a hired house at Hitchin, 25 miles from Cambridge. In 1873 this college, now known as Girton, was removed to the suburbs of Cambridge, at what was considered a proper distance from the men's colleges.

The second move made upon Cambridge was a memorial in 1868 to the university asking for advanced examinations for women, which were instituted in 1869. Lectures having these examinations in view were started in 1870, and in the next year a residence was opened for the women taking these lectures. Thus arose in 1875 Newnham Hall, now the college. At present Newnham College has four halls, each with its own head, dining hall, and common rooms. These units, susceptible of addition, have a common college hall, library, and grounds of 10½ acres. Girton does not have a series of halls and has one great dining hall and a chapel. Its grounds cover about 33 acres. Otherwise to-day there is no substantial difference in the colleges, though different in their origin. Girton was the outcome of the zeal of a group of earnest women who desired to have a college for women like those for men in the ancient universities. Newnham sprang up within a university circle, at first only desirous to secure the privileges of university lectures and examinations for women resident in Cambridge. Though the atmosphere of the colleges at the beginning was somewhat different, due to their different origins, the difference is slight to-day. Both the institutions are independent bodies and without share in the government of the university. They are places "at which women reside and are taught while passing through the university course." Their students are admitted to university examinations, and with the consent of the professors and lecturers in the university to their classes and laboratories; but they are not eligible for degrees, as this would make them members of the university with the right to participate in its government. At present the colleges are not agitating to secure degrees. The record of their students, who must be "honor students" to secure the certificates, have made the certificates almost equivalent to a

[1] Cf., University of London Calendar, 1913–14, p. 37.

degree. There is also a strong feeling that the university before long will find a way to give the degrees.

Oxford moved more slowly in recognizing the demands for the higher education of women, though now officially she has gone somewhat further than Cambridge, in that in 1910 she constituted a delegacy for women students. Through this delegacy the university confers the privileges of "recognized societies" upon women's colleges, and confers upon students on the books of recognized societies a privileged status as "registered women students." No student residing in Oxford may enter her name for any university examination in arts or music unless it is on the register.

The university has recognized four residential colleges—Lady Margaret Hall, founded in 1878; Somerville College, founded in 1879; St. Hugh's College, founded in 1886; St. Hilda's Hall, founded in 1893; in 1901 associated with St. Hilda's College, Cheltenham, under the title of St. Hilda's Incorporated College. These are residential colleges, independent of the university. Each has its own governing body. Like the colleges of the university, they fix their own conditions of admission and make their rules for internal discipline, which are in close general agreement. With the exception of Somerville, which is undenominational, "they are conducted on the principles of the Church of England." Each of the colleges has a number of scholarships, and Somerville a research fellowship. The colleges endeavor to maintain high standards and emphasize reading for honors.

The university also recognizes the Society of Oxford Home-Students, founded in 1879, under the auspices of the Association for Promoting the Education of Women in Oxford. It is comparable with the body of noncollegiate students for those not members of the colleges. It is under the care of a principal and committee for home students appointed by the delegacy for women students. It has no buildings of its own except a rented common room. It has approved St. Frideswide as a hostel for Roman Catholic home students.

To summarize, the women's annex colleges are peculiar to Oxford and Cambridge. They conform to the model of the men's residential tutorial self-governing colleges. They do not, however, belong to the university or share in its government. Their students are not at present admitted to membership of the university or to its degrees. They may enter for examinations qualifying for certain degrees and diplomas. If successful, they receive certificates in lieu of degrees. Though each college has its own staff of instruction, upon which are also lecturers from the university staff, and its own lecture rooms and library, the students also attend university and intercollegiate lectures with the men. They use the university libraries and laboratories. In these particulars there is absolute coeducation. The sepa-

rate college buildings and grounds and undergraduate societies effect segregation for social and athletic purposes.

The "recognized societies" are in general agreement with reference to social regulations for "registered women students." Some of these are in effect as follows:[1] The women students are not expected to enter into conversation with undergraduates attending the same lectures. They are not to go into colleges or lodging houses except with a chaperone approved by their principal. They may attend public entertainments and athletic events under conditions approved by their principal. They are not permitted to take long country walks or bicycle rides or to boat alone. They may receive calls from gentlemen who are known to their parents, but they must not walk, boat, bicycle, or go to cafés with gentlemen without an approved chaperone. They must consult the principal before accepting invitations for the evening or for luncheon, picnic, or for boating parties. Invitations to dances may not be accepted. These regulations are not resented, being in harmony with the long-established Oxford and Cambridge theory that the college stands in loco parentis. The prejudice on the part of the men students against the presence of women in the university has passed. Each sex goes its own way, taking very little notice of the other.

Of women's colleges incorporated in a university, Queen Margaret College, Glasgow, founded in 1883, is a capital example. In 1886 certain professors in the university, each making his own arrangements, began to give lectures to women, some of which were held in the university and some outside. In 1877 an association for the higher education of women was formed in Glasgow, and courses of lectures were organized by it, and were given in the university by permission of the senate. This association was incorporated in 1883 under the name of Queen Margaret College, the senate of the university appointing two members of the council of the college. The college, with its buildings, grounds, and endowments, was transferred to the university in 1892 on condition that these should be devoted to the establishment and maintenance of university classes for women exclusively. By this arrangement the teachers in Queen Margaret College were appointed by the university court and the students admitted as matriculated students of the university. Queen Margaret College is now the women's department of the University of Glasgow, the college as a corporation having been dissolved. The tradition of the college is kept by the "Students Union Association," composed of former students, to which the University is indebted for Queen Margaret Hall, Queen Margaret college settlement, and Queen Margaret college students' union. All women students are

[1] Cf. regulations for men in Ch. XVIII, "Student Life," pp. 240–241.

now required to matriculate at the college and to advise with the "mistress" of the college. A part of the instruction in arts and in the Queen Margaret medical college is given in the college hall and a part in the university.

The second instance of a college for women incorporated in the university, "King's College for Women," London, reversing the order of development in Queen Margaret College, began as a women's department of King's College in 1881, and was incorporated as a college in the University of London in 1910. In 1913 the university senate constituted a delegacy, separate from the King's College delegacy, for the government of King's College for Women. A new era has just been inaugurated for the college by the interest shown in the department of home science and economics and by gifts received for the endowment of a hostel to be called Queen Mary's Hostel, and the building and equipment of laboratories. The college confers a diploma in home science and economics for a one-year postgraduate course and a certificate for a three-year course. The college has a department of theology, a faculty of arts, and a faculty of science and home science. The principal officer and head of the executive work of the college is the warden. This does not apply to the department of theology, whose head is dean of the faculty in King's College for Men, though the warden has the superintendence of her students. The college has its own staff, of whom nearly half are members of the staff of King's College for Men. By a step just taken, the second and third year students in science attend lectures and laboratory courses at King's College for Men. This looks in the direction of coeducation in the form in which it appears in University College, London, and in the Scotch and new universities. It might be a step toward the fulfillment of the recommendation of the royal commission. The commission, in the interest of economy, wished to amalgamate the two King's Colleges and to exalt into a department of the whole university, under the name of household and social science, the college's department of home science and economics.[1]

The year 1880 marks the time of the turn of the tide in the higher education of women and its sweep henceforth toward unrestricted coeducation in universities. In that year the Victoria University, Manchester, was founded, the first university in Great Britain and Ireland in its foundation charter explicitly providing that—

> all the degrees and courses of study of the university shall be open to women, * * * and women shall be eligible for any office in the university and for membership of any of its constituent bodies.

In 1892 the commissioners appointed under the universities (Scotland) act of 1889 empowered each of the Scotch universities to admit

[1] Cf. p. 156.

women to graduation upon the same conditions as those for men. Men and women might be taught together in the same class or in separate classes. The four universities, having long been under the influence of associations for the higher education of women, and having met them as far as the law would allow, availed themselves of their new powers without delay.[1]

After a struggle of three-score years, coeducation is firmly established in the field of higher education. This is the more remarkable since coeducation is little practiced and little tolerated in secondary education. Among the five types of coeducational institutions there is a distinct tendency for the last type evolved to prevail. The independent and isolated colleges are not multiplying, and, as with every other kind of school, all existing colleges tend to seek an affiliation or alliance with a university.

The success of coeducation has banished fears and silenced objections to the admission of women to university privileges. There is a steadily increasing number of young women attending the universities, due in part to the influence of the board of education in recognizing degrees and facilitating the arrangement of practically joint courses of study between the teachers' training colleges and the universities. The old-fashioned governess is passing, and the woman with college training and athletics is taking her place. Girls do not go to college because it is fashionable, but because they desire that kind of education. The increased activities of women in public affairs and in philanthropy are drafting a larger number of those who wish to qualify for such work to the colleges. A late movement in women's education is indicated by the avowed purpose to develop the department of home science and economics in King's College for Women, London, into a university department of household and social science [2] in order to train ladies who have no thought of bread-winning for the administration of the modern home on scientific principles, and for their mission as wives and mothers and their participation in the life of the community. The effeminization of the universities is not apprehended. There is a predominance of men, and masculine traditions are firmly established in student societies and sports. The women also are occupied with their separate societies, and in accordance with the habits of the English woman's out-of-door life have their own sports.

The presence of women has not affected the curriculum. The preestablished widened range of studies and freedom in choice of them

[1] In 1874 Edinburgh instituted a certificate for women; 1876, St. Andrews the title of L. L. A., cf. p. 56. Glasgow opened mixed classes in the university, while continuing separate classes in Queen Margaret College. The six new English universities, the Welsh, Irish, and in general the universities throughout the Empire, have adopted the policy of unrestricted coeducation.

[2] Cf. p. 155.

prevented this incidence of the advent of women. The segregation of the social and athletic life of the women in the university-annex colleges has resulted in genuine coeducation in all matters scholastic. One might say there is literally coeducation as distinguished from asexual education. The college incorporated in the university and the unrestricted coeducational institution are as rapidly as possible securing the benefits pertaining to the annex college, while retaining the advantages of equality, freedom, and inexpensiveness which they have. They are agreed in the necessity of having a woman and scholar as the head of the women's student body.[1] They are insisting upon approved lodgings and have accepted the principle of having residential halls or hostels, which they are erecting as rapidly as they can secure the funds.

The future of the higher education of women is assured. Women's colleges and university departments recently have received relative to their age and size the largest donations given to university education.[2] The new stage in the higher education of women will be safeguarded and promoted by the number of university women graduates and their organizations The association of university women teachers, in 1913, numbering 2,717 members, is not only placing teachers in the Islands but also abroad, including the United States. Perforce it is influencing the standardizing of women's institutions throughout the English-speaking world by making a list of those whose graduates it will admit to membership. The federation of university women is raising funds for fellowships to be held by women graduates who have proved their capacity for research. University women now have greatly increased opportunity for research work and Government appointments. The annual reports of the central bureau for the employment of women carry the names of women having bachelor's degrees with honors in a variety of employments.

Women are not excluded from theological degrees. In 1915 the Archbishop of Canterbury, in addition to conferring diplomas on students who have been successful in his examination in theology, conferred upon two women licenses to teach theology.

The most significant event, to those who believe in the participation in government by women, was the admission, at the end of 1913, of "female graduates of Durham University to membership of convocation on the same terms and conditions as men." Inasmuch as

[1] The title "dean of women" is not used, but warden, mistress, senior tutor, or principal.

[2] Cf. Bedford College, London, $1,175,000; King's College for Women, London, Home Science and Economics, $700,000; the erection of women's buildings or hostels at almost every Scotch and new university; Somerville fund for new buildings; the payment of the debt of Girton, $120,000; halls of residence, Reading.

Durham has been grouped with Oxford and Cambridge, and the refusal of the last two universities to admit women to their B. A. degree has rested primarily upon that degree opening the way for women to sit in convocation and the government of the university, this triumph of woman at Durham may portend much.[1]

[1] The approximate number of women students attending universities and university colleges in 1912–13 was as follows: Oxford, Cambridge, and Durham, 982; London (matriculated students), 1,442; the six new English universities, 1,741; English university colleges, 566; total English, 4,681; total Scotch, 1,882; total English and Scotch, 6,563.

PART II.- TOPICAL STUDIES AND SUGGESTIONS.

Chapter IX.

ORGANIZATION AND ADMINISTRATION OF UNIVERSITIES.

There are four distinct species of university organization in England and Scotland. They are those of Oxford and Cambridge, of the Scotch universities, of London, and of the new universities. These species are clearly descended from a common mediæval genus. In individual institutions of the same species there are varieties, and variations in terminology for practically the same thing. There are four parts in common in the organization of all the four species. The headship consists of a chancellor, a vice chancellor or principal, and other administrative officers.[1] Second is a small executive body with which the headship is associated, known at Oxford as the hebdomadal council, at Cambridge the council of the senate, in Scotland as the university court, in London as the senate containing three councils, in the new universities as the council. Third, comes the academic body called in Oxford the congregation, in Cambridge the electoral roll; in Scotland the senatus academicus, in London the academic council as a part of the senate, in the new universities the senate. The fourth body is an organization of the graduates, at Oxford the convocation, at Cambridge the senate, at London and the new universities the convocation, in Scotland the general council. In the Scotch universities a fifth and a sixth part were related to the first four under the universities (Scotland) act of 1889. In view of parliamentary appropriations the Scottish universities committee of the Privy Council was constituted, to whom reports are made. The students' representative council was also recognized, which, through the rector and by advice concerning his assessor, virtually has two representatives on the court.[2]

In the new universities, in view of their aid from the State, municipalities, public bodies, and donors, a numerically large body known as the court of governors, and nominally the supreme governing body, became the fifth part of the organization.

[1] Cf Ch. X, "University Officers," pp. 170, passim; 175 passim; 180.
[2] Cf. Chs. X, "University Officers," pp. 174–175; XVIII, "Student Life," pp. 246–247.

Oxford, Cambridge, and the Scotch universities have largely kept unobscured, despite the occasional intervention of the State, the original model of a university, namely, a self-governing guild of masters and scholars possessing many rights and privileges from church and state, a corporation making its own plans, without let or hindrance, in the pursuit of learning and the management of its finances. Oxford and Cambridge have become practically an estate of the realm, with complete autonomy, excepting that statutes have to receive the approval of the King in council. So strong are the traditions of the necessity of autonomy in universities, in the interests of political and intellectual freedom, that the plan of government of the new universities is designed to forefend against direct municipal control.[1]

It may be sufficient for our studies to notice the latest changes and tendencies in council, congregation, and convocation, using the Oxford nomenclature for the essentially same parts of organization in the different universities.

The council at Oxford, the supreme governing organ of the university, succeeded in 1854 the old hebdomadal board, composed entirely of heads of houses and the proctors, which had existed from 1631.[2] The council consists of the chancellor, vice chancellor, the ex-vice chancellor, 2 proctors, and 18 members elected by congregation for six years in three orders of six each. The orders are composed of heads of houses or halls, professors, and members of convocation of five years standing. From these 18, half retire (but are reeligible) at the end of three years.

The constitution of the council at Cambridge is on the same plan with the three orders. The functions of the councils have been to manage both the educational and business sides of the universities. The initiative of legislative proposals has been limited to them. Organized agitation for reform of the council took shape in 1909 and 1910 in both the universities. As the reform in the sixties of the hebdomadal board at Oxford and of the "caput" at Cambridge was intended to liberate from the autocracy of the heads of houses and to strengthen the professoriate, the feeling of the present agitators has been that the existing government is still too oligarchical and not sufficiently representative of the wide range of studies or an efficient organization financially.

The efforts of the reformers centered upon the abolition of the three existing orders, throwing open the entire 18 places to election by congregation or senate.[3] The main reasons adduced were that

[1] Cf. Ch. XII, "State Aid and Visitation."

[2] Curzon, "Principles and Methods of University Reform," supra, p. 22, passim.

[3] Curzon, "Principles and Methods, etc.," supra, pp. 22–27; Curzon, "Report of the Hebdomadal Council," p. ix, 8; "Oxford University Gazette," May 7, 1913, pp. 735–736; Tillyard, supra, pp. 343–344.

persons fitted for the work and available for any section of the university rather than classes should be chosen. It was believed that a fair proportion of heads of houses and of professors with qualifications for the work of the council would be elected.

The Oxford reformers have succeeded in extending the power to initiate legislation outside the council.[1] In the direction of efficiency the reformers have succeeded in securing a reconstitution of the faculties and boards of faculties and in the establishment of a general board of the faculties, relieving the hebdomadal council of the greater part of the business connected with curricula and examinations and unifying the policy and administration of the several boards of faculties and the university and college teaching.[2]

A far-reaching reform was the establishment of a finance board which presented in November, 1913, to the council its first "Consolidated Statement of the Receipts and Expenditures of the University and Its Departments" and a "Summary of Receipts and Payments of Colleges" for 1912.[3] This was the first fruits of a coordinated financial policy in the university and the colleges and of the aim to secure something like a uniformity of accounting. The board is intended to unite the financial with the executive and administrative functions of government and to prepare an annual budget for the council.

Corresponding to the Oxford and Cambridge councils is the university court in the Scotch universities. The court, ordinarily numbering 14, consists of the rector and his assessor, the principal of the university, the provost of the city and an assessor nominated by him conjointly with the magistrates and town council, an assessor nominated by the chancellor, four assessors elected by the general council, and four assessors elected by the senatus academicus, and a possible four representatives of affiliated colleges, should there be such.[4] This court of 14 or 15 members, first established by the universities act of 1858, has power to review all the decisions of the senate, to appoint and dismiss the teaching staff, and to alter or revoke rules and ordinances, with the written consent of the chancellor and with the approval of the King in council. It is most suggestive that after 30 years of experience under the reform act of 1858 the financial administration, which had been left with the senate under the tradition of centuries, was transferred from it by the act of 1889 to the court.[5] The court was made a body corporate, with

[1] "Oxford University Gazette," May 7, 1913, p. 734.

[2] "Oxford University Gazette," June 4, 1913, p. 919; Mar. 5, 1913, "Of the Boards of Studies," p. 550. *"Statuta Universitatis Oxoniensis" Oxonii E. Typographeo Clarendoniano*, 1913. pp. 128–146.

[3] "Oxford University Gazette," Feb. 4, 1914, pp. 424–429.

[4] Universities (Scotland) act, 1889 (52 and 53 Vict., ch. 55).

[5] Cf. p. 164.

perpetual succession and all university property vested in it. It was empowered to administer the whole revenue of the university.

In the University of London the senate is most nearly correspondent to the council of Oxford and Cambridge and the court in the Scotch universities. The statutes declare that "the senate shall be the supreme governing and executive body and shall have the entire management of and superintendence over the affairs, concerns, and property of the university."[1] One of the most striking recommendations of the royal commission on university education in London is to reduce the present cumbersome senate of 56 members to 15 and to relieve it of certain legislative functions by instituting a "court" in order to increase the efficiency of the senate as the executive body of the university. It is to have "the management and administration of the whole revenue and property of the university and (except as otherwise provided) the conduct of all the affairs of the university."[2]

The councils in the six new English universities are the executive bodies, varying in number from 24 to 38. In general they consist of the chancellor, prochancellors, vice chancellor, and the treasurer, and of persons appointed by the court, by the senate, by the municipality, county councils, and other interested local public bodies. They have full financial powers, powers of appointment usually after report from the senate, powers of initiative in legislation by the court, and to review the instruction and teaching of the university.

It will be helpful to add the practice in respect to the council in the newer universities in the Empire. In Australia the organization of these universities seems to have been based on the old University of London:

> The governing body—called sometimes a senate and in other places a council—consisted of a number of members (usually 20 to 23) elected by a body variously called convocation, senate, or council, and consisting in the main of former graduates of three years' standing.[3]

In view of the support from the State and of the need of closer relationship with it, in several of the universities the governor in council appoints a certain proportion of the members of the governing body:

> In Canadian universities there is generally a sharp division of administrative control and educational direction. The former, which includes the responsibility for finance and for staff appointments, is usually intrusted to a board of

[1] Cf. Ch. III, "University of London," p. 70.

[2] Final Report, supra, p. 191. The proposed senate would consist of 15 members, the chancellor, the vice chancellor, the chairman of convocation, and 12 other persons, 5 appointed by the Crown, 2 by the "court," 2 members of the academic council by that council, 2 by the London County council, 1 by the corporation of the city of London.

[3] Bd. of Educ., Spec. Repts. on Educ. Subjects, vol. 25, "Universities in the Over-Seas Dominions," p. 3.

governors (or of trustees in the case of denominational universities), who in the academic sense are laymen.[1]

The latest published study of the organization of universities and colleges is the report of the university commission in the Union of South Africa. The report says: "The university will consist of a chancellor, a vice chancellor, a council, a senate, and a convocation."[2] The plan contemplates a Federal university, with a representative of both the government and council of the university and the council of each college. Of each college council the principal of the college is to be an ex officio member, and there are to be representative members of any municipality or public body making a contribution of not less than $5,000 a year and of university graduates. The university council is to be a body of 24 members, of which the principals of the three constituent colleges and a representative nominated by the council of each college will constitute 6 members. The superintendent general of education and His Majesty's astronomer will be ex officio members, 6 members will be elected by convocation, and 9 nominated by the Crown. The presiding officer is to be the chancellor or vice chancellor. The powers of the council give full financial control, subject to the consent of the Government, in matters involving increased expenditures from public funds. The council will admit institutions, recognize teachers, be a court of appeal from the academic senate, from which it will receive an annual report, and will itself make an annual report to the minister of education.

The general conclusions to be drawn from the studies of the councils are confirmatory of vesting the Government and complete financial management in a board, after the American fashion known as the "president and corporation of trustees" or regents or curators.[3] These should be small deliberative bodies. The British practice would make the head of the university an ex officio member, and some other administrative officers like deans or treasurers. Uniformly their practice would have representative members from the academic senate and from the body of graduates, and sometimes a representative of the undergraduates. Representation is also provided for public bodies who are contributors to the support of the institution or who are educationally interested. In the case of State or municipal-aided institutions, both have representation. Care is taken that there shall be proportionate representation, and that there shall not be a preponderance from the faculties or the State or municipality. There is an increasing number of laymen in education of various professions and business interests. They are

[1] Bd. of Educ., Spec. Repts. on Educ. Subjects, vol. 25, "Universities in the Over-Seas Dominions," p. 5.

[2] Union of South Africa. Rept. of the Univ. Commission, Cape Town, Government Printers, 1914, p. 121, passim.

[3] Cf. Ch. X, "University Officers," pp. 176 and 180.

selected on account of their ability and public spirit, and in no case receive any financial compensation.

In the present order of treatment of university organization the third body is the academic and legislative body still known at Oxford as the congregation. In Paris, the pattern influencing Oxford and Cambridge, the congregation, was the "regents," i. e., the masters of arts actually engaged in teaching, as distinguished from the non-regent masters represented in convocation. Between the hebdomadal board at Oxford and the caput at Cambridge, on the one hand, and the largely nonresident convocation or senate, on the other, by the middle of the nineteenth century congregation, or the correspondent electoral roll of Cambridge, had largely lost its powers. The reform acts, intending to restore power to the actual teachers, instituted a congregation or electoral roll consisting of all masters of arts domiciled within what were the approximate residential boundaries of the two university cities. One design of this action was to include in congregation the large number of private tutors or coaches at that time engaged in university teaching. The unlooked-for result was the substitution of a residential or geographical for a teaching qualification. The number of M. A.'s settling in the university cities upon their retirement from their various occupations, all having votes in the congregation, defeated an intended purpose of the acts to make the legislative assembly of the university one of teachers and administrators.

In 1913 at Oxford the important reform was effected by which residence is no longer a qualification for membership in congregation, and in the future it will consist of the teaching and administrative element in the university and colleges.[1] It will not subserve our purposes to treat of the organizations subordinate to congregation, namely, the faculties, the boards of faculties, and the boards of studies and the general boards of the faculties, as reformed by statutes in 1912 and 1913.[2] These statutes are steps in the unification of the university and the colleges and of the recognition of all actually engaged in teaching. They make congregation more nearly parallel to the "senatus academicus" of the Scotch universities, but bring into prominence the narrower purely professorial basis of the latter.

In Scotland the senatus academicus consists of the principal and the whole professoriate, excluding assistant professors and all other teachers. Since the act of 1889 transferred the financial administration to the court from the senatus, the latter is intrusted only with the regulation and superintendence of the teaching and discipline of

[1] Oxford University Gazette, Mar. 5, 1913, pp. 551, 552

[2] *Statuta*, supra, 1913, Titulus V, pp. 128–138; "Of the Constitution of the General Board of Faculties," pp. 142, 145; "Of boards of Study," p. 146.

the university subject to the review of the university court.[1] The faculties established by ordinance consist also of full professors only.

The senate institutes boards of studies corresponding as nearly as may be to the departments of study for graduation in arts. Each board of studies consists of the principal, the dean of the faculty of arts, and such other members of the senate and lecturers as the senate may select. Herein is the only opportunity for teachers other than full professors to share officially in university administration. The practice is in great contrast to that of Oxford, Cambridge, London, and the new universities. There is an agitation in Scotland to gain a representation of the entire teaching staff in the administration of the university. In London the academic council is a standing committee of the senate with advisory functions.[2] The council consists of the chancellor, the vice chancellor, the chairman of convocation, the 16 persons appointed to the senate by the members of the respective faculties, and a member or members of the senate elected by the senate to make up the number to 20. It is obligatory upon the senate to invite and receive reports of the academic council before coming to any determination upon certain educational matters, like the admission of institutions, schools of the university, appointments to the teaching staff, salaries, the regulation of the courses of study for internal students, any matter relating to internal students, and the assignment of funds for buildings and equipment. The members of the respective faculties of the university are appointed by the senate and embrace others than full professors. A faculty reports upon any matter referred to it by the senate and upon courses of study, provision for teaching, and the granting of degrees.

From members of the faculties, the senate appoints annually boards of study, with the aim of securing representatives of every subject of university study, and of giving all teachers an opportunity of expressing their views to the senate. The senate may appoint also other persons than members of the faculties on the board of studies. The academic council and the council for external students, respectively, before advising the senate with reference to courses of study, provisions for teaching, examinations, and the granting of degrees, are bound to receive reports from the board of study concerned.

In the new universities, the senate consists as a rule of the vice chancellor and the full professors. In some cases there is provision for a limited number of other members, for example, in Sheffield, the registrar and the librarian. In general the senate, subject to the approval of the council, has educational control.

[1] Cf. p. 161.

[2] Cf. Ch. III, "University of London," p. 70.

Each faculty consists of the vice chancellor, the dean of the faculty, the professors assigned thereto, such lecturers, assistant lecturers, and other teachers of the university as may be appointed to the faculty, and such other persons as may be appointed by the council, on the recommendation of the senate, provided their number shall at no time exceed one-third or one-fourth of the total number of the members of the faculty. Each faculty, subject to review by the senate, is responsible for courses of study and regulations as to degrees, diplomas, etc. At Manchester, in addition to the boards of faculties, there is a general board of faculties, consisting of all the members of the several boards, and having power to report to the senate on matters concerning teaching and courses of study which affect the university as a whole. The noticeable points in the new universities are that the central body is the senate, in which in effect the faculties are boards or standing committees, and in the faculties, if not in the senate, the entire teaching staff is represented.

The fourth body, the organization of the graduates, known at Oxford as the convocation, and at Cambridge as the senate, is theoretically the supreme legislative power in these two institutions. In fact it has an absolute veto power, though it is rarely used. This consists of the right to confirm or reject, without the power to amend, the statutes passed by congregation. It elects the chancellor; it elects the university representatives in Parliament; it confers honorary degrees. Convocation consists, in addition to the doctors of the university, of all masters of arts resident or nonresident, who by the payment of fees keep their names on the books, both of the university and of any college or hall. Only graduates taking the B. A. degree are eligible to obtain the M. A. The latter is gained simply by the payment of a fee of $60 to the university, in addition to such fee as the man's college may require. An annual fee keeps the name on the books. At Oxford "Out of the total number of B. As. it is calculated that only one-third proceed to the M. A. degree and become members of convocation. In other words the franchise is not primarily educational, but pecuniary."[1]

From the days of Prof. Jowett various proposals have been made to restrict the powers of convocation. He would have shorn convocation of any power of interference in the "internal government" of the university or in "educational matters." One may summarize Lord Curzon's rehearsal of the proposals and the arguments for and against them.[2] It is held that convocation should be retained as a final court of appeal lest the university should fall into the hands of an oligarchy of resident teachers, detached from the out-

[1] Curzon, supra, p. 34. [2] Idem, pp. 35–41.

side world, and the connection of Oxford with its old members and through them with the nation lost. A proposal was made and rejected in congregation in 1909 to shift the ground for an M. A. and consequent membership of convocation from a pecuniary to an intellectual basis by making the conditions for an M. A. the taking of honors or a prize or a diploma. Some would have confined the degree of M. A. to those who have had experience in teaching or in research. Against the proposal were the anticipated loss to the revenues of the university in the smaller numbers in convocation, the temptation to lower the standards of the honor schools, and the depreciation of the B. A. In any case the convocation franchise would be limited to a narrow, if not a pedantic, restriction.

Quite an opposite proposal was to admit to convocation all who had taken an Oxford degree and to reduce the fees to a nominal amount. In addition to the pecuniary risk of this procedure were the objections to the impossibility of the meeting of the thousands of members, to voting by proxy, and the heterogeneous and, except intermittently, apathetic constituencies.

Following the analogy applied to the House of Lords was the proposal of some form of the suspensory veto. "It might, for instance, be enacted that if a statute were passed by congregation, by a certain majority in two successive years, it should become law unless it were thrown out by convocation."

Lord Curzon closes with a statement that dealing with convocation is "a problem that can not be indefinitely postponed." This does not seem too strong a statement to one who has made personal inquiries at the two universities and among prominent graduates. It is a general belief that nothing less than an act of Parliament can effect a reform of convocation, and that it will come sooner or later.

In Scotland since 1858 the general council is the body correspondent to convocation or senate in England.[1] It consists of the chancellor, the members of the university court, past and present, the professors, and all persons after registration on whom the university has, after examination, conferred any degree whatsoever. It is enacted that no person shall be allowed to graduate at any of the universities of Scotland until he shall have paid a registration fee. This fee, which is a payment for life, is only $5. It is the function of the council—

to take into their consideration all questions affecting the well-being and prosperity of the university and to make representations from time to time

[1] Cf. Scottish universities act, 1858 (21 and 22 Vict., ch. 83); Representation of the People (Scotland) Act, 1868 (31, 32 Vict., ch. 48); Universities Election Amendment (Scotland) Act, 1881 (44, 45 Vict., ch. 40).

on such questions to the university court, who shall consider the same, and return to the council their deliverance thereon.

The general councils of St. Andrews and Edinburgh jointly return a representative to Parliament and likewise the councils of Glasgow and Aberdeen. The chancellor and four of the assessors of the university court are elected by the council. The council is more than a nominal body. It has statutory half-yearly meetings, and the annual reports of the university court to the secretary for Scotland are laid before it. To it also are communicated all new ordinances, or changes of existing ordinances, which may be proposed by the university court.

By 1858 the graduates of the University of London were numerous enough to secure their admission in the new charter as part of the corporate body of the university, with the right to assemble in convocation. At present the convocation consists of the chancellor, the vice chancellor, all graduates of three years' standing from the date of their first degree, or who shall have attained a degree higher than that of bachelor and who are upon the register of convocation, and all members of the three standing committees of the senate during their tenure of office.

The annual fee for membership in convocation is $1.25, or a life composition fee of $5. The functions of convocation are to "discuss any matter relating to the university and declare its opinion thereon to the senate, to elect the chancellor, 16 representatives on the senate, and the university member of Parliament." The six new universities have followed the example set in Scotland and London of having, with slight variations, a convocation with similar powers and functions.[1]

As a rule convocation consists, in addition to the registered graduates paying a nominal fee for registration, of the chancellor, the vice chancellor, the deans of the faculties, and the teaching staff. Convocation may elect a limited number of representatives of the court and in some cases of the council. It is noticeable that its powers are limited to discussion and deliverance of opinions. This point and the practice of including the teaching staff of a university with its graduates in convocation are reinforced by the recommendation of the royal commission on university education in London.[2] The report would continue the convocation, with its powers of declaring an opinion, but with an amendment making it include the teaching staff.

The report would borrow from the new universities the "court of governors," to which we alluded as the fifth part of their organiza-

[1] At Birmingham named a "Guild of Graduates." [2] Report, supra, p. 166.

tion. The court is a device in institutions dependent upon public or donated funds to give contributors a voice in university government in addition to that of the teachers and graduates. It is a large body, sometimes of three or four hundred members, representative of all taking a substantial interest in the university. It is nominally the supreme governing court to which appeal may be taken. From its nature it can only make its constituencies heard in the general plan of organization and policy and be in the last resort a coordinating force. The report endeavors to differentiate the court, as a general legislative body acting upon expert advice, from a small and largely independent executive. The report says:

> A large heterogeneous body can not transact executive business, and for this purpose it would be powerless because inefficient, while the power would rest, as it ought to rest, with the executive body.

The thought is that the small executive body of 15 members will have the control of finance, and through finance of the details of educational policy, but it will not act without the advice of the professoriate as a whole, expressed through its appointed representatives, the academic council. The report vigorously opposes the view that the court should be able to turn out the executive body of whose policy it disapproves. It reads:

> We should agree that this ought to be so if the executive body derived all its powers and functions from the superior body. We contemplate, however, that in London, as in the provincial universities, there should be a differentiation of function established under the statutes and based ultimately upon the obvious fact that administration needs continuity of purpose and control, and the expert judgment which long-continued and constant work in the administrative field alone can give. An executive committee which was liable to dismissal at any moment would tend to lose its initiative, and might spend the greater portion of its period of office in learning its business. We think the legislative control which we propose to vest in the court, and the means it will possess of bringing public opinion to bear upon university policy, will effectually prevent friction, while it will avoid the danger of sudden reversals of policy, which are more fatal in educational matters than in other departments of human activity.[1]

Herein is struck the keynote between government and administration. The secret of success of an institution lies largely in the separation but cooperation of these in policies which must not be subject to revolutionary changes. Before we can make an application of our studies in organization and administration, we must take up the subject of "university officers."

[1] Report, supra, p. 49.

Chapter X.

UNIVERSITY OFFICERS.

To understand the government and administration of the universities we must consider some of the principal officers and their functions.

In all the universities the nominal headship is vested in a chancellor. He is elected for life in Oxford and Cambridge,[1] the Scotch universities, Manchester, and London, and, excepting Manchester, by convocation, or the body of graduates corresponding to it. The election in Birmingham is by the court, subject to approval by the Crown, and in Liverpool by the court, subject to approval by the visitor. In the three latest universities—Leeds, Sheffield, Bristol—the election is by the court, upon nomination by the council of the university. The chancellor is created as far as possible by the votes of the whole university, in the older universities by the graduates and teachers, and in the newest universities, as yet without a large number of graduates, by the highest and most representative bodies.

He is the highest dignitary and, theoretically, authority within the university, and yet a nonresident officer. Thereby hangs a tale told by the story of the ancient title. Harking back even of the early university usage of the title, we may catch some note of it from the days of Alcuin and Charlemagne in the cathedral schools. After the Conquest, among the four principal officers of every cathedral church of secular canons, namely, the dean, chancellor, precentor, and treasurer, the chancellor became synonymous with the schoolmaster.[2] With the rise of universities, therefore, the bishop appointed the head of the school, or chancellor. When the university was not in the cathedral town, as in the case of Oxford and Cambridge, the chancellor became nonresident. As universities grew in influence, the chancellor became more than the chief schoolmaster, even the chief authority, sometimes created by the Pope. At Oxford, by the Laudian statute of 1636, the chancellor bore the academic and civic rule of the whole university. He was to guard its

[1] At Cambridge the office is held for two years or for such a length of time beyond two years as the tacit consent of the university permits. Practically it has been for life.

[2] Leach, A. F., The Medieval Schools of England, Methuen, p. 58; cf. pp. 106, 107, 108, 112, 118, 180, 181, 188, 189.

liberties and privileges, and, with consent of the university, to compose difficulties. Gradually the chancellor, at first an ecclesiastical officer exercising public control in the universities, not regarded as a member of the university, became identified with it as its head.[1] At Cambridge he is referred to as the head of the university, to govern it according to the statutes.

He has power to call congregation, to admit candidates to degrees, to see that all officers of the university duly perform their duties, and to punish members *in statu pupillari* for disobedience to the statutes or ordinances of the university.[2]

As a matter of fact, the chancellor rarely appears in Oxford and Cambridge and seldom takes any part in academic government, his powers being delegated to the vice chancellor. His advice has weight with the ruling body of the university. He is usually a member of the House of Lords, and the leader of public measures and subscriptions on behalf of the institutions. In the Scotch universities the chancellor is president of the general council; any change proposed by the university court must receive his sanction. He names an assessor in the university court. He confers degrees upon persons found qualified by the senate, and appoints a vice chancellor to confer degrees in his absence. In London, as "the head and chief officer," he is a member of the senate and of convocation and of all the boards and committees of the senate. He is the presiding officer of the senate. In the new universities the chancellor is generally characterized as the "head and chief officer" and is often the president of the court, council, and convocation, with power to confer degrees and to hear appeals.

When the strength of the universities made them largely independent of the church, they made their own chancellor, and the executive power within the university was chiefly placed by the nonresident official in the hands of his deputy, the vice chancellor. The chancellorship became, in the main, honorary and was considered by some as merely a figurehead.

If the office be only titular and ornamental, one queries how to account for the embodiment of it in the constitution of the most modern universities throughout the British Empire.[3] It is more than a survival due to British veneration of tradition. It may be in part an adaptation to English established rank or class distinctions. Recently the office has been made increasingly active and useful in relating the universities to the public, and possibly in influencing the policies within the institution. This may have been due to the personality of those filling the office. The expansions and the development of policies in institutions in which recent chancellors were

[1] Owen, Sir Isambard, University of Bristol address, "The Significance of a University," 1909, pp. 17, 21.
[2] Calendar, 1915, p. 52.
[3] Cf. Ch. XII, "State Aid and Visitation," p. 198.

known to be active come to mind. One may mention the university reforms at Oxford under Lord Curzon, the actual and prospective reforms at London and Glasgow under Lord Rosebery, the expansion of St. Andrews under Lord Balfour, of Burleigh, and of Aberdeen under the late Lord Strathcona, the founding of Birmingham under the late Hon. Joseph Chamberlain, the upbuilding of Leeds under the Duke of Devonshire, and of Sheffield under the Duke of Norfolk, and the intellectual impetus given to Edinburgh under the Hon. A. J. Balfour, and to Manchester under Lord Morley.

Bristol, the latest of the universities, deems itself fortunate in having Lord Haldane as its chancellor. It claims, somewhat—

> After the fashion of the original model, to have restored public control through the chancellor's authority, so to speak, constitutionalized. He exercises his power through a representatively constituted council and court of governors.[1]

This theory is being put into practice in solving the difficulties attendant upon a new university, through Lord Haldane's personal influence, his fitness as a student of education, and his experience in educational measures.

The vice chancellor in England, the principal in Scotland, is the resident working head of the university. At Oxford he is the real deputy of the chancellor, who nominates him annually from among the heads of houses in the order of their election as head, usually for four successive years. At Cambridge the power of election, lost at Oxford under Laud in 1636, is retained by the senate. It elects annually, subject to one reelection, from heads of the colleges upon the nomination of the council. In suggestive contrast is the appointment of the principal in the Scotch universities for life by the Crown or curators,[2] and of the vice chancellor in the new universities for life or an indeterminate term by the court or council.

The duties of the vice chancellor at Oxford and Cambridge are so numerous and complex that it is not unusual for his health to break down, though his term of office is only two or four years. "There is probably, during term time, no more harder worked official in the United Kingdom." He is the presiding officer over the important educational bodies in the university. He is practically a member of every board and committee, educational and financial, in the university. He is concerned with a large number of appointments. He is responsible for the discipline of the university.[3] He

[1] Owen, Sir Isambard, supra, p. 20.

[2] In Edinburgh by the curators of patronage representing the university, court, and town council, in St. Andrews ex officio the principal of the United College; in the Scotch universities the vice chancellor is named by the chancellor, but his only power is to confer degrees in the absence of the chancellor. It is the custom of the chancellor to appoint the principal as the vice chancellor.

[3] Associated with the vice chancellor are two proctors, elected annually, who are his special agents in matters of discipline. It is noticeable that there are no such officers in the Scotch or new universities.

is expected to be in touch with various educational bodies, particularly the public schools, outside the university and to represent the university on numerous public occasions. So similar are the duties of the vice chancellor to those of the president of an American university and so onerous that at both Oxford and Cambridge the suggestion has been made that some eminent man who should devote his entire time and abilities to university work should be appointed vice chancellor for life or for a long term of office. Indeed, the suggestion has been carried to the extent that the vice chancellor—

> Should be paid an adequate salary and have an official residence, and a proper (administrative) staff under him. So great would be the number of his duties that it would be advisable to give him a deputy also with an adequate salary.[1]

These suggestions are not seriously considered at present at Oxford or Cambridge, but there is a deep feeling that the executive machinery of university government is inadequate.[2] The feeling has issued at Oxford in the increase of the powers and salary of the assistant registrar,[3] as well as in the organization of the board of finance, and at Cambridge in the efficiently organized office of the registrary, coming into close cooperation with the vice chancellor, the council, the financial board, and general board of studies. In the Scotch universities, London, and Birmingham, the working head of the university called the principal,[4] an officer for life, in the main fulfills all the functions ascribed to the vice chancellor in Oxford and Cambridge. He has an organized office in coordination with all the administrative offices similar to that of an American college president.

Durham, London, and the new universities have the office of visitor. It is a revival of the power of visitation in early times asserted by bishops and archbishops and conceded to Kings. In Durham the bishop of Durham is the visitor, in the other universities the King or the King in council. The charters read:

> We * * * shall have the right from time to time and in such manner as we or they shall think fit to direct an inspection of the university, its buildings, laboratories, and general equipment, and also the examinations, teaching, and other work done by the university.

This seems a fair recognition of the relation of the modern university to the State and an acknowledgment of State aid.[5] The

[1] Tilliyard, supra, p. 842.
[2] Curson, supra, Ch. VIII.
[3] Oxford University Gazette, Oct. 29, 1918, p. 186.
[4] The title is a survival of "principal regent" from the early days when each university teacher was a regent and carried his pupils through all the subjects of the curriculum.
[5] Cf. Ch. XII, "State Aid and Visitation," p. 193.

principle involved in having a visitor is explained in the constitution of McGill University, Montreal, in which the supreme authority is vested in the Crown and exercised by the governor-general of Canada as visitor:

> This is a special and important feature of the constitution, for while it gives the university an imperial character and removes it at once from any merely local or party influence, it secures the patronage of the head of the political system of the country.

In the office of rector the Scotch universities have a relic of the guild or university of students as contradistinguished from the university of masters.[1] Bologna was the model. There is even an imitation of the division in Bologna into four nations, and of the headship of each nation, a procurator or proctor.[2] At Bologna the associated groups of students from foreign nations elected the "rector scolarium." This director of students at first was distinct from the "rector scolarum" or director of studies.[3] The university of masters at Paris handed on the Bologna precedents to England and Scotland. At the head of each of the four faculties in Paris was a dean, and of each of the four nations a proctor. Neither the entire university nor the separate faculties had originally a common head, and not until the middle of the fourteenth century did the rector, at first the head of the faculty of arts by whom he was elected, become the head of the collective university.[4]

In Glasgow and Aberdeen the rector is elected by the matriculated students divided into four nations.[5] Each nation chooses a procurator, and the rector is elected by the procurators. In case of an equality in the votes of the procurators, the election is determined by a majority of the votes of all the students voting. The rector, whose term of office is for three years, is the official president of the university court, to which he nominates also an assessor. Before he appoints his assessor he may confer with the students' representative council. In St. Andrews the rector is elected by a general poll of matriculated students, since there is no division of students into artificial nations. The election of the rector usually follows a heated campaign, conducted by the students on the grounds of party politics, and is supposed to be educative of each generation of students in the

[1] Cf. Ch. II, "Scotch Universities," pp. 60–61.

[2] The proctor at Oxford and Cambridge, sharing executive authority with the vice chancellor, is a survival somewhat parallel to the Scotch rector. In the "Early Cambridge and College Statutes" (collected by James Heywood, London, 1855, p. 38) it reads, "Two masters of arts actually regent shall be elected rectors or proctors by the majority of the regent masters of arts." The proctors had powers to arrange lectures, to punish undergraduates, and, in case of neglect by the chancellor or his locum tenens, to convoke the regent masters.

[3] Cf. p. 175; Ch. XVIII, "Student Life," p. 248.

[4] Cf. Ency. Brit., 11th edition, article on "University."

[5] Each of the three nations consists of students born in certain counties or parishes in Scotland, the fourth nation of students not included in any of the other nations.

politics of the day. Upon occasion some person, other than a great political leader, prominent in the public eye, is elected, as earlier Carlyle, John Stuart Mill, Froude, and Dean Stanley, and now Andrew Carnegie, Kitchener, President Poincaré, and Winston Churchill. The rector's office is chiefly associated with the rectorial address. Beyond that it is an indication of the democratic character of the university, and affords, together with the rector's assessor upon the university court, a real representation of the student membership in the university.

The office of dean, primarily that of the headship of a faculty, historically has had a twofold relation, executive and studious. The deans, with the rector of the university and proctors, became an initiative executive. On the faculty and student side, the dean was virtually a "rector scolarum" or director of studies. With the rise of the colleges in Oxford and Cambridge the functions of deans are found in them, and there is no university dean. Glasgow alone has from the beginning preserved an officer of dignity with the title of "dean of faculty" or "dean of faculties." Originally the functions of the office were "to exercise a superintendence over the studies, and, in conjunction with the masters, to judge of the qualifications of applicants for degrees." Later, with the rector and the minister of Glasgow, he was made an examiner of accounts and an adviser to the principal and professors in the institution of judicial inquiries concerning the faculties. By the act of 1858 he was made a member of the university court, but was omitted from that body in the act of 1889. He is elected annually by the senate. In all the Scotch universities each faculty is presided over by a dean elected annually from one of their number. Among his functions is the presentation of candidates for degrees to the chancellor or vice chancellor. In London and the new universities each faculty, with some exceptions,[1] elects its own dean for terms of from one to three years. In a few cases the deans are ex officio members of the council or of the court. The functions of the deans are somewhat various, but they are largely formal, and connected with faculty arrangements and not with student affairs and advice. In Scotland there are "official advisers of studies" in different faculties. In Oxford and Cambridge this function is fulfilled by the college authorities and tutors.

This discussion omits titular officers whose functions have become obsolete or would have little application in the United States.[2] It is worthy of note that librarians, treasurers, registrars, and secretaries hold offices not only of dignity and influence but have membership in legislative and executive bodies.

[1] At Liverpool the deans are appointed by the council upon nomination of the faculties.
[2] E. g., high steward, public orator, esquire bedell.

In the field of university control certain tendencies make themselves clear. Despite the diversities on paper of forms of government three things stand out in common. They are a headship, vested in a person surrounded by a group of administrative officers, a supreme governing body, and an educational legislature.

There has been an increasing differentiation of the functions of the three, the fixing of the responsibility of each, and, at the same time, the interrelating of them by the principles of representative government.

Experience, on the one hand, with a mere figurehead with only presiding and clerical duties as at Oxford and Cambridge, and, on the other hand, with even a veto power as in a Scotch university, has strengthened the tendency to make a real, resident, responsible, and permanent head of an institution.[1] The retention of a nonresident chancellor suits British political and social conditions. He may be useful for representative purposes outside the university and for advisory purposes within it. The assertion of his long dormant authority would be quickly resented.

The strength of the feeling for a responsible, resident, personal head, with powers of leadership, is proved by the action in the reconstitution of the Scotch universities, and in the constitutions of the new English universities and university colleges. An interesting instance of the tendency occurred upon the resignation of the vice chancellor at Manchester in 1913. The charter provides that the vice chancellor shall be appointed by the university court, after nomination by the university council, who before reporting shall consult the senate. The term of office is left open to be determined by the university. The unusually large representation of the senate on the court and council, as well as the provision for consultation with the senate, gave that body large powers. An acting vice chancellor was selected and a year's time taken for deliberation upon the ideals of the vice chancellorship and the tenure of the office. The number of men in the faculties from Oxford, Cambridge, and German universities, impressed by the annual election of the head in those institutions, insured debate with knowledge at first hand of limited functions and terms of office. The decision is notable, made so largely by the professoriate, for a permanent and experienced leadership.[2] The recommendation of the commission on university education in London is a move in the same direction, merging the office of principal in that of the vice chancellor, and making him "a permanent official, with a salary, who would be the chief administrative officer of the university."

[1] Cf. Ch. IX, "Organization and Administration of Universities," pp. 159–163.

[2] Sir Henry A. Miers, M. A., D. S. C., F. R. S., Principal of the University of London, was elected vice chancellor at Manchester.

In the recent choices of the heads of colleges in Oxford, Cambridge, and London the rule of seniority has not been followed. The powers of leadership of the man have been studied, and freer opportunities for their use given. It seemed evident that the institutions gaining ground were those in which the personality of the heads gave them a leadership above that found in the letter of the law. In personal conferences no head intimated that he sought to grasp greater power, but many desired a less cumbersome administration. One experienced head wrote:

> I am strongly of opinion that there is need of a change with us, and that it would be better for our universities if the principal had the same power and responsibility as the presidents of American universities.

A side light pointing in the direction of the above sentiment is afforded by the Australian universities, of which it is said:

> The senate have had no representative whom they might consult and who would serve to blend the administrative with the academic view. It has accordingly happened that unusually large power has accumulated in the hands of the registrar, the chief permanent officer of the senate.[1]

In short, the experiment to get on without a president proves the need of a responsible head and exposes an institution to the discharge of the necessary functions of that office in an irregular way by an officer irresponsible in that sphere of action. The variety of practices with reference to the headship of British universities points to an increasing appreciation of a resident, responsible, headship, vested in a person of the teaching profession, with executive ability, with a prolonged tenure of office, and a representative of the various elements in the university. It is a coordinating office intimately associated with, and generally having actual membership in, other offices, representing the financial and educational management. It is not intended here to strain a point in favor of the "American boss president," against whom President Harper years ago forewarned, writing that "the true college president is not a boss; he is a fellow student and a brother, * * * an elder brother in close relationship with every member of the family." Nor is it intended to intimate that the British would gladly dream of seeing Prof. Cattell's nightmare of the American college president as a "black beast" in the academic jungle.[2] The Great Britain of to-day, in many features as democratic as America, illustrates the fundamental proposition of Prof. Cattell "of historic institutions, *Sacerdotium*, *Imperium*, *Studium*, the University can in our democracy best conserve the traditions of the past and guide the progress of the future." The

[1] Sir Henry A. Meirs, M. A., D. S. C., F. R. S., Bd. of Educ. Spec. Repts., vol. 25, p. 5.

[2] Cattell, J. McKeen, "University Control," The Science Press, New York and Garrison, N. Y., 1913, p. 31.

[3] Cattell, supra, p. vi.

point is that "the advances of democracy and of science in our era"[1] have tended to cause the British universities to revert not to "the medieval university anarchic in its organization,"[2] but to the later evolved university with "a single rector for the entire studium, a form adapted to the whole paraphernalia of the modern university with its endowments, buildings, departments, etc." When a democracy follows the dream of Plato to make "a philosopher, ruler," attention is drawn to the opinion of one of Prof. Cattell's correspondents of the benefit of having a Woodrow Wilson in a university presidential chair. He thinks Princeton failed "to reap the full benefits therefrom, because the presidency carried with it too little power, and the other elements in the university too much."[3]

The general conclusions with reference to the three major bodies in the organization of a university drawn by the late principal of St. Andrews University correspond with our statement of facts and tendencies.[4]

1. The governing body should be a small body, consisting of men of varied professions and interests, who are animated by a desire to benefit their fellow men by the encouragement of those studies and arts which constitute the work of a university. Among these men must be reckoned the teachers of the university, but they should not be a preponderating number.

2. The senate or professors of a university should have the control of the education and discipline with or without a select number of other university teachers, but there should always be an appeal open from their decisions to the governing body.

3. The graduates, and also the undergraduates, should have an opportunity of discussing all matters relating to the welfare of the university in which they take a special interest and laying the results of their deliberations before the senate and the governing body, but their suggestion should be deemed simply advice and without legal authority.

Under the first of these conclusions it should be observed that in all the universities the vice chancellor or principal is a member of the governing body, and in all of them there is representation of the professoriate. The pendulum has swung back and forth from the constitution of the governing body wholly of university teachers to their entire exclusion from that body, excepting only for the head of the institution. At present the point seems to be settled that in addition to the head of the institution, the professoriate should have a representation of not less than two members, and that there should be a predominance of distinguished laymen in education serving *without pay* and primarily attending through salaried secretaries to financial

[1] Cattell, J. McKeen, "University Control," The Science Press, New York and Garrison, N. Y., 1913, p. 7.
[2] Cattell, supra, p. 5.
[3] Cattell, supra, p. 86.
[4] Donaldson, Sir James, "Representation of Teachers and Graduates on Governing Bodies." The Rept. of Proc. of the Cong. of the Universities of the Empire, Hodder & Stoughton, 1912.

administration. The body is also expected to be a final authority on general policies and appointments. It is representative in part of public authorities and in part of graduates as well as of the faculties.[1] Excepting permanent officials, membership falls into classes holding office for certain terms of years.

Under the second conclusion it should be remarked that there is absolute unanimity that the control of the education and discipline should be vested in the academic body. The discipline being committed to disciplinary officers. There is a strong tendency to insist that the entire teaching staff and not the professors only, should have representatives in the academic body.

Under the third conclusion the uniform practice, excepting in Oxford, Cambridge, and Durham, is that the organized graduates should have only the power of advice. The legal control surviving in convocation in Oxford, Cambridge and Durham, is sharply challenged. The recognition of undergraduate opinion is increasing.

Recently "advisory committees" have appeared as a rudimentary development of university organization. These committees, appointed by the executive or faculty bodies, may include persons not members of the appointing bodies or of the university, interested or expert in the subjects referred for advice or report.[2] These committees give the university the benefit of the combined judgment of faculties and practitioners or laymen, and keep the institution in close touch with its environment. The value of these committees has been proven especially in professional, technical, and university extension education. Notable instances are the fruits of the advisory committee of public health in Manchester, of the commerce advisory board, Birmingham, of the advisory committees representing various trades and departments of commerce, Heriot-Watt College, Edinburgh, and of the joint committees of universities and representatives of the workingmen conducting tutorial classes in industrial districts.[3]

The further improvement in university government is a subject of discussion in every part of the British Isles. The modern sixfold plan of organization, it may be repeated, consists of the personal working head, of the large representative supreme legislative body, of the small executive body—including a limited faculty representation—of the educational legislature with its faculty divisions, of the

[1] Herein is a suggestion of Prof. Cattell's first point in his plan for university control: "There should be a corporation, consisting of the professors and other officers of the university, the alumni who maintain their interest in the institution, and members of the community who ally themselves to it." Supra, p. 18.

[2] E. g., University of Liverpool statutes, sections 28, 29. Cf. University of Manchester, advisory committees of the faculty of commerce, of the faculty of theology, of the public health laboratories, of legal education, of mining, of technology, of agriculture.

[3] Cf. Ch. XIX, "University Extension Teaching," pp. 252–254.

advisory organization of graduates, and of undergraduates. The scheme is not without criticism as cumbersome, and giving opportunity for mischievous persons or cliques to play their part at different points along the extended line. A few prominent personages have said they would "scrap" the whole system. Even a single executive council of academic and lay members has been suggested, possibly somewhat corespondent to Prof. Cattell's first proposition.[1]

On the contrary, the latest studies confirm the sixfold scheme, at least for State-aided institutions. Not only the final report of the commission on university education in London, but what is known and creditably rumored from Reading, bears out this view. For several years Reading University College, in its preparation to become a university, has had a committee on university policy. This committee has made extended investigations as to a scheme of buildings, the curriculum, and constitution of the new university. The report of the committee on the third point has not been published. We only know that it is hoped that the proposed form of university government "may free the teacher to the maximum possible extent for his proper business of teaching and research."[2] The last well-authenticated rumor is that Reading will conform in the main to the sixfold plan of constitution of the other new universities.

To point the moral of the present chapter, it is well to quote the common principle and practice in the constitution of American institutions[3] written by a prominent American university president:

> To have the trust administered by its beneficiaries we have thought in the main in the United States to be inadvisable. Faculty, students, and alumni are in different senses, and yet in a very real sense, beneficiaries of the trust.

For this and other reasons the president is convinced—

> (1) That the control of an institution of learning by a body of trustees composed on the whole of laymen is for us in the United States advisable.
>
> (2) That the educational adviser relationship established by that officer of the board of trustees commonly known as president or chancellor is the most effective.
>
> (3) That, within the sphere of the power conferred on them by the board of trustees the faculties should exercise control, but outside of such sphere they should have no authority whatever.

It has been seen that the British tendency is strong to adhere to the principle that a trust should not be administered by its beneficiaries. In practice also the president's three points are being followed with modifications based on the principle of a closer interrelation of the three bodies by means of representation. A small representation of the faculty upon the body of trustees is insisted upon. The president or chancellor is to be a representative of the

[1] Cf. p. 179.
[2] The Reading Univ. Col. Rev., Mar., 1913, pp. 95, 96; Aug., 1913, pp. 176–178.
[3] Cf. Ch. IX, "Organization and Administration of Universities," p. 163.

faculty as well as an officer of the board of trustees. There are extensive safeguards for the appointment of faculties and in their control of educational matters. Finally, the whole institution is kept in vital connection with its graduates, its students, the professions, and the public, by organizations of the first three of these named, and by advisory committees of the last, but all without authority except the weight of opinion expressed by them.

Chapter XI.

PROVISIONS FOR THE FACULTY.

Greater precautions are used than is ordinarily the case in the United States to obtain a faculty, using the term in its broadest sense, of ability and to secure its stability and freedom. Among the various methods of appointment there is an increasing endeavor to rest the appointment on the merits and fitness of the candidate. The greatest care is given in the election of professors. In case of a vacancy publicity is given by advertisement and by printed circulars inviting applications by candidates. Close inquiry, however, shows that though an applicant labors under no prejudice, the institution is not unlikely to give the appointment to someone it has sought out for itself. In the past, experiments have been made with every possible method of election to professorships. Appointments by the Crown, now, relatively speaking, a small number, survive notably in the regius professorships at Oxford and Cambridge. At present these appointments are said to be free from favoritism and politics, practically made upon nominations from the university.[1]

Appointments by patrons may be said to have disappeared. Now, when a patron endows a chair, pains are taken that the appointment shall be made by experts. The election originally by "regents" and "nonregents," analogous to selection by faculties or graduates, of which there were still traces in "the vicious system of election of professors by convocation, which had been the parent of many abuses," was put an end to by the commissions of 1850 and 1877.[2] The latter commission vested the elections, with the exception of professors appointed by the Crown, in boards of electors. Illustrating from Cambridge, commonly a board of electors consists of eight members, two nominated by the council of the senate, three nominated by the general board of studies, and three by the special board of studies. These are standing boards not appointed *ad hoc*, and holding office for terms of years. The members of the boards are chosen not only from the faculty, but from distinguished specialists in the subjects in outside institutions.

[1] Cf. Ch. XII, "State Aid and Visitation," p. 198. [2] Carson, supra, p. 188.

The University of London, following in the wake of Oxford and Cambridge, requires that the title of professor or reader shall be conferred in each case after report from a board of advisers. The vice chancellor and the principal and three "external experts"; i. e., experts outside the university staff and unpaid by any institution in question, must be on every board. The boards vary as the appointees are attached or unattached to any particular school or institution and in accordance with the source from which the salary is paid. For example, in the case of an unattached professorship and readership, the board of advisers, in addition to the vice chancellor and principal, consists of six other persons, of whom three shall be external experts, appointed by the senate after report from the relevant board or boards of studies. The external experts serve on all boards dealing with the same subjects or group of subjects, and are appointed for a term of six years without pay except for traveling expenses. By the universities (Scotland) act of 1889 the university courts became the power to appoint professors, excepting chairs vested in the Crown or other patrons. Edinburgh is unique in having curators of patronage. They indicate an early movement to secure an appointing power above suspicion of influence. By the universities act of 1858, the patronage of 17 chairs previously in the gift of the town council was transferred to 7 curators, 8 nominated by the university court and 4 by the town council. The curators also have the patronage or share in the patronage of several chairs established between 1858 and the exercise of the power conferred upon the university court after the act of 1889.

In the new English universities, in general, the council appoints the professors and other members of the teaching staff on the recommendation of the senate. Subordinate appointments, like those of assistant lecturers and demonstrators, are made by the faculty upon the nomination of the professor or lecturer in charge of a department and confirmed by the council.

Since the beginning of the nineteenth century there has been a revolution with reference to the qualifications for a professorship. At that time social considerations predominated. By the middle of the century Pattison complained that the professor-fellow was simply a teacher, whereas his primary business was to learn and not to teach. "A professoriate has for its duty to maintain, cultivate, and diffuse extant knowledge." Pattison guarded against the misconception especially of the modern superuniversity theorist that the university is to be an association of men of science for the sake of science and experiments with a view to new discoveries. "The professoriate is to know what is known and definitely acquired for

humanity on the most important human concerns."[1] Dr. Farnell sees hopeful signs that the spirit of Pattison is prevailing. He says there is a growing insistence upon the combination of teaching and research for appointment to the highest teaching posts; and a living acquaintance with the methods of teaching and research and some approved work done therein are becoming essential prerequisites. He adds:

> This is by no means yet the rule in the Scottish universities; it is beginning to be the rule in many of the modern colleges of England and Wales; it has established itself on the whole at Oxford and Cambridge as regards professorial appointments, but by no means yet as regards the tutorial.[2]

In fact there is now practiced almost universally the instruction given to the board of advisers in nominating any person for appointment as university professor or reader in the University of London: "They shall have regard to (1) his contributions by research to the advancement of science or learning; (2) his powers as a teacher; (3) generally his eminence in his subject or in his profession."

The importance of security in the tenure of office of a professor is not likely to be forgotten in a country in which in the older institutions the appointment is for life, "*ad vitam, aut culpam.*"[3] In the modern universities, while it is expected that professors, readers, and independent lecturers shall hold office during good behavior, it is likely, in view of the new pension system, that an age limit for retirement at 65 will become universal.[4]

There are provisions for resignation or removal upon three or six months' notice. In the case of misconduct or incapacity of a professor, the different institutions have various regulations safeguarding his tenure by due notice of dismissal and sometimes by the right of appeal from the executive to the legislative body. So unusual is the violation of the security of the tenure of a professorship that a rumor of it precipitates an inquiry in press and in Parliament.

In the staff of instruction there is no such elaborate hierarchy as there is often in the United States. The titles associate, assistant, and adjunct are practically not used. A "reader" or permanent lecturer may have a fixed tenure like a professor. The scientific and modern methods of instruction have introduced a numerous junior staff of instructors and demonstrators, out of proportion to the number of professorships. This is a cause of complaint,

---

[1] Tillyard, supra, p. 181.

[2] The Times, June 26, 1914.

[3] In 1914, venerated and beloved, a master of Clare College, Cambridge, was in his ninety-fourth year, and the principals of St. Andrews and Edinburgh above 80 years of age.

[4] E. g., "No professor shall hold office after he has completed his sixty-fifth year unless council on the recommendation of senate continue his office on special grounds." University of Bristol, Standing Orders of Council, Mar., 1913, p. 56.

especially in the Scotch universities.[1] The appointments are from one to five years. The chances for an academic career are lessened, and hitherto the outside demand for university specialists has been small. The plea has been made, on behalf of the junior staff—

> To introduce an adequate scale of salaries and pension scheme for all members of the staff and to give them a voice in the management of the institution * * * the more important lectureships should be converted into professorships or adjunct professorships * * * as in American universities.[2]

The old story of the inadequacy of the remuneration of the teacher repeats itself in Britain as elsewhere. His emoluments, to say nothing of the pecuniary rewards of the business world, are not comparable with those of other professions, excepting the clerical. An agitation of some 40 years for an increase of salaries, begun without special reference to the increase in the cost of living, has not yet realized its ideals, though advances have been secured.[3] In 1876 at Oxford the salaries of professors ranged from even $500 or $1,000 to $4,000. The Marquis of Salisbury said to the House of Lords:

> Compare these annual stipends with what is paid in other departments. I do not believe that less than $5,000 a year, with a fair pension beside, will secure the highest talent for those professorships.[4]

In 1904 the average annual income of a professor at Cambridge was still not more than $2,750, with a range of a professor's stipend from $450 to $4,000 a year. New statutes had been adopted contemplating a salary of $2,000 a year for a reader, but none received more than $1,500, and in several cases only $500. The stipends of university lecturers ranged from $250 to $1,000.[5] These figures are, a decade later, substantially the same, except the minimum for professors. Members of the staff, and especially professors, have certain perquisites and opportunities for fees, particularly as examiners. The regulation of the University of London represents fairly well the amounts paid for salaries in the new universities.[6] It reads:

> The guaranteed minimum salary for a university professor giving his whole time to the work of his post shall be $3,000 per annum, and the guaranteed minimum salary of a reader giving his whole time to the post shall be $1,500 per annum.

In exceptional cases smaller salaries are permitted. In the matter of salaries a change for the better is coming slowly. The great

[1] E. g., the University of Glasgow in 1870, the professors in the staff were as two to one; to-day they are as one to four. The Times, Edu. Supplement, Apr. 6, 1915. Cf. Ch. II, "Scotch Universities," p. 64.
[2] The Times sup., supra.
[3] Cf. Table 15, "Range of Salaries."
[4] Tillyard, supra, p. 278.
[5] Quarterly Review, Apr., 1906, cf. Tillyard, supra, p. 282.
[6] Cf. Table 15, "Range of Salaries."

inequalities due to the endowment of chairs in different periods are being removed. There is no attempt being made at absolute uniformity, but only to establish minimum standards.[1] In general the salaries in professional or technical chairs are higher than those of the academic professorships on account of the gains which may be obtained in practice. Without exception the salaries of the heads of universities and of colleges are materially larger than the maximum salary of a professor. In a majority of cases they are double the maximum.[2]

The attempt to establish pension systems in all the universities is the most important recent movement. The older universities, with the life tenure, had little occasion for anything but disability pensions. They met the need largely by the use of fellowships[3] or by doles in special cases.

In the eighteenth century a "fund" was established "for a provision for the the widows and children of the ministers of the Church of Scotland, and of the heads, principals, and masters in the Universities of St. Andrews, Edinburg, Glasgow, and Aberdeen." The scheme was a contributory one. The universities (Scotland) act of 1889 empowered the commission to provide a pension scheme for principals and professors. Attention was focused upon the subject of pensions by the establishment of them in the twentieth century English universities, and by the national old-age pensions act of 1908. Oxford and Cambridge did not escape the movement, and both of them have formulated pension schemes, though for lack of means they have not been put into operation. These universities, as compared with the Scotch and new English institutions, have to contend with the absence of financial support from the State and the complications arising from their college systems.

In 1909 Cambridge appointed a pension syndicate which reported in favor of the university's forming its own pension fund and of a noncontributory scheme. With certain exceptions its beneficiaries were to be professors, readers, and university officers, with not less than 15 years of service. The main provisions were compulsory retirement at the age of 70; a possible retirement after the age of 65; in case of a stipend of $3,000 or more a maximum pension of $2,500 a year, or an annual payment equal to five-sixths of the stipend, and an annual payment equal to one twenty-fifth of the maximum pen-

[1] The stipends of the Oxford and Cambridge college staffs vary. This is true not only of the fellowships, but of the payments to the members of the educational staff. The scale of payment at one of the large colleges is doubtless above the average. Senior lecturer, £525 a year; lecturer or assistant tutor, in accordance with years of service, from £282 to £420; assistant lecturer, £210; tutor, £682, plus stipend as lecturer; senior tutor, additional, £105.

[2] Cf. Report of the committee on Scottish universities (cd. 5207), 1910, p. 9.

[3] Cf. Ch. I, "Oxford, Cambridge, Durham," p. 32.

sion for each year of service.[1] Professors and readers on retirement after the age of 65 might become emeriti professors and readers, without statutory duties or powers. A relief pension might be granted in special cases under exceptional conditions by grace.[2] The university is accumulating a pension fund in accordance with this scheme, and also one for assistants, clerks, and servants.[3]

Also, in 1909, at Oxford, Lord Curzon included among the reforms he advocated the establishment of a professorial pension fund, the colleges having already instituted pension funds for their tutors.[4] In the meantime, $50,000 having been given for the purpose of forming a pension fund, in 1913 a statute was promulgated for the establishment of a pension scheme and fund by the university. It was to be an old-age pension scheme, limited to certain professorships tenable for life. It provided for compulsory retirement at the age of 70, upon an annual pension equal to one-half of the stipend at the date of the vacation of office, with the provisos if the service was only 9 years or less the pension should be diminished by one-tenth for each year short of 10 years, and if the service had been for 26 years or more the pension should be increased by one-twentieth for each year exceeding 25, but no pension to exceed two-thirds of the stipend at the date of vacation.[5]

The federated superannuation scheme for English universities and university colleges in receipt of exchequer grants, inaugurated under the auspices of the board of education in 1913, has justified the opinion of the board that it is "one of the most important developments which have been made in recent years in the sphere of university work."[6] The scheme is extending beyond all the institutions in receipt of the grant in England to other university institutions. The board's indirect connection with the scheme through their advisory committee has been terminated. Its supervision has been taken over by a central council, composed of representatives from all the institutions cooperating in it, and an executive committee of that council. In 1912–13 the Government grant to these institutions for superannuation was over $45,000. Inclusive of this amount the institutions expended for the purpose $114,200, or 3.4 per cent of their total expenditure. The scheme, in brief, is compulsory on every new entrant of the teaching and administrative staff with a salary of $1[illegible] or [illegible]ard, and optional for a member with the salary of

[1] Cambridge University Reporter. Oct. 9, 1911. By statute in 1882 the university was empowered to give pensions to retiring or disabled professors or readers. Cam. Univ. Statutes, 1904, with supplement, 1911, pp. 49, 51, 58.
[2] Cf. Cam. Univ. Reporter, Mar. 5, 1912, pp. 670–676.
[3] Cam. Univ. Reporter, Mar. 23, 1914, p. 80. Cf. p. 64.
[4] Curzon, supra, p. 189.
[5] Oxford University Gazette, May 7, 1913.
[6] Bd. of Educ. Repts., Universities and Univ. Colleges, vol. 1, 1914, p. vii.

between $1,000 and $1,500, and with the consent of the institution for a member with a salary of between $800 and $1,000. The plan requires an annual contribution of 10 per cent of the salary, excepting in the case of the excess of a salary above $5,000. The normal contribution is 5 per cent of salary by the beneficiary and 5 per cent by the institution, but the governing body may increase their proportion of the total 10 per cent. The ordinary means of financing the system is by arrangement with selected insurance companies for endowment assurance policies or deferred annuity policies, with or without return of premiums, at the option of the beneficiary, though it is possible for an institution to create its own pension fund. Every policy is held by the institution upon a discretionary trust in order to safeguard the interest of the beneficiary, and, in case of his removal from one institution to another, to facilitate the transfer of the policies. The insurance policies mature at 60. It is a mistake to speak of 60 as "an age of compulsory retirement."[1] The age at which the policies mature is fixed at 60, but institutions have complete freedom in determining the actual age of retirement. After 60 and up to the age of actual retirement the proceeds of the policy, together with the further contributions both by the university and the beneficiary, may accumulate at compound interest by arrangement with the insurance company. The reason why 60 is taken for the maturity of the insurance policy is that this is the earliest age at which normal retirement at present takes place, and the decrease in the surrender value of the policy if a greater age than 60 were fixed for its maturity. The underlying principles of the scheme and its "considerable flexibility" to meet the varied needs, especially of smaller institutions, are causing its spread in England and adaptations of it in America.[2]

The fundamental principle is:

> That the teachers in all the universities constitute a profession comparable with the civil service, and that transference from one university to another should not be accompanied by a financial penalty any more than is transference from one Government office to another.[3]

The principle of compulsory contribution by the beneficiary and the institution, the contribution distributed over the whole of the working life of the beneficiary, is a recognition of the pension as in the nature of deferred pay. The inclusion as far as possible of all

[1] An error coupled with another, "that the Universities of Oxford and Cambridge * * * are not assisted by the British Government in any manner." The Carnegie Foundation for the Advancement of Teaching, Eighth Ann. Rept., 1913, p. 46. Pp. 39–46 contain a good history and summary of the federated system.

[2] Cf. Mass., teachers' retirement law, Carnegie Foundation Rept., supra, p. 46; and the Mass. bill to establish a retirement system for employees in the public service, Carnegie Foundation, Ninth Ann. Rept., 1914, p. 27.

[3] Cf. Ch. XIV, "Applied Science and Professional Education," p. 459.

the members of the permanent teaching and administrative staff is a unifying as well as profitable principle. The policy of cooperation by institutions, with liberty for variation in the application of details of the scheme by any given institution, and the economy in making use of existing insurance companies have caused the plan rapidly to supplant other schemes.[1] The advisory committee were not convinced that adequate provision is at present made for the families of members of the staffs, but the way is open for the improvement of the scheme by the provision that the executive committee are to make recommendations to the central countil from time to time in regard to questions of importance.

[1] Cf. Bd. of Educ. First Report of the Advisory Committee on the Distribution of Exchequer Grants to Universities and University Colleges in England. Mar. 28, 1912 (Cd. 6140); Second Rep., Feb. 4, 1913 (Cd. 6617); Third Rep., June 11, 1913 (Cd. 6869).

Chapter XII.

STATE AID AND VISITATION.

All the universities and university colleges in the United Kingdom receive direct grants from the State. These grants have increased by leaps and bounds since the first grant in 1882–83 of $10,000 to the Aberystwyth University College. By 1886–87 the three Welsh University Colleges were dividing $60,000 equally among them. In 1912–13 the exchequer grant to these three colleges amounted to $127,500. The first exchequer grant in England began in 1887–88 and 1888–89, with the sum of $10,000 to Manchester, and by 1912–13 reached the amount of $745,000 divided among 18 English universities and colleges. To this sum must be added other parliamentary grants under the board of education for technological and professional work, and from other Government departments like the board of agriculture, making a total to the 18 English institutions including the exchequer grant of $1,164,105, and to the Welsh colleges of $171,085. The percentage of total income from the State of the 18 English institutions is 35.2, and of the Welsh institutions 54.3.

In 1883 the four Scottish universities, chiefly through annual votes by Parliament, were receiving State aid in the sum of $141,610.[1] Encouraged by the increasing annual grants to the English and Welsh universities and university colleges, in 1907 the Scottish universities appealed for enlarged grants. The committee on Scottish universities in 1910 reported in favor of an annual grant of $200,000, supplementary to the $360,000 they were then receiving, and that sum was given.[2]

Considerably more than $500,000 is annually granted to the University of London and the institutions associated with it. The influence of the rising flood of State aid has begun to tell upon the older universities. Their age-long policy, with the exception of a few small doles for specific purposes, has been to be independent of State aid. The most significant educational event in Great Britain in 1912 was the acceptance by Oxford of a grant for engineering science.[3]

In 1913 and 1914 Cambridge faced the question of State aid, and voted to appeal for an annual grant of between $20,000 and $25,000

[1] Rep. of the Committee on Scottish Universities, 1910 (Cd. 5257), p. 18.
[2] Cf. Ch. II, "Scotch Universities," p. 48.
[3] Cf. Ch. XIV, "Applied Science and Professional Education," p. 210.

for the medical department.[1] The debates in the senate house were followed by the battle "of fly sheets." The question is such a living one on both sides of the Atlantic that some of the principal points in the discussion may be given. It was argued that the principle of applying for State aid had been fully considered in all the other universities of the United Kingdom, including Oxford, with a decision in favor of accepting grants. Communications were cited from authorities in universities receiving grants showing that the experience of these universities had been free from unfavorable results and interference. It was replied that—

> There was a desire to help the younger universities in their interesting infancy by giving them a dole, but the Government never contemplated such help for Cambridge and Oxford. It would be confiscation of public funds, a hardship on the poor, struggling taxpayer, to encourage an application of the kind for Cambridge.

Reference was made to the opinion expressed in 1912 by the general council of the University of Edinburgh against the proposed imposition of conditions upon the payment of parliamentary grants by the treasury regarding the inclusive fee, as "interfering unwarrantably with the freedom of the Scotch universities." To the latter point it was answered that the Treasury did not attempt to impose new conditions in connection with an existing grant, but to give an additional grant in compensation for the loss of income which might follow the adoption of an "inclusive fee." It was added that now Edinburgh had temporarily accepted as an experiment the offer of the additional grant which had been accepted by the other Scotch universities. The argument was pressed home that the medical department in Cambridge was gravely in want of monetary assistance, and that the university and colleges were not in a condition to meet it, nor were benefactions in sight. This caused a debate upon the old question, if State aid would not stop private munificence upon which the older universities depended for support. It was said that "the great benefactions in America were not given to State universities, but to the independent institutions." There stood out, however, on the other side, the experience in this particular of the Scottish and new English universities. In 1910 the Scottish universities committee reported that since the grants of the act of 1889 the larger part of probably not less than $5,000,000 had been received from private benefactors or raised by local effort. The testimony of Reading is consonant with the facts at all the new universities:

> At Reading local munificence has been conspicuous, has been encouraged by State recognition of the progress accomplished * * *. The public recogni-

[1] Mar. 14, 1914, the senate took the vote; Placet, 267; non-Placet, 235.

tion of worth and effectiveness implied in the award of treasury and other Government grants has been an indispensable antecedent condition of each of the considerable private benefactions.[1]

The fundamental objection to the reception of State aid was the preservation of academic freedom. The objection was formulated by Prof. Sir J. J. Thomson:

It was most desirable that there should be some educational authority in this country free from the control of the board of education, free to work out its own scheme in its own way, without any interference from outside.

The argument was elaborated. The existing liability to parliamentary interference would be increased by the annual appearance on the estimates of the grant, subject to criticism and defeat by a snapped vote in the committee of supply. A second source of interference would be in the development of a bureaucracy in the department of education, at the very least burdening professors with official communications as to details. It was suggested that the preservation of—

six centuries of independent self-government carried on to the honor of the university and the advantage of the nation was endangered by mysterious schemes, which were in embryo at the board of education, for the centralization of education and its standardization.

The reply of those in favor of the grant was that the objections were based on fear of inspection by outside persons, and fear of interference with university teaching by outside criticism. In general it was urged that the advantages which would accrue to the medical school if the proposal was carried through would far outweigh the problematical risks based on fear. It was denied that the grant would put university teaching under the control of a Government department, because the conditions under which the grant would be made are limited to a consideration of the size and efficiency of the school and to knowledge that the money is spent in forwarding the objects for which it is granted.

The procedure of the board of education in the case of the universities' grants was cited. The board—

appointed not an "inspector" but a "visitor," and that person was selected by an advisory committee of experts; the visitation was not "annual." The object of the visitation was not disciplinary, but that the board might be able to obtain first-hand knowledge, and to collect information of the working of departments in different universities. If any important suggestion were to be made to the university, it was done only after consultation with the advisory committee. The board did not desire to introduce any policy of its own; it could give advice or knowledge it had been able to gather, but freedom must be left to the university to work out its own policy of education. The grants were given to the school as a whole and in a lump sum, not to individual

[1] Agric. Educ. Rep. of Deputation, Reading, 1910, p. 107.

departments. The proportion given to each department would be decided by the university, not by the "board."[1]

To the thought that the present policy of the board might be altered, or that Parliament might intervene, it was conceded that it was not impossible, but that it was very improbable in the light of established practice. In any case Parliament was all-powerful. On the whole the freedom of the universities from State interference had been maintained. Springing up without charters from the State, the older universities, though not formally receiving State aid, had been indebted to the State through privileges and exemptions conferred and through royal patronage. They were related to the State through the public character of their life-long chancellors, through Crown appointment of many professors, and by the visitations of royal commissions and ensuing acts of Parliament.[2]

The new universities, though the charters run in the name of the Sovereign, are universities of the people, founded by local contributions and generosity. They are not, therefore, State universities in the American sense of being State-owned and State-controlled, though so largely State-supported. The grants are determined on the report of experts in consideration of two facts: (1) The efficiency of the university and the value of the work which it does, and (2) the extent of the local support which it receives. The Treasury, the board of education, or other board administering the funds constitute advisory committees, ordinarily quinquennially, consisting of the most eminent educators or experts, who serve without salaries. This method of distributing State aid in lump sums, together with the broadly representative membership of the autonomous governing body of each institution, prevents the evils of State interference and combines the benefits of State relationship with efficiency and freedom in the institution. It is hardly conceivable, if the educational institutions in Britain were wholly State-owned and supported, that they would make them departments of the State, in the hands of salaried officers subject to political changes. The fact that institutions of higher learning, whether privately endowed or otherwise, are public institutions in their nature and by charter is recognized by the office of visitor[3] in the new universities, and the other provisions for visitation by advisory committees and occasional royal commissions. May not the State universities in the United States profit by the example of the State-aided institutions in the arrangements to secure efficiency of administration and to safeguard against unwise State interference,

[1] Cf. Cam. Uni. Reporters, Oct., 1913, Mar., 1914; and fly-sheets, pro and con, issued Mar., 1914.

[2] Cf. Chs. X, "University Officers," pp. 171–174; XI, "Provisions for the Faculty," p. 182.

[3] Cf. Ch. X, "University Officers," pp. 173–174.

and the endowed institutions profit by the example of State visitation, in just recognition of their public status, and to strengthen their hold upon the public?

The war promises to introduce a new epoch in State aid to higher education. The dependence of all the institutions, including Oxford and Cambridge, upon fees to meet a considerable proportion, in some cases two-fifths, of their current expenses, has threatened financial disaster in view of the shrinkage, sometimes of two-thirds, of attendance due to the war. The additional emergency grant, after the outbreak of the war, of $225,000 for 1914–15 to the board of education for institutions in receipt of grants may be a happy augury for the future. On the other hand, a parliamentary retrenchment committee has begun its labors by scrutinizing the expenditures of the board of education, of the road board and development commission, and of the board of agriculture and fisheries. The advisory committee on university grants and the treasury have asked for statements and estimates of income and expenditure and of proposed economies.

The first response is an appeal against reduction of grants during the war, in a letter to the committee from the vice chancellors of Manchester, Liverpool, Leeds, and Sheffield.[1] In the statement of these universities, which is more or less that of all the institutions, they seize the opportunity to reach the public with arguments to which the British public is likely, as never before, to be attentive. They assert that "the value of the universities as arsenals of scientific knowledge is now much more generally understood in England than was the case before the war." They believe:

> That the expenditure on the universities has been a highly remunerative national investment, though not so remunerative as it would have been had the responsible leaders of British industry realized more quickly the value of science under modern conditions of trade.

The service of the institutions "both in connection with the war and in the economic reconstruction that may follow it" emboldens them to appeal "in the economic interest of the nation to increase the public grants, even at the present time of financial difficulty." The financial embarrassment of Oxford and Cambridge has already required acts of Parliament[2] to enable them to readjust funds. With their attendance reduced in 1915–16 from above 3,000, respectively, to something like 600, and with some of their colleges closed, they too may be driven to ask increased state aid.

[1] Printed in The Times Edu. Sup., Oct. 5, 1915.
[2] Universities and Colleges (Emergency Powers) Act, 1915.

Chapter XIII.

COORDINATION OF INSTITUTIONS.

The vexed problem of securing economy and efficiency by the coordination of institutions of higher learning of the same or different types, and especially in different localities, affords a variety of instructive experiments in Great Britain. First comes the ancient and unique confederation of colleges, to which we have referred in Oxford and Cambridge. It was not without its influence upon the varieties of the modern federal university like London,[1] Victoria (Manchester), and the universities of Wales and Ireland, which illustrate the second method of coordination. Coordination by amalgamation of two independent and rival institutions into one is so difficult that it took nearly three centuries to accomplish it in the case of Aberdeen.[2] Then it was only effected by the strong arm of the State. Beneficial as have been the results of the amalgamation, after almost 60 years a distinct line of cleavage may yet be detected in the united university. So persistent is institutional life, so potential are historical associations, and so sacred are inherited trusts, that, evidently, the intervention of the State is only justified in extreme cases.

Coordination through a single educational corporation without complete financial incorporation has been evolved at Durham and Newcastle and at St. Andrews and Dundee.[3] In both cases the difficulties have been those of reconciling the ancient with the modern spirit, and of combining institutions in different localities, and aligning local interests. It has taken thirty or forty years to work out the problem. The growth has been from affiliation to incorporation. At Durham in 1851 a nominal relationship began with the "Newcastle-upon-Tyne School of Medicine and Surgery"; the title of the latter became "The Newcastle-upon-Tyne College of Medicine in connection with the University of Durham." In 1870 a closer connection was formed by which the college was called "The University of Durham College of Medicine."

[1] Cf. Chs. III, "University of London," p. 78, passim, 77; IV, "The New or Provincial Universities," p. 108, passim.

[2] Cf. Ch. II, "Scotch Universities," p. 56.

[3] Cf. Chs. I, "Oxford, Cambridge, and Durham," p. 48, passim; II, "Scotch Universities," p. 57.

In this period (1871) at Newcastle the University of Durham and the North of England Mining and Mechanical Engineers established "Durham University College of Physical Science," now known as Armstrong College. The faculty of science in the University of Durham "is seated entirely at Armstrong College," where all the work for the degree of B. Sc. is done. Early the Newcastle students were admitted by the university to the degrees in letters, though not until recently to the degrees in arts. The arm's-length affiliation did not stay the tendency to develop two rival institutions. The reconstitution of the university in 1909, through an act of Parliament, by a plan of finely devised balances, has apparently established a stable equilibrium. In the one university there are the "Durham division" and the "Newcastle division." The oneness of the university is secured through one visitor, one chancellor, one vice chancellor, and other university officers, one senate, one convocation, and a united professoriate.

The nicely calculated balance of authority is worked out in the senate, the supreme governing and executive body of the university, with control of purely university property and fees. Of the 38 other members than the chancellor of the senate, 6 are appointed by the King in Council, 12 each by the Durham division and the Newcastle division, 8 members are elected by the one convocation, with the proviso that 4 shall have been students of the Durham division and 4 students of the Newcastle division. Provision is made in each division that half of the representatives shall be chosen by the professors or teachers. In the Newcastle division the representation from the College of Medicine is 4 and from Armstrong College 8.

The statutes declare, "There shall be professors *of* the university and professors *in* the university." The professors *of* the university consist of certain persons with vested rights, and of any persons declared by the senate to be professors of the university in positions for which the senate may have received funds. Professors *in* the university are those appointed to the office by the council of the Durham Colleges, or by the council or other executive authority of the College of Medicine, or of Armstrong College, or persons determined by the senate in an affiliated institution.

Under the powers of the senate to suspend or remove from the membership of the university, professors and other teachers of the university may be suspended or removed with the right of appeal to the visitor.

Each faculty has its board, consisting of professors and such other members of the teaching staff as the senate may choose. The general powers of the faculty board are to advise the senate and the authorities of the colleges in the university with reference to the curriculum, examinations, degrees, and the appointment of examiners.

There is also a general board of faculties, consisting of all the members of the several boards of faculties, to make representations to the senate upon any matter concerning the curricula or examinations of the university. No curriculum of university study, or scheme of examination, for initial degrees, shall take effect unless approved by the senate, though it may have been formulated by the executive authority of a college.

The provisions for safeguarding the autonomy of the units in the university are as explicit as those for the institutions' unification. At present there are three units recognized administratively, namely, the councils of the Durham Colleges, of the College of Medicine, and of Armstrong College. Each exercises "full control over the teaching, residence, and maintenance, and discipline of all students of the college." Each controls its finances apart from certain statutable payments to and from the university. Each college in the Newcastle division is an incorporated society whose members are called governors. The executive of each college is a president and council. In each the educational work is primarily in the hands of its teaching staff.

A similar experiment to that at Durham has been tried at St. Andrews University and the University College, Dundee.[1] In 1885 an arrangement was made with St. Andrews under which the science degree of the university was thrown open to students of the Dundee College. Under the universities (Scotland) act of 1889 the commissioners were empowered—

> To affiliate the said university college to and make it form part of the said university, with the consent of the university court of St. Andrews, and also the said college with the object, inter alia, of establishing a fully equipped conjoint university school of medicine, having due regard to existing interests, and to the aims and constitution of the said college, as set forth in its deed of endowment and trust.

An agreement was made providing that the property of Dundee College should remain under the control of the college council, and also the expenditures for maintenance, and the salaries of its staff. On the other hand, the agreement specified that—

> The council of Dundee College should have no jurisdiction over the university teaching in the college or over the courses for graduation, the fees for classes forming part of these courses, or any other academic matters *ejusdem generis* with those named.

The university court agreed to develop the college on the lines of its foundation. The court was entitled to employ the services of any Dundee professor at St. Andrews and of any St. Andrews professor at Dundee with the consent of the professor and of the senate and of the council. The arts degree, as well as that in science

[1] Cf. Ch. II, "Scotch Universities," pp. 56–57; also p. 202.

was opened to the students of Dundee. The college flourished under the arrangement. Opponents of the union, however, by litigation on a technical point succeeded in having it set aside from 1894 to 1897, when it was restored after a decision in the House of Lords. New questions precipitated by additional grants, inclusive fees, and their collection, etc., have caused disputes; nevertheless the plan promises to be permanent.[1]

The principal of Dundee College is appointed by the college council. He, together with the provost of the city of Dundee, is a member of the university court of St. Andrews, thus the college has independent representation in the executive body of the university. But the professors and other members of the staff of the college teaching subjects qualifying for graduation are appointed, not by the college council, but by the university court.[2]

The notable difference between the Durham plan and that of St. Andrews is the statutory provision in the former for an exact equality of representation of the colleges in the supreme governing body of the university. Both plans have found a way of securing the weight and fame of a single institution, of preventing the development of rival institutions with unnecessary overlapping, of preserving the entity and the financial independence of each institution with the benefit of the local enthusiasm attendant upon it. The supremacy also of educational interests and administration to which the financial are made subsidiary is conserved.

A fifth method of coordination is that of cooperation secured by voluntary agreements between independent corporations. Recent and happy examples of this procedure are found in the agreements made between Heriot-Watt College and the University of Edinburgh and between the Royal Technical College, Glasgow, and the University of Glasgow.[3]

The University of Edinburgh and Heriot-Watt College led the way by an agreement in 1901 "to secure mutual cooperation in the training of engineers." A joint advisory committee was appointed consisting of the dean of the faculty of science and four professors in the university and the principal of the college and four governors of George Heriot's trust. A professor in the college was made a member of the examining board for the engineering degree at the university. The advisory committee was "to draw up each year a program for a joint curriculum of study" to be submitted to the university court and to the governors of George Heriot's trust. By

[1] Report of the decision of the House of Lords in an appeal relating to the union betwixt the University of St. Andrews and University College, Dundee, July 27, 1896; statement by the university court, St. Andrews, 1912; memorandum by Principal Sir James Donaldson (undated); memorial for the university court of St. Andrews for the opinion of council, January, 1913.

[2] Cf. Ch. II, "Scotch Universities," p. 65.

this arrangement diploma students of the college received part of their training at the university and degree students of the university received part of their instruction at the college. It was expressly stated that the agreement should "involve no financial responsibility of either contracting party toward the other."

In 1912 the cooperation between the university and Heriot-Watt was carried much further by the development of a complete scheme for degrees in civil, mechanical, and electrical engineering. For the first time the staff and equipment of the college are fully utilized for the benefit of university students. The program of studies provides that all classes in the first-year course are to be taken at the university. In the second and third years Heriot-Watt College classes in specialized subjects are interspersed with those in the university.

After careful consideration by a joint advisory committee of the University of Glasgow and of the Royal Technical College, Glasgow, a scheme of cooperation of the institutions, called affiliation, was devised, which was approved by the lords of the Scottish universities committee in 1911 and by the King in council in 1913. The plan was one of cooperation, departing from strict affiliation in not requiring the representation of the university court on the governing body of the college nor the representation of the governing body of the college in the university court. The separate financial administration of each of the institutions was to continue unaltered.

The senatus academicus of the university instituted a joint board of studies and applied science, consisting of the principal of the university, the director of the college, the university professors whose subjects qualify for graduation in applied science, and the college professors conducting approved college courses in applied science, together with such university and college lecturers in applied science as they may appoint.[1]

The university court, having received from the senatus a report by the joint board of studies in applied science, has approved courses of instruction given during the daytime in the college as equivalent to courses of instruction given in the university for degrees in applied science. The professors and lecturers concerned are to submit annually a scheme of courses and a syllabus of the subjects to the joint board of studies who report thereon to the senatus and to the governors of the college. The senatus in turn reports thereon to the university court.

The governors of the college may communicate to the university court their recommendation upon the reports framed by the joint

[1] At present there are 11 members each from the university and the college in the joint board of studies in applied science.

board of studies. The university court makes the final deliverance to the senatus and to the governors of the college. The examiners in each subject for graduation are the teacher in the university, the teacher in the college, and an additional examiner appointed by the university court. Candidates for graduation who attend approved college courses must pass the same examinations for admission and graduation as the students who attend university cour . They are required to matriculate in the university. They enjoy the same privileges and are subject to the same discipline as other matriculated students.

The fees for approved college courses are not to be less than the fees for university courses and are to be collected and retained by the governors of the college. The fees for courses given in the university and for matriculation, examination, graduation, and registration are to be collected and retained by the university court.

Coordination by a coalition of universities to insure common standards in fees and examinations exists in Scotland, and with reference to examinations in the four new northern English universities.

The Universities (Scotland) act of 1889 empowered the commissioners to make a closer coordination than the existing coalition. The act contemplated the establishment of a general university court, over and above the four universities' courts—

> With a view of taking in review the general interests of the universities, especially in regard to degrees and examinations, and with the duty of reporting to Her Majesty on new ordinances or changes in existing ordinances affecting all or any of the universities, and with power to report to the secretary for Scotland on matters connected with the universities.

Evidently fearing the dangers of centralization and of opportunities for state interference, and appreciating the worth of the individualism of institutions, the commissioners did not establish a general university court.[1] They left to each university court the appropriation of the lump sum allotted to the university out of the annual grant. They reserved to each university court the power to make new ordinances, but effected an interrelation of the four universities by the proviso that such ordinances—

> before being submitted to His Majesty for approval, shall have been communicated by the university court to the senate, the general council, and the university courts of the other universities, and have been laid for 12 weeks before both Houses of Parliament.

The preliminary examinations for each of the four universities are conducted under the control and supervision of a joint board of examiners, consisting of 16 members, each university court appoint-

[1] "An occasional conference of representatives of the four university courts and also a conference of the general councils has fulfilled one of the purposes of the rejected university court.

ing 4 annually, under a scheme representing the four branches of English, classics, mathematics and dynamics, and modern languages. The joint board meets for a year at each of the university centers in rotation.[1]

After the dissolution of the Federal Victoria University, the charters of the four northern universities provided for their coalition to maintain standards for admission and degrees, and to make possible interchangeable attendance at these universities.[2] An alteration of a statute or ordinance relating to these matters, proposed by any one of these universities, can not become operative until it has been communicated to the other three universities. If any of the universities object, the question is to be considered by a joint committee of the four universities. In default of agreement, any of the universities may make a representation to the King in council. In this event without the allowance of the King in council the statute or ordinance does not become operative.

The charters make it the duty of each of the universities to cooperate with the others by means of a joint board for the regulation and conduct of matriculation examinations. The present statutes provide that the board shall consist of 20 members, 5 to be elected annually by each of the four universities with power to coopt 5 persons of educational experience. The joint board is to determine the conditions and subjects of the examination, together with possible exemptions. The senate of each university may exempt from the matriculation examination candidates for a degree whom it judges qualified by higher study. Each university has the power to require a standard higher than that of the matriculation examination, to exercise its judgment with reference to certain optional subjects, and the acceptance of exemptions recognized by the board, and to admit unmatriculated students to such classes as it thinks fit.

It will be seen that the coalition of the northern universities is a reflection of that in Scotland, but not so closely bound by the letter of the law and showing a tendency to emphasize the individualism of the institutions.

Affiliation and recognition may be counted as vague or initial degrees of coordination. As early as 1875–76 Durham affiliated two small missionary colleges.[3] The institution applying for affiliation must satisfy the senate of the University of Durham that "provision has been made for its establishment on a permanent and efficient footing and for its government."

[1] For some time a draft ordinance by the four university courts increasing the powers of the joint board and affecting the regulations as to preliminary examinations has been under consideration.

[2] Cf. Ch. IV, "The New or Provincial Universities," p. 108, passim; p. 111.

[3] Codrington College, Barbadoes, and Fourah Bay College, Sierra Leone.

The senate must be satisfied that—

the teaching staff of the college is adequately qualified for the training of students in subjects set for examination by the university in the faculty or department in respect of which the application for affiliation is made. The equipment of the institution in buildings and apparatus must also be satisfactory.

Students properly certified by the affiliated college as having passed the matriculation and public examinations of the university, and as having fulfilled the conditions of the senate as to residence, atttendance, and conformity to discipline required of students of the university, are registered as matriculated students and receive the degrees of the university.

At the same time that Durham was taking this action the report of the commissioners on Scottish universities of 1876 shows that they were considering various plans of affiliation between St. Andrews and a proposed college at Dundee.[1] The commissioners, influenced by the disadvantages of the reduplication of the arts chairs in Dundee and in St. Andrews, favored a plan to establish at Dundee a college affiliated to the university, the professors of which should be members of the faculties of arts and of medicine of the university, but which should be devoted entirely to applied science and to medicine, leaving the literary moiety of the arts faculty in St. Andrews.

The universities (Scotland) act of 1889 gave a vague definition of "affiliation" as "such a connection between an existing university and a college as shall be entered into by their mutual consent, under conditions approved * * * by the universities committee." A college for the purpose was to be an institution of higher learning "established on a permanent footing and sufficiently endowed in the opinion of the universities committee." A permissive provision was suggested for the representation of the university court on the governing bodies of affiliated colleges, and of the governing bodies of affiliated colleges in the university court, with the proviso of a limitation of the rights of the representatives to sit and vote on particular subjects. This plan of affiliation has never been carried out exactly in Scotland.

Work done at institutions outside the universities is allowed to qualify for degrees. The university courts determine which institutions are to obtain the privilege. They first inquire whether their work is up to university standard and require that the class fee shall be not less than that of the university. The university court retains the power to dissolve the connection. In Scotland this is not called affiliation but simply recognition of outside bodies. In England, Oxford and Cambridge have "affiliated colleges," "affiliated institu-

[1] Cf. p. 197.

tions," and "approved universities." The relationship is established and dissolved by Oxford and Cambridge at will.

The privileges of affiliation granted under conditions set forth by the two universities to members or graduates of affiliated institutions consist of exemptions from certain examinations and a shortening of the term of residence at the university. The charters of the new English universities give them powers to affiliate colleges and institutions or parts thereof. The privileges and the conditions of affiliation are similar to those at Oxford and Cambridge, though generally the ordinances of these universities add more specific requirements. They demand that the majority of regular students in the affiliated college are of the age of 16 years, that the university be represented on the body determining the courses of study submitted for approval by the university. They demand that the approved courses be equivalent to those of the university, the right of inspection by the university, and its satisfaction as to the qualifications of the teachers conducting the approved courses.

There is a slight but suggestive interrelation of all the English universities not constituting affiliation but a sympathetic reticulation. The charters of the new universities authorize the appointment of representatives upon other educational bodies. The older universities already had representatives upon numerous colleges, schools, and committees. The new universities follow their example most extensively.[1] Reticulation underlies the coordination of the higher institutions and is an attempt to extend it to all educational bodies. It is a rising into consciousness of a subconscious national system not yet legally organized.

The manifold experiments in coordination impress upon one several outstanding features. The value of educational unification has been learned to secure economy, efficiency, and power. It is an example of the modern movement toward cooperation and combination in the business world. No institution can remain absolutely independent and isolated. There is a clear differentiation between the business world's and the educational world's application of "combination." The former, true to the idea of a university as a society of teachers and scholars, "a corporation not conducted for financial profit," in any coordination of a *geistlich* corporation takes care not to commit it to a mere financial board of control, least of all a paid board. Indeed there is no case of the kind in education, high or low, in Great Britain.

Financial unity is kept subsidiary to educational unity. The history and genius of each institution is respected. Representation

[1] Leeds has representatives upon the courts of Bristol, of Liverpool, and of Sheffield; all universities have representatives on the general medical council and various local education committees, schools, and the Workers' Educational Association.

is given to each one. Even in the closest coordination by financial incorporation, as in the proposed reconstituted University of London, the constituent bodies are represented in the supreme governing body and in the faculties in which they are concerned. In every case the faculty is represented. Coordination is effected in large districts having common interests corresponding to American States or great urban districts. The instances are Scotland, the empire of the north in England, Durham and Northumberland, and London. Mere affiliation does not conform to the above principles and practices. It may be an initial movement toward coordination. Generally it is an arm's length arrangement, sometimes reaching throughout the Empire and to foreign countries. It represents an emerging world-wide republic of letters.

Chapter XIV.

APPLIED SCIENCE AND PROFESSIONAL EDUCATION.

The question whether applied science should have a place in the universities and colleges or in separate institutions has been settled in Great Britain by the incorporation of applied science in the teaching of every university and university college.[1] This unanimity in practice has only been arrived at recently, and after the earlier development of powerful separate institutions. By the middle of the nineteenth century Newman had formulated the doctrine, which gained great acceptance, that a university was not to teach anything useful, though it involved him in inconsistency and difficulties in his embracing a college of medicine in his Irish university. At the same period the supposed antagonism between the classics and science made for separate institutions. The example of Germany in the establishment of its *Technische Hochschulen*, apart from the unversities, with the right to confer the degree of "Doctor of Engineering Science" had its influence in the same direction.

Huxley, the protagonist, in the seventies, of science versus classics, enunciated the principle that applied science is essentially in the university sphere when he said:

> I often wish that this phrase "applied science" had never been invented. For it suggests that there is a sort of scientific knowledge of direct practical use, which can be studied apart from another sort of scientific knowledge which is of no practical utility and which is termed "pure science." But there is no more complete fallacy than this. What people call applied science is nothing but the application of pure science to particular classes of problems.[2]

Despite the wish of Prof. Huxley, the phrase "applied science" was so apposite it gained increasing currency. Indeed, the occasion upon which he made the remark was due in part to the appeal of the phrase to the founder of Mason's Science College.[3] In the coinci-

[1] Cf. Chs. VI, "Technical Colleges and Schools;" XIII, "Coordination of Institutions;" I, "Oxford, Cambridge, Durham," pp. 35–36.

[2] Address at the opening of the Mason Science College, Birmingham. Oct. 1, 1880; cf. The Proposed University of Birmingham, by Prof E. A. Sonnenschein, Nov. 15, 1898. For definition of "applied science," cf. Ch. IV, p. 126.

[3] Mason, Josiah. A Biography, supra, p. 131.

dence of an age of science and an age of industry the phrase opened the purse of the captain of industry and pointed out the extending domain of the professor of science. Applied science emphasized the teaching of the principles rather than the practice of an art. In English usage it stands for instruction in higher education in a professional school on a par with those of the ancient professions. Technical and polytechnic schools are chiefly secondary schools emphasizing the art or practice and graded off in their elementary departments into trade schools. Applied science includes the training of the engineer as the member of a profession; the technical school the training of the mechanic as an artisan.[1]

Only recently has the confusion of ideas and terms begun to clear itself up, and more especially in connection with the founding of the new English universities.[2] In the merging of Mason's Science College into the University of Birmingham, Prof. Sonnenschein presented the idea:

> Let us then widen the term "technical education" so as to include all those special studies which prepare men for earning their bread in a profession; or, better, let us substitute a new term for it and speak of professional education and professional schools or colleges, which, being above the level of secondary school work, should be grouped around the faculties of a university and closely associated with them in government and teaching.

Prof. Sonnenschein anticipated what has since been realized, a modern university, broadened by the definition of technical education, consisting of a college of arts about which should be a group of professional schools in education, commerce, agriculture, architecture and the allied arts, sanitary science and hygiene, and applied science, as well as theology, law, and medicine. So rapidly was this ideal realized that the vice chancellor of the latest of the new universities at its opening declared that in Great Britain the modern universities recognized at least half a dozen new professions in addition to the four learned professions of teaching, of divinity, of law, and of medicine, embraced in the universities of the Middle Ages. The studies like agriculture and engineering have also made good their footing in Oxford and Cambridge. He contended that there was historic ground for embracing the study of all professions within the scope of a university, inasmuch as the mediæval universities "had always very practical ends in view," and prepared their students for the learned professions then existing.[3]

Speaking broadly the ancient professions have been considered as forms of applied science. In the modern applications of the physical and biological sciences to medicine this usage is quite evident. It

[1] Cf. Ch. III, "University of London, pp. 91–92.
[2] Cf. Ch. IV, "The New or Provincial Universities."
[3] Owen, Sir Isambard, *supra*, pp. 23, 24.

is not so striking to the popular mind in the case of law and theology, unless one return to broader definitions like that of Bacon when he said, "Theology is the haven of all the sciences." Increasing appreciation of this definition, the tendencies to unification and the methods of coordination of institutions, have enabled even secular universities like London and Manchester to have faculties of theology, and to overcome the *odium theologicum* and the difficulties of denominationalism.[1] Excepting London, all British universities which offer degrees in divinity rank the theological faculty as a superior faculty. The fact that the faculties of theology, of law, and of medicine have always been accounted as superior faculties to the arts faculty, and in ordinary course the arts degree, preliminary to the professional degree, reinforces the notion that in the higher sense these are faculties of applied science.

The guildlike organization of the professions of law, of medicine, and of theology, with power to set their own standards and to admit and to dismiss members independent of the State, has tended to subordinate the professor to the practitioner. They tended to limit their university faculties to the teaching not of principles but of practice. They set up their own schools independent of the universities. The new and still "open" professions have started to follow their example. We have the Institute of Civil Engineers, of Mechanical Engineers, and of Electrical Engineers, and the Pharmaceutical Society of Great Britain, setting their own examinations and standards.

The legal profession has retained complete control of legal education by its sole power to license solicitors and admit to the bar through membership in the law societies and the Inns of Court. They make some concessions to holders of university degrees. The tendency to secure a more intimate relationship between the profession and the universities is marked. There has long been an agitation, especially in London, for the university to gain a larger control of legal education, and in the Provinces the law society's subsidized local boards of legal studies tends to grow into the law school of the local university.[2]

In medicine 18 universities and certain professional colleges and societies are legally entitled to test candidates and to confer degrees or diplomas. On the face of it medical education would seem to be in the hands of the teaching bodies. In fact, it is controlled by the profession through the general medical council established by an act of Parliament of 1858 to distinguish qualified from unqualified practitioners. The medical profession is not like that of law, a

[1] Cf. Ch. IV, "The New or Provincial Universities," pp. 112–113.

[2] Haseltine, Harold D., "Legal education in England" (Reprint, Transactions of the American Bar Association, 1909), p. 891. Cf. Richards, H. S., "Legal education in Great Britain," Bulletin, United States Bureau of Education.

close corporation, having a monopoly of practice and protection against the competition of the untrained. The public are free to seek "medical aid" from the unqualified practitioner, who is only under certain disabilities in the use of titles and giving valid certificates. The "qualified" men have official recognition, but are subjected to central educational and disciplinary control. They are "registered practitioners." The general medical council has of necessity grown into a council of education, a board of registration, and a court of medical conduct. It has become the determining influence in medical education, though—

"its powers only enable it to visit and inspect examinations, and to call for information as to the courses of study; it is not authorized to prescribe or to amend either. It can not itself disallow an 'insufficient' curriculum or an 'insufficient' test; it can only report its opinion to the privy council."[1]

The general medical council represents the State on behalf of the public through members appointed by the Crown, the medical profession itself through members elected by the registered practitioners residing within the Kingdom, and the universities and bodies which educate and examine in medicine through members appointed by the several bodies. Thus the constitution of the general medical council interweaves happily the educational, professional, and public interests.

Only recently has dentistry been admitted to be a profession and as a consequence the belief entertained that the university ought to train for it.[2] It is treated as a subsidiary branch of medicine and the instruction, when given in a university, committed not to a faculty but to a section of the medical faculty or to a department or school.

The dentists' act (1878) provided for the registration of dentists by the general medical council and gives the council powers similar to those in the case of medical examinations of inspecting the examinations of the licensing authorities. It parallels for dentists the provisions for qualified medical practitioners. In view of the fact that the law does not prohibit any person from practicing dentistry, and that legally qualified medical practitioners may do so, it is reported that there are only about 3,000 qualified dentists, and perhaps from 25,000 to 35,000 unqualified practitioners.[3] In this state of the law the largest part of dental education is carried on outside the universities. As yet to secure students who will prepare for the standards proper to a university degree, only five English universities are bold enough to lead the way by giving a degree in dentistry.[4]

[1] MacAlister, Donald, president of the Gen. Med. Council. "Introductory Address on the General Medical Council," Manchester, 1906, p. 18, passim.

[2] Cf. Ch. IV, "The New or Provincial Universities," p. 114.

[3] Final Rep. of Commission on Univ. Educ. in London, supra, pp. 141–145.

[4] Birmingham, Bristol, Leeds, Liverpool, Manchester. London only gives the post-graduate degree of M. S. in dental surgery.

In theology the licensing of the ministers is absolutely in the hands of the different churches. Theological education traditionally committed to the universities, but by divisions in the church largely withdrawn and placed in church institutions, is again turning back to the universities. Among the tokens of the movement are the opening of the theological degrees at Cambridge to those who are not members of the Church of England, the agitation at Oxford to follow the example of Cambridge, and the formation of theological faculties, or the inclusion of theological subjects among those for the B. A. degree in secular universities. The theological faculties of Victoria University, Manchester, and of the University of London are notable successful experiments of securing the cooperation of different denominations in secular universities. The testimony is that a sectarian issue has never yet emerged in either of them.[1] The day of the isolated theological school is passing. Twenty-eight out of thirty-six theological colleges of the Church of England are affiliated to or located at the seat of a university.[2] There has been a series of removals of theological colleges to university centers, as in the case of Mansfield (Congregational) to Oxford, Westminister (Presbyterian) and Cheshunt (Countess of Huntingdon Connection) to Cambridge.[3]

The force of the centripetal movement that attracts professional education old and new to the universities may be judged by the prejudices and difficulties which have had to be overcome in theological education.

But the supreme triumph of the movement has been in the case of applied science, now attached to every university in Great Britain and Ireland and almost without exception throughout the universities of the British dominions. In addition to the antagonism of ancient classical institutions to the new scientific ones, and the force of the example of the separation of the technical *hochschulen* from the universities in Germany, were the establishment and endowment of technical schools by aroused commercial and industrial interests and by the distribution of public (whisky) money 1890 for technical education.[4] The rapid development at the capital of wealth and of the Empire of the Royal College of Science into the Imperial College precipitated the question of making it an independent technological university and the crown of the technological schools

[1] Garvie, Rev. Dr. Alfred E., "The Christian Churches, the Theological Colleges, and the National Universities," Contemporary Rev., Nov., 1913.
[2] Handbook of the Theological Colleges of the Church of England and the Episcopal Church in Scotland, Longmans, 1913.
[3] Cf. tables for universities giving theological instruction.
[4] Cf. Ch. VI, "Technical Schools and Colleges."

throughout the country. This would have brought schism into the evolving national school system and led to overlapping of universities in London, and would have contravened the historic idea of a university. After repeated investigations by commissions and departmental committees, this general notion has been rejected. It has been decided that the place of the Imperial College is in the one University of London.[1] Applied science inseparable from pure science comes to its proper place in the sisterhood of professional schools in a university. According to Lord Rosebery, "This is one of the giant strides which has been made in university development during the last 30 years."[2]

The teaching profession, the youngest of all outside the universities, though one of the oldest in history, has just begun to organize itself by the formation of the Teachers' Registration Council somewhat along the lines of the general medical council.[3]

The council announces:

> The register itself is but the beginning of a movement toward the promotion of self-government and self-organization such as will place the work of teaching on a truly professional base. * * * Matters concerning salaries, pensions,[4] and conditions of work such as are of general interest to all teachers will in due course be considered. * * * It is anticipated also that the council will be able to organize systematic research into educational problems and so play an important part in the development of a true science of education.

---

[1] Final Report of the Commissioners, London, supra (cd. 6717), pp. 32, 83, 117. Cf. Ch. III, "University of London," pp. 78–79.

[2] "Address to the Royal Technical College, Glasgow, after the affiliation of the college with the university." The Times, Dec. 12, 1913. See Ch. XII, "State Aid and Visitation," p. 190; Oxford's receipt of Aid for Engineering Science. Cf. the combination of departments of engineering of Harvard, Mass., and Mass. Institute of Technology, which President Lowell said "constituted the most important movement toward the conservation of educational forces that the country ever had known." N. Y. Times, Jan. 10, 1914.

[3] Constituted by order of the council in 1912, under the Education (Administrative Provisions) Act of 1907, and succeeding a conference of representatives of 37 associations of teachers unanimously favoring the project. For a report of the conference and of the secretary of the board of education, cf. Parliamentary paper (Cd. 5726). Thus concluded a series of efforts to form a register of teachers beginning in the year 1846. "The unification of the teaching profession" is aimed at by drawing the membership from every form of teaching work. The council consists of 44 members, all of whom are teachers or have been teaching. The 11 universities in England and Wales and 42 associations of teachers are represented on the council, 11 members from each of the four groups—University teachers, elementary school teachers, secondary school teachers, technological and specialist teachers. A certificate of registration renewable every 9 years may be issued upon the payment of one guinea to persons 25 years of age, meeting certain conditions as to attainments, training in teaching, and experience. The qualifications required to satisfy the condition of "attainments" are the degree or diploma of an approved university or other institution, or a certificate by the board of education, or of other approved examining body, and a course of study of three academic years of full-time day instruction or equivalent in subjects satisfactory to the board. Till 1921 "satisfactory experience alone" is required. Up to October, 1915, the total of applicants for registration was only about 12,000, out of perhaps 150,000 eligible to apply. The war and the withdrawal of some 8,270 teachers from school work to serve with the forces account in part for the slow registration.

[4] Cf. Ch. XI, "Provisions for the Faculty," pp. 188–189.

If these ambitions of the council can be fulfilled, not only a profession of education will be organized on a par with the other professions, but also the now inchoate faculties of education in the universities and colleges will become full faculties. At present, Edinburgh and Manchester excepted, there is no faculty of education in any university in the United Kingdom and no specific degree.[1] This does not mean that the universities which have from the beginning prepared the masters for the "public schools" have not fallen in with the movement for the training of teachers, both elementary and secondary, at the university. As early as 1878 Cambridge appointed a teacher's training syndicate. Under its superintendence lectures are given and examinations are held by the university in the theory, history, and practice of education, including method, school management, and practical teaching. The test for practical efficiency requires training for at least a year in some training college inspected and recognized by the syndicate or teaching for a year in a school recognized for the purpose.[2] In 1891 Cambridge took a forward step by opening a training college for schoolmasters in a primary department. A three years' course calling for hard training in a combination of certain university studies and professional training leads to the B. A. degree. Cambridge asserts that "the testimony of 20 years is decidedly encouraging" in this attempt to bring university-trained schoolmasters into the elementary schools.

In 1892 Oxford also established a delegacy to encourage the training at the university of teachers in the public elementary schools. Students entering in 1912 and thereafter will have a course of four years, the fourth year devoted wholly to professional training.

In 1898 Cambridge established a department of secondary training for which Oxford now also provides.

The Scotch universities[3] without faculties or specific degrees in education, by means of a professorship or lectureship in education, and by cooperation with the provincial committees for the training of teachers, provide a four years' course, so arranged that the first three years may be given almost wholly to university work and the last year to professional training.

Even the new English universities, excepting Manchester, have no faculties or degrees in education, but have strong departments of

[1] Cf. Ch. IV, "The New or Provincial Universities," p. 115. A Conference of Representatives of the General Councils of the Universities of Glasgow, Aberdeen, and Edinburgh, Oct., 1915, "was of opinion that a faculty of education should be established in each university," that a postgraduate professional degree in education—bachelor of education—should be instituted, and also a doctorate in education. Cf. Ch. II, "Scotch Universities," pp. 64–65.

[2] At present some 30 training colleges are recognized.

[3] Edinburgh has just established a faculty of education and the degree B. Educ.

education and are in cooperation with the board of education and training colleges.[1] This is true also of the University of London.[2]

It is obvious that the universities, the original home of the teaching profession, tend with the more distinct differentiation of professions to set up a "superior faculty" of education and to embrace a professional school of education among the schools of other professions. There is confirmation for the practice, increasing in the United States, of arts colleges including departments of education with their professional work for arts degrees. The inclusion of the training of elementary as well as secondary teachers to give the touch of the university to all grades of the profession, the close alliance of the university with a certificating board of education, and the affiliation of the separate training colleges foreshadow the disappearance in this as in the other professions of the isolated school. The indication is that the place of a normal school or college is in a school system culminating not in it, but in a university.[3]

The other partially organized professions, like the fine arts, music, and journalism,[4] with the rare exception of music, have no formal faculty. Their principles and history have found a place as a branch of university study in the faculty of arts, but their technique has been left to recognized teachers and affiliated organizations. Oxford, Cambridge, and London have always awarded degrees in music, but no faculty of music has survived except a nominal one in London. The latter the commission recommend shall be dissolved as unnecessary so long as the teaching of music is in the hands of "recognized" teachers in the several strong musical colleges in London.[5] The degrees are to be continued as "external" degrees. In Scotland, only Edinburgh has a faculty of music and a chair of fine art. In the new English universities only Manchester has a faculty of music and Birmingham a chair. In general the universities acknowledge fine art and music as susceptible of being academic disciplines and worthy of recognition either for a B. A. or specific degree. The instruction is given chiefly in the arts faculty and the executant work

[1] Cf. Ch. IV, "New or Provincial Universities," p. 124.

[2] Cf. Ch. III, "University of London," pp. 86–87.

[3] Cf. Ch. II, "Scotch Universities," p. 49; also cf. Smith, J. C., Chief Inspector, Report (1912–13) Training of Teachers (Scotland), Wyman & Sons, London, 1914, p. 3. 1st Normal Coll. Dundas Vale, Glasgow, 1834; by 1887 the churches had 8 training colleges, but closer connection with universities after 1873, when abler students of training colleges were encouraged to attend universities, and 1887–88 leaving certificate stimulated demand for higher education and training period extended; universities also asked why not undertake whole training; 1895 local committees for training created and in 1905 reconstituted in four provincial committees with representatives of universities of central institutions on university level and of churches where they were concerned; and university course extended from three to four years.

[4] Cf. Ch. IV, "The New or Provincial Universities," p. 118.

[5] Rep., supra, pp. 150–152, 181.

in affiliated institutions. A university without opportunity for the study of fine art and music is exceptional and excuses its shortcoming because of lack of funds.

The thesis stands that applied science, as contradistinguished from mechanic arts, belongs in a university as one of its professional schools, and that all the professions, old and new, look to the universities as the center for professional or advanced instruction in the science of the profession which is to be supplemented by gaining the art of the profession in practice regulated by the organized profession.

Chapter XV.

ADVANCED STUDY AND RESEARCH WITHOUT GRADUATE SCHOOLS.

From the seventeenth century onward the British universities were absorbed in teaching undergraduates. So completely was the function of a university to advance knowledge lost sight of that research was not mentioned among the 12 points of reform for Oxford, urged by Sir William Hamilton in the Edinburgh Review (1831–1836). The report of the commission of 1850 did not dwell upon the subject. But, beginning with Bonamy Price in 1850, there has been a line of advocates of the promotion of research as a first duty of a university.[1] Among them are no less names than those of Matthew Arnold, Mark Pattison, and Jowett. By 1877 the universities of Oxford and Cambridge act plans for provisions for "the doing of work or the conducting of investigations within the university." Outside academic circles, the demand has been constant and increasing that the universities should make contributions in the field of research, especially as related to the industries, in view of the rising competition of Germany and the United States and the example of their universities.[2] The war has intensified this appeal, and deepened the conviction of the universities and the Nation in the pursuit of this policy.

In the face of current criticism on the insufficient provision for advanced study and research, one is happily disappointed by what has been attempted or accomplished as shown by a mere glance at some of the facts. All the universities now make a feature of announcing the opportunities they offer for advancing study and research. Oxford and Cambridge include entire chapters upon the subject in their handbooks. In 1896 Cambridge established courses of advanced study and research and made it possible for the graduates of other universities to proceed to the Cambridge B. A. or LL. B. In 1912 the statute substituted the term "research student" for "advanced student" and broadened the terms for admission

[1] Price, Bonamy, "Suggestions for the Extension of Professorial Teaching in the University of Oxford, 1850"; cf. Tillyard, supra, pp. 86–92, 175–179, 260, 386; cf. Curson, "Principles, etc.," supra, Ch. IX, "Encouragement of Research."

[2] Cf. Lockyer, supra, pp. 5–13, "The endowment of research, 1873"; cf. Ch. VI, "Technical Colleges and Schools," and Ch. XIV, "Applied Science and Professional Education."

for such students. A research student, ordinarily a college graduate, may receive a "certificate of research" after three terms of residence and the acceptance by the degree committee of a dissertation upon the research done by him in the university. A student who has obtained a certificate of research and has been in residence at least six terms may proceed to the degree of B. A. or LL. B., and thereafter in course to the degree of M. A. or other advanced degrees.

In 1895 Oxford instituted the degrees of bachelor of letters (B. Litt.) and B. Sc. to encourage special study and research among both its own graduates and other students likely to pursue advanced studies with profit. Not less than eight terms of residence are required. Unlike degrees in arts, these degrees do not make one eligible to share in the government of the university by membership in convocation. In 1900 the university further instituted the higher degrees of doctor of letters and doctor of science, awarded for published work containing an original contribution to knowledge. Out of 1,241 other degrees than honorary conferred in 1912–13 the total number of these research degrees was only 23. It is not fair, however, to gauge the extent of special study and research by these degrees. Many of the final honors schools for the B. A. involve special and advanced studies, and this is also true in the examinations for degrees in law and in medicine. Again, special and advanced lectures are accounted one of the most distinctive features of Oxford teaching. Comparatively recently courses leading to diplomas or certificates have been introduced, with the general object of providing for special lines of study supplementary to the ordinary curriculum for the B. A. or B. M. degrees.[1]

Both Cambridge and Oxford offer ample opportunities for research, on account of the specialists in their own subjects among the teachers as well as the libraries, the laboratories, and the museums. A university policy of research has slowly developed at Oxford and Cambridge since the commissioners' statutes of 1882 provided for a number of college fellowships specially allotted to advance study or research. They were intended chiefly as prizes for excellence in scholarship. Any graduate of Cambridge or Oxford is eligible for election. The yearly income of a fellowship is not less than $1,000 and certain perquisites. In ordinary cases the tenure is six or seven years, and the holders are under no obligation to serve their colleges or even to be in residence. For financial reasons the number of "prize" fellowships has rarely exceeded 20 at Oxford.

[1] At present diplomas or certificates are given for a course extending over a year or more in geography, education, economics and political science, mining and engineering, anthropology, forestry, classical archæology, rural economy, public health, and ophthalmology.

Some colleges have established research fellowships, tenable on condition of the fellow prosecuting some definite scientific or literary work, the prize fellowships not having been particularly fruitful.[1]

Both universities, largely through recent private munificence, have founded university scholarships, usually open only to graduates, in contradistinction to the numerous college scholarships for undergraduates. Oxford has about 50 of these scholarships, of the aggregate annual value of about $21,150, and Cambridge about 57, of the value of about $28,000. Each university has also a number of valuable prizes for graduate work.

The relatively small proportion of graduates to undergraduates pursuing studies at the old universities ought not to be taken as a measure of the progress in them of the university policy of research. The specialization possible and the advanced work offered in the honors schools, commonly occupying a fourth year of study, in addition to the three years for the ordinary B. A. degree, and the fact that the M. A. degree does not require further scholastic work or residence, added to the tradition that culture and not investigation is the object of the university, must be taken into account.

In Scotland the universities commission of 1889 adopted regulations for the encouragement of special study and research and for the appointment of research fellows. Accordingly, the four universities admit as research students graduates of Scottish or of other universities or persons not graduates who give evidence of fitness to engage in some special study or research. The title of research fellow may be conferred with or without a stipend on specially distinguished students. The number of these students has been inconsiderable.[2]

The four universities have over 170 scholarships for graduates, of an approximate aggregate value per annum of $65,000.[3] These scholarships have practically been given within the last 50 years and are administered by each university chiefly for its own graduates. There are also several scholarship endowment funds open to the graduates of any of the Scottish universities, not including the Earl of Moray endowment for the promotion of original research[4] at Edinburgh, and the munificent research scheme of the Carnegie trust. The latter alone in 1913–14 awarded 152 research fellowships, scholarships, and grants, worth $50,885.[5] In addition, the trust

[1] Cf. Ch. I, "Oxford, Cambridge, Durham," pp. 31–32.

[2] E. g., Glasgow, 1913–14, 20 students.

[3] St. Andrews about 22 scholarships, of about $7,000; Glasgow about 58, of about $21,500; Aberdeen about 23, of $8,000; Edinburgh about 70, of $30,000.

[4] The available annual income about $3,900.

[5] In the distribution of awards over the four university centers St. Andrews received 8 fellowships, 10 scholarships, and 13 grants, worth $9,095; Glasgow, 7 fellowships, 8 scholarships, 32 grants, worth $13,550; Aberdeen, 3 fellowships, 9 scholarships, 21 grants, worth $10,610; Edinburgh, 7 fellowships, 14 scholarships, 25 grants, worth $17,630. [6] Cf. Ch. II, "Scotch Universities," p. 51.

decided in 1914 to offer an annual essay prize of $500 for competition among graduates of the universities who have not been fellows under the trust, to encourage postgraduate study and research within the departments of history, of modern languages, and of literature.

The Scottish universities also have stimulated graduate work by advanced degrees, though there are anomalies in the titles, due in part to the fact that the M. A. is conferred as a first degree. The bachelor of divinity is a second degree to which an M. A. is a prerequisite, and residential graduate work is required, nor can it be conferred *honoris causa tantum*.

The first medical degrees are bachelor of medicine (M. B.) and bachelor of surgery (Ch. B.), and these must be taken together. The second degree is that of doctor of medicine (M. D.) or master of surgery (Ch. M.), as the case may be, requiring not less than one or two years of graduate study or practice, and the passing of prescribed examination and submission of a satisfactory thesis. After 1908 the universities offered higher degrees in arts and science and forbade the giving of them *honoris causa tantum*. The degrees were doctor of science (D. Sc.), doctor of philosophy (D. Phil.), and doctor of literature (D. Litt.). They are open to graduates with honors of not less than five years' standing in Scotch or recognized universities. In case the graduate is a "research student," he must spend two terms in each of two years in the university in satisfactory work. All candidates must present a thesis recording original research. In lieu of a thesis, an engineer may present an original design of work which has been executed. The number of advanced degrees conferred by the four universities is very small, but increasing in medicine and science.

All the charters of the six new English universities specify that the university shall further the prosecution of original research in all its branches. Therefore, these institutions from the beginning have laid great stress upon research and graduate work. They have secured endowments for research professors and schools, like the professorship of biochemistry in Liverpool and the school of tropical medicine.[1] It is expected that the spirit of inquiry will be encouraged in all departments by teachers who are contributing publications in research. These universities make a point of reporting separately the number of students taking "postgraduate" courses. Beginning with the M. A., they have made the higher degrees not merely nominal or honorary. The master of arts must be a bachelor of the university of one year's standing who has graduated with honors in arts, or passed a prescribed examination, or presented a satisfactory thesis. They have instituted master's research de-

[1] Cf. Ch. IV, "The New or Provincial Universities," pp. 120–121.

grees for those who have passed degree examinations of approved universities when they have conducted research in the university for at least two years. They even admit candidates who have not passed degree examinations if the senate is satisfied that they have sufficient education to carry on successful research for three years.

The Litt. D., LL. D., and D. Sc. are conferred on graduates of not less than four years' standing who give sufficient evidence of conducting orignal research. Research students are allowed the use of special laboratories at a reduced fee. There are numerous research fellowships, studentships, and scholarships for advanced study. The University of Bristol is even offering a research B. A. or B. Sc. degree for three years of original research in lieu of the pursuit of a curriculum. Herein Bristol is following the example of London, which offers the B. Sc. degree to be taken "by research" by internal students. Indeed, the University of London offers great opportunities for postgraduate study and research through its numerous schools and institutions. External graduates, graduates of other approved universities, and persons who have passed examinations equivalent to those required for a degree may enter as internal students for the degree of M. A. and for the degree of doctor in the several faculties. The course of study for these students covers at least two years.[1]

In addition to the several research institutions like the physiological laboratory,[2] or the Lister institute of preventive medicine, the incorporated colleges and schools of the university encourage research in all departments. The university requires the provision of facilities for advanced work and research wherever it appoints a teacher as a university professor or reader. Recently the university has received a number of funds for the promotion of research.[3]

The university has hardly a dozen scholarships and studentships open to graduates; nevertheless, the colleges and schools of the university impregnated by the spirit of the university had about 1,359 postgraduate students enrolled in 1913–14.

The place of graduate work and research in a university has been studied afresh by the commission on university education in London (1913): In the hearings before the commission all sides of the question were presented. There were advocates of a "super-university." They called "the true university work not that of undertaking teaching up to the bachelor stage, but of advancing research and higher learning." They proposed a series of institutes under control of the university, grouped round the headquarters of

[1] In July, 1913, there were some 90 such students.
[2] Cf. Ch. III, "University of London," pp. 85–86.
[3] Charles Graham medical research fund; Dixon fund for scientific investigation; the Ratan Tata fund.

the university, but detached from the different colleges. The advocates of this proposal had a special motive of extending the external side of the university. They made two admissions well-nigh fatal to their theory. When they said "the teaching up to the stage of the bachelor's degree in most subjects may be very well left" to the colleges, and they were not able to say all subjects, they admit there can be no clear cleavage between the college and the university. They made a more damaging admission in saying—

> It is most essential that teaching should not be divorced from research, and that in every school of the university the teachers and students should be actively encouraged not only to promulgate what is at present known in their subject, but also to extend the bounds of knowledge.[1]

The commission summarizes its conclusions against proposals which tend to break up a close association of undergraduate and postgraduate work as follows:

> A hard and fast line between the two is disadvantageous to the undergraduates and diminishes the number who go on to advanced work. The most distinguished teachers must take their part in undergraduate teaching, and their spirit should dominate it all. The main advantage to the student is the personal influence of men of original mind. The main advantage to the teachers is that they select their students for advanced work from a wider range, train them in their own methods, and are stimulated by association with them. Free intercourse with advanced students is inspiring and encouraging to undergraduates. The influence of the university as a whole upon teachers and students and upon all departments of work within it is lost if the higher work is separated from the lower. Advanced instruction of a specialized kind must be provided for occasional students who are already engaged in a profession or calling.

Caution is given against making all kinds of research of equal value. Research students must have the wider point of view of a liberal education. Research professors need a sympathetic relation to other branches of knowledge and must be kept to a just appreciation of the limitations as well as the possibilities of their own specialty. "The establishment of research professorships *eo nomine* would produce the impression that other professors would not be expected to make additions to knowledge."

The fact that no British university has organized a graduate faculty despite their recent interest in and study of the organization of research brings home to one the uniqueness of the American constitution of graduate schools and incipient superuniversities. To be sure one has to take into account the British absence of a horizontal grading or stratification of education. Theirs is a system of overlapping, or better, of interlocking, of all the grades, primary, secondary, collegiate, and university. It represents a growth. The

[1] Commission Rep., supra, pp. 28–30, 86, 72. Cf. Ch. III, "University of London," pp. 91–92.

connections are more vital and less mechanical than the American system. It would therefore be unnatural for them to segregate graduate work. Nevertheless, one raises the query if the more or less artificial system of American grades has not been carried too far in superimposing upon the colleges a kind of superlative graded school, albeit a large amount of the graduate school curriculum is offered to undergraduates.[1] The British plan of encouraging advanced studies, and giving opportunity for specialization in their "honor schools," and their quasi-combined undergraduate and professional courses, disseminates the research spirit through the entire student body. "The superior faculties"—the strictly graduate faculties—are not pushed on one side as merely professional faculties, but are infiltrated with the same spirit in conjunction with the arts faculty.

There has been a rapidly rising appreciation of the need and value of research by the British Government. A few illustrations will show the Government's increased utilization of experts and grants in aid of research. First among these comes the royal commission for the exhibition of 1851, among whose many activities is the institution of their scheme of science research scholarships.[2] The Government committed itself anew to subsidies to investigation and research in the development and road improvement funds act of 1909, guaranteeing to the fund $14,500,000 for the period up to the end of the financial year 1914–15. The development commission has granted large sums to the universities and colleges for the initiation or assistance of schemes of agricultural and other economic instruction and research. The commission has recommended a continuation of the fund.[3]

Under the national insurance act (1911) in 1913 an annual grant of about $285,000 became available for research. A medical research committee with executive functions was appointed for the purpose of dealing with the money. Also, an advisory council was appointed upon nomination of distinguished specialists, and by each of the universities and other learned bodies. The duty of the advisory council is to make recommendations to the minister responsible for national health insurance before he gives his final assent to the medical re-

[1] Cf. "There is, however, no other division of American university work that has in the past been less sincere and more open to criticism than the so-called graduate schools. It has been assumed that no research work could be done unless there was a formal graduate school, whereas, if research comes at all, it grows naturally out of the work of teacher and student." "Education in Vermont," Carnegie Foundation, Bulletin No. 7, 1914, p. 204.

[2] The scholarships of the value of $750 per annum are ordinarily tenable for two years. The scholars are appointed from graduates upon nomination by universities in the Empire; 20 were appointed in 1913.

[3] The grants to colleges and institutions in aid of research, investigation, and scholarships in 1914–15 were $284,825. Cf. Report Development Commissioners, 1914, pp. 8, 55–57.

search committee's scheme for any year. They report upon the various kinds of research work going on in the different parts of the Empire, in America, and in foreign countries. They make suggestions upon the general scope of the research work to be undertaken under the committee's scheme. In 1914 the parliamentary budget contained a scheme for establishing in such available centers as the county towns special departments, where the panel doctor should have it in his power to command any specialist's services that he needed. These would be scientific centers to help and stimulate the practitioner in research. The example of Cambridge in establishing the first research hospital in Britain is being followed by the committee of national research in setting up a research hospital, and also by the establishment of research wards in some of the great London hospitals. Recently the prominence of research as a function of the hospital has been much dwelt upon. Just before the war Mr. Balfour alluded to the happy rivalry for the furtherance of knowledge by researchers in all countries, and, as yet unenlightened by the war, added, "A rivalry far happier than that in armaments, but, he sometimes thought, hardly less expensive."[1]

Following the analogy of the advisory committee on aeronautics, established in 1909, and their research work carried out at the national physical laboratory, Cambridge, a committee appointed by the postmaster general reported, in 1914, in favor of the establishment of a national committee for telegraphic research and a national research laboratory.[2]

Without anticipation of the outbreak of the war, in the first half of 1914, there was a discussion by some 40 distinguished educators and public men of the duty of the State to encourage and reward research more effectively and generously.[3] There were different opinions as to the form that State encouragement should assume. Many correspondents believed that successive governments were apathetic and that it was hopeless that any of the schemes proposed would receive at present effective Government aid. Dr. Farnell asserted that:

> This apathy toward discovery and research, which is more marked in our country than in Germany, France, or the United States, is a vice of our national (British) temperament, due to a faulty educational system, and the blame attaches to all our educational institutions from the primary school to the highest university.[4]

He prophesied that this apathy would tend to disappear with the realization of how profoundly it threatens the national position.

[1] Balfour, Hon. A. J., "Address at Guy's Hospital," The Times, June 4, 1913; Cf., Allbutt, Sir. T. Clifford, "Address, St. Thomas's Hospital," Morning Post, July 1, 1914.

[2] "White Paper" (Cd. 7428), The Times, June 9, 1914.

[3] Cf. series of letters on "Science and the State" in the Morning Post, beginning May 25, 1914, with a letter from Provost T. Gregory Foster, Ph. D.

[4] Farnell, L. R., D. Litt., Rector, Exeter College, Oxford, Morning Post, June 26, 1914.

The war has already brought a fulfillment of the prophecy, as the plan of the minister of education mentioned below will show. Dr. Farnell's cure was to indoctrinate collegians and all teachers with respect for discovery and research and to impregnate the mass of citizens with such respect.

Mr. Pease, then minister of education, in presenting to the House of Commons in May, 1915, the estimates for the board of education, and in asking additional grants in the midst of war grants, said:

> The war has brought home the realization that it is essential, if Britain is to maintain its position in the world, to create careers for scientific men, to associate industry closely with them, and to promote a proper system of encouragement of research workers, especially in the universities.[1]

He proposed the appointment at once of an advisory council on industrial research, a committee of experts to consult with other expert committees, consisting of leaders of industries and advisers possessing knowledge in connection with pure science and science applied to industry. The council will have to advise as to the way in which a sum of about $150,000 in the estimates for the current year should be spent in training and research work and its distribution among institutions. Mr. Pease anticipated that this comparatively small sum will have to be "enormously increased" in future years by the State.

Government action is reenforced by conferences of representative leaders of industry and of science, both in the Island and the colonies, pleading for closer cooperation of science, industry, and finance.[2]

The half century's slow progress in the promotion of research in Britain and in the encouragement of it by the State and nation has been brought to a head by the war, with happy auspices for the future. Above the din of battle and the sound of marching hosts the insistent voice of education calls throughout the land, and

> "Peace hath her victories no less renowned than war."

[1] "Scheme for the organization and development of scientific and industrial research" (White Paper, July, 1915, board of education, cf. The Times, July 27, 28, 1915). New parliamentary grants for the purpose are to be administered by a committee of the Privy Council, aided by an advisory council composed of scientific men and men engaged in industries dependent upon scientific research. The advisory committee is to act in cooperation with the royal and other societies as well as with universities and technical institutions. The scheme is received cordially everywhere, but in some quarters there is criticism that the administration is committed to the Privy Council and not to the board of education.

[2] The Times, Mar. 25, 1915, "Chemists in Industry."

Chapter XVI.

EXAMINATIONS.

A strong and rising tide is running against the examination systems developed and multiplied in the nineteenth century. The reconstitution of the University of London in 1900, by which it ceased to be merely an examining board and began to be a teaching body, marked the turning of the tide.[1] Its height may be estimated by the conviction of the commission for the same institution in 1913 that the external examination is "inconsistent with the true interests of university education, injurious to the students, degrading to the teachers, and ineffective for the attainment of the ends" it is supposed to promote. The commission does not stop with writing this of a purely external examination conducted by examiners who have nothing to do with the instruction of the candidates and who have nothing to go on but the syllabus prescribed for the course of instruction. It adds:

> Even the so-called internal examinations of the University of London are practically external, because of the large number of institutions involved and the demands of the common syllabus. A system of external examinations is always based upon want of faith in the teachers.

The remedy proposed is the appointment of teachers who can be trusted with the charge of university education and to dispense with the necessity of the syllabus. The commission goes further in saying that examination should not be the sole test for a degree and that due weight should be given to the whole record of the student's work in the university: "It is absolutely necessary that, subject to proper safeguards, the degrees of the university should practically be the certificates given by the professors themselves." This is a position which contravenes the universal practice of British universities to give degrees upon the passing of three examinations—entrance, intermediate, and final—qualified by certain residential requirements and conducted by a board of examiners, apart from or in conjunction with the teachers of the candidates. The proposition is a move in the direction of the American practice of the award of degrees by the teacher on the candidate's whole record, and is one with which

[1] Cf. Chs. III, "University of London," pp. 68–69, 92–93; IV, "The New or Provincial Universities," p. 107.

there is much sympathy among the teachers in the "public" and secondary schools and professors, especially in the new English universities. These universities occupy a halfway house. As a relic of their conflict in 1902 to meet the objection to "one-college" universities and "one-man" degrees, they provide that "every examination shall include an external examiner, not associated with the university, for each subject or group of subjects with which the examination is concerned."[1]

At this moment the culmination seems to be approaching of long study of external examinations in secondary schools in England and of university entrance examinations. The matter has been brought to a head by circular "849" of the board of education to local education authorities and secondary schools, issued in July, 1914.[2] In making their proposals tentatively the board invited criticism and suggestion, which have become a feature in the educational publications of 1915. The circular is the outcome of correspondence and conference during two years with all the English universities and educational associations concerned. In its main features it is framed upon principles laid down in the report of the board's consultative committee in 1911 on examinations in secondary schools.[3] This classic report upon the subject does not lose sight of the broader aspects of examinations as a whole in their influence upon the universities, the professions, and the Government service. The inauguration of the competitive system of examinations all along the line, principally during the decade 1850–1860, and its spread to the present evils is traced. The number of examining bodies and their independence of one another have introduced a multiplicity of separate examinations in secondary schools, conducted by the more numerically important bodies, estimated at nearly 90, which examine.

Circular "849" proposes an annual examination of grant-earning schools by one or more of the university examining bodies, chosen by the school and approved by the board. Provision for two examinations is suggested, and certificates in accordance therewith. The first will be suitable for "forms" in which the average age of the pupil ranges from about 16 years to 16 years 8 months. The examination will be designed to test the results of the course of general education, and will correspond to the present school certificate examinations of the universities. The subjects for examination will be treated as falling into three main groups—English subjects,

[1] A suggestion for a small American college. Cf. case of Univ. Coll. Liverpool in Privy Council, Dec. 17–19, 1902.

[2] Printed in "The Educational Times and Journal of the College of Preceptors," Feb. 1, 1915, pp. 52–53.

[3] Board of education (Cd. 6014).

languages, science and mathematics. The candidate will be expected to show a reasonable amount of attainment in each of these groups, and will be judged by this test rather than by his power to pass in a required number of specified subjects. The "form," and not the pupil, will be the unit for examination. In order that the certificate shall be accepted for the purpose of matriculation, a mark of credit will be assigned to those candidates who in any specific subject attain a standard which would be appreciably higher than that required for a simple pass. The board hope that the reorganization of the school examinations will facilitate the organization of the conditions of admission to the universities and the professions. In addition to the three main groups of subjects which form a general course, a fourth group, including music, drawing, manual work, and housecraft, may be recognized by indorsement on any certificate awarded to those who are successful in the main examination.

The second examination will be designed for those who have continued their studies for about two years after the stage marked by the first examination. It will be based on the view that the school course should in these two years provide for more concentrated study in three main groups, classics and ancient history, modern humanistic studies, science and mathematics. The candidate will be required to offer one group as a whole and at least one subsidiary subject. Only those schools will be able to take the second examination which have an organized course of about two years beyond the stage marked by the first examination. The two examinations will be accessible to all candidates under 19 years of age, whatever their previous education. It is proposed to bring teachers into touch with the examining bodies, by representation on the examining body, or by some system of consultation by giving them the right to submit their own syllabuses, and by submission to the examining body of an estimate of the relative merits of the candidate in each subject offered for examination.

In view of the number of examining bodies it is proposed that the board of education shall be a coordinating authority to determine minimum and equivalent standards in examinations and fees, and to initiate conferences of the examining bodies. It is explicitly provided, however, that the board of education shall only exercise this authority after report from and with the assistance of an advisory committee composed of a representative of each approved examining body, of local education authorities, and of the teachers' registration council.

A certificate of success in the examinations will not be issued before the candidate attains the age of 16 years. In the case he is of a school on the board's list of secondary schools, the certificate

will not be issued until he has completed a course of three years and until he leaves the school.

The examination is to be submitted from a school found to be efficient on an inspection by the board embracing all its activities. Arrangements are to be made for the closest cooperation between the board's inspectors, both the examining bodies, and the advisory committee.

Circular 849 indicates a distinct movement in the direction of the Scotch education department's methods and its leaving certificate examination. The department inspects the schools, sets and supervises the examinations, and issues certificates under conditions some of which are strongly reflected in Circular 849.

An intermediate certificate is given—

To testify to the conclusion of a well-balanced course of general education, suitable for pupils who leave school at 15 or 16 years of age, or, alternatively, to the fitness for entry on more specialized courses of post-intermediate study of such pupils as remain at school till 17 or 18.[1]

The intermediate course must extend over not less than three years. It must be an approved course, as a rule, providing for instruction in at least five subjects, embracing English (including history and geography), a language other than English, mathematics, experimental science, and drawing.

The leaving certificate is awarded on the satisfactory completion of a course, as a rule of not less than two years' duration, of post-intermediate study approved by the department. The curriculum is expected to provide for the continuous study throughout the course of not less than four subjects, one of which must be English on the higher-grade level, together with a subsidiary study of history (not reckoned as a separate subject). The normal general course includes one language other than English, as well as either mathematics or experimental science studied on the higher grade level. The remaining subject or subjects without restriction as to grade may be chosen from a list of electives which include drawing, music, and domestic science.

For both certificates excellence in one branch may be held as compensating for some degree of deficiency in another. No certificate is awarded without full consideration of the opinion of the teachers as to the proficiency of the pupil in his various subjects, and the deliberate judgment of the headmaster as to the candidate's claim for a certificate on the whole range of his work.

The significance of the Scotch education department's leaving certificate examination is rapidly increasing. It is largely supplanting the preliminary examination as a means of entrance to the Scotch

[1] Scotch Education Department, Circ. 340, July 7, 1913.

universities. Of the 902 new applicants accepted by the Carnegie trust for the winter session 1913–14, in their first year of university attendance in the four university centers, 87.6 per cent entered by leaving certificates.[1]

The influence of these certificates may be seen in a draft ordinance of the four universities in discussion since 1913. It proposes changes in the regulations as to preliminary examinations. It would substitute for the present joint board of examiners an "entrance board" on a more permanent basis than that of the examiners, and with enlarged powers of control and supervision of the preliminary examinations. An important step toward the coordination of educational authorities and examinations is intimated in proposing that the entrance board—

> shall have power to confer from time to time on matters relating to preliminary examinations with the Scotch education department, with bodies representing teachers in Scotland, and with university and other educational authorities outside Scotland.

In the sections with reference to the methods, scope, standards, higher and lower, of the examinations, the subjects and the time of passing, there is close conformity with the department and its leaving certificate. There is an approach to an accredited system of schools which have been inspected by the department.

The proposed Scotch entrance board is a tribute incidentally to the success of the coordinating movement in examinations through the joint matriculation board of the Universities of Manchester, Liverpool, Leeds, and Sheffield.[2]

The pathfinder is the Oxford and Cambridge schools examination board, commonly called the joint board.[3] It was established in 1873 for the inspection and examination of schools preparing boys for those universities and to grant certificates on the results of the examination. Girls' schools are now admitted. The examinations of the board are mainly of two kinds, school examinations, and examinations of candidates for certificates. The certificate examinations are three, for higher certificates, for school certificates, and for lower certificates. The higher certificate examination, started in 1874, is intended for sixth form candidates of about 18.[4] Every candidate is required to satisfy the examiners in at least four subjects and may not be allowed to offer more than six.

---

[1] Cf. Ch. II, "Scotch Universities," p. 53.

[2] Cf. Chs. IV, "The New or Provincial Universities," p. 111; XIII, "Coordination of Institutions," pp. 200–201. The joint matriculation board inspects and examines schools and awards senior school certificates, which are matriculation certificates if the requisite subjects are chosen; also school certificates and housecraft certificates.

[3] Cf. Ch. I, "Oxford, Cambridge, and Durham," p. 37.

[4] In 1915 the number of candidates for higher certificates was 1,713; number certificates awarded, 987.

The school certificate examination is intended for fifth form candidates of about 17. It is a pass examination as a test of general education and is awarded on a minimum of five subjects. The certificate is granted only to candidates who have been in attendance for three years with satisfactory conduct, at one or more schools, inspected at intervals of not more than five years by the joint board, or by the board of education and approved by the joint board. The examination may be held at an uninspected school and its results without a certificate accepted at the universities.

The lower certificate examination is intended for candidates of about 16. Successful candidates are classified in each subject in two classes. The certificate is awarded on a minimum of five subjects. The higher certificate and the school certificate give exemption under certain conditions from responsions at Oxford, the previous examination at Cambridge, and from the entrance examinations at their colleges, from the matriculation examinations at other universities, and from the preliminary examinations of professional bodies, of law, medicine, etc.[1]

The board of education recognizes these certificates, with some provisos, as satisfying certain of its requirements for the training of teachers. Indeed, the board and the universities have come into a closer cooperation, in that the board has recognized the universities as inspecting authorities, and the "administrative inspection" of the board may be in conjunction with the "examination inspection" by the universities. This may be a point of departure for one of the reforms adumbrated in circular "849" to effect the combination of a system of inspection with a system of examination. The results of inspection need to be known by the examiners, and the finding of the examiners by the inspectors.[2]

The local examinations of Oxford and Cambridge, which must be kept quite distinct from the school examinations, of which they were a forerunner, were established in 1858 as a result of an appeal from outside the universities.[3] At first these were really *local* examinations, i. e., examinations at local centers, not schools.

They were intended to promote a *good general education* for those under 18 and not members of the universities. The candidates were expected to master the elements of a plain English education, after

[1] Cf. "Regulations of the Oxford and Cambridge schools exam. board," 1915.

[2] Cf. on the state of inspection "Report Consultative Committee," supra, pp. 63–66, 389. The opinion of the schools inquiry committee was in favor of intrusting the examinations of students in secondary schools to universities as the natural centers. Rep. of committees, 1868, Vol. I, p. 648. The secondary education committee report made an "important distinction between official and educational inspection," "official" dealing with buildings, regulations, etc.; "educational" with the examination of pupils. "Inspection should be provided by the State and examinations by the universities." Vol. I, 1895, pp. 163–165.

[3] Cf. Ch. I, "Oxford, Cambridge, and Durham," p. 37.

which they were to be allowed a wide latitude in the selection of subjects. The universities were appealed to as competent and impartial and possessing "in a special degree sufficient public confidence for the work." There was fear on the one hand of the perils of bureaucratic methods of a State board, and on the other hand of the "private crochets or personal interests" of other bodies.[1] So successfully have the universities fulfilled their mission that these examinations have multiplied and been subdivided into preliminary, junior, senior, and higher local examinations, taken at many centers and by a multitude of candidates.[2] The senior and higher local examination under certain conditions gain exemption from "responsions" and the "previous examination." The growth of extra-mural examinations and of inspection of schools by the universities, and all apart from State legislation, has so demonstrated that a university is naturally the apex of a school system that the charters of all the new British universities empower them to inspect schools and be examining bodies.[3] In spite of the free and voluntary evolution of the various examination systems and the obvious need for their coordination one hears from adverse critics of Circular "849," in accordance with their fears or interests, phrases not unfamiliar in America—on the one hand, "deliverance from the yoke of the universities," and on the other, "protection from the tyranny of the board of education."

A galaxy of universities is appearing above the horizon, each with its own planetary system of schools, and all, under the influence of a national board of education, moving toward one goal by means of school leaving and entrance examinations with common standards. We may be on the verge of a favorable answer to the plea Lord Curzon made in 1909 "for a universal and elastic system of school-leaving examinations conducted by the universities in consultation with the Government and with the masters of secondary schools." The signs of it are the promulgation of a statute for the reform of responsions at Oxford in 1913, although it was temporarily defeated in 1914, and the report in 1914,[4] still pending, of the previous examination syndicate at Cambridge in favor of fundamental changes, administrative and educational. In both uni-

[1] Acland, T. D., "Some Account of the Origin and Objects of the new Oxford Examinations for the title of Associate in Arts and for Certificates," 1858; cf. report Consultative Committee, supra, pp. 11–14, 160–170.

[2] Oxford local exams., total number candidates (exclusive certain oversea centers) examined for certificate, 17,884 in 1915, of whom 12,845 passed.

[3] Cf. Chs. I, "Oxford, Cambridge, and Durham," p. 20; IV, "New or Provincial Universities," pp. 111–112.

[4] The Oxford statute promulgated in congregation, Nov. 4, 1913, by a majority of 10, and repeatedly debated and amended in succeeding congregations, was rejected June 16, 1914, by a majority of 37; some of its friends voting against it in its amended form. The Cambridge syndicate appointed May, 1913, reported June, 1914 (Cam. Univ. Rep., June 16, 1914). Further action postponed on account of the war.

versities references were made to conferences designed to procure cooperation and to bring into line the school examinations, which served as a test of general education. In both places a change in the administration of the examinations was proposed in order to have the supervision of these examinations in the hands of those dealing with the inspection and examination of schools. As regards educational changes, the proposal at Oxford was practically to substitute for responsions the examination for school certificates which already exempts from responsions. The statute proposed the addition to the necessary subjects, namely, Latin, Greek, and mathematics, of English, and an optional modern subject, in languages or historical or natural sciences. It is said that the retention of compulsory Greek is the crucial question behind the reform of responsions. The measure would have broadened and raised the standard of responsions. It was received with unanimity and enthusiasm by the headmasters' conference and by the headmasters' association, the representatives of some 800 schools and of 75 per cent of those preparing the undergraduates who come to Oxford. The friends of the rejected statute believe, in view of the possible developments at Cambridge, that the rejection may prove to have been a blessing in disguise. They hope that the two ancient universities will take counsel together to deal with the urgent problem of correlating the universities with the secondary schools and at the same time broaden the avenue to the university for all classes of students.[1]

The Cambridge syndicate wish "that the examinations that qualify for study at universities and for entrance to professions should be coordinated." They "think that preliminary examinations should be comprehensive in their scope, but should include only such subjects as are taught in the ordinary curriculum of public and other secondary schools." The syndicate's plan, in harmony with the scheme of the board of education, proposes a previous examination of a scope and standard "such that it can be taken by the average schoolboy of about 17 years of age in the course of his normal school work without cramming or special preparation." They propose that a student shall be required to pass in groups of subjects rather than in individual subjects, and that some choice of additional optional subjects should be permitted. They name as compulsory subjects English, elementary mathematics, and science, and two foreign languages, of which Latin should be one. "The syndicate attach a high value to the study of Greek in the general system of secondary education," but they do not recommend that it should continue to be a compulsory subject. They place on record "that they find that a

[1] Ball, Sidney, "Daily Telegraph," June 30, 1914. Cf. Ch. I, "Oxford, Cambridge, and Durham," p. 28.

majority of teachers do not advocate the retention of Greek as a compulsory subject." Upon inquiry at 200 schools, they learn that at the larger public schools some 25 per cent of the boys are doing Greek, and at the lesser public schools some 8 per cent.[1]

The syndicate suggests that any certificate might be accepted in lieu of the previous examination, provided it includes English, mathematics, Latin, and one language other than English and Latin. As Latin is not everywhere a normal subject of study outside the United Kingdom, they do not suggest that Latin should be a compulsory subject for students from abroad.

In conclusion, it is plain that there is a trend away from the old extreme of entrance examinations by individual institutions, if not toward the extreme of an accrediting system common in the United States, toward an intermediate plan like that of the American college entrance examination board. A certificate system is coming in, resting upon something more than an external examination. It must embrace the teachers' estimates of their pupils' abilities, the teachers' participation in the examination, and be supplemented by inspection of the school. The admission examination is being made more flexible, broadened in its range, and its standard raised.

[1] The Society for the Promotion of Hellenic Studies issued a memorial in 1911 on the place of Greek in education. Answers to their questions showed that no university makes Greek compulsory on all students for entrance except Oxford and Cambridge, and they make an exception for students of oriental origin and Oxford for candidates for diplomas and B. Litt. Durham College and Trinity College, Dublin, make Greek compulsory for classical students. No university except Oxford makes Greek compulsory after entrance, and Oxford excepts candidates for diplomas and D. Litt. Only Trinity College, Dublin, makes Latin compulsory. The majority of answers were against beginning Greek at a university. Cf. Ch. I, "Oxford, Cambridge, and Durham," pp. 21–23.

Chapter XVII.

CURRICULA.

A general glance at the curricula of the British universities impresses one with the retention of certain common characteristics and the force of new tendencies. The variety and differences in standards of admission and the general acceptance of a higher and lower grade of preparation are suggestive, as over against the present American standardization with the terminology of "units," after the fashion of an exact science. To understand the British practices and present-day movements, it is necessary to apprehend back of the common inherited forms certain general ideas.

Admission to the university has been determined more by the general development and character of the pupil and his fitness for university education than upon intellectual tests. At Oxford and Cambridge social qualifications have played no small part. Admission at these two universities must come through membership in a college or in a noncollegiate body as the equivalent of a college.[1] Every college and not the university has an entrance examination of different character standards. Each college admits to membership pupils selected on the basis of the certificates or letters of the candidates' masters and the results of confidential inquiries. Candidates who have passed the examinations may be rejected without explanation if these inquiries are not satisfactory.

> The result is, firstly, that the university has no voice in determining the conditions of its membership; secondly, that there is a wide variety of standards created by the colleges. A man who is rejected in one college may even pass on and obtain admission at another, the scale of the requirement descending in proportion to the character and reputation of the college.[2]

It is possible for men to come into residence before they have passed the first real university examination (responsions or preliminary), and to stay on after they have failed to pass. The low standard and limited range of these examinations are not the only grounds for their proposed reform. The practical necessity for a common examination for Rhodes scholars and the exemptions by the acceptance of the examinations of numerous bodies have heightened the feeling that these two universities should not continue to be unique

[1] Cf. Chs. I, "Oxford, Cambridge, Durham," pp. 24–25; XVI, "Examinations," pp. 229–231.

[2] Curson, supra, p. 109.

in the world in not setting their own entrance examinations and make the passing of them requisite for matriculation.

Hitherto these universities have given an illustration of the subordination of intellectual tests for entrance to what amounted to certificates of character and fitness from the masters in the "public schools," which prepared the majority of their entrants. The six years' training in the elements of a liberal education of the selected pupils in these famous schools perhaps minimized the need for a sifting examinational test. The incoming of a large number of students from the newly risen secondary schools, and of women, as well as the example of a matriculation examination in all other universities and the acceptance of a school-leaving certificate, incline the universities to have their own entrance examination of a higher standard and to separate the matriculated from the nonmatriculated student. They feel the constraint of the emergence of a national system of graded schools.[1] The idea is prevailing that a university curriculum should begin where the secondary school leaves off.

The widening of the curricula of both the secondary school and the university by the introduction of new studies necessarily rather telescopes the instruction of the last years of the school with the first year of the university. The former laxity as to matriculation standards has enabled the British to meet this situation. They are now confronting it, dominated by several helpful ideas. The written entrance examination is to be kept subsidiary to the whole record of the student and to personal testimony as to his fitness to proceed to higher education. They seek to accomplish this by the inspection of the schools, by throwing responsibility upon the masters and local authorities in presenting scholars, and, where leaving certificates are not accepted, confining the examination to four branches instead of a multitude of subjects and permitting options in the subjects in one or more of the branches. The beginning of the curriculum in the primary faculties of arts and science up to the time after a year or more when an intermediate examination under various names is taken is treated as a transitional period, during which the personal equation can be calculated. Thereafter a degree of specialization is permitted surprising to an American who has heard so much of the broad cultural education of Oxford and Cambridge. The idea of the Briton is that a liberal education does not consist in sampling all kinds of knowledge, but in liberalizing the mind and producing culture by the human touch, which Principal Shairp defined as "sympathy with intelligence." It is this spirit, the commingling of teachers and students and of the arts and professional

[1] Cf. Ch. I, "Oxford, Cambridge, Durham," p. 29.

studies which prevents the last two or three years of intense specialization turning out narrow men.

Two further factors clarify the whole matter. The "public" and secondary schools are supposed to give the liberal and general education. It will be recalled that the first advocates of local examinations sought to promote "general education," and Oxford at first acknowledged its products as "associates in arts."[1] The "public schools" have been conjoined in liberal education, especially with the primary faculty of arts at Oxford and Cambridge, in preparation for the work of the superior faculties. This is particularly intimated by reference to the history of the "colleges" of Winchester and Eton. The B. A. degree was not a goal, the center and circumference of all culture. It marked a stage in progress toward a profession. At Cambridge a candidate is not admitted at first to a complete degree, but only to the title of a degree. He is only a "bachelor designate" of arts, of law, of medicine, of surgery, and of music, until later the degree is completed by "inauguration." A bachelor of arts proceeding to the M. A. degree is still an "inceptor in arts." Theoretically a bachelor's degree is preparatory to some professional practice by which it is to be perfected.

The university curriculum opens with a transitional stage presupposing a general and liberal education in the lower schools. Ordinarily within a year, in a second stage, opportunity for specialization is given preparatory to the third and professional stage. We have purposely used the word "stage" instead of "year," for within certain limits one may take his examinations sooner or later when he is ready for them, and take his bachelor's degree in three, four, or more years.

The second factor is the double standard for a degree, the first known as the pass, poll, or ordinary degree, and the second as the honors degree. These are quite different from the American degrees with or without distinction or honor which only record the standing or "marks" of students who have been through the same courses. The British lay out different curricula for the two kinds of degrees and types of students. They minister through a shallower curriculum with a larger number of subjects to the "pass man," the indifferent or average student, and through a deeper and more specialized curriculum to the "honors man," the earnest or able scholar. The pass or ordinary degree "represents a moderate degree of proficiency in a considerable range of subjects, and an honors degree represents a much higher proficiency in a special subject or group of subjects."[2]

[1] Cf. Ch. XVI, "Examinations," pp. 228–229.
[2] Cf. Ch. I, "Oxford, Cambridge, and Durham," p. 35.

The pass degree is ordinarily taken in three years and the honors degree in four years. The temptation for the brilliant student in America to shorten his course to three years is prevented by the provision of the separate honors curriculum and higher standard of examination, requiring not less than four undergraduate years or a higher grade of entrance examination. The professed aim of the British university is to provide for the recognition of the quality of work and for men of ability rather than for a carefully measured quantity of work and for the average man.

The standard represented by the ordinary degree is steadily rising and will continue to rise in proportion to the improvement of the general level of education below the university grade. For it is a sound principle that only students who are really worth cultivating should be admitted to share in the privileges of a civic university.[1]

The standard has indeed been raised by the statutes of all the new English universities which require that the matriculation examination "must be passed by students before entering on the degree courses in the university." The curricula, too, of all the universities, old and new, have been widened by the introduction of the newer subjects of study.[2]

But the most suggestive point for the American is the "shattering of the old pint pot," the hard and fast single curriculum of early days, without falling into the anarchy of "free electives," or the multiplicity of optional courses ingeniously devised by the logrolling of departments zealous of maintaining their prestige and attendance. The "honors schools," i. e., examinations conducted not by the professors in each course, but by other examiners, naturally were not examinations for "small, disconnected courses" but for groups of related studies. With the introduction of the new studies, group after group of honors schools budded off the old curriculum. The courses of instruction were divided and organized into subjects, or groups of cognate subjects, to be elected by the more serious students.[3] An approximate notion of the drift with reference to curricula may be

[1] Muir, supra, p. 31.

[2] Cf. Chs. I, "Oxford, Cambridge, and Durham," p. 35; II, "Scotch Universities," p 50; III, "University of London," pp. 75–76.

[3] Cf. Corbin, supra, p. 283, passim. Cf. Oxford public examination divided into a pass school containing five groups of subjects and nine honors schools. The five groups broadly are (1) languages; (2) history, including geography, political economy, a branch of legal study, and English literature; (3) mathematics, including mechanics, elementary physical and biological sciences, and rural economy; (4) elements of religious knowledge; (5) military subjects. A candidate must pass in three of these subjects, of which one must be a language, and not more than two subjects may be taken from any group except the historical group. For the nine honors schools, see Ch, I, p. 35. In honors schools a candidate may offer a special subject in addition to the stated subjects. The written examinations are supplemented by a viva voce examination, or in the case of the sciences by practical work in the laboratories. The successful candidates are enrolled in four classes.

gathered from some of the main points of the revision (1908–09) in the regulations for degrees in arts in the Scotch universities.

The curriculum for the first arts degree must extend over not less than three academical years. Before entering on the curriculum each student must pass an entrance examination in four subjects—English, Latin or Greek, mathematics, and one language or dynamics. In the subjects of Latin, Greek, and mathematics one may pass on a higher or lower standard, but the higher standard is required in at least one of these subjects.

The curriculum for the ordinary degree must consist of either five or six subjects, which must be studied by attendance on qualifying courses therein. The subjects are grouped in four "departments of study": Language and literature; science, including mathematics; mental philosophy, including moral philosophy, political economy and education; and history and law. Among these groups every candidate is required to satisfy the examiners in at least two and not more than three linguistic subjects, in at least one and not more than two scientific subjects, and in logic and psychology, with a proviso that either Latin or mathematics must be taken.

A qualifying course in each subject consists of not less than 75 meetings of the full class on separate days or of not less than 40 meetings where half courses have been sanctioned.

The ordinance empowered each university to define and group the subjects in the several "departments of study," to select them for the curriculum, and to classify them as cognate.

The first degree with honors may be taken in any group (consisting of a subject or subjects) in which honors classes conducted by at least two separate professors or lecturers have been established. Every candidate must attend at least four qualifying courses in his honors group and at least two outside his honors group. The examinations in the subjects in his honors group or groups must be on a higher standard than those for the ordinary degree.

The principles illustrated by the details concerning the first degrees in the faculty of arts are in general applied to the curricula for the degrees in other faculties. In the faculty of science in the preliminary examination, French or German may be substituted for Latin or Greek, and mathematics must be passed on the higher standard. Candidates for the degree of bachelor of science must attend at least seven prescribed courses in not less than three academical years. Three of these courses—mathematics or biology, natural philosophy, and chemistry—are prescribed for the first science examination and may be passed on the ordinary standard. Four courses of higher instruction must be selected from a list of scientific subjects prescribed for a final science examination, at least three of which must be passed on a higher standard.

The latest experiment in framing an arts curriculum has been made at Reading.[1] Its advocates sought to remedy what they asserted to be the defects of the curricula in modern universities. By their scheme the first year of university training "must form a bridge between school and university education. It must share in the characteristics of both." Professors are expected to take a share in the teaching of elementary classes. A one-year course is laid out in five subjects. They are rhetoric (practical training in the use of the mother tongue), Greek or Latin, a second foreign language, either logic or pure mathematics, and the outlines of universal history with auxiliary study of historical geography. A student of foreign languages may substitute a third foreign language for the fourth and fifth subjects. A student of philosophy and mathematics may take both logic and mathematics in place of the second foreign language.

This first year's largely compulsory course is followed by two years of study for the pass or honors degree of B. A. Both courses aim at imparting general culture rather than specialized attainment. The pass degree course is in four branches, one of which must be a classical language and one must be from a nonlinguistic group. In the honors course three subjects are required, of which not more than two may be from the language group. The subjects are not distinguished as main and subsidiary. The degree in honors will be awarded in arts as a whole if work of first-class quality is done in one of the three subjects and a satisfactory standard maintained in the others.

The three honors subjects are studied in correlation as three aspects of humane learning. The plan is based on the assumption that "the honors curriculum (of the universities) seems to stand most in need of reform," and is confirmed by Mr. Stanley Leathe's appeal to the universities for "full and enlightened recognition" of the claims of "modern humanistic studies."[2]

A proposed third stage of the Reading curriculum is a two years' postgraduate course for the M. A. degree, open to those who have taken the B. A. with honors. The consent also of the faculty is necessary in each case in order to give assurance that the student in the opinion of his teachers is qualified for specialization. One year at least must be spent in residence at the university. The candidate must pursue an approved course of study in a single branch of learning, under the direction of the professor responsible for the subject of his thesis.

[1] University College, Reading. Twenty-first Anniversary, supra, 1913, pp. 51–75. Cf. Ch. V, "Independent University Colleges," pp. 132–135.

[2] The Times, edu. sup., Jan. 7, Feb. 4, 1913.

The degree is to be awarded upon the presentation of a thesis satisfactory to a board of assessors. There is to be no examination except an oral discussion of the subject by the assessors with the candidate. The principle is maintained that specialization in a single subject should be deferred to a postgraduate stage of the curriculum, resting upon "a broad and liberal honors course in the humanities."

The variety and flexibility of the curricula, the attempt to recognize the quality as well as the quantity of the student's work, the elasticity in the time requirements in covering distinct stages rather than years in the curriculum, and the freedom of the student to choose his curriculum, give a preeminence among the methods of instruction to a tutorial system. The tutorial system at Oxford and Cambridge is being made more vigorous than ever. The intercollegiate lectures, the opening of more permanent careers and of opportunities of promotion, have enabled the tutor largely to supplant the private coach.

The Scotch and the new English universities feel the need of some adaptation of the tutorial system and are making endeavors in the direction of it. Some of them have instituted "advisers of studies," as at Glasgow. Reading assigns every student to a tutor. The tendency everywhere is to supplement the lecture system by paper work, and by some adaptation of the seminar, as well as by laboratories and practice work in the sciences.

The curricula in the professional faculties, from the nature of the case, are largely fixed. They are anchored also by the recognition of their preliminary courses in the arts and science faculties and degrees, and justify within certain limits the combined courses of some American universities. By the provision of more than one degree, and by advanced degrees, the professional courses also give opportunity for the recognition of specialized or advanced work beyond the first degree.

Chapter XVIII.

STUDENT LIFE.

The two distinct types of student life, that of Oxford and Cambridge on the one hand, and that of the Scotch and new English universities on the other, are tending to approximate one another. The collegiate, residential, and tutorial system of the former exalted the college above the university and made "the social relationship the basis of the system of instruction."[1] In the latter the university, undivided by colleges as in Germany and America, made "the course" the point of departure, resulting in the greater cultivation of scholastic than of social ideals. The "universitizing" and indeed democratization of the student life in the old universities is due to many factors. The enlargement of the governmental powers of the universities and of their endowments increasing the number of university professorships and lectureships, the use of university laboratories and libraries, as well as the intercollegiate lectures, are giving a common basis of university instruction and acquaintance over and above those of the college. The day is past when each college provided all the necessary instruction for its members and each was independent of the other socially and in athletics. While each college has the advantage of its own small clubs of all kinds, and of its athletic teams, there are now the greater university clubs for every sort of undergraduate activity. The students have fostered these university societies since the end of the first quarter of the nineteenth century, when the Oxford Union was founded, primarily for debate.[2] At first it was exclusive in membership. It soon became the intellectual, social, and sporting bond of union of the best university men. Gradually it lost its exclusiveness. In 1902 Mr. Corbin wrote that the glory of the union had departed, and attributed it to a response of the union to the strong democratic impulse which had entered Oxford and caused the union to throw down all barriers, virtually receiving any man to membership. It would be better to say its decline in prominence was relative, largely due to the increase of other student organizations. It has recently recovered its position, aided by the gifts of its friends and the en-

[1] Corbin, supra, pp. 85–86. Cf. Ch. I, "Oxford, Cambridge, Durham," pp. 16–18 and p. 248.

[2] The Union Society, Cambridge, was founded first in 1815. It now has more than 13,000 members, of whom 2,000 are in residence.

largement of its buildings. Political leaders and cabinet ministers are glad to lead its debates on living issues. It and the sister union at Cambridge have become the pattern of student unions throughout the English-speaking world.[1]

The preeminence of the social element in education is secured by requiring every undergraduate, with some exceptions, to be a member of a college which selects its membership as much upon personal inquiry and social introduction as upon intellectual tests. The family and the later "public school" house life are perpetuated. The upper and lower classmen, the masters, and some of the tutors, reside within the college buildings, which are secluded by their walls and locked gates protecting their "quads," or courts, and gardens. All dine together in the great hall and have their common rooms for the dons and likewise for the students. Each college in its own chapel continues daily family worship, attendance upon which has been compulsory, at least to the extent of answering roll call. The transition to voluntary attendance is now being made, a number of colleges having abolished compulsion within the last 10 years, though keeping a record of attendance. In addition to the regulations and discipline of each college for its students, there are the university regulations. The student has a duality of social life and of obligations in the college and the university like those of the boy subject to the discipline of his home and the laws of the State.[2] The key to an understanding of the situation is found in the purpose of the college to build character and to make gentlemen as well as to teach, reinforced by the university's traditional theory that undergraduates are *in statu pupillari*. Many of the mediæval regulations, which included even oaths of secrecy and corporal punishment, have disappeared. But it is still considered desirable to retain restrictions, of which but a few relics survive in American colleges. A few illustrations from Cambridge will serve:[3] When a student "matriculates" he signs his name to a promise to observe the statutes and ordinances of the university and to be subject to its authorities. He is required, if not in a college or hostel, to reside in "licensed lodgings," or at least in a place approved by the University's Lodging House Syndicate. The lodging-house keeper signs an agreement which virtually requires him to enforce the residential regulations of the colleges. For example, he agrees to lock the outer doors at 10 o'clock at night and to make a weekly report upon the students' observance of regulations. Noncollegiate students are subject to the same regulations as the members of a college, and are

[1] Cf. p. 247.

[2] Cf. Ch. I, "Oxford, Cambridge, Durham," pp. 18, 27, 40.

[3] Cf. "A Compendium of University Regulations for the Use of Persons in Statu Pupillari." Cambridge University Press, 1913. Cf. Regulations for Women, Ch. VIII, "Women's Colleges," p. 154.

under the supervision of a censor appointed by the Lodging House Syndicate in place of a college tutor.

Under the title of "discipline," the first requirement is to wear—

proper academical dress *in decent order and in proper manner* at all university lectures and examinations * * *, in the university church, the senate house, and the library; at all times on Sundays in the streets, and every evening in all parts of the town.

A fine may be imposed for smoking in the streets or riding a bicycle while wearing academical dress, a rule more honored in the breach than in the observance.

A student is forbidden to drive "tandems" or "four-in-hand" carriages. On Sunday he may not drive any vehicle without the written permission of his tutor. He may not keep and use any motor vehicle within the precincts without obtaining, upon the permission of his tutor, a license from the university. He is forbidden to have dealings with any money lenders or to contract large debts without the knowledge of his tutor. Any tradesman to whom any person *in statu pupillari* becomes indebted to an amount exceeding $25 is required to notify the college tutor, and the tradesman is bound to send to the tutor on each quarter day a statement of the whole amount owing from a pupil. The tradesman violating the rule is liable to be "discommuned," i. e., he is forbidden to deal with any pupil, and all pupils are forbidden to trade with him.

Leave must be obtained to give or take part in public entertainments. Until modern times attendance at a theater was forbidden, and now the university prescribes the parts of the house to which students may be admitted.

A student must present a certificate that he can swim, if he is to use a boat on certain parts of the river.

These specimens give an impression of the minutiæ of social regulations, which, it is fair to add, are administered with discretion. They supplement the fundamental regulations of any violation of morality and decorum. In passing it may be said different professors tell me there has been an improvement in morals. They roughly estimate that one-half the students now take water instead of beer or wine as formerly. The university cooperates with the college authorities. In practice, the tutor, to whom a limited number of students is assigned,[1] stands in loco parentis, and the "caution money" deposited by the pupil upon matriculation adds a property restraint to personal sanctions.

Conversations with American Rhodes scholars in Oxford and with teachers who have had experience in both American and English colleges, tend to support the opinion expressed by an American

[1] E. g., at Trinity a tutor is allowed 42 pensioners and 5 sizars.

at Oxford: "On the whole, I would say that the restrictions of college life in England are far less dangerous than the absolute freedom of life in an American college."[1]

The multiplicity of colleges and college clubs has not diminished the attention given to athletics. Each college has its series of athletic clubs for boating, cricket, football, lawn tennis, hockey, golf, and field sports. The captains and secretaries of all the clubs call on the freshmen to see what they can do. The collegiate system gives opportunity for the intercollegiate sports and training for the university teams. A college is rated by the number of "firsts" it takes in scholarship and the number of "blues" it takes in the "varsity" games. Even in the obituaries of England's greatest men prominence is given not only to the "firsts" and prizes but also to their athletic honors taken in their undergraduate life.

The score or more of colleges at each of the universities, the zeal of the college athletic clubs, the habitual devotion of the student's afternoon to the playing field, and the Englishman's inbred love of sport, cause the students, practically universally, to engage in athletics. The contrast is great compared with the American university, which produces a few athletic champions out of a limited number of athletes. The English have hundreds of students engaged, but all just below the champion standard. The enthusiasm of the universities as a whole for athletics is modern. Intervarsity meetings were not established until in the last half of the nineteenth century. There is freedom to play with nonuniversity organizations and, to an American, a striking absence of faculty and other regulations. In 1914 the introduction at Oxford of certain restrictions with reference to age for participation in matches was attributed to the presence of Rhodes scholars of riper years. The universal British spirit of the amateur and of sportsmanship safeguard against the intrusion of professionalism and the American overseriousness in playing to win.

Out-of-door games from boyhood have made the spacious playing field, possibly aided by the climate, a substitute for the gymnasium. Compulsory physical training is practically unheard of. This is not only on account of the prevalence of games, but of the spirit of voluntaryism which so characterizes the British people that they have raised the greatest volunteer army in the history of wars.

Military training is a recent instance of voluntaryism in British schools and universities. It is closely allied with physical training and the social life of undergraduates. In the colleges of agriculture and mechanic arts throughout the United States it has long been compulsory by statute. An agitation to make it so in British

[1] Corbin, supra, p. 50.

universities caused a battle of "fly sheets" in Cambridge shortly before the war. Proposals in an article in the *Nineteenth Century and After*[1] advocating making military instruction compulsory by act of Parliament for a B. A. degree in British universities were urged for consideration by the Cambridge senate in a fly sheet signed by over 1,700 members. It was opposed by some 150 resident members, if the university were to act by its own authority. The outbreak of the war has given a pause to the discussion, but has brought into prominence the history and value of the officers' training corps in the schools and universities. After the Boer War the war office took advantage of the interest of the students in military training, particularly in the universities, and provided a system of granting them commissions.[2]

In 1907 Lord Haldane, then secretary of state for war, arranged that the University Volunteer and School Cadet Corps should become contingents of the new officers' training corps.

> The primary object of the officers' training corps is to provide students at school and universities with a standardized measure of elementary training, with a view to their eventually applying for commissions in the special reserve of officers or the territorial force.[3]

These "university candidates" for commissions, averaging some three years older than the boys from Sandhurst and Woolwich, are granted 18 months' seniority. They have to pass examinations in six subjects—strategy and military history, tactics, military engineering, topography, military law and administration. The movement was so successful that by 1911, 16,000 cadets were present at the royal review of the officers' training corps by the King at Windsor.

In 1912 the University of London recognized for the first time military science as an optional subject in the courses for the B. A. and B. S. degrees.

The officers' training corps have sent thousands of volunteers into the present war and are regarded as a chief source of supply to meet the terrible loss of officers.[4] Surely the lesson from British experience is not to multiply West Points, but to make more efficient the military departments in American colleges and universities.

A series of "War and Peace Societies" was being established in the universities just before the war, but avowedly not inimical to

---

[1] No. 445, Mar., 1914, pp, 682, passim, "The Universities and Military Training;" cf. "Schools and Military Training," The Times, Ed. Sup., Feb. 1, 1915.

[2] Cf. Peterson, W. G., "Military Training in the University," University Magazine, Apr., 1914, Montreal, pp. 292–305.

[3] Regulations for Officers' Training Corps, U. K., pub. with army orders, Apr. 1, 1912.

[4] The total numbers, approximately, serving in the British forces (reported in the Year-Book of the Universities of the Empire, June, 1915), from the staffs of instruction of the universities and colleges in Great Britain and Ireland, 1,185; from the student bodies, 17,436, inclusive of the officers' training corps; including graduates, it is estimated that Oxford and Cambridge alone have sent about 20,000.

the officers' training corps. The objects of the societies are to diffuse information "with regard to the economic futility of armed aggression, to consider the problem of defense, and means of settling international disputes without war."

A sign of the democratization of Oxford and Cambridge is the life of the present Prince of Wales at Oxford as contrasted with that of his grandfather, King Edward, when Prince of Wales. King Edward was not permitted to enjoy the democratic life of an undergraduate. He did not have undergraduate rooms in Christ Church. He wore a special gown. When he entered the room at a public function, like a debate at the union, everybody rose. The present prince in 1914 closed two happy years of ordinary undergraduate life, coming up like any other "fresher." He had no special privileges; no distinction in treatment, dress, or address was made between him and the other students. He was content to play football with the college second eleven, to become a private in the officers' training corps, and in "eights week" to be simply an earnest follower of the boat from the towpath.

Lord Rosebery has called attention to the change in the treatment of the nobility since his time as an undergraduate, when a nobleman, though a "fresher," was seated at the high table and had precedence over fellows and scholars. At Cambridge the chief vestige of the former distinction of rank is that a nobleman pays a matriculation fee of $75 as over against a fellow-commoner's $50.

The war, which has more than "literally decimated" the universities, furnishes an opportunity for, if it will not compel, a new order of things. Already the provost of one of the colleges has issued a plea to the dons to initiate a greater simplicity and economy in living and a greater industry.[1]

The university publications estimate the total expenditure of a student within the short collegiate year of about 20 weeks at from $750 to $800. It is possible, by the most rigorous economy and by foregoing much that makes university residence of value, to reduce the expenditure to $425 or $450. It is evidently desirable and in no way extravagant to spend $1,000. The Rhodes scholars therefore find the $1,500, which are supposed to cover all the expenses for a year of 52 weeks, including traveling, none too much.

The call to the simplification of life, to less expensive living, and greater industry in the old universities, and the increased devotion to university activities over and above those of the colleges, are evidences of the approximation of the student life to that of the Scotch and new universities. The latter universities, in turn, seeing the advantages of the former with their collegiate residences and social

[1] Phelps, L. R., provost of Oriel College, Oxford, "Thoughts for the Times." Cf. The Times, Educ. Sup., Apr. 6, 1915. Cf. Ch. I, "Oxford, Cambridge, Durham," p. 30.

regulations, are seeking to provide facilities for the corporate student life. Without exception they are now encouraging the erection of halls of residence or hostels. Without exception each one of them has at least one such place, and the number is rapidly increasing through private benefactions. The first building is generally for young women, and then for training college students, in order to receive grants from the board of education. The authorities are attempting to create the atmosphere of an Oxford or Cambridge residential college without its expensiveness. One of the latest examples is the city of Leeds new training college. The site is a 90-acre park in the suburbs, conveniently connected with the city and the university by street railway. The buildings consist of a great central edifice devoted to instruction, flanked by three men's hostels on one side and five women's on the other, with their adjoining playing fields. At the sides and back are houses for the principal and vice principal, laundry, swimming bath, and games pavilion. Each hostel houses 60 students. Each has a common room and dining hall. Each house has a resident tutor who, with his prefects, some of them chosen by the students themselves, maintains the discipline of the place. Each hostel is a financial unit, for which its matron is responsible. In the center of the college building is a large hall, with stage and organ, about which are grouped, with connecting cloisters, the rooms devoted to instruction.

Reading is working out and applying certain principles as to a residential system in a modern university. The education of the student by association with his fellow students is made a factor equal to his study and his class work.[1] The hall of residence is considered the best means for this purpose, but certain conditions are important. The hall should accommodate between 50 and 100 students. If there are less than 50, the right sort of people are not likely to meet one another. If there are over 100, there is danger of some becoming hermits. Hostels should not be occupied by particular classes of students, or exclusively by those entering with the same training, or contemplating the same career. To do so is to miss the opportunity of broadening the students' outlook. The hostel tends to establish a standard in such matters as those of food, clothes, and manners. A standard of plain living so desirable for society in this age becomes a necessity in the new universities, bound to make the higher education more accessible and less expensive. Even so, the hostel may be more expensive than living at home or in lodgings. The additional cost is justifiable in the course of a modern education, just as the more costly laboratory method of

[1] Cf. Ure, P. N., "A Residential University," University College, Reading, Twenty-first anniversary, 1913, pp. 20–37.

instruction is worth more than textbook teaching. Each hall is in charge of a warden, as a rule a member of the teaching staff, who is responsible for discipline and management. The relationship between students and staff are furthered by the residence of some of the teachers, besides the warden, who are not concerned with the government of the hall. A point is made of having a spacious site and garden for each hall, and that they shall be accessible to the college.

The cost of board and lodging in these hostels for the academic year of 30 weeks ranges from $160 to $250. The college fees are $100.[1] The total cost for each academic year to the student runs from $325 to $425, which is the approximate cost at the Scotch and new universities.

The Scotch and new universities somewhat recently have developed a system of approved lodgings. Most of them require registered students not living with relatives or friends or in a hall of residence to reside in these lodgings, concerning which the university has satisfied itself as to the sanitary and other conditions. Ordinarly a member of the staff acts as supervisor of lodgings. In addition to the residential facilities, these universities have arrived at other arrangements for promoting corporate life which are almost identical in all of them.

The first of these arrangements is the Students' Representative Council, which has spread from Scotland, where it originated in 1884 at the tercentenary of Edinburgh University.[2] The consciousness of student membership and activity in a university had been kept more alive in Scottish than in other universities by the continuance of the election of a rector by them. This first council was organized to aid in the celebration of the tercentenary of the university and incidentally to keep within limits the usual student demonstrations in university ceremonials. The other Scotch universities formed councils and the four secured official status from the university commissioners of 1889. The concerted action of the councils led to the annual Scottish interuniversities conference, followed under an impulse from Manchester, since 1903 by the annual British students' congress.

The regulations to make the students' representive council thoroughly representative of every section of the student body vary in different universities. Glasgow may be taken as an example. At first the students in each faculty elected the same number of representatives and, in addition, the various university societies were

[1] The total fees for the whole course for the B. A. average at the six new universities, $295; for the B. Sc., $350; for B. Eng., $505; for B. Med., $710; Scotch universities about the same; Cambridge, for B. A., $465; for M. B., $685.

[2] Cf. Ch. IX, "Organization and Administration of Universities," p. 159.

directly represented. Experience soon taught that the efficiency of the council was increased by disfranchising the societies and by giving a larger number of representatives to the upper-class men. At present the representatives are elected by the men and women separately and apportioned among the faculties roughly, according to the number of students in them. In addition, there are representatives at large, eight men and four women, elected by the general body of men and of women, respectively. The editor of the university magazine is an ex officio member. The total number of representatives is 71. The size of the council makes it necessary to carry on its work by committees. Besides the standing committees of the council, there is a grand committee for and from each faculty.

The functions of the council are in all the universities—

> to afford a recognized means of communication between the students and the university authorities; to represent the students in such matters as affect their interests; to promote academic and social unity among the students.

An ordinance of the universities (Scotland) act of 1889 gave the council the right to petition "the senatus academicus with regard to any matter affecting the teaching and discipline of the university," also, to petition the university court with regard to any other matter affecting the students. The success of the councils has assured their permanence and establishment widely in the university world. The Scotch rectors confer with the councils before they appoint their assessors in the university court. Major changes in the curriculum even have been due to the representations of councils.

Ordinarily one of the first fruits of a students' council has been the formation of "a students' union," everywhere found to be a most efficient means of promoting corporate life.[1] Commodious and expensive buildings, erected by funds raised by graduates and students, are now to be found in practically all these universities. They provide facilities for reading, writing, dining, games, and accommodation for numerous college societies who desire to make the buildings their headquarters. Commonly, membership of the union is open to present and former students, to graduates, and to the authorities and staffs of the institution, upon the payment of annual or life subscriptions. As a rule a union is managed by present and former students by means of a committee of management. There are separate students' unions for women. In many cases subscription to the university union is compulsory on students and carries with it membership of the various athletic clubs. Sometimes the union has also the management of the athletic grounds and sports, as well as of the social entertainments.

Students' societies and clubs of every kind abound. While the organization of them requires the permission of the university au-

[1] Cf. pp. 239–240.

thorities, this is given with the greatest freedom. Opportunity is given for propaganda of every kind.

Thus the corporate life is diversified, made tolerant, and kept keen intellectually. The great movements of the day seek a university connection, which keeps the universities in contact with the social movements of the world and prepares the way for a university leadership of them. An instance is the Christian Union. There are some 150 of these unions in all the universities and almost all the colleges of Great Britain and Ireland. They are affiliated to the student Christian movement, which is in turn one of the 15 national movements which together form the World's Student Christian Federation, with a membership of 150,000-present students.

The total absence of college Greek-letter fraternities is not due to opposition to them, but probably in no small part to the existence of hostels and approved lodgings and in the older universities of the separate colleges with their social features. The numerous ephemeral clubs, as well as the permanent ones, largely supply the place of the fraternities.

Arrangements for giving advice to students have been multiplied. Within six or seven years at Cambridge "supervisors of studies" or "directors of studies"[1] have been appointed by the masters and fellows of colleges. A supervisor, say in natural science or in history, takes men for an hour a week for informal and private advice. Glasgow has appointed "official advisers of studies." In Liverpool the dean of each faculty in his function as an adviser of students is supplemented by departmental tutors. The arrangement is a voluntary one on the part of both tutor and student. At Leeds each student is advised by the head of the department in which he proposes to work. In all the universities efforts are being made to increase the personal contact of the teacher with the student in all his interests.

The spirit of the old and now of the new British universities to educate the student by the corporate life no less than by the intellectual life, which was conserved to a certain degree in the older American colleges, but almost lost in the newer institutions through the influence of the German university, has been revived in America, notably by the examples of Princeton and Chicago.

[1] Cf. Ch. X, "University Officers," pp. 174–175.

Chapter XIX.

UNIVERSITY EXTENSION TEACHING.

University extension in the sense of the universities carrying higher education to adults has had an unparalleled success in England. The progress of the movement has been remarkable. Instituted by the University of Cambridge in 1873, adopted by Oxford in 1878, with the work of the London Society for the Extension of University Teaching, which was founded in 1876, taken over by the reconstituted University of London in 1900, these three universities are the world-wide acknowledged leaders of the movement.[1] Taking Oxford alone, some half million persons have attended the courses given in nearly 40,000 lectures by over 200 lecturers. Nearly 30,000 students have been examined.

The original form of university extension teaching has not declined in England as it has in the United States. The characteristic features of the lecture system at local centers, with a class following the lecture, the setting of paper work and a final examination, have been maintained. This is due in part to the evolution of a series of certificates.[2] Honors also are awarded and university privileges granted in rare cases, like exemption from the entrance examination and the reduction by one year of the period of residence for the degree of bachelor of arts.

No small secret of the flourishing of university extension lectures has been the arousing of local interests and the organization of permanent local centers. Not only was a local university extension society organized, consisting of annual subscribers, entitled to lecture tickets, but also a local students' association. The objects of the association have been to assist students to carry on the work of the lectures by means of meetings and of a students' library, and to promote the social side of the work.

[1] Cf. Chs. I, "Oxford, Cambridge, Durham," pp. 20, 37; III, "University of London," p. 72; IV, "The New or Provincial Universities," pp. 104–105, 107, 109.

[2] Terminal certificate after examination on a course of 10 or 12 lectures; sessional certificate on a course of 24; sessional certificate in honors; affiliation certificate (or higher certificate of systematic study) for a sequence of 96 lectures plus examinations; vice chancellor's certificate and affiliation certificate plus examination in elementary mathematics and two languages.

An important step has been the recognition by the university of a university extension center as an affiliated center. By the scheme of affiliation, courses of instruction in sequence are provided, extending over a period of three years, and including not less than 96 lectures and classes. These courses afford opportunities not only for general culture for adults but also for preparation of students intending to proceed to the university. An "affiliation certificate" with its privileges at the university may be obtained. At this point we observe a development of university extension by which it became the parent of municipal colleges, some of which have become the great provincial or new universities. The humbler widely scattered municipal colleges, in addition to being "affiliated centers," are schools of science, technology, commerce, and domestic science, with day departments. They prepare for the intermediate examination of the University of London in arts, science, engineering, and for preliminary scientific medical examinations, as well as for civil service examinations. They come near fulfilling the early dream of university extension in the time of the Commonwealth by William Dell, master of Gonville and Caius College, Cambridge, who urged the establishment of universities or colleges in every great town, and that "it may be so ordered that the youth may spend some part of the day in learning or study and the other part of the day in some lawful calling."

The real secret of the success of university extension was found when the movement not only went outside the university, but returned to carry on its work within the university. The university spirit in the instruction is maintained among the widely scattered affiliated centers and colleges, not only by the sending out of university teachers, but also by gathering in a goodly number of the students from the centers at the "summer meetings" in the universities themselves. These summer meetings have become an integral part of the extension system. The meeting of 1915 at Oxford, the nineteenth of the annual meetings, held generally alternately at Oxford and Cambridge, though owing to the war not enrolling the usual 1,000 students, was full of enthusiasm and gave proof of the vitality of the movement. The subject of study, "The Genius of Ancient Greece and its Influence on the Modern World," chosen long before the war, was treated profitably, with its reflections of present-day problems as regards peace and war, the individual and the State, and the production and distribution of wealth. Despite the war the summer meetings at other universities were not omitted. In the summer meetings no attempt is made to open all departments of instruction. Different fields are selected in different years. This

makes intensive study possible, and avoids to a certain degree the superficiality often attributed superciliously to extension work.

The next stage in university extension was marked by the founding of Ruskin College at Oxford, followed by an agitation to establish a workingman's college, incorporated in the university. These were first fruits of the desire to gather the most promising university extension students within the fold of the university, and of a notion, implicit in university extension from the days of Mark Pattison, that the university should admit to its benefits "a class which has hitherto been excluded by social position or income." A sympathetic atmosphere at Oxford welcomed Ruskin Hall, now Ruskin College, an institution still not officially attached to the university. The opening of the college was trebly significant. Prof. York Powell, a representative of the group of reformers within the university, presided.[1] Representatives of some 300,000 workpeople were present, indicating the event as one of "the most remarkable efforts of the British labor movement." The date, the anniversary of the birth of George Washington, in 1889, was chosen by the founder, Mr. Walter Vrooman, an American citizen, that the college might have the same birthday as Washington in order to perpetuate one of its ideals, that it should be a link between Britain and America.

This was the first *residential* institution in Great Britain for the education of adult working-class students, who were to use the knowledge they acquired there "in order to raise and not to rise out of" the class to which they belong.[2] The college has flourished since 1910, when, in reaction against an unacademic use of the college for a special propaganda, the present principal was appointed, and the government placed in the control of a council elected by labor organizations advised by a consultive committee of educational experience. In 1913, on the birthday of the college, the first wing of new buildings planned to accommodate 100 students was opened.[3] Up to that time some 500 students had passed through the college, and over 9,000 students had taken correspondence courses. Within the three preceding years, 28 Ruskin students had taken the examination for the Oxford diploma in economics and political science, of whom 26 were successful and 16 obtained distinction. In 1914 arrangements were made for the reception of the first woman student at the college.

[1] Cf. Ch. I, "Oxford, Cambridge, Durham," p. 23.

[2] Bd. of Educ. Rep. on an Inspection of Ruskin College, Apr. 21–26, 1913.

[3] Ruskin College, Oxford, Opening of New Building and Unveiling of the Buxton Memorial, Feb. 22, 1913, Report of the Proceedings.

Though temporarily closed in 1915 on account of the war, one may look forward with confidence to its future; for, in the words of the inspectors:

> The success of the college as an educational experiment may be regarded as established. When it was founded, it might not have been regarded as possible that workmen taken straight from industrial occupations should be able, after a brief and belated apprenticeship to learning, to enter successfully for university examinations. Ruskin College has thrown new light on the educational possibilities of industrial society.[1]

In view of the limited scope of Ruskin College and the report[2] of the working-class education committee that university extension failed to satisfy the needs of the industrial classes on account of the necessity that it should be self-supporting, Lord Curzon committed himself in 1909 to the advocacy of founding a university workingmen's college. His idea was that it should be a poor men's college, in which the sons not only of artisans but of tradesmen, of farmers, and of small professional men should commingle. The bond of union would be humble means. He asserts:

> A worse disaster could hardly befall English education than that the new universities should become the exclusive resort of the poor and unpolished man and that Oxford and Cambridge should be reserved for the rich and cultured.[3]

Members of the proposed college were to be matriculated and to have the enjoyment of all university privileges. To meet their financial necessities they would not be expected to take a three years' course leading to a degree, but to take a diploma at the end of two years. A candidate would be at liberty to remain and proceed to a degree. The college would remain in session throughout the vacation, and the total cost would, if possible, be not more than $300 per annum.[4] A large number of maintenance scholarships were to be attached to the college, which Lord Curzon would appeal to the richer colleges to contribute. He also sought an outside benefactor to build and endow such a college. No response has been made to the appeals, and the entire scheme has found little favor in any quarter and may be considered dead. Doubtless the war, with its resultant retrenchments in all the colleges and readjustment of the "classes" in England, will bury it.

The workers' educational association represents a movement for years flowing side by side with university extension and at length,

[1] Report of an Inspection, supra, p. 18.
[2] Report of a Joint Committee of University and Working-Class Representatives on the Education of Work-People, Oxford, 1908; cf. p. 253.
[3] Lord Curzon, supra, p. 67. Cf. Ch. I, "Oxford, Cambridge, Durham," p. 21.
[4] At Ruskin College the collegiate year is 44 weeks and the cost $260.

in 1907–8, joining it in forming tutorial classes, which has given the latest and most promising development of university extension. After the industrial revolution in the nineteenth century had "flung working men and women into hastily constructed towns" the thoughtful workers of England utilized adult schools, mechanic's institutes, workingmen's colleges, and the university-extension lectures.[1]

In 1903, through the efforts of a group consisting entirely of trade-unionists and cooperators, seconded by scholars, a national conference was held at Oxford. "An association to promote the higher education of workingmen, primarily by the extension of university teaching," was formed. Mention was also made of the development of a school-continuation system. The association announced its hopes—

> to coordinate existing and to devise fresh means by which working people of all degrees may be raised educationally, plane by plane, until they are able to take advantage of the facilities which are and may be provided by the universities. It is a missionary organization working in cooperation with education authorities and working-class organizations. It is definitely nonsectarian and nonpolitical.

The association spread rapidly by means of conferences and the organization of "local associations."

In 1907, after a second national conference at Oxford, the workers' educational association got its present name. A discussion of "what Oxford can do for workpeople" led to a clearer conception of the work of the association and ultimately to the important report of a "joint committee of university and working-class representatives on the education of workpeople."[2]

At the same time the first experiments on the lines of tutorial classes, as they are now known, were tried with complete success, at Battersea from the University of London and at Rochdale from the University of Oxford. These classes, with which every university and every university college in England and Wales is now associated, in 1914 numbered 153 and contained about 3,500 working men and women pledged to a three years' course of serious study and the writing of 12 essays in connection with each year of the course. The classes meet once a week, for at least two hours, for 24 weeks in each year, half of the time being devoted to class work. The number in a class is limited to 32, and they must be adults. Among the conditions for receiving a possible grant of $150 for each year of the

[1] Mansbridge, Albert. "University Tutorial Classes, a study in the development of higher education among working men and women," Longmans, Green, & Co., 1913 Cf. Ch. I, "Oxford, Cambridge, Durham," p. 20.

[2] Cf. p. 252.

course the board of education requires representatives of a university or university college upon the body supervising the class, which body must be responsible for the framing of a syllabus and the selection of a tutor. The instruction must aim at reaching, within the limits of the subject covered, the standard of university work in honors.

Diplomas and degrees are not asked for, and much is made of the spirit of comradeship in the classes. The practice is growing of holding week-end meetings and summer schools at the universities to which the members of the tutorial classes resort for periods from two to eight weeks. The financial support accorded to tutorial classes since their establishment, and to summer schools in connection with them, amounts to $187,700.[1] The tutorial classes have been aided not only by traveling libraries loaned by the universities, but also by the formation of a students' central library.

The university tutorial classes have stood the test of the war, though diminished by enlistments. Subjects cognate to the war or arising out of it, judiciously studied, have cultivated the "historic sense and steadied men in the midst of this unprecendented cataclysm." The numerous educational classes and reading circles organized by the Workers' Educational Association, entirely apart from the university tutorial classes, show the permeation of the association by the original missionary spirit of university extension. Classes and lectures have been held in rural districts, and the ideal presented that every village should have its branch of the Workers' Educational Association. Special classes for women have been multiplied, especially in literature, modern history, and child study. Under the impetus of the war, first aid and home nursing have been taken up to reach a fresh type of student.

The association has followed the soldiers into their camps with lectures and even with instruction in French. They have instituted a war-time comradeship committee. Its duty is to organize the supply of letters and magazines to those at the front; to bring soldiers' wives together for educational purposes; to supply talks in convalescent homes. The marvelous growth of the association, its maintenance in the crisis of war, and its success in the federation of labor and learning, mark it as a phenomenal sign of the times.[2]

[1] From universities, $87,200; from the State, $60,000; local education authorities, $30,500; sundry, $10,000.

[2] In 1915, in Great Britain and Ireland, the association has 173 branches, 2,409 affiliated societies, 11,088 members, and 9 daughter associations in the over-seas dominions. The affiliated societies include 902 trade-unions, trade councils, and branches, 383 cooperative committees, 341 adult schools, brotherhoods, etc., 16 university bodies, 21 local education authorities, 178 working men's clubs and institutes, etc., 61 teachers' associations, 148 educational and literary societies, 59 classes and study circles, and 300 various societies, mainly of workpeople. (The Workers' Educational Association. Twelfth An. Rept. 1915.) Cf. Rept. of the Univ. of London Joint Com. for the Promotion of the Higher Educ. of Working People, 1909–1913, Feb., 1914. Cf. Education and the Working-Class (Reprint from "The Round Table," Mar., 1914).

The association has added an extension to university extension which has more thoroughly democratized the latter, and is linking up a system of national education around the universities. The war has emphasized the fact that it is a national movement and has introduced a new phase in adult education. University extension followed popular technical education with cultural studies. In turn attention has been given to the social sciences in the period of social reform in England since the opening of the century. The war has brought home to the mass of the people their ignorance of international affairs. The workers' educational association and university extension have been quick to seize this opportunity to meet the demand for instruction in modern history and international politics.

An impetus and a timely help in the higher ranges of their work will be given by the newly formed "Council for the Study of International Relations," of which Viscount Bryce is president, and the chairman of the Yorkshire district of the workers' educational association has been chosen secretary. The present crisis and the present stage of extra mural university activities give new force to the words of Bishop Gore at the Oxford conference in 1907, when he quoted the remark, "The great function of the universities is to educate the governing classes." He added, "Everybody who has eyes to see must recognize that the governing classes in England and in other countries include, and that continually in a broader and intenser form, those who work with their hands." Mr. Mansbridge prophesies, "The universities can never be the same again. Plato's contention that students should proceed to higher study after experience of life is abundantly reenforced by the practice of tutorial classes."[1]

The importance of university extension and an indication that the spirit of it possesses all classes appear in an organization, the Cavendish Association, correlative among the "upper classes" to the workers' educational association. One of the outcomes of the celebrations of the coronation of King George was the formation of the Cavendish Club, promoted by the Duke of Devonshire, whose family name it took. It is a London social club of some 1,400 public-school and university men whose main objects are to encourage its members to devote their leisure time to some form of social service and to bear witness to the Christian spirit as its motive force. In 1913 it was proposed to found a Cavendish Association along similar lines.

[1] Mansbridge, supra, p. 125

An appeal was made to public-school and university men by means of meetings throughout the country to form, at important centers, branches of the association to impress upon the men their responsibilities as citizens in the matter of national, civic, and social service. A suggestive list of opportunities for social service was circulated, leaving every man without excuse for not finding in his own locality that special piece of work for which he might be adapted. Planted just before the war, this association has not had time to take deep root, but it exists in suspended animation. The association is but one of many similar enterprises, like college settlements, which reflect a sense of a national need of what Arnold Toynbee called a "citizen education."

University extension is coming to the larger meaning that an obligation is laid upon the university graduate, as well as upon the university teacher, to supply the community with some form of intelligent social service. There is a steady approximation toward Mark Pattison's dream that "the ideal of a national university is that it should be coextensive with the Nation; it should be the common source of the higher (or secondary) instruction for the community." To-day the demand of the workingmen, which can but perpetuate university extension and which is full of hope for democracy, is for something more than "bread-and-butter" education. It is a call for a liberal or humane education which is not so much "a means of livelihood as a means of life." The earlier day has passed when Principal Dale truly said, "The working classes were not ready for what the universities had to give, and the universities did not know what the working classes wanted."

The great war has revealed that the United States has many of the problems of England. University extension may aid in solving some of them. Many American institutions transplanted it in its original form, and some have developed it in very practical ways, but in others interest in it has declined. May it not be well to come again to the English fountainhead? Fortunate as Americans esteem themselves in the absence of social classes, and in the accessibility and inexpensiveness of collegiate education, may there not be searchings of heart, if a due proportion of the children of laboring people are in the colleges, and if the colleges are disseminating the spirit of humane education in their university extension operations? Are the graduates, individually and collectively, spreading the university spirit in social service or tending to become an aristocracy of learning? Are they in their college associations, fraternities, and clubs planning for more than their own social enjoyment? Are they recognizing their obligations to serve the public in church and state? The

American workingman has had faith in his schools and has trusted especially the colleges and universities. Has not the time come for the labor organizations to strengthen their membership and particularly their leadership by courses of study conducted in connection with these institutions with the impartial spirit of truth believed to be preserved in them? May not these organizations assure the perpetuation of the federation of labor and of higher learning in America?

PART III. STATISTICAL TABLES.

TABLE 1.—*Oxford, Cambridge, Durham—Finances, staff, and students.* (*See Ch. I.*)

Institutions.	Years.	Fees.	Endowments (receipts).	Donations.	Local grants.	College contributions.	Parliamentary and treasury grants.	Examinations and other sources.	Receipts.	Payments.	Total value of grounds, buildings, and equipment.	Number of staff, excluding colleges.	Undergraduates.	Number of degrees in course.
University of Oxford	1907								[1]£76,152					
	[2] 1912	[3]£53,044	£5,831	[4]£11,000		[5]£44,578	£2,559	[6]£20,926	[7]719,322	£119,322		[8] 130	[9] 4,025	[9] 1,262
Twenty incorporated colleges	1907								514,927					
	1912								550,002					
Total, university and colleges	1907								591,079					
	1912								669,324					
University of Cambridge	1883								[10] 37,395					
	1913	20,171	2,061	[12] 35,702		[13] 30,186	[14] 16,263	31,165	[15] 82,401	[16] 73,637		[8] 127	[9] 3,306	[11] 1,532
Seventeen incorporated colleges	1883								310,065					
	1913								344,144					
Total, university and colleges	1883								347,460					
	1913								426,545					
DURHAM DIVISION.														
University of Durham	[17] 1903													
	1912	1,566					2,000	5,185	[18] 13,204	[19] 13,204				
Durham colleges	1903													
	1913	4,424	12,150				570	1,932	19,078	18,892	£44,536	15	257	
NEWCASTLE DIVISION.												21	234	
College of Medicine	1903													
	1913	3,205	335	115			2,033	[21] 3,943	7,481	7,099		[20] 26	214	
Armstrong College	1903								9,633	9,329	54,000	[22] 27	209	
	1913	10,390	4,794	2,597	£4,710		17,843	736	41,071	20,545		59	[23] 523	
										40,726	219,179	88	[24] 1,106	
													[25] 715	
													[24] 795	
Total, university and colleges	1903											91		
	1913	18,019	17,279	2,712	4,710		20,446	6,611	69,782	63,947	317,714	136		

[1] Curzon, "University Reform," p. 142.
[2] From Oxford Univ. Gazette, Feb. 4, 1914, "Returns from the Board of Finance for 1912."
[3] Including examinations.
[4] During 1908–1912 Trustees Oxford University Endowment Fund report, £123, 144 (Oxford Mag., Oct., 1913).
[5] Statutory, £38,511; voluntary, £4,066.
[6] Including estates, university press, income, taxes repaid, and miscellaneous, exluding examinations.
[7] Including debit balance on general fund, £978, and on common university fund, £178.
[8] In 1913–14.
[9] Including M. A., 407, in 1913–14.
[10] Coll. assessed 2½ per cent (1913, 1½ per cent), Tillyard, p. 273–4. (Chest, £32,785; common university fund, £4,610).
[11] Including M. A. 351, in 1913–14.
[12] For year 1912; see "Yearbook of the Universities, 1914."
[13] Statutory.
[14] Cambridge University Reporter, Mar. 23, 1914. Approx. from Bd. of Edn.; Commrs. for buildings, etc., through Bd. of Agrl., and balance from Paymaster General (Solar Physics Obs. Acc.).
[15] Including additional college payments Prof. fellowships, £4,478. (Chest, £49,401; common university fund, £29,000.)
[16] Chest, £50,881; common university fund, £22,804.
[17] Accounts for 1909 on different basis—no just comparison.
[18] Including assets.
[19] Including balance of external income.
[20] 44, including clinical.
[21] Examination of bacteriological and pathological specimens.
[22] 14, including clinical.
[23] Day.
[24] Evening.

TABLE 2.—*Scotch universities—Staff and students, 1912–13.* (*See Ch. II.*)

Universities.	Total number of teaching staff.		Number of students.		Total number of students.		Arts.		Pure science.		Applied science.		Technology.		Agriculture.		Theology.		Law.		Medicine.		Dentistry.		Pharmacy.		Teaching.		Music.		Fine arts.		Post-graduate.	
	In 1908.	In 1913.	Full time.	Part time.	In 1908.	In 1913.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.
St. Andrews	75	118	[1] 433	[1] 62	477	[1] 495	292	...	96	...	...	...	...	...	...	...	21	...	...	...	91	...	...	...	...	...	...	...	...	...	...	...	...	...
University College, Dundee	47	61	179	36	209	215	[2] 67	...	21	...	14	...	...	4	0	0	0	0	...	20	[3] 72	...	7	...	...	...	...	...	...	...	...	...	2	6
Glasgow	118	173	...	...	2,219	[4] 2,825	[5] 1,231	...	[6] 492	...	...	...	...	...	...	...	57	...	204	...	749	...	0	0	0	0	...	...	0	0	0	0	[7] 40	...
Aberdeen	68	89	1,043	220	1,162	1,263	579	...	53	...	0	0	0	0	94	...	26	...	16	...	275	...	0	0	0	0	0	0	0	0	0	0	0	[illegible]
Edinburgh	112	222	3,284	68	2,956	3,352	1,234	17	425	9	...	...	...	...	...	...	52	1	266	10	1,288	31	...	...	...	...	...	...	19	...	...	...	...	...

[1] Including University College of Dundee; matriculated students only.
[2] Including 3 in arts and science.
[3] Including 1 in science and medicine and 6 in public health.
[4] Including 75 in summer sessions.
[5] Including teaching.
[6] Including applied science, technology, and agriculture.
[7] Included with single class enrollment.

TABLE 3.—*Scotch universities—Financial statement, 1903-1913.* (*See Ch. II.*)

Universities.	Years.	Fees.	Endowments (income).	Donations.	Carnegie trust.	Local grants.	Parliamentary and treasury grants.	Examinations and other sources.	Total income.	Total expenditures.	Total value of grounds, buildings, and equipment.
St. Andrews	1903										
	1913	[1] £6,250	[1] £3,523	[2] £1,260	£2,084		[1] £15,306	(3)	[1] £33,119	[1] £34,414	
University College, Dundee	1903			15,755					11,612	10,929	
	1913	1,871	7,996	292	(3)		3,370	£483	14,014	13,986	£146,000
Glasgow	1903			379					75,837	77,022	
	1913	34,609	29,170	30,400	2,000	£450	22,380	10,106	109,955	107,600	
Aberdeen	1903			29,900					[4] 19,529	17,868	
	1913	4,285	792	1,020	2,917		23,400	5,282	23,789	21,262	
Edinburgh	1903	33,260	12,269	1,000		10,800	15,070	9,601	85,559	79,634	(5)
	1913	39,327	16,987	11,300	3,798	10,800	26,142	10,317	109,233	109,316	
Totals		86,342	58,468	44,272	10,799	11,250	101,598	26,188	300,080	296,588	

[1] 1911-12. [2] Four years' lectureship in sociology. [3] Included in column of fees. [4] General fund. [5] No official estimates have been made.

TABLE 4.—*University of London—Staff and students.* (*See Ch. III.*)

Institutions.	Total number of teaching staff.		Number of students.		Total number of students.		Arts.		Pure science.		Applied science.		Technology.		Agriculture.		Theology.		Law.		Medicine.		Dentistry.		Pharmacy.		Teaching.		Music.		Fine arts.		Post-graduate.	
	In 1908.	In 1913.	Full time.	Part time.	In 1908.	In 1913.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.
University College	95	135	875	1,208	1,208	2,083	203	[1] 673	169	[1] 54	115	13	....	....	0	0	0	0	28	6	124	13	....	....	....	....	0	0	0	0	124	149	112	300
King's College for men	99	130	504	2,793	[2] 4,647	3,297	88	741	80	130	87	54	9	0	0	0	201	30	....	[3] 60	194	177	....	21	0	0	102	8	0	0	0	0	37	215
King's College for Women [4]	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

[1] Including day and evening.
[2] Including 1,918 King's College School and C. S. students and 1,210 Gilbert lectures.
[3] 800 attending course of 4 Gilbert lectures.
[4] See Tables 13 and 14.

University of London, including all institutions, in 1913–14: Total number of staff, 874; appointed teachers, 9[illegible] recognized teachers, 775; total number of candidates for all examinations, 11,920; internal students, 4,888; postgraduate and research students, [illegible]0.

TABLE 5.—*University of London—Financial statement.* (*See Ch. III.*)

Institutions.	Years.	Fees.	Endowments. (income).	Donations.	Local grants.	Parliamentary grants.	Examinations and other sources.	Total income.	Total expenditures.	Total value of grounds, buildings, and equipment.
University of London	1903							£46,474	£44,270	
	1913	£43,102	£848		£5,066	£8,000	[1] £15,116	72,132	69,504	[2] £563,596
University College	1903			£717				33,437	34,346	
	1913	26,266	9,053	3,019	6,465	19,208	2,680	66,694	66,867	640,000
King's College for Men	1903			900				27,157	28,906	216,500
King's College for Women [4]	1913	15,118	795	1,445	4,285	15,258	2,079	38,982	39,589	(3)
Total	1913	84,486	10,696	4,464	15,816	42,466	19,875	177,808	175,960	1,410,096

[1] Excluding examination fees. [2] Excluding grounds. [3] Grounds are Crown lands. [4] See Tables 13 and 14.

TABLE 6.—*University of London Institutions for Instruction and Research, 1913-14. (See Ch. III.)*

[The first figures after the names indicate the number of "Appointed and recognised teachers" or in group (c) of institutions of "Recognised"; the second figures the number of "internal students." The letters indicate the faculties in which courses may be taken by "internal students," as: A., arts; T., theology; L., laws; M., medicine; Mu., music; S., science; E., engineering; Ec., economics.]

(a)

Colleges Incorporated in the University.

University College—87; 694; A., L., M., S., E., Ec.
King's College—64; 461; A., L., M., S., E.
King's College for Women—18; 57; A., S.

Other Institutions Belonging to the University.

Goldsmiths' College. (See group (c).)
Brown Animal Sanatory Institution—0; 0.
Physiological Laboratory—3; 1; S.
Francis Galton Laboratory for National Eugenics—0; 0.

(b)

Schools of the University.

Imperial College of Science and Technology—40; 341; S., E.
Royal Holloway College—17; 148; A., S.
Bedford College for Women—26; 292; A., M., S.
East London College—25; 407; A., S., E.
London School of Economics—25; 316; A., L., S., E.
South-Eastern Agricultural College, Wye—4; 21; S.
Westfield College—10; 58; A., S.
London Day Training College—4; 37; A.
New College, Hampstead—5; 35; T.
Hackney College, Hampstead—6; 14; T.
Regent's Park College—3; 10; T.
King's College, Theological Department—10; 40; T.
Wesleyan College, Richmond—3; 2; T.
St. John's Hall, Highbury; 4; 10; T.
St. Bartholomew's Hospital Medical School—38; 211; M., S.
St. Thomas's Hospital Medical School—35; 94; M.
Westminster Hospital Medical School—23; 13; M.
Guy's Hospital Medical School—35; 180; M., S.
St. George's Hospital Medical School—25; 1, M.
London Hospital Medical College—42; 151; M., S.
Middlesex Hospital Medical School—28; 60; M.
Charing Cross Hospital Medical School—18; 4; M.
London School of Medicine for Women (Royal Free Hospital)—21; 149; M., S.
University College Hospital Medical School—24; 72; M.
King's College Hospital Medical School—26; 8; M.
St. Mary's Hospital Medical School—31; 69; M., S.
London School of Tropical Medicine—10; 0.
Lister Institute of Preventive Medicine—7; 8; S.
Royal Army Medical College—0; 0 (others average 70).
Royal Dental Hospital and London School of Dental Surgery—4; 0.
Naval Medical School of the Royal Naval College, Greenwich—0; 0 (others average 80).

(c)

Institutions Having Recognized Teachers.

University of London, Goldsmiths' College—15; 78; A., S.
Battersea Polytechnic—18; 109; A., S.
Birkbeck College—32; 359; A., M., S., Ec.
City of London College—4; 0 (other students, 2,261).
Finsbury Technical College—2; 0 (other students, 177).
Jews' College—4; 15; A.
Northampton Polytechnic Institute—10; 14; E.
Northern Polytechnic Institute—10; 65; A., S., E.

Royal Veterinary College—6; 14; S.
Sir John Cass Technical Institute—6; 18; S.
South-Western Polytechnic Institute—16; 115; A., S., E.
West Ham Municipal Technical Institute—11; 66; A., S., E.
Woolwich Polytechnic—7; 9; S., E.
Maria Grey Training College—4; 23; A.
St. Mary's College, Paddington—3; 14; A.
Mary Datchelor Training College—3; 7; A.
Borough Road College, Isleworth—1; 0 (other students, 140).
St. John's College, Battersea—1; 0 (other students, 150).
St. Mark's College, Chelsea—1; 0.
Royal Academy of Music—5; 0 (other students, 571).
Royal College of Music—10; 0 (other students, over 400).
Trinity College of Music—5; 6 (other students, 644).
Guildhall School of Music—3; 0 (other students, 2,200).
Bethlem Royal Hospital—2.
Brompton Hospital for Consumption and Diseases of the Chest—14; 0.
Hospital for Sick Children—15; 0 (other students, 270).
National Dental College—4; 0 (other students, 40).
National Hospital for the Paralyzed and Epileptic—15; 0 (other students, 60).
Royal London Ophthalmic Hospital—11; 0 (other students, 65).
School of Pharmacy of the Pharmaceutical Society of Great Britain—2; 0 (other students, 77).

TABLE 7.—*New or provincial universities—Staff and students in 1912–13.* (*See Ch. IV.*)

Universities.	Total number of teaching staff.		Students.		Total number of students.		Arts.		Pure science.		Applied science.		Technology.		Agriculture.		Theology.	
	In 1903.	In 1913.	Full time.	Part time.	In 1903.	In 1913.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.
Manchester (Victoria University and Owens College)	126	238	1,268	387	[1]1,391	1,655	288	[2]39	264	19	78	6	226	1	6	.....	2	28
Birmingham	107	166	888	125	807	1,013	144	19	[3]104	[3]17	.....	.....	161	27	0	0	0	0
Liverpool	118	232	883	429	638	1,312	306	125	197	35	87	32	0	0	0	0	0	0
Leeds	100	162	654	458	[4]820	1,112	[5](6)	(59)	(24)	(17)	(3)	(11)						
Sheffield	62	146	345	2,187	1,764	2,832	168	86	132	47	[5]134	[5]127	.....	.....	50	125	0	0
Bristol	.....	164	487	320	.....	807	54	458	21	37	[3]109	[3]1,574	.....	.....	0	0	0	0
							278	.....	101	.....	(6)	(6)	0	0	0	0	0	0

Universities.	Law.		Medicine.		Dentistry.		Pharmacy.		Teaching.		Music.		Fine arts.		Commerce.		Postgraduate.		Population of city, 1911.
	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	
Manchester (Victoria University and Owens College)	..	56	159	23	60	8	4	.....	[7]23	[8]204	4	9	6	2	16	30	131	166	714,333
Birmingham	0	0	[9]150	[9]27	.....	.....	0	0	229	.....	0	0	0	0	46	5	54	30	525,833
Liverpool	22	43	200	174	71	20	0	0	0	0	0	0	0	0	0	0	42	119	746,421
Leeds	.....	(4)	(9)	(28)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sheffield	20	39	[10]157	[10]3	.....	.....	.....	.....	[11]157	[11]4	[12]157	[12]4	0	0	0	0	13	31	445,560
Bristol	0	24	[10]37	[10]10	.....	.....	.....	.....	91	1	0	0	0	0	.....	.....	13	83	454,632
		0	95	.....	0	0	0	0	[7]0	0	0	0	0	0	0	0	0	0	357,048

[1] Including 183 evening students in Owens College.
[2] Including applied science.
[3] The figures in parentheses show the number of postgraduate students and are included in the total figures given for each faculty.
[4] Day students.
[5] Including technology.
[6] See Merchant Venturers' College.
[7] 221 students of the training department are included in the numbers for arts and pure science.
[8] Evening students.
[9] Including dentistry.
[10] Including dentistry and pharmacy.
[11] Included elsewhere.
[12] Teachers.

TABLE 8.—*New or provincial universities—Financial statement, 1903–1913.* (*See Ch. IV.*)

Universities.	Years.	Fees.	Endowments (income).	Donations.	Local grants.	Parliamentary grants.	Examinations and other sources.	Total income.	Total expenditure.	Total value of grounds, buildings, and equipment.
Manchester (Victoria University)	1903	.....	.....	£649	.....	.....	.....	£41,278	£41,197	.....
	1913	£22,972	£20,602	1,072	£6,550	£24,870	£4,155	81,807	81,717	£593,284
Birmingham	1903	.....	.....	83	.....	.....	.....	35,124	33,490	.....
	1913	16,988	8,219	.....	15,960	20,986	8,060	70,076	70,017	680,724
Liverpool	1903	.....	.....	2,942	.....	.....	.....	29,501	35,662	.....
	1913	21,470	14,724	6,242	11,918	24,440	1,808	80,601	80,576	[2] 420,258
Leeds	1903	.....	.....	1,979	.....	.....	.....	31,502	34,871	.....
	1913	14,499	8,608	[1] 1,892	14,459	22,733	1,924	64,117	63,606	335,000
Sheffield	1903	.....	.....	1,678	.....	.....	.....	20,074	21,256	.....
	1913	9,156	4,859	1,408	15,927	17,520	1,958	60,826	52,286	217,928
Bristol	1903	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1913	8,709	6,936	2,597	4,710	17,809	770	41,071	34,147	146,536
Total	1913	93,794	61,939	13,209	69,512	128,236	18,666	385,496	382,349	2,383,772

[1] Owens College.

[2] Excluding equipment.

[3] Annual subscriptions.

TABLE 9.—*Independent university colleges—Staff and students.* (*See Ch. V.*)

Independent university colleges.	Total number of teaching staff.		Number of students.		Total number of students.		Arts.		Pure science.		Applied science.		Technology.		Agriculture.		Theology.		Law.		Medicine.		Dentistry.		Pharmacy.		Teaching.		Music.		Fine arts.		Post-graduate.	
	In 1902.	In 1912.	Full time.	Part time.	In 1903.	In 1913.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.
Reading	53	98	627	575	1,104	1,202	[1] 17	[2] 201	56	54	....	....	[3] 19	[2] 141	[4] 68	....	0	0	0	0	0	0	0	0	0	0	0	0	65	29	38	100	0	0
Southampton (Hartley)	....	53	188	534	....	702	109	....	30	....	18	....	....	....	....	....	....	....	(5)	(5)	....	....	....	....	....	....	....	....	(5)	(5)	(5)	(5)	....	....
Nottingham	49	84	239	82	....	(5)	49	22	73	11	36	16	0	0	0	0	0	0	....	13	....	5	....	2	....	....	....	73	....	4	....	....	6	9
Exeter (Royal Albert Memorial)	[6] 32	[7] 34	243	[8] 513	739	761	26	6	10	8	0	0	20	23	0	0	0	0	0	0	[9] 8	....	....	....	....	2	147	2	0	0	23	95	....	....

[1] And 30 students of miscellaneous subjects.
[2] And commerce.
[3] Including board dairy instruction.
[4] Included in arts.
[5] Day students, 321; evening students, 1,254.
[6] 19 full-time instructors.
[7] 23 full-time instructors.
[8] Including 306 Sunday evening classes in arts, science, and technology.
[9] Including dentistry.

TABLE 10.—*Independent university colleges—Financial statement.* (*See Ch. V.*)

Independent university colleges.	Years.	Fees.	Endowments (income).	Donations.	Local grants.	Parliamentary grants.	Examinations and other sources.	Total income.	Total expenditure.	Total value of grounds, buildings, and equipment.
Reading	1908			£1,458				£11,522	£12,988	
	1913	£7,816	£8,439	663	£2,006	[1] £8,416	£770	39,409	27,850	£145,000
Southampton (Hartley)	1903									
	1913	2,142	518		4,650	4,422	10	11,784	11,316	[2] 88,100
Nottingham	1903			31				18,335	18,226	
	1913	8,414	501	42	10,395	12,429	832	27,616	27,201	320,600
Exeter (Royal Albert Memorial)	1903			18				5,656	5,287	
	1913–14	2,709	[3] 28		[4] 4,027	[5] 2,865	198	9,535		60,000
Total	1913	16,476	9,479	725	19,992	29,461	1,853	77,991	66,982	469,100

[1] And £1,300 from board of agriculture.
[2] Exclusive of grounds and equipment.
[3] Including donations. An endowment fund was inaugurated in 1911 and £5,000 promised and subscribed to date. The income of this fund not brought into the colleges' account, but is accumulating.
[4] Including £1,042 exchequer contribution accounts.
[5] Not including receipts for maintenance of students.

TABLE 11.—*Agricultural and technical colleges and schools—Staff and students.* (*See Chs. VI and VII.*)

Agricultural and technical colleges and schools.	Total number of teaching staff—		Number of students.		Total number of students—		Arts.		Pure science.		Applied science.		Technology.		Agriculture.	
	1903	1913	Full time.	Part time.	1903	1913	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.
Royal Technical College, Glasgow	37	159	389	[1] 221	4,937	[2] 4,908	.....	.....	.....	.....	[11] 373	[11] 221	.....	.....	.....	.....
Heriot-Watt College, Edinburgh	[3] 20	140	[3] 262	[4] 2,837	4,128	3,119	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Municipal Technical College, Dundee	40	65	[3] 142	[4] 1,130	1,040	1,263	.....	.....	.....	.....	.....	.....	1,233		.....	.....
West of Scotland Agricultural College, Glasgow	25	47	[5] 274	60	366	534	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gordon's College, Aberdeen	[6] 43	65	219	1,175	[6] 998	1,394	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Municipal School of Technology, Manchester	70	164	348	[7] 4,255	5,166	4,587	.....	.....	.....	.....	.....	.....	229	[7] 4,255	.....	.....
Merchant Venturers' Technical College, Bristol	.....	[8] 62	484	.....	.....	546	.....	.....	.....	.....	62	.....	.....	.....	.....	.....
East London College, London	.....	32	181	376	.....	557	77	71	74	75	29	16	.....	.....	.....	.....
South-Eastern Agricultural College, Wye, Kent	13	32	156	76	60	232	.....	.....	.....	.....	.....	.....	.....	.....	156	76
London School of Economics, London	17	72	270	1,867	1,002	2,137	[9] 26	[10] 12	1	1	.....	.....	.....	.....	.....	.....
Imperial College of Science and Technology, South Kensington	.....	86	789	166	606	897	.....	.....	113	18	[11] 567	[11] 29	.....	.....	.....	.....
Goldsmiths' College, London	[12] 58	79	581	696	.....	1,247	17	5	.....	[13] 106	.....	.....	.....	[14] 313	.....	.....

Agricultural and technical colleges and schools.	Theology.		Law.		Medicine.		Dentistry.		Pharmacy.		Teaching.		Music.		Fine arts.		Postgraduate.	
	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.
Royal Technical College, Glasgow	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Municipal School of Technology, Manchester	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16	.....
East London College, London	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19	.....
London School of Economics, London	[15] 9	.....	[16] 8	[17] 34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	25
Imperial College of Science and Technology, South Kensington	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[18] 65	[19] 251
Goldsmiths' College, London	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	[20] 506	.....	(21)	(21)	.....	107	110	61

[1] And 4,208 evening students.
[2] Standards raised since 1903 to university level.
[3] Day.
[4] Evening.
[5] In winter; 200 in summer.
[6] 1905–6.
[7] And 84 special day students.
[8] 1911–12.
[9] 24 intercollegiate.
[10] 2 intercollegiate.
[11] Including technology.
[12] 1906; the college, in its present form, only opened in 1906.
[13] Including applied science.
[14] Engineering and building.
[15] Intercollegiate.
[16] 5 intercollegiate.
[17] 33 intercollegiate.
[18] 6 intercollegiate.
[19] 7 intercollegiate.
[20] Training department.
[21] Nearly all take music in the training department.

TABLE 12.—*Agricultural and technical colleges and schools—Financial statement.* (*Chs. VI and VII.*)

Institutions.	Years.	Fees.	Endowments (income).	Donations.	Carnegie trust.	Local grants.	Parliamentary grants.	Examinations and other sources.	Total income.	Total expenditures.	Total value of grounds, buildings, and equipment.
Royal Technical College, Glasgow	1903			£77					£19,853	£19,253	
	1913	£6,718	£4,980	700	[1] £100	£910	£17,440	£1,410	32,259	34,698	£381,349
Heriot-Watt College, Edinburgh	1903								7,060	11,490	
	1913	3,283	5,342			135	7,656	1,007	17,423	17,292	88,000
Municipal Technical College, Dundee	1903			0					2,772	3,135	
	1913	1,055	460	550	0	0	5,600	340	7,475	7,500	79,800
West of Scotland Agricultural College, Glasgow	1903								7,406	8,193	
	1913	1,606	0	0	[2] 571	135	11,314	2,205	15,310	15,310	[3] 13,888
Gordon's College, Aberdeen	[1905–6			775					3,746	3,756	
	[1913	4,040	[4] 1,059			80	5,977	[4] 690	11,849	10,508	61,262
Municipal School of Technology, Manchester	1903			(5)					26,492	[6] 31,227	
	1913	10,934	0	(5)	0	20,379	13,677	1,105	46,095	[7] 47,699	380,000
Merchant Venturers' Technical College, Bristol	1903										
	[8] 1913	1,770	20	3,601		1,680	2,112	71	9,255	9,255	[9] 45,000
East London College, London	1903										
	1913	2,710		2,000		600	7,140	187	17,614	17,614	70,000
South-Eastern Agricultural College, Wye, Kent.	1903		0	6,000	0	[10] 2,000		9	10,217	12,801	
	1913	10,000		6,500		[11] 2,000			18,800	20,000	47,000
London School of Economics, London	1903			1,385					4,058	4,251	
	1913	5,944	108	135		4,725	5,850	475	17,238	17,227	46,171
Imperial College of Science and Technology, South Kensington	1903										
	1913	27,404	0		0	21,212	35,277	44	83,937	79,984	908,794
Goldsmiths' College, London	[12] 1903										
	1913	[13] 8,058	0	0	0	[14] 4,380	[15] 8,279	367	21,085	23,312	
Total	1912	84,532	11,979	13,486	671	59,286	120,322	7,901	298,340	300,395	2,160,664

[1] Since increased to £400.
[2] For college extension.
[3] Excluding grounds.
[4] Including heritable property and Aberdeen endowments trust.
[5] Including other returns for expenditure.
[6] Almost entirely in the forms of plant and equipment.
[7] Exclusive of (£18,000 in 1913) charges for sinking fund and interest re-capital account.
[8] 1911–12.
[9] Excluding grounds and equipment.
[10] Kent: in return for work done.
[11] Surrey.
[12] The college in its present form only opened in 1905.
[13] £6,899 received in training department.
[14] London county council.
[15] £6,564 for the training department.

TABLE 13.—*Women's colleges—Staff and students.* (*See Ch. VIII.*)

Women's colleges, 1913.	Total number of teaching staff—		Number of students.		Total number of students—		Arts.		Pure science.		Applied science.		Technology.		Agriculture.	
	In 1903.	In 1913.	Full time.	Part time.	In 1903.	In 1913.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.
Girton College, Cambridge	32	27	[1] 163	.....	[1] 127	163	140	.....	20	.....	.....	.....	.....	.....	.....	.....
Newnham College, Cambridge	[2] 12	[2] 13	225	0	168	225	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lady Margaret Hall, Oxford	[2] 3	[2] 6	67	0	51	67	65	.....	2	.....	.....	.....	.....	.....	.....	.....
Somerville College, Oxford	6	8	89	.....	74	89	81	.....	5	.....	.....	.....	.....	.....	.....	.....
St. Hugh's College, Oxford	3	6	.....	.....	26	44	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Hilda's Hall, Oxford	(4)	(5)	40	.....	22	40	37	.....	3	.....	.....	.....	.....	.....	.....	.....
Society of Oxford Home Students, Oxford	.....	.....	[3] 150	.....	44	[3] 150	.....	.....	.....	.....	0	0	0	0	0	0
Bedford College, London	32	52	327	35	349	362	192	30	55	5	13	.....	0	0	0	.....
King's College, London	.....	53	80	337	.....	417	51	132	6	.....	.....	[7] 23	.....	.....	.....	0
Westfield College, London	13	15	62	[6] 3	47	65	59	2	6	.....	0	0	0	0	0	0
Royal Holloway College, London	27	29	154	.....	139	154	115	.....	35	.....	0	0	0	0	0	0

Women's colleges, 1913.	Theology.		Law.		Medicine.		Dentistry.		Pharmacy.		Teaching.		Music.		Fine arts.		Postgraduate.	
	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.
Girton College, Cambridge	1	.....	2	.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Somerville College, Oxford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....
St. Hilda's Hall, Oxford	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bedford College, London	0	0	0	0	1	.....	0	0	0	0	38	.....	0	0	19	.....	9	.....
King's College, London	.....	48	.....	.....	.....	.....	.....	.....	.....	.....	.....	125	.....	.....	.....	.....	3	.....
Westfield College, London	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.....	2
Royal Holloway College, London	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	.....

[1] Michaelmas term.
[2] Resident staff, excluding collegiate and university teachers.
[3] Resident.
[4] One resident tutor; others voluntary teachers and coaches.
[5] Two resident and nonresident tutors and several university coaches.
[6] Including 14 at St. Frideswide's Hostel for R. C. students.
[7] Home science.

TABLE 14.—*Women's colleges—Financial statement.* (*See Ch. VIII.*)

Women's colleges.	Years.	Fees.	Endowments (income).	Donations.	Local grants.	Parliamentary grants.	Examinations and other sources.	Total income.	Total expenditures.	Total value of grounds, buildings, and equipment.
Girton College, Cambridge	1903			£905				£14,409	£13,300	
	1913	£17,950	£356	1,164	0	0	£641	18,593	16,014	£128,871
Newnham College, Cambridge	1903			873				11,135	10,874	
	1913	21,627	1,950	409	0	0	171	23,473	22,313	
Lady Margaret Hall, Oxford	1903			7				4,855	4,622	
	1913	6,819	0	0	0	0	697	7,516	6,763	32,000
Somerville College, Oxford	1903			0				6,802	6,673	
	1913	8,607	0	(2)	0	0	216	8,823	8,466	26,149
St. Hugh's College, Oxford	1903		0	5				[3] 2,414	[3] 2,319	
	1913			30				[3] 4,000	[3] 3,770	8,600
St. Hilda's Hall, Oxford	1903			0				1,416	1,385	
	1913	2,937	0	0	0	0	380	3,317	2,986	
Society of Oxford Home Students, Oxford	1903									
	1913							128	127	
Bedford College, London	1903									
	1913	15,184	613	143	630	7,949	2	23,941	24,489	[4] 100,000
King's College, London	1903									
	1913	3,094	0	151	1,012	1,891	104	8,327	8,194	
Westfield College, London	1903			121				4,732	4,709	
	1913	6,466	296	[5] 1,425	0	0	136	8,803	[7] 182	32,816
Royal Holloway College, London	1903							21,471	22,875	
	1913	16,444	10,773	0	0	0	1,594	28,812	25,331	[8] 725,300
Total	1913	99,128	14,188	3,322	1,662	9,840	3,941	133,733	125,635	1,053,736

[1] £364 toward special fellowship fund.
[2] Special building fund.
[3] Approximately.
[4] Exclusive of endowments for specials.
[5] And £61,756 building fund.
[6] Exclusive of grounds.
[7] Endowment, £879; scholarships, £546.
[8] Cost.

TABLE 15.—*Range of salaries.* (See Ch. XI, p. 185.)

UNIVERSITIES.†

ABERDEEN. Professors, $3,000–$6,500; lecturers, $250–2,125; assistants, $250–$1,000.

BIRMINGHAM. Chairs: 1 at $1,500; 3 at $2,500; 10 at $3,000; 1 at $3,250; 1 at $3,500; 2 at $3,750; 3 at $4,000; 2 at $4,250; 1 at $5,000; assistants and other members of teaching staff, 1 at $550; 1 at $650; 22 at $750; 2 at $800; 3 at $875; 1 at $900; 16 at $1,000; 2 at $1,250; 1 at $1,375; 3 at $1,500; 2 at $2,000.

BRISTOL. The salaries of the staff vary up to a maximum of $3,250. In the Merchant Venturers' College salaries vary up to $2,175.

CAMBRIDGE. Professors, usually $3,000–$3,500; readers, usually $1,500; lecturers and demonstrators, $250–$1,000. Often all these fixed amounts are increased by certain fees and college privileges.

DURHAM. Durham Colleges: Professors and lecturers, $1,000–$2,500; other members of staff, $175–$1,500. Armstrong College, Newcastle: Professors, $2,500–$3,000; lecturers and heads of departments, $750–$2,000; demonstrators, $600–$650. College of Medicine, Newcastle: 19 professors, 4 lecturers, and 8 demonstrators; salaries vary from $52.25–$3,750.

EDINBURGH. Chairs, $3,000–$8,000; lecturers, $105–$3,000; assistants or demonstrators, $80–$1,500. Heriot-Watt College: Professors, $2,500–$3,000; lecturers in charge of departments, $1,500–$2,000; assistant professors and other members of staff, $400–$1,125; lecturers and instructors for evening classes six months' winter session, $100–$750.

GLASGOW. Professors, $2,500–$6,000; lecturers, $1,000–$2,000; assistant lecturers, $500–$750. Royal Technical College: Professors, $2,125–$3,500; lecturers, $1,000–$1,625; other members of staff, $500–$2,000. West of Scotland Agricultural College: Professors, $2,500; lecturers, $750–$1,500; other members of staff, $400–$750.

LIVERPOOL. Professors, $2,500–$5,000, with a share of fees; guaranteed minimum, $3,000; lecturers in charge of departments, $1,250–$2,000, with a share of fees; assistant lecturers and demonstrators, $375–$750.

LONDON. Professors (full time), $3,000–$5,000; principal, $10,000; readers, $500–$1,500; lecturers pro rata for work done; other members of clerical and official staff, $7.25 per week to $4,000 per annum. East London College: Professors, $2,000–$3,000; lecturers, $800–$1,750; assistant lecturers and demonstrators, $250–$1,250. Goldsmiths' College: Vice principals of training department (men) $3,000, (women) $2,650; heads of engineering department and school of art, $2,000 each; lecturers, $1,000–$1,750 (men), $800–$1,250 (women); physical instructress, $750; assistants in domestic subjects, manual instruction, etc., at various salaries. Imperial College: Professors in charge of departments, $5,000–$6,250; professors not in charge of departments, $3,000–$4,500; assistant professors, $1,500–$2,500; lecturers, $1,000–$1,500; demonstrators, $750–$1,000; assistant demonstrators, $500–$600; in each appointment to a professorship pension and salary specially considered and determined. Kings College for Men and Women: Professors, $1,750–$5,000; assistant professors and lecturers, $1,000–$2,750; assistant lecturers and demonstrators, $750–$1,000; junior assistants and demonstrators, $500. School of Economics: Professors or lecturers, $3,000; readers, $1,500; part-time lecturers, from a small fee to $2,500. University College: Professors, $2,000–$5,000; readers, from $1,500; lecturers, two-thirds of fees, varying from $125–$1,000; assistant professors and demonstrators, $250–$1,750.

MANCHESTER. (Victoria): Professors, $2,500–$7,500, including a share of fees; lecturers (independent), $1,500; lecturers under direction of professor, $1,000–$2,500; senior assistant lecturer or demonstrator, $750–$900; junior assistant lecturer or demonstrator, $750. Municipal School of Technology: Professors, $2,000–$3,500; lecturers, $1,250–$2,500; assistant lecturers, $600–$1,250.

OXFORD. Professors, $4,500–$5,000; readers, usually $1,500, with additional fees; tutors, usually $1,000 and additional fees.

ST. ANDREWS. Professors, $2,750–$3,750; lecturers, $500–$1,750; assistants, $500–$1,000. Dundee: Professors, $2,000–$3,000; lecturers, $750–$1,500; assistants and demonstrators, $500–$1,000.

SHEFFIELD. Professors, $2,000–$5,500; lecturers and demonstrators, $500–$1,750.

INDEPENDENT UNIVERSITY COLLEGES.

EXETER UNIVERSITY COLLEGE. Professors, $1,250–$1,800; lecturers, $550–$1,175.

NOTTINGHAM UNIVERSITY COLLEGE. Professors (heads of departments), $1,550–$3,625; lecturers and demonstrators, $650–$1,400; evening lecturers and occasional class professors paid by hour or term.

READING UNIVERSITY COLLEGE. Eleven professors, $1,100–$2,870; several permitted to do outside work; lecturers, $750–$1,750; assistant lecturers, $500–$750; teachers, $125–$500; laboratory assistant, $200–$450; laboratory boys, $75–$200; all members of staff are paid by fixed stipends except certain music teachers.

SOUTHAMPTON HARTLEY UNIVERSITY COLLEGE. Professors, $1,250–$1,750; 1 professor, $2,000; lecturers, $700–$1,000; 1 lecturer $1,125.

WOMEN'S COLLEGES.

BEDFORD COLLEGE, LONDON. Professors, $3,000; lecturers, $2,000; part-time lecturers, $1500; assistant lecturers, $825–$1,000; assistants and demonstrators, $600–$750.

GIRTON, CAMBRIDGE. Lecturers are paid by the hour for the teaching given.

KINGS COLLEGE FOR WOMEN. See under London.

LADY MARGARET HALL, OXFORD. Professors, $750 guaranteed (always exceeded): A guaranty of $750 is given to the resident members of teaching staff.

NEWNHAM, CAMBRIDGE. Lecturers, $600–$800, with board and lodging and pension, and fees for teaching given over the minimum salary; other members of staff, $600–$800, with board and lodging and pension.

ROYAL HOLLOWAY COLLEGE, LONDON. Professors, $3,000; lecturers, $600 minimum, with board and residence.

ST. HILDA'S HALL, OXFORD. Principal, $1,000, with board and residence; house bursar, $375, with board and residence; tutors and lecturers, $750–$1,000; tutors have a fixed salary of $250, with board and residence and a guaranty of $500 if tuition fees do not reach that sum.

ST. HUGH'S COLLEGE, OXFORD. Principal, $625; vice principal, $325; teachers and lecturers, $400–$1,250; teachers are paid according to the time they give.

SOMERVILLE COLLEGE, OXFORD. Tutors, $1,000–$1,500; a tutor has a guaranteed minimum salary of $600, with board and residence. This sum always exceeded.

INDEX.