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OF

WILLIAM BULLOCK CLARK 1860-1917

BY

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WILLIAM BULLOCK CLARK

1860-1917

BY JOHN M. CLARKE

WILLIAM BULLOCK CLARK was born in Brattleboro, Vt., December 15, 1860. He died suddenly of apoplexy, at North Haven, Me., early in the morning of July 27, 1917. He passed away in the prime of his life and usefulness.

Doctor Clark was of old American lineage. His father was a merchant at Brattleboro-a man of worth and held in high regard in his community. The father's family was derived from Thomas Clarke (the final e was in the spelling of the name for several generations), of Plymouth, who, though not of the Mayflower company, was a notable and vigorous figure in the colony after 1623, the date of his arrival. From this progenitor have sprung fertile and sturdy legions of Americans. With the Bullocks the same strong strain entered the combination. On both sides were men who, in their various generations, served colony and king and republic in military and civil office from the battle of Lexington to the founding of this Nation. In these late days it is of more than passing note that through the early years of the generations this combination of Clark and Bullock was of pure strains which had never crossed with Cavalier or Ouaker or such other haphazard invaders of King James's American plantations, nor in later years with newer alien stocks.

In the wanderings of the descendants of Thomas Clarke and his contemporaries, the families had spread from Plymouth along the coastlines to Stonington and New London and thence up the Connecticut River. This route was "Puritan Street" the line of migration beaten out by one generation after another and which gave the way for the settlement of the western wilderness. Few ventured the shorter cut from Massachusetts Bay through the savage forests and lurking dangers of Wellesley, Framingham, and Worcester. So to the upper waters of the Connecticut and to Brattleboro came Dr. Clark's immediate progenitors, and there he was born—a son of a substantial and respected father and of a strong-hearted mother. Obedient to the recognized procedure of heredity, Dr. Clark is said to have derived much of his intellectual vigor and agility from his mother; but it would be beyond my power or wish to think of Dr. Clark or to present him to others as a composite of ancestral traits; rather as a unit of character and work.

In the home at Brattleboro there were influences indoors of the Christian fireside and outdoors of the attractiveness of the river and its bounding hills. There, too, was the busy industry of the town, with its commercial ambitions. One may perhaps find it possible to trace back into some of this youthful environment the threads which were to be woven into the manhood fabric; yet, after all, the boy lived a normal, healthy Yankee boy's life, and as schooling days in Brattleboro drew to a close was, like other Yankee boys, possessed with the desire to go to college. I have learned of no special proclivities toward geology which Clark had acquired from the granite hills and river clavs of Brattleboro; but I have learned over and over again that in the making of a boy into a man there is some one individual's influence that is likely to dominate all others, leave a deep imprint, and often turn the feet into a determined path. So I think we may say of Dr. Clark, as I once had occasion to say of his predecessor at the Johns Hopkins, there was nothing startling, premonitory, or out of the ordinary in his school and college career; but that, always a good student, leaving behind a reputable record, he was not awakened to a real purpose in life until he was led into the circle of the sciences which are concentric to geology; and this was in Amherst College and the torch-bearer was then, as before and since, Professor Benjamin K. Emerson.

A singular physiology determined the direction of Clark's career in geology. Professor Emerson was then in a quartan fever of enthusiasm over the new petrology and was keenly disposed to induct his students into its fascinations; but as it happened Clark was, in a moderate degree, color-blind and the nicest discriminations of the crossed nicols were not for his eyes; so perforce his efforts were directed into the standard

4

lines of geology-structure, stratigraphy, and paleontology. It was for the pursuit of these aspects of his science, colorless in a certain sense, but vastly colorful in their chief reactions, that on graduation in 1884 he left Amherst for Europe with the inspiring companionship of Professor Emerson and Professor William North Rice, both of whom were going off together for a year's holiday. This was such an opportunity for travel and uplifting fellowship as seldom falls to a young man's lot. In journeys through Scotland and down into Cornwall and Devonshire, up the Rhine and into Switzerland, their scenery and geology expounded by his extraordinary couriers, amid the exciting surroundings of new lands, the student was electrified by the allurements of his science. Everywhere he made notes and collected specimens, meanwhile conning his vade-mecum-Dana's Manual. Professor Emerson intimates that on this trip Clark was unfailingly thoughtful of the whimsies of the distinguished zealots who were acting as his spiritual guides.

Arriving at Munich, he was advised to settle down and study with Zittel, then the leading paleontologist active in the universities of Central Europe. There, and also for a short time at Berlin, he had the experience which so many American students of those days shared; an opportunity to acquire the precision of German procedure while, like others, he unwittingly succumbed to the ingratiating propaganda of Teutonic national ideals. As Munich was in the heart of a region where the Mesozoic and Tertiary rocks were richly developed, Clark's special interest was turned in their direction, and he always afterward pursued, by preference, investigations in this field.

Prof. George Huntington Williams, then at the head of the newly organized Department of Geology at the Johns Hopkins University, wholly enamored of the Zirkel-Rosenbusch petrology, a scholarly investigator of the best type after the German model, felt the need of assistance in the organic phase of geology, and through him Dr. Clark, who had made his degree at Munich, was invited to that institution which through the rest of his life was to be the stage and setting of his successful career.

Memorial tributes in other places have dwelt upon the growth of Dr. Clark's influence in the university, and there is today a widespread cloud of witnesses to his successful labors in the scientific army of this nation. So we may perhaps wisely summarize the university phase of his life in a few paragraphs.

It is the misfortune of a teacher's career that it cannot be defined in terms of the influences it imparts. The portrait must always fail in some intangible measure when it is drawn in words alone. A student's memories and the influence for good which he in his day transmits are the most subtle and doubtless the most enduring of all tributes to a successful teacher, and these we may leave to the generations of his disciples. Williams and Clark were a strong team at the Hopkins; Williams, the erudite and polished scholar, refined in research, hesitating a little to step down to the street from his cloister; Clark, with a big heart open to all men, eager to carry his message and his science to all the people, a splendid mixer and propagandist, with an unwearied enthusiasm for ever more work and a genius for organization. When, in the vicissitude of life, Clark took charge of the department, he brought into it a spirit of living emulation and freer interchange. The ascetic cells were none the less regarded, but their devotees were turned out for frequent airing, made to meet the man on the street and understand his claim upon them. Professor Clark strengthened his own hands immensely in the wise choice of his strong associates in academic work: Mathews, the sturdy, clearheaded geologist and executive; Reid, the fine-strained, acute geophysicist; Swartz, the versatile teacher; Berry, the animating expositor of these academic groves.

The students who gathered around him caught his ideals; there was to be no specializing among them till they had covered the entire broad field of the science, organic and inorganic, and were then in some more adequate measure inoculated with his vision. That this paleontologist graduated from his department geologists, paleontologists, paleobotanists, geophysicists, highway engineers, and meteorologists was a natural realization of his proper university business; but a more vivid expression of his earnest conviction that geology is an essential science is the fact that he had convinced the engineering faculty of the imperative need of the full undergraduate course in geology for candidates in civil engineering.

6

Professor Clark became head of his department in 1894, but before he had reached this position he had contracted an affiliation with the U.S. Geological Survey which gave him an official standing therewith; and this in variant form was continued to his death. It was a connection extending over almost thirty vears, from 1888 to 1917, and it had a very important influence on his life work in opening to his study, and in large measure to his eventual official control, the problems of the Cretaceous and Tertiary formations of the Atlantic Coastal Plain. Correlation in stratigraphy and paleontology in this region was vastly obscure at the time Clark began his work. The lamented Mc-Gee, with an unerring genius, had pointed the way out of the chaos of accumulated discrete data; but it is safe, I think, to say that in this field the work of many hands, guided by or coöperating with Dr. Clark, has brought to the science not alone a resolution of the outstanding problems, but a detailed and applied knowledge of practical resources before unknown.

In 1892, while still holding a subordinate position in the university, he made his first trial of outside organization and brought into existence the Maryland State Weather Service, of which he was made Director and as such continued until his death. A deeply interested and experienced student of climatology has characterized Clark's weather reports as the best ever made in this country.

In 1896, now with all his influence of a full professor in the Hopkins, he effected the creation of the Maryland Geological Survey, receiving the official title of State Geologist and safeguarding the organization by the creation of a Board of *ex officio* commissioners, of whose sympathy and support he might under all conditions feel reasonably secure. To such sympathetic and understanding support the noteworthy product of this Survey in no small way is due. It is almost needless to say that this organization, of all his creations, lay nearest his heart and that its volumes are his most tangible monument. Perhaps it is true that only those who have been charged with State geological surveys can fully appreciate the quality of this achievement, that is to say, only such men as have been confronted by similar problems in the effective manning of such a survey; the execution of essential details, the presenta-

7

tion of them to the public in inviting form, the whole mechanical paraphernalia thereto attached, and, of course, of prime moment, the securing of appropriations in such form and amount as to make the work free of embarrassing interruption. I believe it fair to say that the impulse toward the organization of this Survey may have begun to take form from the time Professor Williams and Dr. Clark were called on to prepare a treatise on the Geology and Mineral Resources of Maryland for the use of the World's Fair Commission in 1893. This document was of such broad and general scope as to summarize not only the outstanding knowledge, but the outstanding lack of knowledge as well.

The first official volume of reports on the Geological Survey was not issued till 1897, and naturally it was given over to a presentation of the general field, the history of such scientific investigations in the State, and the scope and importance of the problems involved in the undertaking. The first report of a newly created official departure is awaited with a critical keenness by the tax-payers, and the prescient Clark knew that the fate of his organization largely hung on the reception of his maiden volume; so he gave them an untechnical, readable book whose mechanical execution was worked out in the very best taste, with miniature geological maps rendered with a beauty of execution we had not seen before, carefully selected paper and letter-press, a dignified format and binding, the whole making a most attractive and desirable book. So his people estimated it, for its reception was laudatory and encouraging; and so his colleagues have estimated it in terms of the worldly wisdom which took this way to open the door to the technical volumes which followed. There are now ten volumes in this series, the last of which Dr. Clark's eye never saw. They are familiar to all of us geologists and they make a sumptuous array of varied and inviting books-the compendium, now that they have run through the gamut of the formations, of the economic, stratigraphic, and paleontologic facts of the State of Marvland.

Into this fruitful survey of his adopted State he brought a battalion of collaborators and independent workers. It may be said that he subsidized the best talent he could find for these geological problems, and it would be a long and strong list if I should here call the roll of these shareholders. If one should say, herein lay his good generalship, that he could impress so many to his service, and that a too ponderable share of the load was laid upon the shoulders of his effective aides, let this critic look through the contents of these volumes and learn the very large part which Dr. Clark's own hand has played in the creation of their technical contents.

No sooner was the geological organization on its feet and fortified by the plaudits with which its first volume was greeted than Clark took advantage of the good-roads propaganda, which was then spreading through the Eastern States, to organize a Highway Division of the Geological Survey. The construction of a system of public highways for a Commonwealth calls for executive ability of the first order. It must commandeer highgrade engineering, prudent financiering, and astute appreciation of community and commercial requirements and avoid the emaciated political sniper. It also takes money in great sums. From 1898 to 1910, after an expenditure of \$2,000,000, when the importance of the work made necessary the organization of a separate board-the Maryland State Roads Commissionthese activities were carried on by the Geological Survey, and their successful appeal to the people greatly strengthened the organization, perhaps in such degree that it was freer to stroll away among the aisles of pure science, from which during this period emanated so many of the volumes on paleontology.

"The fine roads that now run through Maryland counties are in no small measure the result of his sound advice and farseeing counsel," said the *Baltimore American*, in commenting on the death of this "most useful citizen."

Professor Clark was made a member of the new commission, and so continued until 1914.

Ten years ago the problems of forest protection and development were subtending a large angle in the public vision, and at that time Dr. Clark was made executive officer of the Maryland State Board of Forestry, and with the parturition of the term *conservation* at the celebrated "Governors' Meeting," called by President Roosevelt at the White House, and, as one might say, the "pinchoting" of "conservation commissions" over the land, Clark was appointed by the Governor a member of Maryland's Commission.

The foregoing may be taken as the summary, or rather as an inventory, of Professor Clark's scientific activities; in them all he showed the initiative of the pioneer, I think an inherited trait. His ancestors "pioneered" from England to Plymouth; from Plymouth to the mouth of the Connecticut; from there to Brattleboro; then he "pioneered" from Brattleboro to Baltimore, where the atavistic geographical sense of organization seems to have been converted into the initiative for organization. But the scientific side of his life is only a part of his story. He entered without reserve into a man's share of civic life and duty and his competency to serve was recognized both by By act of legislature he was made Com-State and city. missioner for the State of Maryland in the resurvey of the Mason and Dixon line. The Mayor of Baltimore, Mr. McLane, after the great fire of 1904, made him a member of a committee to rehabilitate the burnt district, and in that work he served as vice-chairman of the Subcommittee on Streets, Parks, and Docks; and I recall the proper pride with which he pointed out to me on one occasion the improvements which resulted from these labors. By Mayor Timanus he was appointed a member of a Commission on City Improvements and he was one of the first advocates of the present system of sewers. Again he was made a member of the Mavor's Committee to widen the down-town streets and create a civic center for the city. From 1901 to his death he was president of the Henry Watson Children's Aid Society of Baltimore, and this interest led him into a deep concern for problems relating to the dependent child, in which his judgment was so highly regarded that he was a delegate to the White House conference on this theme in 1900. He was also a member of the State Tuberculosis Association and vice-president and chairman of the Executive Committee of the Federated Charities of Baltimore.

Thus he gained esteem and confidence among his neighbors, the citizens of his vicinity—not an easy thing for a man of science, who is so freely condemned as "unpractical" by the so-called man of affairs. And these many lines of civic industry he carried without friction or loss of tone and never to an interference with his scientific labors and ambitions.

To enumerate the marks of appreciation of his scientific work would make a long list. 1 am not sure that Dr. Clark ever kept a complete one, but these were the progressive orders of his advancement; he belonged to American, English, and German geological societies; he was a member of the National Academy of Sciences and chairman of its geological section; of the American Philosophical Society; president of the Association of American Geologists; the treasurer of the Geological Society of America.

A few years ago, when Dr. William M. Davis was about to retire from the Sturgis-Hooper Professorship of Geology at Harvard, Clark was asked by Professor Davis and President Lowell to take the position. He was attracted by the offer. The venerable prestige of Cambridge, the large opportunity of expansion, the cozy repute of such an attachment, together with a certain pious genealogical appeal, made a strong argument to him; but the child of his creation was dearer to him than any child of adoption could be. He came to Albany to talk the matter out with me, and I was told afterward, when he had decided not to go, that the only condition of his remaining which he asked of his trustees was that the salaries of his colleagues should be increased.

Doctor Clark was an LL. D. of Amherst College, and probably might have been its president had he been so disposed. His administrative relations to the Johns Hopkins University during the interregnum after the retirement of President Remsen were so influential that many eyes were turned on him as a probable successor to the vacant chair. R. Brent Keyser, President of the Trustees of the Hopkins, speaking at Dr. Clark's public memorial,* has said of this: He "was among the first to be mentioned to fill the vacant position. I therefore asked him frankly for his attitude in regard to presidents, and he replied that while he appreciated fully the opportunities, honor, and dignity of the position, he was convinced that the university wanted a man outside of the faculty;

^{*} Held at the university, November 5, 1917.

and he at once threw himself whole-heartedly into the search for the outside man. In all matters in which the university was involved," added President Keyser, "he occupied the dual position of the man keen after its material prosperity, but even keener to guard its spiritual ideals."

Dr. Clark traveled widely, both in the far-flung excursions of the international geological congresses and with his family on many occasions. For many years he had made a summer home at North Haven, Me., and in his outings during vacation days at "Stonecrop" he threw his official cares aside and was always the wholesome, hospitable man-boy, bubbling with energy, gardening, raising chickens, building boats and sailing them, reveling in unchecked return to the instincts of Brattleboro days.

Doctor Clark married Ellen Clarke Strong, daughter of the late Edward A. Strong, of Boston, and descendant of William Clarke, of Dorchester (1637) and Northampton; and their four children, Edward, Helen (Mrs. H. Findlay French), Atherton, and Marion, share an unsullied strain of Puritan descent.

Thus, briefly, we have summoned together for this sketch the outstanding facts of Dr. Clark's life. Much of his record must remain untranscribed except upon the hearts of those who received his impulses and his confidences.

For some time before his death a heightening blood pressure had warned Dr. Clark of dangers ahead, but his undiminished vitality seems to have made him indifferent to the signal. In the spring of 1917 he was appointed to the Geology Committee of the National Research Council on nomination from the National Academy of Sciences and was asked to take over the organization of a plan which would locate, chart, and describe the entire supply of materials available for rapid highway and fortification construction from Maine to Texas and for 100 miles back of the seaboard. He entered on this undertaking with his customary energy, even though at the time serving as a member of the Marvland State Defense Council, and he effected a large and efficiently coöperating organization of about fifty geologists and highway engineers. This was his chief service for the war and he fell in the midst of it. Other hands have with prudence and efficacy brought the work to its completion, and it will stand as his last monument and a permanent memorial. 12

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WILLIAM BULLOCK CLARK-CLARKE

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