

SCIENCE

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UNIVERSITY CONTROL¹

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BOLOGNA and Paris are the archetypal universities from which all others have descended and from which they have in some measure inherited their present organization and methods. In the first decades of the twelfth century Irnerius lectured at Bologna on the civil law, and Abelard at Paris on philosophy and theology. There were at the same time other eminent teachers in those cities, and students were attracted from all parts of Europe. The students in a foreign city organized themselves into guilds for mutual protection and assistance in accordance with the custom of the time. These were the first universities. The lecturers, who had previously taught as the sophists at Athens and the rhetoricians at Rome, or as masters of music, dancing and gymnastics teach to-day, also organized themselves into societies or universities. There were no endowments; no academic buildings. The professors lectured at their homes or in

¹This paper, more especially the collection of letters from university professors, was prepared for the faculties of the University of Illinois, and for discussion before their committee charged with drawing up a constitution for the university. Papers on the subject have also been presented before the Society of Sigma Xi of the University of Indiana, the Huxley Club of the Johns Hopkins University and at a joint meeting of the faculties of Lehigh University and Lafayette College. The fact that in the last two cases the presentation was in the form of an after-dinner address may account for the more frivolous and rhetorical passages, and for the use of the first personal pronoun. These might have been eliminated—they have been reduced—but a reformer should be concerned with accomplishing his ends rather than with conserving his dignity.

hired houses; the academic convocations were held in churches or monasteries. When there were difficulties with the city authorities or with their colleagues, a group of professors or students might migrate and found a new studium elsewhere. Thus in the thirteenth century offshoots from Bologna gave rise to studia at Reggio, Vicenza, Arezzo, Padua, Vercelli and Siena. Oxford, the third of the great medieval universities, was probably due to a migration from Paris in 1167.

At Bologna the universities of students—who were men of maturity from all parts of Europe, as many as ten thousand at the end of the twelfth century, it is said—obtained control, lording it over the professors by means of the boycott. At Paris the students, organized into nations, were somewhat younger, and the professors, doctors or masters, as they were indifferently named, were in control. In one respect the conditions were curiously similar to the contemporary American university, for there was a college of arts of younger students, and professional schools of theology, law and medicine. We even read of an anticipation of present tendencies in that students had to receive the degree in arts before entering the medical school. About the middle of the thirteenth century there were established colleges of residence which were endowed as eleemosynary institutions for poor students, usually under the control of the church. In England the colleges were the property of the head and fellows, who had complete control of the establishment; on the continent they were somewhat less independent. In the course of time the differences became emphasized. The continental colleges became absorbed in the university and disappeared as halls of residence, whereas at Oxford and Cambridge the colleges practically constituted the university.

It is truly remarkable that there should have been some seventy-five universities throughout Europe before the time of the invention of the printing press and amid the incessant warfare of those days. One may wonder whether love of learning was not greater, intellectual curiosity keener, then than now. The students, numbered by the thousand—legend puts it as high as 30,000—flocked to a university attracted by the reputation of a great teacher. The rich came with their retinues, while the poor begged their way. Irnerius at Bologna, Roscellinus and Abelard at Paris, Grossetête and Roger Bacon at Oxford, were followed by long lines of great men, teachers, scholars, founders of science.

My main concern with the medieval university is that it was extraordinarily unhierarchical, democratic, anarchic, in its organization. The university was then, as it now should be, the professors and the students. The professors, of course, had complete control of the conditions under which degrees were given and in the selection of their colleagues and successors. The doctor earned the *jus ubique docendi*; he was not employed or dismissed. There was an elected council and rectors were elected for a year or for some other short period. Only later there came to be a single rector for the entire studium. The whole paraphernalia of the modern university—endowments, buildings and grounds, trustees and president, heads of departments and deans, curricula, grades and examinations—were absent or subordinated. There were indeed all sorts of routine, customs and limitations, but the university, in an age of feudalism and of absolutism of state and church, attained a remarkable freedom, and its great performance was in large measure due to this freedom.

It further seems to be the case that the waning of the influence of the university

in the course of time was largely due to the loss of freedom. As the universities obtained endowments and buildings, as their governing bodies became organized, they lost their spontaneity and creative leadership. The great philosophers, scholars and men of science of the seventeenth and eighteenth centuries worked in large measure outside the universities. Bacon, Hobbes, Locke and Berkeley; Descartes, Spinoza and Leibnitz; Harvey, Huygens and Laplace; Linnæus, Buffon, Lamarck and Cuvier; Lavoisier, Priestley and Dalton, were not university professors or not primarily such. Newton was, but he relinquished his chair at Cambridge to take a position in the mint at London. The men of science of the seventeenth and eighteenth centuries worked largely in connection with the academies of science, which were then established, and in the newly founded museums, observatories and botanical gardens. This movement is analogous to the contemporary establishment of research institutions outside the universities. There was too much dogmatism, formalism, discipline, routine, control, machinery—it might have been called efficiency if they had had the word in those days—in the university, and scientific men found greater freedom and stimulus in the academies, which, though under the patronage of the court, they themselves controlled.

Toward the close of the eighteenth century the universities throughout Europe had sunk to a low level. Within a period of a few years as many as thirteen German universities became extinct—Mainz, Cologne, Bamberg, Dillingham, Duisberg, Rinteln, Helmstedt, Salzburg, Erfurt, Altdorf, Frankfort, Ingolstadt and Wittenberg. But the new era of freedom and democracy, represented and caricatured by the French revolution, gave fresh life to the universities. The centralized scheme

of Napoleon aggrandized Paris at the cost of the provincial universities, which only just now are regaining their autonomy. In Germany the modern university attained its fruition. The University of Berlin, established in 1809, when the political fortunes of Prussia were at low ebb, played a great part in the regeneration of the nation. It was partly founded on the basis of the existing Academy of Science, as was the University of Munich a little later. It is possible that our newer research institutions, if placed under the control of men of science, may become the freer universities of the future.

During the nineteenth century the German universities rivaled in their influence those of the medieval period. The advances of democracy and of science have been the great achievements of our era. In the advancement of science and to a certain extent in the maintenance of a democracy of scholarship, the German universities have been dominant forces. In Germany the university is indeed the creature of the state and subject to it. But during the nineteenth century academic freedom and the independence and influence of the professor attained a remarkable supremacy. Any student who showed ability could become a *Privatdozent*; if he continued to advance his subject with sufficient distinction and did not starve to death in the meanwhile he became a professor. The professorship has been maintained as a position of dignity, honor and freedom. The professor receives his appointment by the decision of his peers and holds it for life. He may lecture about as much or as little as he likes, on almost any subject, well or poorly as the case may be, with complete freedom in the expression of his views; he is but little concerned with grades, absences, discipline, routine reports, committee meetings and the like; he gives

much or little attention to his students as he may choose. The rector is elected annually by the professors. The curator, the representative of the government, the efficient man who runs things, is nowhere regarded as the intellectual or social equal of the professors.

All this might be supposed to lead to abuses; but the result is there to be seen by every one—the great scholars and men of science; the contribution to national progress and the civilization of the world. No efficient machine driven by the president of an American university can grind out such flour. I fear that the German university can not continue its great performance of the nineteenth century. This was doubtless more the result than the cause of the idealism of the people, now threatened with submergence under wealth and luxury. The modern German university must have its fine buildings, must grow greatly in size. This is inevitable, perhaps desirable. Laboratories, libraries and collections are required on a scale not formerly imagined; there is danger, perhaps need, of more administrative machinery, and the more machinery you have, the more you must get. It seems that the professors now tend to form a bureaucratic guild, too greatly concerned with their own financial status, and too little with the welfare of the docents and associate professors, of the students and of the people. The Prussian ministry is interfering more than formerly in the selection of professors and the management of things. The German emperor, it is said, wants presidents in the American style—we could spare him at least one for each of the twenty-one German universities.

It seems remarkable that in the bureaucratic little states which have since become the German empire, the universities should have been centers of liberal scholarship and free personalities. But it is perhaps gen-

erally the case that the finest exhibitions of the love of liberty and honor are made under persecution or where there are contrasted conditions. It is really quite difficult and discouraging to play the part of an academic hero or martyr now-a-days. One can do it better in Russia than in the United States. Thus a hundred professors at Moscow have recently resigned owing to some interference of the government with the liberty of the professors. In that country students and professors strike, and the government institutes lockouts. They take their liberties seriously, and the professors maintain their right to choose their colleagues and their deans and rectors.

The historic English universities, Oxford and Cambridge, have been primarily groups of independent colleges. The master and fellows are the college; they own the buildings and endowment and divide the income among themselves. They elect their colleagues and successors and of course their head. The headship is an honorary and social position with but few executive powers or duties. Government is by town meeting and committee. There have been abuses of the monastic system, and perhaps even now too much time is spent on details of management. But high standards of scholarship and conduct have on the whole been maintained. From among their resident fellows and from their students great men have been forthcoming in every line of activity. Probably half the leaders of England in statesmanship, scholarship, science, poetry, have come from its two universities, having together no more students than one of our larger institutions; and England has produced more great men than any other nation.

The universities of Oxford and Cambridge, as distinguished from their colleges, have long had a few endowed professorships and conducted libraries, but until

recently they were essentially degree-conferring institutions. They are administered by councils elected by the resident teachers, but the ultimate control is vested, as is becoming, in the masters of arts. The Church of England clergy have perhaps had more influence than is desirable, but their interference has in the main been confined to prescribing the conditions for the degree. In any case it is only a temporary phase, and a certain amount of conservatism is not so bad for a university. It would seem quite absurd to invest the ultimate control of Oxford and Cambridge in a self-perpetuating board, consisting of a score or larger crowd of business and professional men. The chancellorship is an honorary office, without executive power or influence, to which a non-resident graduate of distinction is elected. With the specialization of knowledge and the need of laboratories, the colleges could not give all the instruction needed, and the universities of Oxford and Cambridge are becoming increasingly teaching bodies. Parliament has required the colleges to give some part of their income to the support of the university. The professors are usually nominated by boards of electors, consisting of men of distinction in the subject or in related subjects, partly from the university and partly from outside. I have never heard of the expulsion of a fellow or professor. That a professor's salary should depend on the favor of a president or that he should be dismissed without a hearing by a president with the consent of an absentee board of trustees is a state of affairs not conceivable in an English or German university.

Harvard College was founded in 1636 by the general court of the Colony of Massachusetts Bay and placed under a board of overseers named by the court. In 1650 there was established a self-perpetuating

corporation consisting of a president, a bursar and five fellows, which, however, was made responsible to the overseers. In 1865 the election of overseers was transferred from the legislature to the alumni of the college. The Collegiate School of Connecticut, subsequently named Yale College, was chartered by the legislature of the Colony of Connecticut in 1701 and placed under the control of trustees or partners, consisting of ten reverend ministers of the gospel. In 1745 the corporation received the title of The President and Fellows of Yale College. Later the governor, the lieutenant governor and six senators of the state were added to the fellows; in 1872 alumni trustees were substituted for the senators. The College of William and Mary was chartered in 1693 by the sovereigns whose names it bears. Princeton, Pennsylvania and Columbia, chartered, respectively, in 1746, 1751 and 1754, were placed under the control of boards of trustees, and, like Harvard and Yale, either at their inception or later, were controlled by the state and received appropriations from it. In my opinion it would have been better if the relation between the state and its university had been maintained.

The colonial college was largely modeled on the Cambridge college; thus the form of the Harvard and Yale corporations—the president and fellows—was directly borrowed. At Harvard the corporation included the teachers of the college; there was much protest the first time an alumnus was elected a fellow when there was a tutor eligible. It would be interesting to trace—did time and my competence permit—the steps through which our colleges slipped from the control of the state and of the graduates and teachers into the hands of small self-perpetuating corporations, until we reach the most reactionary

of all charters, that of 1810 for Columbia College, the provisions of which are as follows:

The said trustees, and their successors, shall forever hereafter have full power and authority to direct and prescribe the course of study and the discipline to be observed in the said college, and also to select and appoint by ballot or otherwise, a president of the said college, who shall hold his office during good behaviour; and such professor or professors, tutor or tutors, to assist the president in the government and education of the students belonging to the said college, and such other officer or officers, as to the said trustees shall seem meet, all of whom shall hold their offices during the pleasure of the trustees. *Provided always*, That no such professor, tutor, or other assistant officer shall be a trustee.

The careers of our colleges were checked by political and church dissensions; thus, in the case of Columbia, the subordination of the professors is in part explained by distrust of their episcopalian tendencies. It seems that the organization of our colleges was influenced not only by the college of the English universities, but also by the English endowed public school, to which it came to bear a greater resemblance.

The University of Virginia was established as a state institution by the legislature in 1819. Under the influence of Jefferson the continental university was to a certain extent followed; and both in educational and administrative methods there was much that was admirable—at least from my point of view. Under the general control of a board, the affairs of the university were administered by the faculty and its elected chairman, until after eighty years souls were once more sold for gold. The University of Indiana was established in 1820, the University of Michigan in 1837, as part of the public educational system of those states, the governing bodies being elected boards. Here was inaugurated a new movement in higher educa-

tion, destined, I trust, to parallel the great performance of the medieval university and of the German university. The institutions of the Atlantic seaboard having slid into capitalistic control, there has arisen in the central west a system of higher education directly responsive to the will of the people on whose support it depends.

Prior to the last quarter of the nineteenth century, we had colleges and professional schools, but no university. Yale, it is true, first offered the doctorate of philosophy in 1860, and in the early seventies the degree was given by Harvard, Columbia and Cornell. But the graduate work of a faculty of philosophy was not organized or emphasized until the opening of the Johns Hopkins University in 1876, when there arose an institution nearer to my conception of what a university should be than any elsewhere in this country or than it has been able to remain. Buildings, administration and routine instruction were subordinated to great men who attracted from the whole country the students who were to be the future leaders. In the organization of the Johns Hopkins Medical School in 1893 a contribution of nearly equal significance was made in placing the professional school on a university basis. The past two or three decades have witnessed an almost incredible growth of our universities. Columbia has now 700 instructors, 7,000 students, fifty million dollars. In spite of the materialistic standards and autocratic methods of control which this paper emphasizes—perhaps overemphasizes with a view to their correction—the development of the American university, especially of the state university, is one of the greatest achievements of our people, promising moral, social and intellectual leadership and supremacy in the course of the present century.

If here or elsewhere I have expressed

opinions which seem lacking in appreciation of what is being accomplished in this country for higher education and for the advancement of science, this is only because it is not possible to put in each paragraph or even in a single paper everything that one believes. The most useful forward movements and the greatest men are subject to just criticism. It is only when the work has been accomplished and the men are dead that we may forget the faltering and the errors and eulogize the good that has been done. In our educational and scientific work, as in our business, social and political life, we must oppose with all our power the materialistic aims and autocratic usurpations which are the not unnatural accompaniments of the development of the vast resources of a new country and the passing from aristocratic to democratic control. As I wrote² before the present democratic movement had gathered its existing force:

The applications of science—which in the first instance made democracy possible by supplying the means of subsistence with possible leisure and education for all—have in their recent developments enormously complicated modern civilization. Our methods of communication, transport and trade, of manufacture, mining and farming, have led to the doing of things on an immense scale. The individual has once more been subordinated, crudely commercial standards prevail, and control has been seized by the strong and the unscrupulous. Those of us who are not ashamed to profess faith in democracy regard all this as a temporary phase, which will only last until intelligence has developed equal to the complexity of the environment. The only real danger is that instincts may become atrophied before reason is ready to take their place.

The trust promoter and insurance president, the political boss and government official, the university president and school superintendent, have assumed powers and perquisites utterly subversive of a true democracy. The bureaucracy is defended on the ground of efficiency; but efficiency is not a

² "The University and Business Methods," *The Independent*, December 28, 1905.

final cause. To do things is not a merit regardless of what they are, and bigness is not synonymous with greatness. There is no ground for hopelessness. Of the things done the good may last and the rest may be eliminated; bigness may become greatness. The organizers of our huge corporations have in a way made history prematurely; these vast combinations were inevitable; the trouble is that they have come before we are ready to manage them. We have no evidence that people are less competent, honest and kindly than they were; it is the difficulties and the temptations that have increased.

There is ground for maintaining that the methods of the business corporation and the political machine have been somewhat wantonly applied to educational administration in this country. On the one hand, educational institutions are not and need not become so big and complex as to require the sacrifice of freedom to supposed efficiency, and, on the other hand, those who are the university—the teachers and the students who are or have been under their influence—have far more than average intelligence. . . .

In stating frankly views that are shared by a larger proportion of my colleagues than is generally supposed, I by no means wish to adopt the attitude of a pessimist. I know well from personal experience with what unfailing courtesy and ceaseless effort a university president may conduct the affairs of his difficult office. Much has been accomplished for higher education in the United States. As the industrial trusts will in the end be directed by the world's greatest democracy for the benefit of the people, so our educational system may give the material basis for an efflorescence of creative scholarship springing from a free and noble life.

My own academic experience has been mainly in the endowed institutions of the Atlantic seaboard. My father was president of Lafayette College from 1863 to 1883, during which period the teachers increased from nine to thirty, the students from 60 to 300, and the property from \$50,000 to \$1,000,000. There the personal and patriarchal system of college control was exhibited at its best. It doubtless now flourishes in many small institutions throughout the country as in the English public schools. A man such as Mark Hop-

kins or Thomas Arnold has been the soul of the institution. As Matthew Arnold writes in "Rugby Chapel"

... to thee was it given
Many to save with thyself;
And, at the end of thy day,
O faithful shepherd! to come,
Bringing thy sheep in thy hand.

As a fellow at the Johns Hopkins University at the zenith of its great achievement, I had again opportunity to witness the system of presidential autocracy under favorable conditions. The university was dominated by one man who was personally responsible for and to its dozen professors and two hundred students. But the patriarchal system is of necessity limited to the small institution, and it is scarcely fitted to the democracy of the twentieth century. In a residence of six years at European universities, I had experience of the educational system, but though I was assistant at the University of Leipzig and lecturer at the University of Cambridge, I was at that time indifferent to administrative methods. These have been increasingly forced on my attention since my appointment as professor at the University of Pennsylvania and lecturer at Bryn Mawr College, and for the twenty years during which I have been professor at Columbia University.

I reviewed the problems of university control in a short article printed in *SCIENCE* some six years ago. This was reprinted with certain added footnotes, and at the beginning of December sent to our leading men of science, who hold or have held academic positions, with the following note:

Would you be willing to give your opinion of the plan of university control here proposed? If you are so kind as to do so, I shall understand that I may quote anonymously your reply.

About 300 replies have been received, which are printed practically in full as an

appendix to this paper. The article on which the replies were based is as follows:

UNIVERSITY CONTROL³

In the colleges from which our universities have developed the problem of administration was comparatively simple. The faculty and the president met weekly and consulted daily; each was familiar with the work of the entire institution; a spirit of cooperation and loyalty naturally prevailed. The trustees also understood the economy of the college and were able to work intelligently for the general good. But when a university covers the whole field of human knowledge, when it is concerned with professional work in divergent directions, when it adds research and creative scholarship to instruction, when both men and women are admitted, when there are 500 instructors and 5,000 students, it is no longer possible for each trustee and for each professor to share intelligently in the conduct of the whole institution. We appear at present to be between the Scylla of presidential autocracy and the Charybdis of faculty and trustee incompetence. The more incompetent the faculties become, the greater is the need for executive autocracy, and the greater the autocracy of the president, the more incompetent do the faculties become. Under these conditions it appears that the university must be completely reorganized on a representative basis. It should not be a despotism and it can not be a simple democracy. Autonomy should be given to the schools, departments or divisions. The administrative, legislative and judicial work must be done by experts, but they should represent those whom they serve. . . .

The present writer ventures to propose tentatively the following form of organization for our larger universities, to be reached as the result of a gradual evolution:⁴

³ Reprinted from *SCIENCE*, for March 23, 1906, with footnotes added in November, 1911.

⁴ No sensible person would attempt to reform suddenly by a paper constitution a system which has developed in response to its environment. The boss in politics, the trust magnate in business, the university president and school superintendent, have probably conducted to a certain kind of efficiency and to an enlargement more rapid than would otherwise have been possible. What a community does is dependent on the men who compose it rather than on the laws under which they live. But a bad system may demoralize the cooperative spirit of the group and may select for it individuals who are not the most desirable. The danger of our present system of university control is that

1. 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 with it.⁵ In the case of the state universities part of the corporation would be elected by the people. This corporation should elect trustees having the ordinary functions of trustees—the care of the property and the representation of the common sense of the corporation and of the community in university policy.⁶ The trustees should elect a chancellor⁷ and a treasurer who would represent the university in its relations with the community.

2. The professors or officers, or their representatives, should elect a president who has expert knowledge of education and of university administration. His salary should not be larger, his it tempts a man to play for his own hand and selects for academic work men lacking in character, individuality and genius.

⁵ A large corporation of this character places the ultimate control on a democratic basis. The members would pay annual dues, and a considerable income would thus accrue. A large number of individuals would take an active interest in the welfare and development of the institution. In the case of the state universities the people of the state are in a sense the corporation with ultimate control, and it might be undesirable to establish an intermediate body. Still the state might delegate its powers to such a corporation, and a society of members of the university might be formed, even though the regents or trustees were elected by the people or appointed by their elected governors.

⁶ The trustees or regents of an American university have absolute powers, but tend to delegate them to the president. They place a limit on the amount of money that can be spent and sometimes use their reserve powers even in matters of educational detail. When the corporation is small, as at Harvard, it may be in active control of policies. In the private chartered institutions it is usually large, its members having but little knowledge of educational problems or of the special university under their control. There are often several trustees who take an active, though not always a wise, interest in the university, and it is a delicate problem of the president to manage such trustees. One of the most serious difficulties of the present situation is that the president owes his office, salary and powers to the trustees and must obtain their favor, whereas he is not responsible to the faculties. The professor is likely to owe his office and salary to the president, and is sometimes placed in a position that is humiliating.

⁷ It might or might not be an advantage to have a chancellor, such as exists in the British universities, a man of prominence in the community, who would obtain endowments and represent the university at public functions.

position more dignified or his powers greater than those of the professor.⁸

3. The unit of organization within the university should be the school, division or department, a group of men having common objects and interests, who can meet frequently and see each other daily. It should be large enough to meet for deliberation and to represent diverse points of view, but small enough for each to understand the whole and to feel responsible for it. The size of this group is prescribed by a psychological constant, its efficient maximum being about twenty men and its minimum about ten.⁹

4. Each school, division or department should elect its dean or chairman and its executive committee, and have as complete autonomy as is consistent with the welfare of the university as a whole.¹⁰ It should elect its minor officers and nominate its professors. The nominations for pro-

⁸ It may be that no president is desirable other than an annually elected rector, as in the German universities. If, however, the president were elected by the faculties for a limited term and made responsible to them, the academic situation would be greatly improved. The argument of efficiency can be adduced in favor of giving autocratic powers to one individual, but the university is the last place where such system should prevail. It is neither necessary nor desirable that things be done in haste. Administrative details can be handled promptly by a clerk or secretary. Men and women should not be subject to the judgment or whims of an individual. Security, permanence, honor, the slow growth of traditions, are essential to a true university.

⁹ Such autonomy is usually possessed by medical, law and technical schools forming a part of a university. It should be extended to other divisions when they become sufficiently large. Partly independent institutions for teaching or research can to advantage form part of a university. The separately endowed colleges of the English universities have certain advantages.

¹⁰ In the department-store system, which is likely to prevail in our universities, the junior professors and instructors are responsible to the head of the department and are dependent on him for advances in office and salary, while the heads of departments are in like position in relation to the dean or the president, the heads of departments and deans being named by the president. The active committees are appointed by the president; in one of our leading universities even faculty members are named by the president from among the professors, making the faculty a presidential committee. This procedure reverses the proper or, at all events, the democratic method of control, according to which officers are chosen by those whom they serve and leaders are followed because they are acknowledged as such.

fessorships should be subject to the approval of a board of advisers constituted for each department, consisting, say, of two members of the department, two experts in the subject outside the university and two professors from related departments. The final election should be by a university senate, subject to the veto of the trustees. The same salaries should be paid for the same office and the same amount of work. The election should be for life, except in the case of impeachment after trial.¹¹ The division should have financial as well as educational autonomy. Its income should be held as a trust fund and it should be encouraged to increase this fund.

5. The departments or divisions should elect representatives for such committees as are needed when they have common interests, and to a senate which should legislate for the university as a whole and be a body coordinate with the trustees. It should have an executive committee which would meet with a similar committee of the trustees. There should also on special occasions be plenums of divisions having interests in common and plenums of all the professors or officers of the university.¹² There should be as much flexibility and as complete anarchy throughout the university as is consistent with unity and order.

It seems that the 299 replies expressing the opinion of the writers on this paper

¹¹ The greatest possible care should be exercised in the selection of professors. Instructors and lecturers should be freely admitted to the university, but the professorship should be maintained as a high office. The alternative to permanence of tenure is competition for prizes under honorable conditions, but in this case salaries must be as large as the incomes of leaders in law, medicine and engineering. It is more economical and probably conduces to greater dignity and honor to pay adequate but moderate salaries with permanence of tenure, as in the army or the supreme court. Advances in salary should be automatic, as at Harvard, but there might to advantage be a few professorships with comparatively high salaries—the same as that of the presidency—vacancies in which would be filled by cooptation or by election by the faculties.

¹² Professors and other officers should not be distracted from their work of teaching and research by administrative politics. But they should select their administrative officers and legislative committees and have opportunity to make proposals and vote on questions of educational policy. Voting by mail and the fly-leaf method of discussion of the English universities could be adopted to advantage. An elected executive committee of the faculties meeting with the executive committee of the trustees is a feasible method of improving the existing academic situation.

represent with considerable accuracy the existing academic sentiment in this country among those who have been most successful in their work. They are all from men in the natural and exact sciences, who form somewhat less than half our university professors, but there is no reason to suppose that their colleagues in other departments would differ as a class in their attitude on academic questions. I wrote to scientific men because I had a list of those of highest standing and am personally acquainted with most of them. It may be that in some cases men were more likely to reply because they agreed with my views and were more likely to emphasize their agreement than their dissent. As a psychologist by trade, I judge, however, that this is more than balanced by the opposite tendency to react by objecting and to argue against a proposition proposed. Probably the replies of younger men and of less successful men would be more radical and more opposed to the existing system of university control.

The letters are well worth a careful reading. We are told that every question has two sides; as a matter of fact many questions are polygons. The problems of the administration of an educational institution have many sides and many angles. They differ completely in the small college and in the large university, in the newer and in the older institutions, in the state university and in the private corporation. My paper was written with reference to the large endowed universities, especially those which have enjoyed or suffered a rapid growth in size and scope. The replies are from institutions of all kinds. Those who hold chairs in the smaller colleges may find a system fairly adequate to their needs which would be undesirable in our large universities. Those in state universities may regard as

necessary a strong executive responsible to the people and professors subordinated to the public service, when they would not approve of the irresponsible autocracy of the private corporations. Professors at Harvard and Yale may take satisfaction in the long traditions and wise precedents which obtain at these universities, when they would not care to live under the system in use at Columbia and Chicago.

It was originally my intention to base this paper on an analysis of the letters received, but the exigencies of an engagement made it necessary to prepare its first version before the proofs could be obtained, the letters written and the replies received. It is indeed somewhat difficult to summarize such a large number of points of view which represent both real differences of opinion and differences due to the fact that various situations were under consideration. It seems best to print the letters, and to permit those interested to draw their own conclusions. The letters will be given under the institution from which they come when there are as many as ten replies, the institutions otherwise being grouped. In general, the letters are placed in the order of their preference for the existing system of university control which I designate as a limited autocracy. Omissions have been made from some of the longer letters and, formal compliments, apologies and the like have been erased. Thus a large percentage of all letters begin with the phrase "I have read with interest," etc. Other slight editorial revision, such as eliminating the paragraphs, has been undertaken, but every effort has been made not to alter in the slightest degree the opinions expressed. There is given here a table showing the source of the replies and the only classification that I shall attempt to make. Its validity can be

judged by those who care to read the letters.

	Limited Autoc- racy Present System	Greater Faculty Control	Represent- ative Democ- racy; Plan Proposed	Total
Harvard	9	6	11	26
Yale	1	6	4	11
Columbia	2	2	10	14
Pennsylvania	0	3	9	12
Johns Hopkins	0	2	14	16
Chicago	1	0	17	18
Cornell	0	4	8	12
Mass. Inst.	3	4	3	10
New England	6	6	12	24
Middle States	3	4	21	28
Col. for Women	1	2	5	8
Southern	1	3	9	13
Michigan	0	3	7	10
Wisconsin	5	4	4	13
Minn. Ill. Mo. Cal.	5	5	18	28
C. & W. State	2	7	14	23
C. & W. Private	7	7	16	30
Anonymous	0	1	2	3
Total	46	69	184	299

Of the 299 replies 46 are taken as favoring the system usual in this country, which is designated as a limited autocracy, 69 as favoring a system in which the faculties have greater share in control, as at Yale or the Johns Hopkins Medical School, 184 as favoring a plan of representative democracy more or less similar to the one proposed. Five sixths of those holding the most important scientific chairs at our universities believe that there should be a change in administrative methods in the direction of limiting the powers of the president and other executive officers and making them responsible to those engaged in the work of teaching and research. This is an agreement greater than I had anticipated. When eighty-five per cent. of those responsible for the conduct of a given system unite in holding that it should be altered, the case may be regarded as strong. Political and social changes are usually made on a much narrower majority. It is true that five of the six presidents who replied—they are of course

at the same time men who formerly did distinguished scientific work—form part of the minority. Indeed, a large percentage of this minority consists of presidents, directors, deans and other university officials.¹³ Whether this should be interpreted as that much in favor of the present system, or that much more against it, may be left an open question.

A considerable number of professors at Harvard favor the existing system, but their preference applies to their own situation, where the administrative autocracy is tempered. Of 19 replies from Wisconsin and Illinois, eight favor a limited autocracy, but they have in mind their system, which is not the same as that of the private universities. Probably they would in any case prefer the methods of President Van Hise and President James to those of President Draper. Those who want a strong executive responsible to the people of the state have been classed in the group favoring a limited autocracy. Thus the two replies from Columbia which are placed in this group are from men who do not trust faculty control, though, as I happen to know, they are by no means satisfied with the existing situation. If these two cases are omitted, we find that of 70 replies from Columbia, Pennsylvania, Cornell, Johns Hopkins and Chicago—these are the institutions which I had especially in mind in my proposals—only one (an executive officer) favors the existing system, eleven favor greater faculty control, and 58 a

complete change which would make the administration responsible to the faculties. This is surely a condition which foretells reform or bankruptcy.

J. McKEEN CATTELL

(To be continued)

ABBOTT LAWRENCE ROTCH¹

ABBOTT LAWRENCE ROTCH was born in Boston, January 6, 1861, the son of Benjamin Smith and Anna Bigelow (Lawrence) Rotch. He was graduated from the Massachusetts Institute of Technology (S.B.) in 1884. In 1891 Harvard recognized the importance of the work which he had already accomplished by bestowing upon him the honorary degree of A.M. From 1888 to 1891, and again from 1902 to 1906, he held the appointment of assistant in meteorology at Harvard, a position which involved no teaching and in which no salary was paid. In 1906 he was appointed professor of meteorology, an honor which he prized very highly, and which gave him the position on the teaching staff of the university to which he was in every way fully entitled. He was the first professor of meteorology who has occupied that position at Harvard, and he served in this professorship without pay. In the year 1908–09, at the request of the department of geology and geography, he generously put the splendid instrumental equipment and library of Blue Hill Observatory at the service of the university, by offering a research course ("Geology 20f") to students who were competent to carry on investigations in advanced meteorology. This action on the part of Professor Rotch gave Harvard a position wholly unique among the universities of the United States. It brought about a close affiliation, for purposes of instruction and of research, between the university and one of the best-equipped meteorological observatories in the world. To his work as instructor Professor Rotch gladly gave of his time and of his means. He fully realized the unusual ad-

¹³ Eighteen of the replies are from men who formerly held academic positions but are now connected with research institutions, the government service, etc., or who while holding professorships are principally engaged in other work. These replies show about the same distribution as the others, three in the first group, four in the second and eleven in the third. They are classed under the institutions with which the men are or were connected. Two replies from those previously connected with universities as teachers, but somewhat incidentally, have been omitted. They both belong to the third group.

¹ An appreciation of Professor A. Lawrence Rotch, based on the same material, appears also in the *Harvard Graduates' Magazine*.—R. DeC. W.