

ROBERT HARE, M.D.

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From the Philadelphia Ledger, May 17, 1858.

DEATH OF PROF. ROBERT HARE.

Dr. Robert Hare, extensively known as a celebrated Chemist and Physician, died at his residence, in this city, on Saturday last, at the advanced age of 77 years. Dr. Hare, in 1801, made the discovery of the "Compound or Oxyhydrogen Blowpipe," the operations of which were communicated to the Chemical Section of the British Association for the Advancement of Science. The Doctor received from the American Academy of Arts and Sciences the Rumford Medal for the instrument. He introduced, subsequently, a modification of the compound blowpipe, which was fed by alcohol, and also invented a new galvanic instrument, known as Hare's Calorimotor, an account of which was published in Silliman's Journal in 1819. Among his other inventions mentioned in the same Journal, we might mention the Litrameter, an instrument for ascertaining the specific gravities of fluids; the Hydrostatic Blowpipe, an apparatus for freezing water by the aid of sulphuric acid; Improved Barometer Gage Eudiometer; Single Gold Leaf Electroscope, and numerous other improvements in chemical apparatus to facilitate the works of the laboratory.

To the *Materia Medica*, Dr. Hare contributed by his process for demarcotizing laudanum, and to *Toxicology* by his method of detecting minute quantities of opium in solution. In 1818, Dr. Hare was elected to the chair of Chemistry in the Medical Department of the University of Pennsylvania, which post he retained until 1847, when he resigned. Dr. Hare contributed papers on various subjects to the transactions of the American Philosophical Society. One was on the Tornado or Water Spout, with a detailed description of the remarkable storm at New Brunswick a few years ago. Dr. Hare, a few years since, became identified with believers in spiritualism, and took quite an active part in the promulgation of that doctrine. The Doctor has left behind him a widow and three children.

From the North American and United States Gazette.

DOCTOR ROBERT HARE.

In the death of Dr. Robert Hare, which took place on Saturday morning, science has to mourn the loss of one of her favourite sons. Our grief at this announcement should be softened by the reflection that he had passed the time assigned by the Psalmist, for he was seventy-seven years of age at the date of his decease.

Doctor Hare, ever since the beginning of the present century, has been known, and during many years of this period, celebrated, for the zealous and successful prosecution of chemistry, and especially of electro-galvanism. His first discovery, the "Compound or Oxyhydrogen Blowpipe," was made in 1801, when he had not attained the age of manhood. Fed by oxygen and hydrogen gases, this instrument produced such an intense degree of heat, as to melt the alkalies and the most refractory minerals and gems. By its aid, lime, barytes, strontia and magnesia were decomposed, and their metallic bases evolved. He

succeeded, many years subsequently, in reducing, by this blow-pipe, twenty-five ounces of platina to a fluid state—a fact which he communicated, during a visit to England, to the Chemical Section of the British Association for the Advancement of Science. Since then he received from the American Academy of Arts and Sciences the Rumford Medal, for this instrument.

In after years he introduced a modification of the compound blow-pipe, which was fed by alcohol. He invented a new galvanic instrument known as Hare's Calorimotor, of which, together with a new theory of galvanism, he gave an account in Silliman's Journal, in 1819. Two years later, we find him contributing a memoir, in the same journal, on some new modifications of galvanic apparatus, together with the outlines of a new theory of galvanism. By this apparatus, which he called the Galvanic Detlagrator, charcoal was ignited, and produced a light equal to the brilliancy of the sun, and too vivid to be borne by eyes of common strength. The combustion of the metals produced by it was peculiarly brilliant. Platina, a quarter of an inch in diameter, was instantly fused. The galvanic detlagrator was declared, by Professor Silliman, of Yale College, to be "the finest present made to this department of knowledge since the discovery of the pile of Volta, and of the trough of Cruikshanks." About this time Dr. Hare gave a description of an improved gasometer, and of a new eudiometer, invented by him. Among his other inventions, also detailed in Silliman's Journal, we may mention the Litrameter, an instrument for ascertaining the specific gravities of fluids; also the hydrostatic blow-pipe, a modification of impelling power beyond what could possibly be obtained by the breath. He described, also, an apparatus for freezing water by the aid of sulphuric acid. Among his latest inventions was the "Improved Barometer Gage Eudiometer." Numerous were the improvements and modifications in chemical apparatus introduced by him, to facilitate the works of the laboratory. His "Single Gold Leaf Electroscope," doubtless suggested by Bennet's instrument with two gold leaves, is repre-

sented, by Sir W. Snow Harris, to manifest an astonishing sensitiveness to the smallest electrical force.

To the *Materia Medica*, Dr. Hare contributed by his process for denarcotising laudatum, and to *Toxicology*, by his method of detecting minute quantities of opium in solution.

Doctor Hare contributed papers on various subjects to the *Transactions of the American Philosophical Society*. One was on the Tornado, or Water Spout, with a detailed description of the remarkable storm at New Brunswick, a few years ago. He considered the atmospherical disturbances, in these cases, to be owing to an electrified current of air. His views were at variance with those of Colonel Redfield, of New York, with whom he more than once debated the subject.

The eminence of Dr. Hare in his favorite branch caused him to be elected, in 1818, to the chair of Chemistry in the Medical Department of the University of Pennsylvania, which had been vacated by the transfer of Dr. John Redman Coxe to the chair of *Materia Medica*. Dr. H. remained this post until his resignation of it in 1847, or during a period of nearly thirty years. There have been many more attractive and brilliant lecturers—no one more honestly intent on instructing his class; and, certainly, no one, on either side of the Atlantic, performed his experiments on such a large scale, and with what we might almost call such a grand apparatus—more especially when he wished to exhibit the wonders of electricity and galvanism. It must have seemed to his auditors that when he sometimes paused in the very midst of an explanation, it was from no want of clear conception of his subject, nor of words; but because at the moment, a new thought would present itself, and he straightway allowed himself to imagine the new combinations and the results that must follow. Beyond the contributions to science, in the vehicles already mentioned, Dr. Hare wrote but little. He was not the author of any systematic work, for his “*Compendium of Chemistry*” was intended for his pupils, and as a text-book to his lectures. In its pages, so copious illustrated by drawings

of different chemical apparatus and instruments used in his lectures it showed what he did, if the letter press fell short of telling what he said.

Doctor Hare was fond of discussing questions of political economy, and he occasionally issued brochures on those which most interested him at the moment. He had warm political predilections, and was never backward in expressing them. In early life he was a federalist, and in later times a whig. His frankness on such occasions, as on others which came up in the course of conversation, might seem to a stranger to be rather *brusque*; but those who knew him could readily acquit him of all intention to wound the feelings or to give pain to any fellow being. He was, indeed a man without guile, and, withal, given to fits of abstraction, so as at times to seem to be wanting in the amenities of life, which in his heart he felt inclined to cherish in society, as he did uniformly in his own family. He was not only placable but magnanimous; and if he was sometimes chafed with the attempts made to deprive him of the merits of certain discoveries, or to underrate his scientific attainments, he seemed to be influenced more by a sense of justice than by considerations of personal vanity.

Here we would fain terminate our brief and imperfect sketch of the labors and character of departed genius; but we have yet to advert to what is everywhere known, and silence respecting which could only pass for an idle affectation of friendship. Our readers know that we allude to the delusion under which Dr. Hare labored during the last few years of his life, by a belief in "spiritualism," as the thing is misnamed, and in his ability to hold intercourse with the other world through an invisible but present medium. Surprise has been very generally felt that so zealous and successful a votary of science should have allowed himself to be mystified in this manner. But, without entering into recondite psychological inquiries, which would be out of place on the present occasion, we think that an explanation may be found in the original constitution of his mind, in

the long and intense strain of his intellectual faculties during the many years in which he was uninterruptedly engaged in the studies of the closet and the experiments of the laboratory; and, finally, in the very nature of his favorite pursuits. He had long been in the habit of dealing with those subtle, diffusive and imponderable substances, or, as they might be called, essences, which give rise to the phenomena of electricity and magnetism, and which penetrate all matter and pervade all space, and which assume such an endless variety of disguises—now amusing us in philosophical toys, now convulsing nature in the storm and the tornado, or causing mountains to vomit forth volcanic fires, and make an entire continent to tremble in the throes of an earthquake. Sent through the human frame, the electric agency imparts new life, and, for a moment, gives movement and expression to the dead.

Doctor Hare, in the vigor of his days, had been accustomed to investigate the causes and nature of these proteiform appearances, to unmask some of their disguises, and to exercise the office of a vigilant observer and careful experimenter, while admitting only the deductions thus obtained. But with advanced age came a wearied and a worn mind, which yielding more and more to habits of abstraction and absence from the outer world, allowed itself to imagine some changes, some disguises, of an *etherial* and even spiritual nature, not differing much from but only going a little beyond those light, diffusive and imponderable agencies with which he might be said to have long held communion. We leave to others the duty of showing that the secrets of the other, the spiritual world, and the revelations of God to man have not been discovered by either genius or learning or science. The knowledge of all this lies in another direction, and is taught by other means, now happily, under the Christian dispensation accessible to all.

Doctor Hare has left behind him a widow and three children—Judge Hare, and his brother, now living in Maryland, and Mrs. Prime, in New York.

From a New York Paper.

DEATH OF DOCTOR ROBERT HARE.

The Philadelphia papers announce the death of Dr. Robert Hare, in that city, on Saturday, at the age of 77. Dr. Hare was a veteran in the ranks of Chemical Science. Many of the most valuable discoveries of the century are due to his research and ability, and no man was held in higher esteem among *savans* on both sides of the Atlantic, until in an unfortunate moment he became a convert to the doctrines of Spiritualism, a delusion which of late years expelled from his mind nearly every other subject. For fifty years the Doctor was regarded as an unimpeachable authority in all matters pertaining to chemical research.

Dr. Hare was a native Pennsylvanian, born in the year 1781. At the age of 20, he entered the Chemical School of the University of Pennsylvania. The opportunities thus offered him he improved. Before the year 1802, when he had been a member of this class a few months only, he contrived the apparatus now universally known as the Oxyhydrogen Blowpipe, an instrument which, by combining oxygen and hydrogen gases, produces an intense heat, sufficiently powerful to fuse the hardest substances, and evolve the metallic bases of lime, barytes, magnesia, &c. For this invention, which was subsequently perfected, he was awarded the Rumford medal of the American Academy of Arts and Sciences. The well known "Drummond light" is a practical application of this discovery; the two gases being thrown on a piece of lime, producing slow combustion and an intense light.

Dr. Hare's next specialty was Galvanism. In 1819, he published in Silliman's Journal an account of a new galvanic instrument of his own invention to which he gave the name of the Colorimoter. Two years later, he promulgated through the same channel, a new theory of Galvanism, accompanied by descriptions of some new modifications of galvanic apparatus.

His new instrument bore the name of the "Galvanic Deflagrator." Its power was sufficient to fuse platinum, and the combustion of charcoal by means of it produced a brilliant light. Soon after, the doctor contrived an improved gasometer, a eudiometer, a litrameter, a hydrostatic blowpipe, an apparatus for freezing water by the use of sulphuric acid, a single gold leaf electroscope, and numerous smaller improvements in chemical instruments, all of which succeeded each other with miraculous rapidity—giving evidence of his vigorous intellect and remarkable genius for invention.

Sundry valuable contributions to the *Materia Medica* are also due to Dr. Hare. In 1818 he was elected to the Chair of Chemistry in the Medical Department of the University of Pennsylvania, as successor to Dr. John Redman Coxe. Dr. Hare retained this post for twenty-nine years, finally resigning it in 1847. During this long period he was celebrated as a lecturer on his favorite topics. His lectures were, in fact, the only series of elaborate announcements of the discoveries which have given him a lasting reputation. Beyond the publication of brief memoirs in scientific journals of the day, he made no set records, and his principal published work is the *Compendium of Chemistry*, a volume originally intended as a hand-book for his pupils.

During the past ten or twelve years, Dr. Hare bestowed much attention upon the subject of meteorology. He conceived a theory of storms, the enunciation of which brought a very large storm about his own ears, from other investigators in the same field. Any one who has attended the meetings of the American Association for the Advancement of Science, at any time within ten years, can hardly fail to recall the memory of fierce conflicts waged between Dr. Hare and his especial and particular opponent, the late Wm. C. Redfield, of this city. Both gentlemen had theories which clashed, and the warfare was frequently violent.

Dr. Hare was an active member of the American Association;

though latterly he had taken but a small part in the scientific discussions. Becoming possessed of the idea that he was a medium of communication for disembodied spirits, he gave up all the later years of his life to the investigation of the so called "spiritual" phenomena.

Conceiving it to be the duty of a scientific body to give heed to these manifestations, in the reality of which he had full faith, the Doctor made repeated attempts to force the subject upon the attention of the American Association. He was finally accorded a hearing, after repeated rebuffs; members recalling his eminent services in former years, and honoring his age. At one of the last Conventions, he produced and explained the uses of an instrument (the last he ever invented), to which he gave the name of the "Spiritoscope." Its purpose was to facilitate intercourse between spirits and mortals; it was an upright disk with a revolving index, pointing, as moved, to different phrases printed on a white surface. Readers may remember that a public lecture was given in this city by the Doctor, two or three years since, on which occasion this apparatus was exhibited. The last delusion into which the broken mind of the venerable gentleman was led, was the belief that, by certain processes, he had succeeded in realizing the dreams of the alchemists, and had turned the baser metals into gold. But a few days ago the announcement of this new vagary was made public. It is closely followed by the tidings of the death of a gentleman, whose later fallacies are more than counterbalanced by the eminent services rendered in his earlier years to American Science.

In person, Dr. Hare was portly, hale and prepossessing. He was above the middle height, possessed a dark, keen eye, was vivacious and agreeable in conversation, and had hosts of personal friends. His political sentiments were of a set character, and he was a hard-working Whig, so long as Whigs were in fashion. He was the author of several political pamphlets. In his habits, the Doctor was extremely temperate and unostenta-

nous. His residence in Philadelphia was plain and retired. He mingled freely in society and was warmly welcomed; was fervent in his friendships, but somewhat bitter in his dislike; was given to controversy, and was noted for his unyielding temper when once rooted in opposition.

From the National Intelligencer.

MEMORY OF THE LATE DR. HARE.

At a meeting of the Board of Regents of the Smithsonian Institution, on Wednesday, May 19th, 1858, the Secretary announced the death of Dr. Robert Hare, of Philadelphia, the first honorary member of the institution, and one of its principal benefactors; whereupon Prof. Bache gave a sketch of the life and scientific researches of the deceased, and offered the following resolutions, which were unanimously adopted:—

Resolved, That the Regents of the Smithsonian Institution have learned with deep regret the decease of one of the earliest and most venerated honorary members of the establishment, Robert Hare, M.D., of Philadelphia, late Professor of Chemistry in the University of Philadelphia.

Resolved, That the activity and power of mind of Dr. Hare, shown through a long and successful career of physical research, the great fertility of invention, the happy adaptations to matters of practical life, and the successful grappling with questions of high theory in physical science, have placed him among the first in his country of the great contributors to knowledge. *Clarum et ~~in~~excadabile^N nomen.*

Resolved, That while we deplore the loss of this great and good man, who has done so much to keep alive the flame of science in our country in past days, we especially mourn the generous patron of our Institution, the sympathizing friend of the youth of some of us, and the warm hearted colleague of our manhood.

Resolved, That we offer to the bereaved family of Dr. Hare our sincere condolence in the loss which they have sustained by his death.

From the City Item, Philadelphia, May 20th.

DOCTOR ROBERT HARE.

Since the death of our distinguished townsmen on the 15th inst., the daily papers have recapitulated the many services which he rendered to the cause of science, and the discoveries that attested the force and originality of his genius. To these details we can add nothing, but would offer our last tribute of respect to the memory of a high minded and public spirited gentleman, who, throughout a long life, was just and honourable in all his dealings, constant in his friendships, and ardent and disinterested in his attachment to his country. Bold and zealous in the pursuit of truth, no personal considerations could suppress the frank avowal of the convictions of his mind. From some which he entertained during the latter period of his life, it is needless to say that we dissent; but to the entire good faith and pure intentions with which he advocated them, we bear our willing testimony.

From The Press, May, 1858.

DR. ROBERT HARE.

The announcement of the decease of this distinguished scholar and savan has created no ordinary sensation. There are few men, now living, whose record of devotion to science dates back so far, or is so full of brilliant trophies in the field of scientific discovery, as that of Dr. Robert Hare. In the department of chemistry, his name must rank in history with those of Sir Humphr y Davy, Volta, Priestley, and Berzelius. His po-

sitive additions to scientific knowledge won for him the highest testimonials from European universities, and up to the time of his death he was in familiar correspondence with the foremost men of the age. For thirty years of his life he held the chair of Chemistry in the Medical Department of the University of Pennsylvania, a position in which he acquitted himself with a rare credit.

He was much more of a diligent, pains-taking student of nature, than a copious writer. He was much more pleased to make valuable inventions and improvements in science, than to write learned descriptions of them. His character was marked with singular modesty and diffidence. His manners were gentle, and to a degree childlike. He was remarkable, more particularly during the latter years of his life, for his abstractedness, which was doubtless the natural result of the long strain to which his mental powers had been subjected by scientific labours. Many anecdotes are remembered amongst his wide circle of friends, of curious instances of this abstraction. There have been few men who have figured so prominently as citizens, who have left behind them more pleasant memories. He had not an enemy, and he carries to the grave the warm and kindly remembrance of thousands who knew his rare qualities of head and heart. Society, as well as science, mourns, in his departure from this earthly scene, the loss of a brilliant ornament. He had reached his seventy-seventh year, and we believe nearly the whole of his long and laborious life was passed in our city.

From a New York Paper, May 29, 1858.

DR. ROBERT HARE.

The secular journals bring us the unexpected intelligence that our venerable friend, the great American light of Chemical Science, closed his mortal career at his late residence in Phila-

delphia on Saturday the 15th instant, at the age of 77 years. The speedy occurrence of this event was not anticipated, and the announcement will doubtless surprise his numerous friends in every part of the country. It is true that Doctor Hare had already transcended the ordinary limits of human life, yet he retained his corporeal vigor and mental energy in an unusual degree. When the writer last looked upon his majestic form it was erect and commanding as ever before. He stood with manly firmness under the weight of many years, and walked with a measured but elastic step, never bending beneath the burthen. Not a nerve was unstrung, nor had his physical frame been materially enfeebled by the earnest labors of a long and useful life. In his organic structure and the Roman firmness of his character he was like the mountain oak, while the maturity of his mind was unaccompanied by the ordinary physical infirmities of old age. Our last interview with Dr. Hare dates but a few months back, when he was in the full possession and free exercise of all his faculties. His mind displayed remarkable activity, and when engaged in conversation on the themes which most interested him, the fires of youthful energy flashed from his eye and his whole countenance glowed with the fervor of his illuminated spirit.

Dr. Hare was born in Pennsylvania in the year 1781, but our limited knowledge of his history does not cover the period of his early life. Soon after he entered the Chemical School of the University of Pennsylvania, which occurred in 1801, he distinguished himself and attracted the attention of the scientific world by the invention of the Compound Blowpipe, an instrument for combining oxygen and hydrogen gases in such a manner as to produce an intense heat, capable of fusing the hardest substances. This apparatus the Doctor subsequently improved and perfected, and for this he received the Rumford medal of the American Academy of Arts and Sciences. The hydro-oxygen light, now generally known as the "Drummond light," is a practical application of Dr. Hare's discovery, the gases

being thrown in jets or currents on to a lime-hall, thus producing a light that is only exceeded in intensity by the unclouded solar rays. For many years the Doctor applied himself to the study of his favorite science, and to the construction of several important instruments without which the furniture of the chemist's laboratory would be incomplete. These valuable contributions and aids to science were produced with surprising rapidity, and gave evidence of a remarkable genius for the application of scientific principles to the department of mechanical invention.

These important achievements immediately secured for Dr. Hare a commanding reputation throughout America and Europe, and while he was everywhere cordially esteemed and honored by his personal friends, for his incorruptible integrity, it may be as truly said that few men of his time have been so universally respected by the scientific world. His discoveries in Chemistry combined with his contributions to the *Materia Medica*, secured for him in 1818 the Chair of Chemistry in the Medical Department of the University of Pennsylvania, which he occupied with distinguished honor to himself and the institution during a period of twenty-nine years. In 1847 he resigned his place in the University, but pursued his scientific researches into other fields. He bestowed much time and thought in Meteorological observations, and the annunciation of his theory of storms—before the American Association for the Advancement of Science—led to repeated and very spirited controversies before that body, in which he was chiefly opposed by William C. Redfield, who entertained and defended a different theory.

In private life Dr. Hare was universally respected and esteemed. He was simple, temperate, and regular in his habits, while his manners were dignified without ostentation or unnatural restraint. He was easily approached, and in conversation was accustomed—from long habit as a teacher—to annunciate his views in a positive manner and with a certain air of authority. It required great force of evidence to unsettle his mind on

Hare, sincerely condole with his family upon the loss sustained by them, and desire to express their feelings of respect for the memory of one who has stood either in the relation of colleague or preceptor to each individual at present composing their body.

“That the exalted character and brilliant career of Dr. Hare, whose far spread reputation, both in foreign lands and in his native country, will long survive him, are a just source of gratification and pride to the department of the University with which he was so long connected, and which has been eminently benefited by his labours as an experimental chemist and philosopher.

“That it is the subject of pleasing reflection, that his life, devoted to the calm pursuits of science, and an earnest desire to benefit his fellow beings, has peacefully terminated at a ripe old age, in the cheerful prospect of future happiness.

“And that these resolutions be entered on the minutes of the Faculty, and a copy of them be transmitted to the family of the deceased.”

 B. E. ROGERS,

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