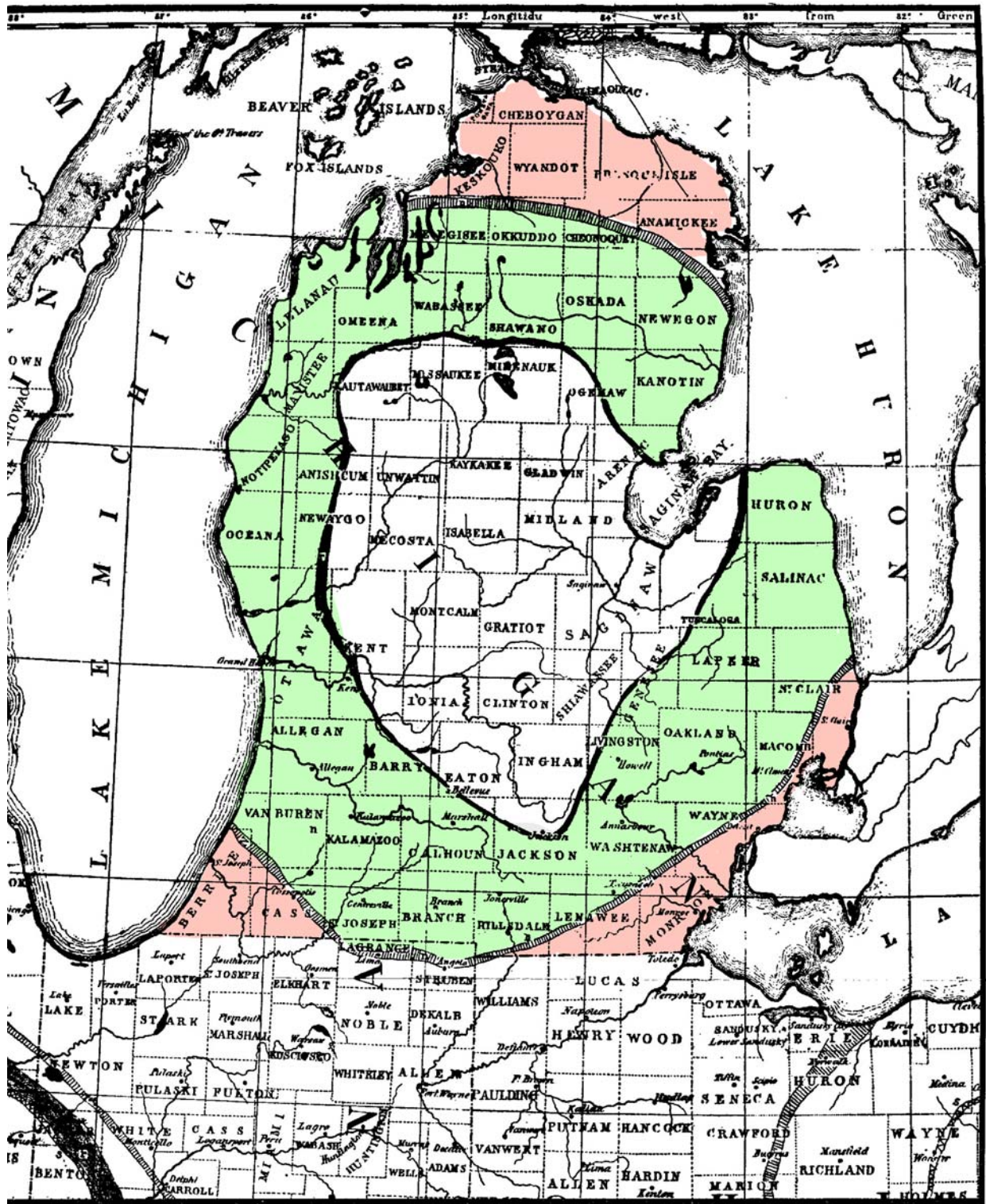




Douglas Houghton  
State Geologist



Part of the **Geologic Map of the Middle and Western States** published in *Natural History of New York, Part IV, Geology* by James Hall 1843, Albany New York. Hall stated, “Dr. Houghton, State Geologist of Michigan, has obligingly furnished me with a geologic map of that state of which I possess a very imperfect knowledge.” The Houghton Manuscript is lost. The map outlines the ‘Coal Measures’ and carboniferous limestone, Portage and Chemung groups. Granted there has been substantial information added since 1843, but the basic pattern still holds true. Amazing this was done with out cars, paved roads, GPS or computers. Truly an amazing accomplishment. Map Martin, Helen M. **An Index Of The Geology Of Michigan**. Lansing, 1956.

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## **DOUGLASS HOUGHTON MICHIGAN'S FIRST STATE GEOLOGIST 1837 - 1845**

by Helen Wallin

Illustrated by James Campbell

**This brilliant young man came to Michigan Territory with education, enthusiasm, and vision. He gave generously of his talents, and eventually his life, to the struggling new State.**

**The author hopes this sketch will introduce Dr. Houghton to a wider circle of friends and admirers, spur the search for lost materials, and hasten the production of a truly definitive biography of this illustrious man.**

The interest in Douglass Houghton continues. Since the first printing of this pamphlet in 1966, new information has come to light. One of the more significant findings concerns the Houghton burial plot in Elmwood Cemetery in Detroit. This situation was revealed largely through the zeal and dedication of Mr. Don H. Clarke of Essexville, Michigan. Another matter of considerable interest involves portraits of Dr. Houghton.

The text of the pamphlet remains virtually the same as the first edition except for a dozen, or so, emendations. Most of the new material, including details on portraits, appears in the Appendix. The attractive new look was achieved through a revised format and the excellence of Jim Campbell's artwork.

Assistance in gathering information was generously contributed by many fine people associated with libraries, historical collections, societies, and agencies - too numerous to list individually. Those few to whom special thanks are due are: Edsel K. Rintala for permission to use his excellent book, Geneva Kebler Wiskemann of the State Historical Commission, Esther Loughin formerly with the State Library, Helen M. Martin formerly with the State Geological Survey, and Robert W. Kelley geologist and editor with the State Geological Survey.

Helen Wallin, Lansing, Michigan Information & Education Division, December, 1970 Department of Natural Resources

This printed and the companion electronic version was compiled from several of the earlier publications by Steven E. Wilson.



## Douglass Houghton Michigan's First State Geologist 1837-1845

*Wading the streams by day, tortured by swarms of mosquitoes at night - often short of provisions, and often drenched by rain - were it not that courage is uplifted by the love of science, both for its own sake and the good it is to accomplish, the task of the pioneer explorer would be hard indeed.* – Douglass Houghton

### Abstract

Douglass Houghton's scientific explorations and fervent interest in geology sparked the development of Michigan's rich mineral resources, particularly the copper deposits of the Upper Peninsula. His genius and charisma have spanned almost a century and a half. Born in Troy, New York in 1809, Douglass received his early schooling in Fredonia. Returning to Troy, he graduated in 1828 from Van Rensselaer School and then stayed on as Professor of chemistry and natural history. In 1830, General Lewis Cass, Territorial Governor of Michigan, arranged for Houghton to lecture on chemistry and geology in Detroit. That same year Houghton was also appointed surgeon and botanist for the Schoolcraft expedition to the source of the Mississippi River. From 1832-1836, Dr. Houghton practiced medicine in Detroit. Then in 1837 he was appointed the new state's first State Geologist, devoting most of his labors thereafter in directing the activities of the State Geological Survey - one of the early organizations of its type in the United States. During his lifetime, Houghton served many leading organizations and institutions. Also, he was Mayor of Detroit, President of its first Board of Education, Professor at the University of Michigan, and, was being nominated for Governor at the time of his early demise. In October 1845 he and two companions drowned in Lake Superior while engaged in geological endeavors.

## Houghton Family



Douglass Houghton was born in Troy, New York, September 21, 1809, the fourth child of Judge Jacob and Mary Lydia Douglass Houghton. In addition to Douglass, there were four boys, Alured, Alexander, Richard and Jacob Jr., and two girls, Lydia and Sarah. Jacob's fore bearers had come to Bolton, Massachusetts, from Bolton, England, in the 1650's. Jacob settled in Troy in eastern New York, but later moved his family to Fredonia (then called Canadawa) in western New York. The 400-mile journey by horse team into the wilderness took several weeks. Many hardships were encountered, but Jacob and Mary were young and not easily discouraged. It was the beginning of a new life. Bradish, Douglass Houghton's brother-in-law, said the Houghton's were "animated with a noble passion for securing a home in a new region of the West for themselves and children."

At Fredonia Jacob Houghton opened an office among the few rude cottages in the midst of the woods. The services of the young lawyer were in demand, so by 1813, he was able to build a substantial two-story frame house, which became home, schoolhouse, academy and college for his children. The house was located on the highest ground overlooking the village. A large stream - the Canadaway - traversed the village. An orchard was planted from cuttings Jacob carried in the leg of his boot during a visit to Mayville. To the west, the land sloped gently to Lake Erie. To the south, the hills of Chautauqua rose 600 to 800 feet. Eventually farms, orchards and vineyards covered much of the land, but there were also dells, groves and the virgin forests. A few rods from the house just back of the orchard, the boys excavated a turf-covered cellar large enough to admit four persons. Furnished with crude seats and shelves, the children retreated here for study. No amusements of any kind, or girls, were permitted.

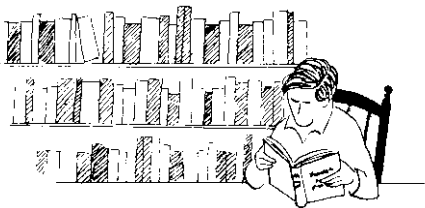
Jacob shrank from the usual art of politics, believing he could not afford to sacrifice his law business. He was Justice of the Peace, and at one time served as Postmaster. Eventually he was appointed Judge of the County. In subsequent years, many of his students became leading lawyers in that part of New York.

Judge Houghton and his wife were widely known for unobtrusive charities, for thoughtful care of the sick and poor, far and near. Doubtless these acts influenced young Douglass.

The ambition of the father was a thorough education for his children, so their studies began very early in life. Alured (born 1807), the eldest, when eleven years old, studied at the new college at Meadville, Pennsylvania. He and his nine-year old brother, Douglass, corresponded in Latin and Greek.

Douglass was feeble in body, and diminutive in size when he was born. In fact, his mother feared she could not raise him. On the other hand, Bradish informs us. his intellect was sound and bright, he was quick in apprehension, of a joyous nature, sympathetic and sensitive; as he grew to boyhood his strength and health were assured; he was no recluse or dreamer in boyhood. He mixed readily and heartily with those of his age and was distinguished for bold enterprise among his companions at the age of six years. His figure, even for a boy, was small, but it was instinct with nerve and activity. In temper he was quick and resolute, a little obstinate, perhaps. His decisions were prompt, like those of a commander, and his boyish plans were matured without much consulting of others."

### Education



In 1824, the Fredonia Academy was organized and established, and Douglass and his younger brother, Richard, were among the earlier pupils. At the age of sixteen, Douglass found time to study medicine under his father's friend, Dr. Squire White. Alured studied at Geneva College and then, in 1828 at age twenty, took charge of a new academy at Baton Rouge, Louisiana. He died of yellow fever in 1829.

Douglass enrolled at Rensselaer Scientific School founded by the Patroon Van Rensselaer at Troy, New York. Life at Rensselaer was not easy. Studies began at 4:30 a.m. and continued until late evening. Each student was required to give eight lectures demonstrating a thorough understanding of all courses offered by the Institute.

Houghton received his diploma as Bachelor of Arts, October, 1829. With the exception of the study of medicine, his formal education came to a close upon graduation from Rensselaer. Professor Amos Eaton, the principal, asked him to stay on as a faculty member. In February 1830, he was made assistant professor in the branches of natural history and chemistry.

### Lectures in Detroit



In 1830, some patrons of science in Detroit, including General Cass, Territorial Governor of Michigan, Lucius Lyon, territorial delegate in Congress, Major John Biddle, Colonel Henry Whiting, E. P. Hastings, Shubal Conant, and Reverend Dr. Berry, asked Professor Eaton, the leading educator in this country, to recommend a lecturer on chemistry, botany and geology. Lucius Lyon consented to call on Professor Eaton at Troy.

After listening to the Member of Congress, Professor Eaton arose and opened the door of the little laboratory adjoining his office and presented his young protégé, Douglass. Mr. Lyon, a man of reserve and much dignity, was not a little surprised at such a presentation. He could hardly believe Professor Eaton in earnest - proposing to send a boy, still in his teens, to discourse on subjects of science, and to address mature men of culture.

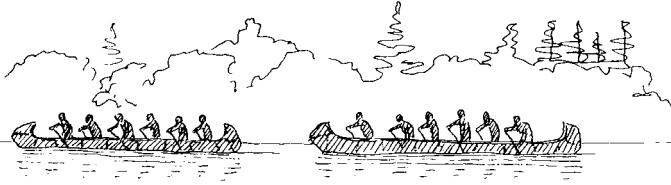
But, Mr. Lyon was soon convinced that young Houghton was competent to fill such a mission. The youthful professor did not hesitate a moment. Professor Eaton had implicit confidence in Douglass. Retaining his professorship at Rensselaer, Douglass gathered up his simple apparatus, visited his parents for a few days at Fredonia, and then departed by stage and boat for the small but ancient settlement on the Detroit River.

At this time Detroit was known only as an old French town - a border military post in Indian country. Bolstered with letters to several prominent citizens, warmed by the prospect of success, and confident in his knowledge and capacity, Houghton embarked on a career in his newly adopted state.

Houghton arrived in Detroit around November 17, 1830, with only ten cents in his wallet. Immediately, he circulated notices throughout the city regarding his lectures - the first series consisting of 26 discourses on chemistry to be held in the Lecture Room of the Old Council House on Jefferson Avenue. Admission to the series for families of three persons was \$4.00, with additional members paying \$1.50 each. Individual tickets were \$2.00.

The lectures were a great success. His unaffected manner, his enthusiasm, and his thorough knowledge of his subject made them so. This success led him to remain in Detroit, where he soon became one of the most popular men in the city.

## Expedition of 1831



At the close of his lectures in the spring of 1831, Houghton returned to Fredonia where he was licensed as a physician by the Medical Society of Chautauqua County. Returning to Detroit, he was appointed surgeon and botanist on the federal expedition to locate the source of the upper Mississippi River. On this expedition he also studied smallpox among the Chippewa. This appointment probably grew out of a friendship with Henry R. Schoolcraft, in charge of the expedition.

Schoolcraft had come to Michigan in 1820, when Secretary of War John C. Calhoun appointed him mineralogist for an expedition under Lewis Cass, Governor of Michigan Territory. Schoolcraft's report marked him nationally, as a mineralogist, geologist, explorer and writer. He was also Indian Agent for the Upper Great Lakes with headquarters at Sault Ste. Marie. During this expedition, Houghton learned of the copper deposits of the Keweenaw Peninsula - the scene of his greatest success as well as his later demise.

The report of his first summer's work was sent from Fredonia, on November 14, 1831, to Lewis Cass, then Secretary of War. Houghton was to lead the way in the exploration for copper in the Upper Peninsula.

## Expedition of 1832

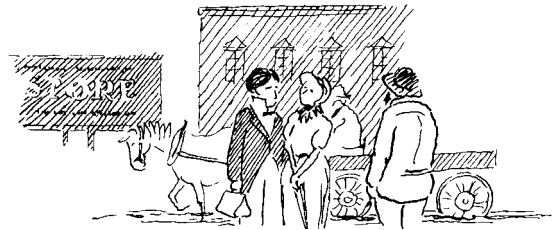


On May 30, 1832, Houghton left Detroit for Sault Ste. Marie to rejoin the Schoolcraft Expedition to complete the work begun the previous summer. Establishing peace between the tribes of the Chippewa and the Sioux was one of their goals. Houghton also acted as correspondent for the Detroit Journal and Michigan Advertiser.

On this trip Houghton continued to study smallpox among the Chippewa. He catalogued over 200 plants and reported the location of copper-bearing rock in the Keweenaw Peninsula. The expedition returned to Sault Ste. Marie in the fall.

Returning to Detroit, he took up permanent residence and began the practice of medicine. His practice grew rapidly and proved financially and socially profitable. He was one of the leaders in combating the dreaded Asiatic cholera that summer and was soon referred to affectionately as "the Little Doctor."

## Marriage



As soon as affairs would allow in 1833, he married Harriet Stevens, his childhood friend and his sister's classmate at the Fredonia Academy. The bride and groom moved into a new home at 19 Wayne Street, between Jefferson and Lamed in Detroit. Mrs. Houghton appears to have been the ideal wife. Bradish indicated her goodness and her charities were the "natural offspring of a most tender and sympathizing nature and sound Christian principles. She made their home a welcome resort of her husband's friends and contributed largely to the social popularity of the Houghton House."

In the summer of 1834, Detroit suffered its second epidemic of cholera. Dr. Houghton was again one of the leaders in combating it - ministering to rich and poor alike. His brother, Richard, studying medicine under him, died.

To relinquish some of his medical practice and engage more in real estate, Houghton entered into a medical partnership with Dr. Randall S. Rice. Eventually Houghton's real estate holdings in Detroit became vast, and he dissolved his medical partnership with Dr. Rice.

His contacts from lectures, his services as physician, and his business transactions proved invaluable in convincing the State Legislature of the desirability of a State Geological Survey. His interest in geology, begun in boyhood, never waned.

## First State Geologist, 1837



Michigan became a state at noon January 26, 1837. About two hours later, a bill was introduced in the First Legislature, proposing a thorough geological study of the state. The bill

was approved as Act 20 on February 23 (see facsimile inside front cover). Thus, was inaugurated the State Geological Survey, an organization which, even to the present day, continues to carry out the basic objectives of its founders.

Houghton was allowed \$3,000 for the first year's work. He had no example or model applicable to the State of Michigan. He proposed an organization comprising four divisions: geology, zoology, botany, and topography - not unlike many conservation or natural resource departments in several states today.

The State of Michigan, not Douglass Houghton, was to profit from his unselfish labors expended upon the geological survey. In reminiscing at a later date, Bela Hubbard, his friend and co-worker, stated:

“Though nearly a generation has passed since the death of Dr. Houghton, no doubt, most of those here present will remember the peculiar characteristics of one not easily forgotten: his diminutive stature, his keen blue eyes, his quick, active motions, the strong sense and energy of his words when dealing with matters of science, and his indomitable perseverance in carrying out his designs. They will remember, too, his love of fun, and his hilarious manner of telling a comic story. Of such he had a large fund, and a happy way of using; preserving a grave countenance until he got through, and then joining in the laugh with a peculiar cackling, so contagious as to be alone sufficient to set every one in a roar.

“He was no carpet knight of science, and on his geological excursions never flinched from hard work and exposure.”

“On these occasions he usually wore a suit of gray, the coat having large side-pockets, and hanging loosely upon his small frame. The hands and feet were very small, but the latter were incased in boots that came almost to his thighs.

His shocking battered, bad hat was broad-brimmed and slouched, almost concealing his face, and his whole appearance was that of battered, weather-worn backwoodsman.”

Houghton was more than a joiner. He was a leader and social organizer. He was a religious man, preferring the church of his forefathers-the Protestant Episcopal Church. Concerned over the excessive drinking in the area, he and a few friends united to form the first temperance society in the city of Detroit in 1835.

Harriet “Hattie” Douglass Houghton, the first daughter, was born June 18, 1837 to Harriet and Douglass.

## 1838 Survey



Houghton's realization of the importance of a scientific study of the new state, coupled with his ability to promote it to the Legislature, were remarkable. The State was poor, the population was scattered over dense forests and oak openings, and the Legislature was made up of hard working, practical men, who knew how difficult it was to come by a tax dollar. Geology was a new science and little considered in America. Excepting at Troy, New York, there was no school of science in the entire country. The subject was new and unknown and received with suspicion and indifference.

The report on the 1837 survey, the first, was submitted to the Legislature February 1, 1838. Houghton had explored numerous rivers in the state including the Muskegon, White, Pere Marquette, Manistee, Cheboygan, Thunder Bay, Au Sable and Tittabawassee. The settlers had already learned to use the streams as highways, and were beginning to occupy fertile banks. He examined Calhoun, Branch and Hillsdale Counties and advised the selection of five more salt springs, and recommended the northern part of the Lower Peninsula be divided into counties. His scientific explanation of the change of levels of the Great Lakes was one of his most important achievements.

He was offered the presidency of the University of Michigan, but declined because of the Survey work. He did, however, accept the position as professor of geology, mineralogy and chemistry and his extensive collection of specimens was kept at the University at Ann Arbor.

When the Second Protestant Episcopal Church was established in July, Houghton was one of its eight vestrymen.

## 1839 Survey



The financial panic of 1837 had halted operations at the salt springs on the Tittabawassee and Grand rivers. Houghton used his own private resources to honor the contracts. The contractor, however, refused to complete the job, because of “fears as to the health of the country,” and work was suspended. By the end of the year, 30 remaining sections of



the 72 sections of salt lands granted to Michigan under the Act of Admission, were located.

In June or July of 1839, Houghton left Detroit by the steamboat, *Constellation* for Mackinac Island, to equip his survey party. Field work kept him in the Upper Peninsula most of the summer although he did some work in the southern part of the state. It was impossible to superintend the salt well work.

On August 31, he returned to Detroit aboard the steamboat, *Madison*. Because of lack of funds the zoology and botany sections of the Survey were suspended, and field work of the geological and topographical sections was concluded. At this time he called attention to whitefish and trout in the Great Lakes as sources of wealth and was a leading advocate for a canal around the Falls of the Saint Marys.

### 1840 Survey



The fact that the Survey continued during such financial straits was a tribute to Houghton's abilities.

Early in the spring, before the opening of the geological season, Houghton and Bela Hubbard (Hubbard had come to Detroit in 1835) traveled to Philadelphia, where on April 2, they aided in the organization of the Association of American Geologists. Houghton presented information regarding the occurrence of black peroxide of copper on the shore of Lake Superior. Valuable information in connection with the federal survey of Michigan was gained at this meeting. He also visited the New York Legislature and learned that a bill for extending the survey of that state was under consideration.

His plan for 1840 was to complete the study of the Keweenaw region of the Upper Peninsula. On May 21, the party embarked at Detroit on the steamer, *Illinois*. The party consisted principally of Houghton, with assistance from Bela Hubbard, and C. C. Douglass, with Frederick Hubbard, in charge of instrumental observations. They reached Mackinac Island on May 23 and remained about three days, during which time two boats and crews were

hired. These were lightly constructed of pine and cedar. The party left Mackinac Island on May 26, and traveled to the Sault, arriving the morning of May 30.

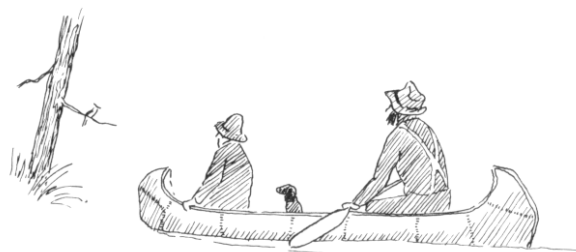
After a short portage, they encamped at the head of the rapids and assembled provisions for the next two months. One of the boats was exchanged for a "Mackinac barge" for carrying provisions and baggage. On June 1, a cruise of the unmapped southern coast of Lake Superior was begun. They studied the topography and geology and enjoyed the scenery, but Houghton was anxious to concentrate on the Keweenaw Peninsula. They reached Copper Harbor July 3. Independence Day was celebrated by setting off several blasts, and partaking of a special meal.

The party remained at Copper Harbor for only a few days, exploring the country, and then continued on to the Ontonagon region to view the Ontonagon Boulder and secure specimens of it. They then went on to the outpost at La Pointe, Wisconsin, and spent a few pleasant days replenishing provisions. At this time Houghton studied the topography and the location of the Wisconsin-Michigan boundary. He wanted the boundary settled before news of copper became generally known, thus avoiding future difficulties.

Survey work in the Lower Peninsula made it imperative that Hubbard return there, but Houghton remained in the mineral area of the Upper Peninsula where he was to locate the fabulous copper deposits. He realized the significance of his discoveries and stated with confidence, "I hope to see the day when instead of importing the whole immense amount of copper and brass used in our country, we may become exporters of both." Much of the early prospecting was based upon his wise guidance.

It was this year that his second daughter, Mary, was born in Detroit.

### 1841 Survey



He attended the second convention of the Association of American Geologists in Philadelphia where his comprehensive report on mineral deposits of the Northern Peninsula advanced the reputation of the Survey in Michigan. From there he went to Washington, D.C., to

personally supervise the engraving of the county maps prepared by the Survey.

Returning from the East, he assumed the responsibilities of a commissioner on the part of Michigan in the settlement of the Michigan-Wisconsin boundary. In carrying out this duty, he examined the 180-mile strip of territory extending from the mouth of the Montreal River on Lake Superior to the mouth of the Menominee River on Green Bay. Also, he did much field work in the mountainous region now identified as the Porcupines.

Now his final report had to be prepared. The staff of the Survey, however, consisted only of himself and one assistant, S. W. Higgins. This task clearly would take much longer than anticipated—the drafting alone requiring a year. His report for 1841 was referred to a select committee of the State House of Representatives, which appropriated \$2,200 for the completion of the Survey as well as compensation for his services as superintendent of the state salt wells.

A third daughter, Katherine was born October 21, 1841 (died in infancy).

### 1842 Survey



This year was a quiet one for Houghton and the Survey. Most of his time was spent in the preparation of his final report. There was a small amount of field work to complete. Higgins, the topographer, was engaged for several months locating lands for the state and the drafting was temporarily suspended.

The engraving of maps of Hillsdale, Lenawee, Branch, Calhoun, Jackson, and Washtenaw counties had been completed, but unfortunately, were not forwarded before the close of navigation. The continuance of the county surveys had depended on the sale of those already completed. These maps; more detailed than any previously published in the United States, would demonstrate the advantages Michigan offered to immigrants.

At this time Houghton received a request from the Geologist of the Provinces of Canada for information on the geology of Michigan. Houghton was delighted and immediately sent such reports as were available, and hoped to send the maps being published.

This year also marked the first of two successive terms Houghton was elected and served as Mayor of the city of Detroit.

### 1843 Survey



In the early spring of 1843, Houghton again attended the national meeting of scientists held at the State Geological Museum in Albany, New York. The name was changed to the Association of American Geologists and Naturalists, and Houghton was elected treasurer. Principles of mineral nomenclature and arrangement were discussed. Houghton's remarks on the geological structure of the Northern Peninsula won the respect and friendship of fellow members.

A minor part of the geological season was used in completing some of the surveys of the Upper Peninsula but the greater part was spent in compiling and arranging materials for the final report and completion of maps. Four of the county maps had been published and were being sold. Ten counties were in process of being engraved. Again the additional county maps were not received before the close of navigation thus cutting off receipts which would have aided publication of others.

Houghton began planning a joint geological-linear survey with the United States Government. From his knowledge of politics he knew he needed support of some organization or group to get his plan accepted.

### 1844 Survey



When Houghton went to Washington in May of 1844, for the fifth session of the Association of American Geologists and Naturalists, he was determined to present his plan of the joint survey to the House of Representatives. He had already convinced the Secretary of the Treasury who, in turn, had presented it to the House of Representatives. But no action had been taken.

He then presented his plan to the Association and a resolution was adopted authorizing a committee to acquaint the government with the importance of prosecuting geological surveys concurrently with the linear surveys of the public domain. The six-member committee, of which

Houghton was later selected chairman, presented the plan to the proper officials.

His offer to undertake the running of four thousand miles of township and section lines at a price only a little over the cost of a linear survey erased the last objection. His confidence in the plan, along with the aid of his old friend, Lucius Lyon, who was in Congress at the time, assured its adoption. On June 25 Houghton and Thomas Blake, Commissioner of the General Land Office at Cincinnati, signed contracts for conducting the joint surveys. This appears to be the first instance of a formal cooperative survey project between the federal government and a state.

The people of Michigan were jubilant upon receiving news of the \$20,000 Congressional appropriation for a mineral survey in the Upper Peninsula. The following tribute in the Adrian Watchtower indicates how highly Dr. Houghton was regarded:

“It would be idle in us to pretend to eulogize the abilities and labors of our much esteemed State Geologist, Dr. Houghton—a man not more distinguished in the discharge of his public duties than he is beloved and respected in the private circle. He has conferred great and lasting benefits upon Michigan by his professional skill and industry, and with the aid of his judicious assistant (S. W. Higgins) has done much to make the real value and resources of the State accurately known both at home and abroad. It is not (too) much to affirm that no man has done so much for any State, in the way of scientific researches, as Dr. Houghton has for Michigan.”

Because the summer was almost over when the federal appropriation was received, about all that could be accomplished in 1844 was to prepare for the following year's work.

### 1845 Survey

In the spring of 1845, Houghton, in spite of ill health, tested his plan for the new survey to prove its feasibility. “My field notes & maps are nearly ready ... & they satisfactorily prove the entire practicality of the plan.”

To carry out this project, he sought the assistance of William A. Burt and John Mullett. Burt had been active in the linear survey of the Upper Peninsula, assisting considerably in 1841. He had won prominence as the inventor of the solar compass which made surveys of the iron ore areas easier, and, in 1844, the discovery of the rich deposits in the Marquette region. Mullett was concerned about the tight operating costs. To obtain the most competent surveyor, Houghton paid Mullett out of his own pocket the difference between the appropriation and amount Mullett wanted.



The remainder of 1845 was spent in the mineral region of the Upper Peninsula. Surveys of twelve districts were completed by Houghton and Burt and transmitted to the General Land Office in Cincinnati. Notes and maps of several townships completed by fall, were still in Houghton's possession. Lucius Lyon, the new Surveyor General of Ohio, Indiana and Michigan, reported:

“Enough has been done to show clearly the great value of such an accurate geological and topographical survey, as the one in which he (Houghton) was engaged, and to demonstrate the practicability of carrying them on in connection with ordinary linear surveys of the public lands, without increasing the expenditures of the government for surveying more than a half a cent per acre, even in a rough and thickly wooded country like that on Lake Superior . . .

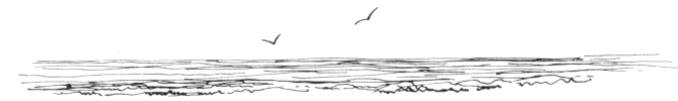
Besides the activities connected with being State Geologist, Houghton held a professorship at the University of Michigan. He was not able to conduct classes regularly at the University, but encouraged Silas H. Douglass, an assistant professor, to train men for future service in the State Geological Survey. Houghton was also president of the Board of Education of Detroit.

In February of 1842, he was selected by his fellow Democrats as their candidate for Mayor of Detroit. On March 15, he took the oath of office administered by his friend Dr. Zina Pitcher. During his administration, he entertained such notable persons as ex-President Van Buren and Lewis Cass. The death of Governor Stevens T. Mason on January 19, 1843, the first Governor of the State of Michigan, was a matter of importance, and he bore the brunt of funeral preparations.

His political career did not cease when his term as mayor expired. In fact, he began to be more active in the affairs of the Democratic Party, and in the fall of 1843, was delegate from the First Ward to the convention held in Dearborn. It seemed only a matter of time before his name was brought forth in the summer of 1845 as candidate for the highest office of the state—the Governorship.

The years in which the Survey was carried on were financially difficult for Michigan, encompassing the Panic of 1837. Houghton's financial affairs, along with those of other citizens, were in poor shape. Because the Geological Survey appeared doomed in June 1844, he entered "banking" with the Peninsular Mutual Fire and Marine Insurance company.

## Death



In the fall of 1845, Douglass Houghton's future was indeed bright. His work as State Geologist was being concluded. Observations remained in only a few scattered spots of the Upper Peninsula. His final report was almost completed. A museum for the enormous collection of specimens secured during eight years of the Survey was contemplated. As president of the Michigan Insurance Company, his financial future seemed secure. The governorship of Michigan loomed on the political horizon.

Houghton's demise has become a part of the folklore of Michigan's Copper Country. Working late in the year along Lake Superior, Houghton and his voyageurs, Peter McFarland and Baptiste Bodrie, camped at Eagle Harbor on the night of October 12. Next morning, they departed in their Mackinac barge for Eagle River, eight miles to the west, and soon reached their destination.

After securing additional clothing for other members of the party located in the vicinity, they left Eagle River for the storehouse of Hassey and Avery, five miles farther west, reaching there by noon. They deposited their provisions in the storehouse and set out to find the survey crew under the direction of Samuel W. Hill, but were unsuccessful. Tousin Piquette and Oliver Larimer arrived on the scene and indicated Hill was two miles farther up the lake. The entire party went to search for Hill and met him about sundown. Houghton gave Hill some instructions regarding the survey and then left for Eagle River.

After their departure, a gentle land breeze was blowing. Houghton took his usual seat in the stern and steered the boat while McFarland, Bodrie, Piquette,

and Larimer did the rowing. The only baggage on board was the bedding and the portfolio. Meeme, Houghton's black water spaniel and constant companion, was also on board. Before reaching the Hassey and Avery storehouse, McFarland asked Houghton if they were going to stop, and Houghton replied, "No, for if I do not get to Eagle River tonight, Oliver Larimer will lose his passage down the lake." McFarland felt the wind would increase, but Houghton said, "No, I guess not; a land breeze can't hurt us."

By now, they were opposite the storehouse and McFarland told Houghton they would have to put in and pick up Larimer's baggage. This they did, and resumed their voyage to Eagle River. It began to snow and grow dark; the wind was still a gentle land breeze. After they had rowed about three miles farther and the boat was opposite a place identified only as "the sand beach," the direction of the wind changed—blowing from the northeast. The snowfall became heavier and the sea rougher.

McFarland wanted to put in at the "sand beach," but Houghton replied, "We had better keep on—we are not far from Eagle River; pull away, boys, pull hard." Thereupon, Bodrie told McFarland, in French they had better go ashore. After finding out from McFarland what Bodrie had said, Houghton encouraged the continuation of the journey by saying, "We had better go to Eagle River tonight as we shall there have a new log house to dry us in.

Wind and snow increased and the boat began to ship water. Houghton again urged, "Pull away, my boys, we shall soon be in, pull away."

The boat was tossed and heaved by the breakers for over an hour and made little progress. Suddenly a large wave struck. Two hundred yards from the shore, they were again swamped. Then another large wave capsized the boat with all hands under her. McFarland, the first to surface, caught Houghton by the collar and told him to hang on to the keel. Houghton complied and then remarked, "Peter, never mind me, try to get ashore if you can; I will go ashore well enough."

Immediately another huge wave flung the boat on end, and Houghton disappeared beneath the icy water. After a long struggle, McFarland was tossed against a ledge of rock. Soon he heard the voice of Bodrie. They then searched the rugged coastline until they grew stiff from the cold. But the search was futile. Arriving at Eagle River about midnight, they told their tragic tale. Within the hour, the coast was lined with miners and others searching for the bodies.

After days of searching, the body of Tousin Piquette was recovered sometime before October 21. Meeme had been washed ashore and eventually was returned to Houghton's boyhood home in Fredonia. A coroner's investigation was not convened because witnesses would have had to appear at Sault Ste. Marie, nearly 250 miles away. Instead, a sworn statement of the survivors was secured. Bela Hubbard and Jacob Houghton, Jr., were present when the findings were recorded. The statements were sent to Lucius Lyon, the Surveyor-General of Ohio, Indiana, and Michigan, for transmitting to the Executive Department in Washington.

It had been Lyon who carried the news to Detroit, in 1830, that Douglass Houghton was to commence his lectures—now his was the sad duty of giving the official story of Houghton's death.

Houghton's drowning, universally lamented, was a severe shock to the people of Michigan. His work, so near completion, would never be completed.

In the spring of 1846, Houghton's remains were found on a beach six miles from the scene of drowning. Larimer was never found. Houghton's corpse was buried in the sand with one arm protruding. The initials "DH" marked in hobnails on the boots verified identification. The remains were transported to Detroit.

The Democratic Free Press of Detroit on May 15 carried the sad story of the Wisconsin coming into port the day before, from the upper lakes with her flags at half mast, bearing the body of the late State Geologist of Michigan.

The funeral was held on May 15, at the Presbyterian Church, surprising because Houghton was an Episcopalian. In respect to him, the House of Representatives turned out en masse. The place of burial that day is not known but seven years later his remains, and those of his infant daughter, Katherine, and his younger brother, Richard, were re-interred in Elmwood Cemetery in a lot purchased by his sister, Lydia Houghton Bradish. The granite shaft marking the lot was provided by his wife (who later married R. R. Richards).

The impoverished condition of the State at the time did not allow purchase of a memorial, but in 1879, the Legislature purchased a full length portrait painted by his brother-in-law, Alvah Bradish. This portrait shows Houghton, dressed in the garb of a field geologist, standing before the Pictured Rocks of Lake Superior with his faithful spaniel, Meeme.

Survivors included his widow, Harriet Stevens Houghton, and his two daughters, Hattie Douglass Houghton and Mary Houghton. His estate amounted to \$38,000. Administrators Samuel T. Douglass, Henre H. Walker and Harriet S. Houghton asked William A. Burt and Bela Hubbard to examine a portion of his

field notes and prepare reports based on them. These were forwarded to Lucius Lyon, the Surveyor General.

In reflecting on Houghton's death, Bela Hubbard, his friend and co-worker said:

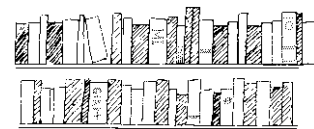
*"Thus at the early age of thirty-six years, was lost to his state and science one who, without eulogy, may be ranked among the most extraordinary men of our country; whether we view him as the humble student of nature, attracting all peers of science; the friendly and skillful physician, periling his life to save that of others; the energetic and independent public man, untiring in his energy, and sacrificing his private means to the public cause; or the universal instructor of youth and age, the source of as frequent and general reference as the pages of a cyclopedia.*

*"The soldier dies honored who falls in battle. He, too, perished on the field of his fame-a field whose victories are bloodless, and in whose fruits, untainted by misery and crime, the whole human family may rejoice."*

## Dr. Houghton's Affiliations

Licensed physician  
Mayor, City of Detroit  
Founder, Detroit Temperance Society  
President, Detroit Board of Education  
President, Detroit Young Men's Society  
Member, National Institute of Washington  
Member, Boston Society of Natural History  
Member, College of Natural History, Vermont  
Member, Literary and Historical Society of Quebec  
Honorary member, Academy of Sciences, Philadelphia  
Vestryman, Second Protestant Episcopal Church, Detroit  
Member, Hartford Natural History Society of Connecticut  
Honorary member, Antiquarian Society, Copenhagen, Denmark  
Delegate from the First Ward, Democratic Convention, Detroit  
Member, Geological and Historical Society, Newark Seminary, Ohio  
Professor of Geology, Mineralogy and Chemistry, University of Michigan  
Founding member and Treasurer, Association of American Geologists, which became the Association of American Geologists and Naturalists, which became the American Association for the Promotion of Science, which became the American Association for the Advancement of Science.  
Douglass Houghton was President-elect of the AAGN at the time of his death.

## References



ALLEN, R. C. - Dr. Douglass Houghton: Michigan Pioneer and Historical Collection, v. 39, p. 124-134, 1915

ALLEN, R. C. - A brief history of the Geological Survey of Michigan 1837-1872: Michigan History, v. 6, no. 4, p. 675-699, 1922

BALD, F. CLEVER - Douglass Houghton finds copper 1840. Michigan Historical Commission, 1965 (3-page text accompanying Robert Thom's painting commissioned by Michigan Bell Telephone Company)

BRADISH, ALVAH - Memoir of Douglass Houghton, first State Geologist of Michigan. Raynor & Taylor, Detroit, 302 p. portrait, 1889

CAMPBELL, JAMES V. - Outlines of the political history of Michigan: Schober & Co., Detroit, 1876, p. 423, 487-90, 527-9

DOUGLAS, CHARLES HENRY JAMES - A collection of family records with biographical sketches and other memoranda of various families and individuals bearing the name DOUGLAS: E. L. Freeman & Co., Providence, 1879

HAYS, DONALD R. - Douglass Houghton, Chemist: Michigan History, v. 50, no. 4, p. 341-348, Dec. 1966

HEMANS, LAWTON T. - Life and times of Stevens Thomson Mason, the boy governor of Michigan: Michigan Historical Commission, 1930, portraits of Houghton following p. 272, 320 (2nd edition).

HEARDING, JOHN H., and others- Douglass Houghton: Lake Superior Mining Institute, Proceedings, v. 13, p. 237, 1908

HOUGHTON, DOUGLASS- Geological reports 1837-1845, edited by George N. Fuller: Michigan Historical Commission, 700 p., 1928

HUBBARD, BELA- Obituary, Douglass Houghton: American Journal of Science, 2nd series, v. 1, no. 1, p. 150-152, 1846

HUBBARD, BELA- A memoir of Dr. Douglass Houghton, late State Geologist, and Professor of Geology and Chemistry in the University of Michigan: American Journal of Science, 2nd series, v. 5, no. 14, p. 217-227, 1848

HUBBARD, BELA- Memorials of a half century in Michigan and the lake region: G. P. Putnam's Sons, 581 p., 1887

JEFFREY, NEWMAN- The Detroit Young Men's Society: Michigan History, v. 43, no. 2, p. 197-211, June, 1959

LAWTON, CHARLES D. - Broken chords: Michigan Miner, v. 4, no. 3, p. 22-24, Feb., 1902

MARTIN, HELEN M. - Douglass Houghton, (1809-1845) .. Michigan Conservation, v. 14, no. 10, p. 10, portrait, Oct., 1945

MASON, PHILIP P. - Schoolcraft - the literary voyager of Muzzeniegun: Michigan State University Press, East Lansing, 1962

MERRILL, GEORGE P. - First survey under Douglass Houghton: in Contributions to a history of American state geological and natural history surveys (Michigan): U. S. National Museum Bulletin 109, p. 158-238, 1920

MICHIGAN MINER, THE- Dr. Douglass Houghton: v. 2, no. 1, p. 26-27, portrait, Dec. 1, 1899

NASON, HENRY B. - A biographical record of officers and graduates of the Rensselaer Polytechnic Institute 1824-1886: Rensselaer Polytechnic Institute, Troy, New York

RINTALA, EDSEL K. - Douglass Houghton, Michigan ~ pioneer geologist: Wayne State University Press, 119 p., Detroit, 1954

RUSSELL, I. C. - Douglass Houghton: Michigan Academy of Science, 4th Report, p. 160-1 62, portrait, 1904

STARK, GEORGE W. - Douglass Houghton-family physician: Alexander Blain Hospital Bulletin, v. 6, no. 1, p. 2-11, 1947 (Detroit)

WALKER, L. G., JR. - Douglass Houghton: New England Medical Journal, v. 271, p. 1207-1208, Dec. 3, 1964, Boston, Massachusetts

WALLIN, HELEN- The little doctor: Michigan Natural Resources, v. 38, no. 6, Nov. -Dec., p. 10-12, 1969

WARNER, ROBERT M. - The drowning of Douglass Houghton: Inland Seas, v. 26, no. 2, p. 118-122, Summer 1970

WINCHELL, ALEXANDER- Douglass Houghton: The American Geologist, v. 4, no. 3, p. 129-1 39, portrait, 1889

YOUNG, M. W. - Dr. Houghton's monument: Lake Superior Mining Institute Proceedings, v. 27, p. 20, 1929

## Portraits

### *Ann Arbor, Michigan*

University of Michigan, Michigan Historical Collections

Oil painting of Dr. Houghton done in 1850 by his brother-in-law, Alvah Bradish. Donated in 1950 by Dr. Houghton's grandnephew Douglass Houghton and grandniece Mrs. Theodosia Houghton Thode (grandchildren of Jacob, Dr. Houghton's brother).

Small daguerreotype of Dr. Houghton. Donor and date undetermined. Resembles portrait accompanying Russell's article in 4th report of Michigan Academy of Science, 1904. Chair not discernible.

### *Detroit, Michigan*

Detroit Historical Museum

Oil painting of Dr. Houghton done in 1851 by Bradish. Copied from the life portrait Bradish had done in 1835. Top of chair or settee has a straight piece of wood trim with a row of furniture tacks. Except for the chair and slight differences in the rendition of the clothing, this portrait resembles the one owned by the State Geological Survey. Bradish presented this portrait January 15, 1851 to the Detroit Young Men's Society which, in 1882 gave the painting to the Detroit Public Library. In 1949 the Burton Historical Collection (Detroit Public Library) donated the portrait to the Detroit Historical Museum.

### *Michigan Bell Telephone Company*

Oil painting of Dr. Houghton depicted on bended knee holding copper specimen. Painted by Robert Thom in 1965 for Michigan Bell Telephone Company series "A History of Michigan in Paintings".

### ***Fredonia, New York***

State University College

Oil paintings of Jacob and Lydia Houghton, Dr. Houghton's parents. Donated by Mrs. Theodosia Houghton Thode, grandniece of Dr. Houghton.

### **Lansing, Michigan**

#### ***House of Representatives, State Capitol***

Huge oil painting done by Bradish (probably in the 1870's) and purchased by the Legislature in 1879 (Act 135). Depicts Dr. Houghton standing on shore of Lake Superior with Pictured Rocks in background and his dog Meeme at his feet.

#### ***Constitution Hall, DEQ, Geological and Land Management Division***



Oil painting of Dr. Houghton sitting in a stuffed red chair. Painted on wood. Donated in 1951 to the State Geological Survey by Dr. Houghton's grandson Edward Houghton Morgan (Hattie's son). Presumed to be the one and only life portrait for which Houghton posed for Bradish in 1835. Edward said this was his mother's favorite portrait of her father. Hattie died in 1921. Top of chair is only slightly curved, and is not trimmed with wood. Two buttons are plainly visible in upholstery behind Houghton.

### **Burial Plot, Elmwood Cemetery**

Ann Arbor, Michigan

University of Michigan, Michigan Historical Collections

Marble cenotaph dedicated to four professors, one being Houghton. Located on east side of Graduate Library. James E. Dunlap's translation from badly worn inscription is: "In memory of Douglass Houghton, M. D., Professor of Chemistry, Mineralogy and Geology in this University and head of the Geological Survey in this State, learned in Science, vigorous in action, fearless in the performance of his public labors, when his boat capsized in Lake Superior he lost his life by drowning, never to be seen, alas until the sea gives back its dead. He died October 13, 1845 at the age of thirty-six. The Regents of the University of Michigan have authorized the erection of this stone."

#### ***Detroit, Michigan***

Elmwood Cemetery, 1200 Elmwood Avenue

Dr. Houghton's remains buried here along with two brothers, an infant daughter, a sister-in-law, and two nieces. This family burial plot is marked with

a granite shaft provided by his wife. The inscription is not clear. In 1969, the plot was designated as "abandoned". The Michigan Basin Geological Society is endeavoring to correct this situation, having voted to appropriate funds for insuring "perpetual care" (January, 1970).

Douglass Houghton School, 1330 Abbott St.

This structure was razed in 1963 because it was in the path of an expressway. The structure was built in 1910 and an addition made in 1921. The metal tablet from this school was donated to the Detroit Historical Museum. Apparently a much earlier Douglass Houghton school was also located in the vicinity.

#### ***Michigan Historical Commission Archives Section***

Photo (11" x 9") of portrait hanging in Portage Township Public Library, Houghton, Michigan. This print used in October, 1945 issue of Michigan Conservation (article by Martin) and in the Michigan Historical Commission book in 1930 (by Hemans).

#### ***Houghton Michigan***

##### ***Portage Township Public Library***

Oil painting of Dr. Houghton (presumably done by Bradish). This portrait resembles the painting owned by the State Geological Survey except for the chair, differences in the rendition of clothing, and other slight differences in portrayal of face and hair.

The clothing appears to be more like the painting owned by the Detroit Historical Museum. On the other hand, the chair is different than in either of the other two paintings it so closely resembles in other respects. The top of the chair is distinctly rounded and is trimmed (with wood?). Also Houghton's left arm conceals a lesser portion of the armrest.

## **Geographic Features Named for Dr. Houghton**

### *in Michigan*

**County:** Houghton County is located in the northwest part of Michigan's Upper Peninsula. Comprises the base of the Keweenaw Peninsula which juts into Lake Superior. This area is the only place in the world where native copper has been produced commercially.

**City:** The city of Houghton is the county seat of Houghton County.

**Lake:** Houghton Lake, located in Roscommon County in the Lower Peninsula, is Michigan's largest inland lake.

**Falls:** Douglass Houghton Falls is located about 1 ½ miles southeast of village of Laurium in Houghton County.

**Peak:** Mount Houghton, located in Keweenaw County about 1 ½ miles northeast of Bete Grise, is the second highest peak in the rugged terrain comprising the Keweenaw Peninsula.

**Stream:** Houghton Creek flows through Rose City in Ogemaw County. Whether or not this particular feature was named after Douglass Houghton is not determined.

### *Fredonia, New York*

Houghton Common  
Houghton Common, Fredonia  
Monument at Eagle River  
Houghton, Michigan  
Houghton Common  
State University College  
Houghton Hall, dedicated Oct. 17, 1969. This \$2½ million structure contains 22 laboratories, two large classrooms, a seminar room, reading room, lounge, and 28 faculty offices.

### *Eagle River, Michigan*

Stone monument built from rocks and minerals collected throughout the Northern Peninsula  
Douglass Houghton Hall  
On main campus of Michigan Technological University. This was the first men's dormitory on campus. Erected in 1938; occupied in 1939 housing 204 students. Additional construction in 1947-1948 allowed additional housing. Today the dormitory can accommodate 373 students.

Douglass Houghton School, on Edwards Street

Frame structure razed circa 1950. Portrait now hanging in Portage Township Library formerly hung in this school.

### *Marquette, Michigan*

St. Paul's Church

Houghton Memorial Window presented in 1887 by the founder of the great Norrie mine.

### *Ann Arbor, Michigan*

University of Michigan, Michigan Historical Collections

Unpublished Houghton manuscripts: Letterpress book, 184145; field notes including sketched maps.

Photostat copies of correspondence.

### *Detroit, Michigan*

Detroit Historical Museum

Two metal tablets, one, or both, of which were mounted on the former Douglass Houghton School.

Detroit Board of Education

File materials relating to the Douglass Houghton School built in 1910, as well as on the original school of an earlier date.

### *Detroit Public Library, Burton Historical Collection*

Typescript (72 pages) of Houghton diary June. Aug., 1832 during Schoolcraft expedition.

Letters reporting his activities and discoveries in papers of William Woodbridge, Oren Marsh, and others.

### *Eagle Harbor, Michigan*

Keweenaw County Historical Museum

Three letters by Houghton and one by a relative during time of Pancho Villa's raids across Mexican border.

### *Fredonia, New York*

State University College

Original geologic reports pertaining to Michigan 1838.1841 by Houghton

Original document appointing Houghton's father as ensign in the Vermont State Militia, 1801.

Photostat copy of document admitting Houghton's father to New York State Bar Association, 1807.

### *Lake Linden, Michigan*

Houghton County Historical Society

Houghton's travel kit containing prayer book, tea cup, and Latin grammar.

### *Mt. Pleasant, Michigan*

Central Michigan University, Clarke Historical Library

Houghton's letter to John Livingston June 17, 1841 saying he will join Cram's party.



Houghton's personal volumes (containing bookplate and signature) of Encyclopedia Americana, 1829-33.

### *Troy, New York*

Rensselaer Polytechnic Institute

A biographic record of officers and graduates of the Rensselaer Polytechnic Institute 1824-1886.

## State Reports by Houghton

List from Volume 7 Michigan Geological Survey, 1900 (Houghton's informal report of Dec. 1, 1837 to Gov. Mason not included).

Reports from 1838-1846 were published with Legislative documents as follows: B. D. means Senate document; H. D., House document; J. D., joint document. State Geologist is abbreviated S. G., and State Geological Survey, S. G. S.

1838. Report of a select committee of the Board of Regents of the University on the collection of the S. G.

H. D. Vol. I, p. 1-2; 5. D. No. 1, p. 1. H. D. No. 55 is duplicate of No. 1.

Statement of the expenditures on account of the S. G. S. for the year 1837.

H. D. No. 8, pp. 115-118; 5. D. No. 21 (First annual account of the S. G.), pp. 315-318.

Report of the S. G. (first annual).

H. D. No. 24, pp. 276-317; S. D. No. 16; separately, No. 14, pp. 1-39.

Communication from the S. G.

H. D. No. 46, pp. 457, 460.

1839. Report of the S. G. in relation to the improvement of State Salt Springs.

H. D. No. 2, pp. 39-45; 5. D. No. 2, pp. 1-8. Report of the committee on the S. G.'s report in relation to the improvement of the State Salt Spring.

H. D. No. 4, pp. 123. Report of the S. G. in relation to the iron ore, etc., on the school section in town five south, range seven west, in Branch County.

H. D. No. 21, pp. 342-344. Second annual report of the State Geologist.

H. D. No. 23, pp. 380-507; 5. D. No. 12, pp. 264-391; also separately H. R. No. 23, and S. R. sometimes misprinted No. 13 and No. 23, pp. 39 and appendix of sub-reports 123 pp. Report of the Committee of the Senate on Manufactures, to whom was referred the communication of the

S. G. relative to salt springs and the salines of the State.

S. D. No. 3, pp. 85-86 (parallel to H. D. No. 4). Communication from the S. G. relative to the G. S.

S. D. No. 25, pp. 463-466; L. D. No. 3, app.

1840. Report of S. G. relative to the improvement of the Salt Springs.

H. D. No. 2, Vol. I, pp. 18-23; 5. D. No. 8, Vol. II, pp. 153-158. Annual report of the State Geologist (third, map of Wayne county).

H. D. No. 27, Vol. II, pp. 206-293; 5. D. No. 7, Vol. 2, pp. 66-153; separately,

H. R. No. 8, pp. 1-124. Report of the select committee to whom was referred the several reports of the S. G.

H. D. No. 46, Vol. II, pp. 455-461. Report of the majority of the Committee of Finance on the communication and accounts of the S. G. for 1839. Report of the minority of the Committee on Finance on the same subject. Report of the select committee on S. G.'s report and accounts relative to improvement of Salt Springs, etc. S. G.'s account for the year 1839, the same being the subject matter of the three preceding reports. S. D. No. 15, 16, 17, 18, pp. 209-224.

1841. Special message concerning State Salt Springs.

H. S. and J. D. No. 5, pp. 235-254.

Annual report of the S. G. (fourth).

H. S. and 3. D. No. 11, pp. 472-607; separately H. D. No. 27, pp. 1-184;

S. D. No. 16, pp. 1-184.

Report of the S. G. relative to county state maps.

H. D. No. 35, pp. 94-98.

1842. Report of the S. G. relative to the State Salt Springs.

H. D. No. 2, pp. 15-21; S. D. No. 1, pp. 1-9. Report of the select committee in relation to the report of the S. G.

H. D. No. 19, pp. 77-79.

Annual report of the S. G. (fifth).

H. D. No. 14, p. 6; 3. D. No. 9, pp. 436-441.

1843. Annual report of S. G. (sixth).

H. D., S. D., and J. D. No. 8, pp. 398-402.

Report of the S. G. relative to the State Salt Springs.

S. D. No. 9, pp. 402-408.

1844. Annual report of the S. G. (seventh).

S. D. No. 11 (three pages). Maps of Washtenaw, Calhoun, Jackson and Lenawee counties were published separately.

1846. Report from Geological Department by S. W. Higgins, principal assistant.

J. D. No. 12, 22 pp. Report of the joint committee relative to the Geological Survey.

J. D. No. 15, 8 pages.

D. Houghton undertook an arrangement with the Linear Survey of the U. S. Land Office by which a certain amount of geological work was done, which was never published by the State, the results of which appear largely in the township plats of the Land Office, and in the report of C. T. Jackson, 1849, U. S. S. Ex. Doc. No. 1, pp. 371-935, H. Ex. Doc. No. 5, Vol. 3, Part 3, including sub-reports of W. A. Burt and Bela Hubbard on the geology of the sub divisions of the Linear Survey, First Session 31st Congress, and of Foster & Whitney, U. S. Geologists, Part I, H. Ex. D. No. 69, pp. 1-224 and 12 Plates, First Session 31st Congress; S. Ex. D. No. 2, Vol. 2, p. 147, Second Session 31st Congress; Part 11 5. Ex. D. No. 4, Vol. 3, p. 3, Special Session 32d Congress.

See also:

Reports on the Mineral Region of Lake Superior, with a correct map of the same and a chart of Lake Superior (first title page). Reports of Win. A. Burt and Bela Hubbard, Esqs., on

the geography, topography and geology of the U. S. Surveys of the Mineral Region of the South Shore of Lake Superior, for 1845: By J. Houghton, Jr., and T. W. Bristol, Detroit, 1846 (second title page).

A second edition was published the same year in Buffalo by J. Houghton, Jr., the title being "The Mineral Region of Lake Superior." "Memoir of Douglass Houghton," Aiva Bradish, Detroit, 1889; reprints the early reports almost in full.

### Historical Marker Honoring Douglass Houghton

The dedication of a Michigan Historical Marker honoring Douglass Houghton, the first State Geologist, and recognizing State Salt Well #1, took place in Sanford, Michigan on September 7, 2002.

This marker commemorates the first attempt to drill for salt in Michigan. In 1837, the newly established Michigan

legislature, two hours into their first session, called for a thorough geological study of Michigan. This resulted in the enactment of Public Act 20 of 1837, authorizing the State Geological Survey and appointing Douglass Houghton as the state's Geologist. When Douglass Houghton undertook this effort in 1838 he believed that the salt springs on the Tittabawassee River showed the most promise for developing a supply of salt, a much needed resource for commerce and industry in the new state.

The research, development, and placement of this marker has been a cooperative effort between; Michigan Historical Commission, Michigan Department of Environmental Quality's, Geological Survey Division, Friends of the Pere Marquette Rail Trail, Midland County Parks Commission, Sanford Founders Days, Sanford Historical Museum, Sanford Historical Society, and the Village of Sanford.

Office of State Geologist  
Detroit March 21. 1842

To His Exc. John S. Barry

Sir, I have the honor to report that, in accordance with the provisions of Section 8, of an Act entitled "An Act relative to the Salt Springs & the lands granted" for the use of the same" Approved February 16, 1842 the further progress of work at the State Salt Springs on Tittabawassee river was, without delay, suspended -

The condition of the public property at that place renders it necessary to retain some competent person on the ground to preserve said property from waste & destruction - This has been temporarily done, & this department only awaits instructions from the Executive to determine what course shall hereafter be pursued relative to the same -


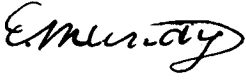
I have the honor to be, Sir,  
Very Respectfully, Yours Obedt. Servt.  
Douglass Houghton  
State Geologist

A letter from Douglass Houghton to Governor Barry. The signature is seen on the cover.

*An Act.*

To provide for a Geological Survey of the State.

- Sec. 1. - Be it enacted by the Senate and House of Representatives of the State of Michigan that the Governor is hereby authorized and directed to nominate, and by and with the advice and consent of the Senate to appoint a competent person, whose duty it shall be to make an accurate and complete Geological Survey of this State, which shall be accompanied with proper maps and diagrams, and furnish a full and scientific description of its rocks, soils and minerals, and of its botanical and geological productions, together with specimens of the same; which maps, diagrams and specimens, shall be deposited in the State Library, and similar specimens shall be deposited in such of the literary and scientific institutions as the Governor shall direct; and the Governor is further authorized to appoint from time to time, as the exigencies of the case may require, competent persons to act as assistants under the direction of the Geologist.
- Sec. 2. - A sum not exceeding three thousand dollars for the year 1837, a sum not exceeding six thousand dollars for 1838, a sum not exceeding eight thousand for 1839, and a sum not exceeding twelve thousand for 1840, is hereby appropriated to defray the expenses that may be incurred under this act, which sums shall be paid out of the Treasury from any money not otherwise appropriated at such times, and in such sums as the Governor may direct, and an account of all the expenditures of each year shall be annually reported to the Legislature. -
- Sec. 3. - The Geologist appointed under the provisions of this act, shall make a report annually to the Legislature on the first Monday of January in each year, setting forth generally the progress made in the survey hereby authorized.

  
 Approved July 20, 1837.  
 Stephen T. Mason Speaker of the House of Representatives -  
  
 President of the Senate - -

A facsimile of the July 20, 1837 legislation enabling the first Geological Survey.

Douglass Houghton, Michigan's First State Geologist  
Department of Environmental Quality Geological and Land Management Division

