THE STRUGGLE OVER THE LAWRENCE SCIENTIFIC SCHOOL AND THE RETURN OF ALUMNI CONTROL TO HARVARD

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This essay tries to integrate two conspicuous developments in and around Harvard in the mid-nineteenth century: the struggle over the Lawrence Scientific School [1847-1906] between its donor and the University as well as a series of conflict over the latter's administrative structure in the Massachusetts Legislature. During the first decade of its existence, the Scientific School did not follow a straight course.[1] Outraged by Harvard's distortion of the original plan, Abbott Lawrence, the Boston entrepreneur, tried, first as the donor, then as an Overseer for the University, to return the Scientific School to one of the practical sciences for engineers. The retired president Edward Everett of the University countered with his early proposals for a scientific school based on the model of a German philosophical faculty. The few years around 1850 thus witnessed a growing dispute over policy between Everett and the Harvard College Corporation, on the one hand, and Abbott Lawrence and his friends, on the other. These same years also proved the most turbulent and critical in the history of Harvard's administrative structure over three centuries. A series of proposals and counter-proposals on the University's government in the Massachusetts Legislature placed Harvard, at one time, under almost complete control by the State, and rendered the University, at another, a private institution, a conflict

which eventuated in the separation of the University from the State.

The separation has been explained in many terms, among them religious, political and social.[2] In contrast, author singles out the external forces which promoted useful sciences as the major impact facilitating the ultimate independence of Harvard as a private university. The following will thus gather two threads of practical science and Harvard's government in an effort to build a viable picture of the circumstances of the University in the mid-nineteenth century.

I

When his inaugural address as Harvard's president of April 1846 was printed the following month, Edward Everett stated that he was "fully sensible that all the topics of the discourse are treated in a superficial manner"[3] ; among them the establishment of a philosophical faculty of the German type, as well as the organization of a school of theoretical and practical science. In November 1846, the Corporation appointed a Committee made up of the President, James Walker, and John A. Lowell, whose duty was to "report a plan for *a School of Science and Literature* to be established as a separate department."[4] In the plan presented to the Corporation early next year, the Committee outlined the characteristics of the envisaged school. The first article read: "There shall be established in the University *an advanced School of Instruction in Theoretical and Practical Science and in the other usual branches of Academic learning*, to be called the Scientific School of the University at Cambridge."[5] As shown in the changes of words and phrases characterizing the proposed School, Everett's stand on the needed expansion of the University appears to have undergone two major shifts within less then a year. It changed from the juxtaposition of the two-fold

character of the needed reform in April 1846, to a marked preference of a philosophical faculty in November 1846, to an emphasis on theoretical and practical science in January 1847. Especially sharp was the second shift from November 1846 to January 1847: from the endorsement of a philosophical faculty of the German type for a complete liberal education, to an engineering school for practical training in science for life's useful arts.[6] The sheer distance between the two statements dissuades us from accepting Everett's second conversion at face value. Besides this, Everett's insistence on the philosophical faculty idea is evidenced by the reaction to his draft of the plan shown by James Walker, who claimed that "the school should be stated on purely scientific grounds," and that "the ancient language and history" should be excluded therefrom.[7]

If Everett thus changed his stand on the proposed School in January 1847 against his independent judgement, what explains this sudden shift ? Our hypothetical explanation points to the University administration's differences with Abbott Lawrence concerning the ideal image of the Scientific School, and its simultaneous need to accede to his taste in order to allure him to the project. This gap will lead to a conflict between the two parties over the characteristics of the School as well as over the administrative organization of Harvard.

The appointment of Eben Norton Horsford, a product of the German scholarship who had an expertise in engineering, to the Rumford Prefessorship in 1847 reflected this dual nature of the proposed Scientific School. As I showed elsewhere, Samuel A. Eliot, the treasurer of the University, laid a plan for a chemical laboratory prepared by Horsford before Lawrence, and Lawrence responded with an estimated cost of 50,000 dollars. Instead of accepting Horsford's scheme, however, Abbott

Lawrence proposed the creation and maintenance of two professorships, Engineering and Geology.[8] Three-fifths of the fund were to be expended for the construction of buildings and the purchase of apparatus for the three departments, including Horsford's. The interest accruing from the remainder, 20,000 dollars, would provide the basic salary for the professors of Engineering and of Geology. Lawrence also required the introduction of tuition fees distinct from the College, which would be expended partly for the additional salary of the two professors, and partly for "the teaching and diffusion of Scientific Knowledge as *then* applied to practical Arts."[9] Thus, in Lawrence's scheme, Horsford's department of chemistry was only one of the three major components of the Scientific School, which Lawrence in turn conceived as the germ of the future School of Engineering comprising other departments of practical knowledge.

Lawrence's modification of Horsford's plan did not upset Everett and the Corporation. They, too, had a grand plan of a Scientific School of their own, based on the model of a German philosophical faculty, for whose initial organization Lawrence's donation was indispensable. Taking advantage of Lawrence's new scheme, they promptly invited Louis Agassiz as Professor of Zoology and Geology, who ideally met their requirements. In contrast, Horsford increasingly found himself in an awkward position. Not only did Lawrence's specifications divert the money largely for the new professorships. Even the College Corporation did not follow Horsford's original plan. As a consequence his chemistry education and laboratory plan, based on the German ideals, could fail at any moment.[10] In the midst of such a plight, Horsford sent an appeal to the Corporation concerning the grave conditions of his Laboratory which was forced to raise its own money, while the original plan secured "a fund

more than equal to the cost of building" for the purpose of chemical studies. To meet the expenses of necessary arrangements, including some helpful adjuncts, Horsford required the annual deposit of 2,000 dollars on the part of the University. He even proposed the postponement of "the definite organization of the whole school, for a year or two."[11]

Horsford's dissatisfaction with the early state of affairs of the Scientific School did not, of course, mean Abbott Lawrence's satisfaction with the actual progress of the project. On the contrary, increasingly irritated with the Scientific School, Lawrence announced in September 1849 to the University administration a drastic revision of the plans revealed in the earlier letters. First, he proposed a key idea : the separation of the three professoships of Chemistry, of Geology, and of Engineering which, in the 1847 scheme, were integrated as a group.[12] Concerning the department of chemistry, with its Laboratory now finished, the only expense drawn from the fund should be Horsford's annual salary of 1,500 dollars. All the rest would have to be covered by the fees from the students. Though there was a divergence between Horsford's idea of chemical studies and Lawrence's opinion on the management of the department, both at least shared the belief that some type of chemistry education was essential for the Scientific School. As for the Professorship of Engineering, which was still not filled, Lawrence proposed the appropriation of the interest of half of his original donation, or 25,000 dollars, for this position, a favorable treatment compared with the Geology chair already occupied by Louis Agassiz. With a considerable portion of the original 50,000 dollars already expended for the construction of the Laboratory, 25,000 dollars for the Engineering department as a permanent fund signified that almost nothing remained for the department of Geology.[13]

After thus making a few minor modifications to the 1847 specifications,

Lawrence entered into the major proposition : the separation of the Professorship of Geology from those of Chemistry and of Engineering. Originally an integral part of the Scientific School, Lawrence now found the position as filled by Agassiz a failure. The expectations of his immediate usefulness to a class of special students proved disappointment. The students in Geology had not appeared. "I do not, therefore, consider it desirable now," he pronounced, "to found a permanent professorship in this department."[14]

Lawrence's proposal on the Professorship of Geology certainly contrasted with his views in 1847. In his appreciation of Agassiz's social influence, Lawrence made a pledge for the sum of 1,500 dollars per annum for the term of five years "if he should live so long..." 〔Agassiz was only forty-two in 1849./〕 Lawrence did not care whether the Corporation decided to require him to lecture, or let him free when "he cannot live without being of especial service in the promotion of scientific knowledge," in so far as the University was willing to provide "good instruction in Chemistry and Civil Engineering, in the manner... demanded by the present state of the knowledge and wants of the community in which we live." [15] The 1849 letter testified to Lawrence's bitter disappointment with Agassiz and the Corporation concerning the management of the Lawrence Scientific School.

II

Lawrence was not alone in the efforts to materialize an engineering education in Harvard. The Visiting Committee of the University for the year 1848, for instance, belived that the nature and function of the brand-new Scientific School closely resembled Lawrence's original plan of the School in 1847 as well as his position in the September 1849 letter. In their

statement, the object of the School was

> to bring to the aid of high attainments in science to the business of the individual citizen in the manufacturing and mechanic industry of daily life; to educate a scientific corps, that Engineers, Astronomers, Chemists and Architects may have the aid of high education for the practical benefit of their several departments. That the Masonry, Carpentry, Geology, and Mineralogy of the country may be improved by an efficient application of discoveries and improvements which have crowned the age with their astonishing magnitude and variety.[16]

Besides thus giving their understanding of the characteristics of the School, the Committee produced an historical interpretation by locating its inception and development in the long tradition of education in the Western World. According to them, during the Middle Ages, when all knowledge was cloistered, education produced monks. In the more liberalized ages, it trained Physicians and Lawyers. This time, universal education was to change the theoretical to the practical, and to give its diploma for any honorable cultivation of mind. Again, the Committee described the early establishment process of the Scientific School as a culmination of some preceding efforts such as the founding of the Observatory and the plans and practices by Benjamin Peirce, efforts made with "encouraging prospects of utility." However, "the greatest was yet to come." The Professorships of Zoology and Geology and of Engineering of the School were the crowning achievement of this movement, and thus the School was "an experiment, 'the first of its kind in the world.'"[17]

The Committee apparently took this last quotation in its Report from a review article in the January 1848 issue of the *North American Review*, "Eliot's *Sketch of Harvard College*." Intriguing enough, the reviewer had

a quite different evaluation of the Lawrence Scientific School for the University. Unlike the Visiting Committee, the article judged the addition of the new School as undesirable for the University. According to the reviewer, the University at Cambridge from the perspective of 1849 was very rich and very poor at the same time. The University was immensely rich in that the establishment had been enjoying a great amount of donations for the consolidation of the professional schools. In contrast, the College proper, where the number of undergraduates even deteriorated, received almost nothing from the increased income, in special reference to financial aid to the students. For the past half a century, held the reviewer, Harvard had prospered the professional schools at the neglect of the College, an anomaly when seen against its tradition of *liberal* studies. Thus, the costly Scientific School, which benefitted only a limited number of students, was an undesirable addition to Harvard. Moreover, the School betrayed the vocation of the College, which was the training of *scholars* rather than of "*mere* practical chemists, or tolerable engineers, or scientific mechanics." When all was taken into account, the Scientific School yielded "no advantage or profit whatsoever."[18]

In the light of this old ideology, the training in applied sciences was disgustingly novel at Harvard, and the reviewer referred to the new School as "an experiment...really the first of its kind in the world."[19] The Visiting Committee of Harvard University, which borrowed this expression, regarded the same institution as a highly desirable novelty from the point of view of higher education for the active, working people. In spite of their different motivations, the Committee and the reviewer were in agreement in interpreting the new establishment as something experimental and as the first of the kind in the world, and they

shared the same expression.

Against these criticisms from different directions as well as a characteristic interpretation of the Scientific School by the Visiting Committee of Harvard University in 1849, Edward Everett, now retired as President, came to rescue of the University through the First Visiting Committee to the Lawrence Scientific School appointed in November 1849. In the Committee Report published in 1850, which supported Agassiz's museum idea, Everett disclosed fully the old idea underlying the establishment of the Scientific School. Among other things, Everett couter-criticized Lawrence and the Visiting Committee of the University by outlining the historical origins of the institution. Although the application of sciences occupied an important place at its inception, the original plan in fact comprised other disciplines as well, viz. "the literary and philosophical branches..."[20] Indeed, in its first organization, the School even included the Professors of Greek and Latin.[21] "Thus organized," claimed Everett, "the Scientific School, taken in connection with the Medical College, and the Schools of Divinity and Law, might be considered as forming...an institution closely resembling the Universities of Europe, especially those of Germany."[22] Everett's picture marked a contrast to the perception of the 1849 Visiting Committee of Harvard University which regarded the Scientific School as a novel experiment. In this way, the retired President pointed to the discrepancy of ideas between the University administration, and Lawrence and the critics. In Everett's contention, these critics from the beginning misconstrued the intended aims of the School. In fact, the University had intended to develop the new establishment into a philosophical faculty of the German University, rather than into an engineering school.

For Lawrence the donor, Everett's pronouncement on the future course

of the Scientific School could have been perceived as a form of treachery. Contrary to Lawrence's expectation of a technical institution, the retired President disclosed his long-held preference of the German University model, particularly its philosophical faculty. Moreover, the current Corporation concurred with Everett by persistently postponing the appointment of the Professor of Engineering which, to the public eye, was "the only real addition made by the school to the means of instruction formally provided at Harvard."[23] Time was certainly ripe for Lawrence and his friends to open a full-scale battle against the University administration.

III

To exert his direct control upon the School, Lawrence had to legally participate in the policy-making of the University. The death of John Quincy Adams in February 1848, which caused a vacancy in the Board of Overseers, offered Lawrence such a chance. A year later, when the poll for a replacement was taken, Lawrence himself emerged as one of the major candidates for the position. However, the Board discouraged him by appointing Edward Everett, his enemy, with the overwhelming margin of vote againt Lawrence of 55 to 5, a serious defeat on the part of the entrepreneur.[24]

Meanwhile, Everett and the University had freely defined their ideals on the Scientific School in connection with the first two annual Visiting Committees to the Scientific School under Everett. In his report presented to the Visiting Committee of 1849, the zoologist Louis Agassiz developed a rationale for needed financial help for scientific studies that counteracted Lawrence's technical and engineering education idea. Referring to steam power, telegraphs, and pain-subduing agents all as

the unintended products of so-called useless experiments, Agassiz pointed to the absurdity of the encouragement of scientific studies from a practical orientation. Indeed, science had to be "in advance of the wants of the times in order to answer the expectations of a given period."[25] Thus, he stated the first imperative in a hypothetical from : if one desired useful results from scientific studies, then one first had to encourage those studies seemingly irrelevant to those applications. Moreover, a man should seek truth, not simply for ulterior purposes, but also for the sake of its mere beauty, "just as correct morals teach us to do right, not merely because it is useful in the end, but for a higher reason." Similarly, scientific investigations had to be supported on the most liberal scale because "they lead to the knowledge of truth."[26] In this way, the support of scientific activities was also a categorical imperative.

From a practical perspective, the 1849 Visiting Committee led by Everett endorsed Agassiz's position. Among several deficiencies of the Scientific School, the Committee specially noted the want of an appropriate laboratory and museum for Agassiz. Asserted the Committee report :

> ...the want of premises appropriated to the department, and affording adequate space for the laboratory of the Professor, and for a complete museum of natural science, is one that absolutely needs to be supplied. No less urgent is the want of a small fund to defray the expenses unavoidably incident to the formation of a museum.[27]

The second Visiting Committee appointed in 1850, again under Everett, also praised Agassiz's plans and practices. "His establishment in this country and connection with the University," stated the report, "may justly be regarded as forming an era in the progress of American

Science."[28] Then the Committee pointed to the darker side of the School by specially referring to an undesirable portion of the clientele, noteworthy among chemistry and engineering students, who spent only a short period in the institution. Finally, the report proposed the consolidation of all the pure sciences currently taught at the College in this branch, leaving to the former only those academical subjects.[29]

In their emphasis on the pure aspects of scientific studies, Everett as well as the Corporation must have known that they could not induce further munificence from the original donor. The increasingly complex and technical nature of scientific pursuits, on the other hand, entailed greater funds than the University could easily afford.[30] In such a situation, the College did not have money "to keep up with the educational wants of the age, in the purchase of proper scientific and philosophical apparatus."[31] When Everett and the Corporation tried to transform Harvard into a respectable university with a full-fledged scientific school, they had to rely on some external sources without, simultaneously, subjugating themselves to the "undesirable" requirements from a Lawrence. The Corporation would naturally turn to the Commonwealth for financial aid.

In 1848 and 1849, Harvard coalesced with Amherst and Williams to send petitions for the reservation of a five-hundred thousand dollar public fund, beyond one million for the common school system, from which each of them could expect an annual income of ten thousand dollars.[32] Of the three, Harvard explained the need of State assistance by specially referring to the conditions surrounding scientific studies in the institution. Although they had received donations from various sources, held the memorialists, their use was mostly restricted to specific, rather than

general, purposes, which caused financial troubles on the part of the University. The point especially applied to the Scientific School. Abbott Lawrence's 50,000 dollars laid the foundation of the institution. Nonetheless, it was "*but the foundation.*"[33] The increasing salaries for the appointed Professors as well as necessary expenses for the maintenance of the School necessitated additional financial sources. The stipulations of the donation strictly limited the direction of its appropriation. Due to the want of funds thus created, the price of tuition inevitably became high, an undesirable state of affairs for both the College and the Scientific School.[34] Without munificence from the Commonwealth, claimed the memorialists, Harvard simply could not secure her survival in an age of science, to say nothing of her transformation into a modern university.

How did the Colleges justfy the petitions for the State support ? For the 1848 memorial, they developed a theory of the division of labor between the colleges and the common schools in the State system of education. The major responsibility of the former lay in the advancement of latest *discoveries*, while that of the latter, their *teaching*. Moreover, the cultivation of science in the colleges had other beneficial effects upon those in the common schools. Among them, the production of polished industrial goods such as knives for boys and the needles and scissors for girls derived only from "the high state of science and art" in the colleges. The mere concentration of attention on the common school system would soon end up with a diminishing return. Only when the Commonwealth aided both the colleges and the common schools, could she keep "her eminence among the states of the world."[35] Despite the sound argument of the memorialists, the legislature rejected the proposals, as the efforts of the three colleges met their first defeat. In order to avoid conflict with

the vested interests of popular education, the cause of failure for the previous year, the memorialists armed themselves, in 1849, with a theory of equality between the colleges and the common schools. Discrediting the alleged dichotomy of the colleges as aristocratic institutions and the common schools as popular ones, they argued that the colleges could fully contribute to the community when their potentialities were emancipated in the direction of useful sciences as they improved the active phases of social life. "It is a practical age," claimed the memorialists, "and science and art have become more practical then ever before, and have busied themselves more than ever, with the daily wants and interests of humanity."[36] When distributed among 200,000 children of the State for merely consumptive purposes, the beneficial effects of a huge sum of money would be but ephemeral. In contrast, the same amount of fund for the Scientific School, once established, would "constitute a permanent, intellectual treasury, out of which any of those same 200,000 children... may draw for the supply of their wants, and the generations which succeed them, afterwards, for all time to come."[37] The colleges emphasized the coincidence in interest between themselves and the common schools. Moreover, the memorialists this time paid special tribute to popular education by proposing simultaneously the establishment of a 250,000 dollar fund for the normal schools as well as for the State Board of Education.[38] In spite of all this, the legislature discouraged the petition for the second time, as the result of which the colleges, especially Harvard, "grew disenchanted with the legislature after 1849 and ceased to appeal for support."[39]

In fact, it was not just out of disenchantment that Harvard ceased to appeal to the State. She became unable to do so. For something even worse than a deaf ear to her requests awaited the University. The two

unsuccessful petitions were immediately followed by a challenge from the State which asked if Harvard was really useful for the State through the alleged emphasis on the applied aspects of science in the Scientific School. In January 1850, the State House ordered seven gentlemen headed by George Boutwell, the figure largely responsible for the demolition of the two petitions, to investigate "what legislation, if any, is necessary to render Harvard University more beneficial to the people of the Commonwealth."[40] As might be expected, the members under Boutwell's flag, the majority, were convinced of Harvard's failure in answering "the just expectations of the people of the State." The mode of instruction therein hardly differed over the past quarter of a century, when the external world had undergone great changes. Many young men sought "specific learning for specific purpose," which would make them "better farmers, or mechanics, or engineers, or merchants," a demand which Harvard had consistently failed to meet.[41] In a manner reminiscent of the lines of Abbott Lawrence's letter of donation, the selected members of the House pointed to the procrastination on the part of the University in special reference to her deficiencies in scientific and technical education.

Why did this gap develop between the University and the external world? The majority of the Special Committee led by Boutwell saw the fundamental cause in the structure of the College Corporation. It was self-perpetuating and tended to defy suggestions of reform from outside, a tendency especially notable since the end of the previous century when the Corporation overshadowed the Board of Overseers as the governing body.[42] In order to make Harvard more responsive to popular demands, this administrative structure had first to be modified. For the current Corporators consisting of five fellows and the President and the

Treasurer, the Special Committee recommended to substitute fifteen members, eight of which, or the majority, should be initially elected in the General Court.[43] As the virtual founder of the institution, as well as by virtue of the stipulations of State constitution, the State, they believed, was fully entitled to exert such control over the administration of Harvard University.[44] The special Committee had the minority led by S. Guild of Boston, who gave a characteristically different judgment on the role of the Scientific School in the Commonwealth. The minority opposed the proposed reform of the Corporation, because they considered the institution as a citadel of "specific learning" and as "too young a mother 〔by then〕 to have reared many children."[45]

To the majority's discouragement, the election of the College Corporation did not materialize. Otherwise, Harvard would have turned into a State institution. Nevertheless, the legislature introduced a compromise in the form of the Overseers' reform in 1851, abruptly ending the two centuries of alumni control in Harvard.[46] The act removed the clerical block, virtually occupied by Harvard graduates, from the Board of Overseers and provided that henceforth the Board would consist of the Governor, Lieutenant-Governor, President of the Senate, Speaker of the House, Secretary of the Board of Education, the President and the Treasurer of the College, and thirty others "elected by the legislature in a convention of two branches," of which each one third, or ten, were to be chosen in 1852, 1853 and 1854, respectively.[47] Although less drastic than the election of the Corporators, the 1851 reform nonetheless decisively opened a channel for external control of Harvard, a threat to the College Corporation.

IV

Because of his contribution to the election of Zachary Taylor to the presidency, Lawrence was offered, in 1849, the position of Minister to the Court of St. James, which he accepted and departed for England in late September.[48] Thus, during the three years beginning in September 1849, he separated himself from direct influence over the Scientific School. As shown in Section I of this essay, immediately before his departure, Lawrence drew up and sent to Harvard his ultimatum, expressing a resentment to Agassiz's activities and urging the Corporation to improve and introduce training in Chemistry and in Civil Engineering.

By October 1852, Lawrence resigned his post in England and returned home. Removed from any official duty, he naturally resumed his involvement with the affairs of the Scientific School. As before, one of the central issues was the status of Agassiz. By 1853 the zoologist's annual salary of 1,500 dollars was to expire, on which the Corporation wanted to know if Lawrence was willing to extend his promise. In his short reply to Samuel A. Eliot, the entrepreneur admitted the significance of Agassiz not only for New England but also for the entire United States. Stated Lawrence :

> I therefore propose after this present engagement with me shall expire, to continue his salary at the rate of fifteen hundred dollars per annum for five years, until I should before the end of that time make some other arrangement, equal to the sum of fifteen hundred dollars per annum of five years...
>
> In case I should make a donation to Harvard College for the use of the Scientific School before the five years shall expire, then this proposal shall be *null* and *void*.[49]

In these terms Lawrence defined his latest relationship with the Scientific School. Partly complying with the Corporation's request on Agassiz, he nonetheless flatly negated the current policies of the University, for he would continue to pay Agassiz's salary only when he did not give any substantial amount of money to the Scientific School. Every major donation that Harvard might ask of Lawrence from that time on for the Scientific School would be given at the expense of Agassiz's salary. Only by expelling Agassiz from the School, could the Corporation expect further munificence from the original donor. In this way, Lawrence pressed for a basic re-orientation of the Scientific School without losing his formal relationship with the School.

By January 1854, under the 1851 Act, the General Court elected Lawrence to membership of the Board of Overseers.[50] In June of the same year, Harvard conferred on him the honorary degree of Doctor of Laws,[51] to moderate, perhaps, his assault on the University administration. Therefore, by February of the next year, when the Board of Overseers appointed the Visiting Committee to the Scientific School, Lawrence was fully empowered to exert his influence. As could be expected, the Visiting Committee, thus appointed, reported their analyses of and recommendations on the establishment which, in many respects, constituted an antithesis to what Everett and his associates had done a few years before.[52]

First of all, in their reference to the original, "splendid plan of giving a practical scientific education to all classes," the 1855 Visiting Committee affirmed Lawrence's ideas as the basis of the future development of the Scientific School. Second, the report gave the statistics of the students connected with the School which showed in rank order : 23 Physicians, 18 practical chemists, 17 engineers, 13 merchants,

and so on, from which the Committee concluded that a practical education in the School was sought for and used generally among the people, and that "they are so with little demands for those branches of high science." Hence, third, they recommended an exclusive emphasis in the School upon this practical branch and concluded that, to become really useful, the School should "apply the duties of the Professors to practical science alone...and that the branches of pure science...be disconnected from the School."[53] Thus, the recommendations of the 1855 Visiting Committee were diametrically opposed to those of the first two Committees led by Edward Everett.

The divergence between Abbott Lawrence and the Corporation on the basic policies of the Lawrence Scientific School, author believes, offered a background to the now explicit conflict between the College Corporation and the Board of Overseers, as well as to the ultimate separation of Harvard from the Commonwealth. Among the thirty members of the Board of Overseers, Lawrence was the most recent appointment in 1854. However, as the sole donor of the School, he must have exerted a greater right to speak than any other member as far as the policies of the Scientific School were concerned. Moreover, although the School was only one of the branches of the University, the decisions on this single branch involved, during the late forties and fifties, more than the School itself. For the success or failure in the introduction of advanced studies in science meant life or death for the University as a whole.[54]

In the midst of this mounting conflict between the College Corporation and the Board of Overseers over the Scientific School, the General Court took up the separation of the College from the State. By January of 1854, when Abbott Lawrence, along with other nine persons, was about to be

elected to the membership of the Board of Overseers, the two branches of the State legislature organized a special Committee for the purpose of considering and reporting "the relation which subsists between the Commonwealth and Harvard College ; whether the connection between them can be legally dissolved."[55] According to the majority of the Special Committee, the problem revolved, in the final analysis, around the appointment of the Board of Overseers which was recently transferred to the Commonwealth. The minority, which opposed the separation, confirmed the same point when they stated that the subject had emanated in "an objection [on the part of the College Corporation] to the working of this change."[56] In fact, in their fear of excessive control by the State, the College Corporation did not object to the separation. Thus, the majority of the Special Committee proposed to effect such separation by devolving the election of the Overseers to the alumni of the College.[57] Those promoting the separation of the College and the State tried to rescue Harvard from the administrative crisis precipitated by the 1851 reform of the Board of Overseers.

Even though the alumni control did not return to Harvard until 1865, the majority's proposal in 1854 marked the first step of departure for the University, with special reference to the structure of her government, as a private institution. The proposal was introduced exactly when the pressure against Harvard concerning the future of the Scientific School reached the peak, causing a threat to the autonomous, administrative function of the University. In face of the adversity, Harvard had two alternatives : either, as a semi-State institution, to succumb to the demands for a thoroughly practical training in science, or, as a private institution, to become independent of the State and to give up any future financial aid therefrom. Given Harvard's inclination to the philosophical

faculty idea, it was natural that the Corporation preferred the second alternative. However, having no immediate right to decide on the matter, the University had to wait for more than a decade before their desire was fulfilled in the State legislature. In this way, the return of the alumni control to Harvard should not be interpreted merely in terms of intentional movements on the part of the College Corporation. Although it has certain validity, such an interpretation may obscure the true picture unless the other side of the story is also taken into account : namely, the gradually lost interest in the control and reform of Harvard, especially its Scientific School, on the part of some elements of the Commonwealth, which used to oppose the separation. It is no mere coincidence that the separation was finally effected in 1865 when the Massachusetts Institute of Technology and the Massachusetts Agricultural College, the two recipients of the Morrill land grant in the State, started, in which these elements must have found an alternative to the tedious conflict with the Harvard College Corporation.

Seen in our perspective, the significance of the separation of Harvard and the State lies in the emering conflict of opinions concerning the value of scientific studies with reference to their pursuits in colleges and universities. The conflict reflected Harvard's identification with one of the modes for such pursuits, a mode typically shown in the philosophical faculty of the German University. In other words, in becoming a private university, Harvard proclaimed her commitment to one model for sustaining scientific studies, against which the MIT and the Agricultural College, along with other land grant colleges, had to define their characteristics. Our next task, therefore, is to compare the development of Harvard's Scientific School in the latter half of the nineteenth century with that of the MIT and the Agricultural College, as well as to find out

if similar circumstances apply to the separation of College and State in other areas, especially Connecticut, New Hampshire, and New York.

FOOTNOTES

1. As for the history of the Lawrence Scientific School, see : James Lee Love. *The Lawrence Scientific School in Harvard University* : 1847–1906. Burlington, N.C. 1944 ; Morikazu Ushiogi. *Daigaku to Shakai*. 〔*University and Society*.〕 *Tokyo*, 1982, Chapter III ; Akira Tachikawa. "Ju-kyu-seiki America no Daigaku to Kagaku." 〔"The University and Science in 19th Century America."〕 *Daigaku-shi Kenkyu*, 2 〔1981〕, pp.22–33.

2. See : John S. Whitehead. *The Separation of College and State*. New Haven, 1973 ; Jeff Wasserman. "How Harvard Became a Private University." *Harvard Library Bulletin*. XXVII 2 〔April 1979〕, pp.245–264.

3. Edward Everett. "Inaugural Address." In *Addresses at the Inauguration of the Hon. Edward Everett, LL.D. as President of the University at Cambridge*. Boston, 1846, P.27.

4. MS, Edward Everett. "Scientific School of the University at Cambridge." January 30, 1847. 〔Harvard Archives.〕 Emphasis added.

5. *Ibid*.

6. Cf. Howard S. Miller. *Dollars for Research*. Seattle, 1970, pp.74–76.

7. James Walker to Edward Everett. January 20, 1847. 〔Harvard Archives.〕

8. See, Tachikawa. *op.cit*.

9. Abbott Lawrence to the President and Fellows of Harvard College. July 19, 1847. 〔Harvard Archives.〕

10. See, Margaret W. Rossiter. *The Emergence of Agricultural Science*. New Haven, 1975, p.75.

11. Eben Norton Horsford to the President and Fellows of Harvard College. August 22, 1848. 〔Harvard Archives.〕 See also : Charles L. Jackson. "Eben Norton Horsford." The American Academy of Arts and Sciences, *Proceedings*, XXVII 〔1893〕, p.342 ; Rossiter. *op. cit. pp.75ff*.

12. See : Lawrence to the President and Fellows of Harvard College. July 19, 1847. Its sixth proposal ; Abbott Lawrence to Samuel A. Eliot. June 7, 1847. In *Hamilton A. Hill. Memoir of Abbott Lawrence*. Boston, 1884, p.120.

13. See, Abbott Lawrence to Samuel A. Eliot, Treasurer of Harvard College. September 20,1849. 〔Harvard Archives.〕

14. *Ibid*.

15. *Ibid*.

16. *Report of the Visiting Committee of Harvard University, Made to the Overseers*. Boston, 1849, p.33.

17. *Ibid*., pp.33−34.

18. "Eliot's *Sketch of Harvard College.*" *North American Review*, January 1849, pp.114−116. The article is a review of *A Sketch of the History of Harvard College, and its Present State* 〔Boston, 1848〕 by Samuel A. Eliot, Treasurer of Harvard. Cf. 〔Samuel A. Eliot〕 *A Letter to the President of Harvard College, by A Member of the Corporation*. Boston, 1849, pp.30−32.

19. "Eliot's *Sketch of Harvard College.*" p.113.

20. *Report of the Committee of the Overseers of Harvard College, Appointed to Visit the Lawrence Scientific School, in* 1849. Cambridge, 1850, p.6.

21. See, *Corporation Records VIII*, March 13, 1847. 〔Harvard Archives.〕

22. *Report of the Committee of the Overseers*... p.7.

23. "Eliot's *Sketch of Harvard College.*" p.114. Cf. I. Bernard Cohen. "Science in America : The Nineteenth Century." In A. Schlesinger and M. White eds. *Paths of American Thought*. Boston, 1963, p.173 ; Stanley M. Guralnick. *Science and the Ante-Bellum American College*. Philadelphia, 1975, p.135n.

24. See, *Overseers' Records IX*. p.42. 〔Harvard Archives.〕

25. *Report of Professor Agassiz*. In *Report of the Committee of the Overseers*... p.14.

26. *Ibid*., p.15.

27. *Ibid*., p.9.

28. MS, The Lawrence Scientific School, 1851. 〔Harvard Archives.〕

29. See, *Ibid*.

30. See : Richard Shryock. "American Indifference to Basic Science during the Nineteenth Century." In B. Barber and W. Hirsch eds. *The Sociology of Science*. Glencoe, Ill., 1962, p.106 ; Guralnick. *op.cit*., pp.136−137.

31. *Harvard College, Etc*. 〔House--No. 92, March, 1849〕 p.33.

32. *Harvard College, Etc*. 〔House--No. 112, March, 1848〕 p.2.

33. *Ibid*., p.12.

34. See, *Ibid*.

35. *Ibid*., p.17.

36. *Harvard College, Etc*. 〔House--No. 92〕 p.13.

37. *Ibid*., pp.20−21.

38. See, *Ibid*., pp.37−38.

39. Whitehead. *op.cit*., p.100.

40. *Harvard University*. 〔House--No. 164. April, 1850〕 p.1.

41. *Ibid*., p.3.

42. See, Richard Hofstadter and C. Dewitt Hardy. *The Development and Scope of Higher Education in the United States*. New York, 1952, p.127.

43. See, *Harvard University*. 〔House--No. 164〕 pp.5 and 9.

44. See, *Ibid*., pp.6−7.

45. *Ibid*., p.14.

46. See : Wasserman. *op.cit*., p.248 ; Whitehead. *op.cit*., pp.150−151 ; Samuel Eliot Morison. *Three Centuries of Harvard*. Cambridge, 1936, p.289.

47. See, *The State and the Colleges*. 〔Senate--No. 134, April, 1854〕 p.25.

48. See : William H. Prescott. *Memoir of the Honorable Abbott Lawrence*. 1856, p.29 ; Freeman Hunt ed. *Lives of American Merchants*. vol.II. New York, 1858, pp.336−337 ; Brainerd Dyer. *Zachary Taylor*. Baton Rouge, 1947, pp.336−337.

49. Abbott Lawrence to Samuel A. Eliot. March 5, 1853. 〔Harvard Archives.〕

50. See, *Overseers' Records IX*. p.209. 〔Harvard Archives.〕

51. See, *Ibid*., p.239.

52. See, Section III of this essay.

53. See, MS, To the Honorable and Reverend the Board of Overseers of Harvard College. 1856. 〔Harvard Archives.〕

54. See, S. P. Sharples. "Some Reminiscences of the Lawrence Scientific School." *The Harvard Graduates' Magazine*, XXVI 〔June, 1918〕, p.539.

55. *The State and the College*. 〔Senate--No. 134〕 p.1.

56. *Ibid*., p.27.

57. See, *Ibid*., p.4.

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