

TRIBUTES

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HON. LINDLEY M. GARRISON, SECRETARY OF WAR.

(*Baltimore American*, Dec. 6, 1913.)

Upon being advised of the death of Colonel Gaillard, Secretary Garrison sent the following telegram to Mrs. Gaillard: "Mrs. Garrison and I tender our heartfelt sympathy in this sad hour. It grieves us very much to learn of your great loss."

The Secretary has a keen sense of appreciation of the services which Colonel Gaillard rendered the Government not only in connection with the excavation of the Panama Canal, but in important engineering projects in the United States, including fortifications and river and harbor improvements and work of great technical value in connection with the survey of the Mexican boundary. An order had been issued extending an indefinite leave of absence to Colonel Gaillard in order to afford him an opportunity, by complete rest, to recover from his illness.

Secretary Garrison wrote personally to the Colonel: "I do not wish you to return to your work until you are so completely recovered that there is no danger of a recurrence of your existing trouble. I cannot let this occasion pass without saying to you that there is the fullest appreciation of your most valuable services."

MAJ.-GEN. GEORGE W. GOETHALS

(*Public Ledger*, Philadelphia, Dec. 5, 1913.)

[The official tribute issued by General Goethals and printed in the *Canal Record* of Dec. 10, 1913, is given on pages 63-64.]

Col. George W. Goethals when informed of the death of Colonel Gaillard said:

I am deeply shocked to hear of the passing of Colonel Gaillard. He was a great engineer, an unflinching worker and a true gentleman. While his death of course was not unexpected, I feel it is a deep personal loss to me.

FORMER PRESIDENT THEODORE ROOSEVELT

I am very glad that a memorial is being prepared for Col. D. D. Gaillard. When I appointed Colonel Gaillard on the Isthmian Commission, it was because of the very high reputation he bore. His work on the Isthmus admirably sustained this reputation. He was one of the servants of the United States who added to his country's honor, dignity and usefulness. (Aug. 16, 1915.)

FORMER PRESIDENT WILLIAM H. TAFT

I knew Colonel Gaillard, but not very intimately. He was a very competent engineer and a most enthusiastic worker in the cause of the Government. I have no doubt that the work which he did in the tropics and under the trying conditions that existed brought about the illness which led to his death. He therefore sacrificed himself in the same way that a soldier does in battle. He contributed substantially to a great work and Congress recognized his merits. I am deeply sorry that he has not been spared for many more years of usefulness to his country. (June 19, 1915.)

HON. HENRY L. STIMSON
Secretary of War, 1911-1913

Colonel Gaillard's illness and death did not occur until after the close of my term of office as Secretary of War and my only action in reference to the matter was a personal letter of condolence to Mrs. Gaillard. He was a most efficient, loyal and distinguished officer and, as I had an opportunity of seeing personally, the great work of the Culebra Cut is very largely a record of those qualities of his character. He deserves well of his country and I know that his host of friends will be very glad that a memorial of his life has been undertaken. (Oct. 22, 1914.)

HON. JACOB M. DICKINSON
Secretary of War, 1909-1911

I esteem it not only a duty to his memory, and to the American people whom he served with such distinguished ability and fidelity, but a privilege to put on record my estimate of the life, character and services of the late Col. David DuBose Gaillard.

As Secretary of War I was for a period of two years constantly in touch with his work in making the Panama Canal, not only through official correspondence and reports, but a part of the time through personal observation on the ground. I had full information in regard to that work, and can speak of it and him with confidence. He was possessed of and put forth the highest professional skill, with a fidelity to duty, and a disregard of care for himself that could not be excelled. It is my conviction that he sacrificed himself for his country as truly as if he had died upon the field of battle. The

record of an officer so brilliant, so accurate, so untiring, so faithful even unto death, is a proud heritage for his family and his countrymen who will keep his name in grateful and enduring remembrance. (Sept. 30, 1914.)

LIEUT.-GEN. J. C. BATES, U. S. A. (RETIRED)
Late Chief of Staff

I first knew Colonel Gaillard when he reported to me with his regiment at Macon, Georgia, in the fall of 1898. In January, 1899, he again joined me at Cienfuegos, Cuba, with part of his regiment, and in addition to his regimental duties, he served on my staff as Chief Engineer of the Military Department of Santa Clara, Cuba, and later he served on my staff at St. Louis, Mo., as an officer of the General Staff of the Army.

He has earned so high and world-wide a reputation as a constructive engineer that I make no further remark on that phase of his life's work, but speak of him as a soldier. I never knew a better volunteer regiment than the Third U. S. Volunteer Engineers, whose enlisted personnel consisted of men of excellent intelligence. The officers had to pass a rigid examination before being commissioned, and the field officers and several of the regimental staff officers were trained soldiers, but Colonel Gaillard must be given a large share of the credit for the high degree of discipline and efficiency attained by the regiment.

As an officer of the General Staff he performed highly important duties with marked energy and efficiency. Colonel Gaillard was an all round officer and in his untimely death our country lost a valuable

asset, for he was eminently qualified for very high command. He was a genial companion, and a lovable and noble man. (Dec. 4, 1914.)

BRIG.-GEN. JAS. H. WILSON, U. S. A. (RETIRED)

When I took command of the First Army Corps at Lexington, Kentucky, on October 20, 1898, I found Col. David DuB. Gaillard, of South Carolina, commanding the Third Regiment of United States Volunteer Engineers, which had been organized at Jefferson Barracks in June of that year. It was composed of twelve companies, divided into three battalions, each commanded by a graduate of West Point. The company officers were generally young Civil Engineers, who had carefully selected the non-commissioned officers and enlisted men of the regiment.

Although his regiment had been only a few months in service, both officers and men had already caught the discipline and bearing of well trained regulars.

Upon transfer to Cuba, the three battalions of this regiment were immediately utilized in the survey of the towns, cities and surrounding country and in the systematic study of their conditions, resources and economic requirements. A spirit of perfect discipline and a high degree of intelligence prevailed from the first, and the thoroughness with which all did their work and made their reports were most creditable to both men and officers as well as to the country they so admirably represented.

The experience in command of the Third U. S. Volunteer Engineers was but a brief and brilliant episode to Gaillard in the career of a scientist and

a savant. It showed the country just what the highly trained West Point soldier could do for it in the actual organization and command of troops and left Gaillard with increased powers and experience, free to return to duty as a Captain of Engineers.

His work upon "Wave Action" placed him at once in the first rank of West Point Hydraulic Engineers and doubtless did its part in securing for Colonel Gaillard his detail as a member of the General Staff corps, Chief of Staff to the Department of the Columbia, Assistant Chief of Staff to the Northern Division; to membership of the Army War College; of the General Staff corps; as Assistant Chief of Staff in the second occupation of Cuba; and finally, on March 22, 1907, as a member of the Isthmian Canal Commission.

As Supervising Engineer in charge of dredging the harbors, the body of the canal below the tide level, and finally of excavating the Culebra Cut through the central ridge of the Isthmus of Panama, Colonel Gaillard gained the chief honor of his useful life. In every phase of his crowning work in charge of the Central Division, he was left in direct control and made many improvements and economies in the plant and its management.

Colonel Gaillard devoted himself so constantly and so assiduously to the great work of the canal that his health finally became so hopelessly impaired as to cause his death. He would accept no relief till it was too late to save his life, and he died a martyr to his sense of duty and to the high standard of the profession in which he had now become distinguished throughout the world. It was well known to his companions of the Corps of Engineers,

that Gaillard was not only an engineer of great learning but of unfailing judgment and capacity, and it is to be remarked that notwithstanding his scholarship and scientific attainments he was looked upon by the Army as an eminently practical, all-around man, and by those who served with him, as an ideal American soldier. (Dec., 1914.)

BRIG.-GEN. H. M. CHITTENDEN, U. S. A. (RETIRED)
A Member of Colonel Gaillard's Class at West Point

(In January, 1914, Bulletin of the Class of 1884, U. S. Military Academy.)

To lay down one's life upon the field of battle in voluntary service of fatherland has been considered in all ages the loftiest expression of patriotism, if not of heroism itself. To fall as Gaillard has fallen—is it any less true heroism? Any less self-sacrifice upon the altar of country? Not amid the din of armed conflict, nerved by the frenzy of an hour or a day, but at the end of long years of patient, exacting work, of terrific responsibility, the tragic end has come. But it is just as much a direct result of the struggle itself as if it were the work of a hostile bullet, and the exalted standard of duty which his career exemplified will command the increasing admiration of men as long as his work in the Isthmian hills endures.

We grieve that he could not have remained to enjoy the fruits of his well-earned fame. But there is compensation in the thought that to him was reserved the higher privilege of laying down his life work just as it was crowned with success. Like Wolfe on the Plains of Abraham, he has been called with the plaudits of victory ringing in his ears. Whatever may come to others, his record is secure.

MAJ.-GEN. W. W. WOTHERSPOON, U. S. A. (RETIRED)

Colonel Gaillard served as one of my assistants for a long period in the War College branch of the General Staff of the Army, and whilst so serving gave evidence of that marked ability which has characterized his entire service in the Army. I, like everyone else who ever served with Colonel Gaillard, had a deep admiration and respect for him. (Sept. 25, 1914.)

BRIG.-GEN. JOHN M. WILSON, U. S. A. (RETIRED)
(Late Chief of Engineers)

It was my good fortune to have been honored with the acquaintance of the late Col. David DuB. Gaillard for a number of years.

I regarded him as one of the ablest, bravest, most accomplished officers of Corps of Engineers of the United States Army, and as a cultivated gentleman of the highest type of character; honorable in every sense, firm and true in peace and war. Generations shall come and pass away ere the beloved name of this hero will be forgotten by the Nation. He gave up his life in the interest of the great work in which he was engaged on the Panama Canal, remaining on duty till his physical strength was exhausted.

His name should be carved high upon the tablet of fame of the heroes who have given up their lives in the interest, welfare and prosperity of our great Nation. (Sept. 25, 1914.)

A TRIBUTE

How is it possible to put into words any adequate tribute to the memory of a friend of many years? How much more difficult is this when in addition to worth as a man and a friend, eminence as an engineer who has advanced his profession along widely different lines, is to be portrayed?

My acquaintance with Colonel Gaillard goes back to his cadet days, when some of his work at the drills in practical military engineering first brought him to my attention as his instructor. Later, after graduation, his first practical work was as my assistant in the Florida District of river and harbor improvements, where, for four years, we were closely associated. From 1887 until the end of his life, in the varied stations and duties of our corps, we were thrown together from time to time. Always it was a pleasure to meet him; always a profit to learn of his work.

Very early in his career he manifested the qualities which were sure to lead to eminence in his profession—an intense devotion to duty—strong common sense—an unusual power of observation and analysis by which he saw not only what was being done and how it was being done, but also how methods could be bettered and greater results obtained. It surely was no small thing for a young engineer, with practically no funds for experiment, to undertake the analysis of wave action, to devise a simple and practical instrument for recording wave pressures, and to measure the force of the breakers which he was combating in his work on the sandy coast of Florida. Yet the first work on this

line of study was done in Florida in 1888, work which later resulted in his book on "Wave Action in Relation to Engineering Structures," which has become a standard book of reference on this difficult subject among the engineers of the world.

From 1891 to 1896 he was a member of the Mexican Boundary Commission, and had duties of great responsibility. For a large part of this time he was in the field and traversed the entire boundary line from the Rio Grande to the Pacific Ocean. Of hardships there were many, but his friends later heard from him only the many humorous incidents which a man with his sense of fun was sure to find on such a journey, through the deserts, with a party originally composed mainly of scientific tenderfeet.

After this duty he was for a time on fortification duty at Fort Monroe, and later in Washington, in local charge of the Washington Aqueduct and water supply. It was while there that his superiors showed their confidence in him by selecting him for a peculiarly delicate piece of work in Alaska.

At the outbreak of the Spanish War he was promptly assigned to military duty as Engineer Officer on the Staff of General Wade. A little later he was appointed Colonel of the Third Regiment of Volunteer Engineers, recruited from the South. This regiment was organized too late to participate in the actual fighting, but in December, 1898, and in January and February of 1899 it was sent to Cuba by battalions and stationed at Matanzas, Cienfuegos and Pinar del Rio. There a fruitful field for activity was found in the sanitation and engineering problems of those portions of the Island, until May, 1899, when the Regiment was returned to the United

States and mustered out. It is said that the Commanding General of the Province of Santa Clara, himself a veteran of the Civil War and a distinguished soldier, stated that in all his experience he had never seen a better volunteer regiment than was the Third Regiment of Volunteer Engineers—a tribute indeed to its Colonel.

After the war came various duties, carried out with characteristic fidelity, energy and ability. Colonel Gaillard never was satisfied with good enough. Each class of duty was marked by some achievement in the betterment of methods.

So it was but natural that, when in 1906 President Roosevelt was engaged in organizing the staff of engineers for the great work at Panama, he selected Colonel Gaillard as one. To him fell the task for which it was supposed that officers of the Corps of Engineers from their training and experience were least fitted—the completion of the Culebra Cut—supposedly primarily a job of railroad engineering and management. How well he did this work, how the useful output of each machine, engine and car was practically doubled under Colonel Gaillard's unceasing care is a matter of history. To us who knew the man, the results were not surprising—simply expected. It was a wonderful experience to walk through the cut with Colonel Gaillard on one of his tours of inspection. Not a step was without an instructive reminiscence, and not a recital without that humorous accompaniment which was so enjoyable. The torrid heat and the rough going were forgotten and the six-mile tramp seemed but a short stroll.

Without doubt it was his hard work and anxiety

on the Isthmus which shortened his life, but equally without doubt, had this result been foreseen, the work would have been done with the same disregard of self.

Any memory of Colonel Gaillard would be incomplete without some allusion to his home life. From the day when she came to Florida as a bride, to the end, Mrs. Gaillard was always the devoted companion, friend and helper. With their son, she shared his lot always, in city or desert, at home, in Cuba, in Panama. No one who visited their home at Culebra can ever forget the wonderful scene of beauty created there out of what had been a jungle.

It was fitting that both houses of our Congress should have taken official notice of the death of Colonel Gaillard, for in his death the country lost one of her most useful citizens, dead in line of duty. But what can the rest of us do? How can we express our sense of personal loss of a man admired and respected as an officer and an engineer and beloved as a friend? (Feb. 10, 1915.)

MAJ.-GEN. W. C. GORGAS, SURGEON GENERAL, U. S. A.
(Late Member Isthmian Canal Commission)

GAILLARD AS A FRIEND

I first met Colonel Gaillard when he came to Panama in 1907, and was thrown with him very intimately for the next six years. As I look back through my life's companionships I can recollect few men for whom I formed as great a personal attachment as I did for Colonel Gaillard. Colonel Gaillard's work was located for about nine miles along the Culebra Cut. My sanitary inspections nearly every week took me to some part of his work.

I would usually telephone him the day before, letting him know where my sanitary inspections would carry me, and ask him to appoint a place and hour where and when we should meet. In this way we generally spent half a day together nearly every week. These expeditions are among the most agreeable recollections which I retain of the Isthmus. He was always bright, cheerful, witty and entertaining.

I was naturally interested in the great engineering problems which he had in hand, and these he had the faculty of making most clear and interesting to my non-engineering mind.

It was most surprising to me to see, from week to week, as I went on the work, how he had overcome the difficulties which had seemed to me a short time before insurmountable. I remember, in particular, my surprise at the astounding way in which he steadily reduced unit cost in this part of the work during the years of his administration.

No history of this work would ever be able to make plain the handicaps under which he labored, and the administrative difficulties against which he had to contend. It was a source of great satisfaction to me to believe that my liking and friendship were returned by him. We were together the last day he spent on the Isthmus and lunched together just before he sailed. We all then knew that he was a very sick man. He took this occasion to express to me his warm friendship, and it is a great source of consolation to me to know that at this, our last meeting, I was enabled to make him understand how near and how valuable a friend he was to me. (Oct. 9, 1915.)

BRIG.-GEN. W. L. SIBERT, U. S. A.
(Late Member Isthmian Canal Commission)

(In report of the Forty-fifth Annual Reunion, June, 1914, of the Association of the Graduates of the United States Military Academy.)

Although stricken in middle age, David DuBose Gaillard served his country more effectively than most men are able to do in the ordinarily allotted number of years. His most striking characteristic was a marked alertness of both mind and body, coupled with a determination to know every detail of the work on which he was engaged, and to see that every step taken was founded on correct principles, be that step physical or moral. This with a genius for administration and organization coupled with indefatigable energy, constitute a combination from which great results should follow. We consequently find Gaillard at the age of 32 a member of the International Boundary Commission between the United States and Mexico. Upon first call to arms in the Spanish-American War, we find him requisitioned by Major-General Wade for duty as Engineer Officer on his staff. Then we find him, although only a captain in the regular establishment, appointed Colonel Third Regiment, United States Volunteer Engineers, and serving in Cuba. After the war with Spain we find him a member of the General Staff Corps, and again in Cuba during the second occupation of that island as assistant to the chief of staff of the forces there. Finally we find him appointed a member of the Isthmian Canal Commission and assigned to a duty that involved, among other things, digging the great cut through the Continental Divide at Culebra, the most trying,

discouraging and difficult feature connected with the building of the Panama Canal.

The surest proof of duty well done is the continual selection for duties more and more important.

In the performance of all the above work, the records show that the same determination to forget self and to fully master the duty at hand, whether that duty be the astronomical observations necessary in establishing an international boundary line, the preparation of a volunteer regiment for service in the field, or in keeping the tracks intact and the trains and shovels going in spite of the sliding mountain sides at Culebra.

When Gaillard was selected in 1907 as a member of the Isthmian Canal Commission and assigned to a duty that involved cleaving a passage way for ships through the Continental Divide at Panama, every one recognized the stupendousness of the task, and furthermore that success at a reasonable cost involved the best solution of an intricate problem in railroad transportation, a field practically new to Gaillard. The work was under way, with competent subordinates, and Gaillard first undertook a complete study of the bigger elements of the problem.

He noted that the loaded cars were taken from the shovels to extensive yards and there made up into trains and sent to the dumps. His studies indicated that if trains of suitable size could be partially loaded at one shovel, passed on to others, and finally when completely loaded go to the dumps, that the output of the steam shovels would be increased and that the same railroad transportation equipment would carry this increased output to the

dumps and thus bring about a material decrease in cost. The results proved the correctness of his deductions, and the resulting system of train movement in the Culebra Cut was highly praised by many visiting railroad transportation men.

After studying and unifying the general features of the work, Gaillard commenced a similar study of the smaller elements with a view of further increasing output and diminishing cost. This involved an immense amount of work, such as the selection of the explosive best suited to the various classes of rock, the best depth to drill holes and how best to space them; keeping records of performance and costs of repair of each unit of the varied and extensive plant; the relative cost of similar operations in the several subdivisions of the work, etc., etc.

As the work proceeded, the slides and other difficulties increased, and the burden became more severe; and just as victory was in sight he broke under the strain and was unconscious when the last barrier was destroyed that held back the waters of Gatun Lake from his essentially completed work.

The duty done and the results accomplished by Gaillard for his country are of permanent record and will be an inspiration for many young graduates of our Alma Mater, but the personal side of his character, his unselfishness, his unfailing courtesy, his genial manner, his quick, brilliant wit can only be of adequate record in the memory of those who knew him through sunshine and through rain.

LIEUT.-COL. CHESTER HARDING

Corps of Engineers, U. S. A.

(Extract from a lecture on "Personal Recollections of the Work on the Panama Canal," delivered before the Washington Society of Engineers on Jan. 6, 1914.)

How pathetic it is, what a tragedy it is, that on the day that the waters of the lake first flowed into the Culebra Cut, the man under whose brilliant leadership the victory was won, was lying in mortal illness far from the scene, unconscious of his triumph. His fame is secure. His name will be honored as one who sacrificed his life in the performance of his duty, in the same way that we honor, and teach the young to honor, a general who is killed on the field of battle while leading his forces to victory. How eminently fitting it would be for the Government to erect a monument to Gaillard's memory on the banks of the Culebra Cut.

COL. WILLOUGHBY WALKER

Coast Artillery Corps, U. S. A.

(Late Major Third U. S. Volunteer Engineers)

AT WEST POINT

Colonel Gaillard possessed the same lovable traits of character that endeared him to every one who knew him, while his standing in his class clearly indicated the high mental qualifications which subsequently won for him the high esteem in which he was held, not only by members of his own corps, but by everyone with whom he came in contact.

Of his service as Colonel of the Third United States Volunteer Engineers, it is unnecessary for me to speak. The high efficiency and excellent disci-

pline of the regiment were only a reflection of his personal character.

Although firm in the enforcement of discipline and in his demand that every man perform his full duty, it was nevertheless a great pleasure to serve under him, and I shall always recall my service in the Third Engineers as one of the happiest, as well as one of the most instructive, periods of my entire service in the Army.

In recognition of his crowning success in overcoming the almost insuperable difficulties of Culebra Cut, which made the Panama Canal a possibility, his name will surely be placed among those of the world's greatest engineers. (Sept. 29, 1914.)

PROF. J. L. VAN ORNUM

Head of the Department of Civil Engineering, Washington University; Associate of Colonel Gaillard Throughout Mexican Boundary Survey

(Late Major Third U. S. Volunteer Engineers.)

Colonel Gaillard was a distinguished officer of that corps of our military establishment celebrated for illustrious service. His exceptional qualification for duties of especial importance is attested by the repeated selection of him for positions of noteworthy trust, such as those of Commissioner of the Mexican Boundary Survey, Colonel of the Third U. S. Volunteer Engineers, and Isthmian Canal Commissioner; and the significance of his achievement in the removal of that stupendous barrier at Panama is justly recognized in the name "Gaillard Cut," which will ever remain a deserved tribute to him who gave his life to the accomplishment of this unparalleled undertaking. He was held in highest respect for his steadfast integrity and his intense

devotion to duty; he was admired for his discriminating judgment and his productive talent; he was honored for his supreme fidelity to his country's interests that were entrusted to his care; he was sincerely esteemed for that unassuming sincerity which is characteristic of the truly great, and he was loved for his loyalty to his friendships, his responsibilities and his ideals. (May 1, 1914.)

LIEUT. JOHN W. BLACK

(Late First Lieutenant and Battalion Adjutant Third U. S. Volunteer Engineers)

[Address at banquet of Officers of Third U. S. Volunteer Engineers at Aragon Hotel, Atlanta, May 17, 1899. The Regiment was mustered out of the Volunteer Army of the Spanish War upon the morning of that day.]

Mr. Toastmaster and Fellow Officers: It is somewhat of a surprise to me to have been called upon to supplement the remarks which have just been made, inasmuch as I have been with you so short a time* that I cannot be expected to say that which might best express your sentiments. However, it has required but a short association with you to discover many of the good qualities of our commanding officer, whose efforts seem to have been untiring for the good of the regiment, as shown by the high state of efficiency to which it has attained, which has been acknowledged by all those most competent to judge. It is indeed a privilege and an honor to have served under so worthy an officer, and I for my part shall never regret having joined you for muster out. Although we all may not have gained all we anticipated at the beginning of the war, yet we cannot but feel assured that had the opportunity

*Lieut. Black had been absent on detached service upon the staff of General James H. Wilson until a short time before the regiment returned from Cuba.

offered, we could not have failed to gain some personal glory, as a reflection of his worthy leadership. But after all it is not the strife of battle alone which develops bravery, nor the clash of arms which makes the hero, as often the bivouac and the camp bring out the instincts of the true man and the ideal soldier. In contemplating the short time we would be together before our paths in life would again separate, the idea impressed me that it would be highly fitting for us to present our worthy colonel with some token of our esteem, and appreciation of his efforts in our behalf; and the hearty response which met my suggestion is in itself enough to attest the high regard in which he is held, both as a man and a soldier.

Colonel Gaillard, I have the pleasure and honor of presenting to you this evening, as a token of our esteem and good will, and best wishes for the future, this loving cup. May it, while recalling to you the scenes of the campaign, also recall the personnel of the regiment, and the good fellowship which has always existed among us. We have tried to select something which would be acceptable, and which could be used not only in the field, but in your own home, where it can be enjoyed by your estimable wife, whose presence among us has on more than one occasion helped to cheer our soldier life, and who we regret could not have been with us at muster out. It is our earnest wish that you may be spared to your country and your family for many years, and that your cup of happiness may be filled to the brim. May you in the years to come, always find some of us to drink with you the toast, "The Third United States Volunteer Engineers."

EDITORIAL APPRECIATION

EDITORIAL APPRECIATION

Colonel Gaillard's death called forth from the entire press of the country most appreciative editorial comments upon his life and services and his untimely death. It is difficult to recall an instance when one who had been so little in the public eye, and whose name was comparatively little known to the people at large, has received tributes of appreciation from so great a variety of sources. The editorial comments from periodicals and newspapers would of themselves make a large volume. It is deeply regretted that the limitations of this memorial do not permit the inclusion of all of the many editorial tributes which a generous press paid to Colonel Gaillard at the time of his death. A few of these comments that appeared in the technical and weekly press and in the daily press, have been selected as representing the warm response from the whole country.

TECHNICAL AND WEEKLY PRESS

(Army and Navy Journal Dec. 13, 1913.)

Lieut.-Col. David DuBose Gaillard, Corps of Engineers, U. S. A., whose death in Baltimore, Md., December 5, 1913, we briefly noted in our last issue, was an officer who stood exceedingly high in his profession. He is the first of the army engineers employed in the construction of the Panama Canal to die as a result of his work, which is considered as undoubtedly a contributory cause of his illness, although the results of the official autopsy made pub-

lic on December 8th indicate that the immediate cause of death was an infiltrating tumor in the brain. . . .

Colonel Gaillard had the digging of Culebra Cut, without doubt the greatest and most difficult work connected with the construction of the canal. Colonel Gaillard's work at Culebra, it is estimated, saved the Government \$17,000,000.

Colonel Gaillard was in New York last spring on a leave in the hope that the rest would benefit his health to the extent that he would be able to remain in the Canal Zone to see his part of the work completed. He sailed from New York on June 26 last, again to take charge of the work in the Central Division. He had to return North, however, a couple of months later, and entered the Johns Hopkins Hospital at Baltimore, where he had been a patient since August 17. The weight of responsibility, coupled with the climatic conditions and the long hours of physical work had undermined his health.

Last month a bill was introduced in Congress to promote Colonel Gaillard to the rank of colonel for his distinguished service. He lay unconscious at the hospital at the time and knew nothing of the wedding of the Atlantic and Pacific, with the blasting of the Gamboa Dike on October 10.

At the Panama Canal 20,000 workers on the Culebra section were to interrupt their work and stand at attention for five minutes on December 8, at the time of the funeral of Colonel Gaillard, who was chief engineer of this section of the canal. The Senate passed a resolution expressing sympathy, and Secretary of War Garrison sent a telegram of

condolence to Mrs. Gaillard as soon as he learned of her husband's death.

[Professional Memoirs, Corps of Engineers, United States Army and Engineer Department at Large, January-February, 1914, pp. 133-4.]

LIEUT.-COL. DAVID DUBOSE GAILLARD

(The article, after giving an interesting account of Colonel Gaillard's life, with detailed references to his engineering and military service, concludes):

The foregoing brief record of Colonel Gaillard's professional services speaks eloquently for his talents and ability. In his more than twenty-nine years of continuous active service, he has filled positions of great responsibility and trust, covering a wide and varied field of duty, both as a military and as a civil engineer. His successful prosecution of the monumental work on the Culebra Cut of the Panama Canal, one of the greatest and most trying of engineering problems, constitutes a crowning achievement in a life characterized by conscientiousness, loyalty and modesty.

His friends and intimates will remember Colonel Gaillard, not only for professional attainments of the highest order, but also for his character as a man, husband and father. Possessed of a cheerful temperament and of a never-failing good humor, he was always a welcome addition to any gathering. A life so well spent must indeed serve as an inspiration to coming generations.

HALBERT P. GILLET
Editor-in-Chief of *Engineering and Contracting*
(In an Editorial, Dec. 10, 1913)

DAVID DuBOSE GAILLARD, AUTHOR

The death of David DuBose Gaillard will cause much to be said about his construction work as an engineer. His fidelity to the task of directing the largest single excavation that man has yet carved through a mountain—the Culebra Cut—has cost him his life. This tragic end will merit all the public notice that it will receive.

Before Gaillard went to Panama he performed a great work which is unknown to the general public, and of which few engineers have knowledge. He had made a most painstaking series of tests and had written an exhaustive treatise that was published nine years ago as Professional Paper No. 31 of the Corps of Engineers, U. S. A., entitled “Wave Action in Relation to Engineering Structures.” At the time of its publication the writer was one of the editors of *Engineering News*, and it fell to his lot to condense “Paper No. 31” into an article. But to abstract such a paper was not the task of a few hours, nor even of a few days. The paper was of absorbing interest to the writer, not because this was on a subject of which he knew much, but because of its authorship. Here was an author who has undertaken to present to the engineering world not merely a mass of data—although that alone would have merited its reward—but who had undertaken to analyze the data and derive useful generalization therefrom. This was noteworthy authorship, and the deeper the writer studied the paper the more its merit impressed him. Three solid

weeks were spent in the study of Gaillard's treatise, and in condensing it into an article, which was then submitted to the author for review. His letter of reply was full compensation for all the work that the article represented.

Any careful student of Professional Paper No. 31 could scarcely fail to see therein a picture of the man who wrote it. The picture is one of a highly trained, analytical man of science, gifted with a great thoroughness of application to the problem in hand.

The picture is not that of a man of "pure science," either, of one who delves for facts merely for the pleasure of finding what is new. The picture is of the scientific man who seeks facts with the object of their immediate, useful application. It is the picture of an engineer. That it is the picture of a great engineer there was no doubt in the writer's mind nine years ago, and time has merely served to bring into more pronounced relief the greatness of the man.

CHARLES WHITING BAKER

Editor-in-Chief of *Engineering News*

(In a letter to the *New York Times*, Dec. 22, 1913)

To the Editor of The New York Times:

Your editorial article, commenting on the achievements of the late Col. D. DuB. Gaillard in the Panama Canal work and urging suitable recognition by Congress, deserves commendation. It is probably little realized by the general public how many millions of dollars have been saved to the United States by the quality of the service that has been rendered by our engineers who have conducted the work at Panama.

Colonel Gaillard was distinguished among his as-

sociates by the enthusiasm with which he worked. No college football captain trains his team with a more eager zest than Colonel Gaillard displayed in the conduct of his huge task—the largest job of excavation by far that the world has ever seen. And let me summarize in a word the results: The rock of the Culebra Cut has been blasted, excavated, loaded on cars, hauled some fourteen miles and spread on the dump. The work has been carried on 2,000 miles from the base of supplies, with a plant bought at the boom prices of 1907, with skilled labor receiving the highest wages ever known, with inefficient colored labor of the tropics to perform the ordinary tasks, with the heat and rains of a tropical climate, to say nothing of constantly recurring slides and floods. Under all those conditions, the cost per cubic yard of the Culebra Cut excavation has been only some two-thirds the cost of the rock excavation on the Chicago Drainage Canal, built in the '90's, where the rock was merely dumped in a pile on the bank beside the canal.

I sincerely trust that Congress will suitably recognize Colonel Gaillard's service, not alone because such recognition is peculiarly deserved where a man yields up his life in his country's service, but because such recognition is necessary to counteract the oft-repeated charge that republics are ungrateful. Such devoted public service as Colonel Gaillard gave is needed everywhere; and the country can well afford to deal generously with those who give their lives in such service.

(*Engineering Record*, New York, Dec. 13, 1913)

DEATH OF COLONEL GAILLARD

The death of Lieut.-Col. David DuB. Gaillard in Baltimore last week marks the first break in the ranks of those great engineers to whom the Panama achievement is to be credited. Not less bravely than the soldier whose career ends on the battlefield did he give up his life in the service of his country. With the other men still fighting the engineering battles on the Isthmus, his name will go down in history, for the Panama Canal will assume important rank in American annals.

(*Engineering News*, New York, Dec. 11, 1913)

It is greatly to be regretted that a man who contributed so much to the success of this great enterprise, for which he truly gave his life, should not have lived to witness its completion, or at least to have died with the knowledge that every detail gave proof of ultimate success.

This is particularly the case because of all those occupying positions of high responsibility in connection with the great work at Panama, Gaillard will by common consent be awarded chief place for enthusiastic interest in the work. Many, if not most engineers, as they advance in years, become so accustomed to the routine of professional work that they follow it from force of habit and lose the interest in it that animated them in the years when life was new. But Colonel Gaillard was a man who possessed in rare degree the quality of youthful enthusiasm, a quality that made him most attractive as a friend and as a co-worker.

of the heroic kind on the field of battle, but they were none the less valuable to the world, and his place is secure in the history of the country. . . .

As a man, Colonel Gaillard was kind-hearted and always took a keen interest in the welfare of the common laborers. To him the common laborer was just as important as the highly skilled mechanic, for he was interested in seeing that justice was done to all. That is why his death will be mourned in the canal zone.

VAUGHAN CORNISH

(In *Geographical Journal* of the Royal Geographical Society,
London, Feb., 1914)

In 1908, on my second visit to the Panama Canal works, I found Colonel Gaillard installed as engineer in charge of the Culebra Cut. Thanks to his organization, everything worked smoothly and rapidly, and the neatly terraced sides of the cut stood firmly. But when I next visited the canal in 1910, the bottom of the cut was already upheaving. Consequently, during the last four years of his life he thought and labored unceasingly upon an excavation of which the sides would not stand up, and a construction of which the foundation sank. He was an active, alert and vigorous man, in the prime of life. His intelligence was above the common and his mind worked quickly. His great personal charm gave him many friends, and he had that wide range of intellectual interest which is so useful to a man burdened by an arduous task. But at last the strain broke him. Such a work as the dividing of a continent requires the sacrifice of men as well as money and Gaillard spent himself willingly in the execution of his task.

(*Collier's Weekly*, Jan. 3, 1914)

David DuBose Gaillard, hero of the great Culebra Cut, was buried the other day in Arlington, dead at fifty-four. In energy and efficiency, in loyalty and honor, he was a true son of that new South which has risen from the ashes of our Civil War. In constructive genius he was a peer of De Lesseps and the other great engineers of the French stock. Our statesmen and millionaires shrink and fade most pitifully when we set their performances against the modest devotion to duty which was this man's life.

(*The Outlook*, Dec. 20, 1913)

GAILLARD: SOLDIER OF PEACE

Something like twenty-five years ago a young journalist by the name of Rudyard Kipling made a prophecy. "Some day," he said (we quote from memory), "the American Army will make the finest engineering corps in the world." The American Army is today a great deal more than a fine engineering corps, but no one will deny that this prophecy of Mr. Kipling has been justified by the facts. Engineers of the American Army owe the high position which they hold today not chiefly to their skill in planning means of scientific destruction, but to their constructive achievements in the realm of peace. Not the least among these leaders of the new army was Lieutenant-Colonel Gaillard, now dead on the field of battle. The war in which he was engaged was not with man, but for man, and with forces of Nature. Since 1907 he had been in charge of the central division of the Panama Canal,

concerned with the stupendous operations at the Culebra Cut, that nine-mile artificial valley which we have made through the backbone of the Isthmus.

(*Nation*, New York, Dec. 11, 1913)

The death of Colonel Gaillard, the conquerer of Culebra Cut, comes pathetically close upon the completion of the historic task. In a very real sense he gave his life to his work. Unremitting toil broke his health, and one likes to imagine that it was only a brave spirit which held him on the Isthmus till the work in hand was done. That task was carried on in the manner of the true workman, outside of the glare of publicity and with thought only for the matter in hand. Had Colonel Gaillard lived a few months, the *Nation* would have undoubtedly expressed its recognition of his services.

(*The Human Factor*, New York, March, 1914)

The engineers of the American Army owe the high position which they hold today not so much to their skill in planning means of destroying life as to their constructive achievements in the realm of peace.

Among the most successful of these was the late Lieut.-Col. D. D. Gaillard—one of the heroic figures in the great historic achievement of severing the continents at Panama. . . .

He served his country and humanity with heroic fidelity, and gave up his life on the altar of patriotism, fighting not *with* man, but *for* man in conquering the forces of nature.

DAILY PRESS

(Atlanta, Ga., *Constitution*, Dec. 10, 1913)

The change in world trade and the vast era of development that will follow the opening of the canal will be attributable as much to the energy and the sacrifice of such men as Gaillard as to the enterprise and wealth of the American people. When it is said that this labor was the most gigantic of those labors of Hercules which have characterized the construction of the waterway, the achievement of Colonel Gaillard is seen in its proper proportion.

(Baltimore *American*, Dec. 6, 1913)

Lieut.-Col. David DuBose Gaillard, the man whose practical genius contributed so much toward building the canal, an engineer of the highest type, besides being a man of the worthiest ideals and noblest aspirations, has left behind him a name whose luster will be none the less because he died upon the brink of the full achievement of the task to which he devoted his life. The man who breathed his last in Baltimore, the city destined to have a new era as a result of his enterprise, will be remembered forever by his fellow countrymen and his name will stand for the best traditions of army service and of patriotic carrying on of a herculean undertaking. So that despite the pathetic incidents of his closed career, it is one that will be a heritage to his family and to the nation.

(Baltimore *News*, Dec. 31, 1913)

A MONUMENT TO GAILLARD

James Bryce says that in the construction of the Panama Canal man has taken more liberties with Na-

ture than in any other instance in history. The Culebra Cut in particular has appealed powerfully to the popular imagination. In a recent article by the editor of *Engineering News* the statement is made that this work is the "largest job of excavation by far that the world has ever seen."

It appears, also, that not only is it the most colossal undertaking of its kind but it has been carried out with remarkable economy and efficiency. It had to be done "2000 miles from the base of supplies, with a plant bought at the boom prices that prevailed in 1907, with skilled labor receiving the highest wages ever known, with the heat and rains of a tropical climate, to say nothing of constantly recurring floods and slides"; but, in spite of all the disadvantages, the cost per cubic yard of excavating Culebra Cut was only two-thirds the cost of rock excavation for the Chicago drainage canal.

And the man who, more than any other, did it was Gaillard, the pathetic circumstances of whose death have touched the nation's heart. There is something particularly appropriate in the suggestion that a monument to him be erected on one of the hills overlooking the cut, where it would stand permanently as evidence that republics are not ungrateful.

(Battle Creek, Mich., *News*, Dec. 10, 1913)

"IN SIGHT OF THE GOAL"

There is appropriate comment, both in tone and quality, upon the death of Col. David Gaillard, who built the Culebra Cut at Panama, and wrecked his health, and died while his triumph was about to be celebrated.

And it is being said that it is too bad that he could

not have lasted until he saw the realization of his hopes—and too bad, too, that he wore his life out, there, in the accomplishment that took his very self before it would yield.

Neither of these things is too bad, when you come to think of it.

Colonel Gaillard was not working Culebra Cut for the sight and sound of the hurraing millions who would celebrate the final completion of the work. He was working there because it was his work, and his reward was in the knowledge that his papers showed him from day to day, that a good day's work was being done.

And as to wearing his life out—why, after all, it was only a matter of a few years, anyhow—“and whoso would save his life must lose it.” This latter is written in a higher authority, even, than the engineering rules by which they chart canals.

Colonel Gaillard didn't wear his life out, as a matter of fact, nor does any man wear his life out who does conscientiously a thing which is his to do.

Colonel Gaillard built his life into that marvel of the ages by which the mountain range of the Isthmus was separated and the oceans joined.

Perhaps there is something pathetic in the fact that he died “in sight of the goal,” but perhaps it was just as well. For he knew, at least, that the goal had not been missed.

(Beaumont, Tex., *Journal*, Dec. 10, 1913)

IN HONOR OF A HERO OF PEACE

Col. David DuBose Gaillard, Corps of Engineers, U. S. A., and member of the Isthmian Canal Commission, has passed away.

From the nature of his ailment since his return to this country last August, a fatal ending was expected by those closely acquainted with the circumstances, and still his demise at Baltimore has cast a gloom over that host which knew him best at the big ditch.

For seven long years this modest individual labored most heroically on the most difficult task in the construction of the Panama Canal. For seven long years he stood at his post amidst all the unhealthy environment and the discouraging beginnings of that work up to almost its very end, undismayed by the repeated slides which might have daunted a less confident and resourceful man.

As the sun descended the western horizon night after night this man would hope against hope that the dawn of the next day would not show the work of the day before undone, but still he resumed his labor with irresistible progress and in the end saw the great undertaking nearing completion within the time promised, but like the seer of old, was not allowed to behold its fulfillment.

On the very day on which his completed work was given to the world, he lay unconscious and without hope of recovery, and it is one of the inscrutable decrees of fate that he should not have been spared to witness the culmination of the great undertaking in which he bore so notable a part.

Let the nation shed a tear at the grave of this hero of peace.

(*Boston Globe*, Dec. 8, 1913)

SACRIFICED HIS LIFE

Fate, seemingly unkind, decreed that Lieutenant-Colonel Gaillard should not live to participate in the

final triumphs of American engineering skill on the Isthmus of Panama.

The faithful servant is dead.

The guns will thunder and the bands will play in time to come as the ships of many nations pass in procession from the Atlantic to the Pacific, formally celebrating the marriage of the oceans, but he will not be there to witness and enjoy the spectacle.

Literally it is true that he sacrificed his life for his country. . . .

We suggest that Culebra Cut might well be rechristened Gaillard Cut to perpetuate the name and the fame of the man who dug it.

(The Buffalo Enquirer, Dec. 14, 1913)

The country has had no martyr of exactly the Gaillard kind before. "Culebra" means nothing to this country. It is a name that can be spared. "Gaillard" means much. It should be placed where the country will ever keep it in mind. What better place than on the mighty, continent-cleaving cleft he dug?

(Cedar Rapids, Ia., Gazette, Dec. 10, 1913)

A HERO WORTH REMEMBERING

The late Colonel Gaillard, who died in Baltimore last week, has been widely eulogized. And certainly few Americans have deserved such encomiums as have been tendered this man—after he has passed away.

For seven years as member of the Canal Commission and Colonel of Engineers, Gaillard labored heroically on the Culebra Cut. To him had been assigned the most difficult task in the construction of

the Panama Canal, nothing less than cutting a water path through the backbone of the American continent. Undismayed by the repeated slides that might have daunted a less confident and resourceful man he kept steadily at the task, never sure that dawn would not show the work of the day before undone, but resuming his irresistible progress that in the end completed the great undertaking within the time promised. To his professional efficiency he added a patriotic purpose of economical administration. Most of the time he was without a chief assistant and personally supervised details as well as directing the general organization. It has been estimated that he saved \$17,000,000 on the cost of the central division of the canal.

(*Chicago Tribune*, Aug. 21, 1913)

**GAILLARD OF CULEBRA: A MAN WHO DESERVES WELL
OF HIS COUNTRY**

If he had held a city against desperate siege for month after month, he would have been called "the hero of ———," every school boy would know his name, and a thrill would have run through the nation when the report of his physical breakdown appeared in large headlines in the press.

But David DuBose Gaillard has been engaged in a task more difficult, perhaps, and as important to his country, and he has paid the penalty of his grim resolution, his duty and his enthusiasm, and now lies perilously ill in Johns Hopkins Hospital just as his splendid service is nearing its completion. Lieutenant-Colonel Gaillard is the man of the Culebra Cut. It is he who, day by day, has directed and personally led the fight against the treacherous slides,

mastered their strategy and won the fight for the canal.

For months Colonel Gaillard's strength has been yielding, it is reported, to the strain, yet he has worked 12 hours a day much of the time in the staggering heat of the cut. Finally Nature demanded her fee, and Gaillard of Culebra fell like a commander on the field of victory. Whether he will survive or whether he will be restored to health cannot now be predicted. But no man who ever laid down his life on a field for the republic better deserves its gratitude and the memory of his countrymen than David DuBose Gaillard, conqueror of Culebra.

(*Chicago Tribune*, Dec. 7, 1913)

GAILLARD OF CULEBRA

No man who fell, sword in hand, under the flag, died for his country more gallantly than David DuBose Gaillard, the conqueror of Culebra. He gave himself without stint while he lived, and he laid his life on the altar—"the last full measure of devotion."

"Gaillard dug indomitably," says the dispatch announcing his death. "Hill after hill found its angle of repose, and he checked the landslides, save at Cucaracha and points nearby. Their sliding was persistent, but had visibly weakened when the engineer was compelled to stop his work and seek rest.

"For the greater period of his work on the Isthmus, Colonel Gaillard was without a chief assistant. He wanted to save money. He gave his attention not only to the great engineering problems but to all the details of shovel work, train work, and drain-

age. He checked up on small things, and once it was computed that by his careful oversight he had saved the Government \$17,000,000.

“Men who worked with him said he gave twelve hours of each day to the Culebra Cut. In addition he had a voice in all matters pertaining to engineering work in the Zone, to civil administration, and to the general conduct of affairs.

“The hard work, the nervous strain, the worry, and the tropical climate combined broke his health at the hour of his final triumph. There was little left then to be done but to remove the soft earth of the slide at Cucaracha.”

Congress should honor the memory of David Gaillard in some substantial way. It owes it to Gaillard, to the Army, and to the American people.

(Chicago *Evening Post*, April 30, 1915)

GAILLARD CUT

President Wilson has signed an executive order changing the name of Culebra Cut in the Panama Canal to “Gaillard Cut” in honor of the late Col. David D. Gaillard, who died from disease contracted in the building of the canal.

The *Post* was one of the first newspapers in the United States to suggest this tribute to as gallant a soldier, as fine an engineer, as splendid a gentleman as ever graced the roll of the United States Army.

Gaillard was one of the knights of the old Round Table, transferred from the chivalrous age of Launcelot and Guinevere to the practical age of concrete mixers and steam dredges. It seems strange but the qualities of Launcelot’s day had as free play in the jungle-ridden paths of Panama as they had in

the court of King Arthur. In both it was the relation between man and man that counted. Here Gaillard was knightliness itself.

From a technical standpoint, the work of Gaillard was that of one of the four greatest men that the canal has produced. How great his work was, indeed, will probably not be known till the final verdict of history is passed upon the mighty job of joining the two oceans.

To the country "Gaillard Cut" will stand as a memorial to an unselfish soldier and a great engineer. To his friends it will be a monument to a gallant knight. In both cases it is fitting and appropriate.

(Cleveland, Ohio, *Leader*, Dec. 14, 1913)

The suggestion is made by the *Boston Globe* that the name Culebra Cut be abandoned and this most difficult part of the Panama Canal be officially rechristened "Gaillard Cut."

The reasons for this are so obvious and potent that it seems almost impossible the idea will not be adopted. The cutting of Culebra mountain was the greatest feat accomplished in the stupendous canal undertaking. By many competent engineers the object sought was considered impossible of fulfillment. Lieutenant-Colonel Gaillard accomplished the task successfully. But the task killed him.

Literally, Lieutenant-Colonel Gaillard gave up his life for the success of the Culebra Cut and for the Panama Canal. Just as truly he gave up his life for his country. The people of the United States owe it to themselves to afford him a monument which will stand for all time an impressive object lesson of

American devotion and achievement. And what nobler, more enduring or more fitting monument could be selected to bear his name than the great cleft with which he split a continent?

(*The Record*, Columbia, S. C., Dec. 6, 1913)

AN EPIC AND ITS HERO

It looks like the irony of fate that Col. David DuBose Gaillard, conqueror of Culebra Cut, should die at the moment of the culmination and triumph of his great achievement, but to the creative genius the joy in his work is the chiefest, most prized reward. The trump of fame and the acclaim of millions falling on his ears could really have added little to the pleasure and satisfaction of Colonel Gaillard on the completion of his great task. The immortal part of him, the spirit that was put into his work and the everlasting memorial it will bear of his personality and fame to all future times can never die.

Colonel Gaillard's friends and kindred will mourn without comfort or avail that he should have been snatched from them by the inexorable conqueror of all at such a moment, but, viewed from the standpoint of eternity, is it not most fitting that the crown of immortality, in every sense of the word, should have been thus placed on the brow of one to whom life could add no greater goal of success.

Pathetic, as it may be, there seems to be an artistic fitness that all the poets and creative masters have recognized and emphasized that the Tragic muse alone is worthy to crown and conclude a great epic and its heroes.