NOWHERE is the pre-eminence of Philadelphia as a medical center in the early years of the republic more evident than in the exodus of talented young Bostonians to study in that city during the first decade of the nineteenth century. Far surpassing the Harvard Medical School at this period, the University of Pennsylvania boasted well-equipped laboratories and dissecting rooms, excellent clinical facilities, and a faculty educated in famous European universities. Commenting ruefully on this superiority, the memorialist of Dr. Jacob Bigelow observed: "It was exceptional to the lead which Massachusetts has generally taken in the interest of academic and professional opportunities, that any one of its youth should have needed to go to another state of the Union for the medical instruction which he could not find here." ¹ The biographers of several other prominent Boston physicians of this generation might well have echoed these words.

Bigelow, the son of a country parson in Waltham, first thought of medicine as a career when he was a senior at Harvard attending the anatomy lectures of Dr. John Warren. He discovered, he said, "that a physician might be fluent and accomplished, and serve his generation in other ways than as a mere vehicle of pills and plasters. I began to think that if a man could obtain foothold in a city, and diversify his calling with the additional function of a lecturer or professor, he might find his position agreeable and advantageous." ² After a year teaching school at Worcester, he returned to Boston to attend further lectures in anatomy by Warren and to study chemistry under Aaron Dexter and the theory and practice of physic with Benjamin Waterhouse. An impecunious young man, Bigelow supported himself by teaching in the Boston Latin School while serving an appren-

² Ibid., 15–16. Ellis had access to a manuscript autobiography since lost.
practiceship in the office of Dr. John Gorham, and after a year spent in this fashion, traveled to Philadelphia in 1808 to complete his professional training.

Although paying close attention to the lectures of Benjamin Rush, Caspar Wistar, Philip Syng Physick and John Redman Coxe, he was particularly attracted to the classes of Benjamin Smith Barton, professor of materia medica. Already well known for his botanical investigations, Barton soon inspired the young New Englander with an earnest desire to study plant life. From him, Bigelow modestly wrote, he acquired “the rudiments of a botanical taste which adhered to me for many years afterward.”

He must have found Philadelphia society agreeable, for he also remarked that he had formed a number of pleasant friendships in that city. Having passed his final oral examinations in March, 1809, he remained until April to receive his diploma, meanwhile occupying himself by attending the practice of the Pennsylvania Hospital.

Matriculating in the same class with Bigelow was Walter Channing, brother of the eloquent William Ellery. Armed with letters of introduction from George Cheyne Shattuck, an 1807 graduate of the medical school, he had arrived in the city the previous summer and like his fellow student, enrolled with Dr. Barton as a special pupil. The professor must have had a winning personality, for Channing wrote of him with great enthusiasm; the school itself, he added, “exceeds my wildest expectations.”

Unlike most northerners he found the climate pleasant and not so hot as he had anticipated. While both Channing and Bigelow took special work with Barton, the botanical bug evidently bit the latter much more deeply, for soon after his return to Boston he began to lecture on the subject and in 1814 published the first edition of his famous *Florula Bos-
toniensis*, one of the pioneer American botanical guides. Channing, whose circumstances in life were somewhat easier, went to Europe for further study in 1811. It seems probable that he developed an interest in obstetrics while working in the London hospitals; in 1815 he was appointed first professor of midwifery at the Harvard Medical School, a position which he held for more than thirty years.

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4 Walter Channing to George Cheyne Shattuck, August, 1808, Shattuck Papers, II, Massachusetts Historical Society (MHS).
Shattuck, the first of these able young New Englanders, has left us the most complete account of his student life in Philadelphia. A Dartmouth graduate and former pupil of Nathan Smith, he arrived in the city in November, 1806. Displaying an amusing provincialism, he soon informed Roswell Shurtleff, his old college tutor, that it contained “a larger proportion of people of industrious sober habits, than perhaps of any other commercial populous town upon the continent of America south of New England.”

Its regular arrangement was admirable, and a visit to the almshouse convinced him of the benevolence of its citizens, for the institution had plenty of room for the sick and destitute. He was appalled, however, by the “collective misery” which it housed.

Even more disturbing was the suspicion with which Philadelphians regarded New Englanders. In the past, the professors at the medical school had sometimes extended credit to poverty-stricken students from that section of the country, but now they refused to trust any credentials whatever of character or scholarship. They had, they said, too often been cheated out of their fees by unscrupulous Yankees. This policy worked a real hardship on young Shattuck, who had exchanged his Massachusetts money for southern notes while passing through Boston and came away expecting a friend to forward an additional bill of exchange. On the other hand, he was glad to find out that his expenses would be less than he had anticipated; board was only $4.00 per week, and wood, $4.50 per cord.

“If an angel of light were to descend from heaven, and proclaim in accents strong as the seven thunders that a man could be honest in the climate of New England, his story would be discredited at Philadelphia,” was his picturesque summary of a prevalent attitude in the nation’s medical center.

Plunging into his work with real devotion, he was soon engrossed in the lectures of Rush, Barton, Physick and William P. De Wees. All these physicians treated him courteously, and were, he felt, "gentlemen of talents & of industry." To Shurtleff, a professor of theology, he was happy to report that they carefully avoided speaking disrespectfully of Christianity; although it was common knowledge that Rush had imbibed the pernicious doctrines of Priestley, he

5 George Cheyne Shattuck to Roswell Shurtleff, Nov. 10, 1806, Shattuck Papers, I, MHS.
6 Ibid.
was still "a strenuous advocate of the Christian system as being the broad basis of happiness here and hope hereafter."
7 Shattuck's notes on the lectures of Physick and Barton reveal his close attention. The former, one of the first great American specialists in fractures, advocated principles in the treatment of these injuries which are still being taught in medical schools; splints, he was careful to point out, should always be longer than the broken limb, and their daily inspection was an absolute necessity. 8

His studies left young Shattuck little time to enjoy the pleasures of the city; always a man to take his professional obligations seriously, he joined the Philadelphia Medical Society and attended its Saturday night meetings assiduously. His best friend among his fellow students was a Georgian, "a very steady man." Indeed, his New England conscience stood him in good stead, since, like many another young man from the provinces, he was dazzled by the wealth and sophistication of the Pennsylvania metropolis. Never, he wrote, had he had "such feeling views of the pride & vanity of worldly grandeur as since my arrival at Philadelphia" 9; fortunately, he was much too busy to take part in balls, routs, or card parties. On the contrary, his chief relaxation seems to have been attending divine services. On one occasion he heard the eloquent preaching of the Reverend Archibald Alexander, former president of Hampden-Sydney College in Virginia and now settled in the Pine Street Church. On another, he attended a synagogue and was amused to see that the services were in Hebrew, although few understood the language. There were, he estimated, about one hundred Jews in the city, some rich, but many very poor. 10

By early March Shattuck was ready to take the oral examinations necessary to obtain the doctor's degree, and on the 11th of the month he wrote triumphantly to Shurtleff that he had passed. "The dance over the red hot plough shares," he proclaimed, "though it produced no mortal burns, scorched my toes not a little." 11 Although he had done fairly well in anatomy, surgery, and the theory and practice of

7 George Cheyne Shattuck to Roswell Shurtleff, Jan. 11, 1807, Shattuck Papers, I, MHS.
8 Notes of George Cheyne Shattuck on the medical lectures of Benjamin Smith Barton and Philip Syng Physick, Boston Medical Library.
9 George Cheyne Shattuck to Roswell Shurtleff, Jan. 11, 1807, Shattuck Papers, I, MHS.
10 George Cheyne Shattuck to Roswell Shurtleff, Mar. 11, 1807, Shattuck Papers, I, MHS.
11 Ibid.
physic, he was certain that he had not distinguished himself in chemistry or materia medica. Perhaps wishing to make up for his deficiencies in the last named subject, he contemplated staying on to hear Barton’s private lectures on botany, but financial considerations forced him to return to New England and establish himself in practice. His friendship with this amiable professor was evidently fairly close, for he subsequently wrote him at length concerning the results of a natural history expedition to the White Mountains. Barton’s testimonial to his character significantly shows much greater knowledge of his qualities as a student than do those of Rush and De Wees.

The last prominent Boston physician to study in Philadelphia at this period was George Hayward, a protégé of Dr. John Collins Warren. Writing to his patron in November, 1811, Hayward reported that the school had about four hundred students, mostly from the states south of the Delaware River; the majority of the class were Virginians. Like Bigelow, Channing, and Shattuck, he attached himself to Benjamin Smith Barton, who remarked to him one day that the Harvard Medical School had a bright future and that it would soon be drawing all the able students from north of the Hudson. Then, said he, ‘‘Things will be as they should be.’’ Commissioned by Warren to obtain replicas of Caspar Wistar’s famous models of the brain and ear, he was sorry to say that he was unable to do so. The great anatomist stated that he had had them made by skilled artisans who watched him dissect these organs; only in this way could they be constructed accurately. A few months later Hayward happily informed Warren that Wistar and his colleagues had warmly received the first number of the recently established New England Journal of Medicine and Surgery.

The effect of their Philadelphia training on these doctors is a matter of conjecture. While the city was the undoubted medical capital of the United States, its dominance was by no means entirely fortunate; most historians today agree that the theories of Rush, a physician who all too frequently subjected his patients to a drastic

12 Certificate of Benjamin Smith Barton on the character of George Cheyne Shattuck, May 1, 1807, Shattuck Papers, I, MHS.
13 George Hayward to John C. Warren, Nov. 28, 1811 and Feb. 28, 1812, Warren Papers, VII, MHS.
routine of purgatives, emetics, and bloodletting, exerted an exceedingly bad influence on the course of American medicine.\textsuperscript{14} If the young New Englanders had returned to Boston his convinced disciples, its development as a medical center might have been very different. Luckily Shattuck's old preceptor at Dartmouth was doubtful of Rush's system; subsequently the holder of important positions in the medical schools of Yale, Bowdoin, and the University of Vermont, Nathan Smith believed that while the great Philadelphian was undoubtedly an interesting lecturer, his classification of diseases was unimportant. Too much attention, he felt, had been paid to nosology and philosophical generalization. "This mode of proceeding tends to substitute idleness for industry and dogmatism for patient inquiry," was the penetrating comment of this shrewd old Yankee.\textsuperscript{15} Three years before his death in 1879, Jacob Bigelow remarked that only a few New Englanders had attended the Pennsylvania school in his time; recalling that Rush and Wistar had been kindly and warm-hearted toward the students, he added that the former was "enthusiastic and eloquent, an earnest believer in medicine and drugs."\textsuperscript{16} Though he always remembered his old teachers affectionately, Bigelow later played a leading part in the struggle against their doctrines. Samuel D. Gross, himself a leading Philadelphia physician, considered him one of the outstanding medical reformers of the nineteenth century.\textsuperscript{17}

Equally as important as the mental reservations of these men about Rush and his fellows was the growth of the Harvard Medical School into an institution of national standing. Located in a city which within a few years opened a general hospital, an eye and ear infirmary, and a lying-in hospital, it was the only school in New England whose clinical facilities could compare with those in Philadelphia. Under the guidance of James Jackson and the younger Warren it achieved an enviable reputation for good teaching; signifi-

\textsuperscript{14} There is an excellent analysis of Rush's development of this drastic therapy in a recent account of the Philadelphia yellow fever epidemic in 1793: John H. Powell, Bring Out Your Dead (Philadelphia, 1949).

\textsuperscript{15} Nathan Smith to George Cheyne Shattuck, Jan. 22, 1807 (copy), Shattuck Papers, I, MHS.

\textsuperscript{16} Henry I. Bowditch to his daughter, Feb. 20, 1876, quoted in Vincent Y. Bowditch, Life and Correspondence of Henry Ingersoll Bowditch (Boston and New York, 1902), II, 285-293.

\textsuperscript{17} Samuel D. Gross, Autobiography (Philadelphia, 1887), II, 53-56. Gross, a close friend of Bowditch, had evidently had access to the latter's account of a visit with Bigelow.
cantly, neither of these eminent physicians had been strongly influ-
enced by the University of Edinburgh where so many prominent
Philadelphia doctors studied. Although Warren spent several months
there as a young man, he was much more impressed with the achieve-
ments of the French surgeons, particularly Dupuytren and DuBois,
under whom he studied as a private pupil. Jackson, who in many
ways anticipated the therapeutic nihilism of Oliver Wendell Holmes
and his generation, exerted a tremendous influence upon his col-
leagues. No professional man of his time was more revered by his
juniors. Gradually discarding the fearsome treatments advocated by
the Brunonians and Cullenians, he wrote in 1838 that by the opening
of the Massachusetts General Hospital (1821) he had largely dis-
carded mercury, “the Herculean remedy.” In his old age he warmly
supported the struggles of Holmes, Henry I. Bowditch, and George
C. Shattuck, Jr., who brought new and startling French clinical
methods to Boston.18

As a result of the growth of the Harvard Medical School (and
several remarkably good country medical colleges), young New
Englanders who wanted to study medicine rarely traveled to Phila-
delphia after 1820; in 1825 the University of Pennsylvania did not
confer its M.D. upon a single native of that section. Southern medi-
cal students, on the other hand, continued to come to the Quaker
City in large numbers. Marion Sims, a South Carolinian who later
did outstanding work in gynecology, had no difficulty whatever in
finding friends from his own state in Philadelphia in 1834.19

Probably the most important contribution of the Pennsylvania school to the
development of New England science was the “taste for botany”
which Benjamin Smith Barton aroused in Jacob Bigelow, whose
pioneering work stimulated much popular interest in the field.
Frequently lecturing on the subject and enthusiastically supporting
the recently founded herbarium at Harvard University, Bigelow
helped greatly in laying the foundations for the far more important
work of Asa Gray after 1842.

18 Edward Warren, The Life of John Collins Warren, M.D. (Boston, 1860); James Jackson
Putnam, A Memoir of Dr. James Jackson (Boston, 1905). Professor R. H. Shryock has sug-
gested in a brilliant article that the influence of the Edinburgh School on the University of
Pennsylvania may not have been a happy one: “The Advent of Modern Medicine in Phila-
delphia,” Yale Journal of Biology and Medicine, XIII (1940-1941), 715-738.

The close attention paid by Bostonians to the achievements of the Pennsylvania Hospital is additional evidence of Philadelphia's leading position in American medicine. When a group of prominent citizens petitioned the Massachusetts General Court to charter a general hospital, they cited the generosity of the Pennsylvania legislature approvingly. The Bay State, they said, could hardly do less. The committee of both houses to which the petition was referred likewise mentioned the Pennsylvania Hospital as an outstanding example of legislative benevolence, also pointing out that the presence of a similar institution in Boston would stop a southward migration of medical students which was costing the commonwealth a substantial sum every year.\textsuperscript{20} Strongly supported by the Federalist aristocracy, the proponents of the petition easily secured its approval, and on February 25, 1811, the Massachusetts General, third oldest voluntary hospital in the United States, received its charter. A few years later its trustees showed their continuing interest in the Pennsylvania Hospital by sending their architect, Charles Bulfinch, on an inspection tour; Rufus Wyman, first superintendent of the McLean Asylum, was another visitor.\textsuperscript{21}

As time passed and the Harvard Medical School gained prestige, strong feelings of mutual respect developed between its faculty and that at the University of Pennsylvania. Warren's refusal to become a candidate for Wistar's vacant chair in 1818 was probably the most important single factor in strengthening these ties. After the death of the great anatomist there was a good deal of doubt about his successor, and according to David Sears, a prominent Bostonian then residing in Philadelphia, Warren's name was frequently mentioned at the meetings of the trustees. Warren himself displayed a good deal of interest in the position, asking his old friend Benjamin Vaughan for advice and requesting further information of Horace Holley, a well-informed Boston clergyman who was visiting friends in the Quaker City. Realization that he had little chance for the job when

\textsuperscript{20} Petition of James Bowdoin and others to the General Court of Massachusetts, Jan. 15, 1811, a manuscript copy of which is in the archives of the Massachusetts General Hospital; report of the select committee of both houses on the petition of James Bowdoin and others. See documents relating to \textit{Laws of Massachusetts}, V (1810), Ch. 94, Massachusetts State Archives, Boston.

\textsuperscript{21} Bulfinch's report of his journey has been reprinted in a short article by Leonard K. Eaton, "Charles Bulfinch and The Massachusetts General Hospital," \textit{Isis}, XII (1950), 8-11.
the Pennsylvania faculty decided to support John Syng Dorsey plus a very real sense of obligation to his native town caused Warren to withdraw his candidacy, an action which brought him appreciative letters from Thomas Hewson, professor of comparative anatomy at the Pennsylvania school, and Nathaniel Chapman, editor of the *Philadelphia Journal of the Medical Sciences.*

In later years Warren corresponded with W. E. Horner, a pioneer Philadelphia pathologist, Philip Syng Physick, the city’s most prominent surgeon, and Isaac Hays, successor to Chapman as editor of the *Journal.* Like most other American anatomy professors Warren had a great deal of trouble in obtaining sufficient cadavers for dissection, and in 1824 he inquired if Horner could spare a few. The latter replied somewhat wryly that the town had unfortunately been so healthy of late that he had not even been able to secure enough for his own classes! Despite this difficulty, the two men evidently remained on good terms, for Horner later sought his colleague’s advice about the building of Old Blockley and always reviewed his publications flatteringly in the pages of the *Philadelphia Journal.*

In 1830 the Boston surgeon asked Physick for information about his famous splint, and in the same year Hays requested a report on Warren’s cases at the Massachusetts General Hospital. This information would, he thought, be “highly acceptable to the profession.” Two years later the capable Philadelphia editor proposed that he contribute an article on some subject of his choice to a forthcoming “American Cyclopedia of the Medical Sciences,” modeled on the French *Dictionnaire de Médecine et de Chirurgie Pratique.*

This flattering invitation was not merely a tribute to Warren’s professional eminence, but also a symbol of Boston’s emergence as a medical center in its own right. By 1832 the Harvard Medical School

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22 David Sears to John C. Warren, Feb. 24, 1818; Horace Holley to John C. Warren, Mar. 5, 1818; Benjamin Vaughan to John C. Warren, Mar. 6, 1818; Harrison Gray Otis to John C. Warren, Mar. 11, 1818; Thomas Hewson to John C. Warren, Apr. 12, 1818; Nathaniel Chapman to John C. Warren, Mar. 12, 1818, Warren Papers, IX, MHS.


25 Isaac Hays to John C. Warren, Feb. 20, 1832, Warren Papers, XV, MHS.
had attained a position of national importance, and in the next decade a generation of Paris-trained clinicians made the Massachusetts General Hospital a center of research in the great French tradition. While remaining on good terms with their Philadelphia colleagues, leading physicians such as Bigelow and Shattuck, themselves products of the Pennsylvania School, now entrusted the medical educations of their sons to Harvard and then sent them abroad for postgraduate work. Perhaps because geography precluded competition for students, relations between the medical fraternities in Boston and Philadelphia seem always to have been based on a solid foundation of mutual respect. They were also, in some sense, those of an admiring father and a dutiful son.

26 Henry Jacob Bigelow (1818–1890) became an outstanding surgeon at the Massachusetts General Hospital; George Cheyne Shattuck, Jr. (1813–1893), was equally eminent in clinical medicine.