

Charles Ellet Jr.
On the
Chesapeake and Ohio Canal
Summer 1828–March 1830

With His Letters from France
March–April 1831

Editors and Authors:
Karen M. Gray, Ph.D.
Jeffrey Richter, B.A., B.S.
Donald Sayenga

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Karen M. Gray
Jeffry Richter
Donald Sayenga

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PREFACE

In the summer of 2009, Jeffry Richter contacted the C&O Canal National Historical Park concerning Charles Ellet Jr.'s work on the canal during a 20 month period from the summer of 1828 to the spring of 1830. On a volunteer basis, Jeff had taken on the daunting task of cataloging the Charles Ellet Jr. papers in the Special Collections Library of the University of Michigan and I was volunteering two days a week in the Headquarters Library of the C&O Canal National Historical Park in Hagerstown, Maryland.

Jeff and I began a steady exchange by email about Ellet and the canal, answering each other's questions and raising more. We also noticed that January 1, 2010, would be the 200th anniversary of Ellet's birth and that June 21, 2012 would be the 150th anniversary of his death from an injury that he had received 15 days earlier during the Battle of Memphis aboard one of the Union ramships under his command. That occasion, combined with Jeff's work on the collection and my own efforts spanning several decades to gather information on the engineers of the Chesapeake and Ohio Canal, led to an extensive sharing of information and resources, as well as cooperation on this and several other projects.

Digital images of the documents were made by Jeff and transmitted to the Park library on a temporary basis (copyright to the images is owned by the Special Collections Library of the University of Michigan) for the purpose of transcribing them into digital files. That volunteer project involved myself as well as Dward and Jeanine Moore who regularly volunteer for the Park and have worked extensively on our project to transcribe and make available online the previously unpublished oral histories, historic resource studies, and historic structure reports done in the early days of the Park. On occasion, I consulted with another hardworking volunteer transcriber and researcher, William Bauman, as well as members of the C&O Canal NHP staff. Difficult readings and questions on meaning that concerned engineering matters in particular were resolved with the invaluable assistance of the park's engineering and maintenance staff. Finally, Frank Griggs and Donald Sayenga provided invaluable advice and assistance on several occasions.

In addition to this document, our work resulted in a symposium held at Shepherd University, Shepherdstown, WV, on July 24, 2010, on the "Early Engineering on the C&O Canal." The chapter in this work on "Charles Ellet Jr. on the C&O Canal" was prepared as a paper for the National Canal Museum 30th Annual Symposium in Easton, PA, on March 12, 2011. It is published in the museum's *Canal History and Technology Proceedings*, Vol. XXX. That symposium featured four other papers on Ellet included in the Proceedings.

Unfortunately, the manuscript languished for a number of years until Carol Malmi, Ph.D. agreed to proofread it for us, which she did in 2019 and I am deeply indebted to her for doing so. Any remaining errors are entirely my fault and all those now removed are entirely due to her excellent eye for even the smallest punctuation detail or grammatical slip. Weaknesses in language use are my fault also, as I specifically asked Dr. Malmi only to proofread but not edit the manuscript although I knew she could greatly improve my style and English usage.

Sadly, as the manuscript languished in my home office, Don Sayenga became ill and died on February 26, 2019. This work that contributes to this little-documented period in Ellet's career would have been of much less value without the letters that Don provided from Ellet to his sister and that document his extensive journeys in France. His later work, when considered in light of that travel, makes clear that he was a truly brilliant autodidact with a rare ability to learn from what he saw and the engineers and other experts he spoke with along the way.

Karen M. Gray, Ph.D.
Hagerstown, MD,
June 1, 2020

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Charles Ellet Jr. on the C&O Canal

By Karen M. Gray, Ph.D.

Introduction

In the summer of 1828, Charles Ellet Jr., who had turned 18 on January 1, arrived in the District of Columbia seeking engineering work. He had a letter of recommendation from John Randel Jr.¹ under whom he had worked as a rodman in 1827 as part of the team conducting a survey for a North Branch of the Susquehanna extension of Pennsylvania's growing canal system. The extent of his education and experience at this time is little known, but by modern standards his qualifications were meager.

In advanced mathematics, it appears that Ellet at this point was largely self-taught, although he may have attended a school near his home in Bristol, Pennsylvania. The 1897 *National Cyclopaedia of American Biography* entry on Ellet makes the comment that "[f]rom his earliest years he had shown an unusual talent and fondness for mathematics and at the age of sixteen had far outgrown the scope of the school's mathematical curriculum."²

One of the documents in the University of Michigan's Charles Ellet Jr. collection is a letter containing half a page of calculus sent by C&O Canal Company President Charles Fenton Mercer to Ellet without any explanatory text.³ What is demonstrated by the calculations is not apparent, but it suggests the possibility that Mercer was assisting the young engineer on some mathematical question. It also speaks of Mercer's own background in mathematics.

Jeffrey Richter, who cataloged the Ellet papers at the University of Michigan, has pointed out several details in the Randel recommendation that suggest it is essentially a form letter.⁴ It begins with the subject's name (in this case "Mr. Charles Ellet Junr.") in larger lettering than the adjoining text. Where Ellet's position is entered (in this case Randel wrote "assistant engineer"), it too is larger. Both these entries appear to fill large spaces that had been left for completion at a later time.

In the letter Randel states that Ellet "acted in the capacity of assistant engineer" and not that his official position with the company was that. This is significant, as Ellet himself used the term "rodman" for his position with Randel's team. In the second of the two brief paragraphs that make up the letter, Randel states:

¹ Most of the Charles Ellet Jr. papers are in the archives of the Special Collections Library of the University of Michigan. In the summer of 2009, Jeffrey Richter, who was cataloguing the collection, contacted the C&O Canal National Historic Park and was put in contact with the author. Subsequently scans of those documents from Ellet's time on the C&O were made available and Park volunteers transcribed them into MS Word documents. Those electronic resources are the primary source for this paper and they will be cited by date, author, and recipient. This letter is the first in the collection and is dated "Philadelphia 1 May 1828" with no addressee.

² *Cyclopaedia of American Biography*, New York, J. J. White, v. 4. An electronic version of this entry is available at <http://wheeling.weirton.lib.wv.us/history/landmark/bridges/SUSP/ellet.htm>

³ February 21, 1830, Mercer to Ellet.

⁴ As initially pointed out in email correspondence with the author.

I found him to be, a young gentleman of amiable manners, industrious habits;— of strict integrity, sound discretion and good judgment; and he now has considerable experience in his profession:⁵ — he is deserving of public and private confidence.

It is important to recognize that at that time in the United States the term “engineer” had many meanings, ranging from a surveyor–builder who makes little use of mathematics, to foreign men with training at such schools as France’s great École Polytechnique–Ponts. Notably Rensselaer Polytechnique Institute (Troy, NY), founded in 1824, offered a course by Amos Eaton, who viewed engineering instruction as basically practical and based on “the field, where things, not words, are studied” and who “criticized the teaching of engineering with mathematics any more advanced than arithmetic.”⁶

Organization of the Engineering Corps and the Construction Line

The first meeting to organize the C&O Canal Company took place on June 20–23, 1828 and the ceremonial “first shovel” was dug by United States President John Quincy Adams just outside the boundary of the Federal District on July 4. On July 5th the board authorized company president Charles Fenton Mercer to employ principle and assistant engineers to survey and prepare for placing under contract the eastern section of the canal from Little Falls to Cumberland. The middle and western sections (never constructed) would have carried the canal over the Alleghenies from Cumberland to the Ohio River at Pittsburgh.⁷

Benjamin Wright was immediately hired as Chief Engineer. Wright, who had resigned as the Erie’s engineer the year before, had distinguished himself not only for his engineering work but also for his ability to find and train men who would themselves become important engineers throughout the middle of the 19th century—resulting in his eventual designation as the father of American civil engineering.

At some point during the summer (likely July), Charles Ellet was taken on as a volunteer assistant rodman, in which position he aided in the surveys preparatory to placement of the first division of the canal under contract, by taking field notes, drawing maps, making computations, and often walking many miles in a day.⁸ Wright had used such volunteers on the Erie and his continuation of the practice, while initially accepted by the C&O board, was later rejected. In February 1830, Mercer attempted to abolish the volunteer positions, only to

⁵ The inevitable question is: what does “considerable experience in his profession” mean if his previous position was limited to serving with a survey team for which he was likely a rodman?

⁶ Calhoun, Daniel Hovey. *The American Civil Engineer: Origins and Conflict*, The Technology Press, Massachusetts Institute of Technology, 1960, 45. Calhoun discusses and quotes from Amos Eaton’s *Art without Science: or, Mensuration, Surveying and Engineering, Divested of the Speculative Principles and Technical Language of Mathematics*, Albany, 1830, p. 94.

⁷ A fourth section would have connected Pittsburgh to Lake Erie, providing a water route, including the Erie Canal, that would have encircled much of the northeastern quadrant of the country.

⁸ Unrau, Harlan D. *Historic Resource Study: Chesapeake & Ohio Canal*, 16. Unrau’s massive history is in reality a collection of monographs that were transcribed between 2005–07 into MS Word files by volunteers working from the original mid-1970s hand-written documents and poorly-typed transcriptions done in the early 1980s. In 2007 a limited number of copies were printed and the electronic pdf edition was made available at www.nps.gov/history/history/online_books/choh/unrau_hrs.pdf.

have Wright circumvent the action by making the incumbents inspectors of masonry despite their lack of qualifications for such a position.⁹

On August 23, the company's officers took a further step toward the organization of the company's corps of engineers with the creation of a board of engineers consisting of Wright, Nathan Roberts, and John Martineau, all of whom had served on the Erie.¹⁰

By October all the sections from Rock Creek to Point of Rocks were laid out and contracts let, and on November 22, 1828, Wright announced the full, 15-man engineering staff for the first division of the canal:

- (a) to the first residency, covering the line from the eastern termination of the canal through Section No. 6, were assigned Thomas F. Purcell, resident engineer; Charles D. Ward, assistant engineer; Peter Von Smith, rodman; and Randolph Coyle, volunteer rodman;
- (b) to the second residency, covering Sections Nos. 7–18, were assigned Daniel Van Slyke, resident engineer; Herman Böye,¹¹ assistant engineer; and James Mears, Jr., rodman;
- (c) to the third residency, covering Sections Nos. 19–38, were assigned W. M. C. Fairfax, resident engineer; William Beckwith, assistant engineer; R. J. Bowie, rodman; and Thomas H. DeWitt, volunteer rodman;
- (d) to the fourth residency, covering Sections Nos. 39–64, were assigned Erastus Hurd, resident engineer; Charles B. Fisk, assistant engineer; and L. G. Davis, rodman; and
- (e) to the fifth residency, covering Sections Nos. 65–84, were assigned Alfred Cruger, resident engineer; Charles Ellet, assistant engineer; and William Wallack, rodman.¹²

The idealized organization of the construction line for the eastern section of the canal was to include three divisions 60 miles in length, each division divided into six residencies, and each residency divided into 20 half-mile sections for a total of 120 sections per division. The first division would therefore have encompassed the line of the canal from tidewater to Harpers Ferry.¹³

In reality, the first five residencies of the first division of the eastern section divided as follows:

- 1. Sections 1–6, eight miles in length from Rock Creek to Dam and Inlet Lock No. 1 and encompassing tidelock, the Rock Creek Basin, and the canal line above Rock Creek that includes Locks 1–7.
- 2. Sections 7–18, six miles in length to just above Lock 18 at Great Falls.
- 3. Sections 19–38, ten miles in length from Lock 20 to Seneca, and encompassing Dam and Inlet Lock No. 2, locks 20 through 24, and Aqueduct 1 over the Seneca River.
- 4. Sections 39–64, thirteen miles in length from Seneca to mile 24, including lock 25 at Edwards Ferry.

⁹ Sanderlin, Walter. *The Great National Project*, Baltimore: The Johns Hopkins Press, 1946 (reprinted by Eastern National, Fort Washington, Pennsylvania, 2005), p. 63.

¹⁰ Unrau, *Ibid.*, p. 181.

¹¹ Böye, who was Danish, wrote his name with umlauts over both the “o” and the “y”, but his name is commonly written now without the diacritical markings or with the umlaut only over the “o”.

¹² Unrau, *Ibid.*, p. 257.

¹³ *First Annual Report, C&O Canal Company*, Washington: Gales & Seaton, 1829, p. 17

5. Sections 65–84, twelve miles in length from mile 24 to Lock 28 at mile 49, some three-quarters of a mile above Point of Rocks.¹⁴

Unfortunately work on the last mile of the fifth residency and the entire sixth residency was prevented by the June 1828 court injunctions resulting from the conflict with the B&O Railroad over access to four narrow passages along the Potomac River between Point of Rocks and Harpers Ferry. As a consequence, the sixth residency was not included in the organization of the line of the canal at this time, and contracts were let only up to mile 48 at Point of Rocks.

On December 1, a mere nine days after the November 22 appointments were published, resident engineer Herman Böye was moved from the second to the fifth residency with responsibility for sections 65 to 84.¹⁵ Unfortunately, at some point within his first year in the position, Böye became seriously ill, leaving him unable to visit the line of the canal. The first mention of his illness in the Ellet papers occurs in a letter to Ellet dated October 23, 1829 in which he comments at the end: “I am recovering very slowly, if any.”¹⁶

The fifth residency on which Ellet served throughout his period of paid employment with the C&O, was particularly important because it included the great Monocacy Aqueduct—considered one of the two major engineering features of the final canal (the other being the Paw Paw Tunnel). As luck would have it, the Monocacy was also conveniently located near the midpoint of the residency, so its southern bank at its confluence with the Potomac—known as the Mouth of Monocacy—became the engineers’ base of operations for the residency. It also was the location of one of seven post offices established along the construction line in the winter of 1828–29 in response to pressure from the C&O Canal company.¹⁷

November 22, 1828 to October 23, 1829: Construction at Its Peak

Ellet’s appointment a little more than a month before his 19th birthday is intriguing, given the understanding that men in such a position would be at least 22 years of age and have had considerable experience.¹⁸ In any case, three days later on November 25, 1828, the company clerk, John P. Ingle, transmitted to Ellet along with a cover letter, “a copy of all the laws re-

¹⁴ Determining the precise boundaries of the half-mile sections is difficult. This calculation is based on the information in Unrau’s *Historic Resource Study*, p. 227–252, that identifies the section of each major structure built during the initial construction years.

¹⁵ Kapsch, Robert J. and Elizabeth Perry Kapsch. *Monocacy Aqueduct on the Chesapeake and Ohio Canal*. Poolesville, MD: Medley Press, 2005, n. 12, p. 90. Böye, who had been trained in Europe, was an immigrant from Denmark who is best known for his work on Wood–Böye maps of Virginia and its counties, begun by John Wood and completed by Böye in 1826.

¹⁶ October 23, 1829, Böye to Ellet.

¹⁷ Unrau, *ibid.*, p. 189. Two of the letters posted to Ellet from Mercer (Dec. 4, 1829 and Feb. 21, 1830) carried “Free” stamps, indicating that Mercer was using his congressional frank for his Canal Company correspondence. The issue of Mercer’s obvious conflicts of interest is complicated by the federal ownership of \$1 million in C&O Canal stock and the practices of the day.

¹⁸ Stuart, Charles B. *Lives and Works of Civil and Military Engineers of America*. New York: D. Van Nostrand, 1871, p. 259. Ellet later acknowledged that he was aware of this standard. See Appendix IV.

lating to this Company, and the rules adopted for the government of the Corps of Engineers.”¹⁹

Ingle also wrote: “It is the order of the Board, that all Estimates, Accounts and Copies of Contracts shall be kept in a confidential manner— But information may, where it is proper, be given to persons interested therein.”²⁰ If guidance was provided to Ellet as to precisely what “confidential” meant in this context, no record of it exists.

Significant specifications in the rules that are directly relevant to Ellet’s position include the instruction that the assistants are to “look to [their resident] alone for orders, unless specially directed by the Inspector of stone and masonry, by one of the Board of Engineers, the President of the Company, or the President and Directors, who will, in such case, apprise the Resident of the order given.”²¹ Additionally, they state that “[i]n case of the sudden death, resignation, temporary incapacity, or absence of any resident Engineer, until otherwise ordered, his assistant will supply his place.”²² This would have applied to Ellet as Böye’s condition persisted, keeping him from the canal.

The rules also require the assistant or rodman to prepare by the tenth of each month a report on the work done by the contractors and the sum they are entitled to receive; and to send them, countersigned by their resident, to the company clerk.²³

One of the most important documents in the Ellet papers is undated but must surely have been provided to him very soon after his arrival on the residency. It is titled “Specifications of the Aqueduct on Monocacy river”²⁴ and it provides detailed measurements and directions on the treatment of the masonry (e.g. where rusticated) and use of iron bars and bolts, etc. Unfortunately the drawings done by Wright have been lost, although we are certain that they once existed as he reported on their completion in October 1828.²⁵

October and November 1829: Ellet Alone on the Residency

There are no documents in the University of Michigan’s Ellet papers concerning his work on the canal between Ingle’s letter of November 21, 1828 and Böye’s letter of October 23, 1829 when Böye refers to his illness. It is clear that by that time, Ellet was essentially in charge of the residency, his senior engineer being unable to be present. It is Böye’s illness that occasioned most of the remarkable series of letters regarding the C&O now preserved in the Ellet

¹⁹ Ingle to Ellet, Nov. 25, 1828. The rules (*Rules Adopted by the President and Directors of the Chesapeake and Ohio Canal Company for the Government of the Corps of Engineers*) were adopted on November 22, 1828 and published in the Company’s *Journal of Proceedings* on that date as well as being printed in Washington by Gales & Seaton for public reference. (See Appendix V.) Ingle was employed as clerk for the C&O Canal Company on July 3, 1828. He was among the long-term employees who resigned or were fired during the crisis in the summer of 1840 over the excessive use of (monetary) script. Ingle resigned July 9, but when Maryland reconstituted the board and appointed a new president, Michael Sprigg, in April 1841, Ingle was appointed to the Board and continued to serve as a director until June 24, 1847.

²⁰ Ingle to Ellet, Nov. 25, 1828.

²¹ “Rules for the Government of the Corps of Engineers”, *ibid.*, rule 12.

²² *Ibid.*, rule 24.

²³ *Ibid.*, rule 21.

²⁴ A similar document exists in the Canal Company Records in the National Archives and Record Administration facility at College Park, MD, Record Group 79.12.1.

²⁵ Kapsch and Kapsch, p. 16.

papers at the University of Michigan and it is apparent by his preservation of them that he considered them important.²⁶

The October 23 letter indicates that Böye and Ellet had communicated about the Tuscarora culvert, as it begins with Böye saying: “I forgot to tell that the wall at the end of the little Tuscarora Culvert is to have a uniform slope from top (6½ ft. above Bottom) to the bottom of the Culvert pit.” He then mentions a few additional details and directions on how the workmen are to proceed, before ending the letter with a personal comment on his health. Böye signs this letter as he does all but the last three of his letters to Ellet: “your friend, H. Böye” (sometimes adding “in haste”).²⁷

On November 14, 1829, Robert Leckie, who had been appointed inspector of masonry in the spring, writes a long letter to Ellet that begins: “Your attention is particularly requested to the masonry of the Monocacy aqueduct [sic].”²⁸ It is clear that Leckie is highly dissatisfied with the work and also with Ellet, to whom he says:

The work examined by you, & myself, last evening is so bad, that no dependence can be put in it; the filling in of the pier instead of being laid solid in mortar, is thrown in, and does not deserve the name of Masonry. You will see that it is taken up, and the course below it examined, and if that is bad it must also be taken up. You will examine the way in which the cut stone is laid, when the loose stone now lying on the pier is taken off, so that you may have a chance to examine them, you will provide yourself with a thin strip of tough wood, and will take out some of the wedges that are behind the cut stone, and feel with your strip of wood if the stone is laid solid in mortar, you will also, examine the face with a trowel and when you find the cut block laid dry, you will also have that lifted, and relaid in a solid and workmanlike manner.²⁹

Leckie then proceeds to provide more detailed instructions on the “mortar and workmanship” and the “cut stone facing.” The letter is a valuable description of stone masonry work at the time as well as a powerful example of the kinds of concerns, observations, and knowledge that Leckie seems to have expected Ellet to bring to his oversight of the Monocacy contractors.

After ending with the salutation: “I am yours very respectfully, your obedient servant, Robert Leckie,” he adds:

I again refer you to the passages I have marked with pencil in Sganzen's [sic] treatise on civil engineering,³⁰ which elucidates the principles of good masonry, and until the board take such

²⁶ In a letter to Ellet dated Jan. 1, 1830, Ellet's father had added a note in which he says: “If you have not provided yourself with a letter book, I would advise you to get one and be careful to keep copies of all your letters on business. It is of more importance than you may be aware of.”

²⁷ Oct. 23, 1829, Böye to Ellet.

²⁸ Nov. 14, 1829, Leckie to Ellet.

²⁹ Ibid.

³⁰ The work is *An Elementary Course of Civil Engineering* by Joseph Mathieu Sganzen. The first English translation was published in 1827 and promptly reissued with some additions and changes in 1828. It is unknown which of these two additions Ellet had in his possession. An 1837 edition appears not to have been significantly changed from that of 1828. The 1828 and 1837 editions are available on Google books and the 1837 edition is available as a hard copy reprint from the University of Michigan Library. Initially the transcribers could not read the author's name or identify the work. Frank Griggs Jr. was among those contacted for assistance and it was he who identified the author and work to which Leckie was referring.

methods as will ensure the faithful execution of the masonry aqueduct [sic] you will attend these as much as possible yourself L³¹

Leckie was known for his harsh criticisms and Wright on one occasion makes the comment that “he corrects errors with a Mall.”³² A further example is provided from August when Leckie wrote to Wright after inspecting masonry work along the line of the canal:

The prospects of this important branch [masonry] are truly appalling. There are scarcely any masons on the line and the most of the small numbers of laborers are totally ignorant of masonry and who ought never to be permitted to spoil such an important work.³³

December 1829: Wright and Ellet Correspond

If the situation at the Monocacy was bad in mid-November 1829, it was destined to get worse by the end of the month. On December 1, Ellet wrote to Wright saying “perhaps you are aware that Mr. Hovey has left his contract [for the Monocacy Aqueduct] and does not intend to return.” Ellet reports that while all of Hovey’s laborers have stopped working and most have left, the stone cutters “are desirous to know whether there is any probability that they will be paid for that [emphasis Ellet’s] work, and whether their services will be farther [sic] required here.”³⁴

Albert Hovey was one of the major contractors from the late summer and fall of 1828 group. All the culverts on the sections of the canal under construction above Seneca were let to him by September 25, 1828.³⁵ Under the partnership name of Brackett and Hovey he was involved with the contract for Locks 7 and 8; and under the partnership name of Hovey and Legg he had been awarded the Monocacy Aqueduct contract on August 20. There is some confusion about this partnership as Hitchcock appears to have been substituted for Legg on October 31, 1828³⁶ but Legg is clearly still involved when the contract is abandoned around December 1, 1829. There are indications that Hovey had become ill, and this may have precipitated the abandonment of the ambitious Monocacy contract in particular.

While Hovey appears to have quite suddenly abandoned the contract for the aqueduct and left the situation of its laborers in limbo, he apparently provided some information to the company concerning the supplies at the site for which he expected payment. On December 4, company clerk Ingle wrote to Ellet:

It is understood here that Mr. Hovey has abandoned his work on the aqueduct. The following materials are conveyed to me by him in trust for the Canal Company and I must request you to take them into your keeping until otherwise disposed of viz

4420 feet superficial of cut stone
3820-----Ditto Delivered

³¹ Nov. 14, 1829, Leckie to Ellet. Initially the transcribers could not identify the name or the work and Frank Griggs was among those contacted for assistance and it was he who identified the author and work.

³² Kapsch and Kapsch, *ibid.*, p. 19.

³³ Unrau, *Ibid.*, 111.

³⁴ Dec. 1, 1829, Ellet to Wright.

³⁵ These appear to encompass culverts 35–74.

³⁶ Unrau, *Ibid.*, 183.

1980-----Quarried
 550-----Delivered
 4070 feet running of Hewn timber—Delivered
 50 Lb. Irons —

The coffer dams are also paid [for by] the Company—as well as part of the [blocks] & cordage — The cement left will also require attention.³⁷

Wright also wrote to Ellet on December 4, acknowledging that he was aware of Hovey's departure and stating that "I cannot answer you as to the stone cutters getting any pay — I think you ought not to encourage them to go any further in cutting, on the expectation that the company will allow or pay for it."³⁸ The non-payment of workers and other creditors by contractors who abandoned their contracts was a persistent problem for the canal company, and one that on some occasions, would lead to the threat of violence by unpaid laborers.

Wright then states: "The facts are the company do [sic] not wish to have this work go on now, at this season of the year and I wish therefore you would discourage all movements at present except so far as to save all the work now done."³⁹ How much this had to do with the developing financial difficulties and how much it had to do with the fact that winter was about to set in, is uncertain.

Wright then addresses the situation on the troublesome Tuscarora culvert:

As to the work on Little Tuscarora there has been nothing paid on it and the workmen will be entitled to what they do on it and we will see that they are paid. 1st we must pay them for the work they do by the Perch and allow to Hovey all the advantage of the stone he finished — 2^d we must allow them what stone they finish since Hovey went away — discounting for quarrying &c.⁴⁰

Wright emphasizes to Ellet the need "to keep a regular account of all matters as they are and to keep such notes and memorandum as will enable me to know and understand all the questions which may arise." After a final statement that he "can say nothing yet" with regard to the excavation of the Monocacy's east abutment, he signs "In haste your' [sic] truly, B. Wright." A strikingly brief postscript follows: "Mr. Böye is failing slowly."⁴¹

The University of Michigan's Ellet collection contains a copy made by Ellet of his own letter to Wright on December 5, 1829 concerning several difficulties that had arisen with contractors on the residency. In it Ellet warns Wright first, that Messrs. Johnson and Bennett, who are in a partnership with T. McIntosh, object to payments being made to McIntosh; and second, that Mr. Willcox, a subcontractor, would likely be asking for "a greater allowance of kind" than Wright had established in a recent estimate. Ellet explains:

I have allowed him (and with the intention of continuing the same proportion [un]til the section is, completed) ½ as hard pan & the remainder as common excavation: a proportion which I deemed equitable & sufficient to do the work, as it gives 20 1/2 cents per yard on the whole. If you recollect the excavation I should thank you to say whether you deem the estimate just.⁴²

³⁷ Dec. 4, 1829, Ingle to Ellet.

³⁸ Dec. 4, 1829, Wright to Ellet. For example, in May 1838 (Sanderlin, *ibid.*, 121) and March 1850 (Unrau, *ibid.*, 104).

³⁹ Dec. 4, 1829, Wright to Ellet.

⁴⁰ *Ibid.*

⁴¹ *Ibid.*

⁴² Dec. 5, 1829, Ellet to Wright.

Ellet then describes a third situation in which he is again recommending adjustments to Wright's own previous estimates of the nature and value of contractors' work. Concerning it Ellet wrote:

M^r Blodgett says that he had not commenced his sheeting at the time you was [sic] upon his section, and thinks an allowance should be made for it, over the mere price of common embank^t [embankment]. It is about 20 ft wide by 4 deep. well laid & difficult to lay — only 6 feet of it is estimated as wall — I have estimated this embankment, (not paid as excavation which is drawn more than 800 feet) at 20 cts per yard. The chief part of it is as hard to excavate as that on Wilcox's section.⁴³

Ellet concludes by stating: "The above remarks have been made at the request of the contractors."⁴⁴

This communication with the company's chief engineer sheds considerable light on Ellet's responsibilities in Böye's absence. Likely it would have been the resident engineer who made a recommendation that the chief engineer change the amount he had set for work. In this situation Ellet avoids putting himself in the position of making such a request by reporting that it comes from the contractors. This also reminds us that in a time when communication with superiors could take days, many situations required considerable patience before they could be resolved.

However ill Böye may have been, on December 7 he sent a letter to Ellet that reveals his continued sense of responsibility for the fifth residency. In it he asks Ellet if he had received a letter sent "some time ago" in which he had asked for the past two months' abstract of expenses. He reminds Ellet "that whenever a note is made on an estimate, to enter the same in the book of assessment in its proper place."⁴⁵

Böye also states that the contractor on section 67 has been authorized to suspend work and he instructs Ellet that "an accurate estimate be taken of all the work that has been done," noting that the contractor "says that he had a force of about 25 men working for 4 or 5 days after the last estimate was taken." Ellet is told that he must determine "how far this is correct" after he has made out the assessment.⁴⁶ The request raises the issue of the frequency with which Ellet was to visit each contract site and how much he was expected to record or remember of the work.

Böye then takes up the subject of the "trimming of the banks," noting that "the resolution of the board is indefinite" and that Ellet should therefore "estimate all and make no allowance for the trimming of banks." He adds, however: "on the face of the Estimate you might state that an allowance of say \$120 or 130 ought to be made for trimming the banks, the Board can then do what they in their wisdom may deem expedient." Böye also informs Ellet that Wright has determined that "where external slopewall is built on what is usually termed stone embankment" a certain portion is also to be considered wall—and Böye includes a small sketch.⁴⁷

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ Dec. 7, 1829, Böye to Ellet.

⁴⁶ Ibid.

⁴⁷ Ibid.

Again Böye chooses to share details of his treatment and condition with Ellet, writing that “this is the second day that my gums have felt tender from the effect of calomel I have been taking; should it not remove the obstruction in the liver I am to be blistered immediately—by way of a change.”⁴⁸

As always he closes his letters to Ellet with “Your friend, H. Böye” but in a postscript on this letter, asks Ellet to “[r]emember me to all up in your quarters” and tells him that “[a]s it is very probable that I may have no further occasion for my horse, I want to sell him as he will be a mere dead expense to me during winter.” He further informs Ellet that:

Should you know of any who wants [sic] to purchase him I will sell horse, saddle, whip, spur &c &c for \$90. If you would like to purchase him yourself you might have the whole for \$85; otherwise I wish you will send him over to M^r. Johnson who owns the white stone quarry about 3 or 4 days after you receive this.⁴⁹

At this point in his postscript, Böye returns to canal concerns, discussing the need for a waste weir on section 82, asking Ellet if in his last estimate he included the cost of timber for Hovey’s stable, and noting that “Canfield has been appointed a kind of temporary agent for the Company about the Aqueduct.”⁵⁰

On December 8, company clerk Ingle wrote to Ellet that the contractors on section 70 were willing to suspend their operations “until the further order of the Company.” This occasioned instructions that Ellet “please therefore make a final assessment on the Section — to which add your opinion as to the relative value of the work to be done when compared with what has already been done.”⁵¹

Wright also sent a letter to Ellet on December 8, asking Ellet to find whoever was Hovey’s representative and together with him “take an exact account of all stone cut of every kind and description,” including their thickness and size and whether they were at the Monocacy or still at the quarry. He also asks him to identify all the timbers for the central coffer dam or other purposes, and to have them moved to where they will “be secure against the highest freshets.” Wright again closes the letter with “in haste.”⁵²

On December 9, 1829, Wright sent a three-page letter to Ellet that was hand delivered⁵³ by Mr. Asher P. Osborn (with variant spellings of Osbourn and Osborne), the new contractor on the Monocacy. It began: “The board have this day agreed with Mr. Osborn...to go on slowly [emphasis Wright’s] with the Monocacy aqueduct and he is to proceed as follows.” He then specifies which of various kinds of stone locally available were to be used in specific parts of the aqueduct, concluding with: “I am thus particular that the Contractor may not mix these different qualities of Stone and use them for the same parts of the work.”⁵⁴

⁴⁸ Ibid. Calomel is Mercury(I) chloride (Hg₂Cl₂), which was commonly used in the 19th Century for all kinds of mental and physical ailments—despite its highly toxic nature.

⁴⁹ Dec. 7, 1829, Böye to Ellet.

⁵⁰ Ibid. Canfield was one of the contractors on the canal, and it was his subcontractor on section 75 who in July, 1829 won the company’s \$20 silver medal award for being the first to complete their contract (Unrau, *ibid.*, p. 188).

⁵¹ Dec. 8, 1829, Ingle to Ellet.

⁵² Dec. 8, 1829, Wright to Ellet.

⁵³ The cover of some letters includes the name of the person to whom the letter was given for hand delivery. In some cases we can’t identify that person and he may well have had no formal association with the canal.

⁵⁴ Dec. 9, 1829, Wright to Ellet.

Wright also notes that he is including “a diagram of one pier “to show you how I wish the Skewback Stones to be joined at the corners” and he reminds Ellet that he had given instructions previously that “these stones are to be cut with a great deal of care and the inner joints are to be as well cut as the outer faces...so that the stones...shall form a solid resistance against each other and prevent the pressure of the arch from giving way at all.”⁵⁵

Ellet is then instructed to “take up the matter systematically” and Wright explains to him how to draw diagrams “made of each course of stone in each pier and in each abutment” that he will then use for designating which of the stones “now on hand” are set aside for a specific course. The goal was to have “a diagram for every course in the three piers now to be put up and also a diagram for each abutment” that would allow him to “ascertain what deficiency there is in the stone necessary for the Piers and abutments.”⁵⁶

Wright notes that the company has paid for use of the quarry from which most of the stone for the Monocacy is to come, only until March of the coming year (1830). That necessitated the rapid cutting and removal to canal land at the Monocacy by then of as much stone as would be needed. Priority was to be put on the stone for the remaining piers and the abutments, after which the focus should be on the spandrel walls and then the parapet walls. With regard to the spandrel stones, Wright recommends that they be only scabbled at the quarry and then finished down at the aqueduct.⁵⁷

Wright then tells Ellet: “I pray you to give Mr. Osborn all the advice you can and enable him to understand all that is now done.” After providing some further detailed instruction regarding the stones and other Monocacy concerns, Wright informs Ellet that: “If you could find a good mason to assist you in this case upon proper and reasonable terms I wish you to do so — as he will understand how to try the stone in every way.”⁵⁸

These statements beg for analysis of Ellet’s presumed expertise as compared to the experience and knowledge of the contractor. Unfortunately, we know little of the latter, and not much more about Ellet’s competencies. It is clear, however, that Wright is presuming that Ellet can keep Mr. Osborn from making a significant mistake in the quantity of stone needed, the type used in the various parts of the aqueduct, or the manner in which they are laid—yet he recognizes that the young engineer would greatly benefit from the assistance of a good mason.

At this point Wright informs Ellet that “M^r. Cruger will have the charge of your Residency until M^r. Böye regains his health. And he will probably be with you soon and give you further directions.”⁵⁹ Alfred Cruger had been the original engineer assigned as resident to the fifth residency on November 22, 1828, but was quickly replaced by Böye when he was commissioned to assist Nathan Roberts in the court-ordered surveys of the narrows between Point of Rocks and Harpers Ferry relative to the B&O and C&O conflict over right-of-way.

On December 14 there is another letter from Wright who informs Ellet that “the clerk has agreed to Mr. Laferty [sic] suspending Lock 27.”⁶⁰ There is a certain abruptness in Wright’s reference to Ingle as “the clerk” and his representation of Ingle as the one who au-

⁵⁵ *Ibid.*, p. 1.

⁵⁶ *Ibid.*, p. 2.

⁵⁷ *Ibid.*

⁵⁸ *Ibid.*

⁵⁹ *Ibid.*, p. 3.

⁶⁰ December 14, 1829, Wright to Ellet. The original contract was actually to the firm of Lafferty and Boland that held contracts for Locks 25 and 27 as well as sections 25 and 27 that were located above Lock 21. Company records indicate that the firm abandoned both locks in February 1830 (Unrau, *ibid.*, 230).

thorizes Lafferty to abandon his contract. This may reflect Wright's growing impatience with the interference by the administrators in engineering matters, especially since the company rules do not give to the clerk any authority "of whatever concerns the execution and police of the canal"⁶¹ as they do to the president and directors.

In any case, the remainder of the letter contains precise instructions for Ellet on measuring the excavation work, stone, and timber at the lock. It also advises Ellet that Lafferty has been given a blank Bill of Sale that Ellet is to fill out and submit to Ingle. Wright ends by again advising Ellet to bargain with "a good mason or stone cutter & Lock builder" to assist him in this project for a flat fee that would be written on a bill and submitted to Wright with a letter stating the services provided. Wright states that "I will get it paid by the board." In a post script Wright indicates that Lafferty has pumped water out of "the drain" and Ellet should estimate "the cost of this as well as you can."⁶²

Late December 1829: Böye Is Still Very Much in the Game

On December 16, Böye sends Ellet a long letter from Georgetown that includes a separate page with recent board resolutions relative to winding up estimates. It references a letter from Ellet to Böye sent on the 14th in which Ellet apparently commented on how busy he was and also indicated that section 83 had been completed under the estimated cost. In response Böye notes that "we could not tell that there would be less rock than appearances indicated & we estimated on the safe side."⁶³

Böye then states that Cruger has been given "only those sections that were added to the fifth residency from the fourth," and that the added sections are, with one exception, among the many where work is stopping "as is pretty much the case with the whole of the fourth residency."⁶⁴

This comment—and indeed the tone of Böye's letter which is that of someone who still considers himself to be responsible for the residency—raises the issue of which man is Ellet's immediate superior at this point. On the face of it, this would appear to be Böye's way of limiting Cruger's authority to only certain parts of the fifth residency, but there is no way of knowing if Böye himself had been accurately informed of precisely what Cruger's responsibilities were to be—or, if he had been, whether he comprehended the full implications of the change.

In his last letters to Ellet, Böye sometimes provides a glimpse into canal politics and economics. In this one he states: "*entre nous*, I think that in a few months the Company will be obliged to stop its functions or operations altogether, unless Mr. Rush should be successful in obtaining money in Holland."⁶⁵

⁶¹ *Rules*, Ibid., Rule 1,

⁶² December 14, 1829, Wright to Ellet

⁶³ December 16, 1829, Böye to Ellet.

⁶⁴ Ibid., p. 2. On November 22, 1828, Erastus Hurd was appointed as the resident engineer for the fourth residency, but Cruger replaced him at some time. See Wright's Dec. 9, 1829 letter that informs Ellet that Cruger was being put in charge of the fifth residency "until Mr. Böye regains his healthy."

⁶⁵ Ibid. Richard Rush was Secretary of the Treasury under John Quincy Adams. In April 1829 he was appointed to act as agent for the District cities in Europe in an attempt to secure loans so that they could fulfill their obligations regarding the purchase of canal stock. Dec. 16, 1829, Böye to Ellet, p.1.

It is clear that Böye has read Ellet's most recent "abstract" on canal work, as he comments in detail on certain things that are missing such as a receipt and the expense of day's labor by one of the company's workmen. He also addresses specific issues with several of the contractors, which further indicates that despite his illness, he still has a grasp of details on the residency. He asks Ellet to send the fifth residency's rodman, William Wallach, down at Christmas with the abstract for December and all the vouchers for the past quarter.⁶⁶

Böye then warns Ellet of what he calls a "disagreeable point"—namely situations "where owners may come forward and claim property after you have taken and returned an assessment." He advises the young engineer to try to determine if any part of a work "is encumbered" before submitting an assessment. In the event of such a case, Böye informs Ellet that he will handle it by writing to the board or seeing Wright about it.⁶⁷

Referring again to the grim economic condition of the canal, Böye advises Ellet:

I do not suppose there will be any alteration in the Engineering Corps on the 5th [residency] but if the Aqueduct should be the only work which continues, probably some alteration will take place. This, however, is a mere conjecture of mine as I have not heard a single word about it. As I said before if they do not get more money I have it from pretty good authority that the whole work down to Georgetown will be suspended.⁶⁸

He concludes with some personal information that "[i]f such arrangements, as I am making now in Richmond succeed, I shall probably quit this before long" and signs the letter as usual, "in haste, your friend."⁶⁹

On December 16 the company clerk, Ingle, also wrote to Ellet, advising him that section 79 was being abandoned and requesting Ellet to "make a final measurement on it."⁷⁰

A letter from Böye on December 27, concerned one of those "disagreeable points" where "the proprietor came forward & claimed property after the same had been assessed to the contractor and settled for by the Company." Böye notes that Wright mandated that "nothing is to be estimated which is not on the Company's ground and delivered and a bill of sale in due form given for it"; but Böye reports that he reminded Wright that: "if the contractor had no right to the property he certainly can convey none." Böye's final advice to Ellet was to determine who furnished the articles he is estimating and whether or not they had been paid for.⁷¹

Before concluding (this time without the usual "in haste"), Böye indicates that his health "has evidently improved" and writes "you have no idea how much I want nightshirts."⁷²

January 1830: Instructions from Wright, Leckie, and Ingle

On January 3, 1830, Ellet sent to Wright a letter concerning a problem that had arisen with the McIntosh, Johnson, and Bennett partnership and workers on Section 71. Ellet informs

⁶⁶ Ibid.

⁶⁷ Ibid.

⁶⁸ Ibid.

⁶⁹ Ibid.

⁷⁰ December 16, 1829, Ingle to Ellet.

⁷¹ December 27, 1829, Böye to Ellet.

⁷² Ibid.

Wright that McIntosh “is now lying ill in Barnsville” (a nearby village) and that “as Mr. McIntosh has not distinctly espoused his ideas, I have copied the whole of his letter.” In the quote that follows McIntosh reminds Ellet that his workmen “look to me and no other person” for the payment of their wages, and he states that unless the payment being prepared by Wright is made to himself, his men fear they will not be paid. McIntosh assures Ellet that he “can give ample security in the city of Washington by receiving the amount of the estimate for the payment in full to the men to whom it is fairly due.”⁷³

It is clear that Ellet has been caught in the middle of a crumbling partnership with liquidity problems, and one can sympathize with him and the workers who, Ellet writes: “are certainly dissatisfied, and complain of being sent by Johnson to Bennett, & from Bennett to McIntosh for their wages.”⁷⁴

A note written on the reverse indicates that Ellet was dealing with an even more significant issue concerning the stone that was to be used in the Monocacy Aqueduct. It says:

Both Osborne & Van Olstine assert positively, that your order to them (personally) were, to get the stone for the water table & also for the skew backs, from Nelsons quarry; — Whereas your letter states distinctly, that for both, it must come from Johnson’s White stone quarry. So confident are they of the correctness of their opinion, that they have commenced already quarrying for the water table at Nelson’s.⁷⁵

Ellet is likely referring to Wright’s December 9, 1829 letter in which he does indeed specify that the water table and skewbacks were to be built of white stone from the quarry on the Johnson farm rather than Mrs. Nelson’s quarry on Sugarloaf Mountain.⁷⁶

On January 6, 1830, Wright responds to Ellet. As usual Wright begins the letter with a formal “Dear Sir”, but on this occasion he signs it “Very truly your friend” rather than with simply “yours truly” or a similar formal conclusion. In this letter Wright insists that he “certainly never told Mr. Osborn anything about the [skewbacks] coming from Mrs. Nelson.” However, he advises Ellet that “[a]fter I wrote you the letter, I saw Mr Leckie [the company’s inspector of masonry] who told me that the water table could not well be obtained from Johnson’s quarry and that Mrs. Nelson[’s] quarry would furnish good stone for that part of the work.”⁷⁷

Wright goes on to give permission for the skewbacks on the interior of the arch to come from the Nelson quarry also, given that they will not be seen. However, “in order to have uniformity, the Skewback for the Ring at the end ought to be same as the Rings which are to be from Johnson’s.”⁷⁸

On January 13, 1830, Leckie wrote another long letter to Ellet. After briefly mentioning several things about the dry walls on the residency, he describes a series of quarries on the Nelson farm, evaluating the stone coming from each but making a general statement that the Nelson stones “are of good quality and have good beds and seem to be well cut.” His confidence in the Nelson quarry stone leads him to add: “there can be no doubt, but plenty of

⁷³ January 3, 1830, Ellet to Wright.

⁷⁴ Ibid.

⁷⁵ Ibid. Osborne was the second contractor on the Aqueduct, taking over from Hovey, and Alexander Van Alstine was a lawyer representing Hovey, the original contractor for the Monocacy Aqueduct.

⁷⁶ January 3, 1830, Ellet to Wright. See also December 9, 1829, Wright to Ellet.

⁷⁷ January 6, 1830, Wright to Ellet.

⁷⁸ Ibid.

stone for the aqueduct can be procured at these quarries.”⁷⁹ This is significant in light of the discovery by Wright on a visit to the aqueduct in July 1830 that the Nelson quarry stone was too soft and that the three piers constructed at that time would have to be torn down and rebuilt with a harder stone.⁸⁰

Leckie then specifies certain adjustments in the height and courses that could be made if it was not possible to cut stones of the proper size. For example, “in case 30 Inch stuff enough cannot be obtained for the first courses of the Piers and abutments, two 15 Inch courses may be substituted.”⁸¹

Leckie closes with instructions concerning the culvert on section 67 near Conrad’s Ferry⁸² and the practices of the quarrymen on section 74 just above the Monocacy. He describes the culvert as “a tolerable good job” for which Ellet can prepare an estimate on the work done to date and he then provides the young engineer with specific guidance on certain things about the ring walls and the cement for the facing.⁸³

However, Leckie is clearly upset with what is happening at the quarry on section 67, where “[t]he quarrymen are sending out all the trash on the top of the quarry which is an aggregate of clay, and are moreover putting in the same pile small irregular pieces good for nothing.” He tells Ellet that he has asked the quarrymen to keep “the bad stuff” separate from the stone for the culvert, and concludes by noting that “[a]lthough these stones are not designed for work on your intendency [Conrad’s Ferry being in the fourth residency], and as Mr Cruger may not be along often, it would be highly desirable that you should have an eye to the proper selection of the culvert stuff.”⁸⁴

In a post script note, Leckie mentions that he is uncertain about the cement from the Tuscarora valley north of the canal and that he is having two barrels of the raw material brought to his home “to be operated on to remove all doubt.” Interestingly, the company formed to mine Tuscarora limestone and develop adjacent facilities to process it, was organized by Leckie and James Alcott of New York. While a determination was made that the hydraulic cement from this mill was adequate, by June 1830 it had been decided that its quality was in fact too poor for use on the canal.⁸⁵

On January 15, 1830, Ellet wrote to Wright and states that “Barry & Griffin will hand you their estimate of the stone which they have laid on the little Tuscarora culvert, both previous to & since Mr Hovey left.” The name of the culvert is something of a mystery. In section 76 of the fifth residency, culvert No. 71, with a 16 ft. span, was built to carry Tuscarora Creek under the canal. As the designation of “little Tuscarora” can’t be associated with any of the watercourses in this residency, the presumption is that these references are to culvert No. 71.

Ellet goes on to mention the price previously agreed upon for the masonry work on the culvert, but then notes that he has not made any estimate as to the cost of transporting the stone “because I do not know in what manner you would have the account presented.” He then concludes with this statement: “I am not indeed assured that the form of the present es-

⁷⁹ January 13, 1830, Leckie to Ellet, p. 1–2

⁸⁰ Kapsch & Kapsch, *Ibid.* p. 25.

⁸¹ January 13, 1830, Leckie to Ellet, pp. 1–2.

⁸² After the Civil War the ferry was operated by former Confederate officer Elijah V. White and became known as White’s Ferry. A ferry continues to operate at this location—the last on the Potomac.

⁸³ January 13, 1830, Leckie to Ellet, p. 3.

⁸⁴ *Ibid.*

⁸⁵ Unrau, *Ibid.* p. 168

timate will be approved of—and would not have sent it thus, without advice, but for the absolute necessity of the contractors: who unless furnished with money cannot proceed any farther.”⁸⁶

Interestingly, this copy, which likely was a draft for the final document that was actually mailed, is filled with deleted words and words crossed out with alternative wording entered beyond them. While some of these corrections are to achieve better wording, some convey Ellet’s uncertainty not only with the situation but, it would seem, also with how best to express what he must to the recipient.

On January 18, 1830, Ingle wrote to Ellet concerning the failure of Mr. Billington to provide the locust timber for which the company has contracted. Ingle instructs Ellet to “write me immediately and let me know what he is doing,” noting that the contractors “are suffering for want of it.” He instructs Ellet to inform Billington “that unless he sends the timber down immediately, we shall hereafter detain a much larger portion of his money for this object.”⁸⁷

Ingle wrote to Ellet again on January 30, 1830, stating that the “President & Directors of the Ches & Ohio Canal Company have instructed Alfred Cruger Esq. Resident Engineer of the 3^d Residency— to take charge also of the 5th residency during the sickness of Mr. Böye.” This is old news, however, Wright having informed Ellet of this in his December 9th letter. Also, Böye’s December 16, 1829 letter to Ellet states that Cruger was on the fourth residency, not the third. While this could be a slip on Ingle’s part, it is more likely a reflection of the company’s effort to reduce its expenses by decreasing the size of its engineering corps. Wilson M. C. Fairfax⁸⁸ who was appointed to the third residency on November 22, 1828, may have been gone by then (as seems likely), and with Purcell and Van Slyke in charge of the lower two residencies, Cruger could well have had responsibility for the work still in progress on all three of the upper residencies.⁸⁹

February 1830: Everyone Wants Estimates —Yesterday!

On February 4, 1830, Böye wrote to Ellet that Wright wanted the estimates for Hovey’s work on the Aqueduct, adding “he says he sent you directions how to proceed immediately after Mr. H. [Albert Hovey] had abandoned the work.” This would have been Wright’s long letter of December 9, 1829. Böye also mentions needing an account of the culverts, the ring-stones, and a report on the labor force currently working on the cofferdams, presumably for the aqueduct piers. Böye then notes that he has heard nothing from Ellet “since Mr. Wallack had been there (presumably around Christmas as mentioned in Böye’s letter of December 16), and says that “I have lately improved considerable in health, though still far from being recovered.”⁹⁰

Böye next expresses his hope that Ellet had taken advantage of the cold weather to measure the width of the Monocacy River where the Aqueduct crosses it, the distances between the piers “that we may know how to prepare for any deficiency in the measure should

⁸⁶ Jan. 15, 1829, Ellet to Wright

⁸⁷ January 18, 1830, Ingle to Ellet.

⁸⁸ Wilson Fairfax became chief engineer on the Alexandria canal a few years later.

⁸⁹ January 30, 1830, Ingle to Ellet.

⁹⁰ February 4, 1830, Böye to Ellet.

such exist,” and the distance between the “last pier to the face of the eastern abutment.” Should Ellet not have done this yet, he urges him to “do it should the ice be still strong enough.” In these two paragraphs there seems to be a certain impatience with Ellet and concern that he has done all that was necessary.⁹¹

Continuing onto a second page, Böye asks Ellet to send him “that little book of mine with some manuscript notes in [it] relative to the Aqueduct, rules for measuring planes, & solid” and describes it as duodecimo size,⁹² bound in calf. He also notes that the company had contracted for “a considerable amount of the Tuscarora waterlime.”⁹³

In a remarkable comment on the political scene, Böye writes that “there is nothing new here, except that a kind of Armistice has taken place in Jackson’s Cabinet between the two belligerent parties, but I do not think it will last long.” The reference is to the ‘Petticoat Affair’ that would eventually result in all but one member of Jackson’s cabinet resigning in the spring of 1831.⁹⁴

After signing the letter “adieu and as always your friend,” Böye adds a long postscript occasioned by the fact that Wright had just handed him a letter from Ellet dated January 30th that “has brought to my mind some facts, which if not already noticed by you ought to be taken into consideration before the Lock houses are received & a final Estimate given.” He goes on to mention flaws he had noted such as cracked stones above fireplaces and stone steps needed from a house to the ground, and “sundry minor defects which have now escaped my memory.”⁹⁵

He concludes by reporting that Clement Smith, the company treasurer,⁹⁶ had just visited him and wanted a copy of the Hovey estimate, which the board had not yet seen. He then asks Ellet to send down another copy.⁹⁷

In this letter, apparently written less than two months before his death, we see Böye seeming to be very involved with the state of the residency and still serving as a source of information concerning it and a conduit for information from Ellet. There is a decided tone of impatience in this letter, despite the bits of personal and public news and warm closing phrase. However that impatience may have been with the endless details surrounding the many contracts being abandoned and the perilous financial situation of the company, as much as with Ellet’s being slower than desired in providing the many measurements and estimates so urgently needed by both the engineers and administrators.

⁹¹ Ibid.

⁹² The book page of a duodecimo book results from the folding of each printed sheet into 12 leaves (24 pages). Generally they were small, as for example 6" x 9".

⁹³ Ibid., p. 2

⁹⁴ Ibid., p. 3. The ‘Petticoat’ or ‘Peggy Eaton Affair’, resulted from Senator John Eaton’s relationship with Mrs. Peggy O’Neale Timberlake, whose husband was a purser in the U.S. Navy and often away on extended voyages. In 1828 when Peggy’s husband died while abroad, the two married—but so quickly that it only compounded the scandal. When Jackson appointed Eaton as Secretary of War in 1829, many of the wives of the other cabinet members ostracized the Eatons and the tensions this produced made it impossible for the cabinet to function effectively, ultimately resulting in the resignations of all the cabinet except postmaster William T. Barry. In 1833 Eaton was elected as C&O Canal Company president, replacing Mercer, in a questionable election.

⁹⁵ February 4, 1830, Böye to Ellet.

⁹⁶ Clement Smith, an important Georgetown businessman served as treasurer for the C&O Canal Company from July 5, 1828 to July 7, 1834.

⁹⁷ February 4, 1830, Böye to Ellet

On February 5, 1830, Wright sends a brief letter to Ellet “to make out with all possible speed” an estimate for Osborn’s labor and materials, as he “wants money and ought to have it to forward our work.” Wright concludes: “We ought to push that work rapidly. With Esteem yours, B Wright.” The warmth of the “your friend” ending of Wright’s January 6th letter is notably absent, although again it may be due to the pressures of the canal’s difficulties more than any impatience with Ellet’s ability to provide the necessary information in a timely manner.⁹⁸

On February 9, 1830, Cruger wrote to Ellet stating that, in preparation for the reletting of contracts between Seneca and Point of Rocks, he needed “a statement exhibiting the abandoned sections of the Canal & also a list of the culverts not commenced or not contracted for, with the probable amount of Perches of arch work, abutments, wings & dry walls in each.” On the crowded single-page letter with his name squeezed into the lower right corner, Cruger gives a few detailed instructions on how Ellet is to proceed, and then informs him that “I intend to be with you early next week, to which time I have postponed a further consideration of this subject as well as some others.” He concludes by requesting “that this statement be prepared by that time or such part of it as your time will enable you to execute & oblige.”⁹⁹

Given that the letter was written on a Tuesday and that it likely took a day or two to get it to Ellet, the young engineer appears to have had only about 5 days to make the requisite surveys and measurements and prepare the statement Cruger indicates he was “instructed by the Board of Directors to procure.” Interestingly, Cruger signs his letter “resident engineer protem”, indicative of the fact that the extension of his duties to the fifth residency was by no means a final appointment in his eyes. This certainly indicates that the company was not prepared to simply replace Böye, and Böye’s continuing involvement and correspondence with Ellet indicates that to some degree both men were functioning as his superiors.¹⁰⁰

Böye writes to Ellet again on February 12, 1830 in response to his receipt of estimates and papers that Ellet sent to him on February 7—prior to the February 9 letter from Cruger to Ellet. The initial concern in this letter is about ringstones for Hovey’s culverts, for which an estimate is needed. Böye is also uncertain about the status of a \$300 payment that was to have been made to Hovey, and whether some 26 ringstones for the Tuscarora culvert were included in Ellet’s most recent report.¹⁰¹

Böye next informs Ellet that Wright wants the estimate that was given to Hovey’s sub-contractors—an estimate he says he does not remember ever having seen. He then states that “it will be indispensable to open a separate account with the present contractors for the Aqueduct” to keep their accounting separate from Hovey’s, which has been taken over by his creditors.¹⁰²

The exact nature of the engineering authority on the fifth residency might be clearer if only Böye had been a bit more explicit in the next, highly enigmatic paragraph in which he wrote:

⁹⁸ February 5, 1830, Wright to Ellet.

⁹⁹ February 9, 1830, Cruger to Ellet.

¹⁰⁰ Ibid.

¹⁰¹ February 12, 1830, Böye to Ellet, p. 1.

¹⁰² Ibid. p. 1.

I understood from Mr. Krüger [sic, Cruger] that his having any thing to do with the 5th R^y [Residency] originates with Mr. Mercer, who asked Mr. C, [Cruger ?] if he had any objections to which the reply was “No”.- What Mr. M^s. [Mercer’s] reasons were I could perhaps divine, but the arrangement is but of little importance. — Entre nous – Contractors will always grumble.¹⁰³

It would be reasonable to interpret this as indicating that certain contractors had complained about Cruger, about the lack of a physically-present resident engineer on the residency, or both. Böye may be wise in taking such complaints lightly, but his apparent perception of the arrangement with Cruger is deeply problematic. It certainly raises questions as to just how specific President Mercer was in making the arrangement with Cruger and in conveying it to Böye, whose comment that “the arrangement is but of little importance” indicates that (in his mind at least) it did not equate to a straightforward assumption of the entire residency. Finally, it raises the question—but does nothing to answer it—of just how much Wright was involved in the decision to assign to Cruger some, if not all, fifth residency responsibilities.

At this point in the letter Böye responds to a query from Ellet as to when Böye might be able to get to the fifth residency. He explains that since moving from Washington to Georgetown “I have been sorely afflicted with sore throat and cold which I am sorry to say has settled (or affected) at present on my lungs and occasioned a slight spitting of blood.” He continues on in a remarkable bit of self-revelation about his mental state:

... how it will terminate god only knows. So you see I have to go through a regular apprenticeship in matters of diseases; still I try to keep up good spirit, though some times the blue d^s [demons or devils?] will make their appearance.¹⁰⁴

He acknowledges that his condition has kept him from work on “patterns” but that “I will endeavor before long to have something done.” Based on Böye’s next letter written on February 20, it appears these were drawings for the Monocacy Aqueduct ringstones.¹⁰⁵

After signing “in haste, H. Böye,” he adds a long postscript that mentions Ellet’s report that some ringstones seem to have been intentionally damaged to the extent that some were unusable, provoking a query from Böye as to whether the extent of such damage merits a deduction in the payment for the stones. He also points out a mathematical error in one of Ellet’s estimates for an item of walling (indicating how closely Böye is checking Ellet’s data) and raises a question about the depth of a culvert pit as well as comments about a variety of other contractor-related details.¹⁰⁶

On February 20, 1830, Böye writes again in a spirit of urgency:

If you have not had an opportunity to send the papers down I wrote for in my last, I wish you will forward them by mail immediately. There is an Agent here from Hovey who urges an immediate settlement very strenuously; alleging as a reason that both Hovey and Legg are suffering in character & purse while the business remains in this state.¹⁰⁷

¹⁰³ Ibid., pp. 1–2.

¹⁰⁴ Ibid., p. 2.

¹⁰⁵ Ibid., p. 2. See also February 20, 1830, Böye to Ellet.

¹⁰⁶ Ibid., p. 3.

¹⁰⁷ February 20, 1830, Böye to Ellet.

He notes that Ellet should have—or shortly will have—the patterns for the aqueduct ring-stones and that Wright and Leckie have accepted his proposal that there be 45 rather than 41 “on account of its being a better proportion and easier obtained.” Before signing “in haste, yours as always, H. Böye,” he again shares information on his health, stating that it “continues about the same as when I wrote you last. I still spit blood.”¹⁰⁸

As is often the case, a long postscript follows, referencing a letter Ellet wrote on February 17 and sent with other documents including Hovey’s culvert estimates. Böye makes additional comments about culverts and stones before stating that “[t]hese things however are unimportant in settling with Hovey if we only have the number of the whole he has been cutting.” He then reports that the person who brought Ellet’s material was waiting and it was therefore necessary to conclude without answering the inquiries in Ellet’s letter.¹⁰⁹

On the same date, President Mercer wrote to Ellet concerning the arrangements the company’s board of directors had made with Charles Carroll of Carrollton¹¹⁰ “for the use of certain quarries of lime stone, on his land,” necessitated by a new contract with Brackett and Guy for “40,000 bushels of hydraulic lime.” Essentially Carroll had permitted the company to bargain with his tenants concerning “compensation or indemnity, for entering, and passing in and out of their fields or grounds.”¹¹¹

Mercer then instructs Ellet “to see the tenants, with as little delay as possible” to determine “the places, from which the lime stone is to be taken,” to “know which of these courses, they prefer,” and to inform them that Mr. Carroll has authorized Brackett and Guy’s work on their lands and to assure them “that, for any damage done them, by Messrs. Brackett and Guy’s operations, in quarrying, burning, grinding and delivering the lime, they shall be justly and fully indemnified.” Mercer makes it clear that the agreements with the tenants in advance are to help prevent later court cases.¹¹²

On February 21, 1830, Mercer sent Ellet a letter containing a half a page of mathematical calculations and there is no indication that there was once an additional sheet of text that explained them. It can be assumed, however, that Mercer was demonstrating something for Ellet, but why and what remains undetermined.

On February 22, 1830, another long letter was sent by Böye to Ellet concerning the bookkeeping for the Aqueduct. He recommends that Ellet “open a new account for the present concern, but at the same time...to transfer from the account of the former contractors, to that of the present one or ones, every item which has been placed to the credit of Hovey & Legg.”¹¹³

Wright, Böye explains, sees this method as confusing and “thinks a final estimate [of Hovey’s work] must first be made, and that Mr. Hovey’s son in law (his agent) had better to make some arrangement with the present Company [Osborn’s] to assume the responsibility of the former Concern.” Clearly there was a murky area (likely concerning supplies and stone work more than actual construction), and Wright hoped to avoid the canal company

¹⁰⁸ Ibid.

¹⁰⁹ Ibid.

¹¹⁰ Carroll was the last living signer of the Declaration of Independence and had dug the first ceremonial shovel for the Baltimore and Ohio Railroad on July 4, 1828—the same day as the first shovel for the C&O Canal had been dug by President John Quincy Adams.

¹¹¹ February 20, 1830, Mercer to Ellet.

¹¹² Ibid.

¹¹³ February 22, 1830, Böye to Ellet

having to negotiate amounts due with both companies and to have them sort it out between themselves.¹¹⁴

Böye however is sure Osborn, who is currently in New York, will not agree to this without having discussed it with Hovey and Legg's representatives and he gives Ellet instructions on how to prepare the estimates in the current unsettled situation. The instructions are not clear, however, and Böye concludes with the comment that: "I am sure that although I may not have been successful in explaining my ideas above very clearly, you will be at least able to guess [Böye's emphasis] at what I mean."¹¹⁵

Böye then turns his attention to "the subject of Headers as respects the proportion they ought to bear to the number of Stretchers" and the fact that he and Wright had agreed to adopt a "coercive measure" to encourage the contractors to prepare the correct proportion. This measure involved deducting 25 pence for stretchers, "it being presumed that the quarrying of Headers was worth that much more than Stretchers." Ellet is instructed to apply this to his future estimates "of stones for the aqueducts and culverts" and "to inform the contractors immediately that this regulation will be rigidly enforced, that they may have time to repent if they are so disposed."¹¹⁶

Responding to an estimate by Ellet of 686 cubic yards dug by subcontractors at culvert 70, Böye remembers that he had estimated the work done as already at 600 cubic yards back in August. While acknowledging that his memory might be deceiving him, he points out several things about the work that suggests the estimate should exceed 700 cubic yards, leading him to tell Ellet: "I wish you would go over the matter and see if there ought to be more excavation allowed for that Pit."¹¹⁷

Finally, Böye refers to an inverted arch—presumably still referring to culvert 70—and asks Ellet to determine how much stone delivered by Hovey went into it. Böye notes that "there was no stipulated price for the inverted arch & the subcontractors will therefore be entitled to whatever price is allowed but still Hovey must be paid for what stone he delivered."¹¹⁸

This letter, like some of Böye's others, slips into a gossip tone as he shares with Ellet that one of the contractors "who grumbled" for an estimate, wished to have it "to ascertain whether he was gaining or loosing [sic] in which latter case he would quit." Böye indicates, however, that Ellet may already be aware of the contractor's motive.¹¹⁹

In an afterthought on the issue of the culvert 70 pit estimate added by Böye writing vertically up the left margin of page 3, he points out that "the question is only how much excavation was there in digging the Pit" and "how many perches of stone were delivered by Hovey above what was used in laying the 74 Perches of Masonry."¹²⁰

¹¹⁴ Ibid., pp. 1.

¹¹⁵ February 22, 1830, Böye to Ellet, p. 2.

¹¹⁶ Ibid., p. 2–3

¹¹⁷ Ibid., p.3

¹¹⁸ Ibid.

¹¹⁹ Ibid.

¹²⁰ Ibid.

March 1830: The Final Month

It would appear that Ellet had determined by the end of February to leave the canal and travel abroad,¹²¹ as on March 6, 1830, Mercer writes:

I regret, on every account, but your own, that you propose leaving the service of the Company, over whose direction, I preside. The considerable desire which carries you to Europe, I would not, however, repress, if I could; and our difficulty will be known in the way of your departure at the time you propose.

By the 20th of this month, at most, a successor will be appointed to relieve you, and, as soon, as you have made him acquainted with the state of the Monocacy, you will be, at liberty, to depart with my best wishes for your success in life, and such aid, as I can afford to you, vis a vis, in going abroad, by introductions to our ministers in England and France.¹²²

The letter is remarkable for its warm and personal nature—not typical of Mercer’s letters concerning canal business, which tend to be strictly to the point. Indeed, everything about it suggests it is more a personal than a business letter.

Böye writes to Ellet about his departure on March 8, 1830:

Although you have frequently mentioned your intentions of going to France, I did not think you would have resolved to set out so soon. I should have been pleased if you could have continued—I think I can divine some of the reasons which induce you to take this step now,¹²³ but more of that when I see you, which, if I continue to improve in strength as much as I have done lately, will I hope be about 1 or 2 weeks. My health, however, is still vacillating.¹²⁴

Again in a gossipy mood, Böye tells Ellet:

Judge Wright talks of Mr. Scofield [for Ellet’s position], the present Assistant to Van Slyke.¹²⁵ You know there is not much harmony between them [i.e. Scofield and Van Slyke], neither is Mr. Scofield much liked by contractors, if report speaks true.¹²⁶ I understand from Mr. Ingle this morning that there is some uncertainty about that arrangement as probably Mr. Mercer would dismiss him; the latter he however merely intimated. I wish that you will mention this to nobody as it is not known how the quarrel with Van Slyke will terminate.¹²⁷

¹²¹ Ellet’s correspondence with members of his family at this time also indicate his decision to leave. In the note added by Ellet’s father in a letter dated Jan. 29, 1830, his father wrote: “I wish you to think seriously on your projected voyage. It is a very good maxim to let well enough alone. There are many young men of talents rising up in our country, which will very likely supplant you in your absence, and after acquiring scientific knowledge you may be destitute of employment.”

¹²² March 6, 1830, Mercer to Ellet

¹²³ Possibly Böye was alluding to Cruger’s assignment to the 5th Residency that was perhaps an issue for Ellet, or to the state of the company’s finances and legal issues with the B&O that made the future of the work uncertain.

¹²⁴ March 8, 1830, Böye to Ellet.

¹²⁵ Daniel Van Slyke, had been appointed resident engineer on the 2nd Residency Nov. 22, 1828.

¹²⁶ Unrau, in his HRS on the canal notes on p. 37 the “fractional infighting” between and among the administration and the engineers, and references a letter from Van Slyke to Mercer as an example of engineers approaching Mercer and/or the Board directly, over the head of Chief Engineer Benjamin Wright (who left the C&O in the fall of 1830).

¹²⁷ March 8, 1830, Böye to Ellet, p. 2.

An issue has arisen between Böye and Ellet, however, that Böye addresses next. Apparently Ellet believes that Böye has shown one of Ellet's letters to the contractor Lafferty. Böye responds:

I am very positive that I never did such a thing, either to him or any other contractor; nor have I made mention of any thing of such a nature to him or any body else. Whoever has given you this information has stated a falsehood. If ever I have read (or spoken of the contents of) any part of your letters it has related to business solely, but never would I think of disclosing any thing of a nature which would aggravate irritated feelings.

I remember distinctly that Lafferty, one morning made a remark similar to that you mentioned, but whether the Letter he alluded to was for Mr. Ingle or Judge W. [Wright] I do not know; he was at the time much vexed because he had received no Estimate.¹²⁸

Böye then assures Ellet that he should be able to leave by April 1, but recommends that Ellet "wait till the Equinoxial storms are well over" before making the crossing to Europe. He notes that "[y]ou can have no difficulty in finding opportunities as there are 4 packets from N. Y & 3 from Philadelphia for [Le] Havre¹²⁹ regularly every month."¹³⁰

Returning to the subject of Ellet's replacement, Böye closes with: "It was the intention of the Board to have Mr. Williams as your successor, but Judge Roberts¹³¹ wants him with him." The letter is signed "yours as always in haste, H. Böye."¹³²

On March 10, 1830, company clerk Ingle writes Ellet to inform him that Williams is being assigned to work with Van Slyke and "Mr. Scofield the present assistant on that Residency will take place as assistant Engineer on the Fifth Residency in room of Mr. Ellet who retired at his own request from the service of the Chesapeake and Ohio Canal Company."¹³³

Clearly the letter is intended both to apprise Ellet of his replacement and to serve as a letter of recommendation, for Ingle signs it as "by order of the President of the Company" following a second paragraph that states:

The President of the Company in accepting as he does, with regret, the resignation of his station by Mr Ellet, avails himself of the occasion to express his entire satisfaction with the conduct of Mr. Ellet in the service of the Company as well while acting as the Assistant of Dr Martineau¹³⁴ in locating at a very unhealthy season, the entire line of canal below the point of Rocks, as since he entered on the performance of his duty as assistant of Mr Böye on the Fifth Residency.¹³⁵

¹²⁸ Ibid.

¹²⁹ Le Havre, Haut-Normandie in France is the major port city at the mouth of the Seine River from which Paris is about 110 miles inland.

¹³⁰ March 8, 1830, Böye to Ellet, p. 2.

¹³¹ Böye means the engineer Nathan S. Roberts who was never a judge, unlike Wright who had been one.

¹³² March 8, 1830, Böye to Ellet, p. 2.

¹³³ March 10, 1830, Ingle to Ellet.

¹³⁴ John Martineau had served on the Erie Canal with Wright and worked on the C&O only until June 1829 (Unrau, HRS, 42) Primarily he seems to have done surveys and provided the first design for lockhouses. In August 1828, Wright and Martineau surveyed the route from Lock Cove where the Little Falls Potomac Co. canal dropped down to the river, to Rock Creek, a distance of about 3.15 miles, the lower mile passing through Georgetown (Unrau, HRS, 182). After leaving the C&O, Martineau was hired by a committee in Frederick, Maryland to survey the Monocacy for a canal (Unrau, HRS, 646).

¹³⁵ March 10, 1830, Ingle to Ellet.

On March 13 Böye writes a letter of introduction for Scofield to carry with him when he travels to the Monocacy. In it he asks Ellet “to offer Mr. S. such aid and information as he may want to enable him to discharge his duties correctly, which I am sure you will take pleasure in doing.” He also mentions that he has asked Scofield to do some work on section 55 as soon as possible and that Scofield will explain to Ellet both its nature and the reason for it. He signs the letter “your friend as always” following a final comment:

I had intended to have written you in regard to certain facts which have lately transpired but as you are going away so shortly, I will reserve them for a verbal communication.¹³⁶

The final letter from Ellet’s time of employment with the C&O Canal Company was written March 17, 1830 by Böye and may precede his death by three days or less. In it Böye addresses several details with regard to the ringstones (presumably of the Monocacy arches) and states that Leckie “will order the Water Line.” He also tells Ellet:

While I was writing the commencement of this letter I was attacked by a fit which kept me several hours on the floor in a senseless state. My face is considerable bruised in consequence of my falling from the chair.¹³⁷

Conclusion

By April of 1830, Ellet had just left the canal and Legg (the Monocacy contractor) was also gone. It was a short while later that it was determined that the stone in the piers was defective. Osborn was gone from the Monocacy by August 7, 1830 and subsequently a new contract was assigned to the partnership of Byrne and LeBaron (also appearing as LeBaron, Burns and Co. in the canal company records).¹³⁸ While Ellet escaped the worst of the Monocacy debacle that spring and summer, he was in the middle of its troubles in the winter of 1829–30.

Ellet was likewise in the middle of the wave of contract abandonment by the original contractors for many of the other structures. By the latter part of 1829, those abandonments along with the use of many subcontractors had greatly complicated the assistant engineer’s task of preparing, or aiding the resident in the preparation of estimates for partial payments.

Additionally, it is clear that there were frequent changes in the engineering corps, most importantly for Ellet, the assignment of Cruger to the fifth residency in December 1829. But, by that time, Böye’s illness already had kept him away from the residency for three months or more. Consequently, Ellet’s period of stable supervision was confined to the period for which there are no documents in the collection: January 15 to October 23, 1829.

¹³⁶ March 13, 1830, Böye to Ellet.

¹³⁷ March 17, 1830 Böye to Ellet.

¹³⁸ The history of Byrne’s company and his diverse partnerships on his various projects is complex, and that is especially true with regard to the Monocacy contract. Listed under “Contractors” on the 1833 builders stone set atop the upstream parapet wall at mid-aqueduct, are M. Byrne, W. Byrne, and S. Lothrop (who also appears as Latrop in the canal company records). It is unclear when Lothrop replaced LeBaron. It appears that Michael and William Byrne emigrated from Ireland about 1817 and initially worked on the Union Canal. Michael Byrne subsequently became a major contractor on the C&O Canal, but William disappears as a partner about 1835. A William Byrne who is at work on the Illinois and Michigan Canal in 1838, may well Michael’s former partner.

There is no indication that at any time a clarification of his status and authority was officially provided in writing, and every indication that company staff generally worked without clear position descriptions. Further evidence of this is seen in the curious situation from December through March when Cruger appears to have been formally assigned the fifth residency, but Böye continues to be the primary recipient of Ellet's estimates and to still be interacting with Mercer and Wright about the residency as well as making at least one visit to the company office. For an older and more experienced worker this would have been problematic at best, but for someone as young and inexperienced as Ellet, it must have been a constant source of uncertainty and a need to proceed in his communications with caution.

While Ellet's time on the C&O generally strikes his biographers as insignificant, it would be reasonable to conclude that during these approximately 20 months (beginning in the summer of 1828 as a volunteer, through March of 1830) Ellet learned, with limited assistance, a great deal about stone, constructing masonry structures, excavations, the complex and diverse conditions of a locality that can facilitate or hamper progress, and the diversity in contractor competencies. Ellet would have gotten no experience with actual construction while on Randel's survey team in 1827, but he left the C&O having handled—apparently quite well—an astonishing diversity of responsibilities and experiences that truly fit the description of an engineer at that time.

In addition to these professional skills that were acquired and honed on the C&O, Ellet was clearly learning a great deal about the human side of an engineer's job. We know from the biographies of some of the men with whom he worked that he had to deal with powerful egos. Böye always comes across as friendly and considerate, but Leckie—known for his abrasive qualities—clearly has no patience with Ellet's limitations. His November 14, 1829 letter that directed Ellet to the copy of Sganzin's engineering text "marked with pencil," is of particular interest when considering what instructional resources were available to Ellet for acquiring more knowledge when necessary.

There is no evidence in these documents as to the extent to which Ellet used the surveying skills of William Wallack who had been assigned to the position of rodman on the fifth residency on November 22, 1828. We do know, however, from Böye's December 16, 1829 and February 4, 1830 letters, that Wallack carried letters between Georgetown and the Monocacy.

A final comment should be made about the documents Ellet preserved and that eventually ended up at the University of Michigan.¹³⁹ There are only four copies of letters sent by Ellet and all of these are to Wright. Almost certainly this signals Ellet's sense of the importance of his correspondence with the chief engineer. Of letters from others, there are four from the company clerk, Ingle; five from Wright, all written between December 8, 1829 and February 5, 1830 (although Ellet's copy of a January 15, 1829 letter to Wright confirms additional interaction between the two); two from inspector of masonry Leckie; and eleven from his immediate superior, Böye, ranging from October 23, 1829 to March 17, 1830.

There is a postscript to the story of Ellet's involvement with the C&O Canal: On February 17, 1832, Mercer writes to him at the Ellet family home near Bristol, Pennsylvania after his return from Europe. He offers him his old position of assistant engineer at \$1,000 a year, with the promise that "after the present year" he will personally aid Ellet's promotion to the superintendence of a residency. He concludes:

¹³⁹ There is a total of 8½ linear feet of correspondence in the Ellet collection at the University.

Your position on the canal if you return to it will be above Harpers Ferry, and probably above Shepherdstown, in a more healthy country,¹⁴⁰ and far better society than you have hither to found on the Potomac. And that Mr. Thos. F. Purcell, the engineer of our first residency that which began you will remember at Georgetown will be your only superior and the Resident Engineer on your portion of the canal. Our Board of Engineers has been for some time, dissolved¹⁴¹ and A. Cruger and T. F. Purcell¹⁴² are our only Resident Engineers. Mr. Fisk¹⁴³ is the Assistant of Mr. Cruger.

It is notable that four years after construction began, the company had reduced its initial engineering corps of 18 men down to four—two residents and two assistants (although the opening Mercer offered Ellet meant that only one assistant was employed at the time). This was indicative of the growing financial difficulties and the effect of the legal action with the B&O Railroad that had halted construction by both companies above Point of Rocks (mile 49). It was not until the month prior to this letter that Maryland's court of appeals had recognized the canal company's first rights to the Potomac shore, especially through the narrows where the companies had argued space was inadequate for both of them. That ruling freed the canal company to resume construction above Point of Rocks to Harpers Ferry and beyond.¹⁴⁴

¹⁴⁰ Although family letters in the Ellet collection indicate Ellet had been ill at some point while on the C&O, this comment of Mercer's reflects the common belief that lower land was more likely to have swampy areas and slow-moving waters associated with disease, and that correspondingly, higher land was healthier land.

¹⁴¹ I.e., the board that had consisted of Benjamin Wright, Nathan S. Roberts, and John Martineau.

¹⁴² In the November 22, 1828 list of engineering appointments, Thomas F. Purcell is shown as the resident engineer on the first division from Rock Creek to Lock 8. In 1832 he was placed in charge of the newly opened section of construction from Point of Rocks to Dam 4.

¹⁴³ Charles Belazeel Fisk was appointed to the position of assistant on the fourth residency on November 22, 1828, and was the only member of the original engineering corps to remain with the canal throughout the construction years, rising to the position of chief engineer.

¹⁴⁴ On May 9 and 10, 1833, the presidents of the Baltimore and Ohio Railroad and the Chesapeake and Ohio Canal signed an agreement that contained the specifics for getting both works through the four narrows between Point of Rocks and Harpers Ferry. Known as the "Compromise of 1833," it also banished the B&O to the then-Virginia side of the Potomac from Harpers Ferry to the flats near Cumberland. The agreement was forced on the companies by an act of the Maryland legislature on March 22, 1833, that had provided a plan for the two companies to work together (which they modified in their compromise); set a deadline of May 10, 1833 for the companies to agree to the compromise, and threatened to withhold all future funding if the companies failed to meet the demands of the legislature. The March 22 act can be found in the Archives of Maryland, Vol. 0547, Page 0346, Session laws 1832, Chap. 291, or online at <https://msa.maryland.gov/>

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APPENDIX I:

Table of Letters

DATE	AUTHOR	SUBJECT MATTER	ADDITIONAL COMMENTS
1828 5/1	Randel	Letter of recommendation	For Ellet's work on the North Branch of the Susquehanna survey.
Date?	Wright	Monocacy Aqueduct specifications	
1828 11/25	Ingle	Transmission to Ellet of laws and rules	Laws relating to the company and rules for the company's engineering corps.
NOTE:	Between 1/15 and 10/23 there is no correspondence. Is it possible that Böye's illness began in the summer or early fall, resulting in Ellet becoming the primary engineer on the residency as Böye's ability to fulfill his obligations declined?		
1829 10/23	Böye	Tuscarora culvert	First reference to Böye's illness
1829 11/14	Leckie	Poor masonry work on the Monocacy Aqueduct	Discusses the situation with the Monocacy masonry work and refers Ellet to the Sganzin work.
1829 12/1	Copy: Ellet to Wright	Hovey's departure and other contractor issues	Incomplete and informal copy—Ellet simply notes at the end "there were other remarks."
1829 12/4	Ingle [2 copies]	Hovey's stone, etc.	The two copies of this letter have slight differences.
1829 12/4	Wright	Hovey's workmen	
1829 12/5	Copy: Ellet to Wright	Payments to workers, contractor work	
1829 12/7	Böye	Work of Brackett and other contractors. Böye's personal possessions.	Reference to the Johnson quarry.
1829 12/8	Ingle	Section 70	Gillet and Painter work to be suspended.
1829 12/8	Wright	Hovey's stone	Concern for stone and wood, etc. for the aqueduct.

DATE	AUTHOR	SUBJECT MATTER	ADDITIONAL COMMENTS
1829 12/9	Wright	Osborne's work and stone on the Monocacy Aqueduct	Detailed instructions on masonry and which quarry's stone to use for various parts of the aqueduct. It includes a diagram of the piers. Also Cruger to take over 5 th Residency.
1829 12/14	Wright	Lafferty's abandonment of Lock 27.	Instructions on masonry, wood, and estimates.
1829 12/16	Böye	Work by contractors, Rush's mission, and the canal company's need for money.	Böye seems to be keeping his finger in 5 th Residency matters but mentions arrangements he is trying to make in Richmond.
1829 12/16	Ingle	Blodgett abandoning Section 79	Request that Ellet make a final measurement.
1829 12/22	Böye	Payments for materials	Further discussion of difficulties in estimating what is due to contractors.
1830 1/3	Copy: Ellet to Wright	Payments to workmen	Quotes McIntosh's letter asking that he be paid and not Johnson and/or Bennett.
1830 1/3	McIntosh	Workmen's Pay	Ellet quotes this letter in his letter to Wright of this same date.
1830 1/6	Wright	Monocacy Aqueduct stonework	Wright allows the use of Nelson quarry stone for the skewbacks.
1830 1/13	Leckie	Instructions on stone work	Includes information on the Nelson quarry.
1830 1/15	Copy: Ellet to Wright	Estimates for "little Tuscarora" culverts	Estimates for the stone.
1830 1/18	Ingle	Locust timber from Billington	Urging Ellet to find out when Billington will supply the timber.
1830 1/30	Ingle	Cruger's assignment to the 5th Residency	See also Wright's letter of 12/9/29 and Böye's of 12/16/29.
1830 2/4	Böye	Misc. instructions	Concerns estimates, culverts, and lockhouses.
1830 2/5	Wright	Estimate for Osborn's work	
1830 2/9	Cruger	Preparation for reletting abandoned sections	Refers to all abandoned work between Seneca and Pt. of Rocks.
1830 2/12	Böye	Estimates	Böye continues to give instructions to Ellet despite Cruger's assignment to the residency.

DATE	AUTHOR	SUBJECT MATTER	ADDITIONAL COMMENTS
1830 2/20	Böye	Payment to Hovey & Legg, and Monocacy Aqueduct ringstones	Böye refers to his advice of using 45 rather than 41 ringstones—which was followed.
1830 2/20	Mercer	Tuscarora cement quarries on Carroll's land	Concerns arrangements made involving tenants on the land.
1830 2/21	Mercer	A half-sheet of calculations	[Significance of the calculations is unknown.]
1830 2/22	Böye	Monocacy Aqueduct and Culvert 70	Extensive instructions concerning estimates.
1830 3/6	Mercer	Ellet's resignation	Mercer promises Ellet will be relieved by the 20 th and offers him his aid.
1830 3/8	Böye	Ellet's departure	
1830 3/10	Ingle	Ellet's resignation and work on the canal.	Part of the letter is a favorable review of his work on the C&O.
1830 3/13	Böye	Scofield arriving as Ellet's replacement	Introduction of Scofield to Ellet and request that Ellet provide information and advice as needed
1830 3/17	Böye	Final instructions to Ellet	Discussion of Ringstones, report of things he is sending to Ellet and of his having just suffered an attack with loss of consciousness for several hours.
1832 2/17	Mercer	Offer to hire Ellet again as an assistant engineer.	This letter is sent to Bristol, NY, which is near the Ellet family home and to which he appears to have returned from his European wanderings.
1833 9/5	Wright	Letter of Recommendation for Ellet	

Note: On December 18, 1844, C&O Canal Co. President James Coale, wrote to Ellet having heard that he had “recently returned from a visit to England made with a view of the examining and ascertaining the expense of trade and relative advantages of canals and rail roads in regard to the cost of transportation”. Coale expressed an interest in Ellet's opinions on those subjects as well as “the present competition between the canals and the railway from Liverpool to Manchester, as also, of that between the Taff Vale railway and Glamorganshire canal for the coal and iron trade of Wales.” The result was very long report and extensive analysis including numerical data on the subjects Coale had asked about. Coale included it as an appendix item with his own lengthy letter to the governor asking for the passage of an act that would fund construction on the last 50 miles of the canal to Cumberland. See: Document H, By The House Of Delegates, January 18, 1845, Communication From The President And Directors Of The Chesapeake And Ohio Canal Company To The Governor Of Maryland.

APPENDIX II

**Transcription of Letters Concerning
The Chesapeake and Ohio Canal
In the Papers of Charles Ellet Jr.**

**In the
Special Collections Library of the University of Michigan**

[Randel (for Ellet's use), May 1, 1828
RE: Letter of Recommendation]

Cover:
John Randel Junr¹
For
Charles Ellet Junr.
1st May 1828.

Mr. Charles Ellet Junr. [written larger]: was employed by me the whole of the last season, on the North Susquehanna River, and acted in the capacity of assistant engineer² [written larger]:

— I found him to be, a young gentleman of amiable manners, industrious habits;— of strict integrity, sound discretion and good judgment; and he now has considerable experience in his profession:³ — he is deserving of public and private confidence.

John Randel Junr
Civil Engineer.

Philadelphia 1st May 1828.

¹ John Randel Jr. did “turnpike surveying near Albany as early as 1805” and had run levels for the projected Delaware and Raritan Canal. (Calhoun, p. 109). He also made a survey of Manhattan Island and designed what is essentially the present street plan. His design was adopted in 1811. He was then employed to make maps showing all of the old farm boundaries as well as the creeks, swamps, ledges, and other topographical features with reference to the newly established street system. That map is popularly known as the 1820 Randel Farm Map. Randel ran into conflict with Benjamin Wright in the arguments over the route for Erie Canal 1822 and surveyed the route ultimately used for the Chesapeake and Delaware Canal as well as won a contract to build the eastern end of the canal in March 1824 which was, however, voided in 1828. (Calhoun 109–111) As indicated in this letter he conducted the referenced survey on the North Branch of the Susquehanna for the Pennsylvania canal system. In April 1836 Randel was made chief engineer of the Central Railroad and Banking Company in Georgia, but resigned in May 1837 amid controversy with the board over the route he had selected.

² The brief biography on Stanford University's catalogue for the Ellet family papers states that Ellet was hired as a rodman for the survey work on the North Branch of the Susquehanna. In *The Memoirs of Mary Israel Ellet 1780-1870* [Bucks County Historical Society, 1939, edited by Charles Pickens Gambrell] Ellet's mother refers to his work as a rodman. There are also early sources indicating that he worked briefly as a rodman on the Delaware Division of the Pennsylvania canal system in 1827.

³ The inevitable question is: what does “considerable experience in his profession” mean if his previous positions were with survey teams for which he served as a rodman?

[Wright to Ellet, Undated
Monocacy Specifications]

Charles Ellet Jr. Esqr.
Assistant Engineer –
5th Residency –

Specifications⁴ of the Aqueduct on
Monocacy river

1st This Aqueduct is to be constructed with 7 arches of 54 feet span each, and 9 feet rise of the arch. The Aqueduct to be 33 feet 4 in. from outside to outside of the ring stones, or across the arch; and 33 feet from outside to outside of parapet walls. The Piers & Abut^m. [abutments] are to be 33 ft. 4in. long exclusive of the pilasters, which are to project at each end of the piers & abutments 18 in. at bottom and 12 in. at the water table, and to be 7 feet wide; and to be continued up the parapet walls with the same projection; and the water table and coping to break and project over the pilaster.

The piers are to be 10 feet wide, and to stand on a pedestal 12 feet 8 in. wide and 37 feet long; which, at low water mark off-sets 4 in. all round, making the succeeding (or 30 in.) course 12 feet wide & 36 f. 4 in. long. On the top of this course is another off-set of 6 in on each side of the pier, and 18 in. on either end; where it is to be be [sic] carried up plum ~~from the~~ to the water table: but at the sides there will be another off-set on the succeeding course of 6 in.; from where it will be carried plum 10 f. wide to the scu [skew] back [sic]. The pilaster will project at bottom (on top of the 30 in. course) 18 in. beyond the plum work square to the edge of the 30 in. course.

2nd The ends of the piers and abutments, together with the pilasters are to be rusticated 2 in. at every joint or course of stone. The arch stones are to be not less than 12 in. thick, and 3 feet long to the face spring of the arch, and 2 f. 6 in. at the crown, on the face. The piers and abutments are all to be cut stone, of very large size, from 1 to 6 tons, or more, each stone, and to have beds in proportion to size; — to be placed in the work so as to ~~have~~ make strong, solid and permanent masonry. Bars & bolts of iron shall be put in between the courses, wherever required, to secure the whole strongly together. The arches to be cut and coursed through & through every part, and to be bonded in such a manner as to secure against any spreading of the arch; this will require that no arch stone be less than 3 to 6 feet horizontally as they are placed in the arch

3rd The water table shall be 9 in. thick, and project 9 in. — and the upper side shall be beveled 8 in. back, and 2 in. deep; leaving only 2 in. on the outer edge of the table: It shall be laid horizontally on the top of the arch stone.

[pg. 2]

The parapet walls on the towpath side shall be 8 ft. 6 in. wide at bottom, and batter on the inside 6 in. so as to be 8 ft. wide on the top; the other parapet shall be 5f. [feet] 6 in.

⁴ No engineering drawing of the aqueduct has been located.

[inches] wide at bot. and 5 feet at top. And on these shall be a coping extending across the whole width of each wall by single stones, and project on the outside 1 foot. – Coping 1 foot thick. The Wing Walls shall be curved and shaped in such a manner, as the plan shall designate,⁵ so as to secure the emb^t. [embankment] of earth at each end.

The whole work in all its parts to be cut stone wherever it presents a face; and to be coursed throughout, and bonded so as to make strong & durable work, and laid in the best of water cement. –

⁵ There was a formal engineering drawing of the Monocacy Aqueduct as Wright refers to it in a letter to the canal company board. However it has never been found. See: National Archives, Record Group 79, Entry 190, Letters Received, Benjamin Wright to the President and Directors, Chesapeake and Ohio Canal, October, 1828).

[Ingle to Ellet, Nov. 25, 1828
RE: Engineers' laws and rules]

Cover:
To Charles Ellet Jr. Esqr.
Assistant Engineer 5th Residency

Office of the Chesapeake and Ohio Canal Company,⁶
Washington, November 25th, 1828

Sir:

Herewith, I send you by order of the President & Directors, a copy of all the laws relating to this Company, and the rules adopted for the government of the Corps of Engineers.⁷

It is the order of the Board, that all Estimates, Accounts and Copies of Contracts shall be kept in a confidential manner— But information may, where it is proper, be given to persons interested therein.

Respectfully
Your very obt.Servt.
[obedient Servant]

John P. Ingle⁸
Clk Ches & O C Co

⁶ This letter is on company letterhead.

⁷ The rules for the board of engineers issued in November, 1828, “virtually [forced] the engineers to subliminate their own expertise to the wishes of the board” (Unrau, HRS, p.29). They also established five grades: chief engineer, board of engineers, resident engineers, assistant engineers, and rodmen (Unrau, HRS, p. 184).

⁸ Ingle (Dec. 4, 1791–Feb. 2, 1863) was employed as clerk for the C&O Canal Company on July 3, 1828. He was among the long-term employees who resigned or were fired during the crisis in the summer of 1840 over the abuse of script. Ingle resigned July 9, but when Maryland reconstituted the board and appointed a new president, Michael Sprigg, in April 1841, Ingle was appointed to the Board and continued to serve until June 24, 1847.

[Böye to Ellet, Oct. 23, 1829
RE: Tuscarora Culvert
1st reference to Böye's illness]

Cover:

Chas. Ellet jr. Eng.

Mouth of Monocacy

Montgomery

County

Postal stamp: Geo Town DC Oct. 23

D^r Sir

I forgot to tell that the wall at the end of the little Tuscarora Culvert is to have a uniform slope from top (6½ ft. above Bottom) to the bottom of the Culvert pit. You know the slope is 3 in: to the foot, and you may if you choose let the end of the Culvert partake of the same if the workman shall find no difficulty in dropping [sic] the ring-stone conformably. This arrangement will make the wall probably some thing [sic] like 7 or 8 ft. thick at bottom. — There is nothing new here. I am recovering very slowly if any.

—

Your friend
H Böye⁹

⁹ A Danish surveyor engineer who emigrated in 1816, originally settling in Virginia. In 1827 he completed one of Virginia's most important sets of early maps: *The Wood-Böye County Maps of Virginia*. Böye's original appointment was as the assistant engineer to resident engineer Daniel Van Slyke on the 2nd Residency, but he was promoted shortly afterwards to resident engineer of the 5th Residency. It is clear that by October 1829 Böye, is so ill that he is unable to be present on his residency and in the winter Alfred Cruger is assigned to it. Böye appears to have died on Mar. 20, 1830 about three days after his final letter to Ellet on March 17.

[Leckie to Ellet, Nov. 14, 1829
RE: Poor masonry work on the Monocacy Aqueduct]

Cover:
Chas. Ellet Esq.
Assistant Engineer
5 Residency
Ches^{pe} & Ohio Canal

Charles Elliott Esq
Assistant Engineer
5th Residency Ch^{es}.
and Ohio Canal

At David Trummels¹⁰ [sic]
Nov. 14th 1829 –

Sir Your attention is particularly requested to the masonry of the
Monocacy auqueduct [sic]

The work examined by you, & myself, last evening is so bad, that no dependence can be put in it; the filling in of the pier instead of being laid solid in mortar, is thrown in, and does not deserve the name of Masonry. You will see that it is taken up, and the course below it examined, and if that is bad it must also be taken up. You will examine the way in which the cut stone is laid, when the loose stone now lying on the pier is taken off, so that you may have a chance to examine them, you will provide yourself with a thin strip of tough wood, and will take out some of the wedges that are behind the cut stone, and feel with your strip of wood if the stone is laid solid in mortar, you will also, examine the face with a trowel and when you find the cut block laid dry, you will also have that lifted, and relaid in a solid and workmanlike manner:

Details of the mortar & Workmanship.

The cement should be mixed with 1/3 of its quantity of good clean sand; and well worked and beat up and as stiff as it can be used, and no more water put in them then is sufficient, with a good deal of work to make it of a proper consistence [sic], cement prepared in this manner is tough like putty, and setts [sic] equally and well; too much water spoils it—

The cut Stone facing [sic]

Every stone should be centered and hoisted, it should be first tried down dry on its bed if it batters in the face as is commonly the case, it should be raised behind and at each corner a flat piece of stone should be put in, so as to [pg.2] bring the front face square & plumb, with the range of the wall. The stone is then hoisted 18 inches, and the bed made up with chips, laid solid in mortar, so as to give the whole stone an equal bearing; a bed of mortar is then laid on and the stone lowered carefully down on it; and settled to its bed with several blows of a heavy wooden mallet; until the mortar come out all round, and the ashlar has as solid a bearing as when it lay in the quarry —

¹⁰ Possibly David J. Trundle (1811 to 1871). From Ellet's expenses it appears he was renting accommodations from David Trundle or being boarded at his home.

The filling in of the pier should be done in the most careful manner the materials should be placed so as to give the greatest strength, forming headers across the pier so as to bind into each other in the best manner, to bind the pier together, and each piece should be laid in full mortar, and struck down to its bed as before directed, The inequalities among the layer pieces should be filled with smaller pieces fitted as neatly as possible, to the spaces, and every piece so laid to have a flat bearing (not thrown in on edge) and be also laid in full mortar, and stuck down to its bed. You may grout the top of each course if you please.

In freezing weather great care should be taken that the mortar be worked clean up, so that no frozen lumps remain on the wall which might by ~~xxxxxx~~ thawing make the wall to settle, and no more mortar should be made at a time than can be used during the day as it never setts [sic] well a second time.

I am yr [yours] very respectfully
 Your obSert [obedient Servant]
 Robert Leckie¹¹
 Inspector of Masonry on
 1st Division C & Ohio canal

I again refer you to the passages I have marked with pencil in Sganzins [sic] treatise on civil engineering¹², which elucidates the principles of good masonry, and until the board take such methods as will ensure the faithful execution of the masonry aqueduct [sic] you will attend these as much as possible yourself L

[On a page to the right of page 2 are these figures with no text]

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¹¹ W. Robert Leckie was appointed Inspector of Masonry in the fall of 1828. In partnership with James Alcott of NY in the summer of 1829, he will begin the development of a mill for cement production on the Tuscarora Creek. Leckie's papers are at the Duke University library in NC. The library states the following: *Robert Leckie (d. 1839), military engineer; educated in Scotland. Papers are concerted [sic] with construction of public buildings, canals, arsenals, aqueducts, fortification, masonry of the Chesapeake and Ohio Canal, and surveying and building of walls in the District of Columbia.*

¹² The work is *An Elementary Course of Civil Engineering* by Joseph Mathieu Sganzin. The first English translation was published in 1827 and promptly reissued with some additions and changes in 1828. An 1837 edition appears to have been unchanged. The 1828 and 1837 editions are available on Google books and the 1837 edition is available as a hard copy reprint from the University of Michigan Library.

[Ellet to Wright *copy*, Dec. 1, 1829
RE: Hovey's departure & contractor issues]

[Dates of the other letters to Wright of which Ellet provided copies or draft versions are Dec. 5, 1829 and Jan. 3 and 15, 1830. The copy of the Dec. 5, 1829 letter was written on the same page as this letter.]

Cover:

Copy of 2 Letters

To Benjamin Wright
Chief Eng — Of the
Ches & Ohio Canal Co.
Washington

Copy

December 1st, 1829

D^r Sir,

Perhaps you are aware that M^r. Hovey¹³ has left his contract, & does not intend to return. His hands have all stopt [sic] & most of them are dispersing. Some of his stone cutters have been at work since the estimate was taken and are desirous to know whether there is any probability that they will be paid for that work, and whether their services will be farther [sic] required here.

The workmen on little Tus:¹⁴ [Tuscarora] culvert, who bargained with Hovey to lay ~~it at~~ the stone at \$1.25 per perch¹⁵, I have advised to Continue these on the same terms until I receive your instructions respecting these. As the bank of that pit has commenced caving it is necessary that the arch should be turned as soon as possible. — (There were other remarks) —

¹³ Prior to Sept. 25, 1828 all the culverts on the sections of the canal under construction above Seneca were let to Albert Hovey. On Aug. 20, 1828 Hovey was awarded the contract for Sections 1 and 32; and on Oct. 25, 1828 in partnership with Brackett he was given the contracts for Sections 7 and 8 as well as, in partnership with Legg, for the Monocacy Aqueduct. However Hitchcock was substituted for Legg on Oct. 31 and the contract was abandoned in December 1829. In addition Hovey and Brackett had the contracts for Locks 7 and 8 but abandoned them in February, 1829. On Oct. 21, 1829, Hovey was given the contract for the Broad Run Trunk (originally constructed as a double culvert and later reconstructed as a wooden aqueduct), but abandoned it in the winter (Unrau, HRS, pp. 189, 227, 239, 251, 255, 256)

¹⁴ Tuscarora Culvert at Hahn mileage 44.04 is Culvert 71. The "little" is anomalous as no "Little Tuscarora" in the vicinity of the canal has been located.

¹⁵ A perch of stone is 24¾ cubic feet, or a section of wall 16½ feet long (1 perch), or 1½ feet thick, and 1 foot high. Sometimes considered to be 25 cubic feet.

[Ingel to Ellet, (copy 1) Dec. 4, 1829
RE: Hovey's stone, etc.]

[NOTE: The file "1829-12-04 Ingle text copy2" is a copy of this letter and the words missing in the last paragraph due to a hole in the original paper are taken from this copy.]

Cover:

Charles Ellet Jr. Esqr.
Mouth of Monocacy
Montgomery Co.
Md.

Canal Office Dec.4th 1829

Dear Sir

It is understood here that Mr. Hovey¹⁶ has abandoned his work on the aqueduct. The following materials are conveyed to me by him in trust for the Canal Company and I must request you to take them into your keeping until otherwise disposed of viz

4420 feet superficial of cut stone
3820-----Ditto Delivered
1980-----Quarried
550-----Delivered
4070 feet running of Hewn timber—Delivered
50 Lb. Irons —

The coffer dams are also paid [for by] the Company—as well as part of the [blocks] & cordage — The cement left will also require attention---

Your obedt Servt [obedient Servant]
John P Ingle
Ck. Ch & O C Co

Charles Ellet Jr. Esq.—

¹⁶ Prior to Sept. 25, 1828 all the culverts on the sections of the canal under construction above Seneca were let to Albert Hovey. On Aug. 20, 1828 Hovey was awarded the contract for Sections 1 and 32; and on Oct. 25, 1828 in partnership with Brackett he was given the contracts for Sections 7 and 8 as well as, in partnership with Legg, for the Monocacy Aqueduct. However Hitchcock was substituted for Legg on Oct. 31 and the contract was abandoned in Dec. 1829. In addition Hovey and Brackett had the contracts for Locks 7 and 8 but abandoned them in February, 1829. On Oct. 21, 1829, Hovey was given the contract for the Broad Run Trunk (originally constructed as a double culvert and later reconstructed as a wooden aqueduct), but abandoned it in the winter (Unrau, HRS, pp. 189, 227, 239, 251, 255, 256)

[Ingle to Ellet (copy 2) Dec. 4, 1829
RE: Hovey's stone, etc.]

Cover:
[Hand written:] Free¹⁷
C. F. Mercer
M. Co.
[stamped:] FREE [in red ink]
[postmarked: City of Washington]

Charles Ellet Jr. Esqr
Mouth of Monocacy
Montgomery Co
Md.

(Copied)

Canal Office Decr 4th 1829

Dear Sir

It is understood here that Mr Hovey¹⁸ has abandoned his work on the Aqueduct—the following materials are conveyed to me by him in trust for the Canal Company and I must request you to take them into your keeping until otherwise disposed of —

viz 4420 feet superficial of cut stone
3820 Do Do Do Ditto Delivered
1980 Do Do Quarried
550 Do Do Do Delivered
4070 feet running of Hewn timber—Delivered
50 lb Iron

The Coffor dams are also paid for by the Company. As well as part of the blocks & cordage—the cement left will also require attention

Your Obedt Servt [Obedient Servant]

John O Ingle Ck C & O C.Co

C Ellet Jr Esqr

¹⁷ As a congressman, Mercer had “franking privileges” (i.e. free postage). Under the postal laws from 1789–1873 the privilege was very broad and given that the federal government was invested in the canal, this may not have been an abuse of that privilege.

¹⁸ Prior to Sep. 25, 1828 all the culverts on the sections of the canal under construction above Seneca were let to Albert Hovey. On Aug. 20, 1828 Hovey was awarded the contract for Sections 1 and 32; and on Oct. 25, 1828 in partnership with Brackett he was given the contracts for Sections 7 and 8 as well as, in partnership with Legg, for the Monocacy Aqueduct. However Hitchcock was substituted for Legg on Oct. 31 and the contract was abandoned in December 1829. In addition Hovey and Brackett had the contracts for Locks 7 and 8 but abandoned them in February, 1829. On Oct. 21, 1829, Hovey was given the contract for the Broad Run Trunk (originally constructed as a double culvert and later reconstructed as a wooden aqueduct), but abandoned it in the winter (Unrau, HRS, pp. 189, 227, 239, 251, 255, 256)

[Wright to Ellet, Dec. 4, 1929
RE: Hovey's workmen]

Cover:

Mr. Charles Ellet Jr.

Civil Engineer

Mouth of Monocacy

Maryland

[Postmark: Geog.town D.C. Dec. 8] ["10" is also handwritten in large figures in the same ink and possibly the same handwriting.]

Copied

Georgetown Dec 4th 1829

Dear Sir

I have your letter of the 1st before me I had heard that Hovey¹⁹ had gone—

I cannot answer you as to the stone cutters getting any pay — I think you ought not to encourage them to go any further in cutting, on the expectation that the company will allow or pay for it.

The facts are the company do [sic] not wish to have this work go on now, at this season of the year and I wish therefore you would discourage all movements at present except so far as to save all the work now done.

As to the work on Little Tuscarora there has been nothing paid on it and the workmen will be entitled to what they do on it and we will see that they are paid. 1st we must pay them for the work they do by the Perch and allow to Hovey all the advantage of the stone he finished — 2^d we must allow them what stone they finish since Hovey went away — discounting for quarrying &c

I pray you to keep a regular account of all matters as they are and to keep such notes and memorandum as will enable me to know and understand all the questions which may arise

As to excavation of the East abut[ment] I can say nothing yet

In haste your' truly
B. Wright

Mr. Boye²⁰ is failing slowly

¹⁹ Prior to Sept. 25, 1828 all the culverts on the sections of the canal under construction above Seneca were let to Albert Hovey. On Aug. 20, 1828 Hovey was awarded the contract for Sections 1 and 32; and on Oct. 25, 1828 in partnership with Brackett he was given the contracts for Sections No. 7 and 8 as well as, in partnership with Legg, for the Monocacy Aqueduct. However Hitchcock was substituted for Legg on Oct. 31 and the contract was abandoned in December 1829. In addition Hovey and Brackett had the contracts for Locks 7 and 8 but abandoned them in February, 1829. On Oct. 21, 1829, Hovey was given the contract for the Broad Run Trunk (originally constructed as a double culvert and later reconstructed as a wooden aqueduct), but abandoned it in the winter (Unrau, HRS, pp. 189, 227, 239, 251, 255, 256).

[Ellet to Wright, Dec. 5, 1829
RE: Payments to workers, contractor work]

[NOTE: This is the 2nd of 4 letters to Wright of which Ellet made copies. The first letter is dated Dec. 1, 1829 and is on the same page as this. The third letter is dated Jan. 3, 1830 and is on a separate page as is the Jan. 15, 1830 letter copy.]

Cover:

Copy of 2 Letters

To Benjamin Wright
Chief Eng — Of the
Ches & Ohio Canal Co.
Washington

Copy

Dec^r 5th 1829

D^r Sir

The enclosed estimates will be handed to you by M^r M^cIntosh²¹; who having disagreed with his partners; Johnson & Bennet²² [sic Bennett], they object to his drawing ~~has~~ money. Mr. Willcox²³ (Canfield sub-contractor²⁴) will probably apply for a greater allowance of kind

[pg.2] You stated that given in the last estimate. I have allowed him (and with the intention of continuing the same proportion [un]til the section is, completed) ½ as hard pan & the remainder as common excavation: a proportion which I deemed equitable & sufficient to do the work, as it gives 20 1/2 cents per yard on the whole. If you recollect the excavation I should thank you to say whether you deem the estimate just.

²⁰ A Danish surveyor engineer who emigrated in 1816, originally settling in Virginia. In 1827 he completed one of Virginia's most important sets of early maps: *The Wood-Böye County Maps of Virginia*. Böye's original appointment was as the assistant engineer to resident engineer Daniel Van Slyke on the 2nd Residency, but he was promoted shortly afterwards to resident engineer of the 5th Residency. It is clear that by October 1829 Böye, is so ill that he is unable to be present on his residency and in the winter Alfred Cruger is assigned to it. Böye appears to have died on Mar. 20th, three days after his final letter to Ellet on March 17.

²¹ McIntosh held contracts on Sections 60 and 71 under the name T. McIntosh & Co.; and on Sections 65, 75, and 76, under the name McIntosh & Bennett (Unrau HRS, p. 256). See the letter of Jan. 3, 1829 in which McIntosh argues that the amount of the estimate for work done should be paid to him. It would seem to refer to a similar disagreement among the partners in his company.

²² Likely this is Thomas Bennett who held contracts with Brackett for Locks 5 and 6, while Brackett held contracts with Hovey for Locks 7 and 8. Bennett was also in partnership with McIntosh on Sections 65, 75, and 76 as indicated in note 1.

²³ Willcox is unidentified except for Ellet's information here that he was a subcontractor for Canfield.

²⁴ Likely this is Canfield of Hurd & Canfield whose subcontractors R. & H. Fowler of New York won \$20 for being the first to complete a section of the canal. Possibly it is also the D. Canfield who in Feb. 1830 took over the contract for Lock 27 originally given to Lafferty & Boland (Unrau, HRS, p. 188)

M^r Blodgett²⁵ says that he had not commenced his sheeting at the time you was [sic] upon his section, and thinks an allowance should be made for it, over the mere price of common embank^t [embankment]. It is about 20 ft wide by 4 deep & well laid & difficult to lay — only 6 feet of it is estimated as wall—

I have estimated this embankment, (not paid as excavation (which is drawn more than 800 feet) at 20 cts per yard. The chief part of it is as hard to excavate as that on Wilcox's section.

The above remarks have been made at the request of the contractors.

[Initials?]

²⁵ Blodgett & Co. held an early contract for Section 79 but abandoned it. He is mentioned by Böye in his Dec. 16, 1829 letter concerning a verbal message he relayed from Ellet. In Ingle's letter of Dec. 16, 1829, he mentions that "Messrs Blodgett & Co. are willing to relinquish Sec. 79".

[Böye to Ellet, Dec. 7, 1829
RE: Work of Brackett & other contractors,
and Böye's personal possessions]

Cover:
Chas. Ellet Esqr.
(By Mr. Blodgett)

Georgetown Dec. 7th 1829.

Dear Sir,

From the enclosed letter, which was handed to me a few days ago by Mr. Brackett²⁶ [sic Brackett], you will perceive that he has leave to suspend the work on Section 67 for the present until further orders, and that an accurate Estimate be taken of all the work that has been done. Mr. Br. says that he had a force of about 25 men working for 4 or 5 days after the last estimate was taken & hence expects a proportionate addition; how far this is correct you will determine after you have made out the assessment. You will please, however, as the resolution of the board is indefinite, to estimate all and make no allowance for the trimming of banks; but on the face of the Estimate ~~it~~ you might state that an allowance of say \$120 or 130 ought to be made for trimming the banks, the Board can than [sic] do what they in their wisdom may deem expedient.

Judge Wright has decided that in all cases where external slopewall is built on what is usually termed stone embankment, that portion marked (a) in this figure [see graphic image below] is to be estimated also as wall.

I wrote you by mail some time ago requesting you to forward Abstracts of expenses to me for the last 2 months; did you receive the letter? [pg. 2]

I need not mention that whenever a note is made on a estimate, to enter the same in the book of assessment in its proper place.

This is the second day that my gums have felt tender from the effect of calomel I have been taking; should it not remove the obstruction in the liver I am to be blistered immediately---by way of a change.

Your friend
H. Böye

P.S. Remember me to all up in your quarters.

As it is very probable that I may have no further occasion for my horse ~~and~~ I want to sell him as he will be a mere dead expense to me during winter. Should you know of any who wants [sic] to purchase him I will sell horse, saddle, whip, spur &c &c for \$90. If you would like to purchase him yourself you might have the whole for \$85; otherwise I

²⁶ Brackett was a partner with Bennett on Locks 5 and 6, and with Hovey on Locks 7 and 8. Brackett also had the contract for Sections 67 through 70. Likely this is the Ruben Brackett in partnership with Wines on the contract for Lockhouse 14 at Lock 22—a company later reorganized under only Ruben Brackett (Unrau HRS, p. 244) Brackett and Guy were the operators of the Tuscarora cement mill with which the canal company signed a contract on Feb. 3, 1830 (Unrau, HRS p. 168).

wish you will send him over to M^r. Johnson²⁷ who owns the white stone quarry about 3 or 4 days after you receive this.

I have understood that Section 83 is nearly completed. In consequence of the water which comes down, during rains along on Sects 84 83 & 82²⁸ it will be necessary to have a waste weir somewhere on 82. I have understood from Mr. Canfield²⁹ that the space opposite his Shanty is not yet closed; it would be proper to keep it open for having a waste weir there; it could be made of stone as I understand there will be plenty to spare.

Did you in y^r. [your] last estimate to Hovey³⁰ include the timber which he made use of for his stable?

Canfield has been appointed a kind of temporary agent for the Company about the Aqueduct.

²⁷ Joseph Johnson was the owner of two quarries on Furnace Ford and what is now known as the Johnson Farm. The Johnson home was known as Rock Hall. Kapsch states in footnote 52: "Two quarries have been located on Furnace Ford, the white quarry and the red or pink quarry. The white quarry provided the stone for the ring stones. The red or pink quarry probably provided the stone for the wing walls of the abutments." (Kapsch & Kapsch, p. 94.)

²⁸ On Oct. 25, 1828, the contracts for Sections 82 and 83 were given to J. Hurd & Co.; and that for Section 84 to Walter B. Kemp. Hurd's company also appears as Hurd, Canfield & Co., which subcontracted under R. & H. Fowler of NY on Section 78.

²⁹ Canfield is likely D. Canfield of Hurd & Canfield whose subcontractors R. & H. Fowler of New York won \$20 for being the first to complete a section of the canal. Possibly also the D. Canfield who in Feb. 1830 took over the contract for Lock 27 originally given to Lafferty & Boland (Unrau, HRS, p. 188).

³⁰ Prior to Sept. 25, 1828 all the culverts on the sections of the canal under construction above Seneca were let to Albert Hovey. On Aug. 20, 1828 Hovey was awarded the contract for Sections 1 and 32; and on Oct. 25, 1828 in partnership with Brackett he was given the contracts for Sections 7 and 8 as well as, in partnership with Legg, for the Monocacy Aqueduct. However Hitchcock was substituted for Legg on Oct. 31 and the contract was abandoned in December 1829. In addition Hovey and Brackett had the contracts for Locks 7 and 8 but abandoned them in February, 1829. On Oct. 21, 1829, Hovey was given the contract for the Broad Run Trunk (originally constructed as a double culvert and later reconstructed as a wooden aqueduct), but abandoned it in the winter (Unrau, HRS, pp. 189, 227, 239, 251, 255, 256)

[Ingle to Ellet, Dec. 8, 1829
RE: Section 70]

Cover:
Charles Ellet Jr. Esqr.
5th Residency

Canal Office December 8th 1829

Dear Sir

Messrs Gillet and Painter³¹ are willing to suspend their operations on Sec 70 until the further order of the Company, you will please therefore make a final assessment on the Section — to which add your opinion as to the relative value of the work to be done when compared with what has already been done

Your Obit Serve. [Obedient Servant]

John P Ingle

Ck [clerk]

³¹ These men are unidentified. On Oct. 25, 1828 the contract for Section 70 was assigned to R. Brackett & Co. Likely these men were subcontractors or assigned the contract later if Brackett & Co. abandoned it (Unrau HRS, p. 256).

[Wright to Ellet, Dec. 8, 1829
RE: Hovey's stone]

Cha^s Ellit [sic Ellet] Jr. Esq

Cover:
Charles Ellet Jr. Esqr.
Asst. Engineer
Monocacy
Mr. Blodget

Copied

Georgetown Dec 8 1829

Dear Sir

I wish you to find out the man who is considered as Mr. Hoveys³² [sic] representative and in Company with this man, to take an exact account of all stone cut of every kind and description — have this entered in a Book and describe each stone as to thickness and size and every particular so that we can easily understand them — note also where they are whether at the Monocacy—at the quarry at Mrs Nelsons³³ [sic] or at the landing opposite thereto —and also what stone have been quarried which are useful and important to our purpose — as far as you can

Note also all timbers on the ground which has been brought there for use of Central Coffe Dam or any other useful purpose and have this taken where it will be safe, and be secure against the highest freshets —

Also all other things which Mr. H [Hovey] had prepared there and which the Company have transferred by him to them.
In haste yours truly,

B Wright
Engineer Ches & O Canal
Dec. 8 1829

C. Ellet Jr. Engr.

³² Prior to Sept. 25, 1828 all the culverts on the sections of the canal under construction above Seneca were let to Albert Hovey. On Aug. 20, 1828 Hovey was awarded the contract for Sections 1 and 32; and on Oct. 25, 1828 in partnership with Brackett he was given the contracts for Sections 7 and 8 as well as, in partnership with Legg, for the Monocacy Aqueduct. However Hitchcock was substituted for Legg on Oct. 31 and the contract was abandoned in December 1829. In addition Hovey and Brackett had the contracts for Locks 7 and 8 but abandoned them in February, 1829. On Oct. 21, 1829, Hovey was given the contract for the Broad Run Trunk (originally constructed as a double culvert and later reconstructed as a wooden aqueduct), but abandoned it in the winter (Unrau, HRS, pp. 189, 227, 239, 251, 255, 256)

³³ Nelson's quarry was about 4 miles from the mouth of the Monocacy and located at the foot of Sugarloaf Mountain. Initially used on the piers, the stone from that quarry proved to be too soft and the three piers partially built using it were torn down. The aqueduct was subsequently built primarily of stone from a quarry on the farm of Joseph B. Johnson at the Furnace Ford of the Monocacy, about half as far from the Aqueduct as the Nelson quarry. See *Monocacy Aqueduct on the Chesapeake & Ohio Canal* by Robert J. Kapsch and Elizabeth Perry Kapsch. Medley Press, 2005.

[Wright to Ellet, Dec. 9, 1829
RE: Osborne's work and stone
on the Monocacy Aqueduct]

Cover:
Upper left corner: Trundle
Centered:
Mr. Charles Ellet Junr.
Assistant Engineer
5th Residency
Monocacy
Lower Left: Mr. Osborne

Georgetown Dec. 9, 1829

Dear Sir,

The board have this day agreed with Mr. Osborn³⁴ the Bearer of hereof to go on slowly with the Monocacy aqueduct and he is to proceed as follows:-

1st. To secure all the present work so that it can pass over the spring floods safely.

2nd He is to commence at Mrs Nelsons [sic] quarry³⁵ and get all the necessary stone for the remaining Piers and the two Abutments.- - -

3rd He is to get all the stone for the Spandrel Walls at Mrs. Nelsons quarry –

4th He may take his choice to get the Parapet Walls between the Water Table & the Copping at Mrs. Nelsons or he may get these of the white Stone.

You will bear in mind that the Piers and abutments are to be of the Red or Grey Stone up to the Skewbacks. The Skewbacks are to be of White Stone.

The Pilasters are to be of the Red Stone.

The Ring stone and the Arch sheeting to be of the White Stone. or the Sheeting may be in part of Red Stone if the Contractor shall prefer it

The Spandrel Walls up to the Water Table to be of the Red Stone

The Water Table to be of White Stone

The Parapet Walls to be of Red Stone or White Stone but not mixed – the Copping to be of white Stone

I am thus particular that the Contractor may not mix these different qualities of Stone and use them for the same parts of the work.

³⁴ Asher P. Osborn (also Osbourn or Osborne) was given the contract for the Monocacy Aqueduct on Dec. 9, 1829 after Hovey's company abandoned it in late November. Osborn himself reassigned it to Byrne's company on Aug. 7, 1830, subsequent to the discovery in July that the Nelson Quarry stone was not sufficiently strong. See Unrau, HRS, p. 239.

³⁵ Initially stone from this quarry was used on the piers, but proved to be too soft and three piers partially built using it were torn down. The aqueduct was subsequently built primarily of stone from a quarry on the farm of Joseph B. Johnson at the Furnace Ford of the Monocacy, about half the distance from the Aqueduct that the Nelson quarry was.

I have drawn a diagram³⁶ of ~~the~~ one pier to show you how I wish the Skewback Stones to be joined at the corners. You will recollect that these stones are to be cut with a great deal of care and the inner joints are to be as well cut as the outer faces — and so that the Stones a b b b c shall form a solid resistance against each other and prevent the pressure of the arch from giving way at all.

The same may be said of e e e e e this should [pg. 2] be so put together as to form a solid mass of stone and capable of resisting any lateral thrust which the arch & the super incumbent weight ~~xxxx~~ can bring upon it.

In order to further our object the best at this moment to take up the matter systematically I wish you to have a diagram made of each course of stone in each pier and in each abutment, and as you go over to measure the stone now on hand and take your notes - you can mark them on your diagram which you set apart for a certain course Say “Diagram for 2b with course (or whatever thinking it is) Then on this mark all the Stone which you find cut to fit that course — and so our having a diagram for every course in the three piers now to be put up and also a diagram for each abutment.

In this way you will understand how to ascertain what deficiency there is in the stone necessary for the Piers and abutments.

As Mrs. Nelsons [sic] quarry is only hired for one year ending in March next it is necessary that every exertion should be made to improve it and move all the stone now cut and those to be cut down to the Bank of the River and place them on the land condemned for the Canal — & as fast as conveniently can be to have them brought down to the Monocacy —

The Board wish to have Mr Osborn put up the three remaining piers and the Abutments up to the Skewbacks and then let them remain.

The next thing is to have the Spandrel Walls cut at Mrs. Nelsons [sic] — This can be of any thickness down to 12 inches. They are to be Square joints and truly cut and perhaps it would be better to have them only scabbled and then transported to the ground and cut there — You can give the Contractor the quantity of face work so as to enable him to get out these[?].

The next is the parapet Walls — this you will find on the Plan to be 5½ or 6 feet between the top of the Water Table & the bottom of the Coping — these ought to be in 3 or 4 courses and with good wide beds.

I pray you to give Mr. Osborn all the advice you can and enable him to understand all that is now done

I presume you have my letter of yesterday requesting [pg. 3] you to measure all the work now done by Mr. Hovey³⁷ as well all the Stone cut, as those quarried and not cut because Mr Hovey ought to be allowed for all he has done which shall be found useful to those who follow him.

Timber also should be noted down and its quantity measured as near as possible.

The cranes I hear are transferred to Mr. Van Alstine³⁸ as well as the Shears & Blocks ropes &c. these of course we have nothing to do with.

³⁶ Included at the end of this document.

³⁷ Hovey & Legg were awarded the contract for the Monocacy Aqueduct on Oct. 25, 1828. However Hitchcock was substituted for Legg on Oct. 31 and the contract was abandoned in December, 1829.

³⁸ Van Alstine was a lawyer representing Hovey, the original contractor on the Monocacy Aqueduct.

The ring Stone for Certainty which Mr. Hovey has cut and been paid for ought to be put together in a place by themselves near the Bank of the River —if they are at the quarry— and each kind carefully measured —

This labor will be arduous and take some time and in order to execute it well it will be necessary for you to have some good man to measure the stone and note them down & try a square upon them to see that they are cut with paralleled [sic] beds and if found wanting to note them.

to take down the width of bed and see that there is a proper proportion of header so as to form a strong bond in the work — if you could find a good mason to assist you in this case upon proper and reasonable terms I wish you to do so — as he will understand how to try the stone in every way —

M^r Cruger³⁹ will have the charge of your Residency until M^r. Boye⁴⁰ regains his health. And he will probably be with you soon and give you further directions-

In the mean time let M^r Osborn move on in as rapid a manner as he chooses to obtain stone from Mrs. Nelson — provided you understand every thing [sic] relating to Mr. Hoveys [sic] affairs — M^r. Osborn might now be getting the Stone down from Mrs. Nelsons [sic]— and if the water falls he might raise upon the piers now begun

Mr. Osborn ought not to set any one to cutting ring Stone from the White quarry until he gets a set of patterns made for an arch - - If he gets a set for one side of an arch they will answer for the whole.

I am Dear Sir

truly yours

B Wright

Engineer Ches & Ohio Canal

Charles Ellet Jr Eng^r

[Note on side of pg. 3]

ps. The first duty of Mr. O [Osborn] must be to secure the stone wanted from Mrs. Nelsons [sic] quarry before March—

[Note drawing below]

Let there be as many Sheets as there is Courses in each pier — and let these be sewed together and the Diagrams made on the Sheets. Then let them be numbered Pier No 4 or Pier No 5 — — Pier No 6—

N Abutment

S. Abutment — &c.

³⁹ A problem arises here because Alfred Cruger was listed as the resident engineer on the 5th Residency, with Ellet as his assistant on Nov. 22, 1828; yet it would seem that at some point Böye had been put in charge of the 5th Residency and only now was Cruger being given responsibility for it.

⁴⁰ Mr. Herman Böye, from Denmark, was in the original Nov. 22, 1828 corps of engineers list as an assistant engineer on the 2nd Residency under resident engineer Henry Van Slyke. However, he apparently was put in charge of the 5th Residency before becoming ill. As indicated in note 3, Cruger had been listed as the resident engineer on the 5th Residency on Nov. 22, 1828.

[Wright to Ellet, Dec. 14, 1829
RE: Lafferty's abandonment of Lock 27]

Cover:
Charles Ellet Jnr. Eng.
Engineer 5th Residency
Monocacy
Mr. Lafferty

Georgetown Dec 14th 1829

D Sir

The Clerk (Mr Ingle⁴¹) has agreed to Mr Laferty⁴²[sic] suspending the Lock 27 – This being the case I request you measure all his stone, Timber. Excavation &c &c

1st you will measure all his stretchers and give thickness of each course

2d “ “ “ “ headers & give thickness of course

3d “ “ “ Hollow Quoins [for? footing?] giving each one its thickness and we can thereby see whether his Hollow quoins are corresponding in thickness to the course

4th give the running measure of coping now cut

5th give as near as you can the quantity of Stone quarried estimating them as well as you can & taking care that you do not over estimate them and also that you allow for a proper proportion of headers

You will recollect that there must be a header in every 10 feet run – and perhaps to give a clear view of it you should estimate and set down Each Course in a line by itself and then say what the length of headers are in that course so that we see the State of each course at a look

Measure also the timber – and give the running measure, where it is on the ground near the Lock and so high that the Spring flood cannot float it away

Mr Ingle has given Mr Laferty [sic] a Blank Bill of Sale for you to fill up as you shall find the measurement to be and get Mr L[afferty] to deliver it to the Ches & Ohio Canal Co you being a witness

Make out a final Estimate and put such price as you have heretofore done to each Item – be as expeditious in this as you can because Mr L[afferty] seems to be extremely anxious to close it so that he can go to some other work [pg. 2]

⁴¹ Ingle (Dec. 4, 1791–Feb. 2, 1863) was employed as clerk for the C&O Canal Company on July 3, 1828 and resigned July 9, 1840 in the controversy over the misuse of script. When Maryland reconstituted the board in April 1841, Ingle was appointed to the Board and continued to serve until June 24, 1847.

⁴² On Oct. 25, 1828 Lafferty & Boland were awarded the contracts for Locks 25 and 27. Unrau in his HRS states that they abandoned the contracts for the locks in January/February 1830, but this letter indicates that their work on Lock 27 was stopped in December 1829.

The Backing stone you will also measure as correct as you can under all the circumstances & the excavation you will find done I suppose as it has heretofore been done

If you think the assistance of some good mason or stone cutter & Lock builder would be useful to you in making the measurement you can authorize to hire him to assist you and make your bargain with him before hand and certify his bill X & state in a letter what services he has performed + [sic] I will get it paid by the Board this would be the way if you have none preferable

In[?] [?] yours truly

B Wright

Eng Ches & Ohio Canal

C Ellet Esq

Eng 5th Residency

PS. Give me the amt of Exⁿ[i.e. amount of excavation] in the drain and say whether it is at bottom

Mr. Laferty [sic] says that he has pumped the water out – give me the cost of this as well as you can

[Böye to Ellet, Dec. 16, 1829
RE: Work by contractors, Rush's mission,
the company's desperate need for money.]

[NO COVER]

Georgetown Dec. 16th 1829

Dear Sir,

Your favor of the 14th ins^t [instrument] was handed me this morning by M^r. Blodgett⁴³ who tells me that you have already sent my shirt down, but I have seen none – By whom did you send it?

I do not wonder that the cost of Section 83 falls below the general estimate. As well as I remember all the rock necessary for walling. (about 400 Perches I believe) was considered as excavation in the G^l. Est [General Estimate]: where as only about 200 Cub. Yd^s. [cubic yards], I presume, will be counted as such, but that is nothing: you know we could not tell that there would be less rock than appearances indicated & we estimated on the safe side.

I have no doubt of your having plenty to do at present, and I wish sincerely that I was able to render you some assistance. From the enclosed resolutions you will perceive that the Board have taken some steps in regard to these winding up estimates, as I consider them to be. Indeed, entre nous I think that in a few months the Company will be obliged to stop it's [sic] functions or operations altogether, unless Mr. Rush⁴⁴ should be successful in obtaining money in Holland.

You will perceive from the enclosed that the extension of Cruger's⁴⁵ Residency applies only to those Sec [pg.2] tions [sic] which were added to the 5th from the 4th. This arrangement saves some trouble in keeping the accounts but in reality it is no additional labour [sic] to Cruger as agreements with the respective Contractors except Capt. Darrah⁴⁶ for postponing the work has already been made; indeed this is pretty much the case with the whole of the 4th Resid^y.

In the abstract (for Oct) you sent me you forgot to introduce 1 days [sic] service for Hez^a: Trundle⁴⁷; however it can be done at some future day, but you omitted to send

⁴³ Mr. Blodgett held an early contract for Section 79 but abandoned it.

⁴⁴ Richard Rush was Secretary of the Treasury under John Quincy Adams. In April 1829 he was appointed to act as agent for the District cities in Europe in an attempt to secure loans so that they could fulfill their obligations regarding the purchase of canal stock.

⁴⁵ Cruger was listed as the resident engineer on the 5th Residency, with Ellet as his assistant on Nov. 22, 1828 (Unrau, HRS, p. 257). From these letters it is clear that he was moved at some point to the 3rd and/or 4th Residency. Böye, who had been listed on Nov. 22, 1828 on the 2nd Residency as an assistant to Daniel Van Slyke appears to have been promoted to the position of resident engineer for the 5th Residency, with Ellet as his assistant. However, in Dec. 9, 1829, Cruger is put in charge of the 5th Residency as well as the 4th due to Böye's illness. Böye here, however, indicates that Cruger's responsibility was extended to only "those sections which were added to the 5th from the 4th."

⁴⁶ Darrah is unidentified.

⁴⁷ Hezekiah Trundle is possibly Hezekiah William Trundle (b. 1810), one of the Trundle family located in the area at the time. See *The Trail Families* by William N. Hurley, Jr.; Heritage Books, 2008, p. 81.

me Wetherells⁴⁸ [sic] receipt without which I can get no money. If you can spare Wallach⁴⁹ [sic] during Christmass [sic] send the Abstract for Dec ~~& the~~ all the vouchers for the last quarter (Weth. [Wetherell] & Trundles [sic] receipts) and my shirt by him.

In respect to Billington⁵⁰ you will be guided by the written orders.

If Trundle lays claim to any timber as his property you will please not to include it in the present assessment; but an explanatory note might be made on the face of the assessment.

Cases may hereafter occur where owners may come forward & claim property after you have taken & returned an Assessment which is a more disagreeable point. I will see Judge Wright, or write to the Board about it. You ought however try to find out before taking an Assessment, or near as you could if any part was encumbered – I am afraid Hovey⁵¹ has some in this [pg. 3] condition

As respects Canfield's⁵² Wall there is no further allowance made, to my knowledge, than what I wrote you; nor need you estimate differently unless you see something in writing.

The present object of the board, in regard to the Sections above Seneca you will learn from one of the enclosed resolutions. If Millerd⁵³ [Millard] McIntosh & Canfield continue their labours [sic], I do not [sic] suppose there will be any alteration in the Engr. Corps on the 5th, but if the Aqueduct should be the only work which continues probably some alteration will take place. This, however, is a mere conjecture of mine as I have not heard a single word about it. As I said before if they do not get more money I have it from pretty good authority that the whole work down to G.T. [i.e. Georgetown] will be suspended.

If such arrangements, as I am making now in Richmond succeed, I shall probably quit this before long.

In haste

Yr friend [Your friend]

H Böye

⁴⁸ Wetherell is unidentified, but likely another local person hired for some small job with Trundle.

⁴⁹ William Wallack, rodman on the 5th Residency in the Nov. 22, 1828 list of engineers.

⁵⁰ Likely this is Nathaniel Billington with whom the company contracted for locust timber at 35¢ per cubic foot on June 10, 1829. See Unrau, HRS, p. 188.

⁵¹ Hovey had abandoned several contracts, most notably the first one let on the Monocacy Aqueduct.

⁵² Canfield was a contractor—possibly the Canfield of Canfield & Hurd and/or the D. Canfield who held a contract on Lock 27 Feb. 12 to Nov. 26, 1830, after which Andrew Small took over the contract and completed the lock.

⁵³ A. H. Millard was awarded the contract for Section 33 on Oct. 25, 1828.

[Ingle to Ellet, Dec. 16, 1829
RE: Blodgett abandoning Section 79]

Cover:
Chas. Ellet Jr. Esq.
Assistant Engineer
5th Residency
Ches & Ohio Canal

Written vertically on the left side of the cover:
Dec. 16th 1829
To the President and Directors
Of the Ches & Ohio Canal Co
Gentlemen

Canal Office
Dec^r. 16. 1829

Sir.

Messrs Blodgett & Co.⁵⁴ are willing to relinquish Sec 79⁵⁵ — — please make a final measurement on it — as soon as it is put in a safe condition to leave —

Your Obt Svt [Obedient Servant]
John P Ingle
Ch & O CCo

C Ellet Engr

⁵⁴ There is no information on Blodgett and his partners other than indicated here.

⁵⁵ Section 79 was located between Locks 27 (Section 72) and 28 (Section 87) and it had no masonry structure.

[Böye to Ellet, Dec. 22, 1829
RE: Payments for materials, etc.]

Cover:
Chas. Ellet Jr. Esq.
Mouth of Monocacy

Lower left:
Fav^r of
M^r. Mathews

Washington City Decr. 22nd. 1829

Dr. Sir,

As M^r. Mathews⁵⁶ has promised me that he will have this safely conveyed to you, I avail myself of the opportunity to inform you that Judge Wright⁵⁷ could give me no information or answer in regard to the case I stated in my last which might occur, vis: ~~that~~ where the proprietor came forward & claimed property after the same had been assessed to the contractor and settled for by the Company. Judge W. [Wright] says that nothing is to be estimated which is not on the Compy^{'s} [Company's] ground & delivered and a bill of sale in due form given for it; but that as I told him does not alter the case any; for if the contractor had no right to the property he certainly can convey none.

The best you can do appears to me to ascertain as much as possible who ~~the~~ furnished the articles to be estimated & from them to learn ~~whether~~ the [sic] have been paid or not. I suppose however you will meet with a few cases of this kind, if any.

At present I stay at Doct^r. Bradford's⁵⁸ who lives contiguous to Genl. Bernard,⁵⁹ a short distance from Secretary Branche's.⁶⁰ Since I came over here my health has evidently improved, but the restoration of perfect health will depend chiefly on the regular observance of a low diet for some time to come yet.

Yr. fr^d. [Your friend] H. Böye
[Written vertically along the side:]
You have no idea of how much I want night shirts.

⁵⁶ Mr. Mathews is unidentified.

⁵⁷ Wright was Chief Engineer of the C&O Canal from June 1828 to Nov. 1830 (Unrau, HRS, pp. 33–38). Known as the 'Father of American Civil Engineering', he is primarily known for his years as a chief engineer of the Erie Canal although he worked on many projects besides the C&O after leaving the Erie.

⁵⁸ Apparently Böye was in his care and living in his home. Dr. Bradford is otherwise unidentified.

⁵⁹ Likely this is Simon Bernard (1779–1839), an important French general who, after Napoleon's second abdication, was banished from France and emigrated to the United States, where, being made a brigadier-general of engineers, he executed a number of works for the government, and co-authored with Col. Joseph G. Totten and John L. Sullivan a U.S. Board of Engineer's report issued on Feb. 14, 1825 on the C&O canal proposal. The report stated: "*The obstacle to a communication by the Potomac route with the Western states, lessens to a point, compared with the greatness of the object, whether in a commercial or political relation to the prosperity of the country. In Europe, their canals, even those of Governments, have all some definite limited object of utility. But here it is not alone the distance—the elevation—the vast natural navigation to be connected, which constitutes the grandeur of the design; but the immense interests it combines into an harmonious national whole.*" General Bernard returned to France in 1830. It is frequently stated that he had a substantial role in the C&O Canal but this is not accurate.

⁶⁰ Possibly this is John Branch, Jr., President Jackson's Secretary of the Navy from Mar. 9, 1829 to May 12, 1831.

[Ellet to Wright, Jan. 3, 1830
RE: Payments to workmen]

[NOTE: This is the 3rd of 4 letters to Wright of which Ellet made copies. The first letter is dated Dec. 1, 1829, the 2nd letter is dated Dec. 5, 1829. This letter is with the previous two but on a separate sheet. All three appear to be drafts and only the Jan. 15, 1830 is written like a finished letter.]

Cover:

Copy of 3rd of 3 Letters

To Benjamin Wright⁶¹

Chief Eng — Of the

Ches & Ohio Canal Co.

George Town

Mouth of Monocacy
Jany. 3rd 1830

D^r Sir,

The following is a copy of a letter from Mr. Mc Intosh,⁶² who is now lying sick at Barnsville⁶³

“Presuming that you are acquainted with the minds & feelings of the workmen on Section 71 relative to the payment of their wages — which is, that they look to me & no other person for their different amounts —

I therefore ~~request~~ beg of you to remark by letter to Judge Wright the ideas of the workmen on that subject, as they I am certain consider that unless I receive the amount of the estimate which you are about making out, they will ultimately loose their pay — I can give ample security in the city of Washington by the receiving the amount of the estimate for the payment in full to the men to whom it is fairly due.”—

As Mr. McIntosh has not distinctly espoused his ideas, I have copied the whole of his letter:— he seems to desire to have the estimate paid to him rather than to his partners.⁶⁴ The hands are certainly dissatisfied, and complain of being sent by Johnson⁶⁵ to Bennett,⁶⁶ & from Bennett to McIntosh for their wages. —

⁶¹ Wright was Chief Engineer of the C&O Canal from June 1828 to Nov. 1830 (Unrau, HRS, pp. 33–38). Called the ‘Father of American Civil Engineering’, he is primarily known for his years as a chief engineer of the Erie Canal although he worked on many projects besides the C&O after leaving the Erie.

⁶² See McIntosh’s letter to Ellet that McIntosh erroneously dated Jan. 3, 1829 rather than 1830.

⁶³ Barnesville is about 4.5 miles east of the mouth of the Monocacy.

⁶⁴ Section 71 was let to T. McIntosh & Co. Bennett is a named partner with him on Sections 75 and 76 (Unrau, HSR, p. 256) but it is uncertain who the partners were for the T. McIntosh & Co. contract.

⁶⁵ On Oct. 25, 1828, an Amos Johnson—who may have been the same man—was awarded the contracts for Section 26 and for Lock 26 on Section 68—although the contract for the lock was relet on Mar. 14, 1829. (See Unrau, HRS, p. 230, 256.)

⁶⁶ Thomas Bennett held contracts with Brackett for Locks 5 and 6, while Brackett held contracts with Hovey for Locks 7 and 8. Bennett was also in partnership with McIntosh on Sections 65, 75 and 76.

With respect,
Cha^s Ellet jr

Ben Wright
Chief Engr

(over)

[The following note was written on the reverse side of the page:]

N.B. — Both Osborne⁶⁷ & Van Olstine⁶⁸ assert positively, that your order to them (personally) were, to get the stone for the water table & also for the skew backs, from Nelsons [sic] quarry; — Whereas your letter states distinctly, that for both, ~~it~~ must come from Johnson's White stone quarry. So confident are they ~~that they are correct~~ of the correctness of their opinion, that they have commenced already quarrying for their water table at Nelson's.

⁶⁷ Asher P. Osborn was given the contract for the Monocacy Aqueduct on Dec. 9, 1829 after Hovey's company abandoned it in late November. Osborn himself reassigned it to Byrne's company on Aug. 7, 1830, subsequent to the discovery in July that the Nelson Quarry stone was not sufficiently strong. (See Unrau, HRS, p. 239.)

⁶⁸ Osborn was the second contractor on the Aqueduct, taking over from Hovey. Alexander Van Alstine was a lawyer representing Hovey, the original contractor for the Monocacy Aqueduct.

[McIntosh to Ellet, Jan. 3, 1830
RE: Workmen's pay]

Cover:
Charles Ellet Esqr.
Engineer

Barnesville⁶⁹ January 3rd 1829
[Year should be: 1830]

Mr Elliott [sic]
Sir

Presuming that you are acquainted with the Minds and feelings of the Workmen on Section 71⁷⁰ relative to the payment of their wages which is that they look to me and no other person for their different amounts

I therefore beg of you to remark by letter to Judge Wright the Ideas of the Workmen on that Subject as they I am certain consider that unless I receive the amt [amount] of the Estimate which you are now about making out that they will ultimately loose [sic] their pay – I can give Ample Security in the City of Washington by receiving the Amt [Amount] of the Estimate for the payment in full to the men to whom it is fairly due.⁷¹

I am with Respect
Sir your Abt. Servant [sic Obt for Obedient]
Thomas McIntosh⁷²
-----[flourish]

⁶⁹ Barnesville is about 4.5 miles east of the mouth of the Monocacy River.

⁷⁰ Section 71 was likely located at Hahn mile 41, not far below Lock 27 (located in Section 72).

⁷¹ See the copy of Ellet's Dec. 5, 1829 letter to Wright in which Ellet states that McIntosh has disagreed with his partners and that "Johnson & Bennet object to his drawing the money." This letter indicates a continuation of the same state of affairs as McIntosh argues for the money being given to him as otherwise the workmen in all likelihood will never be paid. In reality contractors did abscond with a partial payment if they realized they would not make money on their contract. McIntosh's assurance that he can provide "security" is intended to convince the canal company that he would not abscond and that his credit is good.

⁷² McIntosh held the contract for Sections 60 and 71 under the name "McIntosh & Co." and for Sections 65, 75, and 76 under the name "McIntosh & Bennett". These were contracts to build the trunk of the canal and involved no masonry structures.

[Wright to Ellet, Jan. 6, 1830
RE: Monocacy stonework]

Cover:
C Ellet Jr Egr
Ass^t Engineer
5 Residency

Lower left corner:
Mr. Wallack

Washington Jany 6th 1830

D [Dear] Sir

Your letter of 3^d is just read as regard the scubacks [sic] & the water table I certainly never told Mr. Osborn any thing [sic] about the first coming from Mrs. Nelson.— After I wrote you the letter I saw Mr Leckie who told me that the water table could not well be obtained from Johnsons [sic] quarry and that Mrs. Nelson [sic] quarry would furnish good stone for that part of the work.⁷³

With regard to the Skewbacks I will not insist upon any more than the rings coming from Mr Johnsons [sic] quarry and let all that part of the Skewbacks to form the interior of the arch come from Mr Nelsons [sic] — as this will not be seen it is of no consequence.

In order to have uniformity, the Skewback for the Ring at the end ought to be same as the Rings which are to be from Johnsons—

You may therefore consider this as sufficient in lieu of the form letter

Very truly your friend

BWright

C. Ellet Jr Esq

⁷³ This letter responds to the note at the end of the Jan. 3, 1830 letter from Ellet to Wright indicating that Osborn and Van Olstine were certain Wright had authorized the use of Nelson's quarry stone for the water table and skewbacks. However, in Wright's Dec. 9, 1829 letter to Ellet he had specified that the skewbacks and water table were to be of the white stone from the Johnson quarry. In this letter he is allowing use of the Nelson quarry stone for the water table based on Leckie's opinion.

[Leckie to Ellet, Jan. 13, 1830
RE: Instructions on stone work

[NOTE: This is the only letter written on ruled stationary.]

Cover:
Seneca Mills Md⁷⁴
Jan ~~xx~~th 1830

Charles Elliot [sic] Engr
Assistant Engineer 5th
Residency C&O Canal
Monocacy Post office
Frederick County Maryland

Charles Ellitt [sic] Esq
Assistant Engineer 5th
Residency Chesapeake
& Ohio Canal
Monocacy Aqueduct
January 13th 1830

Dear Sir The dry walls on your residency are in a general way progressing very well, that on Section 83 is rough but is as good as could be expected from the very irregular and rough material it is built of; The bank is crowded too close on the wall, they have however promised to remove it back to proper distance and are putting the fine fragments that are made in quarrying the pudding [sic: puddling] stone very purposely behind the wall to prevent the attrition of the water from washing away the clay

The Stone lately quarried out from ~~the~~ Mrs. Neilson's [sic—Nelson's] quarry for the Aqueduct are of good quality⁷⁵ and have good beds and seem to be well cut, there are a few clay edges that will require to be cut off; and some of the joints that have not width enough, but in general there are not much fault to find with them: On examining the different quarries opened, I will begin at the North, or upper end, the first opening on that end offers a good prospect, for courses from 14 to 20 or 22 Inches, there is no dirt on top of any account; the depth as far as we can see is about 12 feet, but the bottom being choaked [sic] up with fragments of stone & rubbish the real depth could not be ascertained [sic], this opening offers a good prospect for stone of good quality: The next opening to the south also presents 7 or 8 feet of a face of good stone the bottom also choaked [sic] up, this stone will afford thick courses if necessary; but there is 6 feet of dirt on the top

⁷⁴ Located at the mouth of the Seneca River. This small community included various mills and warehouses, etc. over the years. It is the location of the Seneca Aqueduct (Aqueduct 1) and just above Dam 2. The Seneca red sandstone quarries are just upstream and a large stone cutting mill as well as wharfs were located on the berm. During the winter of 1828–29 a post office was established here, one of seven established along the canal that winter (Unrau, HRS, p. 189).

⁷⁵ Presumably Nelson's quarry at the foot of Sugarloaf Mountain is meant. In July of 1830 it was recognized that the stone from this quarry was in fact not of adequate quality for the piers of the Monocacy Aqueduct.

[pg.2]

The opening next to that formerly worked by Mr Hovey⁷⁶ is intirley [sic, entirely] out of the question, the good stone not exceeding 4 or five feet thick and a mountain of useless rock & dirt on the top of it; The new opening made by Mr Osburne [sic] and Abandoned unfortunately presents no prospect excepting for building stone: The next opening to the south presents a large body of good stone where thick courses may be obtained, but unfortunately the dirt, [intersected?] clay and unless rock in the top ~~is~~ are equal in thickness to that of of [sic] the body of stone, say about 12 feet each, but owing to the good quality of this stone, and the heavy courses it will produce, I am of opinion that it will be found expedient to work it. The next opening to the South on which M^r Frost⁷⁷ is at work being only partially opened, no opinion can as yet be formed, as to the supply it may afford; the stone already obtained, are of good quality but courser in the grain than those of the other openings.—

There can be no doubt, but plenty of stone for the aqueduct can be procured at these quarries; the coping and arch stones excepted, the first could not be had at all; and, the Granite is so superior a material for the last as respects strength; that it is intitled [sic] to a decided preference

In case 30 Inch stuff enough cannot be obtained for the first courses of the Piers and abutments [tear in paper] two 15 Inch courses may be substituted or the rough granite or the foundation may be raised to a sufficient height to admit of a course of say 24, 26, or 28 Inches as may be deemed advisable:

Should the thick courses used in the superstructure of the piers, be difficult to find, courses of a less height may be used for the face and sides of the abutments, as the discrepancy would scarcely be observed.

[pg. 3]

The Culvert on Section 74⁷⁸ seems to be a tolerable good job, and I am of opinion that the contractors should have an Estimate on it: The ring walls of this ~~abutment~~ culvert having a great presence of ~~the~~ embankment to support, the walls should be of good materials and laid in the best manner to insure strength by being laid as headers across the walls and well bonded together and I would reccomend [sic] the facing [sic] to be laid in cement properly prepared, in the proportion of three parts of Cement, to two parts of good clean Sand.

I beg leave also to call your attention to the stone now quarrying on Section 67,⁷⁹ for the culvert near Conrads ferry [sic],⁸⁰ The quarry men are sending out all the trash on the top of the quarry which is an aggregate [sic] of clay, and are moreover putting in the same pile small irregular pieces good for nothing, when plenty of good stone are there, and the bad stuff bearing only small [?, stain from seal and tear in paper] quantity of good; I have requested the quarry men to carry out [?, stain from seal and tear in paper] all the bad stuff and lay it by itself instead of mixing it with the stone for the culvert as they are doing at present

⁷⁶ Hovey was given the contract for the Monocacy Aqueduct in October, 1828, when he was in partnership first with Legg and then with Hitchcock. However he abandoned the contract in December, 1829.

⁷⁷ No information has been found on Mr. Frost.

⁷⁸ Section 74 was the section above that which included the Monocacy Aqueduct, and this was likely Culvert No. 70 at Hahn mileage 42.44 (although Hahn places it in section 73).

⁷⁹ Section 67 is below Lock 26 (Hahn mileage 39.37, on Section 68).

⁸⁰ Today known as Whites Ferry, located at Hahn mileage 35.5.

Although these stones are not designed for work on your intendency, and as Mr Cruger⁸¹ may not be along often, it would be highly desirable that you should have an eye to the proper selection of the culvert stuff.⁸² — I am Dear sir

Very Respectfully

Your ob. Serv't

[obedient Servant]

Robert Leckie

Inspector of Masonry 1st Division

Chesapeake & Ohio Canal

[The following was inserted in a hand drawn box to the left of the signature:]

As I am not personally certain of the location of the cements operated upon & found good, from the Tuscarora Valley I have requested Mr. Alcott⁸³ to bring down two Barrels of the raw material to my house to be operated upon to remove all doubt.

R.L.

⁸¹ Due to Böye's continuing illness, Alfred Cruger had been assigned to the 5th Residency in addition to the 4th, in early December, 1829.

⁸² It is worth noting that although Leckie was hard on Ellet in his first letter, here he trusting Ellet's judgment with regard to the quality of the stone.

⁸³ Leckie and James Alcott of NY discovered lime about a third of a mile above the Tuscarora Mill. They had difficulty developing a mixture that produced the quality of mortar required and the canal company ceased using cement from this mill likely late in 1830 (Unrau, HRS, p. 167)

[Ellet to Wright, Jan. 15, 1930
RE: Little Tuscarora culvert estimates]

[Note: Of the four letters to Wright of which Ellet kept copies, the first three (Dec. 1 and 5, 1829 and Jan. 3, 1830) were kept together and appear to be drafts. Only this letter has the appearance of a finished letter.]

[NO COVER]

Mouth of Monoc
Jany. 15th ⁸⁴

Dr. Sir—

Barry & Griffin⁸⁵ will hand ~~xxx~~ you their estimate of the stone which they have laid on the little Tuscarora culvert,⁸⁶ both ~~xxx~~ previous to & since ~~xxx~~ Mr Hovey⁸⁷ ~~xxxx~~ left.

The price at which it is estimated is that which I formerly named to you (1.25) and for which they agreed with Mr. Hovey to do it. I have not ~~in the present estimate~~ taken any notice of the expense of transporting stone, &c, ~~xxx~~ because I do not know in what manner you would have the account presented.

I am not indeed ~~certain~~ assured that the ~~manner of~~ form of the present-estimate will be approved of – and would not have sent it thus, without advice, but for the absolute necessity ~~both of~~ of the contractors: ~~xxx~~ who unless ~~they are~~ furnished with money ~~their work~~ cannot proceed any farther.

Very respectfully

Chas. Ellet jr

⁸⁴ Presumably 1830, as Hovey abandoned his Monocacy contract in December, 1829, and is presumed to have abandoned all or most of his culvert contracts on or about the same time.

⁸⁵ Griffin is unidentified.

⁸⁶ There is no indication of a "Little" Tuscarora in the vicinity of the canal. The Tuscarora Creek culvert is Culvert 71, Hahn mileage 44.04, half a mile below Noland's Ferry (Hahn mileage 44.58). In 1833–35 a 1200 ft. long feeder was built to bring water from the Tuscarora Creek to the canal at Hahn mileage 45.10.

⁸⁷ Prior to Sep. 25, 1828 all the culverts on the sections of the canal under construction above Seneca were let to Albert Hovey. On Aug. 20, 1828 Hovey was awarded the contract for Sections 1 and 32; and on Oct. 25, 1828 in partnership with Brackett he was given the contracts for Sections 7 and 8 as well as, in partnership with Legg, for the Monocacy Aqueduct. However Hitchcock was substituted for Legg on Oct. 31 and the contract was abandoned in December, 1829. In addition Hovey and Brackett had the contracts for Locks 7 and 8 but abandoned them in February, 1829. On Oct. 21, 1829, Hovey was given the contract for the Broad Run Trunk (originally constructed as a double culvert and later reconstructed as a wooden aqueduct), but abandoned it in the winter (Unrau, HRS, pp. 189, 227, 239, 251, 255, 256).

[Ingle to Ellet, Jan. 18, 1830
RE: Locust timber from Billington]

COVER:

[Postmark: City of Washington, date Jan. 19]

Paid Charge J.P.I.

Ck. C & O C Co

Charles Ellet J^r. Esq.

Engineer C & O Canal

Mouth of Monocacy

Montgomery County— MD.

Office Ches & Ohio Canal Co
Washington – Jany 18. 1830

Dear Sir

When M^r. Billington⁸⁸ was here some weeks since, we understood that he meant immediately to bring down the locust timber to Seneca.

The Contractors are suffering from the want of it – and I would ask you to write me immediately and let me know what he is doing –

Tell him that unless he sends the timber down immediately — we shall hereafter detain a much larger portion of his money for this object.

Your Obt Svt [Obedient Servant]
John P Ingle⁸⁹ Ck [clerk]

C Ellit [sic] Esq.

⁸⁸ On June 10, 1829 the company had contracted with Nathaniel Billington to provide locust timber at 35¢ per cubic foot (Unrau HRS, p. 188).

⁸⁹ Ingle was company clerk from July 3, 1828 to July 9, 1840.

[Ingle to Ellet, Jan. 30, 1830
RE: Cruger's assignment to the 5th Residency]

COVER:
Charles Ellet Esq^r.
Assistant Engineer
5th Residency

Canal Office Washington Jan^y 30. 1830

Sir.

The President & Directors of the Ches & Ohio Canal Company
have instructed Alfred Cruger Esq. Resident Engineer of the 3^d~~th~~ Residency⁹⁰ – to take
charge also of the 5th residency during the sickness of Mr. Böye.

Your Obt Sevt
John P Ingle
Ch C & O C Co

Charles Ellet Esq
Assistant Engineer
5th Residency —)

⁹⁰ On Nov. 22, 1828, Cruger was put in charge of the 5th Residency but apparently moved to the 3rd and/or 4th Residency at some point. In Wright's letter to Ellet on Dec. 9, 1829, he stated: "Mr. Cruger will have the charge of your Residency until Mr. Böye regains his health." In his Dec. 16, 1829 letter, Böye states: "You will perceive from the enclosed that the extension of Cruger's Residency applies only to those Sections which were added to the 5th from the 4th." Additional comments imply Cruger has responsibility for the 4th Residency so, given Ingle's reference to the 3rd Residency here, it is uncertain exactly how extensive Cruger's responsibilities were at this time or if Ingle made a mistake regarding Cruger's other assignment.

[Böye to Ellet, Feb. 4, 1830
Re: Misc. instructions on estimates
for culverts, lockhouses]

COVER:

Chas. Ellet Jr. Esq.

Mouth of Monocacy

By Mr. Hovey

Georgetown Febry 4th 1830

Dear Sir

Judge Wright⁹¹ has requested of me that a Statement of the condition in which Hovey⁹² left his work, be sent down as soon as possible; he says he sent you directions how to proceed immediately after Mr. H. [Albert Hovey] had abandoned the work. Young Mr. H [Hovey]⁹³ wishes that you take also an account of what has been done on Culverts, especially that at Little Tuscarora,⁹⁴ but you have no doubt already noticed it. Apropos: did you find that all the Ringstones were cut for as many culverts as had been previously estimated for, although not paid, by the Compy [Company] to Hovey? I wish you would also send a copy of what remarks, notes taken or observations which have been made in regard to the forces employed about the Cofferdams.

Since Mr. Wallack⁹⁵ was here I have heard nothing from you. I have lately improved considerable in health, though still far from being recovered. I hope you have improved the late opportunity which the cold weather must have afforded you of measuring the Monocacy where the Aq. crosses it; if not do it should the ice be still strong enough get the distances also between each pier that we may know how to prepare for any deficiency in the measure should such exist, and particularly the distance [p.2] from the last ~~abutment~~ pier to the face of the Eastern Abutment. I wish you will send by Mr. Hovey that little book of mine with some manuscript notes in relative to the Aqueduct, rules for measuring planes, & solid, &c; it is of a duodecimo⁹⁶ size, and ~~has~~ is bound in calf.

⁹¹ Wright was Chief Engineer of the C&O Canal from June 1828 to Nov. 1830.

⁹² Hovey had extensive contracts and it is unclear how much of his work is referred to here. Prior to Sept. 25, 1828 all the culverts on the sections of the canal under construction above Seneca were let to Albert Hovey. On Aug. 20, 1828 Hovey was awarded the contract for Sections 1 and 32. On Oct. 25, 1828, in partnership with Brackett, he was given the contracts for Sections 7 and 8 as well as, in partnership with Legg, for the Monocacy Aqueduct. However Hitchcock was substituted for Legg on Oct. 31 and the contract was abandoned in December 1829. In addition Hovey and Brackett had the contracts for Locks 7 and 8 but abandoned them in February, 1829. On Oct. 21, 1829, Hovey was given the contract for the Broad Run Trunk (originally constructed as a double culvert and later reconstructed as a wooden aqueduct), but abandoned it in the winter (Unrau, HRS, pp. 189, 227, 239, 251, 255, 256).

⁹³ Presumably an unidentified relative of the contractor Albert Hovey.

⁹⁴ Possibly refers to Tuscarora Creek at Hahn mileage 45.10.

⁹⁵ Likely this was William Wallack who was assigned as a rodman to the 5th Residency on Nov. 22, 1828.

⁹⁶ Generally this referred to a book with pages that were 5 inches by 7 inches in size, although duodecimo books did vary from this typical size so its precise measurement cannot be known for certain from this reference.

Reuben Bracket⁹⁷ contracted yesterday with the Company for delivering a considerable quantity of the Tuscarora Waterlime.

There is nothing new here, except that a kind of Armistice has taken place in Jackson's Cabinet⁹⁸ between the two belligerent parties, but I do not think it will last long.

Adieu & believe me as always

Yr fnd [Your friend] H. Böye

Has my horse not been sold yet?

Did the red clayish stuff which was attached to some of Hoveys [sic] stones and which decomposes very readily amount to much. In your statement you will please to make such remarks as may facilitate or have some bearing on the settlement with Hovey.

HB

Since writing the above & after the letter was sealed Judge Wright put into my hands your letter of the 30 ultimo with a request that if I had any remarks to make to communicate them to you. This has brought to my [pg. 3] mind some facts, which if not already noticed by you ought to be taken into consideration before the Lock houses are received & a final Estimate given. For instance, ~~one~~ of the stones across one of the Fireplaces upstairs in Lockhouse N^o. 18⁹⁹ was cracked & required to be either replaced or well secured with a strong Iron bar. The same defect existed in the kitchen fireplace in L.H. N. [Lock House Number] 19¹⁰⁰ where a crane was moreover wanted; some steps from the house to the ground on the river side was also wanting. Besides there were sundry minor defects which have now escaped my memory. The understanding between the contractors & myself was that what extra labour [sic] was [?—word missing due to tear in paper] should be valued by Mr. Leckie who will be up on the [one word missing due to tear in paper] in a few days. —

Mr. Clement Smith¹⁰¹ called on me just now with a request to be furnished with a copy of Hovey's last Estimate which never was laid before the Board. You will therefore please to send down an other [sic] by Young Hovey or any body [sic] who comes down first.

HB.

⁹⁷ One of the partners at the Tuscarora mill providing hydraulic cement--i.e. the "waterlime".

⁹⁸ Possibly referencing the 'Eaton Affair' or 'Petticoat Affair' which would later lead to the resignation of Jackson's entire cabinet.

⁹⁹ Lockhouse 18 at Lock 26 (Hahn mileage 39.37), later known as Milk Lock and Wood Lock at different times.

¹⁰⁰ Lockhouse 19 at Lock 27 (Hahn mileage 41.46,) later known the Spinks Ferry Lock.

¹⁰¹ Mr. Clement Smith was treasurer for the C&O Canal Company from July 5, 1828 to July 7, 1834 (Unrau, HRS, 624).

[Wright to Ellet, Feb. 5, 1830
RE: Estimate for Osborn's work]

COVER:

C. Ellet Junr. Esq.
Ass. Engineer
At Monocacy—

Georgetown Feby 5 1830

Dir Sir

I wish you to make out with all possible speed an estimate for work I owe on the aqueduct in labor and materials by A P Osborn.¹⁰² —

Please therefore send this down by the first opportunity as Mr O. [Osborn] wants money and ought to have it to forward our work — We ought to push that work rapidly

With Esteem yours
B Wright

C. Ellet Jr. Esq.

¹⁰² Asher P. Osborn was given the contract for the Monocacy Aqueduct on Dec. 9, 1829 after Hovey's company abandoned it in late November. Osborn himself reassigned it to Byrne's company on Aug. 7, 1830, subsequent to the discovery in July that the Nelson Quarry stone was not sufficiently strong (Unrau, HRS, p. 239).

[Cruger to Ellet, Feb. 9, 1830
RE: Preparation for reletting
of abandoned sections]

COVER:

Mr. Chas Ellet Jr.
Assistant Engineer
5th Residency
C. & O. Canal
Mr. Hellriggle¹⁰³

4th Residency C. & O. C.
9th Feb 1830

Chas Ellet Esq^r
D^r Sir

Preparatory to a reletting, of all the abandoned work between Seneca & the P^t of Rocks, which will take place in 2 or 3 weeks, I am instructed by the Board of Directors to procure a statement exhibiting the abandoned sections of the Canal & also a list of the culverts not commenced or not contracted for, with the probable amount of Perches of arch work, abutments, wings & dry walls in each.

In order for estimate, with accuracy the latter, it will be necessary to take levels upon the bed of stream, & form your opinion, when then, of the additional depth, it will be expedient to sink the abutments to procure a safe foundation. – In your enumeration of the sections to be relet, it is desirable that the situation of each section should be briefly stated – i.e. whether the excavation is in part executed or not, or if the surface is only scraped off and to what depth, & also if the material remaining is more difficult to remove than that previously taken out or not. This applies [sic] to the 5th Residy [Residency] of which I have been appointed Res^t Eng^r [Resident Engineer] during the continuance of Mr Böye's¹⁰⁴ indisposition. – I intend to be with you early next week, to which time I have post poned [sic] a further consideration of this subject as well as some others. I request however that this statement be prepared by that time or such part of it as your time will enable you to execute & oblige yours very respectfully Alfred Cruger, Res^t Engr [Resident Engineer] protem.

¹⁰³ Hellriggle is unidentified.

¹⁰⁴ Böye was the resident engineer on the 5th Residency but had become ill and was unable to carry out all his responsibilities. It should be noted that he continues to correspond with Ellet concerning the work.

[Böye to Ellet, Feb. 12, 1830
RE: Estimates]

COVER:

Cha^s. Ellet Jr. Esq.

Mouth of Monocacy

By Mr. Seymour¹⁰⁵

Georgetown Feb^y. 12th 1830

Dear Sir,

Your letters of the 7th ins^t. [instant] with the enclosed estimates and papers have come safe to hand In addition to these we wish to obtain a memorandum of the various estimates which Hovey received for ringstone during last summer — These estimates were never laid before the Board, but I believe Hovey received \$300 on acct [account] of Culverts. A single line in your letter will, as well as I remember, give the whole content of each Estimate except that of L. [Little] Tuscarora. Do not omit to specify the number of each Culvert. Did you intend to include the 26 Ringstones for the L. [Little] Tuscarora in the mem^m. [memorandum] for each pattern, or are they exclusive of the list furnished on the 1st Page of y^r [your] letter. † Judge W. [Wright] wishes moreover to have a copy of the Estimate given to Hovey's subcontractors—. This Estim: I do not remember of having ever seen.— †

[Assuming the dagger refers to the text on the left side of the paper, it states:]

†I perceive you have 32 of Large Patterns. Roark¹⁰⁶ I remember marked some Stones with L. [?] Were they intended for Broad Run on the 4th Residency.—

It will be indispensable to open a separate account with the present contractors for the Aqueduct, unless they would agree to have the whole business transferred over to them which I do not suppose they would, consent to as they, (or in fact Mr Osbⁿ.¹⁰⁷) [Osborn] would be apt to be puzzled by H^s [Hovey's] creditors after having assumed the responsibility of his (Mr H^s [Hovey's]) engagements.—

I understood from Mr. Krüger [sic, Cruger] that his having any [p.2] thing to do with the 5th R^y [Residency] originates with Mr. Mercer,¹⁰⁸ who asked Mr. C,¹⁰⁹ [Cruger ?] if he had any objections to which the reply was “No”.- What Mr. M^s. [Mercer's] reasons were I could perhaps divine, but the arrangement is but of little importance. — Entre nous – Contractors will always grumble.

¹⁰⁵ Seymour is unidentified.

¹⁰⁶ No information has been found on Roark.

¹⁰⁷ Asher P. Osborn took over the contract after Hovey abandoned his in Dec. 1829.

¹⁰⁸ Charles Fenton Mercer, president of the C&O Canal Company from June 1828 to June 1833. He was also a Virginia Congressman and from about 1816 on, a proponent of a continuous canal up the Potomac Valley.

¹⁰⁹ Engineer Alfred Cruger.

You ask ‘when will I be able to get up to the 5th [residency].’ Really I do not know what to answer. When about 2 weeks ago, I moved from W.¹¹⁰ [Washington?] to this place I thought of taking advantage of the first moderate spell of weather, since then I have been sorely afflicted with sore throat and cold which I am sorry to say has settled (or affected) at present on my lungs and occasioned a slight spitting of blood – how it will terminate god only knows. So you see I have to go through a regular apprenticeship [sic] in matters of deceases [sic diseases]; still I try to keep up good spirit, though some times the blue d^s [demons or devils] will make their appearance.

If I had not been troubled with cold lately the patterns you mentioned would have been nearly all completed by this time. I believe Mr. L.¹¹¹ [Lafferty?] has done nothing in consequence. I will endeavor, before long, to have something done.

Having now, I believe, answered your queries in the order they were propounded, I will conclude by assuring you that, I remain as always yours oSt[? — for “obedient servant”?]]

in haste H Böye [sic]

P.S. You say that some of the Ringstones have been inten **[pg. 3]** tionally [intentionally— word is divided between pages 2 and 3] injured & some of which have in consequence been condemned. Let me know if any deduction ought to be made, as to the remainder, which you say may answer.—

Presuming that you may want some blanks particularly for Estimates, I send you a small parcel of ~~a~~ by Hovey.

I discovered in Millerd’s¹¹² [sic – Millard’s] Estimate an error in the Item of Walling; instead of \$359.95 it ought to be \$615.62 ½ which will make the total amount please to make the correction in the book of estimates.

Tell Mr. Trundel¹¹³ [sic] that I have Dr. Byrd’s¹¹⁴ receipt here. Should it be deemed necessary I can forward it though I would prefer to deliver it to himself should he come down shortly.

I find nowhere the whole amount of excavation of the Culvert Pit. There was some work done after I was there but how much I do not know as I believe it was the last time I was there. It might have escaped me had it not been for Hovey who put me in mind of it. If you should have no notes at present which would enable you to know the level of the surface of such points as you took you will find them in my book somewhere in the backpart [sic]. I expect Canfield¹¹⁵ will get the finishing of Lafferty’s Lock¹¹⁶. — Mr. Hovey has just told me it is likely that he will not be able to go up in which case a Mr.

¹¹⁰ Presumably referring to the City of Washington.

¹¹¹ It is unknown to whom this refers. Perhaps Mr. Lafferty of Lafferty and Boland, the partnership that had the contract for locks until they abandoned them in Jan./Feb. 1830.

¹¹² A. H. Millard was assigned the contract for Sections 33 and 66 on Aug. 20, 1828 (Unrau, HRS, p. 255). He is mentioned along with McIntosh and Canfield in Böye’s letter of Dec. 16, 1829.

¹¹³ Perhaps David Trundle. Referred to again in the note at the bottom of this page but that had been written along the side of the original letter.

¹¹⁴ Dr. Byrd is unidentified.

¹¹⁵ D. Canfield in Feb. 1830 took over the contract for Lock 27 originally given to Lafferty & Boland.

¹¹⁶ Lock 27. The contract was given to Lafferty and Boland Oct. 25, 1828, but they abandoned it in Feb. 1830 (Unrau HRS, p. 230).

Seymour¹¹⁷ takes charge of this; but in order to get your papers sent down as soon as possible Mr. H. [Hovey] thinks you had better to see VanAlstein¹¹⁸ [sic] who has frequent opportunities of sending down.

[Written on the left hand side of page 2:] How much did D Trundle get for the Stone used by M & Thomas¹¹⁹ for the Lockhouse by the Ton or Perch? I want to know it as I promised him to see him [?] for what H [Hovey] might use for the Culverts.

¹¹⁷ Seymour is unidentified.

¹¹⁸ Alexander Van Alstine was a lawyer representing Hovey, the original contractor on the Monocacy.

¹¹⁹ Thomas & Munroe were given the contracts on Dec. 11, 1828 for the lockhouses at Locks 6, 25, 26, and 27 (Lockhouses 4, 17, 18, and 19 respectively). While they finished those at Locks 25, 26, and 27 in 1830, that at Lock 6 was relet in the spring of 1829 to Richard Grosline. In the summer of 1830 Thomas & Munroe acquired the relet contract for the lockhouse at Lock 23 but that contract too was relet to others in the fall of 1830 (Unrau, HRS, pp. 243, 245).

[Böye to Ellet, Feb. 20, 1830
RE: Payment to Hovey & Legg
and Monocacy ring stones]

COVER:

Chas. Ellet Jr. Esq.

At D^d. Trundle's¹²⁰ Mouth of Monocacy

Georgetown Feb 20th 1830

Dear Sir,

If you have not had an opportunity to send the papers down I wrote for in my last, I wish you will forward them by mail immediately. There is an Agent here from Hovey¹²¹ who urges an immediate settlement very strenuously; alleging as a reason that both Hovey and Legg are suffering in character & purse while the business remains in this state.

The patterns for the Ringstones of the Aqueduct will be (if they have not already been) forwarded shortly. I proposed to Judge W[right].¹²² & Leckie¹²³ to have 45 instead of 41 Ringstones, on account of its being a better proportion and easier obtained, which they agree to. The intrader [sic intrados] of the Key Stone is 18 inches. My health continues about the same as when I wrote you last. I still spit blood.

In haste yours as always

H Böye

P.S. I received this moment your letter of the 17th ins^t. with the enclosed papers. In yr. mem^a. [your memoranda] of Hoveys [sic] Estim. [Estimate] for culv. [culvert] I do not find Culvert 64 on Sect. 67 which, unless my memory decives [sic] me, was estimated There was no stone cut for any Culvert on Sect. 66, previous to my leaving you. Millard¹²⁴ had the refusal. These things however are unimportant in settling with Hovey if we only have the number of the whole he has been cutting.

The person who is to carry this is waiting & I am obliged to conclude without answering the inquiries [sic] contained in y^r. [your] letter which, however I will do in a few days.

H. B.

¹²⁰ From entries in Ellet's letters to family members, he apparently had a room and board arrangement to stay with David Trundle.

¹²¹ The initial contract for the Monocacy was given to Hovey & Legg in Aug. 1828, but they abandoned it in December 1829. Although this letter says "Hovey & Legg", Unrau indicates that a Hitchcock was substituted for Legg in Oct. 1828 (Unrau, HRS, p. 239).

¹²² Benjamin Wright was chief engineer on the C&O Canal from June 1828 to November 1830.

¹²³ Robert Leckie was Inspector of Masonry from the fall of 1829 to Aug. 14, 1830.

¹²⁴ A. H. Millard was assigned the contract for Sections 33 and 66 on Aug. 20, 1828 (Unrau, HRS, p. 255).

[Mercer to Ellet, Feb. 20, 1830
RE: Tuscarora quarries on Carroll's land]

[NO COVER]

Washington Feb. 20 1830

D Sir

The Board of Directors having bargained with Mr Charles Carroll of Carrollton¹²⁵ for the use of certain quarries of lime stone, on his land, and with Messrs. Brackett and Guy,¹²⁶ for the manufacture of 40,000 bushels of Hydraulic lime, for our aqueducts, culverts, and locks, it is necessary, that Mr. Carroll's tenants be informed and that the President and Directors have Mr. Carrolls permission (dispensing with the intervention of a jury,) to bargain with any of them, who may be affected by the under-taking of Messrs. Brackett and Guy, for each compensation or indemnity, for entering, and passing in and out of their fields or grounds, as may be reasonable: the compensation to go to the tenants.

As the President and Directors are to pay such compensation, it is necessary, in order to gain their [pg.2] interest, that some agreement should be made with the tenants, before Messrs. Brackett and Guy commence their operations; or that the measure of indemnity be left to future determination, either by reference to disinterested referees, as to a jury under a writ ad quod damnum.¹²⁷

Be pleased, therefore, to see the tenants, with as little delay as possible, and, learning from them, the places, from which the lime stone is to be taken, know which of these courses, they prefer, and especially engage that Messrs. Brackett and Guy shall be, as Mr Carroll desires, permitted to go to work on their lands, without delay. Aprise [sic] them, as I now authorize you to do, that, for any damage done them, by Messrs. Brackett and Guy's, operations, in quarrying, burning, grinding and delivering. The ????? lime, they shall be justly and fully indemnified. I am, respectfully,

Your Obd. Sevt. [Obedient Servant]

C. F. Mercer

Pres^t of the Ches and Ohio
Canal company

¹²⁵ Charles Carroll of Carrollton (1737–1832) was the last living signer of the Declaration of Independence on July 4, 1828, when both the B&O Railroad and the C&O Canal had their ceremonial beginning. Carroll dug the first shovelful for the railroad, which he strongly supported. He owned Carrollton Manor, a large estate in Frederick County through which the canal ran and that included limestone from which lime was milled. The hydraulic cement produced from this stone proved to be of inferior quality.

¹²⁶ Operators of the Tuscarora Mill.

¹²⁷ A writ that provides for an inquiry into damage.

[Mercer to Ellet, Feb. 21, 1830
RE: Mathematical equations]

COVER:

Postal stamp:
City of Washington
Feb. 21¹²⁸ [1830]

Free [handwritten]
C.F. Mercer
M.C. [Member of Congress]
FREE [stamped in red ink]

(with the PM
At Monocacy-
Please send this
Letter to Mr. Ellet as
early as convenient

Charles Ellet Esq
Assistant Engineer
Ches & Ohio Canal
Mouth of Monocacy
Montgomery County Md

NOTE: The significance of the computations on the document is unknown and have not been transcribed.

¹²⁸ Date must be 1830 as postal stations along the canal were not established until the winter of 1829–30.

[Böye to Ellet, Feb. 22, 1830
Re: Monocacy and Culvert 70]

COVER:

Cha^s. Ellet J^r. Esq^r.

At Dav^d. Trundles.

Mouth of Monocacy

Georgetown Feb. 22nd 1830

Dear Sir

In regard to the inquires contained in your last of the 17th ins^t. [instrument], it appears to me that, as respects the account of Hoveys¹²⁹ & Osb' [sic Hovey's & Osborn's] work, it will be best to open a new account for the present concern; but at the same time (after having ascertained, as correctly as the nature of the ~~work~~ case will admit of, the amount of work done by Hovey) to transfer from the account of the former contractors, to that of the present one or ones, every item which has been placed to the credit of Hovey & Legg¹³⁰ and add them to such corresponding ones in the first estimate to Osbor^e [Osborne].¹³¹ as he may be entitled to. On this Estimate you will make an explanatory remark, showing that the amount of work done by H.&L.[Hovey & Legg] is included. As you have already given M^r. O. [Osborn] an Estim^t [Estimate]: You can in your next adopt this plan. I need not mention that you will, as a matter of course ~~xxx~~ subtract the amt. of H[ovey's]. last Estim[ate]: & that of O^s [Osborn's] in order to obtain the balance due him in his next.

Judge W:¹³² [Wright] to whom I mentioned this subject, is of opinion that the above made will produce some confusion (he thinks a final Estim[ate]. must first be made) and that Mr. H. [Hovey's] son in law (his agent) had better to make some arrangement with the present Company to assume the responsibility of the former Concern; but, Mr. O [Osborn] is now in N. York I believe, besides I am confident that such an arrangement would not be acceptable to [p. 2] to [word repeated] M^r O him without a proper consideration from H.&L. [Hovey & Legg] which of course is out of question. In this case we merely want the correct quantities, and as to prices, those in the scale must be applied, which however would not offer any value to the coffer dams; but even as respects such items it is plain that this Estimated price for Hovey must be used — no matter if he should in his final Estimate be allowed \$1000 a piece. The prices for Iron & excavation are ~~xxxxx~~ fixed by contract, hence will be the same as in the final Estimate. But you have written the 290 y^ds [yards] of Ex^c: [excavation] for the E. Abtm. [East Abutment] in the

¹²⁹ Hovey held the first contract on the Monocacy Aqueduct and abandoned it in December, 1829.

¹³⁰ Legg was initially indicated as Hovey's partner on the Monocacy contract let in August 1828, but Unrau (HRS, p. 239) notes that in October Hitchcock was substituted. Nevertheless, these letters continue to refer to Hovey & Legg.

¹³¹ Asher P. Osborn held the contract for the Monocacy Aqueduct beginning on Dec. 9, 1829. On Aug. 7, 1830 it was assigned to Byrne and LeBaron.

¹³² Benjamin Wright, first chief engineer with the C&O Canal Co.

Estim [Estimate] which must be introduced as that quantity of work has been done although it may not have been p^d[paid] for by H.&L.[Hovey & Legg] –

I am sure that although I may not have been successful in explain my ideas above very clearly you will be at least able to guess at what I mean.

I am glad you mentioned the subject of Headers as respects the proportion they ought to bear to the number of Stretchers. Since Lafferty's¹³³ final settlement I have continually intended to write you respecting the deduction that should be made but it always escaped my recollection. At that time I spoke to Judge W. about the propriety of adopting some coercive measure which would induce contractors to comply better with the contract stipulations as regard the proportion of Hs &c. when it was agreed that a deduction of 25 [p?—abbreviation for “pence”?] ought to be made, it being presumed that the quarrying of Headers was worth that much more than Stretchers, which you will please [p.3] to apply in your future estimates of Stones for the Aqueducts or Culverts. It would be proper however to inform the contractors immediately that this regulation will be rigidly enforced, that they may have time to repent if they are so disposed.

There is something still I do not understand respecting the excavation of the Culvert Pit No. 70.¹³⁴ When I estimated the 600 yds. about the 24 or 25th of Aug. last y^r [year]. the Pit was not finished by a good deal yet I find the whole amt. to be only 685 C.Y^{ds} [cubic yards] which you can not mean to apply solely to the work done by the Subcontractors as they could only have been excavating from the Pit to the Creek & to the river; however may [sic, my] memory may deceive me[†]. As well as I remember there was about [?hole in paper] 17 ft. cutting for the upper half of the Pit. (the nat^l. [natural] soil I believe was about 4 ft ~~xx~~, ~~Bottom~~ lower part of inverted Arch about 21.5 or 22 ft. Below Bottom) and if we only assume 22 ft. as over width, 16 ft. depth & 55 ft. length for upper half of the Pit it will give more than 700 Cub. Y^{ds} [cubic yards]. I wish you would go over the matter and see if there ought to be more excⁿ. [excavation] Allowed for that Pit.

I wish you will also state the quantity of ~~dry wall~~ in the inverted Arch & how many Perches¹³⁵ of Stones that you suppose Hovey delivered which went into that work. There was no stipulated price for the inverted Arch & the subcontractors will therefore be entitled to whatever price is allowed but still Hovey must be paid for what stone he delivered which was appropriated for that part. This letter will probably be sent by Mr. Ingle¹³⁶ who I understand goes up to Monac^y [Monocacy] to morrow [sic].

You know before this no doubt, (as respects one at least) who grumbled; his reasons were however as he stated to ascertain whether he was gaining or loosing in which latter case he would quit.

Yours as always H. Böye

[Written along the side:]

¹³³ Lafferty & Boland were awarded on Oct. 25, 1828 the contracts for Locks 25 and 27. Unrau indicates that they abandoned the contracts for the locks in January/February 1830 (p. 230) however these letters suggest they has stopped work on the locks in Dec. 1829.

¹³⁴ Located at Hahn mileage 42.44, 2.14 miles below Nolands Ferry.

¹³⁵ A perch of stone is 24¾ cubic feet, or a section of wall 16½ feet long (1 perch), 1½ feet thick, and 1 foot high. Sometimes considered to be 25 cubic feet.

¹³⁶ Ingle was secretary for the canal company from July 3, 1828 to July 9, 1840.

†On a little reflection I expect that the 685 yds & 75 yds Emb^t. [embankment] was done by Chas. Owen¹³⁷ in which case the question is only how much Excavation was there in digging the Pit. Moreover how many Perches of Stone were delivered by Hovey above what was used in laying the 74 Perches of Masonry.

¹³⁷ Charles Owen was likely a subcontractor in this case, but may also have been the Owens in the firm of Higgins and Owens that had the contracts for sections 49–52.

[Mercer to Ellet, March 6, 1830
RE: Ellet's resignation]

COVER:

Note: sealed with Mercer's personal seal.

Chas. F. Mercer
March 6, 1830.
Concerning [?]

Charles Ellett [sic] Esq
Asst. Eng^r. Of the
5th Res. [?] [?]
Ches. & Ohio Canal
Mr. C. F. Garnett¹³⁸

Washington March 6th

1830

Dear Sir

I regret, on every account, but your own, that you propose leaving the service of the Company, over whose direction, I preside. The considerable desire which carries you to Europe, I would not, however, repress, if I could; and our difficulty will be known in the way of your departure at the time you propose.

By the 20th of this month, at most, a successor will be appointed to relieve you, and, as soon, as you have made him acquainted with the state of the Monocacy, you will be, at liberty, to depart with my best wishes for your success in life, and such aid, as I can afford to you, vis a vis, in going abroad, by introductions to our ministers in England and France.

With respect,

I am,

D^r. Sir,

Your Obt Servt.

C. F. Mercer

Charles Ellett [sic] Esq.
Ass^t. Engineer of the 5th Res^y.
of the Ches & Ohio C^a. C^o

¹³⁸ Charles Fenton Mercer Garnett was a nephew of Charles Fenton Mercer, and was apparently working as a rodman on the C&O Canal at about this time. He later became a civil engineer associated with several major projects.

[Böye to Ellet, March 8, 1830
RE: Ellet's departure]

COVER:

Chas. Ellet J^r. Esq^r.

Mouth of Monocacy

Fav. of

M^r. Garnett¹³⁹

Georgetown March 8th 1830

Dear Sir,

Your favor by Mr. Garnett, came to hand last Saturday.

Although you have frequently mentioned your intentions of going to France, I did not think you would have resolved to set out so soon. I should have been pleased if you could have continued – I think I can divine some of the reasons which induce you to take this step now,¹⁴⁰ but more of that when I see you, which, if I continue to improve in strength as much as I have done lately, will I hope be about 1 or 2 weeks. My health, however, is still vacillating.

I was informed Saturday morning [2 days prior] at the Canal office by Mr. Mercer,¹⁴¹ (who I saw for the first time since his return from Va.) that you had resigned, he was then going out but told me that he would return immediately when he wished to have some conversation with me relative to your successor; He did not come, however, nor have I seen him since. As yet there has been no appointment. Judge Wright¹⁴² talks of Mr. Scofield¹⁴³ the present Assistant to Van Slyke¹⁴⁴. You know there is not much harmony between them, neither is Mr. S. [Scofield] much liked by contractors, if report speaks true.¹⁴⁵ I understand from Mr. Ingle¹⁴⁶ this morning that there is some uncertainty about that arrangement as probably Mr. M. [Mercer] would dismiss him; the later [sic] he how-

¹³⁹ Charles Fenton Mercer Garnett was a nephew of Charles Fenton Mercer, and was apparently working as a rodman on the C&O Canal at about this time. He later became a civil engineer associated with several major projects. See end of letter for comments

¹⁴⁰ Possibly Böye was alluding to Cruger's assignment to the 5th Residency that was perhaps an issue for Ellet, or to the state of the company's finances and legal issues with the B&O that made the future of the work uncertain.

¹⁴¹ Charles Fenton Mercer, president of the C&O Canal company.

¹⁴² Benjamin Wright was chief engineer from June 1828 to Nov. 1830.

¹⁴³ Assistant engineer to Daniel Van Slyke, resident engineer on the 2nd Residency.

¹⁴⁴ Daniel Van Slyke, appointed resident engineer on the 2nd Residency Nov. 22, 1828, and then, in addition, superintendent of the first operating section of the canal (from Dam 2, which opened Apr. 2, 1831) until he was replaced due to illness on July 31, 1831. Dam 2 was at mile 22.35. Its inlet lock was down river a little ways at mile 22.12, right beside Lock 22 (known today as Violettes Lock).

¹⁴⁵ Unrau, in his HRS on the canal notes on p. 37 the "fractious infighting" between and among the administration and the engineers, and references a letter from Van Slyke to Mercer as an example of engineers approaching Mercer and/or the Board directly, over the head of Chief Engineer Benjamin Wright (who leaves the C&O on Oct. 1, 1830).

¹⁴⁶ John P. Ingle was clerk of the C&O Canal Company from July 3, 1828 to the summer of 1840.

ever merely intimidated. I wish that you will mention this to nobody as it is not known how the quarrel with [p.2] V. Sl. [Van Slyke] will terminate. I propose, you say something of my having shown yr. letters to Lafferty.¹⁴⁷ I am very positive that I never did such a thing, either to him or any other contractor; nor ~~I~~ have I made mention of any thing of such a nature to him or any body else. Whoever has given you this information has stated a falsehood. If ever I have read (or spoken of the contents of) any part of your letters it has related to business solely, but never would I think of disclosing any thing of a nature which would aggravate [sic] irritated feelings.

I remember distinctly that Lafferty, one morning made a remark similar to that you mentioned, but whether the Letter he alluded to was for Mr. Ingle or Judge W. [Wright] I do not know; he was at the time much vexed because he had received no Estimate.

I think that there will be nothing to prevent you from setting out by about the 1st of April. I should think however you had better to wait till the Equinoxial storms are well over. You can have no difficulty in finding opportunities as there are 4 packets from N. Y & 3 from Ph^a. [Philadelphia] for [Le] Havre¹⁴⁸ regularly every month.

It was the intention of the Board to have Mr. Williams¹⁴⁹ as your successor, but Judge Roberts¹⁵⁰ wants him with him.

Yours as always in haste
H Böye

¹⁴⁷ Contractor from the firm of Lafferty and Boland that had the initial contract on Locks 25 and 27 and Sections 25 and 27, which they abandoned.

¹⁴⁸ Le Havre, Haut-Normandie in France is the major port city at the mouth of the Seine River from which Paris is about 120 miles inland, following the Seine.

¹⁴⁹ Williams first name is unknown but records indicate he was moved to the 2nd Residency under Van Slyke.

¹⁵⁰ Likely Böye means the engineer Nathan S. Roberts who was never a judge, unlike Wright who was a judge.

[Ingle to Ellet, March 10, 1830
RE: Ellet's resignation and
work on the canal]

COVER:

[Note added by Ellet:

Jn. P. Ingle

March 10 – 1830

Relating to my resignation –]

Charles Ellet Jr. Esq^r.

Assistant Engineer

Ches & Ohio Canal -

5th Residency -

Canal Office Washington

March 10th 1830

M^r Williams¹⁵¹ will resume his station of Assistant Engineer in the Second Residency and for that purpose report himself to the Resident Engineer Mr. VanSlyke.

M^r Scofield the present assistant on that Residency will take place as assistant Engineer on the Fifth Residency in room of Mr. Ellet who retired at his own request from the service of the Chesapeake and Ohio Canal Company.

The President of the Company in accepting as he does, with regret, the resignation of his station by Mr Ellet, avails himself of the occasion to express his entire satisfaction with the conduct of Mr. Ellet in the service of the Company as well while acting as the Assistant of Dr Martineau¹⁵² in locating at a very unhealthy season, the entire line of canal below the point of Rocks, as since he entered on the performance of his duty as assistant of Mr Böye [sic] on the Fifth Residency.

By order of the President of the Company

John P. Ingle

Clerk C & O C Co.

Charles Ellet Jr. Esqr

¹⁵¹ Williams was mentioned by Böye in his Mar. 8, 1830 letter as the board's choice to replace Ellet although "Judge Roberts wants him with him." However, according to this letter Williams was assigned to the 2nd Residency under Van Slyke, the resident engineer. Van Slyke had been assisted by Scofield but the two had a contentious relationship, which may explain why Scofield, not Williams, was moved to Ellet's position. Ingle's use of the word "resume" here suggests that Williams had previously been assigned to work on the 2nd Residency.

¹⁵² John Martineau had served on the Erie Canal with Wright and worked on the C&O only until June 1829 (Unrau, HRS, 42) Primarily he seems to have done surveys and provided the first design for lockhouses. In August 1828, Wright and Martineau surveyed the route from Lock Cove where the Little Falls Potomac Co. canal dropped down to the river, to Rock Creek, a distance of about 3.15 miles, the lower mile passing through Georgetown (Unrau, HRS, 182). After leaving the C&O, Martineau was hired by a committee in Frederick, Maryland to survey the Monocacy for a canal (Unrau, HRS, 646).

[Böye to Ellet, March 13, 1830
RE: Ellet's Replacement]

Char^s. Ellet Esq^r.
At David Trundles near
Mouth of Monocacy,

Favor of
Mr. Scofield

Georgetown March 13th, 1830

This will introduce to your acquaintance M^r. Scofield who has been appointed your successor, by the Board. You will please to offer M^r. S. such aid and information as he may want to enable him to discharge his duties correctly, which I am sure you will take pleasure in doing.

I have in my instructions to M^r. S. requested him to perform some work on Section 55 as soon as he possibly can, the nature of which & the reason why you will learn from M^r. S. — I thought it would be fully as agreeable to you. You will, however be good enough to give him your aid and advice should he need it.

I had intended to have written you in regard to certain facts which have lately transpired but as you are going away so shortly, I will reserve them for a verbal communication.

Believe me as always y^r. friend
H. Böye

[Böye to Ellet, March 17, 1830
RE: Monocacy ringstones and Böye's illness]

Char^s. Ellet J^r. Esq^r.
Mouth of Monocacy

Georgetown March 17th 1830

Dear Sir,

Your favor of the 13th ins^t. has been duly received.
I could not find M^r. Billington. The Ringstones are to be rusticated 2 inches. See the annexed figure.

Although it is desirable to have perfect points the whole extent of the sides it will not be insisted upon. M^r. Leckie says he will arrange it when he gets up.

The ringstones are to extend into the body of the Arch.

M^r. Leckie will order the [wa]¹⁵³ter line. — I send you some papers by W. Gar[nett]¹⁵⁴ besides my books & my hat. [Illegible]¹⁵⁵ording to the specifications the Ringstones & sheeting are to be 3 & 6 ft. long; perhaps 3 & 5 would be full as well.

While I was writing the commencement of this letter I was attacked by a fit which kept me several hours on the floor in a senseless state. My face is considerable bruised in consequence of my falling from the chair.

In haste yours & *e*¹⁵⁶

H Böye

¹⁵³ There is a lacuna due to a hole in the paper at this point. Several letters are missing but "waterline" is the likely reading.

¹⁵⁴ The hole in the paper obscures part of the name but it is certainly that of Mercer's nephew, Charles Fenton Mercer Garnett.

¹⁵⁵ A flaw due to the sealing wax on the reverse makes several letters illegible here.

¹⁵⁶ The swooping symbol after the ampersand likely stands for "etc."

[Mercer to Ellet at Bristol, PA, Feb. 17, **1832**
RE: Offer of a position on the C&O]

COVER:
C. F. Mercer
Feb. 17, 1832

Washington, D.C.
Feb^y 17, 1832

Dear Sir

I received, with much pleasure, your interesting letter from Bristol where I hope this will find you.

It has been very lately only, in my power to do more in reply than to congratulate you on your return to your native country which I trust your future labors, especially the knowledge you have acquired abroad, will enable you to improve, to the benefit of your own reputation.

I am now authorized by the regulations of our Engineer Corps and the special wishes of our Board of Directors to offer you the place of Assistant Engineer which you vacated to go to Europe with a salary of one thousand dollars a year and to that offer I add that should I have it in my power¹⁵⁷ after the present year to aid your promotion to the superintendence of a residency[.?] I have no doubt your ability and zeal [in the?] company's service will enable as my own inclination will prompt me to do so.

Should this offer meet your approbation you will have the goodness to repair to Washington without delay ~~xx-xx-xx~~ Your position on the canal if you return to it will be above Harpers Ferry, and probably above Shepherdstown, in a more healthy country, and far better society than you have hither to found on the Potomac. And that Mr. Thos. F. Purcell, the engineer of our first residency that which began you will remember at Georgetown will be your only superior and the Resident Engineer or your portion of the canal. Our Board of Engineers has been for some time, dissolved¹⁵⁸ and A. Cruger¹⁵⁹

¹⁵⁷ Mercer's sense of his weakening political power is apparent in this statement. Unlike the presidency of John Quincy Adams, that of Andrew Jackson was opposed to Mercer's system of "mixed enterprise" that combined both government and private investment in companies such as the C&O Canal Company. Additionally, Mercer had been one of those who in 1819 had urged Congress to censure Jackson for his invasion of Florida in the first Seminole War. That had made Jackson's antipathy for Mercer personal as well political. A year and a quarter after this letter, the C&O Canal Company stockholders at the annual meeting replaced Mercer as company president with Jackson's friend John Eaton. The election may have been rigged, but it was certainly an effort by the stockholders to placate Jackson by providing a position for Eaton whose involvement with Peggy O'Neal had led to the "Petticoat Affair" and brought down Jackson's cabinet in which Eaton had been Secretary of War.

¹⁵⁸ It is notable that four years after construction began, the company had reduced its initial engineering corps of 18 men down to three. This was indicative of the growing financial difficulties and the effect of the legal action with the B&O Railroad that had halted construction by both companies above Point of Rocks (mile 49). It was not until the month prior to this letter that Maryland's court of appeals had recognized the canal company's first rights to the Potomac shore, freeing it to use the narrow passages above Point of Rocks that the companies had argued were inadequate for both of them.

and T. F. Purcell¹⁶⁰ are our only Resident Engineers. Mr. Fisk is the Assistant of Mr. Cruger.

Expecting shortly to hear from, or to see you

I remain d^r sir

with sincere esteem

your obt. Servt

C. F. Mercer

P^t [President] of the Ch. &

Ohio

C[anal] Co

Chas. Ellet Esq

¹⁵⁹ In the Nov. 22, 1828 engineering appointments, Cruger was listed as the resident engineer of the 5th residency with Ellet as his assistant. He would leave the canal in the late spring or early summer of 1834.

¹⁶⁰ In the November 22, 1828 list of engineering appointments, Thomas F. Purcell is shown as the resident engineer on the first division from Rock Creek to Lock 8. In 1832 he was placed in charge of the newly opened section of construction from Point of Rocks to Dam 4. Later he worked Dam 4 and was in charge of the survey that revising the line of the canal from Dam 6 to Cumberland. He resigned in March 1836 after a series of clashes with engineer Charles B. Fisk over the design of locks, dams, and the canal prism.

[Benjamin Wright, Sept. 5, **1833**
RE: Letter of Recommendation]

To Whom it May Concern –

The Bearer Hereof M^r Charles Ellet Jun – a Civil Engineer has been known to me for many years and was an Assistant for nearly two years on the Ches & Ohio canal with me.

Since which time he has been thru' Europe and examined all their public works in France and England and more particularly Rail Roads – I esteem him as a Gentleman well qualified to manage a Rail Road & believe his integrity and honorable conduct while with me as a voucher for the same course, in any place he may be put to fill

Benj Wright
Civil Engineer –
New York Sept 5th 1833

APPENDIX III:

Individuals Referenced in or Relevant to the C&O Letters

NOTE: The letters listed with the names are by the person, contain a reference to the person, or contain information to which the individual is highly relevant. Bibliographic information on Unrau's *Historic Resource Study* (HRS) that is referenced frequently in this appendix can be found in the Bibliography following the Appendixes.

Alcott, James

Said to be of New York, he was the partner with Inspector of Masonry Robert Leckie on the Tuscarora cement mill.

See letter: Jan. 13, 1830

Bennett, Thomas

Held contracts with Brackett for Locks 5 and 6, while Brackett held contracts with Hovey for Locks 7 and 8. Bennett was also in partnership with McIntosh on Sections 65, 75, and 76.

See letters: Dec. 5, 1829
Dec. 16, 1829
Jan. 3, 1830

Bernard, Gen. Simon (1779–1839)

An important French general who, after Napoleon's second abdication, was banished from France and emigrated to the United States, where, being made a brigadier-general of engineers, he executed a number of works for the government, and co-authored with Col. Joseph G. Totten and John L. Sullivan a U.S. Board of Engineer's report issued on Feb. 14, 1825 on the C&O canal proposal. The report stated: "*The obstacle to a communication by the Potomac route with the Western states, lessens to a point, compared with the greatness of the object, whether in a commercial or political relation to the prosperity of the country. In Europe, their canals, even those of Governments, have all some definite limited object of utility. But here it is not alone the distance—the elevation—the vast natural navigation to be connected, which constitutes the grandeur of the design; but the immense interests it combines into an harmonious national whole.*" General Bernard returned to France in 1830. It is frequently stated that he had a substantial role in the C&O Canal, but such a claim is a gross exaggeration. In his Dec. 22, 1829 letter, Böye notes that he is living near General Bernard's residence.

See letter: Dec. 22, 1829

Billington, Nathaniel

On June 10, 1829 the company had contracted with Nathaniel Billington to provide locust timber at 35¢ per cubic foot. (Unrau HRS, p. 188)

See letters: Dec. 16, 1829
 Jan. 18, 1830
 Mar. 17, 1830

Blodgett (unknown first name)

Blodgett & Co. held an early contract for Section 79 but abandoned it. He is mentioned by Böye in the Dec. 16, 1829 letter concerning an oral message he relayed from Ellet. In Ingle's letter of Dec. 16, 1829, he mentions that "Messrs Blodgett & Co. are willing to relinquish Sec. 79."

See letters: Dec. 5, 1829
 Dec. 7, 1829
 Dec. 8, 1829, Wright letter
 Dec. 16, 1829, Boye's and Ingle's letters

Böye, Herman (Nov. 16, 1792–Mar. 20, 1830)

A Danish surveyor engineer who emigrated in 1816, originally settling in Virginia. In 1827 he completed one of Virginia's most important sets of early maps: *The Wood-Böye County Maps of Virginia*. Böye originally was hired as the assistant on the 2nd Residency where Daniel Van Slyke was appointed as the Resident Engineer. However, Böye was subsequently moved to the 5th Residency as Resident Engineer with Ellet as his assistant. Sometime in mid-1829 he became ill and in his Dec. 16, 1829 letter to Ellet, he states: "If such arrangements, as I am making now in Richmond succeed, I shall probably quit this before long," suggesting that he planned to return to the Richmond area. His final letter to Ellet was written Mar. 17, 1830 and in it he describes a "fit" that had left him unconscious on the floor for several hours. A March 20 document from Mercer (not in this collection) states that "Böye is no longer with us." This may be a euphemism for Böye's death, however official documentation of the exact date and place of his death has not been found.

See letters: Oct. 23, 1829
 Dec. 4, 1829
 Dec. 7, 1829
 Dec. 16, 1829
 Dec. 22, 1829
 Feb. 4, 1830
 Feb. 12, 1830
 Feb. 20, 1830
 Feb. 22, 1830
 Mar. 8, 1830
 Mar. 13, 1830
 Mar. 17, 1830

Brackett, Ruben [?] [Also Bracket]

Brackett was a partner with Bennett on Locks 5 and 6, and with Hovey on Locks 7 and 8. Brackett also had the contract for Sections 67 through 70. Likely this is the Ruben Brackett in partnership with Wines, Brackett & Wines who had the contract for Lockhouse 14 at Lock 22—a company that was later reorganized under only Ruben Brackett (Unrau HRS, p. 244). Brackett and Guy were the operators of the Tuscarora cement mill with which the canal company signed a contract on Feb. 3, 1830 (Unrau, HRS, p. 168).

See letter: Dec. 7, 1829
 Feb. 20, 1830

Dr. Bradford

Böye mentions that he was residing at his house and being treated by him when he wrote his Dec. 22, 1829 letter.

See letter: Dec. 22, 1829

Dr. Byrd

Unidentified. Böye mention's that he has a receipt from Dr. Byrd for Mr. Trundle.

See letter: Feb. 12, 1830

Byrne, Michael (1792–1859)

Michael Byrne, an Irish immigrant, was a contractor on the Monocacy Aqueduct subsequent to Ellet's departure from the canal. Initially he was in partnership with William Byrne (believed to have been his brother) and Paul Provest. Although Michael won many contracts on the C&O Canal (under his name only or in partnership with others), the Monocacy was the most important. The original Monocacy contract in August 1828 was given to Hovey and Legg. On October 31, Hitchcock was substituted for Legg according to company records. When Hovey defaulted on the contract in late November 1829, Osborne and Legg took over the contract but on August 7, 1830, they assigned it to Byrne and LeBaron. By 1831 the canal company records showed the firm's name as LeBaron, Burns and Co. but the builder's stone placed on the berm parapet after the completion of the aqueduct in 1833, lists the contractors as M. Byrne, W. Byrne, and S. Lothrop (sometimes spelled Lathrop elsewhere).

Canfield, D.

Possibly the Canfield of Hurd & Canfield whose subcontractors R. & H. Fowler of New York won \$20 for being the first to complete a section of the canal. Possibly also the D. Canfield who in Feb. 1830 took over the contract for Lock 27 on Section 72, originally given to Lafferty & Boland. (Unrau, HRS, p. 188 and p. 230)

See letters: Dec. 5, 1829
 Dec. 7, 1829
 Dec. 16, 1829
 Feb. 12, 1830

Carroll, Charles

Charles Carroll of Carrollton (1737–1832) was the last living signer of the Declaration of Independence. On July 4, 1828, when both the B&O Railroad and the C&O Canal had

their ceremonial beginning, Carroll dug the first shovelful for the railroad, which he strongly supported. He owned Carrollton Manor, a large estate in Frederick County through which the canal ran and that included limestone from which lime was milled. The hydraulic cement produced from this stone proved to be of inferior quality and could not be used on canal structures.

See letter: Feb. 20, 1830

Cruger, Alfred

Cruger is one of the engineers included in the Unrau HRS section on the designers of the C&O Canal. In the summer of 1828 Cruger and W. M. C. surveyed the line of the canal from Georgetown to Harpers Ferry with Ellet assisting. Cruger was then listed as the resident engineer on the 5th Residency with Ellet as his assistant on Nov. 22, 1828. However, it appears that Cruger was moved at some point to the 3rd and/or 4th Residency (where W. M. C. Fairfax had been resident engineer on the former and Erastus Hurd on the latter). Also it is likely that at the same time Böye was promoted to resident engineer of the 5th Residency. The Dec. 9, 1829 letter from Wright to Ellet indicates that Cruger, beginning at that time “will have charge of your [Ellet’s] residency until Mr. Böye regains his health”—thus once again assigning 5th residency responsibilities to him. The Jan. 30, 1830 letter from Ingle to Ellet states that Cruger is the resident engineer on the 3rd Residency when also assigned to the 5th Residency. Other letters refer to him having responsibilities on the 4th Residency as well. Clearly during the late 1829 to early 1830 period Cruger’s responsibilities were diverse and apparently not clearly defined. Cruger was still on the canal in 1832 when Mercer offered Ellet, newly returned from Europe, a position on the canal. Sometime in the late spring of 1834 Cruger left the canal.

See letters: Dec. 9, 1829
Dec. 16, 1829
Jan. 13, 1830
Jan. 30, 1830
Feb. 9, 1830
Feb. 12, 1830
Feb. 17, 1832

Darrah, Captain

Unknown. Appears to be a contractor according to a reference in Böye’s letter of Dec. 16, 1829.

See letter: Dec. 16, 1829

Fairfax, Wilson M. C. (1799–1860)

Prior to being appointed Resident Engineer of the 3rd Residency on Nov. 22, 1828, Fairfax and Cruger surveyed the land between the canal and river from Georgetown to Harpers Ferry with Ellet assisting. In the summer of 1832, he participated in the surveys that located the site for the Georgetown abutment of the Potomac Aqueduct that would connect the C&O with the Alexandria Canal. From 1843 until his death in 1860, Fairfax served with the Coast Survey, becoming a topographical draughtsman described as one of the finest in the world.

See www.lib.noaa.gov/noaainfo/heritage_coast_surveyvol1/BACHE7.html

Fisk, Charles B. (June 14, 1806–Jan. 11, 1866)

In the Nov. 22, 1828 engineering appointments, Fisk was named as assistant engineer under Erastus Hurd. Fisk is the only original engineer who remains with the canal company throughout the construction years, rising to the rank of chief engineer, and eventually resigning in June 1852.

See letter: Feb. 17, 1832

Garnett, Charles Fenton Mercer (d. 1886)

Nephew of Charles Mercer, Garnett was the son of James Garnett and Mary Eleanor Dick who was a sister of Charles Fenton Mercer, first president of the C&O Canal Co. (1828-1833). Garnett was apparently a rodman on the C&O. He was a graduate of the University of Virginia and became “a distinguished civil engineer” according to the *Genealogy of the Mercer–Garnett Family of Essex County, Virginia* (p. 13 and p. 30). Online sources document his position as chief engineer of the Raleigh and Gaston Railroad in 1840; of the Western & Atlantic Railroad Jan., 1842–Dec., 1847; and of the Memphis & Charleston Railroad, concerning which he authored a report dated Jan. 15, 1851. In 1853 a report was issued under his name as chief engineer for the Virginia and Tennessee Railroad but he is also reported in this year to be engineer for the state of Georgia, and was in Brazil from 1856–1859 as chief engineer of the Dom Pedro II railroad (said to be “the principle railroad at that time in Brazil”). In 1863 he was “commissioner for collecting railroad iron” for the Confederacy (see OR, Series 1, Vol. 30, Part 4, Page 496). In an 1835 quote he speaks for the importance of an engineer to have “a turn for mathematics and a good store of mathematical knowledge.” The source providing this quote refers to him as “a well-known antebellum engineer”. (p. 9, *Dissertations in American Economic History*, by Terry Mark Aldrich, 1970). A street named Garnett in Atlanta was said to have been named after him. He is referred to as Colonel Charles F. M. Garnett in a book titled *Brazil and Brazilians* by Kidder and Fletcher published in 1857. His grave is in Union Cemetery, Leesburg, VA.

See letters: Mar. 6, 1830
Mar. 8, 1830
Mar. 17, 1830

Gillet and Painter

Contractors associated with Section 70 about whom nothing more is known. See the Dec. 8, 1829 letter from Ingles to Ellet referencing the suspension of their work on Section 70, the contract for which was given to R. Brackett & Co. on Oct. 25, 1828 (Unrau HRS, p. 256). Likely Gillet & Painter were sub-contractors or, if Brackett & Co. later abandoned the contract, they may have been assigned it subsequently.

See letter: Dec. 8, 1829

Guy (First name unknown)

See Brackett with whom Guy was a partner at the Tuscarora Mill.

See letters: Dec. 7, 1829
Feb. 20, 1830

Hellriggle (Unknown first name)

Unknown. Carried the Feb. 9, 1830 letter from Cruger to Ellet.

See letter: Feb. 9, 1830

Hitchcock, Luke

Contractor for section 16. In addition he was likely the Hitchcock in partnership with Hovey on the Monocacy.

See letter: Jan. 15, 1829

Hovey, Albert

Prior to Sep. 25, 1828 all the culverts on the sections of the canal under construction above Seneca were let to Albert Hovey. On August 20, 1828 Hovey was awarded the contract for Sections 1 and 32; and on Oct. 25, 1828 in partnership with Brackett he was given the contracts for Sections 7 and 8 as well as for the Monocacy Aqueduct in partnership with Legg. However Hitchcock was substituted for Legg on Oct. 31 (Unrau, HRS, p. 239) and the contract was abandoned in December 1829. Nevertheless, references to Hovey and Legg continue to appear in the letters. In addition Hovey and Brackett had the contracts for Locks 7 and 8 but abandoned them in February, 1829. On Oct. 21, 1829, Hovey was given the contract for the Broad Run Trunk (originally constructed as a double culvert and later reconstructed as a wooden aqueduct), but abandoned it in the winter. (Unrau, HRS, pp. 189, 227, 239, 251, 255, 256)

See letters: Dec. 1, 1829

Dec. 4, 1829 (Ingle's with 2 copies, Ellet's, and Wright's)

Dec. 7, 1829

Dec. 8, 1829

Dec. 9, 1829

Dec. 16, 1829

Jan. 13, 1830

Jan. 15, 1830

Feb. 4, 1830

Feb. 12, 1830

Feb. 20, 1830

Feb. 22, 1830

Hurd, Erastus

An Erastus Hurd was appointed as a resident engineer on the 4th Residency on Nov. 22, 1828 with Charles B. Fisk an assistant under him.

Hurd, J.

On Oct. 25, 1828, the contracts for Sections 73 and 78 through 83 were given to J. Hurd & Co. This may be the same Hurd as in Hurd, Canfield & Co. which subcontracted under R. & H. Fowler of NY on Section 78.

Ingle, John P. (Dec. 4, 1791–Feb. 2, 1863)

Ingle was employed as clerk for the C&O Canal Company on July 3, 1828. He was among the long-term employees who resigned or were fired during the crisis in the sum-

mer of 1840 over the excessive use of script. Ingle resigned July 9, but when Maryland reconstituted the board and appointed a new president, Michael Sprigg, in April 1841, Ingle was appointed to the Board and continued to serve until June 24, 1847.

See letters: Nov. 25, 1828
 Dec. 4, 1829
 Dec. 8, 1829
 Dec. 14, 1829
 Dec. 16, 1829
 Jan. 18, 1830
 Jan. 30, 1830
 Feb. 22, 1830
 Mar. 8, 1830
 Mar. 10, 1830

Johnson (Unknown first name)

McIntosh (a contractor) refers to both a Johnson and Bennett who were his partners, but it is not clear for which contracts he was partnered with Johnson. Section 71 was let to T. McIntosh & Co., but it is unknown who was included in the "& Co." The Johnson mentioned in the Jan. 3, 1830 letter as a partner to McIntosh, may be the same person as the Amos Johnson who was awarded the contracts for Section 26 and for Lock 26 on Section 28 on Oct. 25, 1828 —although the contract for the lock was relet on Mar. 14, 1829. (See Unrau, HRS, p. 230, 256)

See letters: Dec. 5, 1829
 Jan. 3, 1830

Johnson, Joseph A.

Owner of two quarries on Furnace Ford and what is now known as the Johnson Farm. The Johnson home was known as Rock Hall. Kapsch states in footnote 52: "Two quarries have been located on Furnace Ford, the white quarry and the red or pink quarry. The white quarry provided the stone for the ring stones. The red or pink quarry probably provided the stone for the wing walls of the abutments." (Robert Kapsch and Elizabeth Perry Kapsch, *Monocacy Aqueduct on the Chesapeake & Ohio Canal*. Medley Press, 2005, p. 94.)

See letters: Dec. 7, 1829
 Jan. 3, 1830
 Jan. 6, 1830

Krüger (Alfred?)

This is almost certainly a misspelling of Cruger and refers to Alfred Cruger. If not this person is unidentified. Mentioned in Böye's Feb. 12, 1830 letter with regard to some issue involving Alfred Cruger, Charles Fenton Mercer, Kreiger, and the 5th Residency.

See letter: Feb. 12, 1830

Lafferty & Boland

Lafferty & Boland were awarded on Oct. 25, 1828 the contracts for Locks 25 and 27. They abandoned the contracts for the locks in January/February 1830. However the Dec. 14, 1829 letter cited below indicates that they had stopped work on Lock 27.

See letters: Dec. 14, 1829
 Feb. 12, 1830
 Feb. 22, 1830
 Mar. 8, 1830

Leckie, W. Robert

W. Robert Leckie was appointed Inspector of Masonry in the fall of 1828. In partnership with James Alcott of NY in the summer of 1829, he began the development of a mill for cement production on the Tuscarora. Leckie resigned as Inspector of Masonry on August 14, 1830. Leckie's papers are at the Duke University library in North Carolina. The library states the following: *Robert Leckie (d. 1839), military engineer; educated in Scotland. Papers are concerted [sic] with construction of public buildings, canals, arsenals, aqueducts, fortification, masonry of the Chesapeake and Ohio Canal, and surveying and building of walls in the District of Columbia.*

See letters: Nov. 14, 1829
 Jan. 6, 1830
 Jan. 13, 1830
 Feb. 4, 1830
 Feb. 20, 1830
 Mar. 17, 1830

Mathews (unknown first name)

Unknown. Carried Dec. 22, 1829 letter for Böye to Ellet.

See letter: Dec. 22, 1829

Martineau, John

John Martineau had served on the Erie with Wright and worked on the C&O only until June 1829 (Unrau, HRS, 42). Primarily he seems to have done surveys and provided the first design for lockhouses. In August 1828, Wright and Martineau surveyed the route from Lock Cove where the Little Falls Potomac Co. canal dropped down to the river, and Rock Creek that marked the boundary between Washington and Georgetown (Unrau, HRS, 182). In early Sept. 1828, he was named to the C&O Canal Company's Board of Engineers with Wright and Nathan Roberts. After leaving the C&O, Martineau was hired by a committee in Frederick, Maryland to survey the Monocacy for a canal (Unrau, HRS, 646).

See letter: Mar. 10, 1830

McIntosh, Thomas

McIntosh had the contract for Sections 60 and 71 under the name "McIntosh & Co." and for Sections 65, 75, and 76 under the name "McIntosh & Bennett". These were contracts to build the trunk of the canal (no masonry structures).

See letters: Dec. 5, 1829

Dec. 16, 1829

Jan. 3, 1830 (Ellet's and McIntosh's)

Mercer, Charles Fenton (1778–1858)

Mercer was the primary force behind the idea of a continuous canal up the Potomac valley and through the mountains to the Ohio River. As a Virginia state legislator (1810–1817) and subsequently as a member of Congress (1817–1839), he played a crucial role in the writing and passage of legislation that resulted in the chartering of the C&O Canal Company and the purchase of \$2.5 million in company stock by the federal government and the cities of the federal district. He served as the company's first president from June 1828 to June 1833 and continued to work for the C&O Canal while in Congress until he resigned his seat in December 1839.

See letters: Dec. 4, 1829
 Feb. 12, 1830
 Feb. 20, 1830
 Feb. 21, 1830
 Mar. 6, 1830
 Mar. 8, 1830
 Feb. 17, 1832

Millard, A. H. [Also Millerd]

A. H. Millard was assigned the contract for Sections 33 and 66 on August 20, 1828. (Unrau, HRS, p. 255).

See letters: Dec. 16, 1829
 Feb. 12, 1830
 Feb. 20, 1830

Munroe (unknown first name)

See Thomas & Munroe

See letter: Feb. 12, 1830

Nelson, Mrs. Eliza

Owner of the quarry on Sugarloaf Mountain about 4 miles up the Monocacy River. Initially stone from this quarry was used on the Monocacy piers, but proved to be too soft and three piers partially built using it were torn down. The aqueduct was subsequently built primarily of stone from a quarry on the farm of Joseph B. Johnson at the Furnace Ford of the Monocacy, about half the distance from the Aqueduct as the Nelson quarry.

See letters: Dec. 8, 1829
 Dec. 9, 1829
 Jan. 3, 1830
 Jan 6, 1830
 Jan. 13, 1830

Osborn, Asher P. [Alternate spellings: Osbourn and Osborne]

Asher P. Osborn was given the contract for the Monocacy Aqueduct on or shortly before Dec. 9, 1829 after Hovey's company abandoned it in late November. Osborn himself re-

assigned it to Byrne's company on August 7, 1830, subsequent to the discovery in July that the Nelson Quarry stone was not sufficiently strong (Unrau, HRS, p. 239).

See letters: Dec. 9, 1829
 Jan. 3, 1830
 Jan. 6, 1830
 Jan. 13, 1830
 Feb. 5, 1830
 Feb. 12, 1830
 Feb. 22, 1830

Owen, Charles

Likely the "Owens" in the firm of "Higgins & Owens" that had the contract for sections 49–52. He is also likely a subcontractor for an embankment at culvert 70.

See letter: Feb. 22, 1830

Purcell, Thomas F.

In the November 22, 1828 list of engineering appointments, Thomas F. Purcell is shown as the resident engineer on the first division from Rock Creek to Lock 8. In 1832 he was placed in charge of the newly opened section of construction from Point of Rocks to Dam 4. When Mercer offers Ellet a position on the C&O, subsequent to Ellet's return from Europe, it is as assistant to Purcell. Later he works above that point and does the survey revising the line of the canal from Dam 6 to Cumberland. He resigned in March 1836 after a series of clashes with engineer Charles B. Fisk over the design of locks, dams, and the canal trunk. Except for Fisk, Purcell is the last of the original engineers to leave the canal.

See letter: Feb. 17, 1832

Randel, John Jr.

John Randel Jr. did "turnpike surveying near Albany as early as 1805" and had run levels for the projected Delaware and Raritan Canal (Calhoun, p. 109). He also made a survey of Manhattan Island and designed what is essentially the present street plan. His design was adopted in 1811. He was then employed to make maps showing all of the old farm boundaries as well as the creeks, swamps, ledges, and other topographical features with reference to the newly established street system. That map is popularly known as the "1820 Randel Farm Map". Randel ran into conflict with Benjamin Wright in the arguments over the route for the Erie Canal in 1822 and surveyed the route ultimately used for the Chesapeake and Delaware Canal as well as won a contract to build the eastern end of the canal in March 1824. That contract was, however, voided in 1828 (Calhoun 109–111). As indicated in this letter he conducted the referenced survey on the North Branch of the Susquehanna for the Pennsylvania canal system. In April 1836 Randel was made chief engineer of the Central Railroad and Banking Company in Georgia, but resigned in May 1837 amid controversy with the board over the route he had selected. His letter of recommendation likely resulted in Ellet's employment with the C&O Canal company.

See letter: May 1, 1828

Roberts, Nathan

A former Erie Canal engineer, he is anomalously referred to as “Judge Roberts” by Böye in his March 8, 1830 letter. Nathan Roberts, with James Geddes, had done the 1827 survey of the proposed C&O canal that returned a more favorable cost estimate than had the previous government survey. Once the company was organized in 1828 he accepted a position on its board of engineers that included Benjamin Wright and John Martineau (Unrau, HRS, p. 181). and with Martineau he surveyed the initial line of the canal on which construction would begin in late summer and fall. During the winter and spring of 1828–29, he, along with Cruger, worked on the revision and location of the projected western section of the canal to Pittsburgh. Early in 1830, Roberts completed the survey with the B&O Railroad engineer Jonathan Knight, that the court ordered of the contested Potomac shore between Point of Rocks and Harpers Ferry. During the autumn and winter of 1830–31, he served in Washington as superintendent of the first division of the canal. After surveying the Monocacy River for the purpose of determining its utility as a feeder for the canal (it was never used as such), he left the service of the company when the directors were forced to eliminate some engineering positions because of the continuing controversy with the Baltimore & Ohio that halted construction above Point of Rocks (See Diltz, Chapter 8 and Unrau, HRS, pp. 31, 194).

See letter: Mar. 8, 1830

Rush, Richard (August 29, 1780 – July 30, 1859)

Secretary of the Treasury under John Quincy Adams, in April 1829 Rush was appointed to act as the agent for the deeply indebted district cities that hoped to negotiate a loan in Europe. The cities’ indebtedness was partially due to their commitment to purchase large amounts of C&O Canal stock. After failing to secure a loan through the Barings or Rothschild banks in London, Rush succeeded in November 1829 in obtaining a loan of \$1,500,000 through the Dutch banking company of Daniel Crommelin & Sons in Amsterdam. Subsequently the canal company planned to name an anticipated village at Lock 23 Rushville. (The village never developed.) It named the lockhouse/tavern at Lock 20 (the uppermost of the six Great Falls locks), Crommelin House.

See letter: Dec. 16, 1829

Scofield (first name unknown)

Assistant Engineer to Daniel Van Slyke on the 2nd Residency according to the Mar. 8, 1830 letter from Böye, who had been Van Slyke’s original assistant. Böye states in his Mar. 8, 1830 letter when speaking of Scofield and Van Slyke, that “you know there is not much harmony between them, neither is Mr. S. much liked by contractors, if report speaks true.” According to Ingle’s Mar. 10, 1830 letter, Scofield is selected to replace Ellet under Cruger on the 5th Residency.

See letters: Mar. 8, 1830
Mar. 10, 1830
Mar. 13, 1830

Seymour (first name unknown)

Unidentified other than as the carrier of a letter to Ellet. However, the Seymour name is a common one in Montgomery Country, Maryland.

See letter: Feb. 12, 1830

Smith, Clement

C&O Canal Company treasurer from July 5, 1828 to July 7, 1834. He was also an important businessman and builder in Georgetown, DC, whose houses included the Bodisco House at 3322 O St. that served as the home of Alexander Baron de Bodisco and the Russian Ambassador to the United State from 1838 to 1854.

See letter: Feb. 4, 1830

Thomas & Munroe

Contractor with Munroe. Thomas & Munroe were given the contracts on Dec. 11, 1828 for the lockhouses at Locks 6, 25, 26, and 27 (Lockhouses 4, 17, 18, and 19 respectively). While they finished those at Locks 25, 26, and 27 in 1830, that at Lock 6 was relet in the spring of 1829 to Richard Grosline. In the summer of 1830 Thomas & Munroe acquired the relet contract for the lockhouse at Lock 23 but that contract too was relet to others in the fall of 1830 (Unrau, HRS, pp. 243, 245).

See letter: Feb. 12, 1830

Trundle family

See *The Trail Families* by William N. Hurley, Jr., Heritage Books, 2008, p. 72.

Trundle, David J (Dec. 4, 1811–Sept. 27, 1871) [Alternate spelling: Trummel]: was part of the Trundle family located in the Frederick/Montgomery Co. area near the Monocacy. From Ellet's expenses it appears he was renting his accommodations from Trundle or possibly living in a room-and-board arrangement at his home. Trundle is mentioned in Böye's Dec. 16, 1829 letter in ways suggesting he was a short term laborer.

See letter: Nov. 14, 1829
Dec. 9, 1829
Feb. 12, 1830
Feb. 20, 1830
Feb. 22, 1830
Mar. 13, 1830

Trundle, Hezekiah: Possibly Hezekiah William Trundle (b. 1810), one of the Trundle family located in the area at the time.

See letters: Dec. 16, 1829
Feb. 12, 1830

Van Alstine, Alexander [also VanAlstine]

Van Alstine was a lawyer representing Hovey, the original contractor on the Monocacy. In Wright's Dec. 9, 1829 instructions to Ellet regarding Osborn's work on the Monocacy Aqueduct, Wright states: "The cranes I hear are transferred to Mr. Van Alstine as well as the Shears & Blocks ropes &c. these of course we have nothing to do with."

See letters: Dec. 9, 1829
Feb. 12, 1830

Van Slyke, Daniel [also VanSlyke] (1799–1831)

Van Slyke was appointed as resident engineer to the 2nd Residency on Nov. 22, 1828, initially with Böye as his assistant but by Mar. 8, 1830, with Mr. Scofield as his assistant. According to Sanderlin (*Great National Project*, p. 62) he was from New York. On Aug. 30, 1830, as the company prepared to open the first section of the canal (from Dam 2, which opened on Apr. 2, 1831), his responsibilities were increased to include superintendent of the operating section with an office near the Mouth of Monocacy. On Oct. 3, 1830 he was instructed to “construct a flume around one lock to test its ability to handle the flow of water” (Unrau, HRS, p. 193). However, on Jul. 31, 1831, he was replaced because of illness (Unrau, HRS, p. 544). Böye states in his Mar. 8, 1830 letter, that Van Slyke and his assistant, Scofield, had a contentious relationship.

See letter: Mar. 8, 1830

Wallack, William

Assigned as a rodman to the 5th Residency on Nov. 22, 1828. Supposedly he would have been available to help Ellet, but aside from serving as courier, there is no indication of his having provided any significant assistance during Böye’s illness.

See letters: Jan. 6, 1830
Feb. 4, 1830

Wetherell (first name unknown)

Mentioned in Böye’s Dec. 16, 1829 letter in ways suggesting he was a short term laborer.

See letter: Dec. 16, 1829

Willcox [also Wilcox]

According to Ellet’s Dec. 5, 1829 letter to Wright, he was a subcontractor on the Canfield contract, which likely refers to the Hurd & Canfield firm.

See letter: Dec. 5, 1829

Williams (first name unknown)

Mentioned by Böye in his Mar. 8, 1830 letter as the board’s choice to replace Ellet although “Judge Roberts wants him with him.” According to Ingle’s letter of Mar. 10, 1830, Williams was assigned to the 2nd Residency under Van Slyke and Scofield, who had a contentious relationship with Van Slyke, was moved to Ellet’s position.

See letters: Mar. 8, 1830
Mar. 10, 1830

Wines (first name unknown)

A company called Wines, Brackett & Wines had the contract for Lockhouse No. 14 at Lock 22 (Unrau, HRS, p. 249). Also an M. S. Wines was an early contractor who ran into trouble with his indentured workers who abandoned their worksite and returned to Washington. They refused to return until certain conditions concerning food, lodging, and bookkeeping with regard to their indentureship were agreed upon by Mr. Wines (Unrau, HRS, pp. 116–117).

Wright, Benjamin (Oct. 10, 1770–Aug. 24, 1842)

Wright was Chief Engineer of the C&O Canal from June 1828 to Nov. 1830. (Unrau, HRS, pp. 33–38). Called the ‘Father of American Civil Engineering’, he is primarily known for his years as a chief engineer of the Erie Canal although he worked on many projects besides the C&O after leaving the Erie.

See letters: Dec. 1, 1829
 Dec. 4, 1829
 Dec. 5, 1829
 Dec. 7, 1829
 Dec. 8, 1829
 Dec. 9, 1829
 Dec. 14, 1829
 Dec. 16, 1829
 Dec. 22, 1829
 Jan. 3, 1830
 Jan. 6, 1830
 Jan. 15, 1830
 Feb. 4, 1830
 Feb. 5, 1830
 Feb. 12, 1830
 Feb. 22, 1830
 Mar. 8, 1830
 Sept. 5, 1833

APPENDIX IV

Qualifications of an Engineer

Source for the following: *Chesapeake and Ohio Canal Historic Resource Study* by Harlan D. Unrau, p. 12, taken from Samuel Young, compl, *A Treatise on Internal Navigation* (Ballston Spa, 1817), 9–10.

1. A skillful engineer should undoubtedly possess a considerable degree of mathematical knowledge. Calculations, of which some are of the most obstruse [sic] and laborious kind, will frequently occur; and he should therefore, be well acquainted with the principles on which all calculations are founded, and by which they are to be rightly applied in practice.
2. An engineer should also have studied the elements of most or all of the sciences, immediately connected with his profession; and he should particularly excel in an acquaintance with the various branches of mechanics, both theoretical and practical.
3. His knowledge should comprehend whatever has been written or done by other engineers, and he should have information in every department of his office from an accurate examination of the most considerable works that have been executed in all the various circumstances that are likely to occur.
4. It is necessary, that he should be a ready and correct, if not a finished, draughtsman.
5. He should also be conversant with the general principles of trade and commerce; with the various operations and improvements in agriculture; with the interests and connection of the different owners and occupiers of land, houses, mills, & c.; and with all the general laws and decisions of courts, pertaining to the objects connected with his profession.
6. By an extensive acquaintance with the disposition, inclination, and thickness of the various strata of matter, which compose the soil or land...he will be able to avoid many errors incident to those who are destitute of this knowledge, and to have the course and causes of springs, to which it leads.
7. As the last, though not the least, of these qualifications of an engineer, which we shall enumerate, we shall add, that he should be a man of strict integrity.

APPENDIX V

Rules

Adopted by the President and Directors
Of the Chesapeake and Ohio Canal Company
For the Government of the Corps of Engineers

AND

Excerpt from the By Laws

Applicable to the C&O Canal Engineers

RULES, &c.

1. The President and Directors of the Chesapeake and Ohio Canal Company, under the charter and by-laws of the Company, and the Constitution and laws of the United States, and of the particular States within whose peculiar jurisdiction any part of the works of the canal may be in progress, have the control of whatever concerns the execution and police of the canal.
2. The Eastern Section of the Chesapeake and Ohio Canal will be distributed into three divisions, with a view to the administration of its government and to its construction.
3. The line of the canal, as it proceeds from its Eastern termination, will be subdivided, as far as practicable, into half mile sections. A certain number of these, according to the magnitude or difficulty of the labor which their completion may involve, will make up a residency; a certain number of residencies will be comprised in one division.
4. The Engineer Corps of the Company is distributed into five grades. The Engineer in Chief constitutes the first grade.
5. The second grade is formed of the *Members* of the Board of Engineers, who, with the *Engineer in Chief*, constitute the Board of Engineers, of which they are styled Members.
6. The third grade will be composed of resident Engineers, among whom, whatever diversities of compensation may exist, there will be no distinction, but of merit.
7. The fourth grade will consist of the Assistant Engineers, among whom, in like manner, there shall exist no distinction of rank.
8. The last grade will consist of Rodmen - of such as are paid by the Company, and of those, also who may be admitted, as volunteers, to employment on the Canal, for the study and practice of civil engineering. To the volunteer rodmen a preference will be given in the future choice of assistants, where vacancies occur, and their merit may warrant their promotion. Axe-men and laborers will be hired by the month or day, as occasion may require their services. They will receive their orders from the officer, by whom they are, at any time, employed.
9. To each of the three divisions into which the eastern section of the canal may be distributed, either the Engineer in Chief, or a Member of the Board of Engineers, shall be specially allotted.
10. When acting separately, the Engineer in Chief and each member of the Board of Engineers shall have authority over his allotted division, subject only to the control of the resolutions of the President and Directors or of the President of the Company.
11. To each residency will be assigned a resident Engineer, having like power over his residency, subject to the same authority as aforesaid, and also to the orders of the Engineer in Chief and of either member of the Board of Engineers, or the Inspector of stone and masonry, touching his own peculiar duties, within the division in which the residency is comprehended.
12. Each Resident will have placed under his immediate direction, an Assistant and a Rodman, who will look to him alone for orders, unless specially directed by the Inspector of stone and masonry, by one of the Board of Engineers, the President of the Company,

or the President and Directors, who will, in such case, apprise the Resident of the order given.

13. The Engineer in Chief and the members of the Board of Engineers, will constitute, whenever the former or either of the latter shall desire it, or the President and Directors of the Company, or the President singly, may require it, a Board of Engineers, to decide upon any matter, touching the plan, location, or construction of the canal, which may be submitted to them for their determination, which shall be, in all cases, expressed by a majority of voices; and shall, if approved by the President and Directors of the Company, be conclusive. But each member may make to the President, or to the President and Directors of the Company, a special report on any matter submitted to the Board of Engineers.

14. To each division of the canal will be allotted an Inspector of masonry and stone, and also an Inspector of carpentry and lumber.

15. The Inspector of stone and masonry will be charged with the discovery, inspection and approval of all quarries of stone opened for the supply of materials to the canal, and of all masses of lime-stone and banks of sand, suited to the construction of its works. The inspection, and approval or rejection of all stone, lime, both common and hydraulic, and sand, in every stage of their preparation for use, on the canal, according to the terms of the contracts actually made by the President and Directors, and the instructions of the President and Directors, the President of the Company, the Board of Engineers, and of the Engineer of the particular division, on which any such stone, lime, or sand is to be employed.

He shall, after the stone has been conveyed to the place where it is to be used, and prepared to enter the wall, a second time inspect it before it is laid in the wall. At this time, he shall designate the facing stone of the locks and aqueducts, each, by an appropriate mark; and he shall, from time to time, inspect it, and the cement, both common and hydraulic, as the stone is laid in the wall.

16. The inspector of carpentry and lumber, shall be charged with the selection and purchase of such timber, or lumber, as the President and Directors may choose to supply to the contractors; and with the inspection, before it is used, of all lumber or timber furnished by the contractor for any wood work; and, finally, with the inspection, also, of the construction of any such work.

17. The Inspectors of masonry and carpentry, will receive their orders from the President and Board of Directors; the President of the Company; the Engineer in chief, or the member of the Board of Engineers allotted to the particular division, in which any particular work of masonry or carpentry is to be constructed; but no order of the President and Directors, or of the President of the Company, or of a superior authority, will be varied or altered by one of less grade, without the consent or approbation of the President and Board of Directors, or of the President of the Company, or of the Superior Engineer, by whom such order may have been given. Where practicable, without delay, all orders or regulations from a higher authority will descend to the agent by whom it is to be executed through the intermediate grade or grades.

18. Every resident will be held responsible for every error or neglect occurring within or upon his residency; and every engineer of a division, for the errors or neglects on his di-

vision, provided, however, that no blame attach to him, for necessary or unavoidable ignorance of its occurrence, in case he make it known to the President, or in his absence, to any director of the Company, without delay, as well as the cause of it; and moreover, repair it, if remediable, as soon as practicable.

19. All violations or omissions of duty by any of the Contractors, or of their clerks, overseers, or laborers, shall be communicated to the President, or, in his absence, to a Director of the Company, by the Engineer, Inspector, or Agent of the Company who shall first perceive it, as well as to the resident Engineer within whose portion of the line it may have occurred.

20. Every Engineer, Inspector, or other officer or agent of the Company, is, ex officio, an inspector of every part of the work on the canal, or its feeders, however specially charged with local or specific duties; and is authorized and required to communicate to the President, or, in his absence, to a Director of the Company, whatever he thinks he sees amiss on the works on the canal, or in the conduct of those who are engaged in its construction, or whatever he thinks likely to prove beneficial to the interests of the Company.

21. As soon as practicable after the end of each month, and, at any rate, between the 1st and 10th of the month, will be specially allotted to the estimation of the work done and not already paid for, in whole or in part, on each residency; and an account will be kept by the assistant or rodman, under the direction of the Resident, of the species and quantity of work done by each contractor, on his residency, as well as of the whole sum which the contractor would be entitled to receive for the same. A copy of each monthly estimate will be transmitted by each assistant or rodman, countersigned by the Resident, to the Clerk of the Company, who shall open and preserve an account with each contractor, of the value of his monthly estimates, and of the sums actually paid him by order of the President and Directors. These sums shall be paid, within ten days after they are assessed, to the several contractors, upon the evidence of the Resident that such is due, according to the terms of the contract between the contractors and the Company.

22. Each contractor will render, according to a printed form to be supplied him by the Clerk of the Company, under the direction of the President, an account, every Saturday evening, to the resident Engineer of his section, or, if he has several sections, of each one of them, of the average number of hands, horses, carts, scrapers, wheelbarrows, and drills, employed by him throughout the current week, and of the pounds of gunpowder consumed therein. The resident Engineer will unite these returns, and transmit to the Clerk of the Company, in the beginning of the ensuing week, a consolidated return, according to a printed form supplied to him, of all the particulars embraced in the several returns of the contractors of his residency. He will add to these returns, in an appropriate column such general remarks, as may tend to illustrate the progress of the work done in the past week, by each contractor, the manner in which it is done, and the probability of each section being completed within the period allowed by contract.

23. An office will be supplied each resident on the line of the canal as soon as practicable; and, at this office, copies of all these consolidated returns will be carefully preserved, as well as an account of the monthly estimates. He will note, in one general summary, the quantity of each species of work estimated for the monthly payments, as well as each

contractor's account, under the head of his name, and of the numbers of his sections, separately stated, if he has more than one.

24. In case of the sudden death, resignation, temporary incapacity, or absence of any resident Engineer, until otherwise ordered, his assistant will supply his place; and where, from like cause, the resident Engineer or Assistant may need an additional rodman, he will make a temporary appointment, until the President of the Company, or the President and Directors, can be informed of its cause.

25. No Engineer or officer of the Company shall be concerned or interested, as principal or security in any contract relative to the construction of any part of the canal or any of its appurtenances, nor shall become the purchaser of any materials or ground necessary for its construction or location, but for the benefit of the Company.

26. All letters from the Engineers, officers, or contractors, or any person having business to be transacted with the Company, or with the President or Directors thereof, shall be addressed to the President, and, in his absence, will be opened by the Clerk.

EXTRACT FROM THE BY-LAWS

Adopted by the President and Directors of the Chesapeake and Ohio Canal Company.

5. For designing the plan of the Canal, and its execution, under the authority of the President and Directors, there shall be created a Board of Engineers, to consist of a Chief Engineer and two members, to be appointed by the President and Directors of the Chesapeake and Ohio Canal Company. To these shall be added, from time to time, as required, such resident and assistant Engineers, rod-men, and axe-men as this Board may deem expedient, to be selected and appointed by the President of the Company, and to be in like manner continued or dismissed from service.

6. There shall be appointed an Inspector of stone work, and an Inspector of wood work, to each division of the canal which is placed under the care of a member of the Board of Engineers, to be appointed, compensated, and continued in office, in the same manner as the officers of the corps of Engineers, under the grade of a member of the Board of Engineers.

7. Volunteer rod-men may be admitted into the corps of Engineers, without compensation—to be appointed and dismissed by the President of the Company.

APPENDIX VI

Corps of Engineers as Assigned November 22, 1828

Office of the Chesapeake and Ohio Canal Co.

Washington, Nov. 22, 1828.

Orders of the President and Directors of the Chesapeake and Ohio Canal Company, in relation to the distribution of the Corps of Engineers.

The first division of the Chesapeake and Ohio Canal will extend from its eastern terminus to the junction of the Shenandoah and Potomac, and as far above that point as the descent of the canal through the Blue Ridge mountain.

This division is placed under the peculiar supervision of Benjamin Wright, the Engineer in Chief, assisted by Nathan S. Roberts and John Martineau, members of the Board of Engineers, who will also be specially charged, until their separate divisions shall be assigned to them, with the examination of the route, and the location of the canal and its feeders, and the preparation of them for construction, by contract, from the 85th section to Cumberland.

The first residency of the Chesapeake and Ohio Canal will extend from its Eastern terminus, as far up the line as to embrace the section No. 6.

To this residency are allotted Thomas F. Purcell, as resident Engineer; Charles D. Ward, as assistant; Peter Von Smith, as rodman; and Randolph Coyle, a volunteer rodman.

The second residency of the Chesapeake and Ohio Canal will extend from the 7th to the 18th section, inclusive.

To this residency are allotted Daniel Van Slyke, as resident Engineer; Herman Boye, as assistant; and James Mears, jun. as rodman.

The third residency will extend from the 19th to the 38th section, inclusive.

To this residency are allotted Wilson M. C. Fairfax, resident Engineer; William Beckwith, as assistant; R. G. Bowie, as rodman; and Thomas H. DeWitt, a volunteer rodman.

The fourth residency will extend from the 39th to the 64th section, inclusive.

To this residency are allotted Erastus Hurd, as resident Engineer; Charles B. Fisk, as assistant; and Lanadar G. Davis, as rodman.

The fifth residency will extend from the 65th to the 84th section, inclusive.

To this residency are allotted Alfred Cruger, as resident Engineer; Charles Ellet, jun. as assistant; William Wallack, as rodman.

By order: **JOHN P. INGLE**, *Clk, C. O. C. C.*

Note: “The number of resident engineers was reduced from five to four in September 1829 and later to two in August 1830. When Chief Engineer Wright resigned his position with the canal company in the fall of 1830, the canal directors abolished the position of Chief Engineer, noting that there was little need to employ a person in that position with construction prevented above Point of Rocks. On April 1, 1831, after Nathan S. Roberts requested a leave of absence to return to his New York Home to regain his failing health, the board terminated his employment with the company and abolished his position for similar reasons.”

—Unrau, HRS, p. 65.

APPENDIX VII

CHARLES ELLET JR.'S LETTERS FROM FRANCE MARCH – APRIL 1831

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INTRODUCTION AND CREDITS

In February 2010, Jeff Richter photographed all 44 pages of this letter. He e-mailed the images to me and assisted me with identification of certain words, in particular some of the words partly hidden by the binding. I transcribed the pages to the best of my ability.

Ellet seems to have written the long letter in eleven sessions working from a notebook or sketchbook that has not survived. Each session is numbered, allowing me to retain his subdivisions easily with the exception of his last two parts where the break is less clear. The last part seems to have been written in haste. He divided his phrases with a mark that is either a colon or a semicolon. He underlined words and phrases from time to time. I have included the underlining but I have omitted his strike-outs. Some of his antiquated phrasings and spellings are now out of fashion. His parenthetical insertions are mostly marked <>. Ellet added several footnotes in the letter; they remain where he placed them in the body of the text. I have created a set of endnotes appended to each of the eleven parts, hoping to assist the reader.

Emory Kemp, Michel Cotte, and Francis Griggs helped me identify and understand various place names, canal routes, and civil engineering structures mentioned by Ellet.

Others who helped:

Charles Berg's website <http://projetbabel.org/fluvial> identified the various rivers, canals and slackwater systems of France.

David Denenberg's website <http://www.bridgemeister.com> enabled me to locate the suspension bridges studied by Ellet while en route.

Christelle Molinie identified the various paintings and exhibits at the Musée des Augustins in Toulouse described in Part 2.

Jean-Christophe Dourdet explained the Occitan words included in Part 3.

Pierrette and Michel Teissier located Voltaire's letter as translated by Ellet in Part 10.

Donald Sayenga, Tucson,
Arizona, June 1, 2011

No. 1

May 1st 1831 Paris

My dear sister

Let us commence without a preface for once. I set out March 1st 1831 from Messieurs de la Fitte Caillard & Cie,¹ near the rue St. Honore à Paris, in the diligence for Bordeaux. I would fain endeavour to give you an idea of our ride during the first night, and describe the country through which we past, though seen at this season of the year and as the greater disadvantage — very little grass appearing upon the soil and the trees still covered with the leaves of Autumn. From the road I could perceive many apparently pleasant villages situated upon the most elevated spots to the right and left, without being able, from the rapid gate at which we were rolled over the rough paved road, to ascertain their names or read the observations concerning them in my guide book². Yet these towns would generally afford a keen interest to a traveler on horseback, — as they have generally been the scene of sieges, battles, or the site of some ancient castle whose crumbling walls still inspire the beholder with reverence & respect. But the stranger who casts his eye upon a French town with the expectation of being delighted with its actual beauty will not delay long before he shuts the stage door in disgust, and wraps himself in his cloak. It is in vain he looks for a collection of neat houses, nearly hid by the vines and bushes in the delightful gardens which have been decorated by the care of a belle demoiselle, and listens for the pipe of the shepherd feeding his flock in the vicinity: No, he finds but a huddle of old, dirty & irregular stone piles built out to the edge of the crooked and muddy street — and in the neighborhood the brown³ faced girls of the village, spinning their wool, as they bask in the sun surrounded by their dogs and sheep. But during the first night I had not even the limited pleasure of beholding this, or anything else — and my five senses were reduced to two, feeling & hearing, which were exercised in no very agreeable manner — feeling the cold with which I was frozen stiff, and hearing the eternal voice & cracking of the postillion's whip.⁴ This (the postillion) is an animal which you must describe to the curious; and, were I rich enough I should not a moment hesitate carrying him to America, as a worthy decoration for Peal's museum.⁵ For, who would refuse to sacrifice a shilling to behold this noisy non de script with his legs contained in a pair of oaken barrels, two inches thick, and well hooped with bands of iron, swinging across a horse from which he is perfectly secured against falling by the vertical action of

¹ During his journey Ellet traveled by stagecoach, canal boat, railroad, steamboat, and on foot. This is the only place where he mentions the name of a commercial transportation company.

² The guidebook he carried with him has not been identified. As of 1831, many travelers' aides, such as those written by Ann Plumptre, Marianna Starke, Francis Coghlan, John Murray, etc., were published in England for use by British tourists visiting France, Italy, etc.

³ Ellet makes several references in the letter to the visual appearance of female complexions for his sister's benefit.

⁴ The postillion guiding a horse-drawn vehicle by riding one of the teamed horses must have been a novelty for Ellet.

⁵ In 1786, Charles Willson Peale opened the first natural history museum in the USA at Philadelphia.

this enormous ballast? And then to behold the creature walk lifting up leg at a time as though his knees were splinted and a 56 was suspended to each foot.⁶

Orleans, 5 o'clock in the morning, we arrived after riding 10 hours at this ancient town situated upon the banks of the Loire. As we remained here but 20 minutes during which time I was occupied in forcing the circulation of my blood, I had no opportunity to examine particularly the place, which in truth, from what I saw, was by no means enticing. It has witnessed, as all the ancient cities of Europe, battles, broils & sieges, and was once saved by the valour of Joan d'Arc, and the valiant Count Dunois.⁷

Blois, likewise an ancient city, contains many objects worth the attention of a tourist, but which must be sacrificed by those who are constrained to travel by diligence. Soon after leaving the town the hill, upon the side of which the city is built, and which runs parallel to the river, retreats a half mile from the water, which is kept from overflowing the beautiful meadows on our right by a stupendous causeway, erected by the aborigines previously to the invasion of Gaul by the Romans. It is 152 miles long, 23 feet wide at top, and 20 feet high.⁸

The road throughout this extent is admirable and the view of the opposite bank uninterrupted. I saw with interest upon the opposite side of the Loire one of the finest Chateaux in France, founded by Charles 7th, and now in the possession of Louis Phillippe. Charles 8th was born and died there⁹

Tours — We cross the Loire at the entrance of this town upon a splendid bridge 1335 feet long, of 16 elliptical arches. The approach to the city is imposing, as the quays are made to correspond in magnificence with the bridge which conducts to them, and the finest part of the place is here exposed. The ladies here are said to be celebrated for their beauty — though the few of whom I have had an opportunity of seeing {our landlady & maids} offered but few charms to support the opinion.

Poitiers — The history of the events which this town has witnessed are too familiar to you not to occur to your mind at the first sight of the name; still it was with difficulty I could discover a person competent to inform me where was the spot upon which King John at the head of 20,000 Frenchmen was put to flight by Edward the Black Prince with 8000 of his English archers.¹⁰ The French are perpetually talking about the glory of their arms — “war always adds to their glory”¹¹; for, while speaking of the success of their invincible Captains of the fields of Austerlitz, Marengo, & Arcole, they forget Crecy, Poitiers, Agincourt, and Rosback — while speaking of Napoleon they forget the kings of England and their victories — Frederick the Great and his unconquered Prussians. But this is the nature of man and especially of Frenchmen. I shall not delay to describe the

⁶ Perhaps this is a reference to the halfhundredweight, a 56-pound agricultural measure equal to, or nearly equal to, one bushel of dried corn.

⁷ Historical details of this kind are the first of numerous facts used by Ellet to bulk out the letter, all of which apparently were extracted directly from his guidebook.

⁸ Specific measurements of the causeway, bridges, etc. must have come from his guidebook.

⁹ Chateau d'Amboise.

¹⁰ Ellet seems to have been misled by the name given to the battle by the British. The actual fighting took place in a distant wooded area, east of the city.

¹¹ Unidentified quote.

passage from Poitiers to Bordeaux — generally as all the way from Paris, a level calcareous plain, covered with vineyards, orchards, and gardens, and displaying at times a fine Chateau or the ruins of one to awaken the curiosity.

I have never seen a place more imposing in its appearance than Bordeaux, seen from the north bank of the Garonne. We enter the city by one of the most magnificent bridges¹² which human invention has ever planned, or the industry of man has ever dared to encounter — and behold the river covered with boats on our left and ships on our right, between the lofty masts of which we see the Quay, lined with beautiful mercantile buildings, all symmetrically constructed. The opinion which we form on approaching this immense seaport is not disappointed by examination of the interior — all this likewise proclaims a place of the highest commercial importance. The bourse and Palais Royal are extensive edifices; the Theatre, with its handsome row of Corinthian columns does honors to the city and to the architect. The Cathedral, independent of its antiquity is remarkable for its richness & elegance; — the new hospital is a building of greater utility than beauty, and I was sorry to find that they had occasion for so large a one — indeed they have two. The only vistas of antiquity existing at Bordeaux are the ruins of an Amphitheatre constructed in the reign of Galian, and thence denominated the Palace of Galian — which, like all the monuments of all the conquering people by whom it was elevated still retains sufficient marks of its ancient grandeur to arrest the attention and call forth the admiration of the traveler. The people here are much more kind and agreeable to strangers than in any part of France where I have yet been — one universally receives a pleasant answer to an ordinary question, even when he does not wish to buy. The ladies look very kind, and appear very agreeable also — and, but for their colour {which is mud colour} would be pretty.¹³

March 6th 8 o'clock A.M. I took a seat in the diligence for Toulouse; and having seat No. 1 in the Coupé was greatly pleased with the manner in which we advanced; surveying the rich country ornamented with Chateaux and covered with vineyards — the fields being clothed in green, and the trees and hedges already putting forth leaves.

Note — These all have hedges around the gardens, and there only — in almost every other part of France neither fence, hedge or garden is to be seen.

¹² The stone arch bridge known as Pont-de-pierre, built across the Garonne River in the early 1820s at the instigation of Napoleon.

¹³ Refer to Footnote 3 above.

No. 2.

We passed within a mile of the Chateau¹⁴ where once resided Montesquieu and where he composed “*l'esprit des lois*”. At 2 o'clock we stopped at Langon where, after having paid for my dinner, I sacrificed it for the sake of examining a suspended bridge¹⁵ constructed across the Garonne; and was obliged to fast until 2 o'clock the next day — though I had not breakfasted that morning. This is no exaggeration — during 48 hours I eat but a little piece of bread, two little cakes and as many apples which I was forced to purchase running. But, in truth, when I found the table spread before me, at the end of this time, I followed the wholesome advice of Sir Dugald Dalgetty¹⁶ — I fortified myself for 3 days more. At 8 o'clock in the evening the diligence stopt upon the bridge across the Languedoc Canal, at the entrance of Toulouse. Shall I attempt to describe to you my mortification when guided to the miserable hotel — the Grand Soleil to which I was led by the Conducteur? For I had not yet learned that these men are interested, and even paid to conduct you to particular houses; but this was a practical lesson, the best of all. I shall pass over the rough brick floor, covered an inch deep with sand, by way of a comfort; my disappointment at finding my bed the moment I was about to enter it sans drapes,¹⁷ and the greater mortification when the filles¹⁸ (old enough to be my grandmother) brought me sheets wet enough to wring; against the effects of which I guarded by rolling myself in my old cloak.

All the trifles I leave, and transport you to the musée which I visited on the following morning¹⁹. Here a person well instructed with its contents, and a pretty good historian, pointed out to me many hundred relics of the ancient Romans by whom Toulouse (then Tolosa) was settled. These monuments, consisting of the busts of their Emperors, ancient classick pieces, broken Capitals, the labours of Hercules, and the urns in which the ashes of their dead were contained, all were collected from a spot about two leagues from Toulouse²⁰, where they were interred by that tolerating and most goodly set of men, the first Christians. They were not only interred, — their piety would not permit them to hide these relics from the curious eye in a state of perfection, but called upon them to break to pieces every record of Paganism, or ought that had been shaped by a heathen's chisel

There are few spots in Europe where a man can tread without observing similar marks of toleration and religion. But what would he not see if the stains of blood which they had shed for the same sacred cause, were not obliterated by the dashing rains of a thousand years? When one is shuddering over the recollection of these excruciating transactions, one

¹⁴ Château de La Brède, home of Charles DeSecondat (known as Montesquieu) who published “The Spirit of The Laws” in 1748.

¹⁵ The chain-cable suspension bridge across the Garonne River located at the head of tide.

¹⁶ Dugald Dalgetty is the fictional main character in the 1819 British novel “A Legend of Montrose” by Sir Walter Scott.

¹⁷ i.e. the bed was not yet made.

¹⁸ i.e. the chambermaid.

¹⁹ At the time of Ellet's visit there was only one museum in Toulouse, known today as Musée des Augustins. The ancient Roman relics he saw there since have been moved to another museum location called the Musée Saint-Raymond.

²⁰ The village of Martres-Tolosane.

is almost tempted, for a moment, to doubt the vanity of the creed, the righteousness of the cause which has enacted such cruel persecutions, — which was founded upon gore, supported by the sword and actually exists by - - - I had almost said — deception. But no, it is only while we are surrounded by the ravages, while the marks of destruction are before us, that the mind pursues these false ideas — when we come forth, forget the manner & effects, and think of the principles alone & reason regains the ascendancy, [blot] ed, we believe. I there saw, in fine marble, the statue of the knight²¹ who formerly possessed the ground where these relicks have been discovered, and who was one of the most tremendous fellows chivalry can boast of. He was one of the greatest dualists whom the world has seen, would spring upon an enemy like a lion, and had killed 300 antagonists in pitched battle, with his single hand.

We passed next to the hall of paintings,²² which contains some, almost chefs d oeuvre and even a few specimens by Raphel & Vandyke, which Paris, who monopolizes all that France, indeed the world, yields of excellent, has not laid her hands upon. There is here a superb piece²³, representing Alexander about to mount the horse presented to Phillip, which appeared to others intractable. There is likewise a fine landscape²⁴ which was presented to the museum by one of the ministers of the ex-king, — who <the min.> I find is much beloved in this, his native city — and, we may suppose, by his attention that the feeling is reciprocal — my guide told me that he was but too mild & too good to be a minister.²⁵

I called this morning upon M. Magués, Engineer in chief Canal du Midi, who received me very politely. To day we followed the line of the Languedoc Canal from Toulouse to its entrance into the Garonne, and tomorrow I expect leave a spot which has witnessed so many interesting as horrid events. It was here that Maréchal Soult the head of 20,000 french sustained the attack of Wellington with more than double the number of English & Spanish till he had laid 20,000 of them upon the field. Twas here where the Duke of Montmorency was beheaded at the instigation of Cardinal Richelieu and where the innocent Caleas was broken on the wheel. But he died not unavenged, for he lived at a moment when the equally calumniated, but more powerful enemy of hypocrisy was in the plenitude of his power; and found in him an able and willing avenger, and his family protector. His family found all that could be demanded in an infidel, the only man who had strength, courage and virtue enough to protect them — they found this in Voltaire.²⁶

March 10, 1831, I started to examine the Languedoc Canal in the barque de poste, having

²¹ Possibly a bust of Alexandre Dumège de la Haye (1780–1862) created by Griffoul-Dorbal. Dumège was the person who directed the archaeological excavations at the villa Chiragan in Martres-Tolosane.

²² Today the paintings continue to be displayed in Musée des Augustins.

²³ *Alexandre domtant Bucéphale* painted by Julien-Honoré-Germain d'Aubuisson which was first exhibited at the Paris Salon of 1822.

²⁴ Possibly a painting by Jean-Victor Bertin depicting the myth of the nymph Taygeta in Greek mythology.

²⁵ At the time of Ellet's visit, Guillaume Isidore de Montbel (1787–1861), a former mayor of Toulouse who was King Charles X's Minister of Finance, had fled into exile in Vienna. He was pardoned in 1837.

²⁶ In 1763, François-Marie Arouet (who used the pen-name Voltaire) wrote "Treatise on Tolerance" to prove Calas was innocent and had been falsely accused.

a general letter of introduction²⁷ to all the Engineers upon the line, given to me by M. Magués the Engineer in Chief — and also one for the captains of the boats and Commands of the most important works — requesting them to show me every attention, and point out the peculiarities of the constructions under their charge. These were all unsolicited, and sent to me by that gentleman at a late hour the evening before my departure, with a note wishing me a pleasant journey, and to remember him. Is it not interesting to meet with an individual, a stranger, like this, so perfectly polite, and so disinterested? I have left Toulouse with an impression respecting him which can never leave me as long as I admire a good citizen. I found in that portion of the boat allotted to the better company 3 priests, the only individuals who occupied it except myself; and while eating my cold cut one gentleman began to question me concerning my country, the government religion, etc. Next came what was my religion? Not being attached to conversation which runs upon this subject especially when about to jar with my neighbors, I would have waved the question by telling him what my father's was: viz: Protestant*. But mine? Nothing — I was not bound to any form _ _ _ _ “I might stand alone But would not give my free thoughts for a throne”²⁸ Had I been baptized? No. Wherefore not? Now how to get over this when 6 greedy ears were advanced to catch my reply without telling the simple truth — that I was neither Catholic nor Protestant, and cared no more for a few drops of consecrated water, than for as much out of the canal.

Well, the Gentlemen were struck with amazement, and one of them seeing that I was about to make my escape put his back to the door to prohibit me. I defended myself like a stag at bay, and gave as my principal reason for not adopting any creed, the difficulty of ascertaining the true one — doctors themselves disagreeing on that point. Finally after having forced through the ring, and again returned into the cabin one of them invited me warmly to accompany him home and pass a few days in his parish; doubtless with the laudable intention of drawing me from the frightful abyss which a bad education has spread before my steps.

We arrived at Castelnaudary at 4 o'clock, and found a good dinner prepared. I then engaged a horse to carry me to Sainte-Ferrioll, and to start at 5 o'clock in the morning — but as it did not come in consequence of a violent rain that fell at that hour, I started a pied, notwithstanding the prophecy of the savant, “que je m'abymerais”.²⁹

* I would not swear to the truth of this — but it was as near as I could come to it — and best calculated to relieve me from the net which they were weaving around me.

²⁷ A letter signed by Magués March 9, 1831 is archived at the University of Michigan.

²⁸ The actual quote “I may stand alone, but would not change my free thoughts for a throne” is from Byron's long poem “Don Juan” Canto XI Stanza 90, published serially 1819–1824.

²⁹ Unidentified quote. Possibly: *que je m'abymerai*, meaning “that I will spoil” presumably due to the rain.

No. 3.

I arrived at St. Feréol the principal reservoir of the Canal du Midi at 12 o'clock. Here we observe one of the most extraordinary works in existence³⁰ which alone is sufficient to place in the first rank the courage, genius and enterprise of its author.³¹ Here we see a dam 128 feet high and about 250 wide at the foundation, thrown across the chasm which existed between two spurs of the Montagne Noire, and forming a reservoir a mile in length, capable of containing nearly 7,000,000 cubic meters. But what strikes the spectator with still greater astonishment is the bold method adopted for the drawing off of this water. Three spickets are secured in the outer wall, nearly upon a level with the foundation, which, being maneuvered by levers and rack work, can be turned at pleasure by the force of a single individual. To arrive at these spickets, one traverses an arched passage pierced in the embankment about 75 paces; when he descends a flight of steps and finds the machinery before him. The roaring of the water escaping by these passages, as may readily be conceived <due to a pressure of 130 feet> is tremendous. As it passes through the cylinders the fluid descends vertically, and is conducted by another circuitous passage sub de.

The situation of St. Feréol is admirable. On the one hand the placid and extensive basin, bound by the Montagne Noire, and the magnificent work of art already mentioned — On the other the profound passage below the dam, the rocky sides of which are nearly obscured from the view by the thick boughs which reach over them — and lastly the cascade, foaming and tumbling from rock to rock till it arrives at the bottom of the chasm, form an ensemble truly romantick. Though I had already walked 14 miles, I concluded to continue on to Lampy³² 12 miles further. I followed as nearly as possible the instructions which were given to me by the wife of the guard — and which led me across the summit of a very high & steep mountain, where I found myself enveloped in mist, and totally bewildered. My path spread out, <to employ a popular simile> like a chicken's foot. — and it was impossible to tell which branch to take — often I was wrong — it was raining continually — my feet were blistered. In this condition, you may imagine my joy at beholding at a short distance before me <I could not see 20 yards> a girl pulling a species of herb which grows upon the tops of these mountains; and also my disappointment when I found she could not speak a word of French, or any written language. Nevertheless she understood the word Lampy, and pointed towards it — and accompanied the indications which she gave me with a volley of Patois <the language of the shepherds in this part of France> that made me run from the spot as rapidly as I had approached it. I found next a shepherd, who likewise spoke nothing but the same tongue, yet who asked me if I was in want of food, fire or of the grande route. I understood the mantja to signify manger the French verb to eat; focs or fume I forget which, at present, to come from the Latin fumus or Italian fuseo; and the grand a camina to be the same as the Italian grande camino, and I

³⁰ Ellet's greatest engineering concept, sometimes called the Reservoir Plan for the Ohio and Mississippi Rivers, apparently originated with these 1831 studies of the St. Ferréol and Lampy reservoirs, and also the Couzon reservoir which he visited April 4.

³¹ Pierre-Paul Riquet (1604?–1680).

³² The upper reservoir of this storage system in the Laudot valley.

was not mistaken³³. I could not but admire the good intentions of the innocent or ignorant shepherd <for the words are but too generally synonymous>, though I was out of all patience.

Next, having got beyond the thickest of the fog I perceived at 40 or 50 yards in advance what I took to be the hands of a sign post; but I suspect that Job himself would have excused the hearty anathema which I bestowed upon it when I discovered that it was but a cross, set in a wilderness, to show the way to heaven to those who are lost upon the earth. Thus we form societies and collect funds to support the poor of distant lands when the paupers who swarm our own streets are starving; thus we make clothes to cover the backs of the Kamschatkians when the negroes of our own plantations are naked; thus we send teachers to instruct the natives of Oroytie³⁴ and Hindustan when we are ourselves buried in ignorance — thus again we show the road to Heaven to those who are lost upon the earth. I arrived late in the evening at the upper reservoir; where, after having examined it I found clean victuals <it is not always thus one is so lucky here> a warm fire and a good bed.

The following morning I returned to Castelnaudary, where I arrived at half past 3 o'clock, — dined, and took the barque de poste to Carcassonne. My feet were finely blistered.

We arrived at Carcassonne at 12 o'clock at night; when I, not perceiving the Captain, sprung ashore intending to follow others, and thusly find a hotel. But those individuals directed their paces to their proper homes, leaving me to provide for myself. I began to fear that I should be obliged to sleep in the muddy streets, when a man passed and asked if I desired a hotel; and led me to a miserable hole. I wished to know if that were the best auberge in the place, and he had the honesty to tell me it was but a hotel moderate, and the best was where I had come from; viz. the quay. I desired the name — he gave it to me in his accent patois; I could only understand St Jean + I asked him to repeat it — he repeated — same difficulty, — dite moi encore, monsieur, s'il vous plait “Oh! poudre” said he + (Oh, thunder & lightnings) in a rage, stamping upon the earth, and giving vent to his rising bile. I notwithstanding my mortification, and the pain which my feet caused me, could not refrain my disposition to laugh as I turned away to seek some one who had more sense, and could talk like a christian. I soon encountered an individual who informed me that the hotel was that of St. Jean-Batiste, and directed me where to find it.

The next morning (Sunday, March 13th) after doing justice to a good breakfast, I walked a mile and a half to examine and measure the Pont Rouge, an aqueduct³⁵ across the Fresquel. In the afternoon visited the churches walks and walls of the town — for it is fortified in the ancient style. I had been told that it was a charming place — and, for a French town, it is — the streets are nearly at right angles. France is beautiful — it abounds in landscapes — but the towns are horrible.

³³ The girl and the shepherd were speaking the language known as Langue d'oc or Occitan.

³⁴ This word is very difficult to read in the letter. It is obviously a place name.

³⁵ The stone aqueduct he examined may have been the one sometimes called Pont de Conques. It was situated on the original line of Riquet's canal that by-passed Carcassonne.

I started, monday morning at two o'clock in the barque de poste for Beziers. The country continues beautiful — the plains are sprinkled with olive and almond trees, and the banks of the canal are lined with the poplar & sycamore.

I have often seen mountains, and scarce expected to be surprised at the sight of one — but, imagine if you can my delight at beholding, beyond the mountain of Alarick, the Pyrenees covered with eternal snow. At beholding this southern barrier of France to pierce the sky until the dazzled sight was no longer able to distinguish its icy tops from the snowy clouds in which they were enveloped! But, what are mountains and the difficulties of opposing nature before a man of courage and genius — the Alpine rocks melted before the path of Hannibal, the snows yielded to the step of Napoleon, and Louis the 14th said in his pride “there are now no Pyrenees.” We arrived at Beziers at 6 o'clock in the evening, and passed all of the succeeding day there, and the day following till two o'clock in the afternoon. There is nothing remarkable in this town but the view from the Cathedral, which is placed upon an elevated situation. I set sail at 2 o'clock in the barque de poste for Agde, and was delighted with this portion of my voyage. A fresh and favorable breeze was blowing and the scenery was extensive, and sometimes even charming; on the one hand were seen the extensive meadows which spread out to the ocean, and on the other the distant Pyrenees.

After riding an hour, I beheld a sail ahead and supposed it to be bent upon the canal — but in a few minutes more I was convinced by the long line of blue, bounded by the heavens, that it was tossing upon the Meditteranean.

At 5 o'clock, when within 4 miles of my place of destination, seeing a singular piece of Canal work³⁶, I sprung ashore to take a drawing of it, and followed the barge to Agde afoot. Agde. This is a dismal town, erected upon a volcanick hill and fronting the canal. It is surrounded by gloomy walls and battlements and erected with as much strength and care as if they supposed any person would ever give himself the trouble to carry it by storm; it reminded me of the words “No Admittance” which we often see placed over a door where a man would not enter if paid for his pains. I stopt at the best inn in the place, and was invited to seat myself by the kitchen fire till supper time. Here while examining a well in the corner of the room — a spit turned by clock work, and some other peculiarities, a learned gentleman entered, and, as usual, commenced a catechetical conversation.

³⁶ This must have been the Ouvrages du Libran, a remarkable hydraulic structure allowing the river and the canal to cross each other at sea level.

No. 4.

We talk of the inquisitiveness of the New Englanders — it is but as dust in the ballance when compared to that of the French in the south of France. I was long unable to account for this propensity which exhibits itself more particularly in those places deprived of intercourse with strangers, from their retired situations, and is therefore always to be observed in a village; but I am now perfectly convinced that it is either a certain sign of a want of mind or of cultivation. A man who has nothing in his own head which can afford him entertainment and prevent the approach of languor, is obliged to seek it in that of a neighbor; and, perhaps, should be excused.

My catechist, after going through the usual exercise, or rather making one pass through it, — as “Whence do you come and whither are you going? How long have you been in France, and how much longer will you remain?” And a half dozen similar questions to which I replied like an unwilling witness, gave me to understand that he was rather superior to an ordinary interrogator, by remarking, as he poured some water into the wine

“Vinum debit esse temperatum aqua”

“Wine should be weakened by water”

I supposing that to be the extent of his learning, thought to silence his battery by continuing... “generosem requio

“Quod curas abigat; quod cum spe divite manet

in venas animumque meum; quod verba ministret”³⁷

“I like it rich and generous, such as flows with high hope
into my soul, and makes me eloquent”

But I was mistaken, for there was not a chord I could have struck to produce an effect in more direct opposition to my intentions. I was obliged to repeat all the passages from Virgil. Horace and Juvenal I could call to mind, in order that he might observe the English pronunciation of that language. When my ammunition was exhausted, he would have done me the same favour, much against my will, had not the supper been fortunately announced. Here (at the table) the gentleman drew from his pocket a well worn manuscript filled with Greek; and entertained me during supper by explaining a project of his, which was to have the most astonishing effect upon the progress of the cupido doctorinus, (those who desire to improve). He pointed out to me a part of a list of 3319 words in the Greek tongue, in which entered the letter d. 2142 in Latin actually derived from the same. He intended to extend it to all the modern languages to show the wonderful importance of that single letter. In the mean while I was diving as deep into the omelette as he into science and antiquity — replying at times “bene est” “admirabile est” “difficultates dicident ecce fumus in aeras” “Well — very well — admirable — the difficulties will vanish like smoke etc

After having satisfied the cravings of nature, and become a little more attentive I desired to know the object of his researches, and how the effect was to be produced. He emptied

³⁷ Quoted from the Epistle of Horace addressed to C. Numonius Vala, often memorized by Latin students.

his glass, raised his spectacles and replied slowly, "Propositum est facere studium linguarum, quam difficilem ac pone inviam fuit, planam et amarnam fieri"

"The object is to make the study of languages which has ever been difficult, become smooth and easy". And as for the manner, "studio et labore" "By study and labour". And his reason for doing it was because Cicero says "Studia et Artes a Graecia traditor sunt". "The arts and sciences came from Greece". And consequently it becomes every man who wishes to be more than leviter eruditus, "superficially instructed" to learn that language to the bottom. etc Here I left the gentleman to ponder over his project and went away to put myself in bed, as they say in France.

March 17th after having examined the town, finding that the only way to pass from thence to C  tte,³⁸ was to employ a jack-ass, or Shank's mare, I concluded that the latter would be at least the least ludicrous. For what more laughable than 6 feet 2 inches straddled across an animal not much larger than a shepherd's dog, <and which I could toss half way to Africa> with a pair of legs in proportion dangling upon the ground? I started with my sack and cloak on one arm and my umbrella on the other and marched out of town. As soon as I found myself in the open air, I bound my sack to my back and threw my cloak <which at Paris I had almost concluded to leave behind and am now glad to carry upon my back> over my shoulders and rushed along with a step as free as my heart was light.

My first direction was along the line of the canal which I followed (going a mile out of my way) to its entrance into the Lake of Thau. Here the wind blew as though "it had blown its last"³⁹ and I think the fishermen whom I saw sheltering themselves under the banks of the canal, must have considered me crazy for having followed that long causeway against a tremendous wind, and merely stood a moment at the edge of the lake — but I was not; for here is the end of the Languedock canal, which I have followed de bout en bout.⁴⁰

I immediately retraced my mile, and traversed a sandy meadow, till I arrived at the shore of the Mediterranean. My first act was to dip my hands in the water as the waves rolled up to my feet, to be able to say that I had touched them. I enjoyed this honour (and I suspect you did likewise, Mary) at this time last year, much oftener than I desired, in the Atlantick.

I followed the sea-shore upon a narrow peninsula which separates the lake from the sea, for a space of 11 miles — Amusing myself the while, now looking at the shells, now at the white caps, now at the colors of the rain-bow caused by the reflection of the solar rays upon the spray, as it was born aloft by the wind, — sometimes at sails of distant ships upon the horizon, and some times by crossing to view the lake and the houses upon the opposite shore. But all these eventually became stale, and I thought I should have enjoyed myself much better describing them. When half way over I became thirsty, and

³⁸ The modern spelling of this city is S  te.

³⁹ Unidentified quotation.

⁴⁰ Apparently it was important for Ellet to be able to say he had walked the canal from end to end.

procured a glass of wine in a cabin almost too low to enter. And would you believe that here upon the sandy shore the wild idea of paying a visit to Rome entered my head?

Had my purse been heavier than it was by the trifling sum of 10 Napoleons, I should have gone to Marseilles and embarked. But, unfortunately, my bank was at Paris, and I resigned the project with regret. When I left the beach and arrived upon the main land you may imagine my delight at finding myself upon the most fertile hill in Europe — which yields stone and rock sufficient to fence it in, and surround the town of Cette with a break water.

The road which I followed was about 10 feet wide, enclosed by two of these hedges, so high as to entirely screen the mountain at the foot of which I passed, from view.

But these ingenious Frenchmen have likewise taken the precaution to erect a fort upon the side of this hill, itself similar to protect it from the enemy. I thought this spot would suit Pa precisely, — the stone being all lime he would raise manure enough for both farms. By-the-by, perhaps this is the object of the fort. The town of Cette is advantageously situated, both with respect to commerce and its defense. Its harbor is protected from the enemy by 3 forts, and from the ocean by two breakwaters.

I arrived here in the evening of the 17th — spent the next day examining the place, and on the morning of the 19th took a seat in the diligence for Montpellier — distant 5 leagues. The country from Cette to Montpellier is agreeable — the fields are covered with the almond & olive tree, and the road is within sight of the Mediterranean the chief part of the distance. Finding that the fever, of which I always have a little, was much increased, I considered it time to procure some remedy; and accordingly demanded a doze of Calomel & jollop*⁴¹ of an apothecary. The next question was, with what to mix it? for the good folks here have never heard of such a thing as molasses. For want of better I accepted “gelée a la Grosielle” (currant jelly) as thick as our own East India sweet meat of noted memory. Well, I poured in the jollop — but the dust remained upon the outside and the gelly in; I made a hole and emptied in the callomel, when, being very elastick, it closed upon it. Thus I had the callomel rolled inside of a wad of gelly, and that protected by a coat of jollop. I relate the particulars of this affair both because I wish my journal to be interesting (and vanity is the spice of life) and to show you that Charles does know how to continue, and provide for himself, when occasion calls for his exertion. For you will assuredly give him credit for some originality of invention, for nothing else could have tempted him to mix currant-gelly and jollop.

* This word is not in the dictionary

⁴¹ Editors note: obscure or archaic form of jalap or jallap. A purgative drug obtained from the tuberous roots of *Exogonium Ipomoea purga* and other convolvulaceous plants. Oxford English Dictionary, Second Edition, Vol. VIII, (1989).

No. 5.

In the evening I visited the Botanical Garden, both because it, as well as the whole faculty of Physicians of Montpellier are, and ever have been celebrated, and because it is the spot where Narcissa, the unfortunate subject of her father's melancholy "Night Thoughts" was buried. Though I have never been able to read beyond the first book of this sorrowful plaint, yet I could not but feel an interest in the tale while looking upon the spot where

"With pious sacrilege a grave he stole"⁴²

and thinking how oft the ground upon which I stood must have been watered by his tears. The tomb is in the retreat of an arch way and overhung with cedar trees. A marble slab is placed in the back of the retreat, and bears, not the inscription given in my guide book, "Inter flores Narcissa relucet" * which would have been extremely appropriate, but

"Plancandis Narcissae Manibus" +

I plucked a leaf from one of the vines I found creeping along the wall, which you may place in the "Night Thoughts".

* The Narcissa is distinguished among other flowers, Narcissa is the daffodil.

+ This is an idiomatical expression not easily rendered into English. It signifies that the tomb is erected to appease the manes⁴³ of Narcissa's — to whom the rites of the sepulchre were refused.

Monday March 21st I left, in the morning the beautiful and dusty city Montpellier, for Beaucaire. Finding that there was no communication between these cities by way of Aiges Mortes, whither it was necessary for me to go; I resolved, for want of better conveyance, to have recourse to my old indefatigable steed Shank's Mare. I crossed the Pont Juvenal and persued my way without interruption, through a very interesting country — covered with agreeable houses and innumerable vinyards. I had something to say to every individual whom I passed, not excepting an old lady who was performing the journey in a very fashionable manner viz: upon a jack-ass where she was arranged, heaven only knows how, but where she steadied herself by means of a species of cradel bound to the animal's back like a saddle. But it appeared that her knowledge of staticks had taught her that the center of gravity of the system, thus arranged, was too high; and to remedy the evil she had swung a basket containing a child upon one side, and the vegetables which she was carrying to market upon the other.

The rim of her hat (this likewise was fashionable) was a foot wide and the crown 3 inches high, and the remains of her accoutrements in proportion. I demanded the road to Aigues Mortes, and fortunately she spoke French enough to tell me that I was wrong, and put me right. I sat down after walking an hour beneath an olive tree, and amused myself a short time eating English walnuts. I arrived soon after at the dirty village of Passy, where I

⁴² English poet, essayist, and playwright Edward Young (1681–1765) was a popular author in Ellet's era. Although the episode described here is now believed to be imaginary, it is obvious Ellet and others in his family were familiar with the story. They must have owned a copy of Young's book. The actual quote to which Ellet refers, "With pious sacrilege a grave I stole;" appears as the first line on Page 47 of the 1798 edition of Young's most famous poem "The Complaint — Night III — Narcissa".

⁴³ i.e. the spirits of the dead.

drank a glass of wine, received the necessary indications for pursuing my journey, and caught the hungriest flea (for you recollect the agreement — I must tell all) that ever sucked the blood of mortal. <Perhaps a few such remarks may prevent my letters being _ _ , you understand me, doubtless>

A half mile farther I came to where the road was intersected by a lake or pond, and which at first gave me some uneasiness, as there was no bridge, and the fish cabins, built of reed & mud, which stood around, seemed to be all deserted. I soon saw a couple of little varments who appeared to perform the triple duty of ferrymen, fishermen & shepherds, and who were black enough to be entitled to that of sweeps likewise, making towards me in a skiff.

But the imps could not speak a word of French, and instead of approaching with their boat, remained at a secure distance, repeating constantly in their gibberish some question the purport of which I could not divine till I thought it bore some resemblance to "Combien nous donnez vous" I replied at a venture "dix sous", which they understood very readily and took me aboard. I found one of them to be the handsomest child, in spite of the treble coat of tan due to his multiplicity of professions that I have ever seen — I will not except the marble statues of the Louvre. On the opposite shore I found myself on the banks of the Canal des Etang, as uninteresting as its name would cause one to imagine. Here during a dreary walk of 12 miles, I had not an object to amuse me, excepting an occasional sight of the Mediterranean, at the distance of a quarter of a mile a drove of horses. <now boys prick up your ears> almost wild — some sea gulls, and the dark mountains and elevated villages across the pond.

But, notwithstanding, here was an admirable opportunity to build, pull down & rebuild all my Chateaux en Espagn, until either I wore them out, or they me. I stopped at a little house between the canal & sea and demanded something to drink; — as usual they set a bottle of what they called wine before me, but what we would call 7 year old vinegar — and for bread, a piece of pain bis that would defy old nick himself to break. It was not only tooth-proof, but I think would have been found impregnable if assaulted by a battering ram. I always choose the hardest crust of bread and every thing else I can find; but I imagine that those who have seen me peel the loaf ere now to satisfy my appetite would have laughed to behold me knawing upon this cannon ball with the vain hope of finding an entrance for a hungry tooth. I dashed it upon the table in despair and demanded to know how much I had to pay for my dinner. In the evening I arrived at the walls of Aigues Mortes, which, I must acknowledge, I hesitated to enter. It seemed like going into a prison — the bastille could not have been more gloomy or more imposing. I thought at the time that Saint Louis could not have made choice of a place of embarkation⁴⁴, at his departure for the Holy Land, more likely to convey into his mind those dark and gloomy thoughts, which he must have needed to support him in his horrid designs.

Here he passed the night previous to his departure, brooding on the seas of infidel blood he was about to shed and the immortal reward to be procured by it — the title of St. Louis, the greatest stigma he could have attached to it, in the opinion of future enlightened ages.

⁴⁴ The traditional starting point of the Seventh and Eighth crusades which were led by Louis IX.

The walls of the town are 30 or 40 feet high, with towers distributed along them, formerly intended for archers, but now arranged for the use of cannon & musketry. I entered by a gate-way just wide to admit a cart and for a description of which I must refer you to that given by Scott of the Tolbooth of Edinbourg⁴⁵

I put-up at the hotel God Guard. The old people were as good natured as ignorant, and professed to love tranquility more than the revolution. I went to bed before dark but was unable to sleep, though considerably fatigued by my walk of 20 miles, in consequence of the noise made by my temples, heart and every part of my body sticking against the bedding. In the morning I found my tongue covered with an additional coat, and my nose bled while washing.

I considered all those marks as so many symptoms of an approaching attack. For though I had neither the head ache nor pain in the back usually felt — all the other symptoms were similar to those of last fall a year. I hoped that my old host would be able to give me some good advice — but he assured me in spite of my eyes that my tongue was neither white nor my body fevered — simply because I was not cold before I found myself warm.

But perhaps you will be surprised to hear that your sick brother walked 30 miles that same 22nd March! I started off, knowing that I was bound for Beaucaire, whither I had forwarded my baggage, but without the slightest thought, or care, about the time when I should arrive. I followed the banks of the Canal de Beaucaire as uninteresting as that upon which I amused myself the day before. I arrived at 6 o' clock, examined hastily a noble suspended bridge⁴⁶ and took an apartment, humble enough, upon the banks of "the blue rushing Rhone".⁴⁷ My fever kept me awake until late.

The next morning I went before breakfast to an apothecary who gave me a doze which I would defy - - - - the apothecary to define. The people were very kind — especially Madame who forced me to go to bed before I took my medicine. I remained there 2 or 3 hours, eating English walnuts, which are capital in bed. Though Beaucaire is one of the most interesting and instructive places for me, which I have yet visited it can offer nothing which would afford you the slightest pleasure. I remained there three days — during one of which I was within doors — another examining & reexamining the splendid bridge — and the third in the morning looking over the few relicks of antiquity which they have preserved.

⁴⁵ A famous prison in Scotland, described in Sir Walter Scott's 1818 novel "Heart of Midlothian".

⁴⁶ The new wire-cable suspension bridge between Tarascon and Beaucaire built in 1829.

⁴⁷ The actual quote "by the blue rushing of the arrowy Rhone" is found in Byron's long poem "Childe Harold's Pilgrimage" Canto III Stanza 71 published serially 1818–1821.

No. 6.

When about to leave Beaucaire, instead of taking the diligence immediately in the town I walked ahead for upwards of a league to see three stones — Ancient lapides miliarii <mile stones> which were planted in the reign of the Emperor Claudius upon the spot where they now exist. And here I had the pleasure of observing distinctly the traces of the famous Aurelian Way, and of knowing that here must have passed the troops of the mistress of the world, when going upon or returning from their campaigns in Gaul and Iberia.

I walked on a mile or two further before the diligence overtook me, and had the additional pleasure of finding myself placed along side of a lady and a very pretty daughter, who kept me babbling until we arrived within sight of the old capital⁴⁸ of the western empire which once proudly assumed the title of Altera Roma.*

* the other Rome.

And reasoning from the marks which still exist to testify to her ancient splendours, we must acknowledge the justice of her claim. For we must look upon these remaining piles as the mere remnants of what was — as they have descended to us in spite of wars, battles, sieges, and the desolating fire of the Saracens. But they exist like the giant's sword — a fitting representative of the arm which wielded it. I no sooner arrived in the town than I hastened to the Amphitheatre, and mounted to the very top, malgré the remonstrances of my guide, who called upon me to beware, as the wind was high and a puff pressing against my umbrella might hurl me to the bottom. There I stood examining the entire mass — the enormous thickness, — the arena appropriated to the combatants — the rows of steps and arches and benches, and, in imagination filled it with the 20,000 individuals which it once contained. I contemplated, in fancy, the gladiators in the ring and the applauding voices of the spectators — the thousands of tongues praising the conqueror, or as many inverted palms sentencing the cowardly vanquished to death. I thought that here the joyfull multitude must oft have risen to salute a Roman emperor or victorious general at his entrance — perhaps Caesar himself!

I purchased some coins which had been found in the ruins, stamped with the head of Caesar,+ and went to what is called "la Maison Carée" This was once a temple, and is considered one of the finest specimens of ancient architecture that consuming time has spared — it is said to surpass the powers of modern artists. It is nearly square, from whence it has received its name, and surrounded by Corinthian pillars of most exquisite workmanship. It has been used succesively as an Hôtel de Ville, stables, church and is at present a museum. It contains a number of good paintings and fragments of ancient architecture & sculpture. Among the latter I saw a piece, which from the inscription appeared to be a monument raised to a mother by her sons, and which the Concierge informed me had been found upon a waggon — the teamster having been upon the point of casting it into the sea to form a breakwater! Can we wonder wherefore there exist so few relicks of that ancient people? Can we wonder that the Saracens hesitated not to put fire to these noble buildings, when Christians are ignorant enough to cast them into the ocean?

⁴⁸ Nîmes.

I next visited the fountain of Nemausus <ancient Nîmes> where the most venerable monument is the temple⁴⁹ of Diana, which likewise has had to endure those scourges of antiquity — the sword, time, and fire. I went to the position which was appropriated to the keeping of the victims previously to the sacrifice; — and, wishing a piece of the stone as an memento, I climbed upon some ladders and scantling to break off a fragment which appeared detached; not observing a huge block above which was cracked by the fire, and which rolled down, touching lightly the back of my head and fell within a hair's breadth of the feet of my guide. He, finding himself safe was frightened lest I had been made the last victim of the goddess whose broken statue was scattered around me.

+ Augustus

Next I stepped upon the altar which has as often been stained with the blood of innocent victims as the arena with that of the dying gladiator. Yet I cannot tell wherefore the Apotheosis, and the worship of heroes and other Divinities after their Deification, in the manner of the ancients, always inspires me with respect. I cannot tell wherefore I admire more, and could worship more readily the multiplicity of Gods organized by those credulous nations, than the single one, such as he is worshiped or invented by the moderns — unless it be that the former might be appeased by blood, by flesh, by palpitating entrails, by a sacrifice of some kind; whereas the modern One, more cruel than the whole of the others, is in his hatred implacable. Unless it be that the former were more noble in the exercise of their cruel exactions — demanding always for adversaries another God, or a hero equal to or sprung from one, while the modern exercises his vengeance upon all, without discrimination. Unless it be that the hatred of those existed for a time, and that of the latter is eternal.

I next ascended to the top of a rocky eminence, now crowned with the most luxuriant growth of shrubbery & flowers; and at the foot of the Tour Magne, a most antique structure, enjoyed the magnificent prospect which is there afforded of the surrounding country. The long avenue of trees through the city — the fountain where once the Roman ladies bathed, at the foot of the hill, — the green olive tree at the base of the distant mountain, and the Mediterranean beyond, form an enchanting landscape.

March 26th At 9 o'clock in the evening, before taking my seat in the diligence for the Pont du Gard, I walked around to the spot where

---“the gladiator's bloody circus stands
a noble wreck in ruinous perfection!”⁵⁰

and touched with respect, perhaps for the last time, those frowning walls which so many ages have gazed upon with wonder.

It rained fast during our ride to the Pont du Gard, and I might have felt a little ennui had I not luckily met with what to expell it; for an explanation I must refer you to the “confessions” of J.J. Rousseau who had precisely the same fortune upon the same road when as

⁴⁹ This building earlier was thought to be a Roman temple but it is now described as a library.

⁵⁰ A quote from *Manfred*, Scene IV, The Works of Lord Byron, Murray, London, 1828, Page 52.

obscure an individual as my humble self, about 100 years since. Though it was raining still and 12 o'clock at night when we arrived, my curiosity drew me at that hour to go to examine a suspended bridge⁵¹ across the Gardon, at a short distance, rather than wait till morning. The people in the house looked upon me as upon a crazy man, and I thought always seemed to avoid me at my approach.

I slept soundly in a scented apartment; and dreamed of suspended bridges, arenas, stages and a half dozen adventures similar to that of the preceding evening. I rose early the next morning and visited the Pont du Gard, one of the most stupendous monuments which the children of Rome have left to excite the wonder and the admiration of future ages. Here we behold an Aqueduct formed of three successive rows of arches raised one upon the other, and connecting the two abrupt mountains between which the rapid Gardon is rolling down its waters, and rushing beneath the Aqueduct. Throwing aside reason, and every phenomenon of nature, I wish no other proof than what I have witnessed, that the age of the world, as established by modern Chronologists is false. We know that there are thousands of positions <and I have witnessed myself> where the constant action of rushing water has worn a channel in the solid rock from 20 to 60 feet deep. But here the foundations of the piers show us what the height of the surface, or bed of the stream, two thousand years ago, and it is not visibly changed. This stone is calcareous — how then could the same action wear down the bed 50 feet in 5000 years where the rock is granite? Preposterous!

I mounted to the top of this mighty production of perseverance and traversed it from end to end upon the coping, 70 feet above the water; and here broke off a fragment of the cement with which the sides of the aqueduct were lined, to show to those who have never seen it, hydrological cement after 2000 years, exposure, harder than limestone itself.

⁵¹ Almost certainly this was the 1830 wire-cable bridge at Remoulins built by the Seguin family.

No. 7.

March 27th at 11 o'clock I took a seat in the stage for Avignon, where I arrived at three. It is a very neat town, situated upon the Rhone, which divides and forms an island a little above it. The view of this Island which is afforded from Le Palais des Papes is charming — Road level and luxurient, and studded with Almond and Olive trees, it forms a striking contrast with the fortifications erected upon the opposite bank of the river by Louis 14th, to keep in awe their holinesses, the popes, who formerly owned the town and resided here. Their palace is rather gloomy, but interesting both because of its own age and magnitude, and an archway supported by two Corinthian columns of high antiquity. In the evening I demanded ou est l'église des Courdeliers? and a dirty lad stepped up and offered to conduct me au tombeau de laure, knowing that to be the object of my question. I found the tomb of the beloved object of Petrarch,⁵² whom he has immortalized in his poems, designated by a little marble monument, which was lately erected at the expense of some English gentleman⁵³. Beneath is interred the leaden coffin which contains the bones of Laura — and around are a few shrubs, from one of which I plucked a branch. The ground is trodden by visitors, as every traveler who heard of Petrarch goes to see it; and, to adorn his pages, robs his mistress of the branches which shade her tomb. I should likewise have visited the favourite haunt of the poet at Vaucluse, a fountain at 5 or 6 leagues from Avignon, but that it will require a day which I can ill spare at this moment. The ladies here are beautiful, but, unfortunately, as black⁵⁴ as myself.

The next day, March 28th, I parted in the diligence for Valence. I desired to stop at the Pont St. Esprit <Bridge Holy Ghost>, (well named as it was built by a Monastery) where the Rhone rushes beneath the piers with the greatest velocity. But, it being difficult to get there, I took a seat for Valence, and past after riding two hours the spot where the fierce Carthaginian⁵⁵ led his dark legions across the Rhone, before his famous passage of the Alps. We passed through Orange, where I examined an ancient triumphal arch,⁵⁶ which has often, and falsely been attributed to Marius. The cause of the error has originated in the word Mario, the dative of Marius, which is marked in small letters upon one of the shields. But I observed a number of other names, cut in the same style, upon other shields; which would give them, if they were as well known, an equal title to the honour of the monument. But the probability is that these were but Commanders of legions, or something of that sort, who distinguished themselves in the battle which the arch was erected to commemorate. And a very intelligent gentleman who was with me on the stage, and a resident of Orange, informed me that the words "Ici Augustus..." (Here Augustus) have been decyphered in large letters, near the top of the monument, while the rest was illegible; — which would seem to indicate that it was erected to Augustus; — for what we know not. About 4 o'clock in the evening I passed beneath a tremendous precipice formed by pro-

⁵² Sonnets written by the Italian poet Francesco Petrarca (1304–1374), translated into English, were popular among intellectuals. The tomb of Laura was a favorite pilgrimage site for British tourists.

⁵³ Several contemporary guidebooks credit a monument in the garden behind the Museum to a Mr. Charles Kensall who had it erected in 1823 in memory of Petrarch's Laura. Her tomb formerly was in a church, the Eglise des Cordeliers, but it was destroyed during the French Revolution.

⁵⁴ See Part 1, Footnote 3.

⁵⁵ Hannibal.

⁵⁶ Arc de triomphe d'Orange.

jecting rocks, at the mere sight of which I inwardly shuddered; but what think you were my feelings when I found that it had not escaped the zealous observation of the first protestants, who considered it a spot convenient to make converts by a method quite à la mode at that epoch; viz: by hurling the diabolical Catholicks from the top of this frowning precipice, upon the pikes of their soldiers planted beneath! Such was the fashion of aiding the "Cause of God", in the time of Henry 4th — but the Catholicks soon after getting the upper hand, were not less ambitious of aiding the Almighty by that wholesale Christian manufactory, the inquisition. I arrived at Valence at 6 or 7 o'clock in the morning of the 29th, gave my address to the gentleman I mentioned above, whom Napoleon mentioned in his will and went to examine a fine suspended bridge across the Rhone. This is one constructed in a peculiar manner⁵⁷ and wishing to examine it thoroughly, I entered a hole in the abutments to view the fastenings there.

But I discovered two holes in the pier, in the center of the river, and found that by entering one of them, I might climb up a chimney 50 feet, two feet wide, and see the manner in which the chains are secured upon the top. But to get into the holes it was necessary to descend the side of the pier upon a ladder edgewise; — I descended, entered the hole, a sailor showing me a coupe de main, and examined the construction there. But I could not ascend the chimney without greasing myself with the fresh paint & oil with which the chains were covered — and therefore, much against my inclination, I returned without gratifying my curiosity. At 2 o'clock, as I wished likewise to observe a couple of suspended bridges at Tain and Tournon, I employed a man with a couple of mules to carry me to those towns, where I passed the night quite agreeably.

30th Took a seat in the diligence for Vienne, with an officer from Algiers for a companion. He was very intelligent, inquired much about America, but did not like my description of the manners of the people, in many respects. Indeed, he was at least, half right. We arrived at Vienne at 6 o'clock in the evening.

It is today precisely 12 months since I bid adieu to my friends upon the Chesapeake & Ohio Canal line; and I have repeatedly amused myself comparing my situation with that which I occupied at that time. How things change! Yet I am always pondering upon a much more difficult, uncertain, and to me infinitely more interesting subject, — the future.

31st. My host of the "table ronde" ascertaining this morning that I was an American, informed me that one of my compatriots, a young gentleman from Philadelphia, was boarding chez lui, and as I felt an inclination to see some one who could speak English, and more especially a Philadelphian, I introduced myself sans ceremonie. He was a slender young man of about 25, and in ill health — he gave me his name but I did not recognize it, though he recollected perfectly well having associated with an Ellet some years previously. "Had I not a brother?" "Yes, but he could not have been acquainted with him, without having known me likewise." We breakfasted together, talked of Philada, and everything in America — compared it with France and expatiated largely upon our superiori-

⁵⁷ The wire-cable suspension bridge built by the Seguin family at Valence was arranged with a single tower in the middle of the Rhone River.

ty. After breakfast we made a little promenade, during which he inquired my address. "I had resided in Union St. and likewise in fifth street" "His residence was Pine St. between 6th and 7th". "I also had resided in the same square 6 or 7 years ago — he must recollect the rough cast house upon the left hand side, ascending." "Why! You're the very fellow — Good God how you are altered — I should never have recognized you in the world. You are related to the Israels, are you not?" This was all very easy for him — it was certain he knew me, but who was he?

His name was Badaraque, and he had resided immediately opposite to our house in Pine Street. We were considerably together during those days of boyhood <I will not say happy, for I was never happy> and had I seen the same features which his countenance then wore, I should have known him at once — but he is changed, both by the passage from 16 to 24, and nearly two years of ill health. I reminded him of many trifles which he had entirely forgotten — such as having loaned me a ring book, which you will perhaps recollect was my hobby once during two or three months; and he was surprised that I could find a place for them in my mind — not knowing till I reminded him of it, that the rings which I then manufactured, filling them full of hearts & darts, were for the fingers of a young lady in the neighborhood; though in conformity to my usual modesty, I never had courage enough to send one, much less present it. We visited together the library, cabinet of antiquities and other curiosities of the place, that day; and on the morning of the 1st <April fool day> notwithstanding that he begged me to remain and spend another day with him, I was obliged to bid farewell to him & Vienne.

As there was no regular conveyance from this town to Givors whither I wished to go, I forwarded my baggage to Lyons and went there <to Givors> a foot. This town is situated upon the Rhone, as well as upon the Rail Road leading from Lyon to Saint Etienne.

No. 8.

April 2nd. Finding myself much in want of a pair of boots, and being unable to suit myself in this little place, after having spent a few hours examining the rail-road, and Steam <locomotive> engines, I started a foot for Lyon, at the distance of 12 miles, to purchase a pair. April 3rd. Having bought my boots and seen some of the most remarkable objects at Lyon, I concluded to return to Givors and complete my examination of the rail-road there constructing. At about 11 o'clock in the morning I passed along the Quays of this beautiful city, admiring its situation, upon a peninsula formed by the junction of the Rhone and the Saone — the noble buildings by which the borders of these rivers are lined, and the fine bridges which afford a communication with the opposite shores. You will naturally inquire wherefore did you have this agreeable sojourn, 24 hours after entering it, to walk 12 miles, already fatigued, in the hot sun, with a new pair of boots, when withal a splendid fête to last 3 days, was to occur upon that day? And why, too, did you not start in the stage early in the morning, or get into one of the boats which are passing down the river at all hours of the day? In the first place, my restless disposition, which prevents me moving a step forward until every thing which I intended to do is finished behind me, obliged me to return to Givors to examine the rail-road & Canal. As for the fête, I knew that where it would be, there also would be collected a crowd — of all things, to me the greatest abomination. And as for parting in the stage, I had not taken the notion to go when it started — And lastly I preferred walking along a certain meadow, which, when coming I had espied at a distance, clothed with grass, and shaded with fine willow trees, where I could enjoy my own thoughts, to the burning sun, crowded boat and coarse jokes which I should find upon a water passage. And with such logick, <which I have discovered since for I acted by instinct> me voila retracing the route of the rail-road, at least as happy as the King of France when seated on his throne.

Well, shall I entertain you with facts entirely in this journal, or can you once and a while among my soaring ideas — give you a few notions of my chymical visions, lead you, in imagination above the stars, or descend head long to sad reality? No, you could not comprehend, and would consequently condemn them, for when my imagination becomes heated by exercise though its productions may appear extravagant to others, I know them to be always practicable. And even if they are sometimes extravagant in reality, I do not think it either improper or impolittick to indulge in them — it forms the sole pleasure of my existence. All my ideas are concentrated in one word, and that word Hope. As for the past, I never think about it unless as we glance at an unpleasant dream, and endeavour to shake it from our imagination.

Let us get to Givors, where I must go to bed in a dirty tavern <of all things the greatest curse of the present, except always a cross wife> and in a chamber which had been kept as a rendez-vous these 10 years for all the bed-bugs of a town of 5000 inhabitants; where I was obliged to exclaim “Here is proof which would convince even the skeptical Bishop Barkley that all is not ideal.”⁵⁸

⁵⁸ An allusion to the *esse est percipi* principle of Irish philosopher George Berkeley (1685–1753) who argued that all material objects (such as bedbugs) are merely ideas in our minds.

I had just written the above, and was about to go to bed again when my boots, which were constructed upon the low instep principle, being well soaked with rain, refused point blank to obey either forces or injunctions and leave my feet. No, these stuck my foot, like a foot in a boot— there I tugged and strained, and if I did not swear it can only be attributed to my genealogy — coming, as you know all our family do directly from Job. I then concluded that tight boots are the most troublesome things upon earth; so true it is that we always consider the present inconvenience, however trivial, the worst which can arrive. But from this trifle I draw another proof of the great moral of La Fontaine — that

“Patience et longeurs de temp
Font plus que force ni que rage”⁵⁹

Well, as I have drawn on my boots, and as no bones are broken we must continue our voyage to Rive de Gier. A couple of young men with whom I had dined the day before, ascertaining that I was about to visit the road, and was reduced to <for them> the painful necessity of footing it, invited me to take a seat in their waggon which was about to perform the same route. As you may now imagine me pursuing this agreeable journey in a coal waggon with 6 in company and drawn by a fine horse. Away we went, as jovial a crew as ever was stowed into as dirty a hole — having a soldier and a young lady with us in the bargain. We arrived after riding an hour & a half at our place of destination — having passed through a number of tunnels. Here was prepared a fine dinner. We talked as much as we eat, and drank as much as we talked.* — and the drinking made us talk more. After dinner we went to the café, drank a cup and parted — they to return and I to pass the night at Rive de Gier. They made the day run very agreeably for me, and I became quite attached to some of them — at least to one.

* You will of course perceive that these acts do not include myself.

After separating from these gentlemen, I set out a foot to visit the great basin de Cousin,⁶⁰ which is a reservoir of water intended to feed the Canal de Giers when the springs fail. The dam is 97 feet high, and the water is drawn off by means of spickets, in some respects similar to those of St. Feréol. He turned them for my gratification, and I was absolutely deafened by the roar. There is also a fine cataract formed by the surplus water tumbling over a precipice of rocks, and foaming down a fall of a hundred feet. The scenery is daily becoming more beautiful and even now all the hills by which the basin is surrounded are covered with the verdure of Spring, and the trees with leaves and flowers. Here to, I had the pleasure <for the first time in my life> of hearing the pipe of a shepherd's boy minding his sheep as they browsed the grass upon the hills sloping down to the lake.

You know that I am so unfortunate + as to be unable to distinguish “Yankee Doodle” from “Hail Columbia” at this day; but nevertheless according to my uncultivated taste, this was the most beautiful musick I had ever heard. I have oft passed an hour near an abominable annoying piano, siffling flute or squeaking violin, and shall I add, drummed guitar,

⁵⁹ The moral “Patience and Time are better than Strength and Rage” is from Aesop's fable of *The Lion and The Rat*, published in 1668 by Jean de la Fontaine (1621–1695) in his Book 2, Number 11.

⁶⁰ Now known as the Réservoir de Couzon.

— wishing either that the strings would break, Miss's fingers would weary or Master would get out of breath — or any other accident would occur to relieve me; but here I seated myself upon a stone beneath a white oak tree, and listened long to this delightful harmony, melodiously rising amidst the rugged yet beautiful scenery by which I am surrounded. For only imagine a moment what must be the effect created by such a sound flowing across a beautiful land confined between two mountains, where the natural rudeness of the land and the vegetation produced by the industry of man seemed to vie for ascendancy; — and its echoes as they reverberated from the distant rock, and mingled with the murmurs of the foaming cataract below. This was the musick of nature — away with cultivation — away with refinement, true beauty exists not but here. I passed a half hour in this position and for once realized the delights of a shepherd's life; not that I envied it!!! Fifteen minutes after I was in the center of a town of 14,000 inhabitants, where the houses which are built of stone could not be seen for the coal dust which covers them — where your foot cannot touch the pavement with out passing through 6 inches of mud, and where nearly all the male inhabitants wear but a coat and pantaloons, <and some wanting one or the other of these> and yet whose hides are perfectly secured by a triple coat of some thing resembling lampblack. Such is the town Rive de Giers, which is surrounded by coal pits and glass manufactories.

+ I say unfortunate because not long since at a publick dinner hearing the musicians playing something which I thought I had previously heard, I very innocently asked an acquaintance “what tune is that?” He replied “Yankee Doodle” and I observed a smile intended for contempt upon the lips of his brother who heard the question, which I should not have forgiven very readily had I not pitied him. I pitied him for valuing so highly the knowledge of a science whose benefit and effect dies as soon as the fleeting sound itself. The same can be said of no other.

No. 9.

April 5th, I breakfasted with a young lad who is destined for the Polytechnique school, and who offered to accompany me through the glass manufactories — whither we went and saw that useful operation. After which I saddled my horse and walked to St. Etienne, stopping on my route at various foundaries and iron manufactories, amusing and instructing myself upon this most important branch of industry. I arrived at the pleasant town of St. Etienne at 6 o'clock in the evening, and found at the "hotel du Nord" an excellent dinner, and comfortable beds.

April 6th, after breakfasting at 7 o'clock in the morning, and having performed a short excursion around the town — visited an inclined plane at the summit level of the Rail road, I set out a foot to view the road between St. Etienne and Andrezieux. <9 miles>

I found nothing of sufficient importance to detain me until I arrived at Andrezieux, where I made a few notes, observed a suspended bridge constructing across the Loire <for I am now again upon that River> and witnessed the manner in which the wire cables for these bridges are manufactured.⁶¹ After which I returned to St. Etienne by the same convenient conveyance, where I arrived at 5 in the evening. — thus, having performed a walk of 20 miles, observed many important things in my line, without being reasonable fatigued. Richard begins to be himself again!⁶²

April 7th I left the town of St. Etienne to return to Rive de Gier but I had scarce passed the walls of the town when I found that the country was being overturned by a very hurricane,⁶³ which was raging directly against my course — my cheeks in 5 minutes were switched raw by my collar flapping against them, my coat was blown over my shoulders & my hat over the fields. It was impossible to keep my breath, or open my lips a moment, while making head against it; and when I arrived upon the top of the ridge which divides the waters of the Rhone from those of the Loire, it bid defiance to every exertion I could make to advance & I was obliged to search a circuitous passage. Here too I met with a disappointment which I had no right to anticipate. I had hoped to enter an iron manufactory to see them make the rails for a road from Andrezieux to Roanne — but the ill-natured owner refused to admit me without a recommendation from some individual at St. Etienne — 3 miles distant and where I knew not a soul. I had no right to expect to meet with such a reception, as universally, since the commencement of my travels, I have met with the most cordial and friendly treatment — and that as a mere stranger. I have not only hitherto been permitted to enter, but the owners or superintendents have frequently accompanied me, and pointed out the most remarkable things under their charge. Yet, had I not hastily sacrificed an interest to my independence, I might readily have received an admittance by stating that I was an Engineer — an American — an élève of the Ponts et Chaussées, and merely exhibiting my pass port in support of my pretensions. But no; I wished the respectable appearance of Charles Ellet Jr., without any title, to be his pass port — but was deceived. I shall see them in England nevertheless.

⁶¹ Ellet implemented the same technique a decade later when building a bridge across the Schuylkill River.

⁶² This line is sometimes used by actors in performances of Shakespeare's Richard III.

⁶³ Ellet was walking in a northeast direction. This may have been the strong wind known as the mistral.

I arrived, about noon, at the Rive de Giers; and while awaiting the overseer of one of the coal pits <who modestly assumes the title of Governor> when I was about to ask permission to descend, I observed a train of 20 waggons of coal coming down by the mere action of gravity.

Considering that there might not occur another opportunity to ride to Givors until the following day, I hesitated not to defer likewise my visit to the coal pits till I should arrive in England, and took a seat in a car of stone fastened behind the coal waggons. I was obliged to run rapidly to overtake the train as it shot past me, and found myself upon a very comfortable seat. We soon passed at the same rate through a tunnel where all was as dark as the grave, for more than a half mile; and had not been long sub deo before I found my head becoming giddy in consequence of the rapid retreat of the objects along the road and the continual change of perspective. The scenery contracted and expanded as from the changing of the position of the object glass of a telescope. I shut my eyes to avoid the effects of this sensation and began to muse upon the wonderful march of science and art during the last half century, and upon the wide field yet open for genius, when suddenly I found myself bouncing sky high, the stone upon which I was seated rolling hither and thither and my whole establishment in confusion. I found immediately that the car had run off the rails; but before I could jump to save myself the building stone beneath me, which had been for some minutes flying in the air, were together with myself tossed upon the ground. As soon as I was able to examine the state of my body, I discovered that although my bones were as sound as ever, my flesh and clothes had grievously suffered. My back was bruized, my arms were skinned, my shins were thumped, my umbrella crushed, and my pantaloons literally torn to pieces. These are the pantaloons which we sent for, to Bristol, the noted night of my departure — the same which had nearly sent me to prison at Havre — the same for which I bribed the officer of the Custom House — the same which the tailor cheated me in making — the same which I had twice previously ripped to pieces since my departure from Paris, and which have just undergone this last hair-breadth escape.

And yet a couple of philosophical Frenchmen, who, more fortunate, were upon a different car, assured me that all this was nothing, and I should be thankful that I was not killed. T'is thus we reason upon our neighbor's misfortune; and if a man breaks his leg he should be thankful it was not his neck — if he skin his arm, that he did not break it; according to Mr. Good this reasoning is only skin deep.

Givors, April 8th After having, as usual, spread my blanket on the floor for the cleanly purpose of drawing on my boots what do you think must have been my surprise at beholding a drove of those abominable animals, previously mentioned, trotting in platoon towards a hole in the wall? I thought, both from the labour bestowed in massacring them, and the marks of slaughter exhibited on the field of battle when it was develloped by the sun, that it had resulted in the total extermination of the blood thirsty race; but you perceive that I was deceived, and some skillful general had, under the cover of darkness, drawn off his forces in good order. I might perhaps have renewed the battle, had I not at

the moment been called to breakfast, and felt, at the same time, the necessity of recruiting my forces enfeebled by the loss of blood.

After breakfast I walked to Lyon, which makes the third time I have pursued that road a foot. At Lyons I remained 2 days in the Hotel du Pace. I must confess that notwithstanding the many beauties which this place possesses, I have dwelt here with pain and leave it with disgust. A cloud of dust is rolling continually filling your ears, eyes, and mouth, and your teeth never close without grinding a spoonfull of gravel and sand. More or less.

I saw here the Chateau of Charlemagne, upon the Isle du Barb.⁶⁴

April 9th Finding myself perfectly disgusted with the dust of Lyon, I departed at 8 o'clock in the evening, in the diligence for Geneva though I engaged my passage only to Nantua — intending to walk from there to Switzerland, a distance of 45 miles, to enjoy the picturesque scenery upon the route. The town of Nantua situated at the head of the lake Cerdon, whose depth the sounding line has never reached, is remarkable for its romantick situation. In the afternoon of the 10th having passed through 10 or 12 miles of rock, more remarkable for its rudeness, than its beauty, or the interest which it excites, I arrived at Châtillon de Michaille.

This town is situated upon a spot of level ground selected amidst a multitude of the surrounding mountains, and in sight of a number of cataracts which force their way through the fissures of the limestone, tumbling and foaming to the bottom of the valley, where they form a little river and soon become tributaries of the Rhone.

The tops of most of the mountains around are covered with snow, the melting of which swells the torrents, and at once invokes the beauty and the magnificence of the scenery. But the bold and rugged features which the country here begins to assume is only, apparently, to prepare the mind to behold one of the most singular and imposing spectacles which nature has produced.

⁶⁴ Apparently Ellet saw the monastery ruins on L'ille Barbe in the Saone River north of Lyon which he may have visited to examine the 1827 chain-cable suspension bridge there.

No. 10.

The Loss of the Rhone, one of the principle causes which have induced me to perform this journey on foot, is a sight which alone would have richly paid me for a walk of a hundred miles. This astonishing phenomena occurs in the vicinity of Belle Guard, when a cliff or stratum of limestone crosses the channel of this mighty stream, which is here confined between two precipitous mountains, and the rushing waters instead of passing in an ordinary bed, tumble down the rocks, churning foam resembling the Alpine snow of which it is formed, and lose themselves in the bowels of the earth. Would that I could convey an idea of the effect of this rush of waters and the spray which it produces, which rises and stands like dewdrops upon the leaves and foliage which overhang the falls. I leaned over the top of the dripping rocks to observe the foam as it was dashed upon them by the force of the rolling stream striking upon the edges beneath, and to see it drive and tumble into its receiving gulf, and there washed my hands in the tossing spray. The Rhone finds a subterranean passage beneath the rock for the space of 900 feet then it and makes its egress and rolls on in a channel 30 or 40 feet wide and 120 deep, which it has worn in the solid rock and unites its waters with those of the Valserine. But the Valserine before its junction with the Rhone exhibits phenomena, though less mighty and terrifick still more interesting and more beautiful than those of the latter river. The bed of this stream is a level rock of limestone, about 40 feet broad, confined between two borders not of perpendicular, but overhanging ledges, which are ringed with trees and shrubs whose branches extending from the opposite sides are mingled in the center, and form a majestic arbour which casts its shade upon the torrent beneath. But the stream itself instead of following this level bed, and spreading its rushing waters upon it, is confined in a most sinuous passage, not 3 feet wide at the top, dug in the lime stone, and there rushes foaming, swirling and winding, and at times dashing on high as it rises from beneath and strikes against the angles of its irregular bed. I sat here until it was entirely dark, admiring these works, or other pranks of nature, before I recollected that my host had advised me not to venture down until morning — when, fearing lest he should become alarmed at my absence, I reascended through rocks and brushwood, and stowed myself into a comfortable bed.

April 11th. Since the night has again closed wearied with unusual exertions, I must repose myself by relating to you the objects the day has revealed to me. In the morning I followed the winding channel of the Rhone from where it dives into the cave to where it has cleft its way through the high & terrifick peak of mount Jura. In the most remarkable part of this striking passage stands the fort de l' Ecluse built by one of the Dukes of Savoy, which is flanked by the dark and lofty cliffs of limestone, and commands the river and adjacent country in each direction for a mile. The rushing Rhone in the bottom of the chasm the approaching mountains which have been burst by the torrent and the tremendous rocks, together with the fortifications so advantageously situated, would alone have been sufficient to strike the most lukewarm beholder with admiration and awe — but what think you would have been his delight at knowing that here passed the mighty conqueror of antiquity, when leading the Roman legions to the conquest of Gaul? That it is to this passage that Caesar refers in his commentaries where he says “Augustum et difficile inter montem Joram et flumum Rhodanum“ etc. “A passage between Mount Jura and the

Rhone so narrow that scarce one chariot could be led along at a time. But the lofty mountain overhangs so that a very few could easily prohibit the passage", Thus it is described by Caesar himself — how little did I expect 4 years ago when reading the passage to stand today upon the spot! I continued my journey, happy in admiring the great works of nature around me, until the charming valley of Geneva, contained between the sloping sides of two spurs of the Jura, behind which rise the fabled Alps capd with eternal snow, was expanded before my steps. I passed along these lovely plains, studded with houses, fields, gardens, villages and patches of woods, all clothed in the richest verdure, till next I found myself upon the steps of the Chateau of the immortal defender of truth and humanity — at the dwelling of Voltaire.

Here I stood a moment and cast a glance upon Ferney, the work of his immortal hand, the groves and avenues around his house, the clear and placid lake at a distance and the snowy Alps beyond — all of which, if I may dare to render into English prose⁶⁵ the poetical lines of their glorious possessor, might be thus described:

"How all around delights my enraptured senses! the pure and transparent water of a tranquil ocean bathes the flowery borders of these Elysian fields. The plains are crowned with innumerable herds and embellished by Bacchus; their insensible inclination conducts to those frowning mountains which press upon Hell and cleave the skies. Behold this theatre of snow and of glory — eternal bulwark, which has not guaranteed the splended territory of the Lombards. Behold these frightful mountains, celebrated in history — these mountains which the Charles, the Otho, the Catinat, and the Conti, have traversed in their lofty flight, upon the wings of Victory".

Here an old man who had resided in the family of Voltaire, conducted me first along an arbour where the poet during his exile and residence here was in the habit of performing his morning promenade, and finally to a tree which he himself put into the ground. It oft is stripped of its bark every year by the visitors who carry to distant nations this trifling memento. His chamber and parlour remain in precisely the situation in which he left them at his death — excepting that the curtains of his bed no longer exist, having been carried away in 1814 as trophies, by the officers of the Austrian army. But here is the urn in which his heart was placed — here are the portraits of Madame de Chatelet, his accomplished companion — himself when young — Frederick the Great of Prussia and Catherine of Russia, worked by herself and presented to him. There are also portraits of two of his domesticks — plates of Racine, Corneille, de Lille, and all the celebrated poets of France, as well as those of our own firm patriots, Washington and Franklin. I traversed the valley below the Chateau, in continuing my journey towards Geneva, and, when upon an elevated situation found my eyes resting upon the most magnificent and the most enchanting landscape that even Switzerland possesses. Where shall I find words to express my sensations, and the cause which produced them? The vocabulary of language <if I possessed it> is but the work of man — and here are combined the splendor and the Majesty of Nature. I had already walked 26 miles, amusing myself by cheating my count of time in contemplating the interesting objects with which my path was lined, when I arrived upon this eminence. I reposed myself upon a delightful grass plot, beneath the

⁶⁵ Quoted from Voltaire's Epitre LXXXV which he wrote in 1755 while he was living in Geneva.

branches of an overhanging willow, and surveyed at once both the borders of the lake ornamented with the most inviting chateaux, far as my eye could reach, — while behind rose the dark mount Salère in a gap of which could be seen the snowy summits of the lofty Alps at once above and beneath the clouds which were breaking upon them. The pure rays of an April sun were shed upon the lake, where not a ripple could be seen, and the light was reflected sparkling from the tin roofs of the houses in the city.

But even here, while dwelling upon the spot which nature has selected to pour her gifts upon, I could not but recollect that here too the scar⁶⁶ of persecution and proscription, as well as the rage of revolution have been exercised in all their malignity. That here, as elsewhere, the Calvinists made the converts which they now vaunt, by enriching the lovely plains with the blood of the dissenters.

* one would suppose that these mountains are at a distance of two miles at most. I, knowing that one is subject to deception, made an attempt and supposed them to be 8 or 10 miles off. But I find upon inquiry that the summit of Mont Blanc is 54 miles from Geneva. Byron refers⁶⁷ to it in *Manfred*: “Mont Blanc is the monarch of mountains,

“They crowned him long ago
“On a throne of rocks, in a robe of clouds,
“With a diadem of snow.
“Around his waist are forests braced,
“The avalanche in his hand;
“But ere it fall, that thundering ball
“Must pause for my command.”

⁶⁶ This word is difficult to read.

⁶⁷ Quoted from Byron's play *Manfred*, Act 1 Scene 1.

No. 11.

And, worse than that here, in the land of his nativity, in the village which produced him, in the country he loved, the immortal Rousseau was unable to find a resting place, or a house which would admit him within its threshold, when exiled from France and driven from land to land, from city to city by the hand of persecution — of Religion — of Christianity. Yes,

"Here the self-torturing sophist, wild Rousseau,
 "The apostle of affliction, he who threw
 "Enchantment over passion, and from woe
 "Wrung overwhelming eloquence, first drew
 "The breath which made him wretched⁶⁸

And now the greatest honour the city can boast is to have produced him — and the citizens of every nation are drawn to the humble door which bears for inscription

"Ici est né Jean Jacques Rousseau 1712"

But you remark t'was only the bigots and hypocrites of his own day who have disgraced religion and trampled on humanity; — but do not be deceived as that very man if yet in life would again be tortured as of old. In Life, do I say! I have beheld the dark cave in which his tomb was hid to rot and be forgotten by those who but a year ago held the reins of France; as though the light which he sheds upon earth could be smothered by concealing his coffin! — as though the flambeau which he raises from his tomb could be extinguished by holding his ashes in darkness.

Last evening beheld me contemplating the fury and the loss of the Rhone — today at noon crossing the rainy summit of the Jura — in evening embracing at a glance Geneva, Ferney, the Lake and the Alps — And I mark it the happiest I have ever past.

April 12th — I rose this morning with the sun, and after passing the bridges⁶⁹ across the Rhone, which receives the waters of Lake Lemman, to commence a noble river at the start, I traversed the southern division of Geneva, and found myself upon the promenade surrounding the fortifications, and commanding a view of the most delightful part of the city, the lake, the mountains and the landscape between.

Here I was obliged to acknowledge that if the Swiss are distinguished for a love of country, and for their patriotism, they have reason for it — if this spot has been selected by the most celebrated men for their home during retirement, they likewise have reason.

For where could Childe Harold rest during his pilgrimage upon a spot combining in equal perfection the beauties, the delights, the charms and the magnificence of nature, or awakening in his breast more thrilling historical recollections? Standing upon the spot where the Marius, the Pompey, the Caesars have proudly led the sons of Rome bidding nations to bow and confess the unlimited sway of the mistress of the world in sight of the fearful

⁶⁸ Quoted from Byron's poem "Childe Harold's Pilgrimage" Canto III Stanza 77.

⁶⁹ The small two-span wire-cable suspension bridge built in 1823 by Dufour.

mountains of ice and of snow across which the eternal enemy of the seven hill city moved when — “he almost won her”⁷⁰ — upon the spot where the “blue rushing Rhone”⁷¹ whose banks have been spoiled by a thousand battles receives its waters — and in the very land which vaunts its Tell, how could he but [be] inspired?

And when the author⁷² of Mahomet, Brutus and Alzire was supplied by nature while sitting beneath the arbours which adorn his Chateau with that which art must have denied him, who can wonder that his pages seem to have been dictated by an immortal spirit? They were.

And we must suppose that he whose youth was misery and want, whose manhood sorrow and whose grey hairs bitterness, but withal whose soul was “passion’s essence”, here first imbibed that love of nature which clung to him forever and gleams in every line.

Nor are the females of Geneva less lovely than the smiling soil they tread upon — their complexions are as clear and purely beautiful as the waters of Lake Lemman. I was obliged to confess when at Avignon that there ----- “the sun with ardent frown”

“had slightly tinged their cheeks with brown”;⁷³

but here ----- “their tints as gently sink away
as a departing rainbow’s ray”⁷⁴

April 13th I would gladly give you a minute relation of my return from Geneva to Paris, but that it would require too much time and afford you but little interest. I was occupied almost exclusively in examining the construction of several important canals, slack-water navigation, foundaries, and manufactories. Nevertheless I had a delightful passage up Lake Lemman in one of the fine little steam boats which have just commenced their daily course. The surface of the lake was so placid and perfectly unruffled that it almost appeared like committing sacrilege to disturb its tranquility. And

And⁷⁵ this sheet of water, as pure and transparent as glass, is the mirror of the surrounding scenery, the reflection of which can be distinctly seen beneath its surface as when viewed directly. Not only the adjacent shores, villages, and snowy mountains are there (in the bottom of the lake) but Mont Blanc at the distance of 50 miles may be seen splitting the clouds with which he is at times encircled. In one position, which the glass will indicate to you, we behold at the same time the city of Geneva where the Rhone receives her waters from the Lake and the gaps in the mountains where she pours them into it.

⁷⁰ Unidentified quote.

⁷¹ Refer to Part 1, Footnote 3.

⁷² Voltaire.

⁷³ The actual quote “What though the sun, with ardent frown, had slightly tinged her cheek with brown” is from Sir Walter Scott’s “The Lady Of The Lake” Canto I Stanza 18.

⁷⁴ The actual quote “Whose tints as gently sunk away as a departing rainbow’s ray” is from Byron’s poem “The Prisoner of Chillon” VIII.

⁷⁵ Editors note: The word ‘and’ appears as the end word on page 42 and the first word on page 43 in Ellet’s original document.

At 3 o'clock we arrived at Lausanne, once the abode of Gibbon. I called at the house where he dwelt, and, the gentleman being absent, I was politely received by his lady, who invited me into the parlour from where he once sent forth those shafts of irony "which sting his foes to wrath";⁷⁶ and afterwards descended into his delightful garden situated upon the banks of Lake Lemman, and overlooking the most striking part of the Alps.

April 14th, at 4 o'clock in the morning I left the abode of Gibbon in the Dilligence for Besançon — having in company an old Swiss gentleman who recollects the departure of La Fayette to America during the revolution, and who thinks that we paid him greater honors in 1825 than we had done to God himself had he come upon earth. From this gentleman I learned that the Sap Sago cheese is called in Switzerland Sano Ségre, our word being, apparently, a corruption of that. As for the origin and signification of ségre he could give me no information, but thinks it is an herb. This is for James Dale.⁷⁷

At 10 o'clock I was in sight of a most splendid landscape — a bird's eye view of Lake Neufchatel and the hills and meadows surrounding it. At noon, from the summit of the Jura I surveyed the wide plains extending from the mountain's base to Lake Lemman — the lake itself, that of Neufchatel and the long white chain of the Alps, broken here and there by a pyramidal rock, from whose steep side the Avalanche had fallen. - - - - -

At Dijon I visited the museum, once the palace of the mighty Dukes of Burgundy, where I saw among other less interesting objects the tombs of Philippe le Hardi and his son Jean sans peur <John the fearless> whose tomb was covered with planes⁷⁸, the device he took when he understood the Duke of Orleans, his enemy, had adopted for his a club — to show that he intended to plane down the knots; an emblem which, as well as his surname, would have become him better had he not afterwards cowardly employed the assassin's dagger to destroy his foe. Charles the Bold sometimes resided here.

I passed through Fontainebleau on my return where I visited the palace long the favorite residence of the Kings of France. I cannot describe it at present — but must mention that a little rough table⁷⁹ (or round stand) attracted my attention more than all the attendants of luxury that the splendid residence of royalty possesses — more than the hall of Diana, the theatre where Talma⁸⁰ trod, the chambers of kings and princes or the busts of the Caesars, drawn from Rome — the stand upon which "the modern mightier foe"⁸¹ signed his abdication of the throne of France. I was conducted through the gardens by an individual grown grey following the fortunes of the Conqueror — who commenced his campaign at Marengo and finished at Waterloo. Who was in the guard, that proud name, till he bid it adieu before this palace, when going to Elba.

⁷⁶ Quoted from Byron's poem "Childe Harold's Pilgrimage" Canto III Stanza 107.

⁷⁷ Presumably one of Ellet's personal friends in Pennsylvania.

⁷⁸ Jean sans Peur (1371–1419) is usually depicted wearing a robe or shirt decorated with rabots or carpenters' planes.

⁷⁹ Today, at Fontainebleau Chateau, the little mahogany table is still displayed at the same spot where Napoleon signed his letter of abdication April 6, 1814.

⁸⁰ François-Joseph Talma (1763–1826) was the most famous stage actor of that era.

⁸¹ Unidentified quote.

I arrived in Paris the 27th of April, and received all your letters, <including the one which contained the draft> upon the same day. It is not for me to engage in the sparring between Ma and Uncle M.⁸² I shall not pretend to say whether the difficulty occurred in consequence of stupidity or laziness. I have the money <i.e. the draft> and am satisfied. Apropos for Uncle M. give him my best respects, but for Heaven's sake, Ma, do not make him listen to all this letter.

Give my best respects to all my friends, and particularly to "the princess". Perhaps I shall write either to John⁸³ or Cousin Thom⁸⁴ by the next packet — if I do I shall enclose the letter in this.

Again, my love to all, and not a little to yourself. <I challenge you to write as long a letter>
Your brother, Charles Ellet Jr.

⁸² Possibly Michael Israel, his mother's brother.

⁸³ Probably Ellet's younger brother John Ellet.

⁸⁴ Possibly Charles Lippincott who was related through Charles Ellet [Sr.] and his first wife.

GLOSSARY

Note: When it is possible to do so, entries have been made specific to the C&O Canal and the 1825-1850 era. Separate entries exist for words in bold type.

Abutment. Defined in the 1828 edition of Noah Webster's *American Dictionary* as: "The head or end; that which unites one end of a thing to another; chiefly used to denote the solid pier or mound of earth, stone or timber, which is erected on the bank of a river to support the end of a bridge and connect it with the land."

On the C&O Canal the term was used for the substantial stone structures at the ends of the **dams** and **aqueducts** that anchor them to the land. The ends of **locks** and **culverts**, including the walls that angle away from the gates, were more typically called **wing walls**.

Aqueduct. Defined in the 1828 edition of Noah Webster's *American Dictionary* as "a structure made for conveying water from one place to another over uneven ground."

More specifically to the C&O Canal, an aqueduct is a bridge carrying the canal over a major stream or river. When the watercourse was small enough, a **culvert** sufficed to carry it under the canal, but an aqueduct was required when the area to be spanned and the water passing underneath during normal and high water periods was too great for a culvert. On the C&O Canal there are eleven stone aqueducts that carry the line of the canal over significant Potomac tributaries. A double culvert at Broad Run that washed out in a flood was rebuilt in 1846 as a wooden aqueduct called the Broad Run Trunk.

The eleven stone masonry aqueducts on the C&O Canal have **trunks** that are were also stone masonry, unlike many 19th century American canal aqueducts that had masonry **piers** and **abutments** but trunks constructed of wood.

Ashlar masonry. Stone blocks that have been sculpted or cut to have square edges and smooth faces. Also called dressed stone.

B&O Railroad. The Baltimore and Ohio Rail Road was initially organized in 1827 by Baltimore businessmen. Its first ceremonial shovel was dug July 4, 1828 by the last living signer of the Declaration of Independence, Charles Carroll—the same day as U.S. President John Quincy Adams dug the first ceremonial shovel for the C&O Canal. In June of 1828 both companies resorted to court injunctions against the other to prevent either from constructing through four very narrow passages between Point of Rocks, Maryland and Harpers Ferry (in what was then-Virginia) until the issue of which State had rights to the passages was resolved. In January 1832 the C&O won in an appellate court ruling, but in 1833 the state legislature forced the two companies into a compromise that resulted in right-of-way for both being constructed through the narrows.

Berm. An embankment that forms the sides of a canal. In addition, the bank of the canal opposite to the towpath—usually the land side—was called the berm. The landside berm was generally higher than the adjacent land to prevent runoff into the canal and to channel such water into the nearest culvert.

Coping. The top course of stone on a masonry structure such as the top of lock walls or aqueduct **parapet walls**. Typically they are larger and well **dressed**.

Culvert. A canal culvert provides for the drainage of water or passage of a roadway or walkway under a canal. The original C&O Canal culverts were arched stone masonry structures on a well-established foundation and typically built with substantial **wing** and **parapet walls** at the ends.

Dressed stone. See ashlar masonry.

Dry laid, or dry set masonry. Also known as dry wall, these terms apply to masonry structures in which the individual units are held together by friction and gravity between them rather than by mortar. The Sganzin work on civil engineering that Ellet had access to refers to this as “regular masonry” in which stones are laid together so as to achieve the “solidity of one block of stone.”¹

Embankment. See also berm. Embankments often underlie the canal trunk to maintain a level across low places in the terrain between locks.

Engineer. See also **surveyor**. Defined in the 1828 edition of Noah Webster’s *American Dictionary* as: “In the military art, a person skilled in mathematics and mechanics, who forms plans of works for offense or defense, and marks out the ground for fortifications. Engineers are also employed in delineating plans and superintending the construction of other public works, as aqueducts and canals. The latter are called civil engineers.”

Calhoun’s work makes it clear that at this time in the United States civil engineering was often viewed as “mensuration, surveying, and engineering”, where the latter constituted basic construction knowledge and required mathematics no more advanced than arithmetic.²

Erie Canal. The first version of the Erie Canal was built from Albany to Buffalo, NY between 1817 and 1825. From 1834 to 1862 the Erie was enlarged and parts of the route changed. The New York Barge Canal was built between 1905 and 1918. It made significant changes to the route, greatly enlarged the entire canal, and utilized the canal technology of that time for all structures, especially the locks. Many early engineers began their career or made their name as an engineer on the first version of the Erie.

Extrados. The outer surface of an arch; or the upper boundary of the **voussoirs** of an arch as contrasted with the **intrados** or underside.

¹ Sganzin. *An Elementary Course of Civil Engineering*. P.41 in the 1837 edition.

² Calhoun. *The American Civil Engineer*, p.45.

Face or facing stone. The stone used on the exterior of a masonry structure. Such stone is usually of better quality and workmanship than that which is not visible. The C&O Canal Company's earliest specifications for its masonry locks do not include any special instructions for face stone, but the specifications of 1837 include some fourteen paragraphs concerning the preparation and use of face stone in locks. These instructions begin:

The stone shall be of a quality to endure the frost and sun, and such as shall be approved of by the Engineer or Superintendent of masonry.

All of the face stone, except the hollow quoins and coping, shall be well **scabbled** in their face, in their beds, and in their joints, so that, by taking off of each of the scabbled surfaces one half inch, a perfect and complete cut stone in every respect might be had.

Guard Wall. A high embankment rising above a canal to protect it usually from an adjacent river that would overflow the canal during floods. A guard gate the height of the guard wall passes the canal through the wall and is closed during floods to make the wall continuous. All inlet locks that bring water into the canal from the pool behind a dam have a guard wall to protect the channel beyond it from high water and their upstream gate is guard gate, as high as the guard wall.

Intrados. The lower boundary or **soffit** of the **voussoirs** of an arch; or the line formed by the intersection of the soffit and the face of the arch. The kind of curve determines the kind of arch, i.e. segmental (circular), elliptical, etc.

Inverted Arch. In the context of the Ellet papers and C&O Canal structures, this refers to a shallow arch—i.e. one with a very low **rise**. Böye refers to an inverted arch in his letter of February 22, 1830 in the context of his discussion of culvert 70. The term can also refer to an arch constructed upside down, but there are no such arches on the C&O Canal.

Lock. Navigable canal locks are chambers with gates at both ends that allow boats to enter and leave the chamber and the water level to be raised or lowered. The most common kind of canal lock on the C&O Canal is the lift lock, 74 of which were required to overcome the 608 ft. elevation difference between the eastern terminus at tidewater in the District of Columbia and the western terminus at Cumberland, Maryland. Other types of locks on the C&O are a tidelock, inlet or guard locks, and river locks. Stop or guard gates are sometimes called stop locks but are not true locks as they have only a single gate. Such gates are designed to allow a section of a canal to be sealed off or are built in a guard wall to allow the canal through it. When flood waters threaten the canal beyond the guard wall, the gate is closed to make the wall a continuous barrier.

Masonry. Stone or brick work. Masonry structures are built from individual units usually laid in and bound together by mortar unless **dry laid**.

Mortar. See **waterlime**.

Parapet walls. On canal **aqueducts** these are the walls that form the **trough** holding the water. The walls serve as the sides of the canal trough on top of an aqueduct's **piers**, arches, and **abutments**.

Perch. The 1828 edition of Noah Webster's *American Dictionary* provides this definition: "A measure of length containing five yards and a half; a rod." In the popular language of America, rod is chiefly used; but rod, pole, and perch, all signifying the same thing, may be used indifferently. More precisely, the online Free Dictionary by Parlux provides this meaning: "A unit of cubic measure used in stonework, usually 16.5 feet by 1.0 foot by 1.5 feet, or 24.75 cubic feet (0.70 cubic meter)."

Pier. In the context used here, a pier is a support structure that carries the weight down to the foundation of all or part of the superstructure, such as the trunk of an aqueduct. The Monocacy Aqueduct has six piers between the two abutments, and thus a total of seven arches.

Pilaster. Defined in the 1828 edition of Noah Webster's *American Dictionary* as: "A square column, sometimes insulated; but usually pilasters are set within a wall, projecting only one quarter of their diameter. Their bases, capitals and entablatures have the same parts as those of columns." The pilasters on the Monocacy **piers** have no capitals although the coping stones on the top extend out as drip ledges, as do the exterior water table stones at the base of the **trunk**.

Ring stone. The voussoir stones showing on the face of an arch.

Rodman. A **surveyor**'s assistant. A typical canal survey team at this time might include: (1) surveyor; (2) rodman who was responsible for the rod held at the far end of a line being measured; (3) chainman who carried the chains that measured the distance; and (4) axman who felled trees and trimmed growth along the line being surveyed. Men such as Benjamin Wright sometimes took on young men as apprentices in the surveying and engineering field as volunteer rodmen. While Ellet's position on the Pennsylvania survey team in 1827 was apparently that of a paid rodman, his initial position on the C&O Canal in the summer of 1828 was that of a volunteer.

Scabbled stone. A roughly dressed finish on the face(s) of a stone. While cutting stone dressing it usually produces a smooth surface, a stone that is scabbled is rough. Specifications written in 1839 for C&O Canal scabbled stonework directed that variations on the surface were to be no greater than half an inch in depth.

Shanty. This was the common term for the construction-era ephemeral and minimalist buildings that served as offices, for storage, or to house the laborers.

Skewback. Typically the skewback stone on C&O Canal arches was triangular with the arch stones abutting the sloping face of the skewback stone at the **spring line** of the arch. However not all C&O Canal arches used the skewback system.

Slake. The process of lime and water mixing. If significant water or moisture is mixed with the lime, calcium hydroxide, a dry powder, is produced. See **waterlime**.

Sloped wall. A sloping bank such as those near the ends of locks and other masonry structures. Typically they are covered with closely fitted stones that are usually **dry laid**. See dry wall.

Soffit. The inner or concave surface of an arch.

Spandrel Wall. The roughly-triangular space between the curve of the arch and the **parapet wall**. The top is represented by the **water table** and the bottom by the **ring stones**.

Spring line. The top of vertical side walls supporting an arch, where the curve of the arch begins.

Surveyor. Defined in the 1828 edition of Noah Webster's *American Dictionary* as: "One that views and examines for the purpose of ascertaining the condition, quantity, or quality of any thing; as a surveyor of land; a surveyor of highways; surveyors of ordnance."

In the early 19th Century in the United States the title and work of a "surveyor" often encompassed that of an "engineer." As Calhoun states: "As early as 1758, Americans had the example of architects and surveyors who offered to plan bridges and 'other improvements'—works that later generations would consider proper to the engineer."³

Trunk or prism. The line of the canal formed by walls or berms that contain the water. Although sometimes called the "ditch" of the canal, that term is misleading as the trunk only sometimes required digging a ditch as at other times it is built on a **berm** to maintain the canal's level between locks when it must pass over a depression in the terrain such as a valley. Note that where the canal crosses a stream draining an adjacent area, a **culvert** is necessary to carry the water under the canal.

Voussoir. A masonry unit of an arch, usually wedge-shaped with the abutting faces aligned with a radius of the center. See also **ring stone**.

Waterlime. This is the term commonly used by the engineers for the main constituent of the mortar for masonry structures on the canal. It is made by burning chunks of limestone (a process called calcination that removes carbon dioxide) and then grinding the stone into a dry powder of quicklime. Ellet had a copy of Joseph Mathieu Sganzi's *An Elementary course of civil Engineering*, and it contains this discussion of mortars (pages 29 and 30 of the 1837 edition).

We designate by the name of artificial mortar, or more generally mortar, a mixture of lime and argillaceous or siliceous substances....This mixture should possess the property of adhering to stone and brick, and forming a solid mass.

There are two modes in which lime acts as a cement; in its combination with water, and its combination with carbonic acid. When quicklime [calcium oxide] is rapid-

³ Calhoun, Daniel Hovey. *The American Civil Engineer: Origins and Conflict*. Cambridge, Mass., the Technology Press, 1960, p. 9.

ly made into a paste with water, it soon loses its softness, and the water and lime form together a solid coherent mass, which is a *hydrate of lime* [calcium hydroxide = lime hydrate]. When hydrate of lime whilst it is consolidating is mixed with red oxide of iron, alumina, or silica, the mixture becomes harder and more coherent than when lime alone is used...and they render it less liable to decompose by the action of the carbonic acid in the air and less soluble in water.

The bases of all cements that are to be used for works which are to be covered with water must be formed from hydrate of lime.

Waste weir. A structure in the canal berm or in a masonry structure such as the wing wall of an aqueduct that is built with gates or grooves for planks inserted into the grooves to close the opening. Such structures are used to release unwanted water or to lower the level of the canal or empty it, as would be done to make repairs, etc. Note that if only a part of the canal is drained, gates at the head of the section being drained would be closed to prevent the water above from also draining from the canal. Gates downstream would also have to be closed to keep the normal flow of the canal waters from eventually draining sections below the one intended to be lowered or drained.

Water table. On C&O Canal aqueducts, the water table consists of a horizontal course of stones underlying the canal trunk and at the top of the support structure formed by the abutments, piers, and arches. The parapet walls are built on the water table stones that project out from the face of the aqueduct to provide a drip edge to discourage water from running down the face of the stone.

Wing wall. A wall that usually curves or angles away from the end of a structure such as a lock, culvert, or aqueduct and that often is part of the abutment anchoring the structure to the land.

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In addition to “Charles Ellet Jr. on the C&O Canal” included in this document, the following papers concerning Charles Ellet Jr. can be found in the *Canal History and Technology Proceedings*, Vol. XXX, Editor Lance E. Metz, Canal History and Technology Press, National Canal Museum, March 12, 2011:

- “An Ellet Family Genealogy” by Jeffry Lee Richter
- “Charles Ellet Jr. (1810–1862): Portrait of an Engineer by Emory Kemp
- “Charles the Fearless” [concerning Ellet’s travels in Europe 1830-1832] by Donald Sayenga
- “Charles Ellet Jr., C.E. and the Development of the Ram Boat” by Francis E. Griggs, Jr.

