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BIOGRAPHICAL MEMOIR

OF

WILLIAM MORE GABB

1839-1878

BY

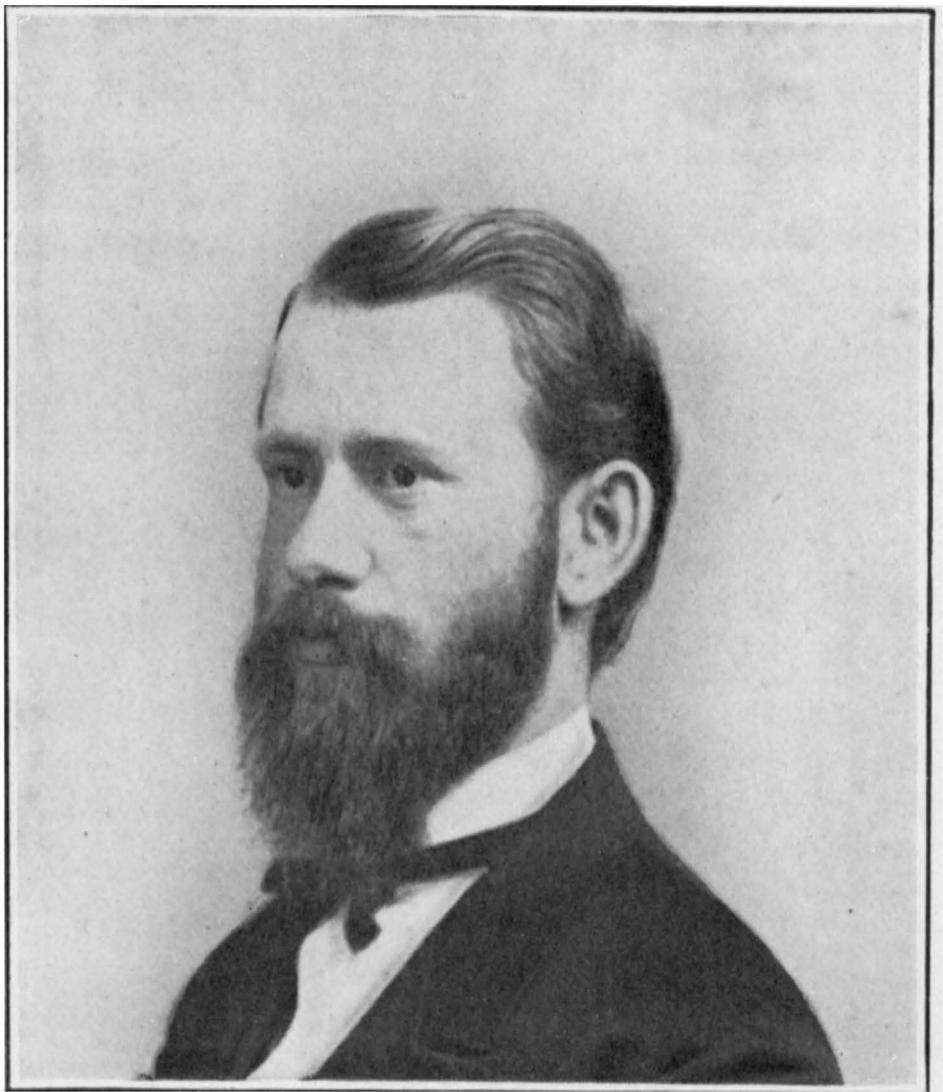
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Your truly  
H. M. Hall

## BIOGRAPHICAL MEMOIR OF WILLIAM MORE GABB.

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WILLIAM MORE GABB was born in Philadelphia January 20, 1839.\* His father, Joseph Gabb, was a salesman in mercantile affairs; and his mother (in regard to whom we have only been able to discover that her maiden name was J. H. More), after the death of his father, carried on the business of a milliner, at 248 Poplar street, near Fourth street. The boy was named after his mother's father, William More.

He was educated in the public schools, and graduated at the Jefferson Grammar School at thirteen years of age. He was admitted to the celebrated "Central High School" of Philadelphia in February, 1853, where he distinguished himself in scholarship, being graduated with the degree of A. B. in February, 1857. Among those of his class to achieve distinction were Henry George, James Morgan Hart, Bushrod W. James, and Gustavus W. Towne (who fell at Chancellorsville during the Civil War, having attained the rank of brigadier-general). Some years later he received the master of arts degree from his Alma Mater.

The professor of natural philosophy and chemistry at the school during Gabb's course was Martin Hans Boye, from whom the scientific tastes of young Gabb probably received some stimulation, as he alone represented natural science in the faculty of that day. Although he took the classical course, Gabb had already shown much interest in natural history, conchology, and mineralogy, and, by saving his small pocket money and by gift, had gathered a small collection of elementary books and mineral specimens, from which, as well as from his chemical lessons, he probably acquired some knowledge of blowpipe analysis and of minerals. It is recorded by Dr. Brewer that Gabb spoke of his pleasure as a boy in frequenting the Museum of the Academy of Natural Sciences.

How it happened that, in days when science seemed to offer no career to the young man without independent financial resources,

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\*In several of the brief biographical notices which have been printed the date is erroneously given as January 16 or 17.

Gabb was permitted to follow his natural bent is a mystery. The father's name disappears from the city directory in 1853, when it is replaced at the same address by "J. H. Gabb, milliner," and the inference might be drawn that the father died at that date and the boy became dependent upon his mother, whose maternal love and pride at his brilliant course in the high school were more impressible by the boy's ambitions than a business-like father might have been. There is mention in a post-card by Dr. George H. Horn, after Gabb's death, of a nephew then living. As no reference to a brother has been found, this nephew was probably a sister's son whose name we have been unable to trace. We know that he had a sister, to whom he was much devoted and who married.

Dropping speculation, our next definite information is to the effect that after graduation, in 1857, Gabb determined to pursue a scientific career in the line of geology and mineralogy. He sought the aid of Professor James Hall, of Albany, New York, then the most distinguished geologist in America, and for a certain period, not definitely stated, he served as assistant and pupil to the Professor. In 1860 he was back in Philadelphia, where, having been admitted to membership in the Academy of Natural Sciences, he became a frequenter of its collections, then the finest in America, and was brought into more or less intimate association with Conrad and other scientific collaborators of the Academy, and served on the committee having charge of the paleontological collections.

About this time, perhaps at the suggestion of Professor Spencer F. Baird, Gabb visited the Smithsonian Institution in Washington, and was one of the group of young scientific students domiciled among the brown Elizabethan towers of the recently erected building. Stimpson, Gill, Hayden, Meek, Horn, Cope, Kennicott, Cooper, and others whose names are now famous were then comrades and fellow-students, shortly to be scattered to the uttermost limits of the continent; but even a brief sojourn among them would have been something to remember for a lifetime. The inspiration of such an experience meant much to the young, eager, ambitious, able, and self-confident student, who had already, in Philadelphia, become known to some members of the coterie.

He had become particularly intimate with the late George H. Horn, who coöperated with him in the preparation of important paleontological memoirs published by the Academy. Another near friend was the late George W. Tryon, Jr., expert in music and conchology. Their influence may have led him finally to specialize in paleontology, though Horn became distinguished later as an entomologist.

In 1860 the California State Geological Survey was authorized, and Josiah Dwight Whitney was named as Geologist. He proceeded in the winter of 1860-'61 to organize the force, which took the field in December, 1860, and the season of 1861 was fully utilized.

The following notes in regard to Gabb's experiences with the State Geological Survey of California, during 1862 and 1863, are from data furnished by Professor W. H. Brewer, of New Haven, who was a member of the Survey staff, and to whom I am much indebted for his kind communications on the subject, his health not permitting him to prepare this memoir personally, as was at first contemplated.

The work of the Survey during 1861 was in the Coast Ranges west or south of the valley of California, and extended from Temescal, south of San Bernardino, northward to Mount Saint Helens, north of San Francisco Bay. The great importance of the Cretaceous rocks, so largely developed in this part of the State, made it very important to engage the services of a qualified paleontologist familiar with the Mesozoic faunas. On Professor Brewer's return to San Francisco, near the end of the year 1861, he was informed by Professor J. D. Whitney, the Director of the Survey, that, after much inquiry, he had engaged a young man who had been recommended to him by competent judges as the best authority in America on Cretaceous paleontology, and as one possessing a good general knowledge of the science in its broader relations.

Gabb left the East and reached San Francisco by steamer from the Isthmus on the morning of January 6, 1862. He was met by Brewer, who conducted him to the offices of the Survey and introduced him to the other members of the staff. The annual meeting of the California Academy of Natural Sciences happened to be set for the evening of the same day, and Gabb accompanied

Brewer to the meeting, was introduced to the little group of scientific men who made up the membership, and was elected not only a member, but also to the Curatorship of Paleontology. It was a cordial greeting to the young scientist, in true California fashion.

Professor Brewer notes that this winter was the wettest that California had experienced since the American occupation of the territory, and the floods very disastrous. The streets of Sacramento, the State capital, were passable only for boats during three months, and the damage to property was commonly estimated at fifty millions of dollars. The Survey was also affected, as the difficulty of getting about was enormously increased, and appropriations were naturally cut down by the legislature, in view of the general losses and reduced taxation.

Gabb worked with great industry, during the early part of 1862, on the fossils which had already been accumulated in the office of the Survey, but took the field with the main party about the last of April, remaining about two months. They visited the northern portion of the Mount Diablo range and worked along its eastern slope for some one hundred and fifty miles. This is one of the most interesting regions in the State for a student of the Cretaceous rocks. These occur at high inclinations over some portions of the region, but are here found in many variable relations, contain its most important coal seams, and exhibit their greatest observed thickness.

During 1861 and 1862 the Survey had studied the geological column from the Cretaceous downward and from the Miocene upward, but no trace of Eocene had been discovered. The only Eocene reported by any observer had been a few fossils, collected by Newberry on the Pacific Railway survey, which were said to be from Fort Tejon.

Doctor Brewer informs me that in 1863 he and Gabb started together on horseback to investigate the region about Fort Tejon for Eocene rocks. Their only baggage was carried in their saddlebags and blanket rolls. Leaving San Francisco early in the spring, they had a tedious ride of more than three hundred miles before reaching Fort Tejon, which was at that time unoccupied by the army. Some settlers were in the vicinity and the main route to Los Angeles crossed the pass. After searching for some

time without satisfactory results, a clue was obtained from a teamster who had accompanied Newberry's party and who claimed to have found the Eocene boulder in the bed of a stream, somewhere between the Fort and the Tejon Indian Reservation, about twenty miles distant. The searchers then rode along the foothills, examined the wash from the various streams, found a single boulder in one, and then went to the Indian reservation. Here two days were spent without success, and the party returned by a slightly different route. Finally, in the ravine called the "Cañada de los Uvas," the beds were detected from which the original boulders may have been derived. Here the desired material was collected.

They then went through the mountains to the San Emidio Cañon, which they explored; thence by the plains to Fort Tejon; across the mountains to the Mojave Desert, which they crossed near its western edge; to the southern part of the Sierra Nevada, and, by way of the Tehachipi Pass (now used by the Southern Pacific Railway), to the great Central Valley again. The Indians on the way had risen in revolt, so the party turned eastward again into the Sierra, working easterly and northerly until the Kern River was reached at Kernville, the Indians being hostile for the whole distance. Gabb and Brewer then worked across the range through Walker Pass and along the eastern base of the Sierra until driven back again by Indians on the warpath. Returning to Kernville, they followed the Central Valley of California northward until they met the party taken by Whitney into the Sierra in June. The expedition was exceedingly interesting and profitable to science, but one which involved much hardship, some danger, and required zeal and courage to accomplish. As a sample of the experiences of the early geological explorers in California, Professor Brewer's notes have seemed worthy of preservation in full.

In the autumn Gabb was sent to investigate the Cretaceous rocks of Oregon, Washington Territory, and Vancouver Island, an expedition to which he devoted three months.

In the intimacy of such a journey as that taken by Professor Brewer, the character of one's companion is usually shown in its true colors. Professor Brewer expresses his recollections of Gabb to the following effect:

What made the strongest impression was that, although strikingly diligent and enthusiastic, he was curiously self-contained. He never seemed afraid and never anxious in the presence of danger; he never lost his temper, and in various ways showed a peculiarly even disposition.

Although as a greenhorn in frontier life he was at first subjected to much chaffing from those members of the party who were more experienced in camp work in California, he never became angry. He took the jokes due to his inexperience, although they were frequent, good naturedly and never exhibited annoyance. He was one of the most diligent of men. If he returned from an expedition of a month or six weeks, and in getting from the field to the office had an hour to spare, that hour was spent with pencil in hand sketching and studying his specimens as if he had not been away.

His relations with his associates were most pleasant. Though his chief was a testy and not tactful man, he greatly appreciated Gabb's work, and in subsequent years did all he could to aid him in various ways.

The writer may add to these personal reminiscences, from his own recollections of 1865 and later years, a few words on Gabb's physical characteristics. He was of moderate height, slender, of sanguine temperament, brown haired, with brilliant dark eyes, a rosy though sunburned complexion, quick in his movements, confident in his bearing, and with a pleasantly harmonious voice. His mistakes, and he occasionally made them, were almost always due to over-confidence, but were acknowledged with a manly frankness. He was considerate of his friends, and his disposition, generous but not lavish, was the result of economical habits forced upon him by the struggles of his early years.

His long absences cut him off in the latter part of his life from intercourse (except at rare intervals) with his scientific colleagues. The only relative who long survived him was a nephew, whose name we have not been able to trace, and the early death of most of those intimately associated with him during his most active years all combined to make the gathering of data regarding his life a matter of no little difficulty.

In 1864 he was sent by Whitney to explore northern Califor-

nia and southeastern Oregon, leaving the northern end of Klamath Lake June 20 and continuing in the field until the middle of October. During this season one of the slate peaks, believed to be nearly 10,000 feet in height and situated in the northeastern angle of Fresno County, California, between the forks of the San Joaquin River, was named Mount Gabb by Whitney.

Paleontological material had now accumulated in abundance, and a large part of 1865 was devoted by Gabb to working up the fossils, the field, except for a little work by Conrad and Trask, being almost unexplored. As Gabb had a neat, artistic faculty, he prepared his own drawings of the fossils, which were afterward engraved and published in the paleontological volumes issued by the Survey.

In 1866 Gabb was engaged from January until November in the exploration of the Coast Ranges and the fossiliferous Tertiary beds of which they are in part composed.

In 1867, at the personal charge of Professor Whitney, Gabb explored the White Mountain Range on the borders of California and Nevada, carrying the work eastward as far as the 116th meridian west of Greenwich, and including a large part of the area between 37° and 39° north latitude, and returned about the end of October.

Certain interests in California having turned their attention to Lower California, an expedition was organized in this year with the consent of the Mexican authorities. It was placed in command of the well-known J. Ross Browne, who associated with himself Ferdinand von Löhr, and, by arrangement with Whitney, W. M. Gabb. The party went to Cape Saint Lucas, and from thence worked northward and in zigzags across the narrow peninsula for the greater part of its length.

Xantus, Guillemin, and Combier had, at various times previously, contributed to the exploration of the peninsula, which was, however, very imperfectly known. To the work of Gabb, trained under such a master as Whitney, and associated with Clarence King, Richthofen, and Ashburner, is due the unveiling of the true structure of the peninsula. This was shown clearly in his map, published in the *Geographische Mittheilungen* of Petermann; by a chapter in the *U. S. Treasury Report on Mineral Resources, 1868*, edited by J. Ross Browne; and lastly by his own report, published by Whitney in 1882.

Early in 1868 Gabb returned to the East and gave a summary of his researches in an address before the National Academy of Sciences at its Northampton meeting, in August, 1868.

After seeing the second volume of the California Paleontology through the press, Gabb severed his connection with the Survey. The government of Santo Domingo desired to know something of its geological resources, and made an arrangement with the Santo Domingo Land and Mining Company, a corporation formed in New York for the purpose, whereby that company was to be reimbursed in land for the cost of the survey. The negotiations having been concluded, the diplomatic agent of the Dominican government in the United States selected Mr. Gabb as chief of the survey, which was topographical and geological.

The work began early in 1869, and was carried on for three years with excellent results. A fine map of the country was prepared and united with Schomburgk's Haitian Surveys to form a complete reconnaissance of the island.

He returned to Philadelphia in 1872 to prepare his report and map, and subsequently made a second visit to the island.

In 1873 the government of Costa Rica, in connection with plans for a railway, desired topographical and geological surveys in its little-known province of Talamanca, and engaged the services of Mr. Gabb for the purpose. During three years, while engaged in this work, Gabb extended his observations over a great part of Costa Rica, collected largely in natural history, geological, and ethnological lines, and sent valuable collections to the Smithsonian Institution. He suffered severely from "calentura," or coast fever, a pernicious and deadly form of malaria, and, from exposure in the field, finally contracted pneumonia. This weakened his lungs to an extent which made him an easy victim of the tubercular disease which was later to prove fatal.

He returned to the United States in the spring of 1876, and at the Centennial Exposition at Philadelphia prepared for the *New York Herald* an interesting and valuable report on the mineralogy of the Centennial exhibits. He was elected a member of the National Academy of Sciences in this year.

Not long afterward he returned to Santo Domingo with the intention of developing a promising mining claim. The climate of the country proved unfavorable to him. His disease made

rapid progress, and in a vain fight for life he returned to the United States in April, 1878. His condition was such that the most serious consequences seemed inevitable. He passed the few remaining weeks of his life in endeavoring to make part of his manuscripts available for publication.

These were delivered to the custody of his friend Mr. Tryon, and on the 30th of May, 1878, he died at his home in Willington street, Philadelphia, leaving an aged mother and a nephew to survive him. He was buried June 3, at Woodland Cemetery, near Philadelphia.

His valuable collection of fossils from Santo Domingo and Costa Rica was bequeathed to the Academy of Natural Sciences of Philadelphia. His books and papers were mostly disposed of by sale, but we have found allusions to a diary which was left to his family and which should contain interesting records of his varied experiences as an explorer in tropical lands.

Beside membership in the Academy of Natural Sciences, the American Philosophical Society, and the Academy of Fine Arts of Philadelphia, his merits were recognized by honorary or corresponding membership in various foreign scientific societies. His energy in work and devotion to research are exemplified by his numerous publications and by his persistent exploration of unhealthy regions, where the most elementary comforts of civilization were absent or obtained with difficulty.

Beside the more serious works enumerated in the accompanying bibliography, Gabb contributed letters, describing his experiences in Lower California, to the *Alta California* newspaper of San Francisco. He contributed at times to *Harper's Weekly*, and prepared a description of Costa Rica for *Harper's Magazine*.

In his early publications, Gabb's attention was chiefly devoted to the fossils of the Cretaceous period, of which he rapidly acquired a thorough knowledge, so far as the forms found in the New World were concerned.

During his period of activity he was probably the most proficient and prominent student of the American Cretaceous.

While working on the paleontology of California he monographed the Upper Mesozoic and Tertiary, so that his works, which at the time formed the standard for reference on the subject, must always remain classics for the student of these forms.

His work in Lower California, Santo Domingo, and Costa Rica was of serious importance for geography; the paleontologic work actually published was of a preliminary character, but the complete monographs which he contemplated and for which he had gathered much material were destined never to be written.

The amount he accomplished in the brief space of eighteen years, during five of which he was more or less constantly suffering from the enervating effects of tropical malaria, is worthy of respect and admiration, mingled with regret that his life was not spared to complete the researches he contemplated and which he was so well fitted to carry out.

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