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# R E M A R K S

On a second Publication of *B. Henry Latrobe*, Engineer, said to be printed by Order of the Committee of the Councils; [of the City] and distributed among the members of the Legislature.

By *William Smith D.D.*

**M**R. LATROBE introduces his remarks with terrible complaints against the Committee of the Delaware and Schuylkill Canal Company, respecting their Address to the Committees of the Legislature, containing *Remarks* on his first publication. These remarks of the Canal Committee, he says, have "*crept* into the public papers;" but he omits to say that they *crept* (if they did not boldly *walk*) into the public papers, in the shape of Observations on his Piece, called "*A View*" &c. which had *crept* into the public papers before.

He then commences his furious charge upon the Canal Committee, in terms, whereof a few specimens follow—"I am treated in a manner so unjustifiable, upon any principle of candor, that I owe it as much to myself, as to the Corporation, to endeavor to protect my opinions and assertions against misrepresentation.—The address of the Canal Committee—is a continued series of misrepresentation and misstatement. The real merits of my piece are kept out of view, and it is attempted to discredit my arguments, by destroying my professional character; for if the representations in the address be true, I am not fit to be consulted."

Most confusedly mixt with these charges against the Canal Committee, are the following—"At the foot of the Pamphlet I observe the name of a man, whom I too much respect to believe he had the smallest share in the manner of the Piece." This *a-la-mode* disorganizing compliment to the "man whose name is at the foot of the pamphlet," (with a view to divide the Body of the Canal Committee from its Head) comes with an ill grace, and is rather a censure than a compliment, when connected with what follows; representing this respectable man, as a mere nose of wax to the body, and considering it as his duty to sign the production of the majority—a kind of proceeding which those who know Mr. Sanson better than Mr. Latrobe knows him, will never lay to his charge.

Mr. L. then charges the majority of the Canal Committee as "very foolishly calling him, Mr. Henry Latrobe, Esquire." (The Mr. was an error of the press, by printing Mr. for B, in the name B. Henry Latrobe, as written by himself. And if Mr. L. had turned his eye to the table of ERRATA, on the last page of the pamphlet, he would have seen the following correction, accompanying the publication, viz p. 16. line last, dele the Mr. before Henry. And a further correction might have been added, (to save the imputation of folly—till his further claim to titles appears) viz. after the word LATROBE, dele Esqr; and, the word Engineer also, leaving only plain B. Henry Latrobe,

But the *folly* must not be increased, at *present*, by any further notice of Mr. *Latrobe's* introductory censures and lamentations.—This may be a work of *more leisure*; and it would be making a *bad return* for the indulgence of the Senate and their Committees, before whom he has laid his lamentations and complaints, to wish the procrastination or postponement of their proceedings from day to day, on a subject “engaging the self-love of individuals, in a controversy about the accuracy of their observations, the justice of their opinions, or the extent of their mathematical knowledge.” Better at once would it be, in order to save the precious time of the Legislature, for the parties to be heard by Counsel (if granted) concerning their contending claims, if any such there are; and Mr. *Latrobe* himself would not be refused an opportunity, together with his Counsel, or the Counsel of his employers, to *protect* his opinions, so far as the State is concerned in them. With regard to the public at large, and the city in particular, his *opinions* are open to the discussion of any Citizen; and he will not be kept long in suspense concerning such discussion; by means of which the public will probably be enabled to decide, whether the misrepresentations and misstatement be on his part, or the part of the Canal Committee; who took him up on his own ground, and upon his own *concessions*, so far as concerns the Canal, and the *aid* requested and now in contemplation to be given by the Legislature, towards its completion. This was *fair ground*, with respect to Mr. *Latrobe*, whose officious interference, and ostentation of *professional abilities*, with his *doubts and fears*, appeared to have a tendency at least to *procrastinate*, if not to *frustrate*, the work of the Canal, in favor of the work in which he offers his services, and which, for any thing he has yet shewn, appears to be a confused and enormously expensive project of “*artificial Castles, and elevated Reservoirs, of different stories, Fountains, Baths, &c.*” (held up, on the ground of *professional abilities*, yet *unknown, and untried*, so far as the history of any thing in his work in America has come to the public knowledge)—and all this he has done in a way that cannot be otherwise considered than as inimical to a great public work, sanctioned by law, carried on at great expense, directed by *professional abilities* (which he has not yet questioned as *superior* to his own) and in near prospect of completion, with the amount of funds far short of those which, he has confess'd, will be necessary to the accomplishment of his own projects. Upon his own *concessions* fairly quoted in the address of the Canal Committee, they took him up; and on that occasion only (for it was not necessary on any other) was his name mentioned, with the utmost candor; and with a fair view, to obviate or remove his *doubts and fears* if possible.

A brief *recapitulation*, so far as the Legislature may be concerned with Mr. *Latrobe's* remarks, now before them, is all that is necessary.

The Canal Committee introduce Mr. *Latrobe*, on the subject of the Canal, with the profession of a *respect*, which he has but ill returned.

"It is highly proper, say they, to quote what he says on his head, in his own words, and to the credit of his publication." The material part of what is quoted follows, viz.

"If the work [of the CANAL] could be accomplished in time, it certainly would render a great part of the expence I have proposed unnecessary. But from what I have heard, doubts may be entertained of the possibility of the necessary expedition. But I confess myself very imperfectly informed. I fear the ice would embarrass the winter supply of water for culinary use—but to every other purpose its waters would be amply adequate."

Mr. Latrobe's two DOUBTS, concerning the Canal—1st, *As to the possibility of the Expedition*; 2d, *The winter embarrassment by ice*; the Committee say they will strive to remove; and accordingly stated for his consideration, such principles and axioms, drawn from the doctrine of Gravity, and the laws of matter and motion—verified in fact by long experience and observation, on the comparative quantity of water running in Schuylkill, Wissahickon, &c. under the ice, and when there is no ice, in reference to the permanent head, as might be deemed conclusive, in an address to a *man of science*; [reference is had to this part of the address before the Legislature, from p. 24 to the end, without further quotation.] But Mr. Latrobe, in his last publication, intimates that his doubts are not yet wholly removed, and that he has not feared vainly.

His Reasons, such as they are, must have some notice, altho' very little is necessary.—

"I shall always, (says he very wittily) feel myself much obliged for the Communication of professional Knowledge, whether the Book be offered by a MERCHANT or DIVINE. I am far from thinking that Belidor, Bernoulli & Kaestner hold a monopoly of HYDRODYNAMIC Science, and that after having studied all they have written, I may not receive Improvement where I should not have expected it."

Without saying much about this parade of Reading and Study, and shielding himself behind the Names of Belidor, Bernoulli and Kaestner; or what Improvement he might expect to receive from the Canal Company or any of the Members, in respect to their reading and study; he must not take it amiss to be told, that among those concerned in the projection of the Canal, and execution of the work, some may be found; who, altho' they have forgot more than ever he read, can still point out to him others besides Belidor &c. from whose writings he may receive Improvement in his professional character; and, not to burden him with many names of French, German, Italian or English engineers and writers, such as Colbert, De La Hire, Marriotte, Gravesande, Desauguliers, Cotes, Varenus, Riccioli, Famiem Michelini, Benedictus, Castellus, &c. it may be proper on the present subject, to refer him particularly to Guglielmini, first mathematician to the university of Boulogne, *Treat. de la Nat della H. Fuimi.*

Mr. Latrobe says he will "state in language free from technical phraseology, the principle as it applies and the deduction as it ought

“ to have been made”—This desire to avoid *technical phraseology*, is but a poor compliment to the understanding of his Readers, whom a few lines before he had addressed with such a hard-sounding *technical* word, as *HYDRODYNAMIC*. To avoid such hard words, and to come down to the level of the simple intellects of his employers and readers, (not excepting the members of the Legislature themselves,) he proceeds to illustrate his *Deductions*, by water (or by beer, which would have done as well) running from a hole in the side of a cask; further exemplified by a *Bowl of Toddy* Story, catching a nutmeg on its surface, a *fly* swimming on the surface of milk or tea, and *drinking* out the *bottom* of his bowl *first*, or before the top; while he strives to catch the *nutmeg* on the surface, in his mouth—*Risum teneatis*—The story follows, in the words of his note—“ This may be seen in a very familiar manner, by attempting to drink a grated nutmeg from the surface of a bowl of toddy: It will be seen that the nutmeg, following the motion of the surface is *stationary*; (*Stationary following* might be corrected by *relatively stationary*, nay, *tho' stationary*) it even *runs back* from the mouth, while the liquor at the bottom of the bowl is drank first. Nor is it easy to get rid of a fly swimming on the surface of milk or tea, by endeavouring to pour it out.”

“ Q. E. D.”

Mr. *Sambourn*, mentioned by the Canal-Committee, as a brother engineer, is, in the last place, introduced by Mr. *Latrobe*, in *piteous plight*, and with an air of very arrogant superiority.

“ I do not know Mr. *Sambourn*, but from the mention made of him by the Canal Company; I have no doubt but he is an ingenious and respectable man.” But though Mr. *Latrobe* pays this compliment to his brother engineer, he soon strives, in his great superiority of knowledge, to retract or soften it away.

“ As to the expence of a steam engine in this country, I know, that he [Mr. *Sambourn*] is much *misenfamed*. I should be sorry to see an *honest* man tied down to execute the work at the sum he mentions. Besides, of 300,000 gallons per day, thrown up at the river, not half would reach the city; the rest would be lost in leakage, absorption, and evaporation, in near a *mile* of Canal and *ten* *ACRES* of *reservoir*. In a hot windy day, not a drop would remain.” Here is a new stroke at the Canal. In winter, its waters are to be nearly frozen up; and in summer absorbed, evaporated, &c. (in the *bed* and *reservoirs* attach'd) that *not a drop would remain*.

But *Ten Acres* of a *Reservoir*, in center square, or on the top of one of his large Castles! this is something equally new and marvelous indeed! and had it been known before to the Canal-Committee, (considering the value of ten Acres of Ground in that part of the City,) they might have added another considerable Item to Mr. *Latrobe's* Bill of cost; as the *Reservoirs* for his greater works, whether in the *Ground* or in the *Air*, must be supposed as capacious as ~~the~~ which he projects for his brother *Sambourn*. Evaporation must have its effect both ways. But, *ten Acres* of *Reservoir*! where did Mr. *Latrobe* learn that the *Grand Reservoir* of the Canal would require *ten Acres* of the twentieth part of Ten?

But this strange *idea* of Ten Acres *reservoir*, was held out as necessary, perhaps, to damn Mr. Sambourn's project, or any other having a connexion with the Canal; the *completion* of which would give the death-blow to all Mr. L's romantic and expensive projects, as well as to the emoluments and honours contemplated by him, from the projection and execution of a greater work than the *Canal*. Any project or practicable measure, for an immediate and temporary supply of water to the city, on Mr. Sambourn's plan, or even Mr. Latrobe's, which can be accomplished in seven *months*, the Canal Company most fervently wish to see in execution; and their Committee have *pray'd*, God forbid that they should throw any difficulty in the way of such immediate or temporary relief to their fellow citizens; from the memory of the *past*, anxiously boding future afflictions.

If Mr. Latrobe could confine himself to this *temporary* seven-months work, which he has again and again declared to be *enough* for *temporary* relief to the city (if under Providence relief is to be had this way) without concerning himself with the *permanent* relief to be obtained by means of the Canal, in *addition* to all the other objects of its completion for the mutual benefit of city and country; he would hear nothing from the Canal-company on the subject of his writings; which though they may excite *ridicule* in some parts, cannot but provoke *indignation* in others.

Recurring again to the *Ten Acres of Reservoir*, as it must be an important object with the city corporation that the ponds and stagnated waters in the vicinity should be drain'd or filled up, it may be presumed that even their own engineer will not be permitted to spread an area of Ten Acres reservoir, although of the *purest* water, any where within the ground plots of the city and suburbs; and it has been said before, that the *Canal engineers* have never contemplated a reservoir of an area amounting to above the *twentieth* part of *Ten Acres*.

Mr. Latrobe complains of misstatements and garbled quotations of his *work*, by the Canal Committee; one instance he gives, is as follows, in his last piece, p. 8, 9,—“ An attempt is made to charge me with *extreme silliness*, in having said, *that after enough had been done for supplying the city with PURE water, and WASHING and COOLING* the streets, still a very important part of the work remained unfinished. *I have said no such thing.*” But how does he prove this? He tries to prove it by misquoting or not fully quoting *himself*, suppressing the most material part of his own words by an *&c.* “ *I have said no such thing,*” (says he, saying and unsaying)—“ *I have said enough would have been done to supply pure water, &c.—but nothing would have been effectually accomplished to supply COOL water, or water against which there is no prejudice.*” Now, this is a direct denial of his own words, as fairly stated by the Canal

Committee in the *query*, page 19, to which he refers—as follows, viz. “Here we may be allowed at least, to offer a *Query*, viz. “If the accomplishment of his first object be ENOUGH to substitute pure for putrifying water, for culinary purposes, and effectually to provide for cleansing and COOLING the streets, how can any important, or indeed any part remain?” How does he reply? “I have said (says he) no such thing;” (i. e. nothing about cooling—) “I have said [only] that enough would have been done to supply pure water, &c. but nothing would have been done to supply cool water, &c.” Then the *cooling* the streets, which he mentions before as effectually provided for, must be understood to be done, not by cool, but by hot water.

He had said in p. 4, that his *first* object being accomplished, his *second*, by the Spring-mill waters, though very important, “might be wholly omitted,”—and p. 8, that he had not spoken of any definite time for bringing the mill-spring to the city; and yet at the foot of his estimate of 275,000 dollars for his work, he says it may be executed in the year 1800, or in two years; but with an expence, not easily to be ascertained, in the distribution of the waters (when brought to the city) to every distant part of it. If there be any mistake in these remarks, they can only arise out of his confused statements of time and expence. In p. 19 he boldly asserts, “that water brought from a reservoir, suppose that of the canal in Center Square, more than 40 f. above the tide water of Delaware, by connecting pipes, would not raise a fountain of five feet, in any part of the city above Front-street. If this assertion is not more bold than just, what will he say to his own project of fountains, &c? or what shall be said of his judging of levels by his eye, or of efficient surveys made in one day's ride, without seeing or touching the canal ground in the whole way; until he came to Spring Mill; except where he passed under its tract at the falls of Schuylkill, and Willahickon bridge?

But, sparing other remarks at present, it is only to be added, that in p. 8, 9, of his first publication, entitled “A View, &c.” speaking of his Spring-mill aqueduct, (which by mere guess-work is to be supplied in quantity, highly over rated, with a body of water sufficient to fill and run through a trunk of from four to five feet in section) he says, “as the aqueduct, before it reaches Philadelphia would gain a very considerable head, the same supply would be received, but in less time.”

This error, the Canal Committee, gave Mr. L. an opportunity to correct, before he committed himself to the public. see p. 26, Law 3d concluding that in the case he supposes, “the BODY would run away and leave the head behind”—But as he makes the *technical terms* of that Rule or Law, an excuse for passing over what he could not refute, let us have another Bowl of Toddy to settle the matter; and let him

drink the whole, Top and Bottom, no matter which is first drank up.  
 PROOF. His throat will be narrower than the *mouth* of the *Bowl*, or the  
 Velocity of any section of the *Toddy* down the throat will be greater  
 than in a section in the *Bowl*, reciprocally as any *sectional* area of the  
 throat is less than that of the *Bowl*. Or if this be too *technical*, when  
 the *Toddy* is drank up, the whole quantity drawn in any given time  
 from the *Bowl*, will have gone down the throat in the *same time*, but  
 not in *less*; for a moment will intervene between the emptying the  
 whole *toddy* out of the *bowl*, and passing it through the *mouth*, down  
 the throat, except a *mouthful* should be withheld, along with the *nut-*  
*meg* to season or wash the *gullet*, at *more leisure*!

Upon the whole, having now done with the *Toddy*, the *Nutmeg* and  
 the *Fly*, (and all malice apart) if Mr. Latrobe feels himself *hurt* in  
 his professional character, by an examination of his opinions, and  
 conclusions, so far as they apply in the projection or prosecution of a  
 great work, which he offers to undertake for public benefit, and at  
 public expence; he must consider the *hurt* as coming from his own  
 hand, and the result of the *opinions* and *conclusions* themselves, not of  
 the examination. If, then, he wishes to *save* his character and not  
 become a *felo de se*. (no matter whether the advice comes from a *mer-*  
*chant* or *divine*.) let him *write no more*, or *strive to write like a gentle-*  
*man*, and a *man of science* and *consistency*.

He will not find any name at the foot of this publication, as he took  
 too much liberty with a name at the foot of a former one. But he  
 may substitute any names, or name, either of the whole, or any part  
 or individual, of the Canal Committee, as he may think it best.

January 26th, 1799.