IN

MEMORY OF

HENRY COIT PERKINS,

OF

NEWBURYPORT, MASS.,

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FROM THE
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SERVICES

In memory of the late Henry Coit Perkins, M.D., were held Sept. 11, 1873, in the Whitefield Church, Newburyport, under the auspices of the Essex Institute, of which the deceased was a member.

The order of the service was as follows:—

1. Hymn.—"The spacious firmament on high."
2. Reading of Scripture and Prayer, by Rev. R. Campbell.
3. Singing.—"Blessed are the dead who die in the Lord."
4. Address by Rev. S. J. Spalding, D.D.
5. Singing.—"God who madest earth and heaven."
6. Benediction.

The singing was by a quartette under the direction of Mr. Wm. P. Dodge.

MEMOIR

OF

HENRY COIT PERKINS,

BY

SAMUEL J. SPALDING.

[READ THURSDAY, SEPT., 11, 1873.]

Some few years since, while sitting with our friend, Dr. Perkins, our conversation turned on the great advances made during the last quarter of a century in all departments of physical science. He was led to speak of his own personal interest and work in the same direction, and of the satisfaction and pleasure he had derived from these side studies of his professional life, as he was accustomed to call them. His account seemed to me of so much value, especially as showing how much could be accomplished by concentration of purpose and a wise use of opportunities, that I ventured to ask him to commit the same to writing.

It is to the brief autobiographical sketch, written shortly after that conversation, that I am indebted for most of the facts respecting Dr. Perkins, which I shall give you to-day.

In this sketch he speaks of his ancestors as belonging to the family of Perkins in Topsfield. His own immediate ancestors were from Topsfield, but remotely from Ipswich.

The Perkins family of Topsfield comprises the descendants of Rev. William Perkins, of whom a sketch is given in the July No. of the 10th Vol. of the "Hist. and Gen. Register."

The Ipswich family comprises the descendants of John Perkins the elder, as he is called in the Records, of whom a sketch is given in the same No. and Vol. of the Register.

"He was born in Newent (as supposed) in Gloucestershire, England, in 1590. He embarked with his wife and family for America, Dec. 1, 1630, at Bristol, England, and arrived at Boston, Feb. 5, 1631, after a 'very tempestuous voyage.' They came over in the ship Lyon, Capt. Wm. Pearce; and the famous Roger Williams was one of their fellow-passengers. At this time their youngest child was about seven, and their oldest seventeen years. On the 18th of the following May (1631) he was admitted freeman. He remained in Boston about two years, when, in 1633, he removed to Ipswich. He was representative to the General Court from that town in 1636, held various town offices and trusts, and appears to have been a man of great respectability. He owned the large island at the mouth of Ipswich river, which was then, and until quite recently, called Perkins' Island. It is still believed to be in the family. His house, which he gave, after his wife's decease, to his youngest son, Jacob, stood near Manning's Neck and close to the river. His will is dated March 28, 1654, and he probably died not long after, as he then says he was 'sick and weak in body.' The will was proved Sept., 1654, and his estate

was valued at £250, 05s. He was sixty-four years old at his death. The name of his wife was Judith, and he left six children, as follows:—

John[2], Thomas[2], Elizabeth[2], Mary[2], Lydia[2], Jacob[2]; Thomas[2], b. 1616; settled in Topsfield; m. Phebe, dau. of Zaccheus Gould, and d. May 7, 1686, aged 70.

He is usually called on the records 'Dea. Thomas Perkins, Sen., of Topsfield.' His will is dated Dec. 11, 1685, and proved Sept., 1686. It is quite long and minute, and his estate was large.

His children were John[3], Thomas[3], Elisha[3], Timothy[3], Zaccheus[3] and three daughters.

Thomas[3], second son of Dea. Perkins, m. Sarah Wallis, 1683, and d. 1719. Children, Martha[4], Robert[4], Samuel[4], Sarah[4], Phebe[4], Hannah[4].

Samuel[4], b. 1699; m. Margaret ———; their children were Thomas[5], Hannah[5], Margaret[5], Samuel[5], Mary[5], Archelaus[5], Sarah[5]."

Thomas[5], b. Feb. 19, 1725; m. 1st, Dinah Towne; m. 2d, Martha Burnham. Children, Archelaus[6], by the first wife, b. April 4, 1756; Daniel[6], Israel[6], Hannah[6], Israel[6], Margaret[6], Thomas[6], Samuel[6].

Thomas[6], b. May 28, 1773; d. Oct. 29, 1853. He m. Elizabeth Storey, Feb. 16, 1804. She was the dau. of Daniel and Ruth (Burnham) Storey of Essex, and was b. June 30, 1778, and d. May 14, 1864. Their children were Henry Coit[7], Daniel Storey[7], Harriet[7], Elizabeth[7], Caroline[7], Mary[7].

Henry Coit[7], b. Nov. 13, 1804; m. Harriet Davenport, Oct. 30, 1828. He d. Feb. 1, 1873. Their only child is Henry Russell, b. April 2, 1838; m. July 6, 1868, Georgiana Prescott, dau. of Samuel G. and Caroline (Prescott) Reed of Boston.

The autobiographical sketch is as follows:—

"'The lines are fallen unto me in pleasant places; yea, I have a goodly heritage.'

I first saw the sunlight, Nov. 13, 1804, as it beamed into an apartment of the old Wolfe tavern in State street, Newburyport, where also was born the father of my affectionate and beloved wife.

The most vivid recollection that now remains of the old mansion is that impressed upon my vision as it was seen wrapped in flames in the great fire of May 31, 1811. I was borne by my aunt from the scene of conflagration to a place of shelter in the residence of the father and family of the late Miss Hannah F. Gould.

At the age of eight years, I commenced the study of the Latin language under Michael Walsh, A. M., the author of the 'Mercantile Arithmetic;' with whom, as I well remember, Hon. Caleb Cushing was fitting for college, and from which school he entered Cambridge in 1813 at the early age of thirteen years.

I continued the study of Latin under Asa Wildes, Esq., at the Newburyport High School, and finally fitted for college under Mr. Alfred Pike, at the Newburyport Academy, and in August, 1820, entered as freshman at Harvard.

My parents were of humble origin, but of respectable descent; my father, Thomas Perkins, was of a Topsfield family of that name; my mother, Elizabeth Storey, was born at Chebacco, now Essex. The parents of both my father and mother were husbandmen, and the children were brought up to habits of industry and frugality, and enjoined the same upon their descendants.

With my brother and sisters, I was led to the baptismal font, May 13, 1816, at the age of eleven years, and received the sacred rite at the hands of Rev. Daniel Dana, D. D., at that time pastor of the Old South Church. A

little tract given me about this time by my pastor, entitled, 'My son, give me thine heart,' I regard as among the first sources of my religious impressions, although I always had been taught, on Sabbath evening, the Westminster confession of faith by my father, and had been blessed with the prayers of a pious mother.

Among the books in my father's small library was a duodecimo entitled 'Elements of Natural Philosophy,' published in 1808, at New York. It contained chapters upon 'matter and motion, the universe, the solar system, the fixed stars, the earth, the atmosphere, meteors, springs, rivers and the sea, fossils, plants, animals, the human frame and the understanding.'

In these, to use the the words of the poet,

> 'I saw a mighty arm, by man unseen,
> Resistless, not to be controlled, that guides,
> In solitude of unshared energies,
> All these thy ceaseless miracles, O world!'

This little volume was the nucleus, around which was to gather all the knowledge I was to be permitted to collect in my after life, and next to the Bible, the volume of nature is the one I have loved most to study. When a lad, I well remember the pleasure afforded in contemplating the changing forms of the silvery clouds, lost in wonder how they could contain and pour out the drenching rain and the rattling hail,— whence could come the mighty wind that prostrated the forest, the dazzling lightning and the heavy thunder that made the earth tremble beneath my feet. Ofttimes, in returning from the evening school have I stood alone gazing into the clear blue sky to see and love the twinkling stars as they ran their silent course, watching me as my heart breathed out the words of the Psalmist, 'When I consider thy heavens, the work of thy fingers; the moon and the stars, which

thou hast ordained; what is man, that thou art mindful of him? and the son of man, that thou visitest him?'

Another favorite book was to be found in my father's library, 'Ferguson's Astronomy,' a book brought over the sea by my deceased uncle, Daniel Perkins, a contemporary of Dr. Bowditch, which served to give me a taste for a science the love of which has remained by me until the time when many of the stars I could then distinctly see with the naked eye are only to be seen by the aid of the telescope.

In the retrospect of the time spent at Harvard, no cloud of any size casts its shadow upon the pleasant years.

To a slight incident (namely, the meeting of a person in the road which led to the Botanic Garden), the writer looks back with pleasure as the turning point of his future employment through life. The individual referred to was Prof. Thomas Nuttall, the distinguished English botanist and naturalist, who had been recently appointed Lecturer on Botany and Curator of the Botanic Garden. A strong attachment sprang up between this teacher and many of the students; this friendship the writer enjoyed, and by it was often enticed away from the drier studies of the course, to a pleasant ramble through the woods and fields in search of their fruits and flowers.

Among the number to whom the volume of nature was first opened, by Mr. Nuttall about the same time, was one recently taken away by the pestilence which walketh in darkness, and with whom for forty-five years, I have been intimately acquainted. I refer to Dr. Augustus A. Gould of Boston. He leaves behind him a character untarnished, and a name long to be held in remembrance by every physician and student of natural history.

On the 27th of Aug., 1824, I graduated at Harvard and,

in company with Rev. William Barnwell of Charleston, S. C., and Rev. Dr. Samuel Parker Parker of Boston, took part in a 'colloquy' before an exceedingly large audience drawn together by the presence of General Lafayette. While an undergraduate, I had attended the lectures of Dr. John C. Warren upon comparative anatomy, and was forcibly struck with the analogies of the skeletons of the lower animals with that of man. I had studied chemistry under Dr. John Gorham, and had often returned from the Botanic Garden with my pockets well filled with minerals from my friend Mr. Nuttall, and my botany box well stored with plants for analysis.

I had unwittingly entered upon the threshold of the medical profession, and on the 27th of Sept., 1824, I entered my name as a student with Dr. Richard S. Spofford of Newburyport, at that time the leading physician of the town.

In Oct., 1825, I entered my name with Dr. John C. Warren and commenced attending the regular course of lectures at the Medical College and practised dissections with a view of understanding more perfectly the structure of the human body. Shortly afterwards I became the house pupil, lodging and studying at his dwelling. Here I made the acquaintance of his son, my highly esteemed friend, J. Mason Warren, then a lad fitting for college in his father's study.

With the students of Dr. James Jackson and Dr. Walter Channing, I attended the clinique at the Mass. General Hospital, and, with Dr. David Bemis, discharged the duties of Dr. Warren's dresser, and assisted him in all his private operations. So diligent were we, that, with the exception of an occasional visit to my friends at Newburyport and Cambridge and a ride once over the neck to Roxbury and back over the Mill-dam, I do not recollect

to have been absent from the Hospital, or away from Boston, for more than two years.

To Dr. James Jackson, I must in justice say, I feel more indebted for what I know of my art, in so far as instruction, written or oral, is concerned, than to any other person. With multitudes of others, I feel that he is my father in medicine. I love him for his virtues, I respect him for his knowledge and I delight to honor him. He has impressed upon the physicians of New England much that has made them useful and skilful practitioners, and to him the public is indebted for much that is valuable in the healing of their diseases. Newburyport has the honor of being the birthplace of this amiable and ever-to-be-remembered Christian gentleman.

In the latter part of August, 1827, I took the degree of M. D. at Harvard, having read a thesis upon the 'Indirect Treatment of Surgical Diseases.'

On the 27th or 28th of this same month, between nine and ten o'clock in the evening, there appeared in the heavens a luminous bow, about five degrees in width and extending across the celestial vault from east to west. This was the first auroral arch I had ever heard of, read of, or seen. At that time, no one knew what to make of it. The frequent appearance of such arches since, either alone or accompanied by auroral streams, has called much attention to such phenomena on the part of many scientific writers."

These arches were ever afterwards objects of special interest to Dr. Perkins, and his observations upon them, as published April 9, 1863, have been regarded as of great value.

On the 30th of Oct., 1828, he was marrried to Harriet Davenport, daughter of John Davenport of Newburyport. Their only child is Henry Russell Perkins, b. April 2,

1838, who early chose the career of business rather than the profession of his father. Dr. Perkins always spoke of his domestic relations in terms of the strongest gratitude and affection.

"On the 3d of Sept., 1827, I took an office and put out my sign as a physician. On the same day I had a professional call from one of my acquaintances. And here I may be permitted to say that one of the most gratifying experiences of a medical man is the continuance of the kind and friendly feelings of his early patrons, especially in this day of change. There is, or there should be, an attachment between physician and patient. We become attached to the beast which carries us safely by night and by day over the dreary, perhaps dangerous, road, and we should speak well of the bridge that has borne us safely over the deep and rapid stream, and why should we not become attached to the watchful physician, who, like a guide travelling over the dangerous crags and precipices of the mountains, conducts safely, and often at the risk of his own reputation and life, it may be, those who have intrusted themselves to his care and skill?

In the year 1828, I think, the dysentery appeared in Newburyport in an epidemic form, and, young as the writer was, he was invited to meet Dr. Bradstreet in consultation in such a case. The Doctor was tardy in his appointment, and did not arrive at the patient's house until after the lapse of an hour or more; coming in at the door, clad in his brown camlet cloak saturated with the rain, he apologized for the delay; 'he had been to the quarantine grounds' to visit a vessel from an unhealthy port. This was among the last professional visits Dr. B. ever made. Whether he took disease on board the vessel or not, he soon was taken down with a severe form of fever, and although he had the benefit of the professional skill and

sound judgment of Drs. Noyes and Spofford, he shortly died with symptoms resembling those of yellow fever. His second daughter died within a fortnight after, apparently with the same disease. The sick men, who had been brought to a boarding-house in town, recovered.

Dr. Oliver Prescott, the oldest practising physician in Newburyport at the time, died within a month of my entrance into the profession of medicine. Dr. Francis Vergne, a distinguished physician in his day, had relinquished practice, and Dr. Nathan Noyes was crippled from a partial paralysis of his lower extremities, so that the medical practice in town fell chiefly into the hands of Drs. Noyes, Spofford, Johnson and Wyman.

The latter gentleman, the nearest to the writer in age, was well read in his profession, especially in surgery and diseases of the eye, and, had specialties been known in his day, he would doubtless have gained in a large city a great reputation and fortune by his skill. The writer enjoyed his uninterrupted friendship and many kind offices in his early and later years.

The decease of Dr. Bradstreet threw a large amount of general practice into the hands of Dr. Spofford; of accouching into the hands of Dr. Johnson; and of surgery into the hands of Dr. Wyman. Several young physicians flocked to the town, among whom we may name Dr. Huntington, who afterwards removed to Lowell and became a distinguished physician as well as a mayor of the city, and before his death was honored with the highest gift the Massachusetts Medical Society had to bestow—its presidency.

What was left, after the *lions*' parts were taken out, fell into the hands of the younger physicians, Drs. Cross, F. V. Noyes and the just fledging Thompsonians and homœopaths and the writer. The hill before us was high and

steep, and, besides, some obstacles were placed in the path. The young physician was not allowed, by the rules of the association he was invited to join, to take the place of an elder until he had recommended and advised the payment of his predecessor's bill; and if he tarried longer than four hours at a case of accouching, which he might be obliged to do at the outset of his business, he was to charge one dollar an hour, for every hour thus spent, in addition to the prescribed fee. The elders knew how to make flying visits, a trick not as yet found out by the juniors. In general, however, the intercourse between young and old was pleasant and advantageous, especially to the former; and at the termination of three years, viz., in 1830, the writer was recommended by them as qualified to become a member of the Mass. Medical Society."

Speaking of the character of the diseases he met with, Dr. Perkins remarks :—

"Besides fever, the most common diseases that I have been called upon to treat in Newburyport have been rheumatism, either acute or chronic, and neuralgia, which sprang up about that time, croup, pneumonia, either by itself or combined with pleurisy, influenza, consumption, dropsies, indigestion, dysentery, diarrhœa, erysipelas, measles, scarlet fever, whooping-cough; and of surgical cases, fractures, dislocations, hernias, diseased breasts, and hands maimed from carelessness in the use of machinery or of fire-arms. Many other diseases and injuries, to be sure, I have met with. Some, however, that I expected to see often, have been quite rare, as gout, and, of late years, delirium tremens, which, at one time, was very common, and wounded arteries of large size, to cases of which I have never been called but in three instances. On the contrary, I have met with those I never expected to see.

In the treatment of diseases, I have never dared to draw my bow at venture, or to neglect nursing the patient; believing that, in the large number of diseases, the better course was to conduct the patient safely through his illness, if possible, than to throw off disease, if it was fastened upon the patient; and that after all, it was much easier to *keep* well than to *get* well. And in a practice of forty-four years as an accoucher, I have been so highly favored as to have lost only two patients, where I had charge of the case from the commencement.

Believing always in a superintending Providence, in the paternal and loving character of our Heavenly Father, and aware of the sudden mishaps that might befall such patients, I do not remember that I ever attended one such case without a silent petition in their behalf and that of the infant about to come into this world of temptation and trial. And whenever I presented my petitions at the Throne of Grace for myself, I have endeavored to remember others also, and especially the sick and the afflicted.

I early learned how to sympathize with those who were afflicted, and having borne the yoke myself, I have endeavored to comfort those who were destined to bear the same. As I have been often called to see others as they descended into the dark valley, I have tried, but oh! how vainly!—to place myself in their situation that I might learn how to follow them. This is an experience we must all meet sooner or later, but it can be met only once. We must learn to die by learning how to live. I have seen many die, but I have seen many more who recovered, and this is one great source of comfort to the physician, that in the ordinary course of nature he is called to see the same individual recover many times, before he is called to see him die once. His duties are, however, of the most responsible character, and no one can be too faith-

ful in preparing himself to meet them, or too sedulous or patient in taking care of the sick."

As showing that Dr. Perkins was something more than a student of medicine, and that he felt the need of broader culture than his profession furnished, we have the following:—

"The early years of my professional life were spent chiefly in attendance upon calls whenever they came, and in reading upon medical subjects. Nearly every opportunity for post-mortem examination was improved, and for some time I kept notes of my treatment of the cases which came under my care. I determined to know something of medicine, if I remained ignorant of everything else. But I soon found that variety in reading was requisite to prevent mental fatigue. An invitation was extended to a young friend to join me in reading French. One or two others being desirous of pursuing the same study, it was proposed to form a club for literary and scientific pursuits. The result of our meeting was the foundation of the Newburyport Lyceum in 1828. This was the *second* institution of the kind in New England.

About the same time, and as an offshoot of the Lyceum, the second Social Library was formed, to furnish popular and useful books for those inclined to read; and this continued in existence for some years, and, after a union with the Athenæum, afforded much instruction to those inclined to learn. Reading that requires no thinking, in other words reading for amusement, being one thing, and study being another, the character of the library, and we fear it is true of all popular libraries, soon became very different from what it was at the outset: the popular literature or the light reading and flimsy material of the day soon crowded its shelves to the exclusion of more solid and substantial works, and shortly

the books of the united libraries were sold and they became extinct.

Acting for many years as the manager, or procurer of lecturers for the Lyceum, an opportunity was providentially offered for becoming acquainted with several gentlemen eminent in their calling who consented to lecture upon the subjects of their collegiate departments in our literary institutions.

My attention was thus directed to some of the sciences collateral to medicine, especially to the means of heating and ventilation. The great eclipse of Feb. 12, 1831, afforded an opportunity of brushing up somewhat in astronomy, which led also to some experiments in the grinding and polishing of glass for optical purposes. Little, if anything, at that time, was to be found in books upon the grinding and polishing of lenses or specula. A visit was made in a thick snow-storm to the venerable Dr. Prince of Salem, for aid, who kindly gave such information as he had, by referring to a young optician, Mr. Widdifield of Boston.

A block of flint glass was then purchased and corresponding ones of crown glass wrought out from the old bull's eyes that were to be found in the doors of old buildings. 'Rees' and other 'Encyclopedias' were ransacked to learn the mode of obtaining the specific gravity and index of refraction of the different kinds of glass, and the mathematical formulæ for the correct curves of the different faces or surfaces of the lenses of an achromatic object glass reduced to practice. This afforded employment and occupation for some of the later hours of the winter evenings. Expecting to have the mechanical part done by another, who shrunk from his promise when he learned the nicety required, our own hands had to do the labor, all of which however was lost, owing to the im-

perfection of the material used. After much rubbing and polishing we at last found that glass of a better quality than the bottom of a tumbler, or the central part of the disk which was attached to the iron handle of the glass blower, was needed for the object glass of a telescope. We were disappointed, but made the best of it, and laid aside the lenses in hopes of owning something better.

The attempt to grind lenses for the telescope was a failure. But I was more successful in grinding and polishing lenses for the microscope, and was led to a practical appreciation of the value of this instrument in the study of the structure of different tissues and fluids of the human frame in health and disease, and to an interest in the work of others in the same pursuit. The microscope is no longer a plaything but a valuable instrument in the hands of the physician as well as in those of the naturalist. As a means of diagnosis, this instrument has become invaluable, and it is now (1866) in as common use in the hospital as the test tube.

The physiological action of ether and chloroform was made by me a subject of inquiry, and their effect in staying circulation, the former in the capillaries, the latter in the larger arteries, and in the heart itself, if too long continued, was ascertained to be, in all probability, the true explanation of the phenomena exhibited in anæsthesia."

Dr. Perkins made experiments upon the frog, of which an account was published. See also Dr. Jackson's book on etherization; also Dr. Channing's book on etherization in midwifery.

"My second sister, Elizabeth Perkins, married Mr. Nathaniel Perkins (nephew of the distinguished mechanician, Jacob Perkins) whose business was that of en-

graving and printing bank-notes. This led me often to visit their establishment and to feel an interest in the protection of their notes, against the counterfeiter, whom there had been some reason to fear. I entered upon some experiments and soon found that the finest and most highly finished engravings could be transferred line for line to a *plate either of steel or of copper*, in such a manner that it was at once ready for the etching tool or the graver. Mr. Francis Peabody of Salem, or rather Mr. Dixon, a person then in his employ, had done the same thing on *stone*, and the only remedy was the printing in different colored destructible ink on the face or back, or on both face and back, of the bill. This was immediately adopted, and proved of great service in an improved form, when it was found that they were in the same danger from the photographic process.

Had it not been for this danger to the banks, much benefit to the art of the engraver would have resulted in the duplication or transfer of the engraved illustrations of foreign books. The mode of softening the ink was soon made use of by the wood engraver, and one-third of his labor, at least, saved by the new process of transferring the plate to be copied immediately upon his whitened block. The process of transferring to steel and copper, especially the white ground, which I made, is known, it is believed, thus far, only to one other individual beside myself, a distinguished bank-note engraver in Philadelphia.

The ink upon the little engraving of the boy making the boat (see the plate, the result of the transfer process) had scarcely dried when my attention was called to the process of copying landscapes by M. Daguerre in 1838.

Under the impression that it would be applicable to copying dissections, and more especially the human face, I set immediatly about having a few small plates made by

Mr. Sargent, a plater at Belleville, and the manufacture of hypo-sulphite of soda, none of which was then to be found in the shops, and the preparation of a camera, iodine box, etc.; and I photographed the brick house then occupied by Mr. Enoch Huse in Middle street, nearly back of the one I occupied in Essex street, about the first of Nov., 1839. A young Frenchman, whose name has escaped from my memory, advertised in Boston to teach the art in twelve lectures, but before he had given his second or third lecture, there was exhibited in Boston a fine daguerreotype of one side of State street, Newburyport, which picture, as fresh and perfect as on the day it first saw the light, is still in my possession. A friend and classmate of Prof. Silliman had written to him that he had succeeded in taking a picture, but not as yet in preserving it, for the want no doubt of the hypo-sulphite.

In taking this picture the lens of crown glass manufactured out of one of the bull's eyes, combined with others, came into use and was of great service.

Improvement after improvement rapidly followed each other in this art. The ambrotype, a most delicate, beautiful and sure process, was soon followed by, and culminated in, the Talbotype, giving the negative upon glass, by means of which positives without number could be rapidly and cheaply executed. One process, known only or chiefly by two French artists, Firth and Fevier, of making positives upon glass which presented the deepest shades and the most delicate lights, was esteemed by all as the *ne plus ultra* of the art; and awakened in me an irresistible desire to learn how it was effected. A small piece of a broken picture was begged of a friend; a portion of the ground, removed from the plate, was carefully scrutinized, analyzed as far as could be, and, by the aid of an article in Humphrey's Journal for 1860,

determined to be *wax*. The knowledge and experience of R. E. Mosely, a very delicate manipulator and photographer, brought out a most beautiful picture, known as the "Sleigh-ride," in which the sleigh, freighted with its lady party, stood amid the snow before the Merrimac House, in State street, with the newly-fallen snow lodged upon limbs and branches of the elms in front of the house. These pictures, the most beautiful, in my estimation, that the photographic art has given to the world, have, thus far, proved too difficult and are too expensive to be in great demand; and inferior but cheaper pictures only are generally known. In truth, we have seen many persons, lovers of art, in Boston even, who had never seen a picture upon glass.

An artist in Philadelphia, whose name has now escaped me, had previously made beautiful pictures of the Suspension Bridge at Niagara and *taken views* in the same material at the White Mountains, but he is supposed, from examination of his plates, to have used collodion in place of the wax. These pictures, the perfection of the art, easily to be made, as soon as the dry process, now believed to have been satisfactorily acquired, is accomplished, still remain for some enterprising artist to bring out, when they will take the place of all others. We think we now have such an artist in Newburyport, Mr. Carl Meinerth.

Although I failed to manufacture a telescope for myself, I eventually procured one, and was prepared to examine Donati's comet at its appearance in 1858, with an instrument of five inches aperture and seven feet focus made by Mr. Alvan Clark of Cambridgeport, the first telescope-maker in the world.

The envelopes of this comet, but more particularly those of the comet of 1861, were carefully observed, and from

data furnished by Mr. Bond of the Observatory at Cambridge, of the time of successive rise of those of Donati's comet, the suggestion thrown out by Prof. Pierce of Harvard was examined and fully concurred in, viz:—that they rose on the principle of the summer cloud. By means of a small home-made polariscope, I repeated Arago's experiment upon the light of this comet and, as was the case with him, found the light of the nucleus in part polarized, showing it to be, in part at least, reflected light." (See his Manuscript.)

"The occurrence of so many comets between the years 1827 and 1858, as also of auroras, columnæ and arches, prompted the inquisitive mind to compare the two together, and to mark their analogies and discrepancies. (See the hypothetical explanations of the tails of comets in my scrap-book.)

In December, 1839, a succession of very severe and disastrous storms occurred at about weekly intervals along the Atlantic coast, which called my attention to the subject of meteorology, and for a number of years, about the time of the publication of Mr. Espy's work on the 'Philosophy of Storms,' or shortly after, to a meteorological record, and to the study of meteorological phenomena. As the result of this study, I learned that a sudden rise rather than fall of the mercury indicated the approach of a storm, especially if the mercurial column had been, for a few days prior to the sudden rise, stationary; that the fall came on gradually as the vapors, visible as haze, came to the zenith from the S. W. or W.; that it was lowest in the lull, and that the gradual rise afterwards indicated a return of fair weather. I thought I could perceive an interval of about seven days in very many successive storms—great atmospheric waves, as it were, so that the occurrence of a severe storm on any day

of the week led me to expect another on or near the same day the week following; that many storms are true cyclones moving along the coast from the S. W. to the N. E. or E. as Mr. Redfield taught, but that cumuli clouds are more in accordance with Mr. Espy's theory. (See paper on this subject printed in the 'Proceedings of the Essex Institute' for 1865.)

While an undergraduate at Harvard, I became acquainted with Robert Treat Paine, the son of the poet of that name, who first showed me Venus by a telescope he had made while a junior in college, and to him, under Providence, I am indebted for a position which brought me into the company of some of the first men of the day, as members of the visiting committee of the Observatory at Cambridge, viz., Hon. Wm. Mitchell, Hon. Josiah Quincy, the distinguished and learned author Jared Sparks, Hon. Edward Everett, J. Ingersoll Bowditch, Esq., and the above-named astronomer Mr. Paine. I acknowledge I had no claims to this or to some other distinguished honors that have been conferred on me, but I felt pleased to be placed by a kind Providence in situations where I could sympathize with my associates, from whom I might learn much. This position gave me opportunity of knowing somewhat of the discoveries made at the Observatory and put their annals into my hands, and I had the pleasure, at Newburyport, of directing by telegraph the great equatorial upon Blinkerfue's comet before it had been publicly announced as visible in this country.

In 1840 or 1841, a box containing some old bones was brought from California in a brig belonging to Capt. Cushing, which was kindly turned over to me by Capt. J. Couch, at that time one of the first ship-masters, who visited that region in a vessel from this place, and long

before the discovery of gold there. These fragments of old bones I cemented together and arranged in their proper places in the skeletons of several extinct animals. This was my first attempt at bringing what little knowledge of comparative anatomy I had into use. Several papers from my inexperienced pen appeared in the 'Proceedings of the Boston Society of Natural History' and in 'Silliman's Journal.' To these old bones, and more especially to the kindness of one of my excellent tutors in college, Mr. George B. Emerson, I soon found myself indebted for membership in the American Academy of Arts and Sciences, and for the use of its valuable scientific library.

I had been a member for some years (not very active to be sure) of the Boston Society of Natural History, and also of the Society for Mutual Medical Improvement. The meetings of these societies, on account of professional engagements, I have been seldom able to attend; neither have I found time to read many of their books. My reading has been confined to such books as I could afford to own. Many very valuable works have been very kindly presented to me either by their authors or some of their families, whose kindness I appreciate and gratefully acknowledge. Among these I would name Dr. Bowditch's appendix to La Place's great work, the 'Mécanique Céleste,' from his son, my esteemed friend, Dr. Henry I. Bowditch of Boston. By means of this book, I went through with an approximative calculation of the elements of the comet of 1861, being kindly assisted in understanding any difficult part by two worthy young friends, whom Providence sent to me at just the right time, Charles Tuttle, Esq., formerly of the Observatory at Cambridge, and Mr. George Searle, now (1866) assistant observer at the same place. Liable to almost hourly in-

terruptions from professional calls until after the hours of the day and the early hours of the evening had passed, it seemed at times as though a limit had been set to my attempted acquirements in this direction, and that I must be content to stop where I was, more especially as my eyes had got to be too old to use mathematical tables by gaslight. One book, however, remained, into which I did desire to look and try to understand, for—I had almost said—the inspired thought it contained. This was Newton's 'Principia,' portions of which I had studied in 'Enfield's Philosophy' in my junior year in college. Happening in at Little and Brown's bookstore in June, 1865, my eye rested upon the very book I needed for this purpose, viz., the first three lectures of the Principia by Frost. Newton had said in his introduction to the third book of his Principia 'that if one carefully reads the definitions, the laws of motion and the first three sections of the first book, he may pass on to the third which treats of the phenomena or appearances of the heavenly bodies, their motions, the disturbance of their orbits, etc., etc.' The object of this book was to help the tyro to understand these first three sections.

Providence had again opened the door to the apartment into which I desired to look. The leisure moments of that year I spent in part in the study of this volume. I did not undertake to read it in course, but studied only such parts as were more immediately applicable to the orbits and motions of the planetary bodies. It enabled me satisfactorily to read a very valuable compend of astronomy by Rev. Robert Main, first assistant at the Royal Observatory, Greenwich.

It may perhaps be thought by some that such studies as the above can be of very little service toward helping a physician to cure disease, or to prescribe skilfully for

his patient. But I believe it will be acknowledged by every professional man, no matter how industrious he may be in his professional reading and practice, that some by-play is needed to keep his mind bright, even for professional duties, and his views from becoming contracted from too continued confinement to one thing. (See Dr. J. Bigelow on the limits of science.)

For nearly forty years the main employments and enjoyments of my life have been of the kinds enumerated in the preceding pages. I have never engaged in politics or taken any active part in any political party. In the troubles that have arisen between the North and the South, I have regarded both as more or less to blame; the North, a part at least, as being too earnest to enforce their peculiar views upon their brethren at the South, and the latter, as having an improper estimate of their own character and standing, and of that of the Northern and the Northwestern States. Notwithstanding all these differences, craven must be that spirit that was willing to see the constitution and the noble structure, reared and cemented by the toil and blood of his fathers, trampled in the dust by traitorous men."

The views of Dr. Perkins on this point are more fully given in an address upon "The Physician and Surgeon in time of War."

"The present generation in America have lived in a wonderful age, and have seen what 'prophets and kings,' it might be said, 'have desired to see but have died without the sight.'

They have lived to see time and space on the land and on the sea almost annihilated by steam; to see the heavenly bodies, the landscape and the features of the human countenance transcribe themselves upon the sensitive tablet; to see their messages carried across continents and

oceans by the swift-winged lightning; to see the celestial bodies tell the story of their own physical structure and condition; to see fleets and navies worthless things; to see the earth reveal her hidden secrets of the ages long since buried in oblivion; to see the institution of slavery crumble to the dust and every man of every color stand up a freeman; to see kingdoms and empires tottering to their base, and their own beloved country saved from ruin only by Divine interpositions and a kind overruling Providence. To see what else? To see, in the future, the Omniscient One only knows what. God grant we may be prepared for the sight.

For one thing we are permitted to ask,—that the happy day foretold and promised in the Scriptures may soon come, when peace and the peaceful principles of the religion of Christ shall extend and cover the earth as the waters cover the sea; when all shall know and serve him from the least even to the greatest, and when he, whose right it is, shall reign King of Nations as he now reigns King of Saints, and his kingdom come and his will be done on earth and in our hearts as it is in heaven.

With the exception of about two months while in the Legislature, I have never laid aside my professional character or taken any recreation that would lead me away from home, save a visit for four days to the White Hills in 1858, and a visit to the hospitals for the sick and wounded in Washington in 1861."

An account of this last visit was given in the Newburyport Herald soon after his return.

"During the larger part of my professional life I have attended to all calls, no matter by whom made or what was the case. Having of late years suffered somewhat with lumbago, I gradually relinquished my night business and such as required prolonged attendance. I have en-

deavored to attend upon the poor as faithfully as upon the rich, and I do not remember ever to have taken a dollar from a sick or wounded soldier or to have troubled any one who could not well afford to pay the fee.

I did not enter upon my profession expecting to grow rich thereby. I have seen dark days when, if there was sickness abroad, in my own circle there were but few calls upon a physician. At such times the words of the Psalmist, 'Trust in the Lord and do good and verily thou shalt be fed,' comforted me and gave me courage. From the day that I commenced business to the present, my purse—thank Heaven!—has always enabled me to gratify every reasonable want, although in the early years of my life I was not able to be as generous as I desired. But if of silver and gold I had little, of such as I had I was willing to divide with those who needed. I have endeavored to follow Him who 'went about doing good,' but, I feel, at a great distance.

In visiting my patients, I have, until I was sixty-two years of age, gone on foot, except when they resided too far out of town. If memory serves, I have thus made as many as thirty visits in a day and had time enough to eat, drink and sleep. I attribute a large share of the health I have enjoyed to this good habit and regular daily exercise. I have lost by sickness only about thirty days; having been once confined to the house by erysipelas, once or twice with influenza and once with dysentery.

In Oct., 1869, I had dysentery which confined me to my house about a month; this time was not lost as it gave me an opportunity to re-read Flint's work on the respiratory organs, and to examine more carefully 'the earliest manifestations of organic crystallization,' as Owen calls the *Eozoon Canadense*, which I had, in connection with Mr. Bicknell of Salem, discovered the August be-

fore in the serpentine of our Devil's Den, and which has since then been found also at Chelmsford, a fact which at once settles the character and age of the rocks in our neighborhood, placing them among the lower Laurentian, and proving them to have been originally deposited in the form of mud at the bottom of the sea and since then to have undergone metamorphic change and crystallization. It is very interesting thus to trace the operations of infinite wisdom and power on the floor of the ocean. 'Thy way, O God! is in the sea, and thy path in the great waters, and thy footsteps are not known.'

Mr. Huxley has, within a short period, found similar instances of organic protoplasm at the bottom of many warm seas, showing that through all time organic creations have taken place. The material universe is full of interest from whatever standpoint it is examined, but we should be careful not to get lost amid *material things*, remembering always that above matter is mind, and above mind are holiness, goodness and truth.

The sick headache, until I was past fifty years of age, was the greatest annoyance in my way. From this, at times, I suffered severely, but it is very rarely that I am now troubled with any difficulty looking toward the brain.

I have been a temperate man through life, having no desire for any stimulant or sedative except a little tobacco, which I have used moderately more or less since a lad in college, it having been prescribed for me at that time by a classmate for my headaches, but which I must say never did me any good, neither can I say much harm, to my knowledge, except perhaps to disturb that steadiness of hand which the surgeon always needs, and for this reason I have often regretted that I had ever put it into my mouth. In 1867 I omitted its use and got rid of an irregularity of the circulation which formerly troubled me.

My food has been in great measure derived from the vegetable kingdom, although I have not been strictly a vegetarian, using a *little* meat at all times when I felt like it; what some would have regarded as but a mouthful has, with vegetables, answered my purpose for a meal.

In the fall of 1870 my attention was providentially called to the subject of 'Germs of Disease' by Dr. L. Beal's work upon this subject. Shortly after, namely, in Nov., Dr. Ernest Hallier's work on the 'Plant Organisms found in Measles, Sheep-pox and Kine-pox' was put into my hand by a German friend, Mr. Carl Meinerth. I could not read a word of German, but my interest in the subject induced me to commence its perusal, which in the course of the winter of 1870 I accomplished, and of which I have now a manuscript translation, corrected by another German friend, Mr. Castelhun.

To test for myself the truth of Prof. Hallier's theory, I had a microscope of excellent optical qualities got up for my especial use by Mr. Edwin Bicknell of Cambridge; and in April or May commenced cultures after Hallier's method. Mr. C. Castelhun was familiar with the use of the microscope, and I engaged him to make a report of what he met with in my cultures.

A belief in substantial organisms as the contagion of what are called Zymotic diseases is entertained by many German and other physicians, and it is probably in this direction, viz., of a sanitary character, that the next progressive step in my profession is to be taken. If the causes of disease can be discovered, its prevention may in time follow, and then truly will have come the medical millennium.

Under date of Oct. 31, 1871, Dr. Shattuck, Chairman of the Committee on Publications of the Mass. Medical Society, informed me that the Society would print and

publish my translation of Prof. Hallier's work, as soon as the manuscript could be prepared. I was to add an appendix of my own confirmative cultures. Dec. 6th, I wrote to Dr. Cotting, on the same committee, informing him that the manuscript was ready. On March 21, 1872, I returned the last corrected proof sheets of the work, and am now awaiting the arrival from Germany of the plates, for the use of which I have Prof. Hallier's consent, as well as that of his publisher."

The plates arrived in season for the translation to appear in the "Publications of Massachusetts Medical Society" issued in 1871.

As a brief synopsis of a portion of his work, Dr. Perkins gave the following :—

"I had the pleasure in 1840 or 41 of figuring and describing the tooth and the right humerus of *Mylodon Harlani* (Syn. *Orycterotherium Oregonense*) in 'Silliman's Journal,' the first specimens of the skeleton of that animal found west of the Rocky Mountains. Also the tooth, portion of the tusk, and the atlas or first bone of the neck of the *Elephas primigenius*, and the astragalus of the fossil ox. All which bones are referred to in Leidy's work on 'Extinct Mammalian Fauna of Dakota and Nebraska,' in the synopsis at the latter part of the volume ; also in his book on 'Fossil Sloths.'

Notice of my observations on the effect of ether and chloroform may be found in Dr. Channing's work on 'Etherization in Midwifery,' and in Dr. C. T. Jackson's volume on 'Ether and Chloroform.'

Some of my observations on the aurora may be found alluded to by Mr. Marsh of Philadelphia in the 'Proceedings of the American Philosophical Society,' as well as in the communications made by him in the 'Journal of the Franklin Institute.'

In the 'Proceedings of the Essex Institute,' Vol. iv, No. 6, 1865, may be found an abstract of a paper read by me on the 'Formation of the Thunder-cloud.' In the 'American Naturalist' for July, 1870, may be found some observations by me on the 'Action of Light upon the Circulation of Plants,' and in different numbers of the Newburyport Herald for 1858, I think, upon the formation and nature of the envelopes and tails of comets, their polarization of light, etc., etc. Upon most of which subjects I have had the pleasure of finding my views to correspond with those of other observers.

In the discovery of *Eozoon Canadense* in the serpentine of our Devil's Den, I had some share, having first noticed the resemblance of the apparent organic crystallization there seen to that found at Ottawa, Canada, which led to the detection of the characteristic tubules by the microscope, by Mr. Bicknell of Salem, which facts show our rocks to belong to the Laurentian series and to have been deposited amid water rather than to have been of Plutonic origin.

Also the bones of *Mylodon*, as having been found in Oregon and described by myself, are alluded to and credited in Murray's 'Geographical Distribution of Mammals,' published in London. My experiments and observations upon the 'Circulation in *Chelidonium majus*' and the 'Action of Light' were reprinted in the 'Journal of Microscopy,' published in London."

Dr. Perkins was a member of the following literary societies:—

Phi Beta Kappa of Harvard University; Boston Med. Society for Mutual Improvement; Boston Society of Natural History; Portland Society of Natural History; Essex Institute; American Academy of Arts and Sciences; Massachusetts Medical Society, of which he was

chosen President at the Annual Meeting of the Councillors in May, 1866.

He was identified with the educational interests of Newburyport, being a member of the Board of Trustees of the Putnam Free School. Elected in 1851, he served for nine years as Treasurer, and in 1869 he was chosen President of that board, which office he held at the time of his death.

He was elected a Director of the Public Library holding that office in 1858 and 1859. He was again elected in 1866, and held the office at the time of his death.

Though no aspirant for political honors, he represented the town of Newburyport in the Legislature in the session of 1841–42. He was a member of the Common Council of the city of Newburyport in 1857, 1858 and 1859, and during the last two years was President of that body.

He thus concludes :—

"I desire and humbly pray that I may 'deal justly, love mercy and walk humbly before God' all the days of my life; that I may manifest my gratitude toward my Heavenly Father by acts of obedience and of love; that I may discharge all my duties to myself, my fellow men and my Maker faithfully and in such a manner that I may meet with his approval and his blessing; that I may ever love the truth, speak the truth and obey the truth: and that at the last I may be so happy as to be found with those I have loved and do love, washed in the blood and clad in the righteousness of our Redeemer and Saviour, Jesus Christ. And let God the Father, God the Son and God the Holy Ghost, be praised now and forevermore."

Such was the life and such were the labors of Dr. Perkins as sketched by himself. The rare simplicity and directness of his autobiography and the lessons of it are so clear that very little is left for other hands to add.

It was a most industrious life. From the beginning to the end of it there was the same unvarying devotion to some useful end. We think he erred in allowing himself too little recreation. But it was a maxim with him that recreation could be obtained as much from a change of labor as from an entire cessation from it. Most persons would have felt that the calls of his professional life were sufficient to engross all his attention. He judged differently. Without neglecting these, he seized upon the little interstices of time, and by using them diligently he laid up his large stores of varied information. While he had an eager thirst for knowledge for its own sake, he was remarkably free from any desire for display. Ruskin has well said "it is ill for science when men desire to talk rather than to know."

His mind seized with avidity all hints and suggestions, whether they came from nature or from the minds of his fellow men. The old bones brought home by a Newburyport ship-master, set him at work in comparative anatomy. The news of the approach of a comet led him to the study of Newton's "Principia," and to rambling among the stars. A tiny plant would beckon him to the fields, the groves and the river-side.

It was a pure life. Every one who came in contact with him, even for a single half hour, was impressed with the guilelessness of his heart and soul. No word of his but might have been spoken anywhere and to any person. The earliest schoolmate or the latest friend of his recognized him as "the pure in heart."

It was a life of untarnished integrity. Starting in his profession with the purpose that he would depend entirely upon himself for the support of his family, he was compelled for many years to practise the most careful frugality. It was a hard and long struggle for a young man to

gain a professional standing and a remunerative employment in such a community as ours.

But in all his transactions he was truthful and honest, and with the Apostle he could say at the close of a long life, "I have defrauded no man." Nor was this integrity of a hard, cold, calculating nature. He would go as readily at the call of the poor from whom he could expect no return, as at the call of the rich, who could reward him most bountifully. And in his account book, he left special directions to those who might have the charge of his affairs, that no poor person should be put to hardship by the payment of his bills.

It was a life without sham or deception. Had our friend been less transparent and outspoken he might have had a larger measure of what the world calls success. But his whole nature revolted from all imposition, trickery or charlatanism. He never pretended to do impossibilities, nor would he excite hopes when he saw there was no foundation for them. It was not often that his usually quiet and genial disposition was disturbed; but nothing would ruffle it sooner than the discovery of imposture or deceit. He was severe upon such exhibitions in his own profession, but not less so in business or in society.

It was a thoroughly religious life. He united with the church in Harris Street, May 1, 1834 and was dismissed from that communion, September 5, 1845. He joined the Whitefield Church Jan. 1, 1850, being one of the twenty original members of that church.

His piety was simple and unostentatious. While he made no parade of it, he never flinched from avowing his faith in our Lord Jesus Christ as the only Saviour of lost men. He gave to the matters of religion his most earnest and most profound consideration, and was a Christian be-

liever not less from the convictions of his reason, than from the associations and training of his early life. He was a man of prayer. The sweet incense of it rose from his home, his office and from the bedside of his patient. Although a man of science he was a firm believer in the efficacy of prayer. Dr. Perkins believed in it, because he had proved its efficacy in his own experience. His faith did not rest, however, on any test to which he had put it, but on his conviction of the reality of God's spiritual kingdom, the laws of which he felt that he but imperfectly understood. As a religious man his ground of trust was in our Lord and Saviour Jesus Christ.

No man was more deeply sensible of his faults than our friend. To one who spoke to him as though he had few, if any, defects of character, he said, "You do not know me." It was this deep sense of faultiness which led him so often to the mercy-seat, and which filled all his petitions to heaven with humble confessions. He was a believer in the divine authority of the Scriptures. The revelations of science never for a moment shook his firm belief in the Bible, as the revelation of God. He was no blind slave of the letter. He never put the Scriptures and science in antagonism. If for a time they seemed to be so, he would say, "This is only apparent. The Author of the two books is the same, and they will be found harmonious by-and-by." He was accustomed to speak of religion as historically old, and science as historically young, and when annoyed or perplexed by the hasty deductions of the friends of either, he declined to express an opinion, saying, "I want more time." His religious hope took a peculiar inspiration and grandeur from his firm faith in the immortality of the soul.

There was singular beauty and force of meaning in the incident related by a friend.

Said a visitor to him at parting, "I am twenty odd years younger than you; if I should survive you, there is one thing I wish you would leave me."

"What is that?" said the Doctor, smiling.

"Your mind, Doctor."

"Oh! that is little enough, — but you know, my dear friend, it is the only thing I can take with me."

In Dr. Perkins we see how consistent and beautiful is the life of a man of science and a sincere Christian. There is something in the study of the works of God calculated to make men humble and devout. It has sometimes seemed to us that literature and science had a different effect upon students, that while one led a man to value and often overrate his own ideas, the other kept him simple and humble in the presence of the great facts of nature.

We have certainly in the life of our friend, a beautiful example of a critical scholar, yet a devout Christian believer, a man of science and yet a man of God, a friend of progress, and yet holding fast to all that was good and true,—a physician by profession, but a friend and helper by choice — truthful, genial, pure, honest, he has finished his course on earth, and gone to join the society of the spirits of just men made perfect in glory.

On Saturday morning, February 1, 1873, our friend was taken ill. No special danger was apprehended during the day, though some anxiety was felt. About 7 o'clock that evening, while physicians were in the house and friends were near him, he suddenly closed his eyes upon this world and fell asleep in Jesus.