

1923

In Memoriam: Gustavus Detlef Hinrichs; James Edward Todd

Charles Keyes

Let us know how access to this document benefits you

Copyright ©1923 Iowa Academy of Science, Inc.

Follow this and additional works at: <https://scholarworks.uni.edu/pias>

Recommended Citation

Keyes, Charles (1923) "In Memoriam: Gustavus Detlef Hinrichs; James Edward Todd," *Proceedings of the Iowa Academy of Science*, 30(1), 28-42.

Available at: <https://scholarworks.uni.edu/pias/vol30/iss1/5>

This General Interest Article is brought to you for free and open access by the Iowa Academy of Science at UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.



Gustavus Hinrichs

IN MEMORIAM

GUSTAVUS DETLEF HINRICHS

Dr. Gustavus Hinrichs, whose passing was announced by the press a short while ago, was a charter member and original organizer of that Iowa Academy of Sciences which was the immediate progenitor of our present society. He presented the first paper before the Academy, and contributed other important papers at each succeeding meeting. For a period of twenty-five years he rendered distinguished service to our State as professor of physical sciences in the State University. He was especially active in no less than four distinct branches of science and largely enriched by his numerous original and precisely analytical contributions the world's literature in all of these fields. As a physical chemist he was most widely known not only in the nation but through out the world. Besides, he did much creditable work in mineralogy, meteorology and geology.

One feature of his work is of especial interest in connection with the history of science in our State. He organized and conducted for twelve years the Weather Service, and published eleven volumes of records besides numerous special articles. This was the first state weather and crop service conducted in this country.

Inasmuch as he spoke fluently and wrote with equal facility the Danish, French, German and Italian, as well as the English, languages, he was better known abroad than around his own fireside. The pen of Doctor Hinrichs was as busy as his mind. A procession of his intellectual progeny spanned an interval of 75 years. Nearly half a hundred ponderous tomes attested the vigor and magnitude of his efforts and his tireless industry. Several hundreds of memoirs were published in the transactions of the learned societies. A majority of these appeared in Europe and in half a dozen languages. Sixty communications were made to the French Academy of Science alone, and over a hundred were printed in the *Moniteur Scientifique* of Paris. Others of more bulky nature were included in the publications of the scientific academies of Vienna, Berlin and Copenhagen. The complete bibliography of his works constitutes perhaps the most imposing array of *recherché* accomplishments ever produced in this country.

Gustavus Detlef Hinrichs was born December 2, 1836, at Lüden, in North Ditmarsia, in the Duchy of Holstein (then Denmark) of the German Confederation, later the province Schleswig-Holstein, of Prussia. His father, Johan Detlef Hinrichs, was a surveyor and civil engineer, and some of the family ancestors were prominent government officials as far back as 1432. The family belonged to the Vogdemannen who migrated from Frisia at the beginning of the Thirteenth Century because of great

storm-floods on their native heaths. His mother's maiden name was Caroline Anderson, and she was of Danish extraction.

Gustav's early education was obtained at home and at private schools. Books were scarce in his native town in those days, but he made the most of what he could lay hands on, and copied copiously from those to which he had only temporary access. In after years he chanced to unearth some of his first notes long since forgotten. Among them was a notebook full of astronomic excerpts, written when he was only ten years old; and another was a manuscript "Steuermannskunde," showing how a ship's place at sea was determined.

The youth of Gustav was set in troublesome times. The general revolution of 1848 made boys old. Ditmarsia was for centuries an independent Republic. Its history was one long account of heroic resistance to the aggressions of powerful neighbors. The combined forces of Holstein, Schleswig, and Denmark finally in 1559 overcame the Republic. Lünden was the chief city of the northern half of the Republic and in Gustav's boyhood days still contained buildings and monuments of that period.

In the midst of armed conflict young Gustav, in 1850, ran away from home, and, imbued with the intense patriotism of youth, joined the colors with the men on the firing line. In 1848, their German brethren had urged them to take up arms; but in the following years Prussia dropped their cause and three years later disarmed them and turned them over again to Denmark. The base abandonment made a lasting impression upon young Hinrichs. By agreement with his family and with assistance of friends he went to Copenhagen to study. The mental atmosphere of the schools there was inspiring and the afflatus of the eminent Berzelius and Oersted, who had departed only a few years before, still lingered.

For three years the youth Hinrichs followed diligently the regular courses of study offered; and then matriculating in the University of Copenhagen, he devoted five years to studies in mathematics, physics and chemistry that seemed best to fit him for his life's work in science. In order to be deemed amply qualified to teach in the higher institutions of learning he passed the necessary examinations early in 1860 with the mark of "excellent."

In the meanwhile the old national animosities broke out anew. Having many friends in high positions in Denmark and all nearest relatives in Holstein it was deemed best for him to go into foreign lands once more. This he did by taking passage to America. Before bidding farewell to his native country he was married to Anna Springer, of Marne, Holstein.

There were even more strenuous times in America on his arrival. Civil War had just broken out and it became difficult to carry out his cherished plans. For a time he took position in a district school; then in a city high-school; and next in the preparatory academy of a State University. Then he was chosen for the chair of physical science in the Iowa State University, which he ably served for more than a quarter of a century.

In after years Professor Hinrichs transferred his field of activities to St. Louis, first occupying the chair of chemistry in the College of Pharmacy, which he retained for 14 years; and then a similar post in the medical school of St. Louis University which he administered for six years before retiring from active teaching in order that he might devote his full attention to his scientific researches. For these he was happily

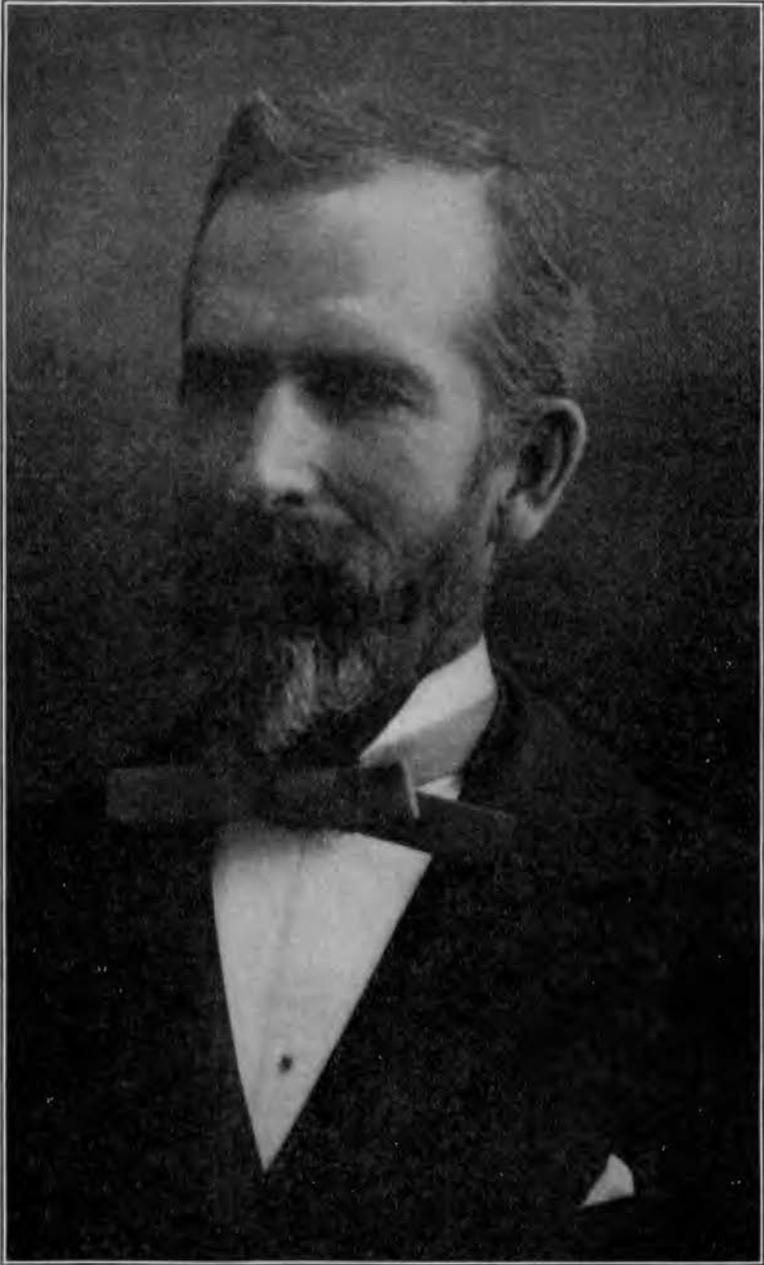
spared in the full possession of his mental faculties and in the full enjoyment of his physical good health until the ripe age of 87 years. Doctor Hinrichs died February 14, 1923.

Hinrichs was a man of largest mental calibre, of broadest international predilections, and of universal sympathies. Little as some of us duller Iowans might have suspected it in coming into contact with him he was without question a genuine genius. He was the brainiest personage that perhaps ever trod our prairie soil. While he was going about in our midst without our ever realizing anything of his gigantic mental stature and although in this country he was usually so coldly received, because so generally misunderstood, he was received with loud applaudits everywhere throughout intellectual Europe and was showered with highest encomiums from the learned societies of the Old World. No countryman of ours was ever in such frequent and friendly communication with the world's savants of his day. This was not an isolated, or chance, recognition here and there, and now and then, but it was a continuous performance for a period of upwards of sixty years.

Hinrichs' performances were always brilliant. They were done mainly in atomic mechanics. Soon after coming to America and settling down at the then recently opened Iowa State University he attacked mathematically the structure of the molecule. By a curious train of inductive reasoning and with fundamental ideas derived from crystallography he gained his first notions on the unity of matter. At this early day he was able to formulate his conceptions so that if he could have been supplied with proper force to pry loose one of the particles composing the lead atom he could transmute that metal into mercury. By continuing the process with mercury and dislodging successively two more particles he would have gold. On Iowa prairies, where sky was ever bright, where air was always clear, and where nightly myriad stars gave impulse to the thoughts of men, he actually discovered a way by which base metals might be transmuted into precious gold. What he really found was the Philosophers Stone, the great quest of the Ages. Two hundred years before, the last of the alchemists of old had finally joined the new company of chemists. Now, chemist returned to alchemist.

Thus Gustavus Hinrichs, modern alchemist lived in our midst. Endowed by nature with strong and hardy constitution, having always lived the simple life, never having indulged in the petty vices which sap and weaken and destroy, he retained to the very end, despite the pressing weight of ninety years, both physical health and mental vigor, with ever lively interest in life and its affairs. Into his busy mind no hint of feeling of *Weltschmerz* ever entered. When at last the final summons came, he passed on tranquilly, unresistingly and free from all distress and pain. Gently did Time lay hand upon his heart as harper is wont to rest his op-
palm on instrument to quiet its vibrations.

CHARLES KEYES.



James E. Todd

IN MEMORIAM

JAMES EDWARD TODD, AND IOWA GEOLOGY

James Edward Todd, whose demise was recently announced in the daily press, was one of the charter members of our Academy of Sciences, and during the first decade of the Society's existence was one of its most active workers. At our first meeting, held in the parlors of the Kirkwood Hotel, in Des Moines, on September 5, 1887, he was one of the eight in attendance for organization, the others being Samuel Calvin, T. H. Macbride, L. W. Andrews, Herbert Osborn, H. W. Parker, R. E. Call and Charles Keyes. Even after giving up his duties in Tabor College, and leaving the State, to assume those of the Chair of Geology in the South Dakota State University, he kept in close touch with the Academy and frequently journeyed from his new and distant home to attend the annual meetings, and present papers before it. His solicitude for Iowa he retained to the last.

During the score of years that Professor Todd was on the faculty of Tabor College no member of our Society was more devoted to its welfare. In this period he read no less than 40 papers, which with one or two exceptions, were on geological topics. From the time of the appearance of his first formal paper in 1878, until within a short time of his death, a span of 40 years, he published annually an average of five or six articles and memoirs. Many of these were short magazine accounts but not a few were more pretentious efforts, formal reports, and monographs on special themes. A dozen of the sumptuous folio atlas sheets and their accompanying explanations that form part of the Great *Geological Atlas of the United States*, published by the Federal Government, stand to his credit.

The place which Todd occupies in American Geology is unquestionably with the distinguished Glacialists. In Glacial Geology it was that he found his most congenial lifework. Through strange combination of circumstances his field of action was severely circumscribed. His productive results were all confined to the Missouri River Valley. For reason of this condition he

missed the larger bearings of his efforts which those working farther north and east had thrust upon them. This fact doubtless colored somewhat all of his achievements. From the very nature of the district in which he was confined it was his misfortune to be brought into contact with only a single till-sheet, and chiefly only with the border of that.

His special field he knew well; immeasurably better than perhaps any of his contemporaries. He was familiar with every rod of the Missouri River Valley between the mouth of the stream and the Big Bend above the Mandan villages and the point where the pre-Glacial stream originally diverted its waters to the Hudson Bay. His very first geological paper published was written on the subject of the Glacial deposits bordering the Missouri River; and his very last, on like topic, was composed half a century later as his busy pen fell from palsied hand and his eyes closed in eternal sleep.

Professor Todd's geological activities naturally group themselves into three well-marked periods, each distinguished from the others by wholly different setting. A first and long period, covering two decades, was spent chiefly in Iowa. A second period, of one decade, was devoted to South Dakota. The third period, also of a decade, was passed in Kansas. Between these decadal intervals, and during them, North Dakota, Minnesota, Nebraska, and Missouri were subject to more or less protracted studies. A hundred and fifty publications on the Glacial geology of this region amply attest the untiring industry with which he labored.

But this pioneer confined his investigations not alone to Glacial Geology. He was no mean stratigrapher; as is fully indicated by the high-grade results incorporated in a dozen or more reports and detailed mappings which he made on South Dakota quadrangles, now forming parts of the Geological Atlas of the United States, published by the Federal Government, and other more extended memoirs issued by various State bureaus. He had wide knowledge of the fossils; and wherever he chanced to be placed he could by means of them quickly and accurately orient himself geologically.

Nor was he geologist alone. He emerged from the old school naturalist and philosopher. He was always a great lover of the free and wide outdoors. He knew intimately the trees, the plants, the birds, the animals, the insects, the snails, and the countless microscopic forms of life about. Much of his early life was

spent in all of these fields. Darwin's work started him deeply into the subject of cross-fertilization of flowers by insects, and the protective coloration of animals. Many of his early papers were on zoological and botanical topics, all with a distinctive philosophic bent, and his output along these lines perhaps equaled or surpassed his strictly geological efforts. His various essays on human history themes had especial charm and exciting interest.

Doubly was Todd in his youth a true pioneer. Not only was he pioneer in his science, but he was pioneer in the upbuilding of his adopted State. He and his acquired State were born in the same year. Coming to Iowa in 1850, when four years of age he quickly adapted himself to all the hardships as well as the advantages of frontier life, and he overcame in a quite remarkable way the innumerable disadvantages which such surroundings necessarily imposed. In the development of the new State he was indeed an unique figure. We of today can little appreciate what he actually experienced or what he really accomplished. He was always ever solicitous for Iowa and interested in Iowa affairs. His last request was to be taken back to the scenes of his childhood; and it was granted. In yellow loess, about which during all his life he had thought so much, his mortal remains now lie enshrouded, under the shade of Tabor oak-grove which he himself in boyhood days planted and which he loved so well.

James Edward Todd was born in Clarksfield, Ohio, a few miles from Oberlin, on February 11, 1846. His father was Rev. John Todd, pastor of the Congregational church of that place; and his mother, before her marriage, was Martha Atkins, a daughter of Judge Q. F. Atkins, of Cleveland, and a graduate of Oberlin College, where during student days her affections were won by the young collegian in the Theological Department of the institution. Reverend John's father, James Todd, removed to Ohio from Dauphin County, Pennsylvania, early in the century, the family having come a generation before from the north of Ireland.

Four years after the birth of James E., the Todd family removed to southwestern Iowa, then, of course, a veritable wilderness, locating first near a river landing called Civil Bend; and then on the upland prairie twenty miles inland where grew up the hamlet of Tabor, and where in due time Tabor College was founded. Rev. John Todd was one of a famed band of eastern Congregationalists whose pioneer deprivations, struggles, and achievements were in after years so charmingly told in autobiographical notes that after his death were edited and published by his son.

At Tabor young James grew up under cultural influences very superior to those ordinarily experienced by frontier lad. In due time he was made ready for college, and was sent back to Oberlin, where his mother and father had been graduated. There he early developed a great fondness for natural history. He received his Bachelor's degree in 1867; and the Master's degree in 1870. He attended Union Theological Seminary in New York for a time, and then returned to Oberlin for further study, taking the degree of Bachelor of Divinity the following year. Although so well prepared he never entered the ministry; but, after spending a year at Sheffield Scientific School and Yale College, he accepted a call to the Chair of Natural History in Tabor College, where he ably served for twenty-one years.

In the meanwhile his scientific interests centered in geology, and he devoted the summer time of several years to field work on the U. S. Geological Survey. He resigned from Tabor College in order that he might carry on special investigations on the Geological Survey of Missouri and on the Minnesota Geological Survey, which occupied a full year. Then being called to the Chair of Geology in the State University of South Dakota, he transferred his activities to that state and conscientiously served for ten years, at the same time directing the work of the State Geological Survey.

After rounding out a decade in South Dakota he received the tender of a professorship in the State University of Kansas, where he took up his new duties in 1907, and remained active in the institution until 1917 when he was made Professor Emeritus. Relieved entirely of teaching he was able to concentrate all of his time upon productive scientific work, which he continued to do up to the very hour of his demise a few weeks ago. This last lustrum was perhaps the most thoughtful and profitable period of his busy life.

Throughout his long career Professor Todd was never out of touch with college life. Amidst the exacting and multitudinous duties imposed by the small college, with its unavoidable time-consuming demands, he found both time and opportunity for an amazing amount of original investigation. During the twenty-odd years in Iowa his efforts were somewhat divided between biological and geological fields; but later the latter gradually supplanted the former altogether. While at Tabor College he devoted much of his energies to the study of the then enigmatical silicious marls which so thickly covered the bluffs of the Missouri River, and which we

now designate as the loess. This naturally led to the contemplation of the associated Glacial drift.

Before he departed from Iowa to enter upon newer and broader fields of Glacial endeavor he had meditated much upon the problems involved and he had published no less than half a hundred papers on topics related thereto. He had traversed the banks of the Missouri River from the mouth up to the Big Bend in North Dakota and had visited the bluff sections every where between. He had gone over ancient Lake Agassiz plains in Minnesota, had reconnoitered the Missouri Coteau, or Height of Land, in the Dakotas, had given detailed attention to the Glacial deposits of the State of Missouri, and had made numerous trips into Nebraska and Kansas. All this led up to his next circumscribed *opus*. This proved to be his most productive period, as is attested by the quality and variety of his publications of this time.

With transference of residence to South Dakota Professor Todd's field of activity greatly expanded. Besides performing the varied duties as Professor of Geology and Head of the Geological Department in the State University, the multitudinous functions of the State Geologist devolved mainly upon him. Glacial Geology was now relegated necessarily to the background, and was largely replaced by stratigraphical determinations among the older rocks and by consideration of the industrial possibilities of the rich mineral region of the Black Hills. The dozen or more quadrangles which he mapped in great detail during this time form parts of the Geological Atlas of the United States; and they compare favorably with the very best work of the kind ever done in this country and perhaps in the world.

The mineral resources of South Dakota State gave opportunity for wide and varied treatment, and the success with which Professor Todd met the exigencies and adopted himself to new environment is amply shown by the way the numerous reports were received by the public and republished in part or entire by the trade journals and scientific press of the country. Besides these, there was published a comprehensive résumé on the general geological features of the state. Sixty or more special papers on a wide range of topics were also prepared and printed in the scientific magazines.

Of this period Dr. H. Foster Bain writes:

I remember Todd as a tall, reserved man, apparently much molded by the fact of having worked long years alone. He was of the old Puritan type; a man who studied most conscientiously the facts before him and to

whom a conclusion became a conviction, and hence by easy progress a matter almost of conscience. I admired greatly at the time, and with the experience of later years admire even more, his pertinacity in continuing to do real investigative work in science despite the handicaps of many classes to be taught and all the distractions incident to making a living in a pioneer country; and in the years Todd was in Iowa and South Dakota those were still states of the pioneers. We saw each other frequently in Iowa days; less frequently in South Dakota; and when he was called to University of Kansas we lost touch; but I always remembered him as a conscientious observer, a patient teacher, an open-minded scientist, and a most kindly gentleman. He was one of a generation in science to which all who follow will owe much.

As a colleague Dr. Raymond C. Moore feelingly observes:

Professor James Edward Todd came to the University of Kansas in late middle life. Long years in geologic teaching, rich and varied experiences in geologic field observation, important administrative responsibilities, and a charming personality fitted him well for his duties at Kansas. Upon his teaching work he entered with interest and vigor and with opportunity to come in contact both with elementary and advanced students he undertook at once an important part in the work of the Department. He was especially interested in the beginning student and his courses were shortly well-known on the campus. In later years, despite his failing voice and declining vigor which made his work in the class-room difficult, he endeavored to continue his teaching work. Failing health finally made this impossible, and though retained as a member of the department, he was relieved of active work.

Hardly had Professor Todd taken up his new work in the University of Kansas than his scientific interest in the field of Glacial Geology turned to the almost unstudied problem of the Kansan Glaciation in the northeastern part of the State. For a number of years his field seasons were devoted to the detailed study of parts of northeastern Kansas. From time to time papers on various phases of this subject appeared from his pen. The completion of his work on the "Glacial Geology of Northeastern Kansas" constitutes his last important contribution to science. This work now in manuscript form, will appear as one of the bulletins of the Kansas Geological Survey.

The outstanding qualities in Professor Todd's personality, as they were impressed upon his associates in the Department, were his very broad, scientific interests, his sincere sympathy for his students, his teaching work, and his geological research, the courtesy, dignity, and unfailing good temper of his daily life, his active and hearty cooperation in all that affected the good of the Department, and an unfailing cheerfulness in the face of increasing physical disability which among his associates added admiration and respect to sympathy.

At Tabor the Rev. Charles Howard, old-time friend and sometime pupil of Professor Todd, spoke feelingly on the impressions that came to him on the life of his beloved teacher.

As a student his outstanding memory was that of a great master of the subjects on which he expatiated, one who took truth as his as he

taught, and true artist with pencil and guide. In many ways he was like the Apostle Paul, "forgetting those things which are behind, and pressing forward to those which are before." Through his science, the flowers, the rocks, and stars he saw the writings of God. He stood before his students a great, towering man. They stood in his strength and he stood in the strength of the Lord. A dauntless spirit of thoroughness pervaded all his work as a searcher after new truths in the scientific field as well as open frankness in sharing these new facts in the work of teaching. He had high standard of excellence in the gaining of knowledge and character.

After entering upon his work in Kansas State University, Professor Todd's duties began to absorb more and more of his time, and his strictly productive efforts necessarily suffered to a noticeable degree. Yet, from a strictly scientific angle, his most important contributions to knowledge appeared at this time. His writings of this period took on a distinctly dynamical aspect which had never been so apparent previously. Professor Todd remained there a full decade before retiring permanently from active teaching. Made Professor Emeritus he was able to spend all of his time during the last five years of his life in quiet retirement in his home in Lawrence, completing various phases of work that had been left unfinished in previous years.

My last meeting with Professor Todd was a right joyous one, despite the fact that his fatal malady already had him gripped in its merciless coils. We had not visited since he first went to Kansas a decade and a half before. During that time, however, correspondence had been frequent. I had last written him a few weeks previously inquiring if he were soon to have ready a manuscript on the Development of the Missouri River which he had mentioned in a letter some time before as desiring soon to see in print. His reply was characteristic:

My Friend Keyes:

Yours of the 19th inst is at hand. I am very glad to hear from you; and of the revival of the *American Geologist* with greatly increased scope.

Nothing would give me more pleasure than to finish such an article as I suggested; but I cannot for several months perhaps. My palsy interferes seriously with my reading, and more with writing, and even with dictation.

Moreover, I am trying to get ready for the printer two manuscripts. "Glacial Geology of Kansas," for the State Survey; and "Was the Present Course of the Missouri River in North Dakota Determined in Tertiary Time," for the Geological Society of America. Both are over due.

With best wishes,

Yours, etc.,
J. E. TODD.

Chancing, two months later, to pass through Lawrence I dropped off for a few hours that I might visit again with a friend whom I had not seen for so many days. Although somewhat shocked at the form that his illness had taken the body proved no indication of the spirit. His faculties were unimpaired; his mind was as clear and as alert as ever; his memory was marvelously exact and unshaken; his speech sparkled as of yore; and his fund of wit and pithy reminiscence was as inexhaustible as in former days. As finally I turned to take my departure, he wished to take me up Mount Oread, a mile or so away, in order to show me some of his latest treasures acquired only a short time before; which of course I would not permit. He alluded again to the article which he now thought he could shortly produce since the others were nearly out of the way. On leaving, he grasped the hand with fervent clasp that seemed to portend final parting; and such it proved to be. Despite the grave misgivings on my part the manuscript indeed appeared. It was his last effort. And presently was it followed by sad death notice. Todd was game to his very last breath. Better was the world for his having lived.

CHARLES KEYES.

